

GEMÜ 550

Pneumatically operated angle seat globe valve

EN

Operating instructions



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1 General information

1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.
- A supplement to Directive 2014/34/EU (ATEX Directive) is included with the product, provided that it was ordered in accordance with ATEX.

1.2 Symbols used

The following symbols are used in this document:

Symbol	Meaning
●	Tasks to be performed
►	Response(s) to tasks
–	Lists

1.3 Definition of terms

Working medium

The medium that flows through the GEMÜ product.

Control function

The possible actuation functions of the GEMÜ product.

Control medium

The medium whose increasing or decreasing pressure causes the GEMÜ product to be actuated and operated.

1.4 Warning notes

Wherever possible, warning notes are organised according to the following scheme:

SIGNAL WORD	
Possible symbol for the specific danger	Type and source of the danger ► Possible consequences of non-observance. ● Measures for avoiding danger.

Warning notes are always marked with a signal word and sometimes also with a symbol for the specific danger.

The following signal words and danger levels are used:

 DANGER	
	Imminent danger! ► Non-observance can cause death or severe injury.

 WARNING	
	Potentially dangerous situation! ► Non-observance can cause death or severe injury.

 CAUTION	
	Potentially dangerous situation! ► Non-observance can cause moderate to light injury.

NOTICE	
	Potentially dangerous situation! ► Non-observance can cause damage to property.

The following symbols for the specific dangers can be used within a warning note:

Symbol	Meaning
	Danger - hot surfaces
	Danger - corrosive materials

2 Safety information

The safety information in this document refers only to an individual product. Potentially dangerous conditions can arise in combination with other plant components, which need to be considered on the basis of a risk analysis. The operator is responsible for the production of the risk analysis and for compliance with the resulting precautionary measures and regional safety regulations.

The document contains fundamental safety information that must be observed during commissioning, operation and maintenance. Non-compliance with these instructions may cause:

- Personal hazard due to electrical, mechanical and chemical effects.
- Hazard to nearby equipment.
- Failure of important functions.
- Hazard to the environment due to the leakage of dangerous materials.

The safety information does not take into account:

- Unexpected incidents and events, which may occur during installation, operation and maintenance.
- Local safety regulations which must be adhered to by the operator and by any additional installation personnel.

Prior to commissioning:

1. Transport and store the product correctly.
2. Do not paint the bolts and plastic parts of the product.
3. Carry out installation and commissioning using trained personnel.
4. Provide adequate training for installation and operating personnel.
5. Ensure that the contents of the document have been fully understood by the responsible personnel.
6. Define the areas of responsibility.
7. Observe the safety data sheets.
8. Observe the safety regulations for the media used.

During operation:

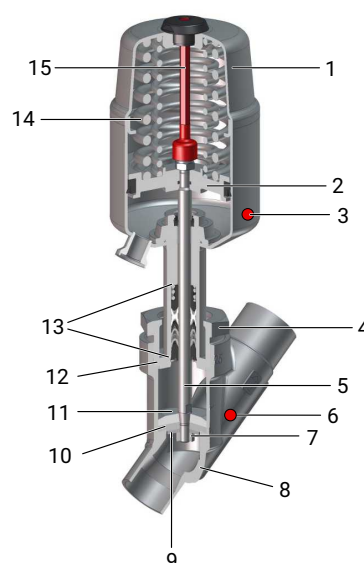
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

3 Product description

3.1 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*	1.4408 investment casting 1.4435 investment casting 1.4435 (F316L), forged body
9	Washer	
10	Seat seal*	PTFE
11	Valve plug	
12	Gasket*	
13	Gland packing	
14	Compression spring(s)	
15	Optical position indicator	

*These components are available as spare parts (see operating instructions chapter "Spare parts (see Chapter 15.2, page 41)").

3.2 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.

3.3 Function

The product controls a flowing medium by being closed or opened by a control medium.

The product has an optical position indicator as standard. The optical position indicator indicates the OPEN and CLOSED positions.

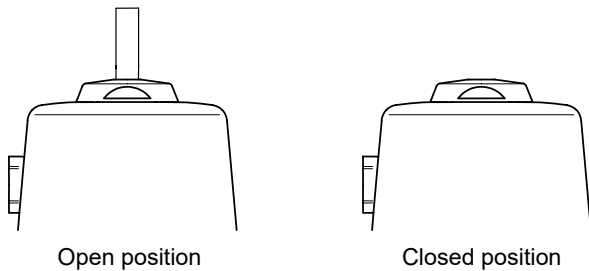


Fig. 2: Optical position indicator

3.4 Control function

The following control functions are available:

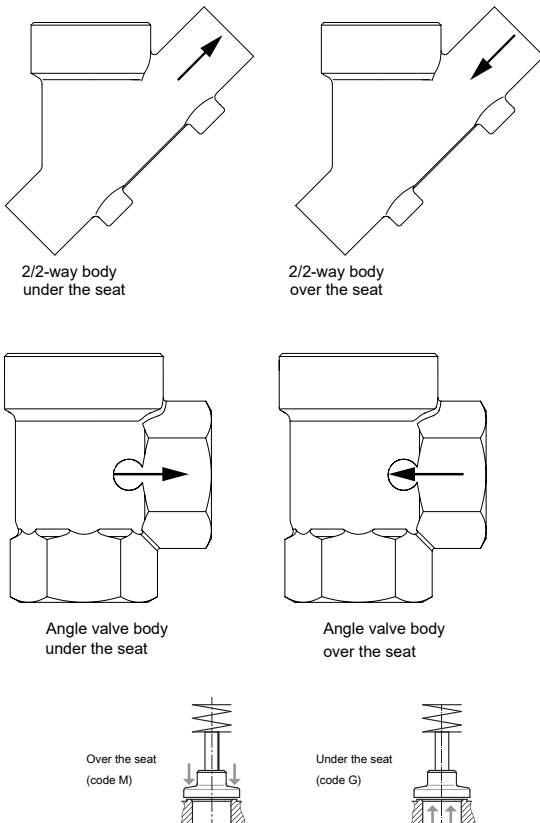
Control function 1: Normally closed (NC)

Control function 2: Normally open (NO)

Control function 3: Double acting (DA)

3.5 Flow direction

The flow direction is indicated by an arrow on the valve body.

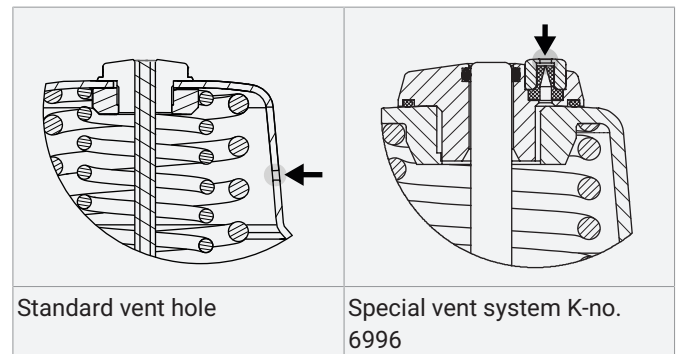


Under the seat (code G) is the preferred flow direction with incompressible liquid media to avoid water hammer

Over the seat (code M) only with control function - Normally closed (NC)

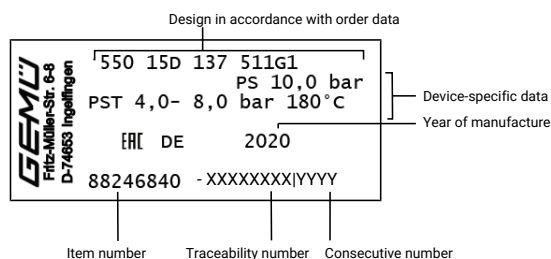
3.6 Vent hole in the actuator

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.



3.7 Product label

The product label is located on the actuator. Product label data (example):



The month of manufacture is encoded in the traceability number and can be obtained from GEMÜ. The product was manufactured in Germany.

The operating pressure stated on the product label applies to a media temperature of 20 °C. The product can be used up to the maximum stated media temperature. You can find the pressure/temperature correlation in the technical data.

4 GEMÜ CONEXO

Processing industry 4.0 – Traceability and service



Fig. 3: GEMÜ 550 with RFID chips

Description

You can use the GEMÜ CONEXO pen to read and process identification data from devices and components. In conjunction with the GEMÜ CONEXO app for maintenance engineers, field data can be collected, processed, and managed and archived centrally via the GEMÜ CONEXO portal.

Features

- Captive electronic identification of the valve body, actuator and diaphragm
- Simplified identification and inventory of devices in the field
- Traceability of the components by providing the serial number
- Electronic supply of product and project-specific documentation
- Optimized maintenance processes thanks to a maintenance log book and photo documentation

Technical specifications - CONEXO PEN:

- Mobile RFID reading device in the form of a pen
- Bluetooth coupling to mobile end devices
- Stylus for touchscreens (smartphone and tablet)
- UHF signal processing

Technical specifications - CONEXO APP:

- Service software for more efficient maintenance
- Available for tablets and smartphones that have the Android or iOS operating system
- High security standards implemented in portal-reader communication
- Workflow template for customizing the maintenance process
- Electronically supported diaphragm evaluation and photo documentation

Technical specifications - CONEXO PORTAL:

- Integrated service functions and remote support
- Portable server application with database for Industry 4.0
- Interfaces to maintenance and ERP systems
- High level of IT security thanks to access rights and encrypted data
- Open system (option to integrate third-party devices)

5 Correct use

 DANGER	
	Danger of explosion! ▶ Risk of severe injury or death. ● Do not use the product in potentially explosive zones. ● Only use the product in potentially explosive zones confirmed in the declaration of conformity.

 WARNING	
Improper use of the product ▶ Risk of severe injury or death. ▶ Manufacturer liability and guarantee will be void. ● Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.	

The product is designed for installation in piping systems and for controlling a working medium.

1. Use the product in accordance with the technical data.
2. Note the supplement acc. to ATEX
3. Please note the flow direction on the valve body.

6 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 6	6
DN 8	8
DN 10	10
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65
DN 80	80

3 Body configuration	Code
2/2-way body	D
Angle valve body	E

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot EN 10357 series B, formerly DIN 11850 series 1	16
Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A	17
Spigot SMS 3008	37
Spigot ASME BPE	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 40s	65
Threaded connection	
Threaded socket DIN ISO 228	1
Threaded socket Rc ISO 7-1, EN 10226-1, JIS B 0203, BS 21, end-to-end dimension ETE DIN 3202-4 series M8	3C
Threaded socket NPT, end-to-end dimension ETE DIN 3202-4 series M8	3D
Threaded spigot DIN ISO 228	9
Flange	
Flange EN 1092, PN 25, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1	10
Flange EN 1092, PN 25, form B	13
Flange ANSI Class 150 RF	47
Clamp	
Clamp ASME BPE, face-to-face dimension FTF ASME BPE	80

4 Connection type	Code
Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 1	82
Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 1	86
Clamp ASME BPE, face-to-face dimension FTF EN 558 series 1	88

5 Valve body material	Code
1.4435, investment casting	34
1.4408, investment casting	37
1.4435 (F316L), forged body	40
1.4435, investment casting	C2
Note: A surface finish from the order code table "K number" 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 0G1	0G1
Actuator size 0M1	0M1
Actuator size 1G1	1G1
Actuator size 1M1	1M1
Actuator size 2G1	2G1
Actuator size 2M1	2M1
Actuator size 3G1	3G1
Actuator size 3M1	3M1
Actuator size 4G1	4G1
Actuator size 5G1	5G1

9 Type of design	Code
Without	
For higher operating temperatures	2023
Special vent system integrated in actuator	6996
Ra ≤ 0.6 µm (25 µinch) for media wetted surfaces, in accordance with ASME BPE SF2 + SF3 mechanically polished internal	1903
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

9 Type of design	Code
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

10 Special version	Code
Without	
Certified to DIN EN 161, class A	G
Special version for oxygen, maximum medium temperature: 60 °C, media wetted seal materials and auxiliary materials with BAM testing	S

11 CONEXO	Code
Without	

Order codes

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	1	Threaded socket DIN ISO 228
5 Valve body material	37	1.4408, investment casting
6 Seat seal	5	PTFE
7 Control function	1	Normally closed (NC)
8 Actuator version	1G1	Actuator size 1G1
9 Type of design		Without
10 Special version	G	Certified to DIN EN 161, class A
11 CONEXO		Without

7 Technical data

7.1 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.

Control medium: Inert gases

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

7.2 Temperature

Media temperature: -10 – 180 °C
for special function G: -10 – 60 °C
with special function S: -10 – 60 °C

Ambient temperature: -10 – 60 °C

Control medium temperature: 0 – 60 °C

Storage temperature: -30 – 60 °C

7.3 Pressure

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

Actuator version code	0G1	1G1	2G1	3G1	4G1	5G1
DN						
6	10.0	-	-	-	-	-
8	10.0	10.0	-	-	-	-
10	10.0	10.0	22.0	-	-	-
15	10.0	10.0	22.0	-	-	-
20	-	6.0	12.0	25.0	-	-
25	-	3.5	7.0	16.0	25.0	-
32	-	-	4.0	10.0	18.0	25.0
40	-	-	2.5	6.0	12.0	20.0
50	-	-	-	3.0	7.0	15.0
65	-	-	-	-	-	10.0
80	-	-	-	-	-	7.0

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**

Actuator version code	0M1	1M1	2M1	3M1
DN				
6	10.0	-	-	-
8	10.0	10.0	-	-
10	10.0	10.0	-	-
15	10.0	10.0	10.0	-
20	-	10.0	10.0	10.0
25	-	10.0	10.0	10.0
32	-	-	10.0	10.0
40	-	-	8.0	10.0
50	-	-	5.0	10.0
65	-	-	-	-
80	-	-	-	-

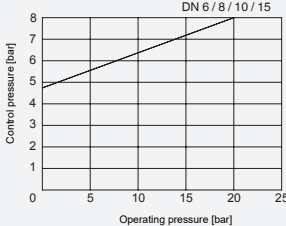
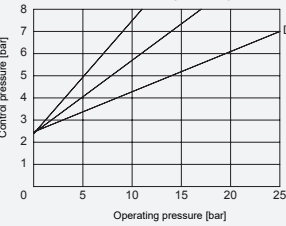
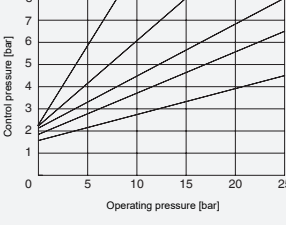
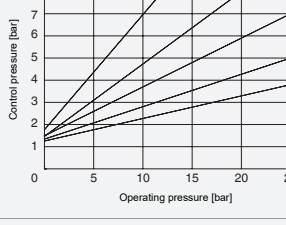
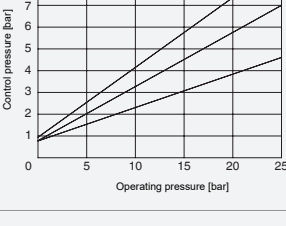
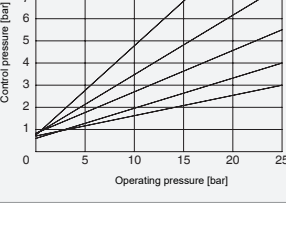
All pressures are gauge pressures. When the flow is over the seat (M), there may be the danger of water hammer with liquid media! For max. operating pressures the pressure/temperature correlation must be observed.

Pressure rating:

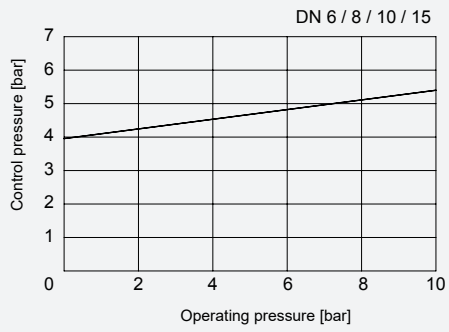
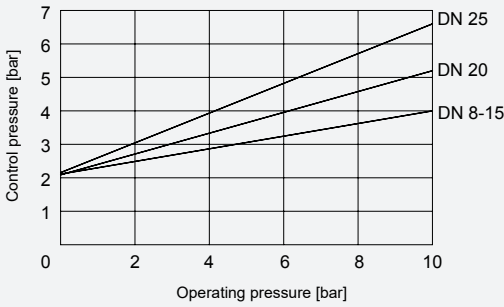
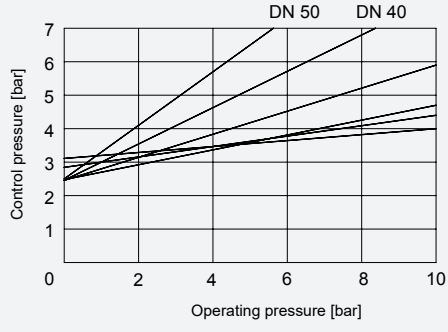
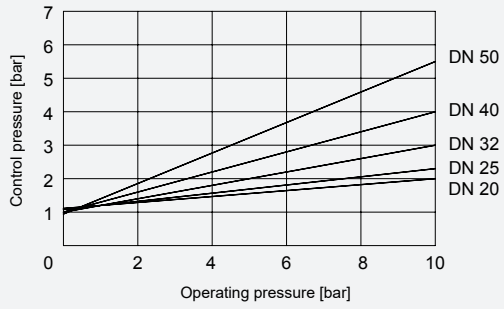
PN 16

Control pressure:

Flow direction: under the seat

Actuator version code	Control function 1 normally closed (NC)	Control function 2 and 3 normally open (NO) and double acting (DA) (NC)
0G1	4 – 8 bar	
1G1	4 – 8 bar	
2G1	4 – 8 bar	
3G1	4 – 8 bar	
4G1	4 – 8 bar	
5G1	5 – 8 bar	

Control pressure:**Flow direction: over the seat**

Actuator version code	Control function 1 normally closed (NC)
0M1	5 – 8 bar 
1M1	5 – 8 bar 
2M1	5 – 8 bar 
3M1	5 – 8 bar 

Filling volume:

Actuator version code	Filling volume	Piston diameter
0G1, 0M1	0.006 dm ³	28 mm
1G1, 1M1	0.025 dm ³	42 mm
2G1, 2M1	0.084 dm ³	60 mm
3G1, 3M1	0.245 dm ³	80 mm
4G1	0.437 dm ³	100 mm
5G1	0.798 dm ³	130 mm

Leakage rate:

Leakage rate A to P11/P12 EN 12266-1

Pressure/temperature correlation:

Connection types code ¹⁾	Material code ²⁾	Max. allowable operating pressures in bar at temperature in °C ³⁾					
		RT	100	150	200	250	300
1, 9, 17, 37, 60, 63, 3C, 3D	37	25.0	23.8	21.4	18.9	17.5	16.1
0, 16, 17, 37, 59, 60, 65	34	25.0	24.5	22.4	20.3	18.2	16.1
13 (DN 15 - DN 50)	34	25.0	23.6	21.5	19.8	18.6	17.2
80, 88 (DN 15 - DN 40)	34	25.0	21.2	19.3 *	-	-	-
80, 88 (DN 50 - DN 80)	34	16.0	16.0	16.0 *	-	-	-
82 (DN 15 - DN 32)	34	25.0	21.2	19.3 *	-	-	-
82 (DN 40 - DN 65)	34	16.0	16.0	16.0 *	-	-	-
86 (DN 15 - DN 40)	34	25.0	21.2	19.3 *	-	-	-
86 (DN 50 - DN 65)	34	16.0	16.0	16.0 *	-	-	-
10 (DN 15 - DN 50)	37	25.0	25.0	22.7	21.0	19.8	18.5
47 (DN 15 - DN 50)	34	15.9	13.3	12.0	11.1	10.2	9.7
0, 16, 17, 59, 60	40	25.0	20.6	18.7	17.1	15.8	14.8
17, 59, 60	C2	25.0	21.2	19.3	17.9	16.8	15.9

* max. temperature 140 °C

All pressures are gauge pressures.

The valves may be used to -10 °C

Pressure/temperature correlation:**1) Connection type**

Code 0: Spigot DIN
 Code 1: Threaded socket DIN ISO 228
 Code 1A: Spigot DIN 11866 series A
 Code 1B: Spigot DIN 11866 series B
 Code 3C: Threaded socket Rc ISO 7-1, EN 10226-1, JIS B 0203, BS 21, end-to-end dimension ETE DIN 3202-4 series M8
 Code 3D: Threaded socket NPT, end-to-end dimension ETE DIN 3202-4 series M8
 Code 9: Threaded spigot DIN ISO 228
 Code 10: Flange EN 1092, PN 25, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
 Code 13: Flange EN 1092, PN 25, form B
 Code 16: Spigot EN 10357 series B, formerly DIN 11850 series 1
 Code 17: Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A
 Code 18: Spigot DIN 11850 series 3
 Code 37: Spigot SMS 3008
 Code 47: Flange ANSI Class 150 RF
 Code 59: Spigot ASME BPE
 Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B
 Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE
 Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 1
 Code 86: Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 1
 Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 1

2) Valve body material

Code 34: 1.4435, investment casting
 Code 37: 1.4408, investment casting
 Code 40: 1.4435 (F316L), forged body
 Code C2: 1.4435, investment casting

Kv values:

DN	Butt weld spigot DIN 11850	Butt weld spigot DIN 11866	Threaded socket DIN ISO 228
6	1.6	-	-
8	1.8	2.2	-
10	2.4	4.5	4.5
15	2.4	5.5	5.4
20	-	11.7	10.0
25	-	20.5	15.2
32	-	33.0	23.0
40	-	51.0	41.0
50	-	61.0	68.0
65	-	110.0	95.0
80	-	117.0	130.0

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.

7.4 Product conformity**Food:**

Regulation (EC) No. 1935/2004*

Regulation (EC) No. 10/2011*

FDA*

* depending on version and/or operating parameters

Pressure Equipment Directive:

2014/68/EU

Machinery Directive:

2006/42/EC

Gas:	EN 161
	EN 16678
Gas identification:	Valve group: 2
	Valve class: A
Explosion protection:	ATEX (2014/34/EU) on request

7.5 Mechanical data**Weight:****Actuator**

DN	Actuator size					
	0	1	2	3	4	5
6	0.24	-	-	-	-	-
8	0.24	0.62	0.90	-	-	-
10	0.24	0.62	0.90	-	-	-
15	0.24	0.66	0.97	-	-	-
20	-	0.73	1.00	1.70	-	-
25	-	-	1.10	1.80	3.20	-
32	-	-	1.30	2.00	3.40	6.50
40	-	-	1.60	2.10	3.50	6.60
50	-	-	-	2.30	3.70	6.80
65	-	-	-	-	-	7.40
80	-	-	-	-	-	8.10

Weights in kg

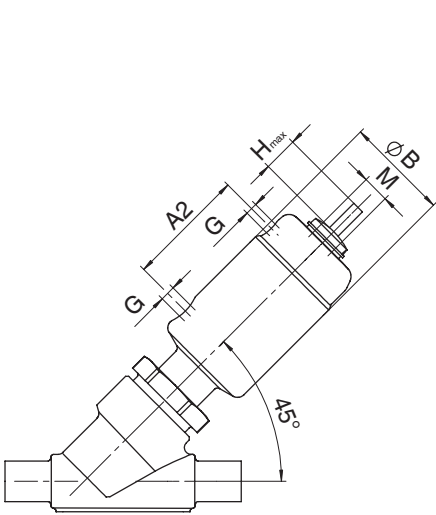
Body

DN	Spigot K514	Threaded socket	Threaded spigot	Flange K514	Clamp
	Connection types code				
	0, 16, 17, 37, 59, 60, 63, 65	1	9	10, 13, 47	80, 82, 86, 88
6	0.12	-	0.14	-	-
8	0.12	0.25	0.12	-	-
10	0.12	0.25	0.14	-	-
15	0.16	0.25	0.14	-	-
10	0.25	0.25	-	-	-
15	0.24	0.35	0.31	1.80	0.37
20	0.50	0.35	0.50	2.50	0.63
25	0.50	0.35	0.65	3.10	0.63
32	0.90	0.75	1.00	4.60	1.08
40	1.10	0.98	1.30	5.10	1.28
50	1.80	1.70	1.80	7.20	2.07
65	3.40	3.20	3.40	-	3.69
80	4.20	4.10	4.40	-	4.60

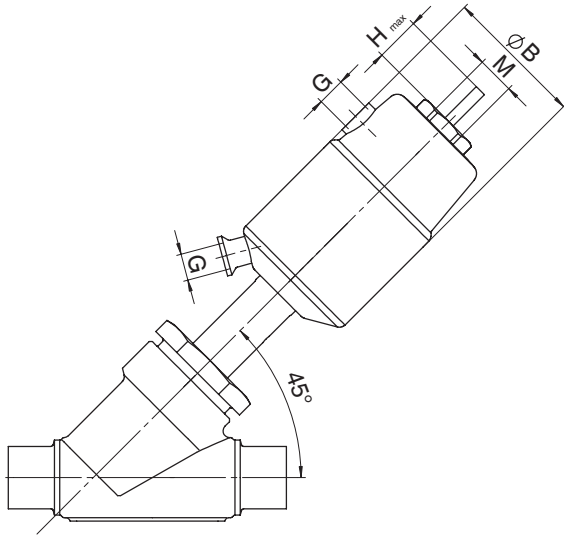
Weights in kg

8 Dimensions

8.1 Actuator dimensions



Actuator size 0, 1



Actuator size 2 - 5

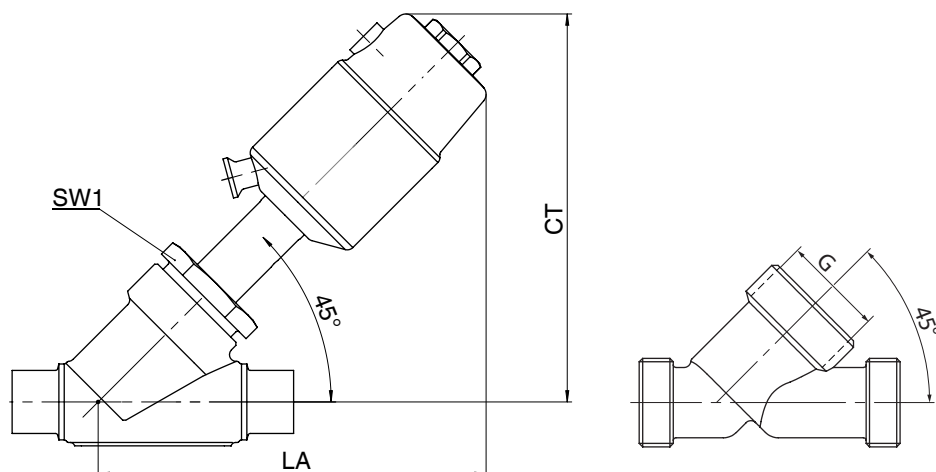
Actuator size	ØB	M	H max*	G	A2
0	32.0	M 12 x 1	6.0	M 5	35.4
1	46.0	M 16 x 1	12.0	G 1/8	53.0
2	63.0	M 16 x 1	22.0	G 1/8	-
3	84.0	M 16 x 1	28.0	G 1/4	-
4	104.0	M 22 x 1.5	32.0	G 1/4	-
5	135.0	M 22 x 1.5	41.0	G 1/4	-

Dimensions in mm

H max*: dependent on nominal size

8.2 Installation dimensions

8.2.1 Valve with 2/2-way body



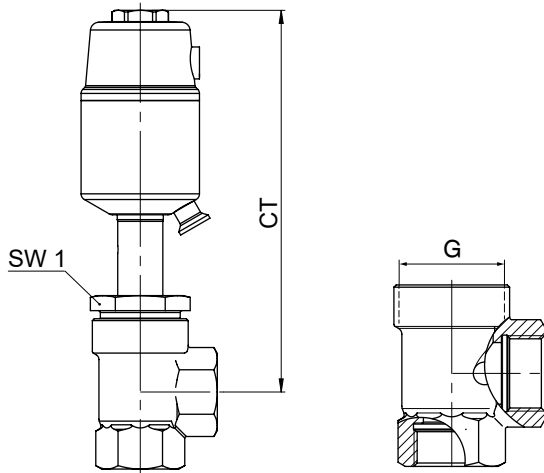
Actuator size			0	1	2	3	4	5
DN	SW	G	CT/LA	CT/LA	CT/LA	CT/LA	CT/LA	CT/LA
6	24	-	91.0	-	-	-	-	-
8	24	-	91.0	-	-	-	-	-
10	24	-	91.0	-	-	-	-	-
15	24	-	91.0	-	-	-	-	-
8	36	-	-	134.0	171.0	-	-	-
10	36	-	-	134.0	171.0	-	-	-
15	36	M 34 x 1.5	-	137.0	174.0	-	-	-
20	41	M 40 x 1.5	-	143.0	180.0	198.0	-	-
25	46	M 45 x 1.5	-	-	184.0	202.0	235.0	-
32	55	M 52 x 1.5	-	-	192.0	210.0	243.0	269.0
40	60	M 60 x 2.0	-	-	187.0	215.0	248.0	274.0
50	55	M 72 x 2.0	-	-	-	223.0	256.0	282.0
65	75	M 90 x 2.0	-	-	-	-	-	295.0
80	75	M 105 x 2.0	-	-	-	-	-	312.0

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).

8.2.2 Valve with angle valve body



Actuator size			1	2	3	4	5
DN	SW	G	CT/LA	CT/LA	CT/LA	CT/LA	CT/LA
15	36	M 34 x 1.5	149.0	195.0	-	-	-
20	41	M 40 x 1.5	152.0	198.0	214.0	-	-
25	46	M 45 x 1.5	-	202.0	218.0	256.0	-
32	55	M 52 x 1.5	-	205.0	221.0	259.0	286.0
40	60	M 60 x 2.0	-	-	226.0	264.0	291.0
50	55	M 72 x 2.0	-	-	233.0	271.0	298.0

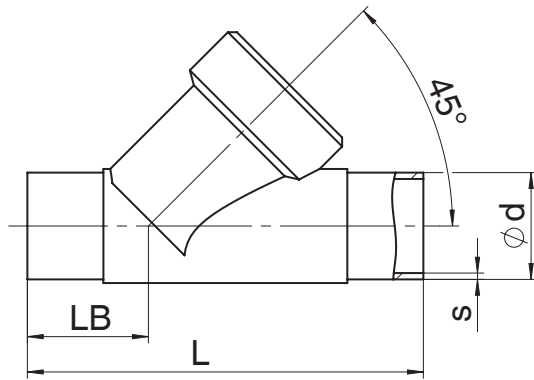
Dimensions in mm

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

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

8.3 Body dimensions

8.3.1 Spigot DIN/EN/ISO/ASME (code 0, 16, 17, 59, 60), actuator size 0



Connection type spigot DIN/EN/ISO/ASME (code 0, 16, 17, 59, 60)¹⁾, forged material (code 40)²⁾

DN	NPS	ød					L	LB	s				
		Connection type							Connection type				
		0	16	17	59	60			0	16	17	59	60
6	1/8"	8.0	-	-	-	-	80.0	26.5	1.0	-	-	-	-
8	1/4"	10.0	-	-	-	13.5	80.0	26.5	1.0	-	-	-	1.6
10	3/8"	-	12.0	13.0	9.53	-	80.0	26.5	-	1.0	1.5	0.89	-
15	1/2"	-	-	-	12.70	-	80.0	26.5	-	-	-	1.65	-

Dimensions in mm

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 (formerly DIN 11850 series 2)/DIN 11866 series A

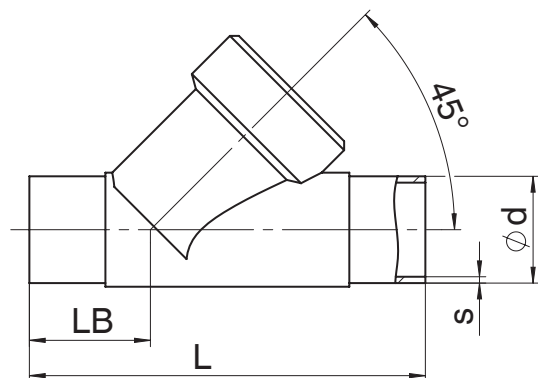
Code 59: Spigot ASME BPE

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

2) Valve body material

Code 40: 1.4435 (F316L), forged body

8.3.2 Spigot DIN/EN/ISO/ASME (code 0, 16, 17, 37, 59, 60), actuator size 1, 2, 3, 4, 5



Connection type spigot DIN/EN/ISO (code 0, 16, 17, 60)¹⁾, investment casting material (code 34)²⁾

DN	NPS	ød				L	LB	s			
		Connection type						Connection type			
		0	16	17	60			0	16	17	60
10	3/8"	-	12.0	13.0	17.2	105.0	35.5	-	1.0	1.5	1.6
15	1/2"	18.0	18.0	19.0	21.3	105.0	35.5	1.5	1.0	1.5	1.6
20	3/4"	22.0	22.0	23.0	26.9	120.0	39.0	1.5	1.0	1.5	1.6
25	1"	28.0	28.0	29.0	33.7	125.0	38.5	1.5	1.0	1.5	2.0
32	1¼"	-	34.0	35.0	42.4	155.0	48.0	-	1.0	1.5	2.0
40	1½"	40.0	40.0	41.0	48.3	160.0	47.0	1.5	1.0	1.5	2.0
50	2"	52.0	52.0	53.0	60.3	180.0	48.0	1.5	1.0	1.5	2.0

Connection type spigot ASME/SMS (code 37, 59)¹⁾, investment casting material (code 34)²⁾

DN	NPS	ød		L	LB	s	
		Connection type				Connection type	
		37	59			37	59
15	1/2"	-	12.70	105.0	35.5	-	1.65
20	3/4"	-	19.05	120.0	39.0	-	1.65
25	1"	25.0	25.40	125.0	38.5	1.2	1.65
40	1½"	38.0	38.10	160.0	47.0	1.2	1.65
50	2"	51.0	50.80	180.0	48.0	1.2	1.65

Dimensions in mm

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 (formerly DIN 11850 series 2)/DIN 11866 series A

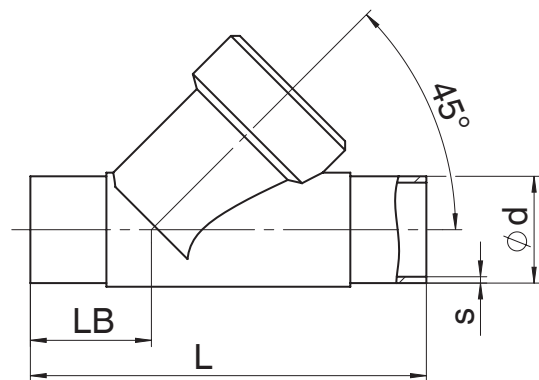
Code 37: Spigot SMS 3008

Code 59: Spigot ASME BPE

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

2) Valve body material

Code 34: 1.4435, investment casting

8.3.3 Stutzen EN/ISO (code 17, 37, 59, 60), actuator size 1, 2, 3, 4, 5**Connection type spigot EN/ISO (code 17, 60)¹⁾, investment casting material (code 37)²⁾**

DN	NPS	ød		L	LB	s	
		Connection type				Connection type	
		17	60			17	60
15	1/2"	19.0	21.3	100.0	33.0	1.5	1.6
20	3/4"	23.0	26.9	108.0	33.0	1.5	1.6
25	1"	29.0	33.7	112.0	32.0	1.5	2.0
32	1¼"	35.0	42.4	137.0	39.0	1.5	2.0
40	1½"	41.0	48.3	146.0	40.0	1.5	2.0
50	2"	53.0	60.3	160.0	38.0	1.5	2.0
65	2½"	70.0	76.1	290.0	96.0	2.0	2.0
80	3"	85.0	88.9	310.0	95.0	2.0	2.3

Connection type spigot EN/ISO (code 37, 59)¹⁾, investment casting material (code 37)²⁾

DN	NPS	ød		L	LB	s	
		Connection type				Connection type	
		37	59			37	59
65	2½"	63.5	63.5	290.0	96.0	1.6	1.65
80	3"	76.1	76.0	310.0	95.0	1.6	1.65

Dimensions in mm

1) Connection type

Code 17: Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A

Code 37: Spigot SMS 3008

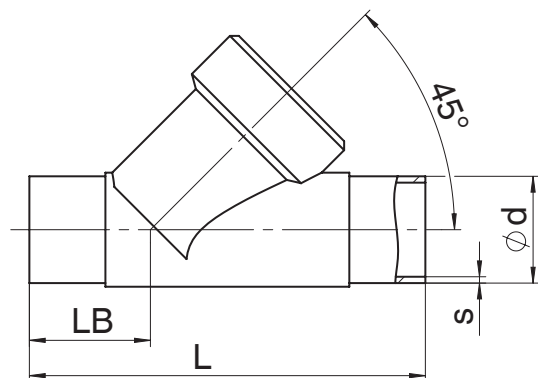
Code 59: Spigot ASME BPE

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

2) Valve body material

Code 37: 1.4408, investment casting

8.3.4 Spigot EN/ISO/ASME (code 17, 59, 60), actuator size 1, 2, 3, 4, 5



Connection type spigot EN/ISO/ASME (code 17, 59, 60)¹⁾, investment casting material (code C2)²⁾

DN	NPS	ød			L	LB	s		
		Connection type					Connection type		
		17	59	60			17	59	60
8	1/4"	-	-	13.5	105.0	35.5	-	-	1.6
10	3/8"	13.0	-	17.2	105.0	35.5	1.5	-	1.6
15	1/2"	19.0	12.70	21.3	105.0	35.5	1.5	1.65	1.6
20	3/4"	23.0	19.05	26.9	120.0	39.0	1.5	1.65	1.6
25	1"	29.0	25.40	33.7	125.0	39.5	1.5	1.65	2.0
32	1¼"	35.0	-	42.4	155.0	48.0	1.5	1.65	2.0
40	1½"	41.0	38.10	48.3	160.0	47.0	2.0	1.65	2.0
50	2"	53.0	50.80	60.3	180.0	48.0	1.5	1.65	2.0
65	2½"	70.0	63.50	76.1	290.0	96.0	2.0	1.65	2.0
80	3"	85.0	76.20	88.9	310.0	95.0	2.0	76.20	2.3

Dimensions in mm

1) Connection type

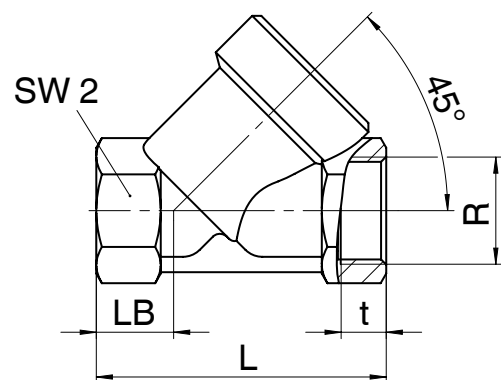
Code 17: Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A

Code 59: Spigot ASME BPE

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

2) Valve body material

Code C2: 1.4435, investment casting

8.3.5 Threaded socket DIN/NPT body configuration D (code 1, 3D), actuator size 0

Connection type threaded socket DIN/NPT (code 1, 3D)¹⁾, investment casting material (code 37)²⁾

DN	NPS	L	LB		R		SW2	t	
			Connection type		Connection type			Connection type	
			1	3D	1	3D		1	3D
8	1/4"	65.0	19.0	19.0	G 1/4	1/4" NPT	17	12.0	10.1
10	3/8"	65.0	19.0	27.0	G 3/8	3/8" NPT	24	12.0	10.4
15	1/2"	65.0	19.0	27.0	G 1/2	1/2" NPT	24	11.4	13.6

Dimensions in mm

1) **Connection type**

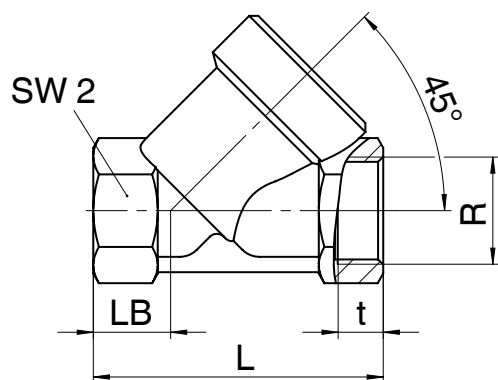
Code 1: Threaded socket DIN ISO 228

Code 3D: Threaded socket NPT, end-to-end dimension ETE DIN 3202-4 series M8

2) **Valve body material**

Code 37: 1.4408, investment casting

8.3.6 Threaded socket DIN/Rc/NPT body configuration D (code 1, 3C, 3D) actuator size 1, 2, 3, 4, 5



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

DN	NPS	L	LB	R	SW2	t
10	3/8"	65.0	16.5	G 3/8	27	11.4
15	1/2"	65.0	16.5	G 1/2	27	15.0
20	3/4"	75.0	17.5	G 3/4	32	16.3
25	1"	90.0	24.0	G 1	41	19.1
32	1 1/4"	110.0	33.0	G 1 1/4	50	21.4
40	1 1/2"	120.0	30.0	G 1 1/2	55	21.4
50	2"	150.0	40.0	G 2	70	25.7
65	2 1/2"	190.0	46.0	G 2 1/2	85	30.2
80	3"	220.0	50.0	G 3	100	33.3

Connection type threaded socket Rc/NPT (code 3C, 3D)¹⁾, investment casting material (code 37)²⁾

DN	NPS	L	LB	R		SW2	t	
				Connection type			Connection type	
				3C	3D		3C	3D
15	1/2"	65.0	16.5	Rc 1/2	1/2" NPT	27	15.0	13.6
20	3/4"	75.0	17.5	Rc 3/4	3/4" NPT	32	16.3	14.1
25	1"	90.0	24.0	Rc 1	1" NPT	41	19.1	17.0
32	1¼"	110.0	33.0	Rc 1¼	1¼" NPT	50	21.4	17.5
40	1½"	120.0	30.0	Rc 1½	1½" NPT	55	21.4	17.3
50	2"	150.0	40.0	Rc 2	2" NPT	70	25.7	17.8
65	2½"	190.0	46.0	Rc 2½	2½" NPT	85	30.2	23.7
80	3"	220.0	50.0	Rc 3	3" NPT	100	33.3	25.8

Dimensions in mm

1) Connection type

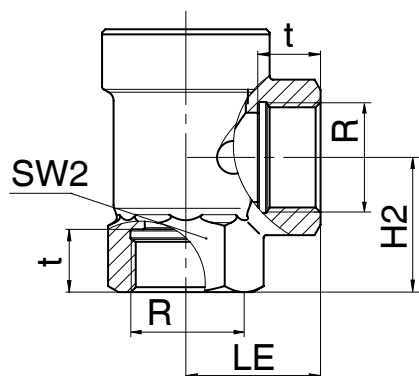
Code 1: Threaded socket DIN ISO 228

Code 3C: Threaded socket Rc ISO 7-1, EN 10226-1, JIS B 0203, BS 21, end-to-end dimension ETE DIN 3202-4 series M8

Code 3D: Threaded socket NPT, end-to-end dimension ETE DIN 3202-4 series M8

2) Valve body material

Code 37: 1.4408, investment casting

8.3.7 Threaded socket DIN/NPT body configuration E (code 1, 3D)**Connection type threaded socket DIN/NPT (code 1, 3D)¹⁾, investment casting material (code 37)²⁾**

DN	NPS	H2	LE	SW2	R		t	
					Connection type		Connection type	
					1	3D	1	3D
15	1/2"	30.0	30.0	27	G 1/2	1/2" NPT	15.0	13.6
20	3/4"	37.5	35.0	32	G 3/4	3/4 " NPT	16.3	14.1
25	1"	41.0	41.0	41	G 1	1" NPT	19.1	17.0
32	1 1/4"	48.0	50.0	50	G 1 1/4	1 1/4" NPT	21.4	17.5
40	1 1/2"	55.0	50.0	55	G 1 1/2	1 1/2" NPT	21.4	17.3
50	2"	62.0	60.0	70	G 2	2" NPT	25.7	17.8

Dimensions in mm

1) Connection type

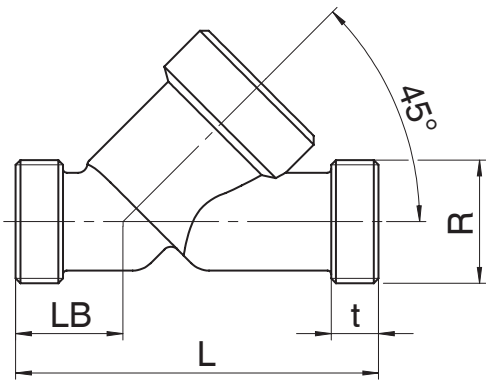
Code 1: Threaded socket DIN ISO 228

Code 3D: Threaded socket NPT, end-to-end dimension ETE DIN 3202-4 series M8

2) Valve body material

Code 37: 1.4408, investment casting

8.3.8 Threaded spigot DIN (code 9), actuator size 0



Connection type threaded spigot DIN (code 9)¹⁾, forged material (code 40)²⁾

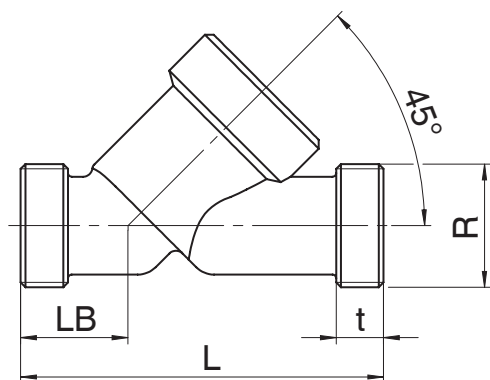
DN	NPS	L	LB	R	t
6	1/8"	65.0	19.0	G 1/4	12.0

Connection type threaded spigot DIN (code 9)¹⁾, investment casting material (code 37)²⁾

DN	NPS	L	LB	R	t
8	1/4"	65.0	19.0	G 3/8	12.0
10	3/8"	65.0	19.0	G 1/2	12.0
15	1/2"	65.0	19.0	G 3/4	12.0

Dimensions in mm

- 1) **Connection type**
Code 9: Threaded spigot DIN ISO 228
- 2) **Valve body material**
Code 37: 1.4408, investment casting
Code 40: 1.4435 (F316L), forged body

8.3.9 Threaded spigot DIN (code 9), actuator size 1, 2, 3, 4, 5

Connection type threaded spigot DIN (code 9)¹⁾, investment casting material (code 37)²⁾

DN	NPS	L	LB	R	t
15	1/2"	90.0	25.0	G 3/4	12.0
20	3/4"	110.0	30.0	G 1	15.0
25	1"	118.0	30.0	G 1 1/4	15.0
32	1 1/4"	130.0	38.0	G 1 1/2	13.0
40	1 1/2"	140.0	35.0	G 1 3/4	13.0
50	2"	175.0	50.0	G 2 3/8	15.0
65	2 1/2"	216.0	52.0	G 3	15.0
80	3"	254.0	64.0	G 3 1/2	18.0

Dimensions in mm

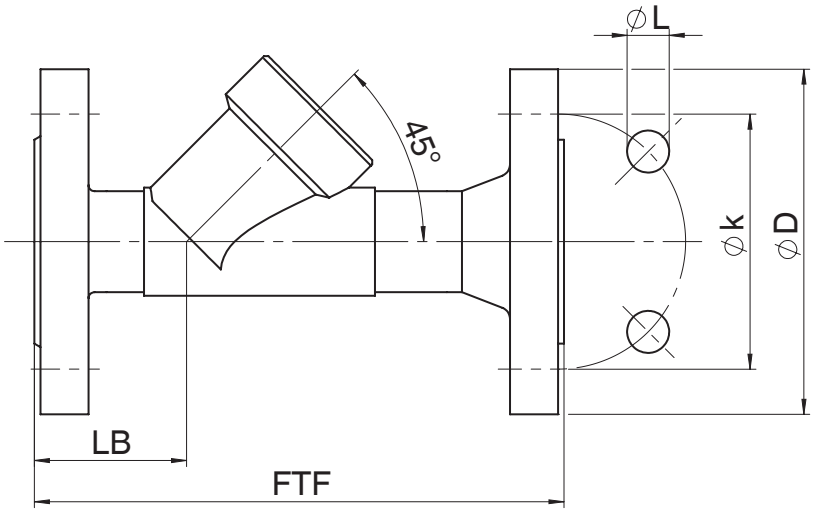
1) **Connection type**

Code 9: Threaded spigot DIN ISO 228

2) **Valve body material**

Code 37: 1.4408, investment casting

8.3.10 Flange EN (code 10), actuator size 1, 2, 3, 4, 5



Connection type flange EN (code 10)¹⁾, investment casting material (code 37)²⁾

DN	NPS	Ø D	FTF	Ø k	Ø L	LB	n
15	1/2"	95.0	130.0	65.0	14.0	33.0	4
20	3/4"	105.0	150.0	75.0	14.0	45.0	4
25	1"	115.0	160.0	85.0	14.0	44.0	4
32	1¼"	140.0	180.0	100.0	18.0	51.0	4
40	1½"	150.0	200.0	110.0	18.0	52.0	4
50	2"	165.0	230.0	125.0	18.0	50.0	4

Dimensions in mm

n = number of bolts

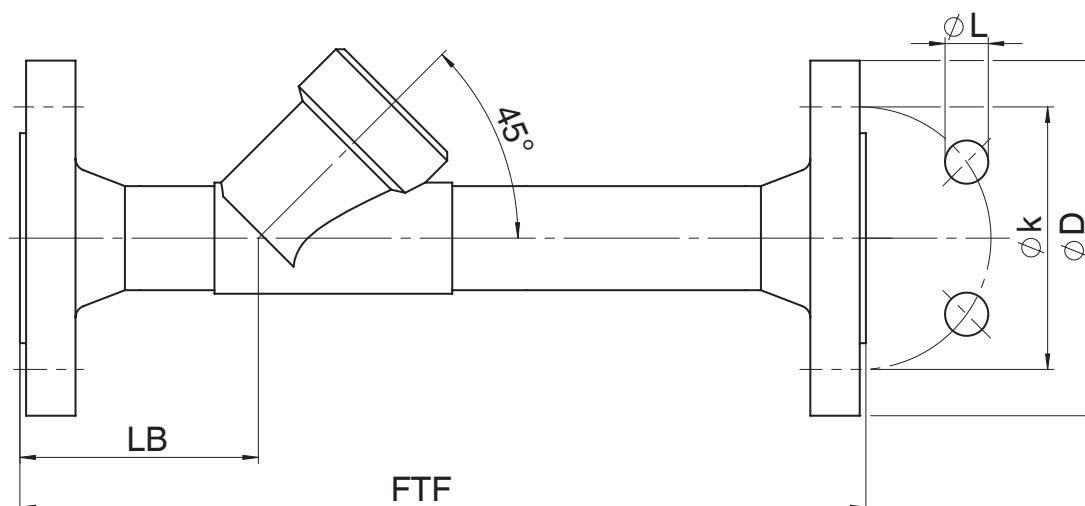
1) **Connection type**

Code 10: Flange EN 1092, PN 25, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**

Code 37: 1.4408, investment casting

8.3.11 Flange special length EN/ANSI (code 13, 47), actuator size 1, 2, 3, 4, 5



Connection type flange, special length EN/ANSI (code 13, 47)¹⁾, investment casting material (code 34)²⁾

DN	NPS	ØD		FTF	øk		ØL		LB	n
		Connection type			Connection type		Connection type			
		13	47		13	47	13	47		
15	1/2"	95.0	89.0	210.0	65.0	60.5	14.0	15.7	72.0	4
20	3/4"	105.0	98.6	280.0	75.0	69.8	14.0	15.7	78.0	4
25	1"	115.0	108.0	280.0	85.0	79.2	14.0	15.7	77.0	4
32	1¼"	140.0	117.3	310.0	100.0	88.9	18.0	15.7	89.0	4
40	1½"	150.0	127.0	320.0	110.0	98.6	18.0	15.7	91.0	4
50	2"	165.0	152.4	330.0	125.0	120.7	18.0	19.1	95.0	4

Dimensions in mm

n = number of bolts

1) **Connection type**

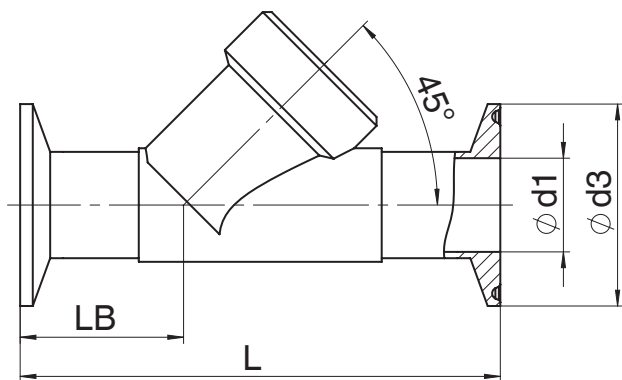
Code 13: Flange EN 1092, PN 25, form B

Code 47: Flange ANSI Class 150 RF

2) **Valve body material**

Code 34: 1.4435, investment casting

8.3.12 Clamp DIN/ASME (code 80, 82, 86, 88), actuator size 1, 2, 3, 4, 5



Connection type clamp DIN/ASME (code 80, 82, 86, 88)¹⁾, investment casting material (code 34)²⁾

DN	NPS	ød1				ød3				L				LB			
		Connection type				Connection type				Connection type				Connection type			
		80	82	86	88	80	82	86	88	80	82	86	88	80	82	86	88
15	1/2"	9.40	ø d1	16.0	9.40	25.0	50.5	34.0	25.0	101.6	130.0	130.0	130.0	33.5	47.5	47.5	47.5
20	3/4"	15.75	18.1	20.0	15.75	25.0	50.5	34.0	25.0	101.6	150.0	150.0	150.0	30.0	54.0	54.0	54.0
25	1"	22.10	23.7	26.0	22.10	50.5	50.5	50.5	50.5	114.3	160.0	160.0	160.0	33.0	56.0	56.0	56.0
32	1 1/4"	-	29.7	32.0	-	-	64.0	50.5	-	-	180.0	180.0	-	-	62.0	62.0	-
40	1 1/2"	34.80	38.4	38.0	34.80	50.5	64.0	50.5	50.5	139.7	200.0	200.0	200.0	37.0	67.0	67.0	67.0
50	2"	47.50	44.3	50.0	47.50	64.0	77.5	64.0	64.0	158.8	230.0	230.0	230.0	36.5	73.0	73.0	73.0

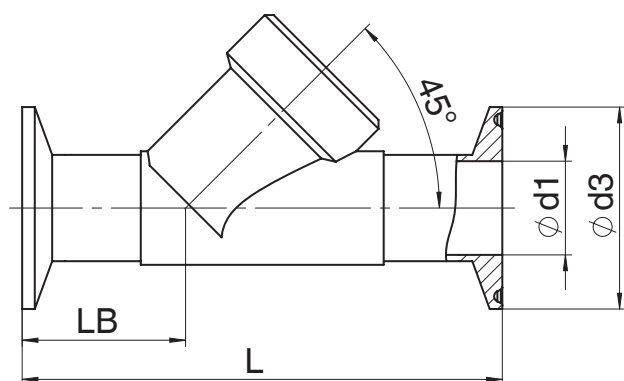
Dimensions in mm

1) Connection type

- Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE
- Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 1
- Code 86: Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 1
- Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 1

2) Valve body material

- Code 34: 1.4435, investment casting

8.3.13 Clamp DIN/ASME (code 82, 86, 88), actuator size 1, 2, 3, 4, 5**Connection type clamp DIN/ASME (code 82, 86, 88)¹⁾, investment casting material (code C2)²⁾**

DN	NPS	ød1			ød3			L	LB
		Connection type			Connection type				
		82	86	88	82	86	88		
8	1/4"	10.3	-	-	25.0	-	-	130.0	47.5
10	3/8"	14.0	10.0	-	25.0	34.0	-	130.0	47.5
15	1/2"	18.1	16.0	9.40	50.5	34.0	25.0	130.0	47.5
20	3/4"	23.7	20.0	15.75	50.5	34.0	25.0	150.0	54.0
25	1"	29.7	26.0	22.10	50.5	50.5	50.5	160.0	56.0
32	1¼"	38.4	32.0	-	64.0	505	-	180.0	62.0
40	1½"	44.3	38.0	34.80	64.0	50.5	50.5	200.0	67.0
50	2"	56.3	50.0	47.50	77.5	64.0	64.0	230.0	73.0
65	2½"	72.1	66.0	60.20	91.0	91.0	77.5	290.0	120.0
80	3"	84.3	81.0	72.90	106.0	106.0	91.0	310.0	119.0

Dimensions in mm

1) Connection type

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 1

Code 86: Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 1

Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 1

2) Valve body material

Code C2: 1.4435, investment casting

9 Manufacturer's information

9.1 Delivery

- Check that all parts are present and check for any damage immediately upon receipt.

The product's performance is tested at the factory. The scope of delivery is apparent from the dispatch documents and the design from the order number.

Control function	Function	Condition as supplied to customer
1	Normally closed (NC)	closed
2	Normally open (NO)	open
3	Double acting (DA)	undefined

9.2 Packaging

The product is packaged in a cardboard box which can be recycled as paper.

9.3 Transport

1. Only transport the product by suitable means. Do not drop. Handle carefully.
2. After the installation dispose of transport packaging material according to relevant local or national disposal regulations / environmental protection laws.

9.4 Storage

1. Store the product free from dust and moisture in its original packaging.
2. Avoid UV rays and direct sunlight.
3. Do not exceed the maximum storage temperature (see chapter "Technical data").
4. Do not store solvents, chemicals, acids, fuels or similar fluids in the same room as GEMÜ products and their spare parts.

10 Installation in piping

10.1 Use of strainers

If the valve is to be used in gas applications (order code Special function G) and if a strainer is to be fitted to the inlet of the valve, the following points must be observed:

- largest mesh size: max. 1.5 mm
- Test mandrel with diameter 1 mm must not pass through
- For valves with a nominal size of DN 25 and larger, the strainers must be accessible for cleaning and replacement without having to undo welded or threaded connections of the valve.

10.2 Preparing for installation

WARNING

The equipment is subject to pressure!

- Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.

WARNING



Corrosive chemicals!

- Risk of caustic burns.
- Wear suitable protective gear.
- Completely drain the plant.

WARNING



The actuator cover is under spring pressure!

- Risk of severe injury or death!
- Do not open the actuator.

CAUTION



Hot plant components!

- Risk of burns.
- Only work on plant that has cooled down.

CAUTION

Leakage

- Emission of dangerous materials.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

CAUTION

Exceeding the maximum permissible pressure.

- Damage to the product.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

CAUTION**Use as step.**

- Damage to the product.
- Risk of slipping-off.
- Choose the installation location so that the product cannot be used as a foothold.
- Do not use the product as a step or a foothold.

NOTICE**Suitability of the product!**

- The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.

NOTICE**Tools**

- The tools required for installation and assembly are not included in the scope of delivery.
 - Use appropriate, functional and safe tools.
1. Ensure the product is suitable for the relevant application.
 2. Check the technical data of the product and the materials.
 3. Keep appropriate tools ready.
 4. Wear appropriate protective gear, as specified in the plant operator's guidelines.
 5. Observe appropriate regulations for connections.
 6. Have installation work carried out by trained personnel.
 7. Shut off plant or plant component.
 8. Secure plant or plant component against recommissioning.
 9. Depressurize the plant or plant component.
 10. Completely drain the plant (or plant component) and let it cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
 11. Correctly decontaminate, rinse and ventilate the plant or plant component.
 12. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
 13. Only install the product between matching aligned pipes (see chapters below).
 14. Please note the flow direction (see chapter "Flow direction").
 15. Please note the installation position (see chapter "Installation position").

10.3 Installation position

The installation position of the product is optional.

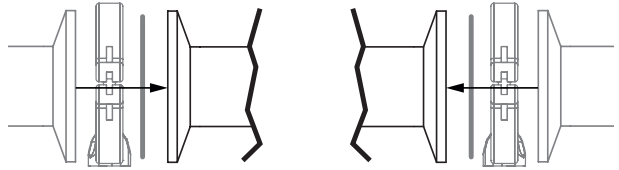
10.4 Installation with clamp connections

Fig. 4: Clamp connection

NOTICE**Gasket and clamp**

- The gasket and clamps for clamp connections are not included in the scope of delivery.

1. Keep ready gasket and clamp.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Adhere to good welding practices!
4. Insert the corresponding gasket between the body of the product and the pipe connection.
5. Connect the gasket between the body of the product and the pipe connection using clamps.
6. Re-attach or reactivate all safety and protective devices.

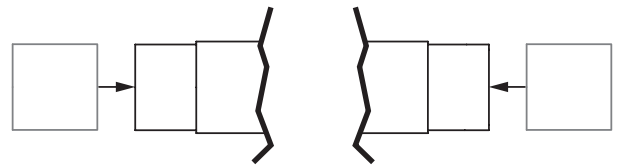
10.5 Installation with butt weld spigots

Fig. 5: Butt weld spigots

1. Carry out preparations for installation (see chapter "Preparing for installation").
2. Adhere to good welding practices!
3. Remove actuator **A** (see chapter "Removing the actuator").
4. Weld the body of the product in the piping.
5. Allow butt weld spigots to cool down.
6. Mount actuator **A** (see chapter "Mounting the actuator").
7. Re-attach or reactivate all safety and protective devices.
8. Flush the system.

10.6 Installation with threaded sockets

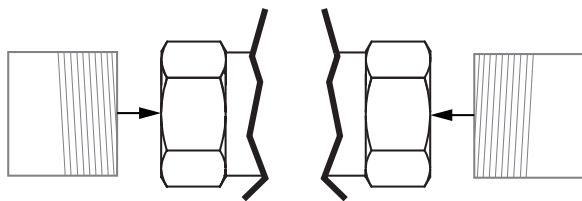


Fig. 6: Threaded socket

NOTICE

Thread sealant

- The thread sealant is not included in the scope of delivery.
- Only use appropriate thread sealant.

1. Keep thread sealant ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Screw the threaded connections into the pipe in accordance with valid standards.
4. Screw the body of the product onto the piping using appropriate thread sealant.
5. Re-attach or reactivate all safety and protective devices.

10.7 Installation with threaded spigots

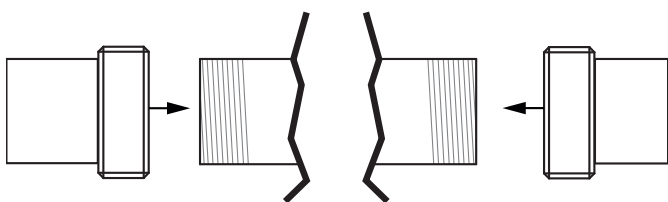


Fig. 7: Threaded spigots

NOTICE

Thread sealant

- The thread sealant is not included in the scope of delivery.
- Only use appropriate thread sealant.

1. Keep thread sealant ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Screw the pipe into the threaded connection of the valve body in accordance with valid standards.
 - ⇒ Use appropriate thread sealant.
4. Re-attach or reactivate all safety and protective devices.

10.8 Installation with flanged connection

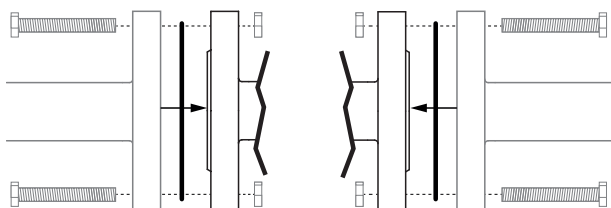


Fig. 8: Flanged connection

NOTICE

Sealing material

- The sealing material is not included in the scope of delivery.
- Only use appropriate sealing material.

NOTICE

Connector elements

- The connector elements are not included in the scope of delivery.
- Only use connector elements made of approved materials.
- Observe permissible tightening torque of the bolts.

1. Keep sealing material ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Ensure clean, undamaged sealing surfaces on the connection flanges.
4. Align flanges carefully before installing them.
5. Clamp the product centrally between the piping with flanges.
6. Centre the gaskets.
7. Connect the valve flange and the piping flange using appropriate sealing materials and matching bolting.
8. Use all flange holes.
9. Tighten the bolts diagonally.
10. Re-attach or reactivate all safety and protective devices.

11 Pneumatic connections

The product has 2 control medium connectors.

Control function	Control medium connector 2 (open)	Control medium connector 4 (close)
1 (NC)	+	-
2 (NO)	-	+
3 (DA)	+	+

+ = available
- = not available

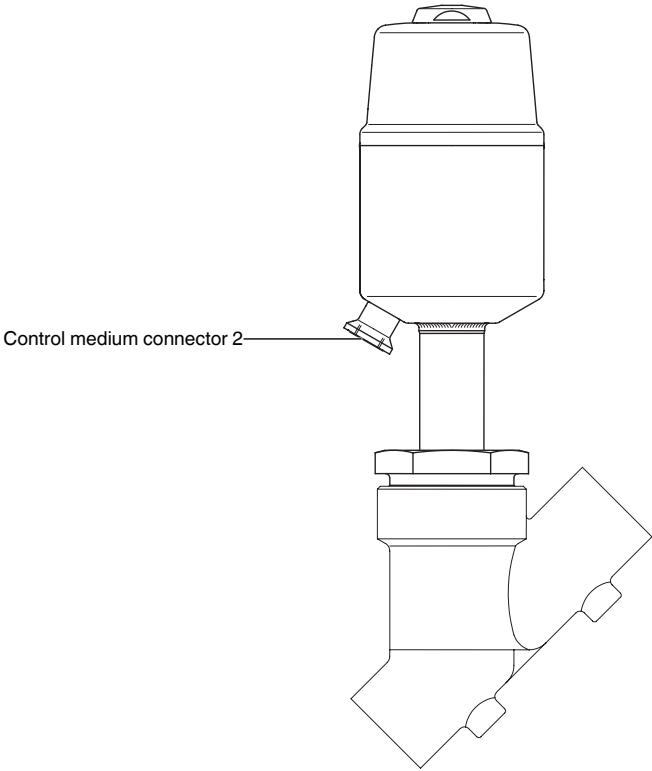


Fig. 9: GEMÜ 550, control function 1

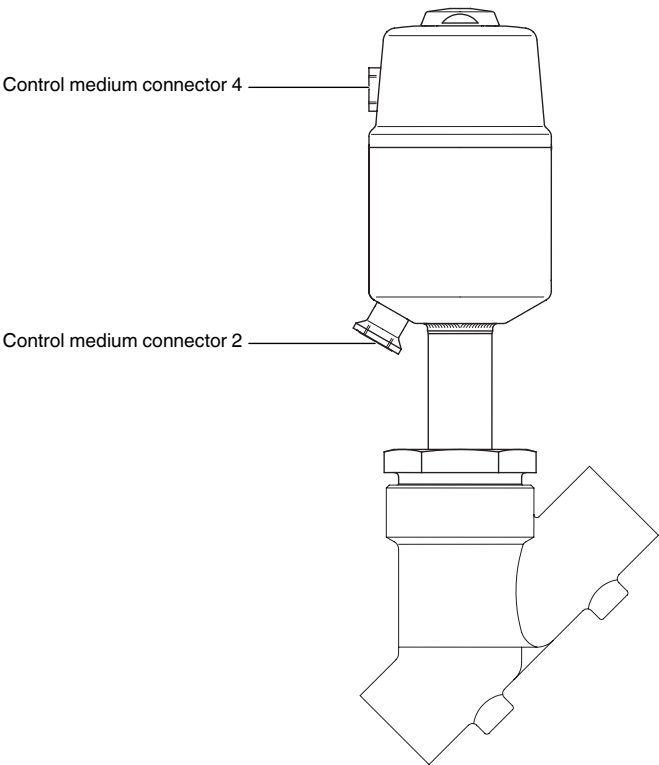


Fig. 10: GEMÜ 550, control function 2 and 3

- 1. Use suitable connectors.
- 2. Connect the control medium lines tension-free and without any bends or knots.
- 3. The actuator can be rotated 360°. The control medium connectors can be in any position.

Actuator size	Thread size of the control medium connectors
0	M5
1, 2	G 1/8
3, 4, 5	G 1/4

11.1 Use of pilot valves in gas applications

When using the valve in gas applications (order code Special function G), the closing time must be less than 1 s.
GEMÜ recommends the GEMÜ 8500 pilot valve.

12 Commissioning

WARNING



Corrosive chemicals!

- ▶ Risk of caustic burns.
- Wear suitable protective gear.
- Completely drain the plant.

CAUTION

Leakage

- ▶ Emission of dangerous materials.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

CAUTION

Cleaning agent

- ▶ Damage to the GEMÜ product.
- The plant operator is responsible for selecting the cleaning material and performing the procedure.

1. Check the tightness and the function of the product (close and reopen the product).
 2. Flush the piping system of new plant and following repair work (the product must be fully open).
- ⇒ Harmful foreign matter has been removed.
- ⇒ The product is ready for use.
3. Commission the product.
 4. Commissioning of operators in accordance with the enclosed instructions.

13 Operation

Operate the product according to the control function (see also chapter "Pneumatic connections").

13.1 Control function 1

In its resting position the product is closed by spring force.

1. Activate the actuator via control medium connector 2.
 - ⇒ The product opens.
2. Vent the actuator via control medium connector 2.
 - ⇒ The product closes.

13.2 Control function 2

In its resting position the product is opened by spring force.

1. Activate the actuator via control medium connector 4.
 - ⇒ The product closes.
2. Vent the actuator via control medium connector 4.
 - ⇒ The product opens.

13.3 Control function 3

In its resting position the product has no defined normal position.

1. Activate the actuator via control medium connector 2.
 - ⇒ The product opens.
2. Activate the actuator via control medium connector 4.
 - ⇒ The product closes.

14 Troubleshooting

Error	Error cause	Troubleshooting
Control medium escaping from vent hole* in the actuator cover for control function NO / connector 2* for control function NC	Control piston leaking	Replace the actuator and check control medium for impurities
Control medium escaping from leak detection hole	Spindle seal leaking	Replace the actuator and check control medium for impurities
Working medium escaping from leak detection hole	Gland packing faulty	Replace the actuator
The product does not open or does not open fully	Control pressure too low (for control function NC)	Operate the product with the control pressure specified in the datasheet
	Control medium not connected	Connect control medium
	Control piston or spindle seal leaking	Replace actuator and check control medium for impurities
	Actuator spring faulty (for control function NO)	Replace the actuator
The product is leaking downstream (does not close or does not close fully)	Operating pressure too high	Operate the product with operating pressure specified in datasheet
	Foreign matter between seat seal and seat	Remove actuator, remove foreign matter, check seat seal for damage and replace seat seal if necessary
	Valve body leaks or is damaged	Check valve body for damage, replace valve if necessary
	Seat seal faulty	Check seat seal for damage and replace seat seal if necessary
	Actuator spring faulty (for control function NC)	Replace actuator
The product is leaking between actuator and valve body	Union nut loose	Retighten union nut
	Sealing washer faulty	Check sealing washer and the respective sealing surfaces for damage and replace parts if necessary
	Actuator/valve body damaged	Replace the actuator/valve body
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
	Threaded connections / unions loose	Tighten threaded connections / unions
	Sealing material faulty	Replace sealing material
Valve body leaking	Valve body leaking or corroded	Check valve body for damage, replace valve body if necessary

* see chapter "Spare parts"

15 Inspection and maintenance

⚠ WARNING

The equipment is subject to pressure!

- ▶ Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.

⚠ WARNING



The actuator cover is under spring pressure!

- ▶ Risk of severe injury or death!
- Do not open the actuator.

⚠ CAUTION

Use of incorrect spare parts!

- ▶ Damage to the GEMÜ product.
- ▶ Manufacturer liability and guarantee will be void.
- Use only genuine parts from GEMÜ.

⚠ CAUTION



Hot plant components!

- ▶ Risk of burns.
- Only work on plant that has cooled down.

NOTICE

Exceptional maintenance work!

- ▶ Damage to the GEMÜ product.
- Any maintenance work and repairs not described in these operating instructions must not be performed without consulting the manufacturer first.

The operator must carry out regular visual examination of the GEMÜ products depending on the operating conditions and the potential danger in order to prevent leakage and damage. The product also must be disassembled and checked for wear in the corresponding intervals.

1. Have servicing and maintenance work performed by trained personnel.
 2. Wear appropriate protective gear as specified in plant operator's guidelines.
 3. Shut off plant or plant component.
 4. Secure plant or plant component against recommissioning.
 5. Depressurize the plant or plant component.
 6. Actuate GEMÜ products which are always in the same position four times a year.
 7. After removing / installing the GEMÜ product check that the union nut **a** is mechanically secured and re-tighten if necessary.
- ⇒ Seals degrade in the course of time.

15.1 Components

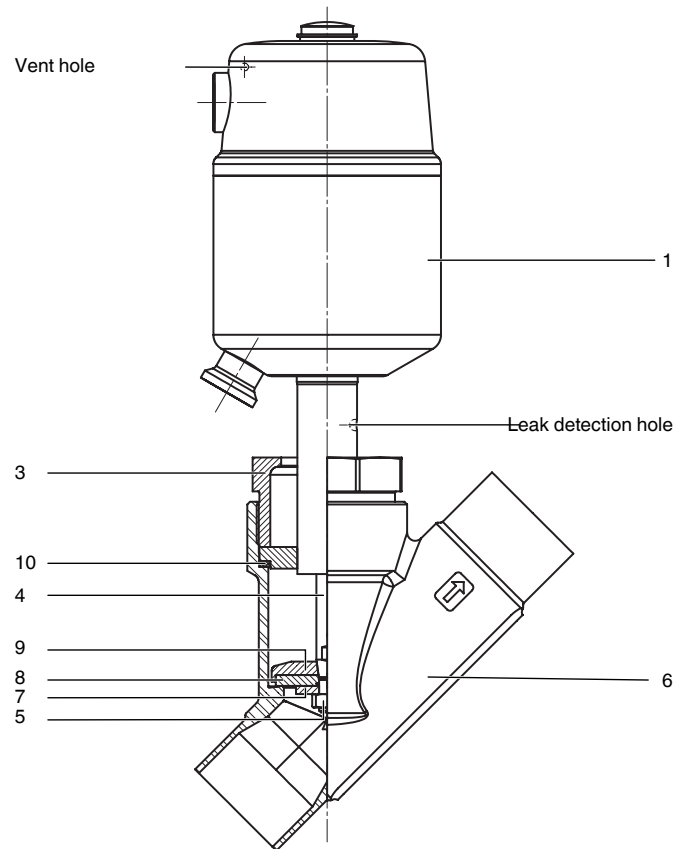


Fig. 11: GEMÜ 550 components

Item	Parts list item	Name
1	A	Actuator
3	a	Union nut
4	b	Spindle
5	d	Nut
6	1	Valve body
7	e	Washer
8	14	Seat seal
9	c	Valve plug
10	4	Gasket

15.2 Spare parts

Parts list item	Name	Order designation
A	Actuator	9550
1	Valve body	K 500...
4	Gasket	550...SVS...
14	Seat seal	

15.3 Removing the actuator

1. Move the actuator **A** to the open position.
2. Undo union nut **a**.
3. Remove actuator **A** from valve body **1**.
4. Disconnect actuator **A** from the control medium lines.
5. Clean all parts of contamination (do not damage parts during cleaning).
6. Check parts for potential damage, replace if necessary (only use genuine parts from GEMÜ).

15.4 Replacing the seals

NOTICE

Gasket!

- Replace gasket **4** each time the actuator is disassembled/assembled.
1. Remove actuator **A** (see chapter "Removing the actuator").
 2. Remove sealing washer **4** from the valve body.
 3. Loosen nut **e** on spindle **b** (hold spindle **b** with appropriate tool that will not damage the spindle surfaces).
 4. Remove retaining washer **d**.
 5. Remove seat seal **14**.
 6. Clean all parts of contamination (do not damage parts during cleaning).
 7. Insert new seat seal **14**.
 8. Insert retaining washer **d**.
 9. Apply appropriate thread locking compound on the thread of spindle **b**.
 10. Fix spindle **b** in place with nut **e** (hold spindle **b** in place with appropriate tools which do not damage the spindle surfaces).
 11. Insert new sealing washer **4** in valve body **1**.
 12. Mount actuator **A** (see chapter "Mounting the actuator").

15.5 Mounting the actuator

⚠ CAUTION



Incorrect combination of actuator and valve body!

- Risk of damage to the actuator and valve body.
- For control valves with a reduced valve seat, make sure that the combination of actuator and valve body is correct.
- Compare the product label of the actuator with the valve body marking.

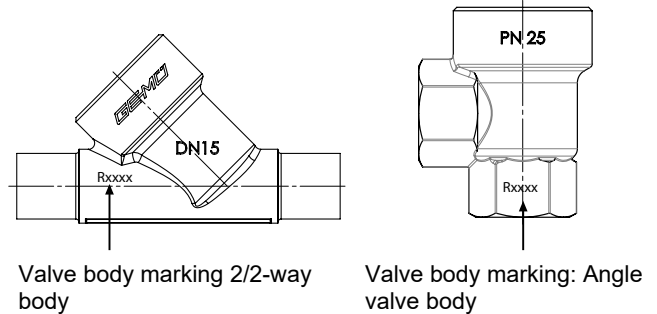


Fig. 12: Valve body marking

Actuator product label	Valve body marking
RAxxx	R002
RBxxx	R004
RCxxx	R006
RDxxx	R008
RExxx	R010
RFxxx	R012
RGxxx	R015
RHxxx	R020
RJxxx	R025
RKxxx	R032
RMxxx	R040

1. Move the actuator **A** to the open position.
2. Lubricate the thread of union nut **a** using a suitable lubricant.
3. Place actuator **A** on valve body **1** approx. 90° anticlockwise to the end position of the control medium connectors and screw it in hand tight using union nut **a**.
4. Tighten union nut **a** with an open-end wrench (for torques, see table). This rotates actuator **A** clockwise approx. 90° to the desired position.
5. Move the actuator **A** to the closed position.
6. With the valve fully assembled, check the function and tightness.

Nominal size [DN]	Actuator size	Torque [Nm]
DN 6	0G / 0M	35
DN 8	0G / 0M	35
DN 10	0G / 0M	35

Nominal size [DN]	Actuator size	Torque [Nm]
DN 15	0G / 0M	35
DN 10	1G / 1M	90
DN 15	1G / 1M / 2G / 2M	90
DN 20	1G / 1M / 2G / 2M / 3G / 3M	100
DN 25	2G / 2M / 3G / 3M / 4G	120
DN 32	2G / 3G / 3M / 4G / 5G	120
DN 40	3G / 3M / 4G / 5G	150
DN 50	3G / 3M / 4G / 5G	200
DN 65	5G	260
DN 80	5G	280

16 Removal from piping

1. Remove in reverse order to installation.
2. Deactivate the control medium.
3. Disconnect the control medium line(s).
4. Disassemble the product. Observe warning notes and safety information.

17 Disposal

1. Pay attention to adhered residual material and gas diffusion from penetrated media.
2. Dispose of all parts in accordance with the disposal regulations/environmental protection laws.

18 Returns

Legal regulations for the protection of the environment and personnel require that the completed and signed return delivery note is included with the dispatch documents. Returned goods can be processed only when this note is completed. If no return delivery note is included with the product, GEMÜ cannot process credits or repair work but will dispose of the goods at the operator's expense.

1. Clean the product.
2. Request a return delivery note from GEMÜ.
3. Complete the return delivery note.
4. Send the product with a completed return delivery note to GEMÜ.

19 Declaration of Incorporation according to 2006/42/EC (Machinery Directive)

Declaration of Incorporation

according to the EC Machinery Directive 2006/42/EC, Annex II, 1.B for partly completed machinery

Manufacturer:

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Postfach 30
Fritz-Müller-Straße 6-8
D-74653 Ingelfingen-Criesbach

Description and identification of the partly completed machinery:

Make: GEMÜ Pneumatically operated angle seat globe valve
Serial number: from 29.12.2009
Project number: SV-Pneum-2009-12
Commercial name: GEMÜ 550

meets the following essential requirements of the Machinery Directive 2006/42/EC:

1.1.3.; 1.1.5.; 1.1.7.; 1.2.1.; 1.3.; 1.3.2.; 1.3.3.; 1.3.4.; 1.3.7.; 1.3.9.; 1.5.3.; 1.5.5.; 1.5.6.; 1.5.7.; 1.5.8.; 1.5.9.; 1.6.5.; 2.1.1.; 3.2.1.; 3.2.2.; 3.3.2.; 3.4.4.; 3.6.3.1.; 4.1.2.1.; 4.1.2.3.; 4.1.2.4.; 4.1.2.5.; 4.1.2.6. a); 4.1.2.6. b); 4.1.2.6. c); 4.1.2.6. d); 4.1.2.6. e); 4.1.3.; 4.2.1.; 4.2.1.4.; 4.2.2.; 4.2.3.; 4.3.1.; 4.3.2.; 4.3.3.; 4.4.1.; 4.4.2.; 5.3.; 5.4.; 6.1.1.; 6.3.3.; 6.4.1.; 6.4.3.

We also declare that the specific technical documentation has been compiled in accordance with part B of Annex VII.

2006/42/EC:2006-05-17: Directive 2006/42/EC of the European Parliament and of the Council of 17th May 2006 on
(Machinery Directive) machinery, and amending Directive 95/16/EC (recast) (1)

The manufacturer or his authorised representative undertake to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery. This transmission takes place:

Electronically

This does not affect the industrial property rights!

Important note! The partly completed machinery may be put into service only if it was determined, where appropriate, that the machinery into which the partly completed machinery is to be installed meets the provisions of this Directive.



Joachim Brien

Head of Technical Department

Ingelfingen-Criesbach, February 2013

20 Declaration of conformity according to 2014/68/EU (Pressure Equipment Directive)

We, GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6-8
74653 Ingelfingen-Criesbach, Germany

declare that the product listed below complies with the safety requirements of the Pressure Equipment Directive 2014/68/EU.

Description of the pressure equipment: GEMÜ 550
Notified body: TÜV Rheinland Industrie Service GmbH
Number: 0035
Certificate no.: 01 202 926/Q-02 0036
Conformity assessment procedure: Module H1
Technical standard used: EN 1983, AD 2000

Note for products with a nominal size $\leq$ DN 25:

The products are developed and produced according to GEMÜ process instructions and quality standards which comply with the requirements of ISO 9001 and ISO 14001.

According to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU these products must not be identified by a CE-label.



Joachim Brien
Head of Technical Department
Ingelfingen-Criesbach



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www.gemu-group.com

Subject to alteration

06.2022 | 88814686