

GEMÜ 550 AK80_WKC2

Pneumatically operated angle seat globe valve



Features

- Suitable for shut-off and control functions for gaseous, liquid and viscous media
- Suitable for vacuum up to 20 mbar (a)
- Wide range of adaptation options for add-on components and accessories
- Free from non-ferrous metals
- Optional for food contact according to Regulation (EC) No. 1935/2004
- Compact design due to short spigots and optimized actuator sizes

Description

The GEMÜ 550 2/2-way angle seat globe valve has a low-maintenance stainless steel piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing providing low-maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

Technical specifications

- **Media temperature:** -10 to 180 °C
- **Ambient temperature:** -10 to 60 °C
- **Operating pressure:** 0 to 25 bar
- **Nominal sizes:** DN 15 to 65
- **Body configurations:** 2/2-way body
- **Connection types:** Clamp
- **Connection standards:** ASME
- **Body materials:** 1.4435 (316L), investment casting material
- **Seat seal materials:** PTFE | PTFE, reinforced
- **Conformities:** ATEX | CRN | DVGW Gas | EAC | FDA | FMEDA | Oxygen | 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

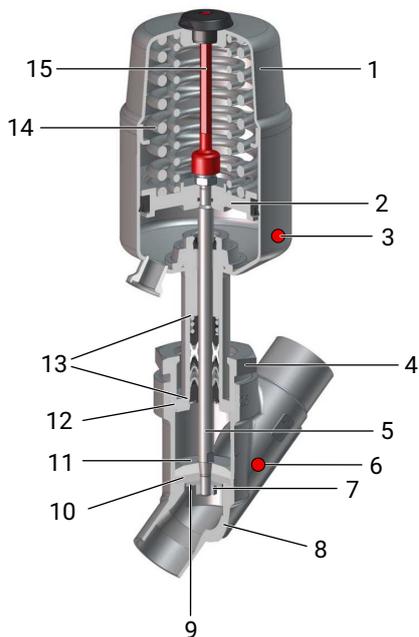


further information
webcode:
GW-550_AK80_WKC2



Product description

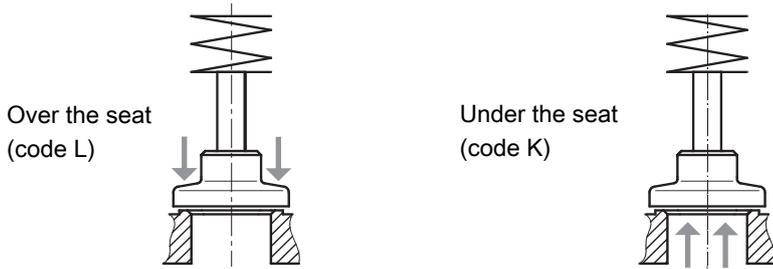
Construction



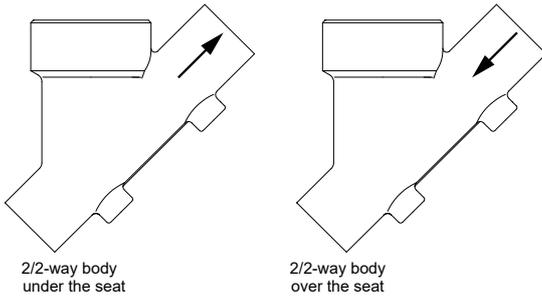
Item	Name	Materials
1	Actuator*	Stainless steel
2	Piston	
3	CONEXO actuator RFID chip (see Conexo information)	
4	Union nut	
5	Spindle	
6	CONEXO body RFID chip (see Conexo information)	
7	Nut	
8	Valve body*	1.4435 investment casting
9	Washer	
10	Seat seal*	PTFE
11	Valve plug	
12	Sealing ring*	
13	Gland packing	
14	Compression spring(s)	
15	Optical position indicator	

*These components are available as spare parts (see the "Spare parts" chapter in the operating instructions).

Flow direction

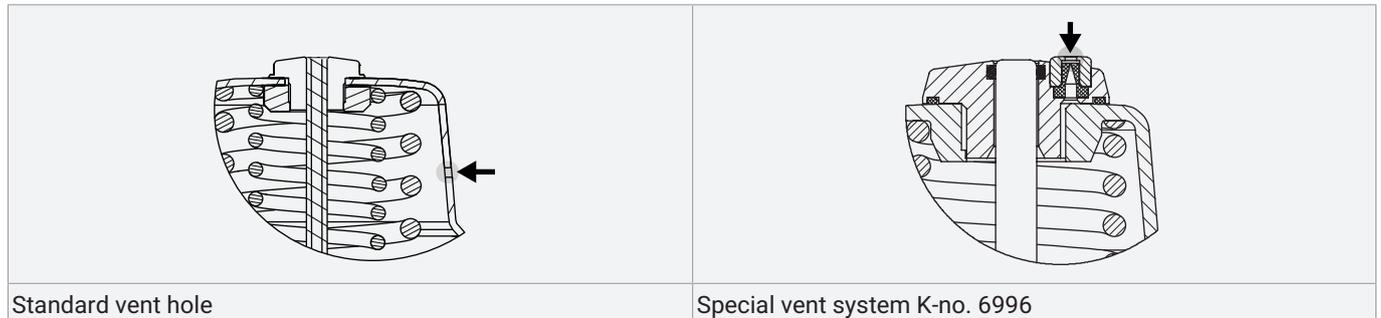


Under the seat (code K) is the preferred flow direction with incompressible liquid media to avoid water hammer. The flow direction is indicated by an arrow on the valve body.



Vent hole in the actuator

To vent the control medium, the pneumatic actuator has a vent hole that is located on the side of the actuator housing (control function normally closed). In certain areas of application (e.g. the foodstuff industry), dirty water or cleaning media could enter through this vent hole and penetrate the actuator, thereby adversely affecting correct operation. A special vent system with lip check valve is available for these applications, which prevents such functional impairment. The vent hole at the side is then closed.



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.

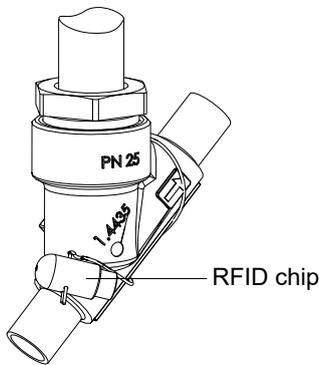
For further information on GEMÜ CONEXO please visit:

www.gemu-group.com/conexo

Ordering

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

In the corresponding design with CONEXO, this product has an RFID chip (1) for electronic identification purposes. The position of the RFID chip can be seen below. The CONEXO pen helps read out information stored in the RFID chips. The CONEXO app or CONEXO portal is required to display this information.



Availabilities

Actuator assignment

Flow direction – Under the seat

DN	Actuator size				
	1K1	2K1	3K1	4K1	5K1
15	X	X	-	-	-
20	X	X	-	-	-
25	X	X	X	-	-
40	-	X	X	X	-
50	-	X	X	X	X
65	-	-	X	X	X

Flow direction – Over the seat

DN	Actuator size		
	1L1	2L1	3L1
15	X	X	-
20	X	X	-
25	X	X	X
40	-	-	X
50	-	-	X
65	-	-	X

Design

Design	
Grade of surface finish (code 1903, 1904, 1909, 1953, 1954 and 1959) as per order data	Valve body material (code C2)
Media temperature -10 to 210 °C (code 2023)	Seat seal (code 5G, 5P)
For contact with foodstuffs, the product must be ordered with the following ordering options	Seat seal (code 5, 5G) Valve body material (code C2)

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
Angle seat globe valve, pneumatically operated, stainless steel piston actuator	550

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 40	40
DN 50	50
DN 65	65

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Clamp ASME BPE, face-to-face dimension FTF ASME BPE	80

5 Valve body material	Code
1.4435, investment casting	C2
Note: A surface finish from the order code table "Type of design" must be specified for valve body material C2.	

6 Seat seal	Code
PTFE	5
PTFE, glass fibre reinforced	5G
PTFE FDA compliant, USP class VI	5P

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

8 Actuator version	Code
Actuator size 1K1	1K1
Actuator size 2K1	2K1
Actuator size 3K1	3K1
Actuator size 4K1	4K1
Actuator size 5K1	5K1
Actuator size 1L1	1L1
Actuator size 2L1	2L1
Actuator size 3L1	3L1

9 Type of design	Code
Without	
Ra ≤ 0.6 µm (25 µinch) for media wetted surfaces, in accordance with ASME BPE SF2 + SF3 mechanically polished internal	1903

9 Type of design	Code
Ra ≤ 0.8 µm (30 µinch) for media wetted surfaces, in accordance with DIN 11866 H3, mechanically polished internal	1904
Ra ≤ 0.4 µm (15 µinch) for media wetted surfaces, in accordance with DIN 11866 H4, ASME BPE SF1 mechanically polished internal	1909
Ra ≤ 0.6 µm for media wetted surfaces, in accordance with ASME BPE SF6, electropolished internal/external	1953
Ra ≤ 0.8 µm for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external	1954
Ra ≤ 0.4 µm for media wetted surfaces, in accordance with DIN 11866 HE4/ASME BPE SF5, electropolished internal/external	1959
For higher operating temperatures	2023
Special bleed system integrated in actuator	6996

10 CONEXO	Code
Without	
Integrated RFID chip for electronic identification and traceability	C

Order example

Ordering option	Code	Description
1 Type	550	Angle seat globe valve, pneumatically operated, stainless steel piston actuator
2 DN	15	DN 15
3 Body configuration	D	2/2-way body
4 Connection type	80	Clamp ASME BPE, face-to-face dimension FTF ASME BPE
5 Valve body material	C2	1.4435, investment casting
6 Seat seal	5	PTFE
7 Control function	1	Normally closed (NC)
8 Actuator version	1K1	Actuator size 1K1
9 Type of design		Without
10 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 seal material.

Max. permissible viscosity: 600 mm²/s
Other versions for lower / higher temperatures and higher viscosities on request.

Control medium: Inert gases

Temperature

Media temperature: -10 – 180 °C

Ambient temperature: -10 – 60 °C

Storage temperature: -30 – 60 °C

Control medium temperature: max. 60 °C

Pressure

Operating pressure: Control function 1 (NC) – Flow direction under the seat

DN	Actuator version code				
	1K1	2K1	3K1	4K1	5K1
15	10.0	22.0	-	-	-
20	10.0	22.0	-	-	-
25	6.0	12.0	16.0	-	-
40	-	4.0	10.0	18.0	-
50	-	2.5	6.0	12.0	16.0
65	-	-	3.0	7.0	15.0

All pressures are gauge pressures. When the flow is over the seat (M), there may be the danger of water hammer with liquid media! For max. operating pressures the pressure/temperature correlation must be observed.

Control function 2 (NO) – Flow direction under the seat

DN	Actuator version code				
	1K1	2K1	3K1	4K1	5K1
15	25.0	25.0	-	-	-
20	25.0	25.0	-	-	-
25	18.0	25.0	-	-	-
40	-	17.0	25.0	-	-
50	-	8.0	16.0	-	-
65	-	-	14.0	16.0	-

All pressures are gauge pressures. When the flow is over the seat (M), there may be the danger of water hammer with liquid media! For max. operating pressures the pressure/temperature correlation must be observed.

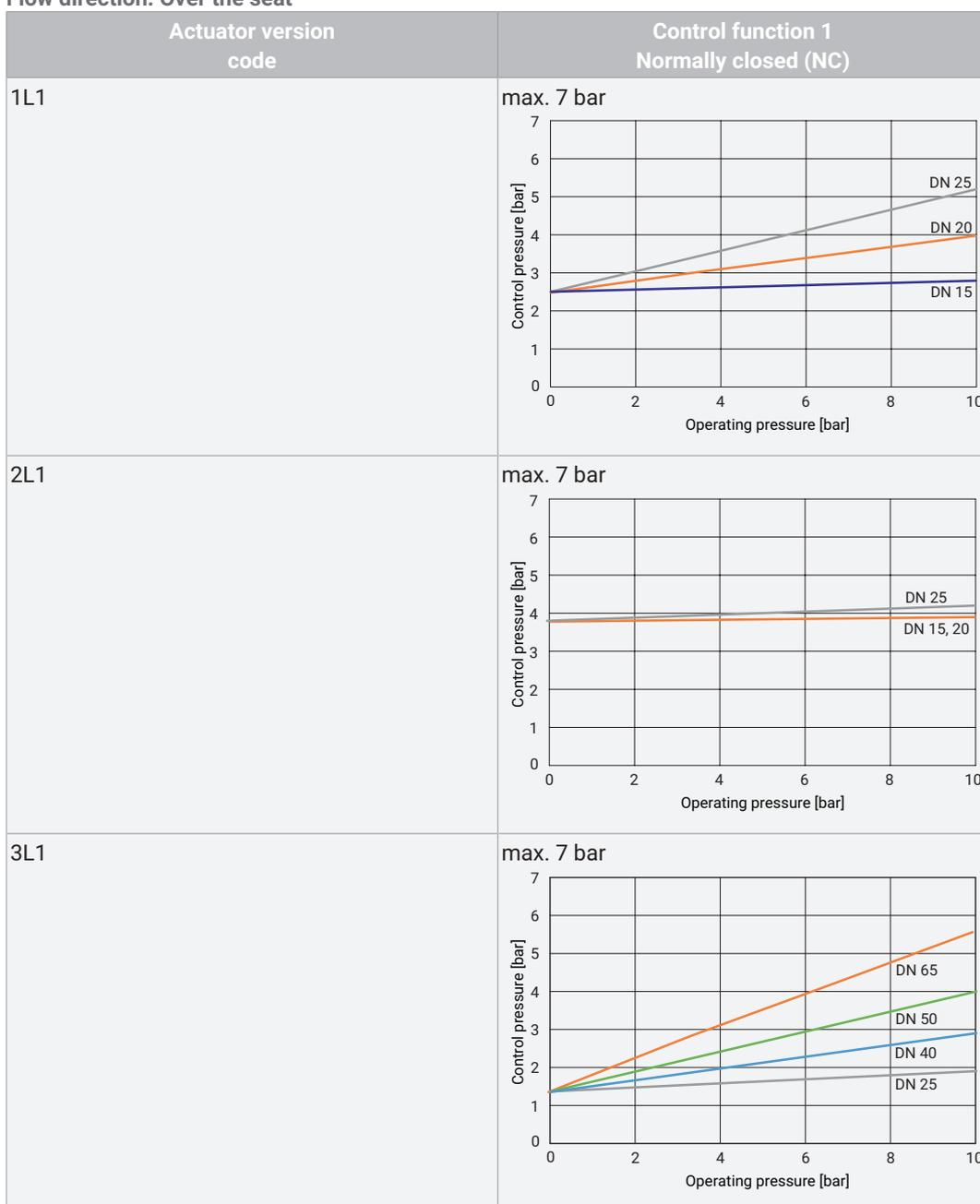
Operating pressure: Control function 1 (NC) – Flow direction over the seat

DN	Actuator version code		
	1L1	2L1	3L1
15	10.0	10.0	-
20	10.0	10.0	-
25	10.0	10.0	10.0
40	-	-	10.0
50	-	-	10.0
65	-	-	10.0

All pressures are gauge pressures. When the flow is over the seat (M), there may be the danger of water hammer with liquid media! For max. operating pressures the pressure/temperature correlation must be observed.

Pressure rating: PN 16

Control pressure: Flow direction: Over the seat



Control pressure:

Flow direction: Under the seat

Actuator version code	Control function 1 Normally closed (NC)	Control function 2 and 3 Normally open (NO) and double acting (DA)
1K1	4–8 bar	
2K1	4–8 bar	
3K1	4–8 bar	
4K1	4–8 bar	
5K1	5–8 bar	

Filling volume:

Actuator version code	Filling volume	Piston diameter
1K1, 1L1	0.025 dm ³	42 mm
2K1, 2L1	0.084 dm ³	60 mm
3K1, 3L1	0.245 dm ³	80 mm
4K1	0.437 dm ³	100 mm
5K1	0.798 dm ³	130 mm

Leakage rate:

Open/Close valve

Seat seal	Standard	Test procedure	Leakage rate	Test medium
PTFE	DIN EN 12266-1	P12	A	Air

Control valve

Seat seal	Standard	Test procedure	Leakage rate	Test medium
PTFE	DIN EN 60534-4	1	VI	Air

Pressure/temperature correlation:

Connection type code	Material code	Permissible operating pressures in bar at temperature in °C			
		RT	100	150	180
80 (DN 15 - 40)	C2	25.0	21.2	19.3	17.9
80 (DN 50 - 65)	C2	16.0	16.0	16.0	16.0

All pressures are gauge pressures.

The valves are suitable for temperatures as low as -10 °C

RT = room temperature

Kv values:

DN	Actuator version	Kv values		Regulating cone number	
		Open/close valve	Control valve	Linear	Equal percentage
15	1K1	2.1	2.0	RS215	RS216
15	2K1	2.1	2.0	RS217	RS218
20	1K1	4.6	4.0	RS219	RS220
20	2K1	4.6	4.0	RS221	RS222
25	2K1	9.8	9.0	RS223	RS224
40	3K1	23.0	20.0	RS225	RS226
50	3K1	44.0	36.0	RS227	RS228
65	4K1	51.5	45.0	RS229	RS230

Kv values in m³/h

Kv values determined in accordance with EN 60534. The Kv value data refers to control function 1 (NC) and the largest actuator for each nominal size. The Kv values for other product configurations (e.g. other connection types or body materials) may differ.

Product conformity

Machinery Directive: 2006/42/EC

Food: Regulation (EC) No. 1935/2004*
 Regulation (EC) No. 10/2011*
 Regulation (EC) No. 2023/2006*
 USP* Class VI
 FDA*
 CRN

Explosion protection: ATEX (2014/34/EU)*
 * depending on version and/or operating parameters

Environment: RoHS

Mechanical data

Weight:

Valve body

DN	Clamp
15	0.35
20	0.30
25	0.50
40	1.00
50	1.40
65	2.40

Weights in kg

Weight:

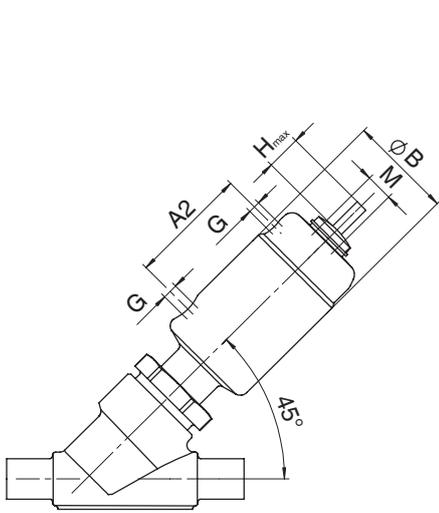
Actuator

DN	Actuator size				
	1	2	3	4	5
15	0.90	0.97	-	-	-
20	0.73	1.00	-	-	-
25	0.80	1.10	1.80	-	-
40	-	1.40	1.30	3.50	-
50	-	1.40	2.30	3.50	6.80
65	-	-	2.50	4.00	7.40

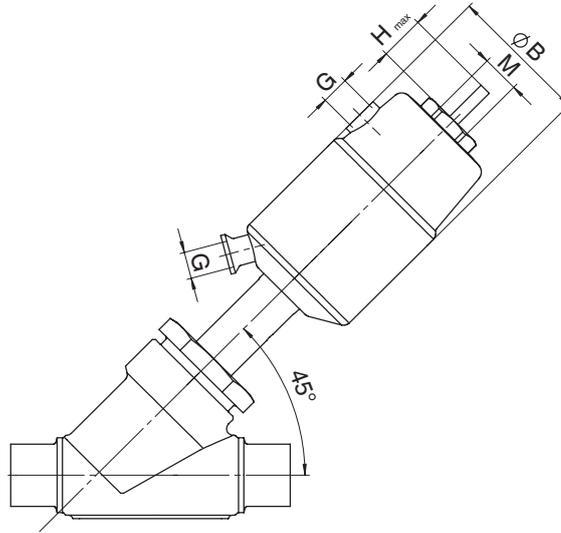
Weights in kg

Dimensions

Actuator dimensions



Actuator size 1



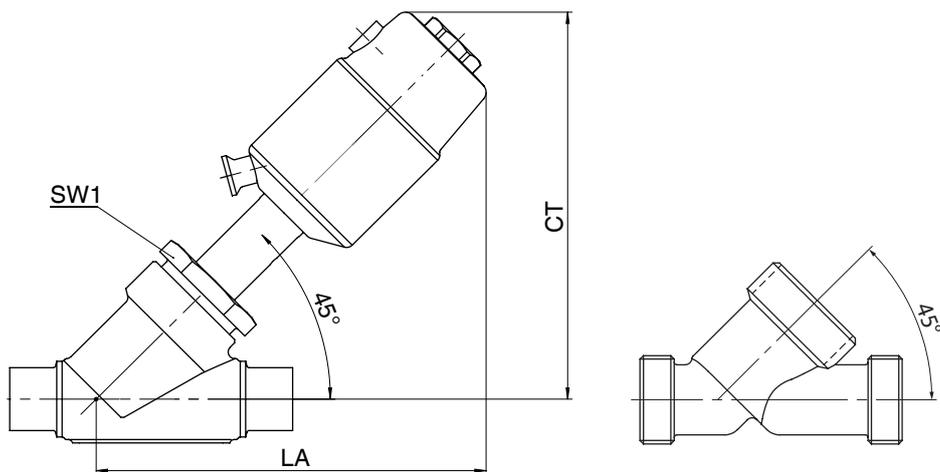
Actuator size 2-5

Actuator size	ØB	M	H max*	G	A2
1	46.0	M 16 x 1	12.0	G 1/8	53.0
2	63.0	M 16 x 1	22.0	G 1/8	-
3	84.0	M 16 x 1	28.0	G 1/4	-
4	104.0	M 22 x 1.5	32.0	G 1/4	-
5	135.0	M 22 x 1.5	41.0	G 1/4	-

Dimensions in mm

H max*: Depends on the nominal size

Installation dimensions



DN	SW1 metric	Actuator size				
		1	2	3	4	5
		CT/LA	CT/LA	CT/LA	CT/LA	CT/LA
15	36	135.0	172.0	-	-	-
20	36	135.0	172.0	-	-	-
25	41	140.0	177.0	195.0	-	-
40	55	-	189.0	207.0	240.0	-
50	60	-	196.0	214.0	247.0	273.0
65	55	-	-	224.0	247.0	283.0

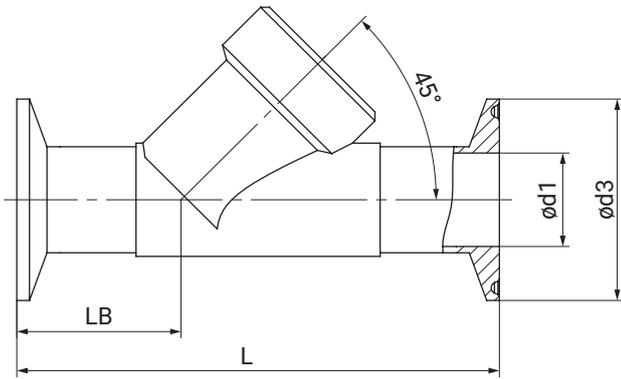
Dimensions in mm

The specified dimensions refer to control function 1 (normally closed NC).

The dimensions are smaller for control function 2 (normally open NO).

Body dimensions

Clamp ASME (code 80)



Connection type clamp ASME (code 80)¹⁾, investment casting material (code C2)²⁾

DN	NPS	LB	L	ø d1	ø d3
15	1/2"	28.5	88.9	9.4	25.0
20	3/4"	35.0	101.6	15.75	25.0
25	1"	33.0	114.3	22.10	50.5
40	1 1/2"	40.0	139.7	34.80	50.5
50	2"	44.0	158.8	47.50	64.0
65	2 1/2"	54.3	193.8	60.20	77.5

Dimensions in mm

1) **Connection type**

Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE

2) **Valve body material**

Code C2: 1.4435, investment casting



GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6-8, 74653 Ingelfingen-Criesbach, Germany
Phone +49 (0) 7940 1230 · info@gemue.de
www.gemu-group.com