GEMÜ 567 BioStar control

Manually operated control valve

EN **Operating instructions**

further information
webcode: GW-567

Contents

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.

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.

PD

PD = Plug Diaphragm

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
	Corrosive chemicals!
	Hot plant components!

2 Product description

2.1 Construction

Item	Name	Materials
1	Handwheel	
2	Actuator housing	1.4305
3	Distance piece	1.4404
4	Valve body with leak detection hole	1.4435, 1.4539, 2.4602, 1.4410, 1.4529
5	CONEXO RFID chip	
6	Plug diaphragm	PTFE

2.2 Description

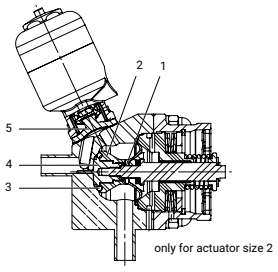
The GEMÜ 567 BioStar Control 2/2-way diaphragm globe valve is designed for use in sterile applications. Flow rates range from 80 l/h to 12,500 l/h, depending on the version. The sealing concept of the valve is based on the GEMÜ PD design. All actuator parts (except the seals) are made from stainless steel.

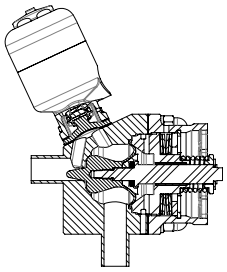
2.3 Function

The product is a manual 2/2-way diaphragm globe valve made of stainless steel operated via the handwheel. The GEMÜ 567 2/2-way diaphragm globe valve is designed for installation in piping systems and has been equipped with a GEMÜ PD design. Flow rates of between 80 l/h and 4100 l/h are possible, depending on the version.

2.4 PD seal system

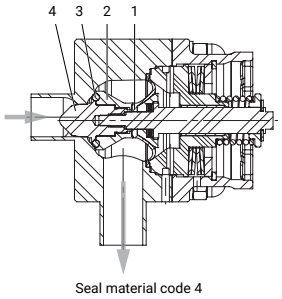
With bypass



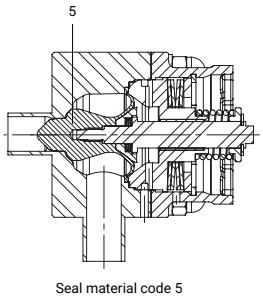


Item	Name	Materials
1	Plug diaphragm FKM, PTFE	PTFE
2	Support ring	1.4435, 1.4539, 2.4602, 1.4410, 1.4529
3	O-ring	FKM, FFKM
4	Regulating cone	1.4435, 1.4539, 2.4602, 1.4410, 1.4529
5	Bypass valve diaphragm	PTFE-EPDM, EPDM

Without bypass



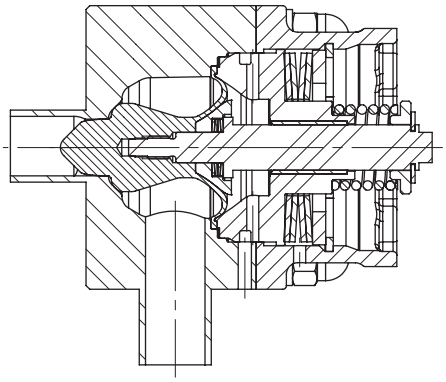
Seal material code 4



Seal material code 5

Item	Name	Materials
1	Plug diaphragm	PTFE
2	Support ring	1.4435, 1.4539, 2.4602, 1.4410, 1.4529
3	O-ring	FKM
4	Regulating cone	1.4435, 1.4539, 2.4602, 1.4410, 1.4529
5	Plug diaphragm with regulating cone	PTFE

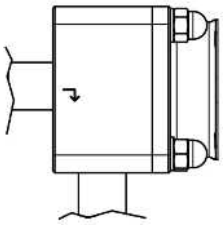
Special function M - 3A



Special function M - 3A

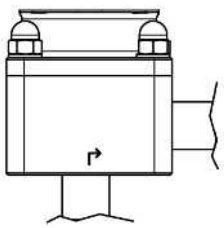
2.5 Flow direction

2.5.1 Installation position for optimized draining



in closed and open position

Actuator horizontal



in open position

Actuator horizontal or vertical

Control range

We recommend designing the valves in such a way that the control range is within an opening stroke of 20% to 90% of the control valve.

3 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
Control valve	567

2 DN	Code
DN 8	8
DN 10	10
DN 15	15
DN 20	20
DN 25	25

3 Body configuration	Code
2-way angle body	E
2-way angle body with bypass	M

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A	17
Spigot ASME BPE / DIN 11866 series C	59
Spigot ISO 1127/EN 10357 series C/DIN 11866 series B	60
Clamp	
Clamp DIN 32676 series B	82
Clamp DIN 32676 series A	86
Clamp ASME BPE	88

5 Valve body material	Code
1.4435 (316L), block material	41
1.4435 (BN2), block material, Δ Fe < 0.5%	43
1.4539, block material	44
2.4602, block material Alloy 22, (NiCr21Mo14W)	A3
1.4410, block material	A7
1.4529, block material	A8

6 Seal material	Code
Actuator seal PTFE / seat seal FKM	4
Actuator seal PTFE / seat seal PTFE	5
Actuator seal PTFE / seat seal FKM / bypass seal EPDM bypass diaphragm code 13	43
Actuator seal PTFE / seat seal FKM / bypass seal PTFE bypass diaphragm code 54	45
Actuator seal PTFE / seat seal FKM / bypass seal EPDM bypass diaphragm code 17	47
Actuator seal PTFE / seat seal PTFE / bypass seal PTFE bypass diaphragm code 54	55
Actuator seal PTFE / seat seal FFKM	F
Actuator seal PTFE / seat seal FFKM / bypass seal PTFE bypass diaphragm code 54	F5

7 Control function	Code
Manually operated	0

8 Actuator version	Code
Stainless steel handwheel	
Actuator size 2	
Actuator size 2, stainless steel handwheel, without seal adjuster and stroke limiter	2MN
Actuator size 2, stainless steel handwheel, with seal adjuster and stroke limiter	2MH
Actuator size 2, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent opening/closing, mounting for proximity switches M 8x1	2 MB
Actuator size 2, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent closing, mounting for proximity switches M 8x1	2MF
Actuator size 2, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent opening, mounting for proximity switches M 8x1	2MK
Actuator size 3	
Actuator size 3, stainless steel handwheel, without seal adjuster and stroke limiter	3MN
Actuator size 3, stainless steel handwheel, with seal adjuster and stroke limiter	3MH
Actuator size 3, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent opening/closing, mounting for proximity switches M 8x1	3 MB
Actuator size 3, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent closing, mounting for proximity switches M 8x1	3MF
Actuator size 3, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent opening, mounting for proximity switches M 8x1	3MK
Plastic handwheel	
Actuator size 2	
Actuator size 2, plastic handwheel, without seal adjuster and stroke limiter	2SN
Actuator size 2, plastic handwheel, with seal adjuster and stroke limiter	2SH
Actuator size 2, plastic handwheel, with seal adjuster and stroke limiter, locking device to prevent opening/ closing, mounting for proximity switches M 8x1	2SB
Actuator size 2, plastic handwheel, with seal adjuster and stroke limiter, locking device to prevent closing, mounting for proximity switches M 8x1	2SF
Actuator size 2, plastic handwheel, with seal adjuster and stroke limiter, locking device to prevent opening, mounting for proximity switches M 8x1	2SK
Actuator size 3	
Actuator size 3, plastic handwheel, without seal adjuster and stroke limiter	3SN

8 Actuator version	Code
Actuator size 3, plastic handwheel, with seal adjuster and stroke limiter	3SH
Actuator size 3, plastic handwheel, with seal adjuster and stroke limiter, locking device to prevent opening/ closing, mounting for proximity switches M 8x1	3SB
Actuator size 3, plastic handwheel, with seal adjuster and stroke limiter, locking device to prevent closing, mounting for proximity switches M 8x1	3SF
Actuator size 3, plastic handwheel, with seal adjuster and stroke limiter, locking device to prevent opening, mounting for proximity switches M 8x1	3SK

9 Control characteristic	Code
Modified equal-percentage	G
Linear	L

10 Kv value	Code
80 l/h	AA
100 l/h	AB
160 l/h	BC
250 l/h	BD
400 l/h	BE
630 l/h	CF
1.0 m³/h	CG
1.6 m³/h	DH
2.6 m³/h	EJ
4.1 m³/h	G1
8.0 m³/h	H2
12.5 m³/h	J3

11 Bypass actuator version	Code
Pneumatically operated, normally closed, diaphragm size 8,	11
Pneumatically operated, normally open, diaphragm size 8,	12
Manually operated, with seal adjuster, diaphragm size 8,	S0

12 Special specification	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
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF1, mechanically polished internal	SF1

12 Special specification	Code
Ra max. 0.38 µm (15 µin.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external	SF4
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF5, electropolished internal/external	SF5

Order example without bypass

Ordering option	Code	Description
1 Type	567	Control valve
2 DN	15	DN 15
3 Body configuration	E	2-way angle body
4 Connection type	17	Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A
5 Valve body material	41	1.4435 (316L), block material
6 Seal material	5	Actuator seal PTFE / seat seal PTFE
7 Control function	0	Manually operated
8 Actuator version	2 MB	Actuator size 2, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent opening/closing, mounting for proximity switches M 8x1
9 Control characteristic	G	Modified equal-percentage
10 Kv value	G1	4.1 m³/h
11 Special specification	1536	Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal
12 Special version	M	Special version for 3A
13 CONEXO	C	Integrated RFID chip for electronic identification and traceability

Order example with bypass

Ordering option	Code	Description
1 Type	567	Control valve
2 DN	15	DN 15
3 Body configuration	M	2-way angle body with bypass
4 Connection type	17	Spigot EN 10357 series A (formerly DIN 11850 series 2)/DIN 11866 series A
5 Valve body material	41	1.4435 (316L), block material
6 Seal material	55	Actuator seal PTFE / seat seal PTFE / bypass seal PTFE bypass diaphragm code 54
7 Control function	0	Manually operated
8 Actuator version	2 MB	Actuator size 2, stainless steel handwheel, with seal adjuster and stroke limiter, locking device to prevent opening/closing, mounting for proximity switches M 8x1
9 Control characteristic	G	Modified equal-percentage
10 Kv value	G1	4.1 m³/h
11 Bypass actuator version	S0	Manually operated, with seal adjuster, diaphragm size 8,
12 Special specification	1536	Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal
13 Special version	M	Special version for 3A
14 CONEXO	C	Integrated RFID chip for electronic identification and traceability

4 Technical data

4.1 Medium

Working medium: Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.

4.2 Temperature

Media temperature:	Without bypass	-10 — 160 °C
	With bypass	-10 — 100 °C
	Observe pressure/temperature diagram	

Sterilization temperature:	Seat seal FKM without bypass, (code 4)	160 °C [1], steam max. 30 min [2]
	Seat seal PTFE without bypass, (code 5)	160 °C [1], steam max. 30 min [2]
	Seat seal FKM bypass diaphragm material EPDM, (code 43)	150 °C [3], max. 30 min
	Seat seal FKM bypass diaphragm material PTFE/EPDM, PTFE laminated, (code 45)	150 °C [3], max. 30 min
	Seat seal FKM bypass diaphragm material EPDM, (code 47)	150 °C [3], max. 30 min
	Seat seal PTFE bypass diaphragm material PTFE/EPDM, PTFE laminated, (code 55)	150 °C [3], max. 30 min

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

2) Longer sterilization times or continuous operation on request.

3) 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. This also applies to PTFE diaphragms exposed to high temperature fluctuations. The maintenance cycles must be adapted accordingly.

Ambient temperature: -10 to 60 °C

Storage temperature: 0 — 40 °C

4.3 Pressure

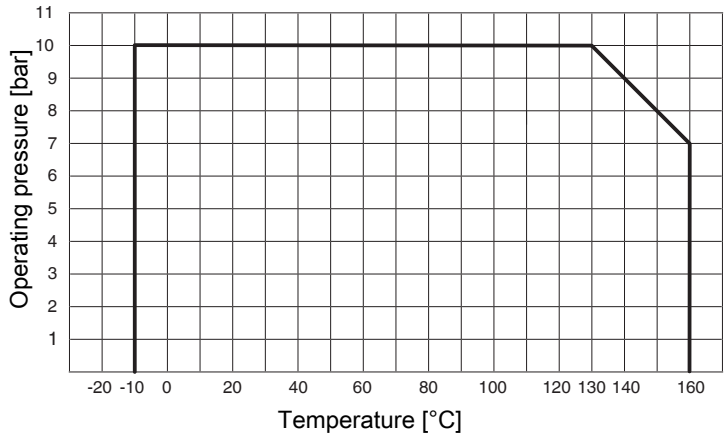
Operating pressure: 0 — 10 bar

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.

Operating pressure:

Pressure/Temperature diagram



Leakage rate:

Control valve

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

Kv values:

Seal material code	Control characteristic	Kv value	DN 8	DN 10	DN 15	DN 20	DN 25
4, 43, 45, 47, F, F5	**GAA, LAA**	80 l/h	X	X	X	-	-
	GAB, LAB	100 l/h	X	X	X	-	-
	GBC, LBC	160 l/h	X	X	X	-	-
	GBD, LBD	250 l/h	X	X	X	-	-
	GBE, LBE	400 l/h	X	X	X	-	-
5, 55	**GCF, LCF**	630 l/h	X	X	X	-	-
	GCG, LCG	1.0 m³/h	-	X	X	-	-
	GDH, LDH	1.6 m³/h	-	X	X	-	-
	GEJ, LEJ	2.6 m³/h	-	-	X	-	-
	GG1, LG1	4.1 m³/h	-	-	X	-	-
	GH2, LH2	8.0 m³/h	-	-	-	X	X
	GJ3, LJ3	12.5 m³/h	-	-	-	-	X

Kv values of bypass 2.1 m³/h
Kv values determined acc.to DIN EN 60534.

4.4 Product compliance

Machinery Directive:	2006/42/EC
EMC Directive:	2014/30/EU
Food:	FDA USP Class VI Regulation (EC) No. 1935/2004 Regulation (EC) No. 10/2011

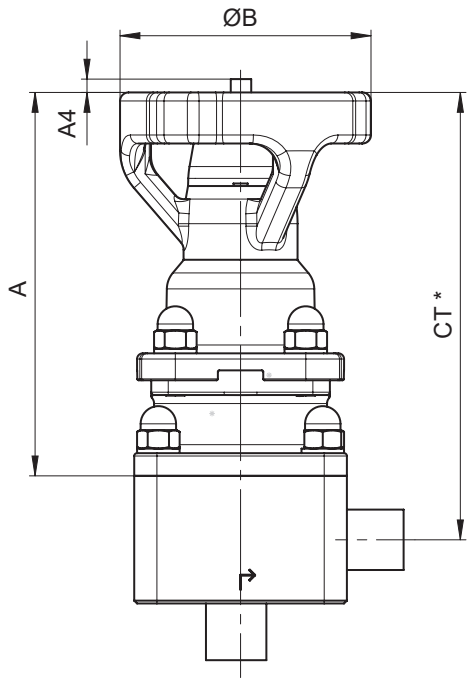
4.5 Mechanical data

Weight:

Valve assembly	
Actuator version 2	2.4 kg
Actuator version 3	7.8 kg

5 Dimensions

5.1 Actuator dimensions

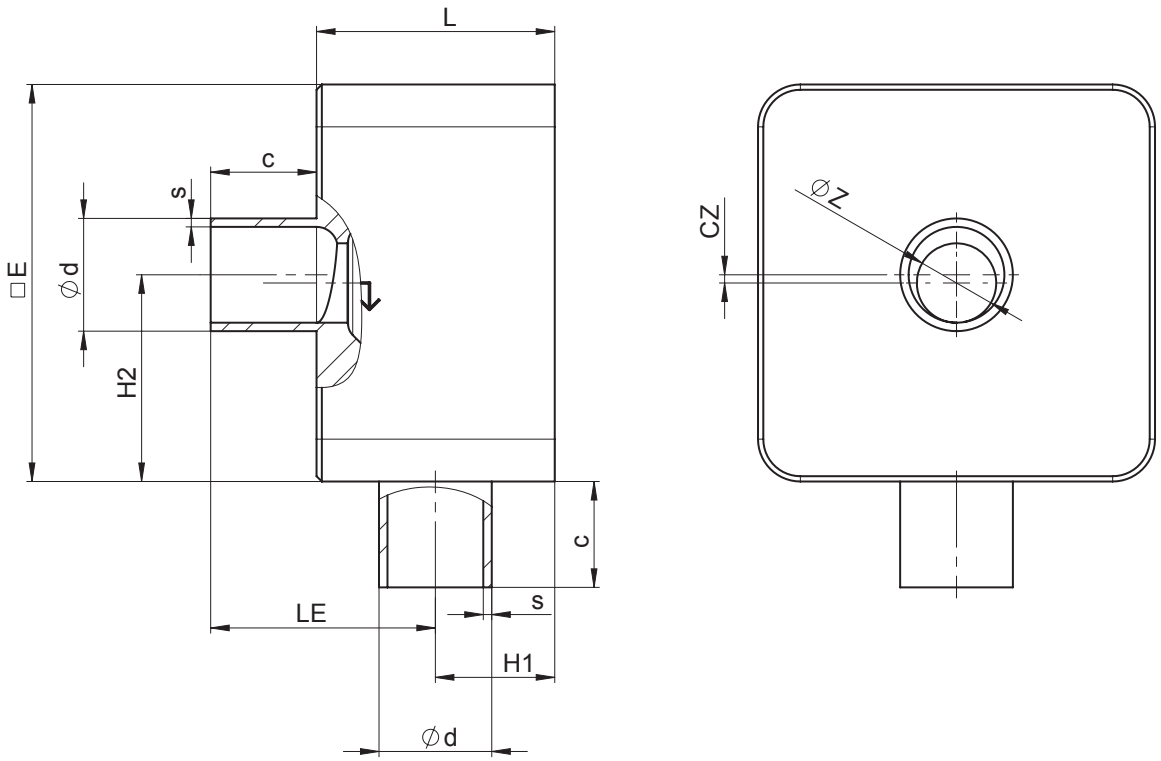


DN	Actuator size	A	A4	ØB
8, 10, 15, 20	2	135.0	5.0	90.0
20, 25	3	193.0	9.0	114.0

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

5.2 Body dimensions

5.2.1 Spigot without bypass code 0

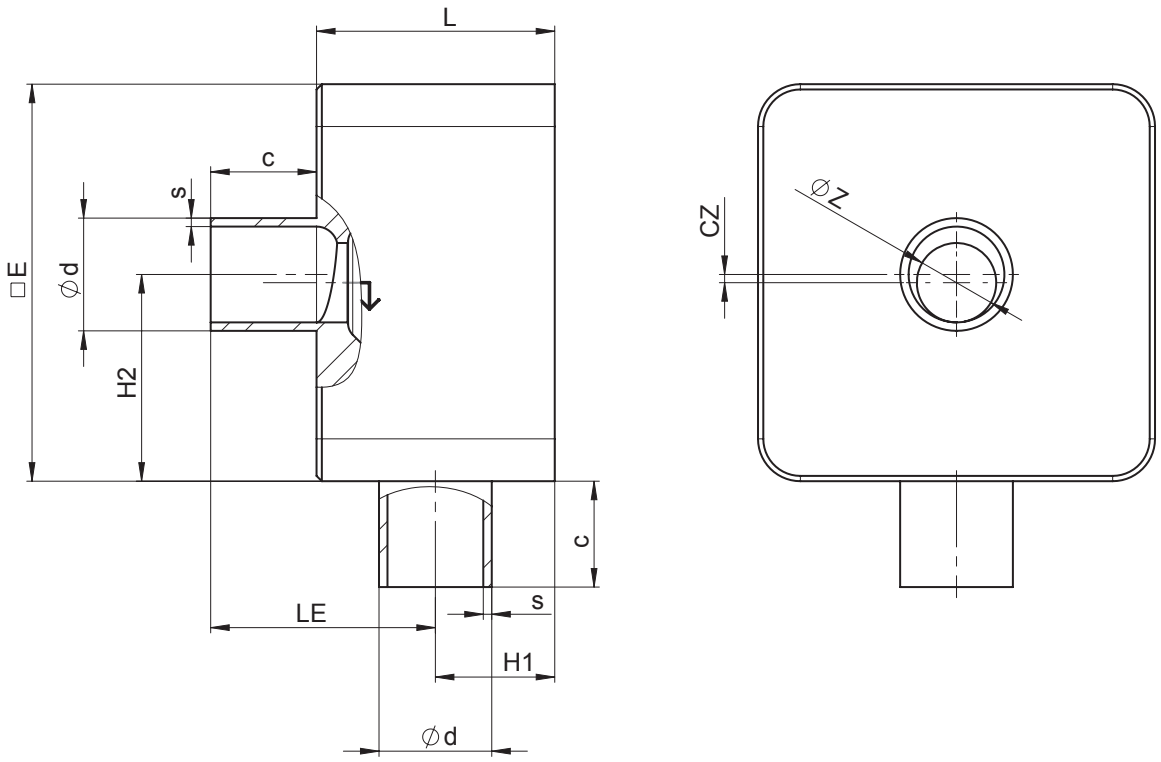


AG	DN	Connection type code 0 [1]									
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	45.0	75.0	20.0	2.0	44.0	21.0	40.5	6.5	18.0	1.5
		B	45.0	75.0	20.0	4.0	44.0	21.0	39.5	5.5	18.0	1.5
		C	45.0	75.0	20.0	6.0	44.0	21.0	38.5	4.5	18.0	1.5
		D	45.0	75.0	20.0	8.0	44.0	21.0	41.0	3.5	18.0	1.5
		E	45.0	75.0	20.0	10.0	44.0	21.0	40.0	2.5	18.0	1.5
		G	45.0	75.0	20.0	15.0	44.0	21.0	37.5	0.0	18.0	1.5
3	20	H	55.0	95.0	25.0	20.0	54.0	26.0	50.0	0.0	22.0	1.5
	25	H	55.0	95.0	25.0	20.0	54.0	26.0	50.0	2.5	28.0	1.5
		J	55.0	95.0	25.0	25.0	54.0	26.0	47.5	0.0	28.0	1.5

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 0: Spigot DIN

5.2.2 Spigot without bypass code 17

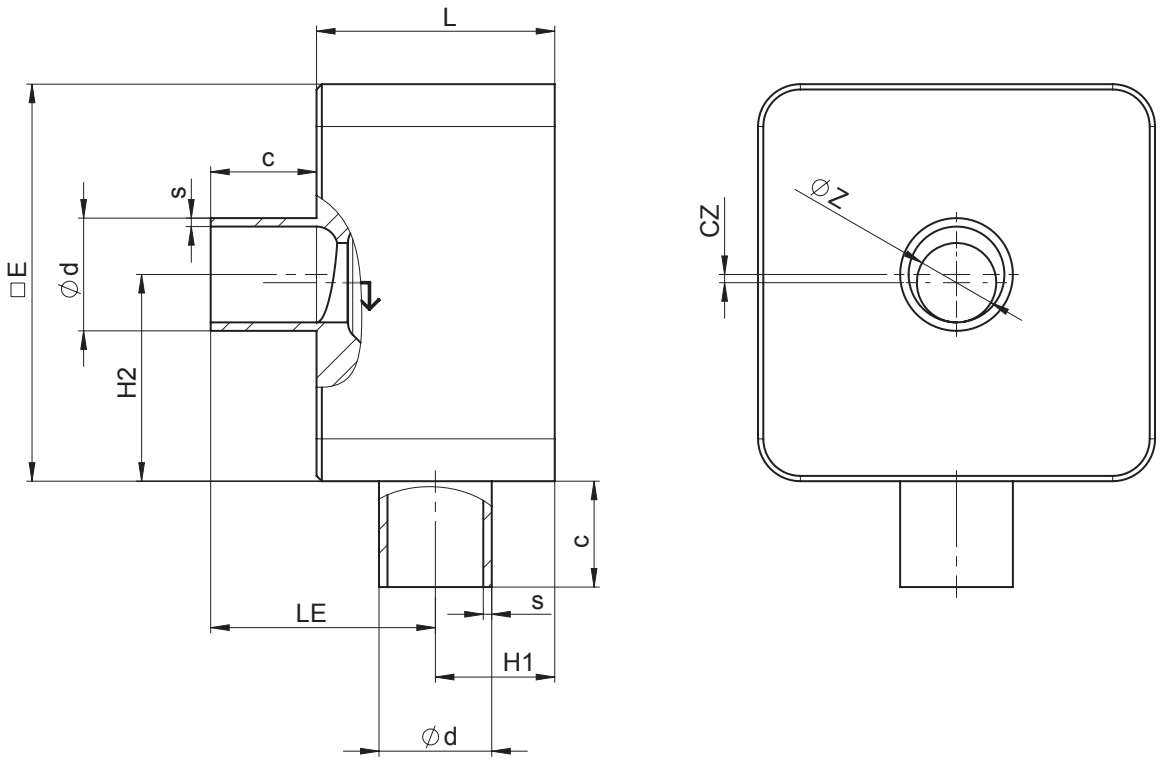


AG	DN	Connection type code 17 [1]										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	45.0	75.0	20.0	2.0	47.5	17.5	40.5	3.0	10.0	1.0
		B	45.0	75.0	20.0	4.0	47.5	17.5	39.5	2.0	10.0	1.0
		C	45.0	75.0	20.0	6.0	47.5	17.5	38.5	1.0	10.0	1.0
	10	A	45.0	75.0	20.0	2.0	46.5	18.5	41.5	4.0	13.0	1.5
		B	45.0	75.0	20.0	4.0	46.5	18.5	40.5	3.0	13.0	1.5
		C	45.0	75.0	20.0	6.0	46.5	18.5	39.5	2.0	13.0	1.5
		D	45.0	75.0	20.0	8.0	46.5	18.5	38.5	1.0	13.0	1.5
	15	A	45.0	75.0	20.0	2.0	43.5	21.5	44.5	7.0	19.0	1.5
		B	45.0	75.0	20.0	4.0	43.5	21.5	43.5	6.0	19.0	1.5
		C	45.0	75.0	20.0	6.0	43.5	21.5	42.5	5.0	19.0	1.5
		D	45.0	75.0	20.0	8.0	43.5	21.5	41.5	4.0	19.0	1.5
		E	45.0	75.0	20.0	10.0	43.5	21.5	40.5	3.0	19.0	1.5
		G	45.0	75.0	20.0	15.0	43.5	21.5	38.0	0.5	19.0	1.5
3	20	H	55.0	95.0	25.0	20.0	56.5	23.5	47.5	0.0	23.0	1.5
	25	H	55.0	95.0	25.0	20.0	53.5	26.5	50.5	3.0	29.0	1.5
		J	55.0	95.0	25.0	25.0	53.5	26.5	48.0	0.5	29.0	1.5

Dimensions in mm
AG = actuator size

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

5.2.3 Spigot without bypass code 59

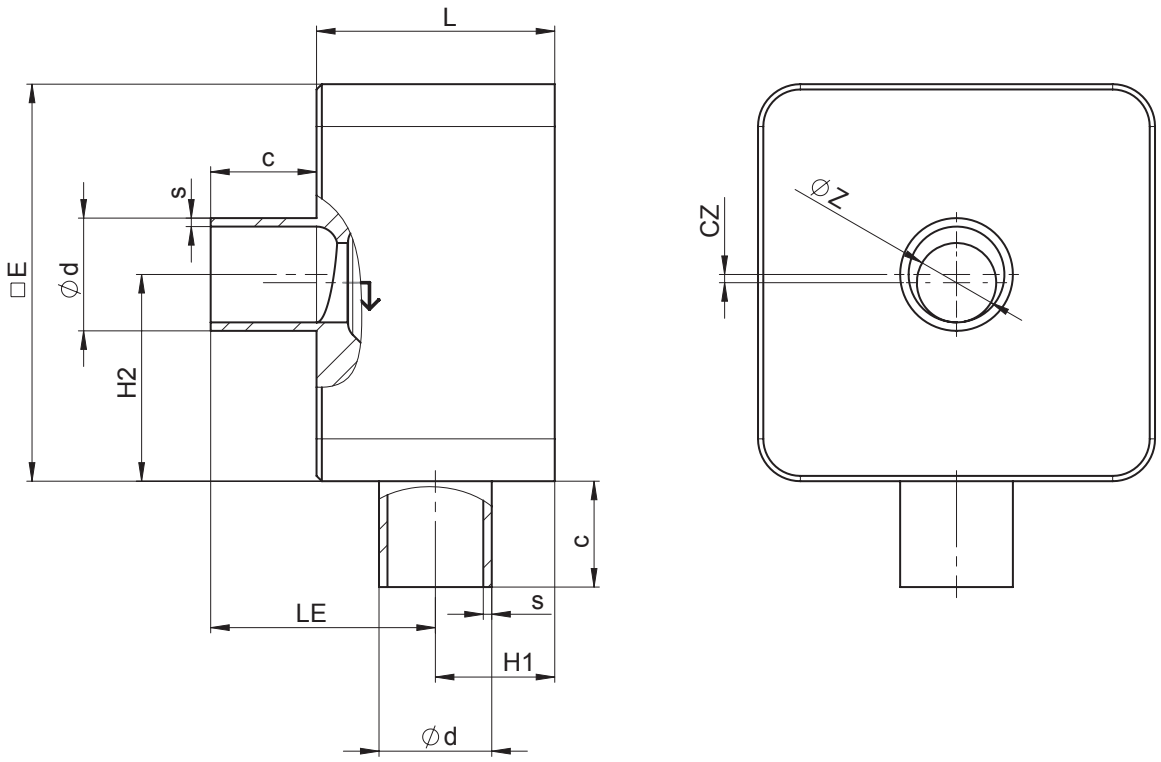


AG	DN	Connection type code 59 [1]										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	45.0	75.0	20.0	2.0	46.8	18.2	41.20	3.70	12.70	1.65
		B	45.0	75.0	20.0	4.0	46.8	18.2	40.20	2.70	12.70	1.65
		C	45.0	75.0	20.0	6.0	46.8	18.2	39.20	1.70	12.70	1.65
		D	45.0	75.0	20.0	8.0	46.8	18.2	38.20	0.70	12.70	1.65
	20	A	45.0	75.0	20.0	2.0	48.6	21.4	44.38	6.88	19.05	1.65
		B	45.0	75.0	20.0	4.0	43.6	21.4	43.38	5.88	19.05	1.65
		C	45.0	75.0	20.0	6.0	43.6	21.4	42.38	4.88	19.05	1.65
		D	45.0	75.0	20.0	8.0	43.6	21.4	41.38	3.88	19.05	1.65
		E	45.0	75.0	20.0	10.0	43.6	21.4	40.38	2.88	19.05	1.65
		G	45.0	75.0	20.0	15.0	43.6	21.4	37.88	0.38	19.05	1.65
3	25	H	55.0	95.0	25.0	20.0	55.4	24.6	48.60	1.10	25.40	1.65

Dimensions in mm
AG = actuator size

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

5.2.4 Spigot without bypass code 60

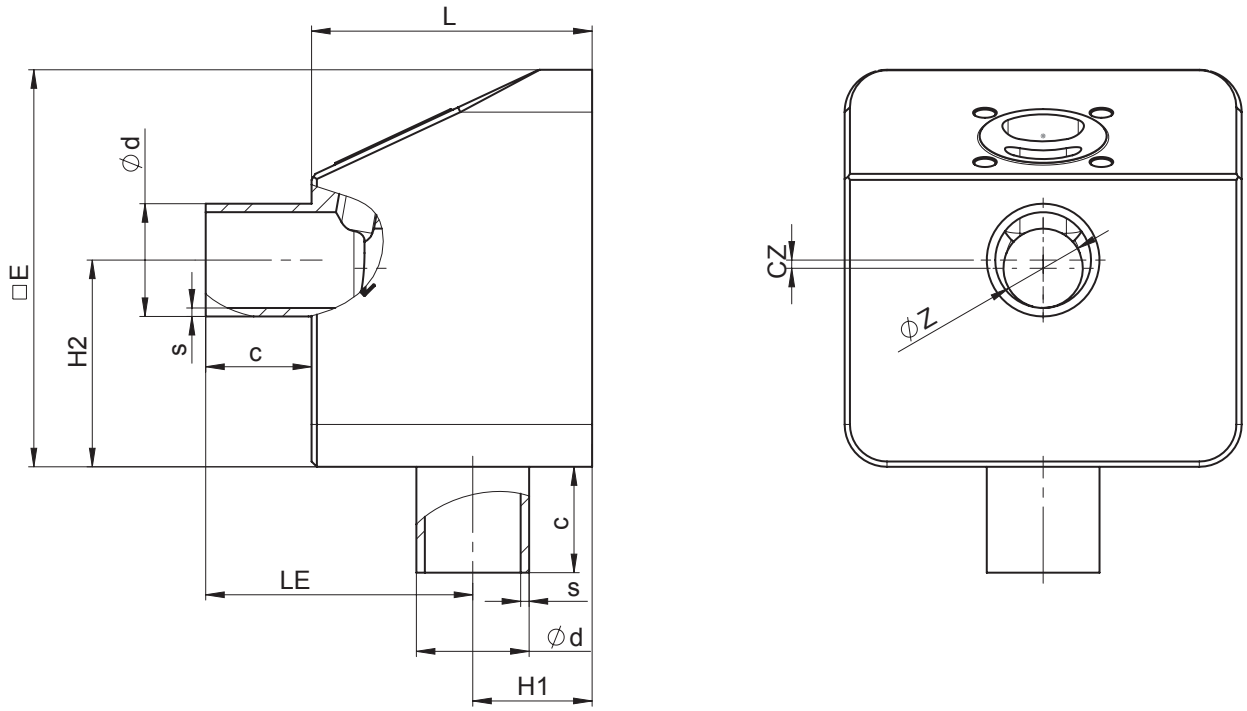


AG	DN	Connection type code 60 [1]										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	45.0	75.0	20.0	2.0	46.3	18.7	41.65	4.15	13.5	1.6
		B	45.0	75.0	20.0	4.0	46.3	18.7	40.65	3.15	13.5	1.6
		C	45.0	75.0	20.0	6.0	46.3	18.7	39.65	2.15	13.5	1.6
	10	A	45.0	75.0	20.0	2.0	44.5	20.5	43.50	6.00	17.2	1.6
		B	45.0	75.0	20.0	4.0	44.5	20.5	42.50	5.00	17.2	1.6
		C	45.0	75.0	20.0	6.0	44.5	20.5	41.50	4.00	17.2	1.6
		D	45.0	75.0	20.0	8.0	44.5	20.5	40.50	3.00	17.2	1.6
	15	A	45.0	75.0	20.0	2.0	42.4	22.6	45.55	8.05	21.3	1.6
		B	45.0	75.0	20.0	4.0	42.4	22.6	44.55	7.05	21.3	1.6
		C	45.0	75.0	20.0	6.0	42.4	22.6	43.55	6.05	21.3	1.6
		D	45.0	75.0	20.0	8.0	42.4	22.6	42.55	5.05	21.3	1.6
		E	45.0	75.0	20.0	10.0	42.4	22.6	41.55	4.05	21.3	1.6
		G	45.0	75.0	20.0	15.0	42.4	22.6	39.05	1.55	21.3	1.6
3	20	H	55.0	95.0	25.0	20.0	54.6	25.4	49.40	1.90	29.6	1.6
	25	H	55.0	95.0	25.0	20.0	54.6	28.4	52.40	4.90	33.7	2.0
		J	55.0	95.0	25.0	25.0	51.6	28.4	49.90	2.40	33.7	2.0

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

5.2.5 Spigot with bypass code 0

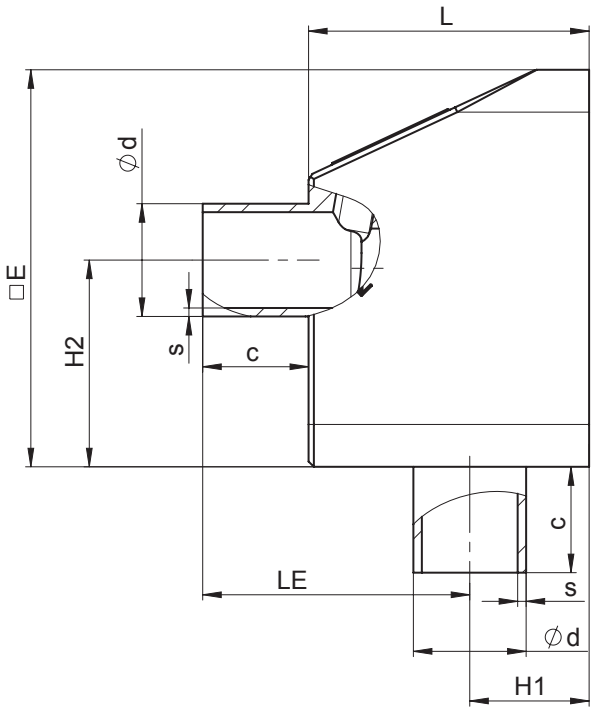


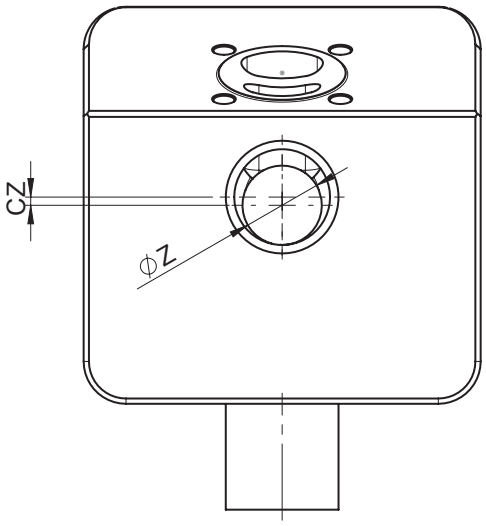
AG	DN	Connection type code 0 [1]									
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	53.0	75.0	20.0	2.0	52.0	21.0	44.0	6.5	18.0	1.5
		B	53.0	75.0	20.0	4.0	52.0	21.0	43.0	5.5	18.0	1.5
		C	53.0	75.0	20.0	6.0	52.0	21.0	42.0	4.5	18.0	1.5
		D	53.0	75.0	20.0	8.0	52.0	21.0	41.0	3.5	18.0	1.5
		E	53.0	75.0	20.0	10.0	52.0	21.0	40.0	2.5	18.0	1.5
		G	53.0	75.0	20.0	15.0	52.0	21.0	37.5	-	18.0	1.5

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 0: Spigot DIN

5.2.6 Spigot with bypass code 17



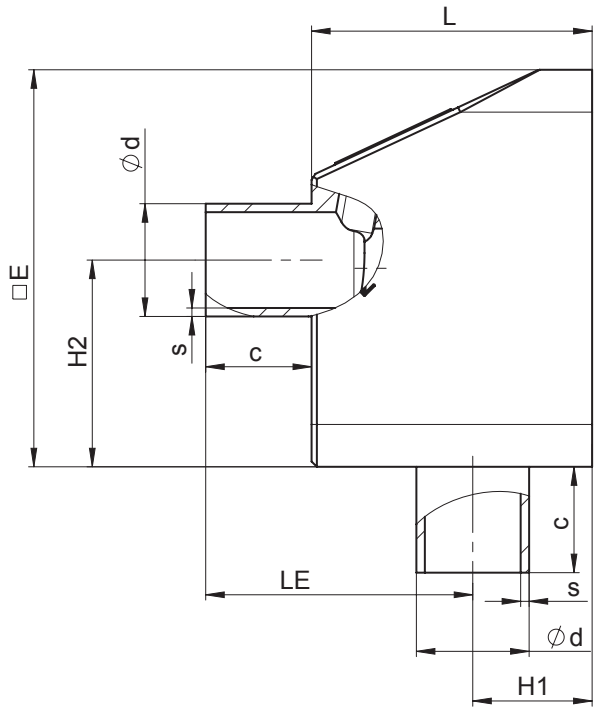


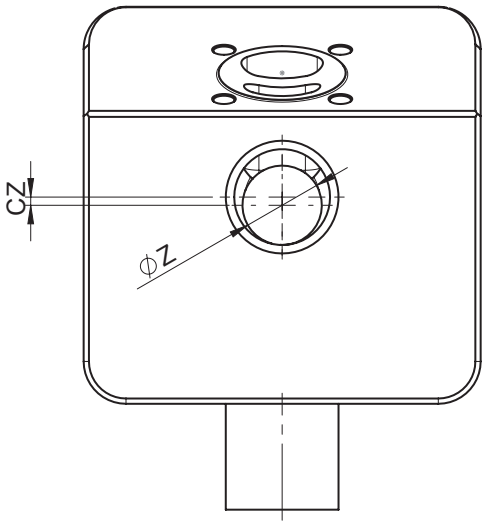
AG	DN	Connection type code 17 [1]										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	53.0	75.0	20.0	2.0	55.5	17.5	40.5	3.0	10.0	1.0
		B	53.0	75.0	20.0	4.0	55.5	17.5	39.5	2.0	10.0	1.0
		C	53.0	75.0	20.0	6.0	55.5	17.5	38.5	1.0	10.0	1.0
	10	A	53.0	75.0	20.0	2.0	54.5	18.5	41.5	4.0	13.0	1.5
		B	53.0	75.0	20.0	4.0	54.5	18.5	40.5	3.0	13.0	1.5
		C	53.0	75.0	20.0	6.0	54.5	18.5	39.5	2.0	13.0	1.5
		D	53.0	75.0	20.0	8.0	54.5	18.5	38.5	1.0	13.0	1.5
	15	A	53.0	75.0	20.0	2.0	51.5	21.5	44.5	7.0	19.0	1.5
		B	53.0	75.0	20.0	4.0	51.5	21.5	43.5	6.0	19.0	1.5
		C	53.0	75.0	20.0	6.0	51.5	21.5	42.5	5.0	19.0	1.5
		D	53.0	75.0	20.0	8.0	51.5	21.5	41.5	4.0	19.0	1.5
		E	53.0	75.0	20.0	10.0	51.5	21.5	40.5	3.0	19.0	1.5
		G	53.0	75.0	20.0	15.0	51.5	21.5	38.0	0.5	19.0	1.5

Dimensions in mm
AG = actuator size

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

5.2.7 Spigot with bypass code 59



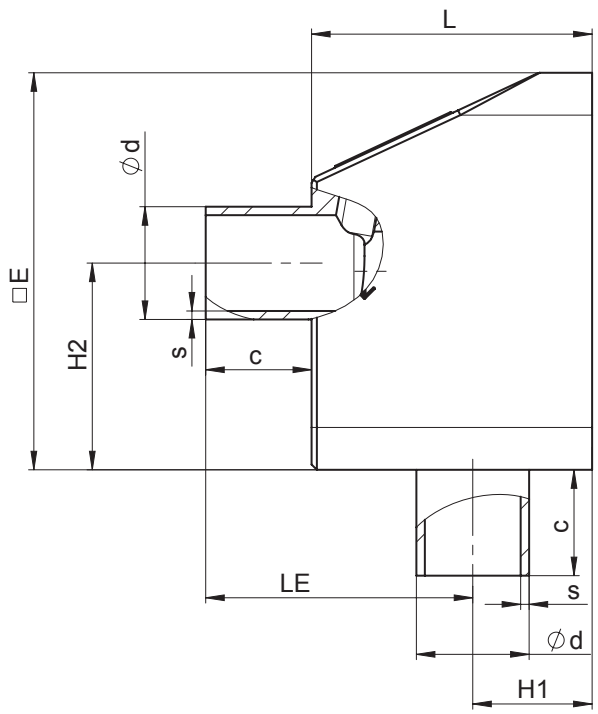


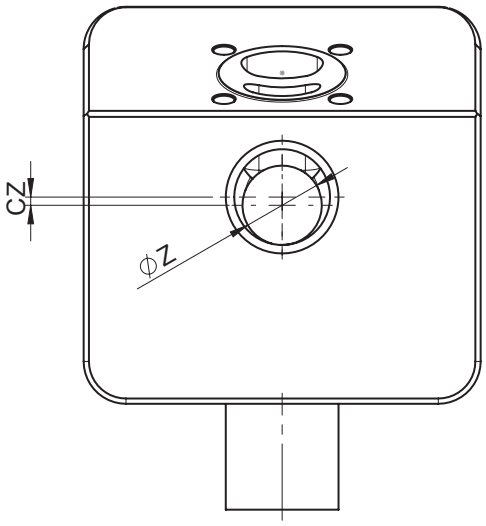
AG	DN	Connection type code 59 [1]										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	53.0	75.0	20.0	2.0	54.8	18.2	41.20	3.70	12.70	1.65
		B	53.0	75.0	20.0	4.0	54.8	18.2	40.20	2.70	12.70	1.65
		C	53.0	75.0	20.0	6.0	54.8	18.2	39.20	1.70	12.70	1.65
		D	53.0	75.0	20.0	8.0	54.8	18.2	38.20	0.70	12.70	1.65
	20	A	53.0	75.0	20.0	2.0	51.6	21.4	44.38	3.70	12.70	1.65
		B	53.0	75.0	20.0	4.0	51.6	21.4	43.38	2.70	12.70	1.65
		C	53.0	75.0	20.0	6.0	51.6	21.4	42.38	1.70	12.70	1.65
		D	53.0	75.0	20.0	8.0	51.6	21.4	41.38	0.70	12.70	1.65
		E	53.0	75.0	20.0	10.0	51.6	21.4	40.38	2.88	19.05	1.65
		G	53.0	75.0	20.0	15.0	51.6	21.4	37.88	0.38	19.05	1.65

Dimensions in mm
AG = actuator size

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

5.2.8 Spigot with bypass code 60



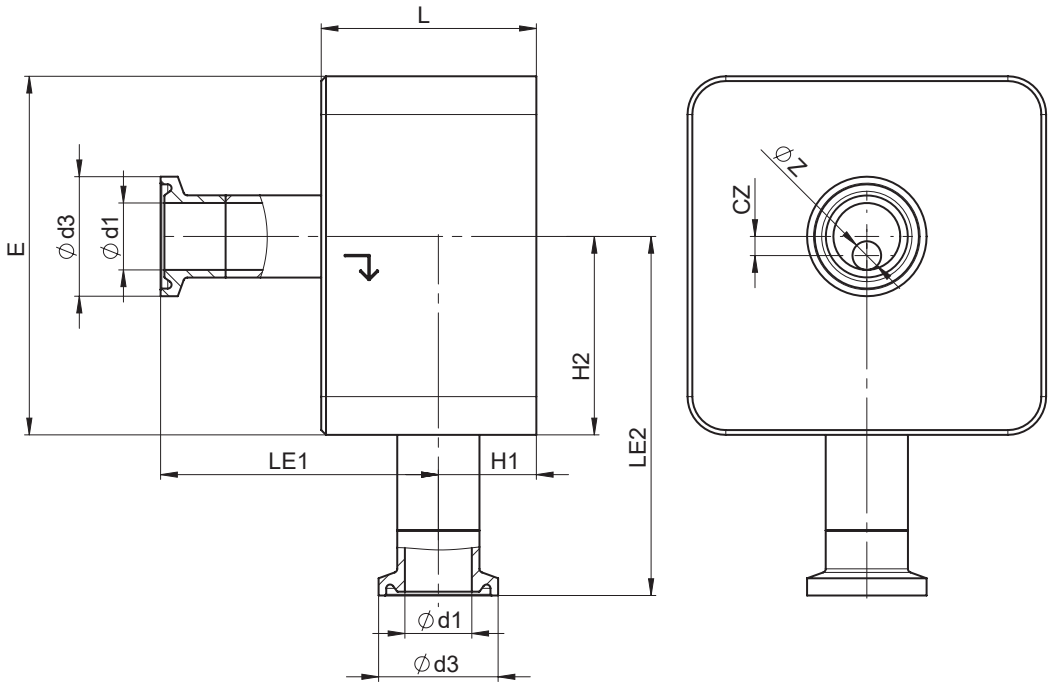


AG	DN	Connection type code 60 [1]										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	53.0	75.0	20.0	2.0	54.3	18.7	41.65	4.15	13.5	1.6
		B	53.0	75.0	20.0	4.0	54.3	18.7	40.65	3.15	13.5	1.6
		C	53.0	75.0	20.0	6.0	54.3	18.7	39.65	2.15	13.5	1.6
	10	A	53.0	75.0	20.0	2.0	52.5	20.7	43.50	6.00	17.2	1.6
		B	53.0	75.0	20.0	4.0	52.5	20.7	42.50	5.00	17.2	1.6
		C	53.0	75.0	20.0	6.0	52.5	20.5	41.50	4.00	17.2	1.6
		D	53.0	75.0	20.0	8.0	52.5	20.5	40.50	3.00	17.2	1.6
	15	A	53.0	75.0	20.0	2.0	50.4	22.6	45.55	8.05	21.3	1.6
		B	53.0	75.0	20.0	4.0	50.4	22.6	44.55	7.05	21.3	1.6
		C	53.0	75.0	20.0	6.0	50.4	22.6	43.55	6.05	21.3	1.6
		D	53.0	75.0	20.0	8.0	50.4	22.6	42.55	5.05	21.3	1.6
		E	53.0	75.0	20.0	10.0	50.4	22.6	41.55	4.05	21.3	1.6
		G	53.0	75.0	20.0	15.0	50.4	22.6	39.05	1.55	21.3	1.6

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

5.2.9 Clamp without bypass code 82

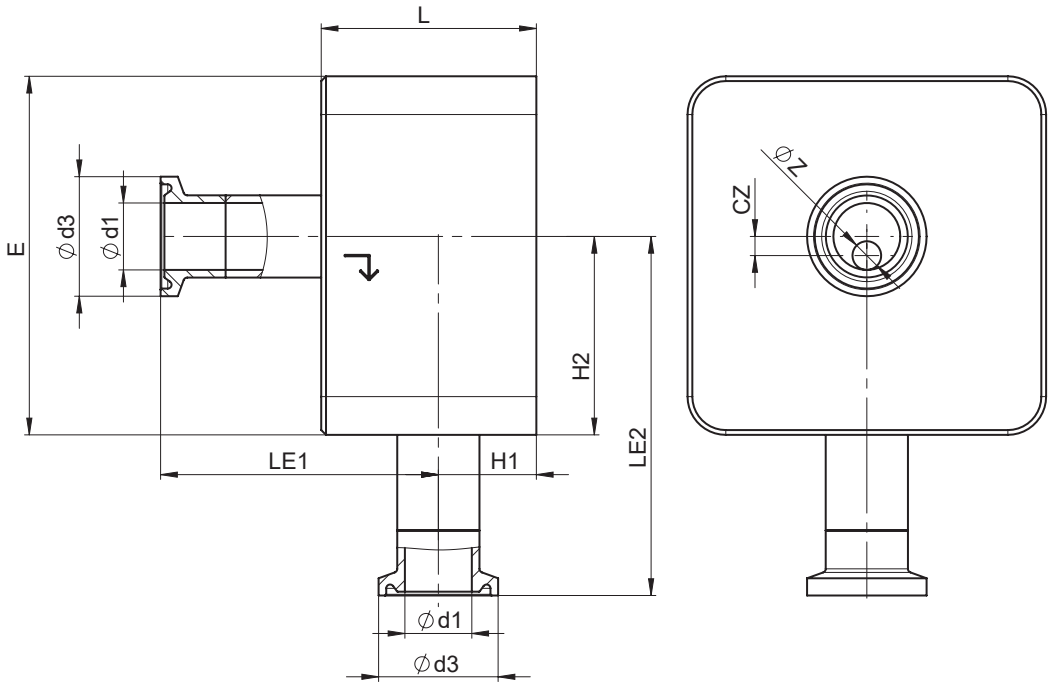


AG	DN	Connection type code 82 [1]										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	45.0	75.0	2.0	59.3	74.65	18.7	41.65	4.15	10.3	25.4
		B	45.0	75.0	4.0	59.3	73.65	18.7	40.65	3.15	10.3	25.4
		C	45.0	75.0	6.0	59.3	72.65	18.7	39.65	2.15	10.3	25.4
	10	A	45.0	75.0	2.0	57.5	76.50	20.5	43.50	6.00	14.0	25.4
		B	45.0	75.0	4.0	57.5	75.50	20.5	42.50	5.00	14.0	25.4
		C	45.0	75.0	6.0	57.5	74.50	20.5	41.50	4.00	14.0	25.4
		D	45.0	75.0	8.0	57.5	73.50	20.5	40.50	3.00	14.0	25.4
	15	A	45.0	75.0	2.0	55.4	78.55	22.6	45.55	8.05	18.1	50.5
		B	45.0	75.0	4.0	55.4	77.55	22.6	44.55	7.05	18.1	50.5
		C	45.0	75.0	6.0	55.4	76.55	22.6	43.55	6.05	18.1	50.5
		D	45.0	75.0	8.0	55.4	75.55	22.6	42.55	5.05	18.1	50.5
		E	45.0	75.0	10.0	55.4	74.55	22.6	41.55	4.05	18.1	50.5
		G	45.0	75.0	15.0	55.4	72.05	22.6	39.05	1.55	18.1	50.5
3	20	H	55.0	95.0	20.0	66.0	87.40	27.0	49.40	1.90	19.0	50.5
	25	H	55.0	95.0	20.0	62.6	90.40	30.4	52.40	4.90	25.0	50.5
		J	55.0	95.0	25.0	62.6	87.90	30.4	49.90	2.40	25.0	50.5

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 82: Clamp DIN 32676 series B

5.2.10 Clamp without bypass code 86

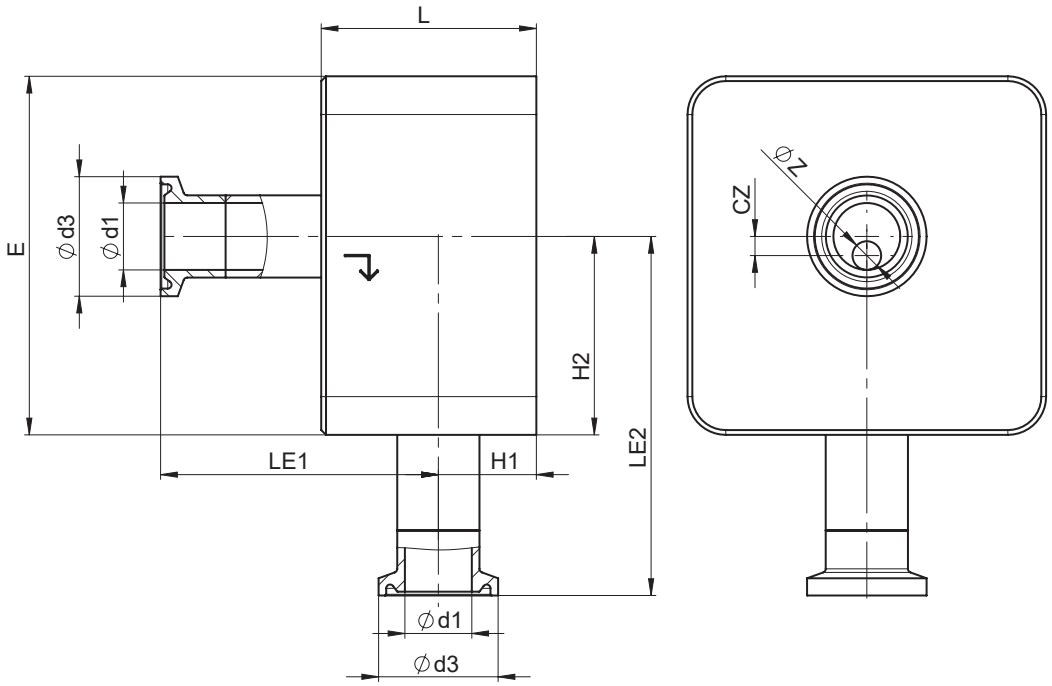


AG	DN	Connection type code 86 [1]										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	45.0	75.0	2.0	60.5	73.5	17.5	40.5	3.0	8.0	25.0
		B	45.0	75.0	4.0	60.5	72.5	17.5	39.5	2.0	8.0	25.0
		C	45.0	75.0	6.0	60.5	71.5	17.5	38.5	1.0	8.0	25.0
	10	A	45.0	75.0	2.0	59.5	74.5	18.5	41.5	4.0	10.0	34.0
		B	45.0	75.0	4.0	59.5	73.5	18.5	40.5	3.0	10.0	34.0
		C	45.0	75.0	6.0	59.5	72.5	18.5	39.5	2.0	10.0	34.0
		D	45.0	75.0	8.0	59.5	71.5	18.5	38.5	1.0	10.0	34.0
	15	A	45.0	75.0	2.0	56.5	77.5	21.5	44.5	7.0	16.0	34.0
		B	45.0	75.0	4.0	56.5	76.5	21.5	43.5	6.0	16.0	34.0
		C	45.0	75.0	6.0	56.5	75.5	21.5	42.5	5.0	16.0	34.0
		D	45.0	75.0	8.0	56.5	74.5	21.5	41.5	4.0	16.0	34.0
		E	45.0	75.0	10.0	56.5	73.5	21.5	40.5	3.0	16.0	34.0
		G	45.0	75.0	15.0	56.5	71.0	21.5	38.0	0.5	16.0	34.0
3	20	H	55.0	95.0	20.0	69.5	85.5	23.0	47.5	0.0	20.0	34.0
	25	H	55.0	95.0	20.0	65.0	88.0	28.1	50.0	2.5	26.0	50.5
		J	55.0	95.0	25.0	65.0	88.5	28.1	47.5	0.0	26.0	50.5

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 86: Clamp DIN 32676 series A

5.2.11 Clamp without bypass code 88

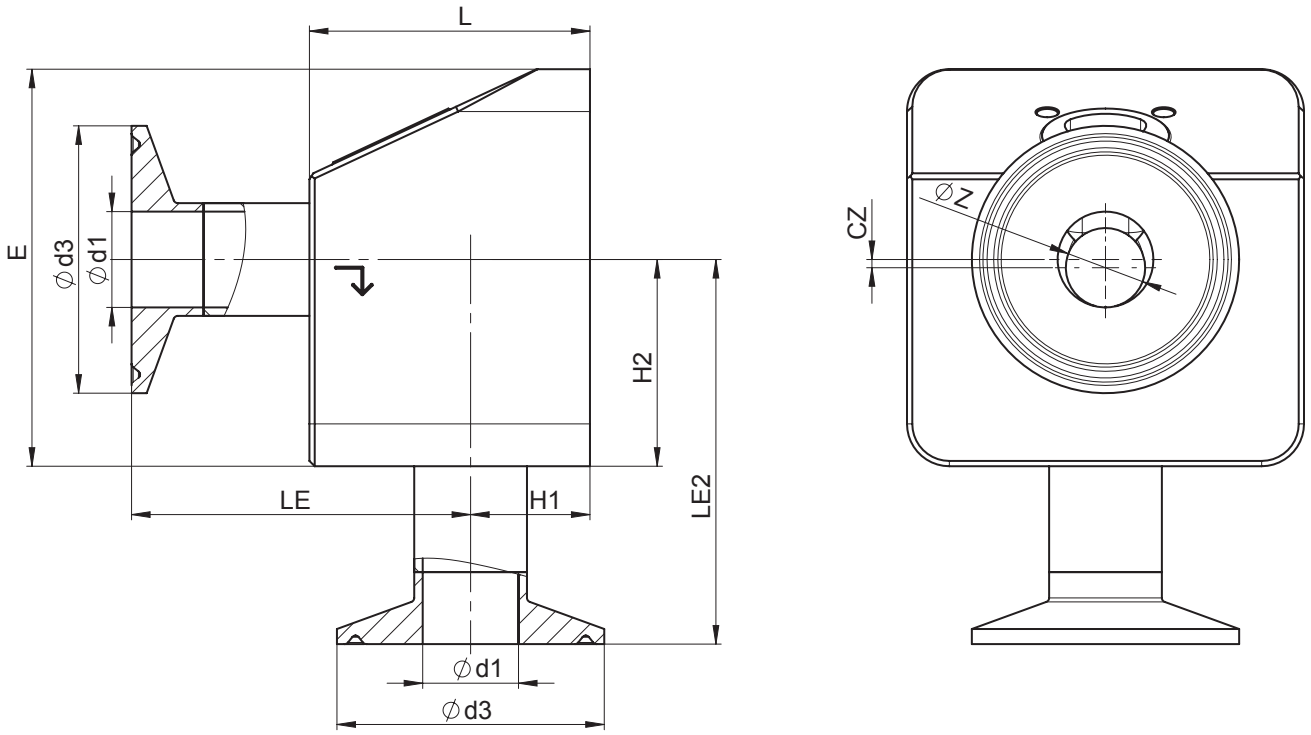


AG	DN	Connection type code 88 [1]										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	15	A	45.0	75.0	2.0	59.8	74.20	18.2	41.20	3.70	9.40	25.0
		B	45.0	75.0	4.0	59.8	73.20	18.2	40.20	2.70	9.40	25.0
		C	45.0	75.0	6.0	59.8	72.20	18.2	39.20	1.70	9.40	25.0
		D	45.0	75.0	8.0	59.8	71.20	18.2	38.20	0.70	9.40	25.0
	20	A	45.0	75.0	2.0	56.5	77.38	21.4	44.38	6.88	15.75	25.0
		B	45.0	75.0	4.0	56.5	76.38	21.4	43.38	5.88	15.75	25.0
		C	45.0	75.0	6.0	56.5	75.38	21.4	42.38	4.88	15.75	25.0
		D	45.0	75.0	8.0	56.5	74.38	21.4	41.38	3.88	15.75	25.0
		E	45.0	75.0	10.0	56.5	73.38	21.4	40.38	2.88	15.75	25.0
		G	45.0	75.0	15.0	56.5	70.88	21.4	37.88	0.38	15.75	25.0
3	25	H	55.0	95.0	20.0	66.8	87.60	26.3	48.60	1.10	22.10	50.5

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 88: Clamp ASME BPE

5.2.12 Clamp with bypass code 82

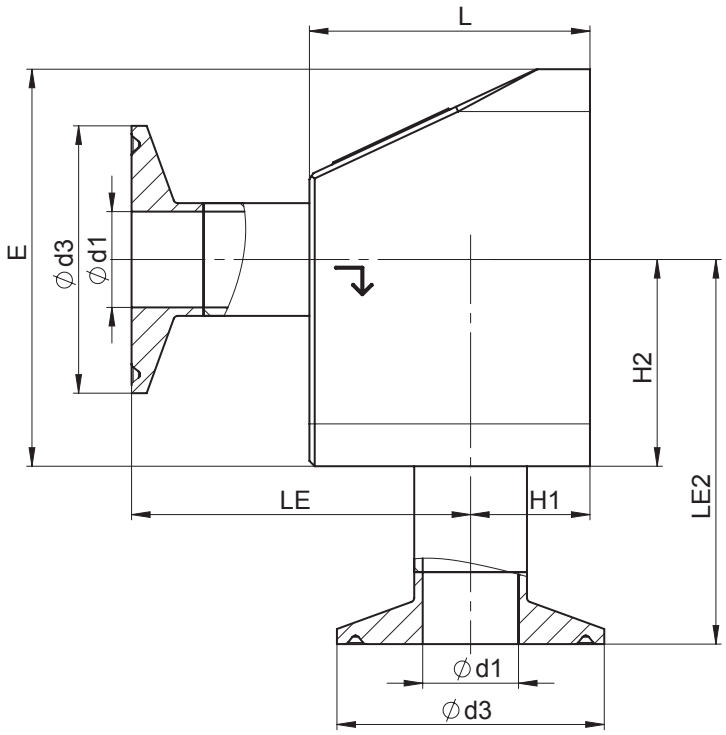


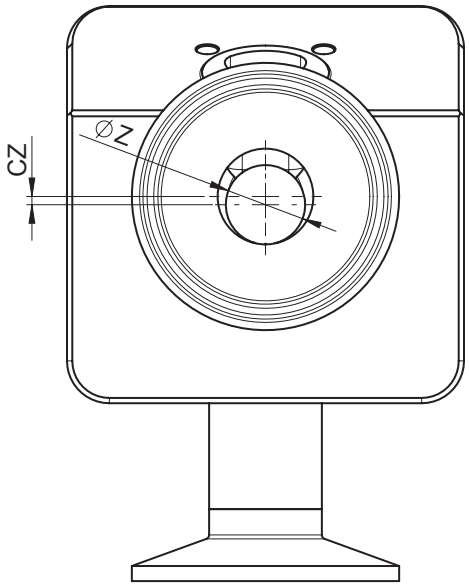
AG	DN	Connection type code 82 [1]									
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	53.0	75.0	2.0	67.3	74.65	18.7	41.65	4.15	10.3	25.4
		B	53.0	75.0	4.0	67.3	73.65	18.7	40.65	3.15	10.3	25.4
		C	53.0	75.0	6.0	67.3	72.65	18.7	39.65	2.15	10.3	25.4
	10	A	53.0	75.0	2.0	65.5	76.50	20.5	43.50	6.00	14.0	25.4
		B	53.0	75.0	4.0	65.5	75.50	20.5	42.50	5.00	14.0	25.4
		C	53.0	75.0	6.0	65.5	74.50	20.5	41.5	4.00	14.0	25.4
		D	53.0	75.0	8.0	65.5	73.50	20.5	40.5	3.00	14.0	25.4
	15	A	53.0	75.0	2.0	63.4	78.55	22.6	45.55	8.05	18.1	50.5
		B	53.0	75.0	4.0	63.4	77.55	22.6	44.55	7.05	18.1	50.5
		C	53.0	75.0	6.0	63.4	76.55	22.6	43.55	6.05	18.1	50.5
		D	53.0	75.0	8.0	63.4	75.55	22.6	42.55	5.05	18.1	50.5
		E	53.0	75.0	10.0	63.4	74.55	22.6	41.55	4.05	18.1	50.5
		G	53.0	75.0	15.0	63.4	72.05	22.6	39.05	1.55	18.1	50.5

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 82: Clamp DIN 32676 series B

5.2.13 Clamp with bypass code 86



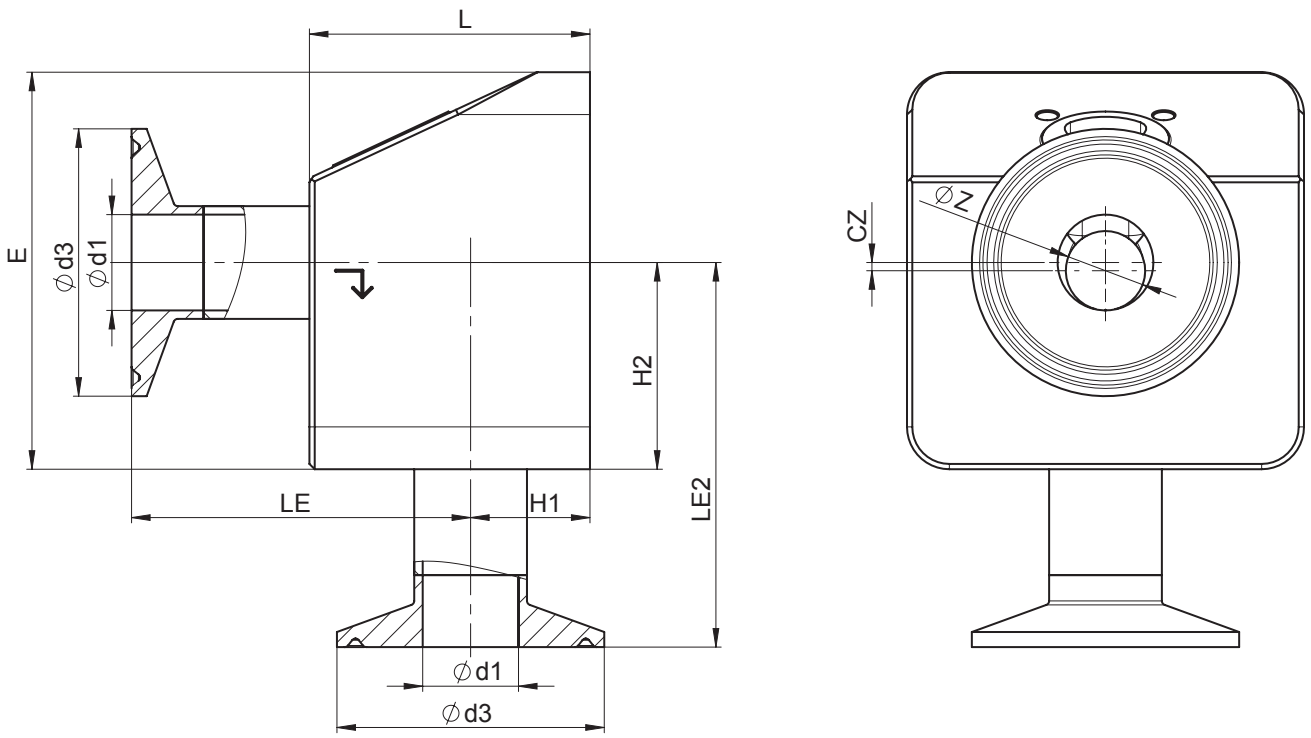


AG	DN	Connection type code 86 [1]										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	53.0	75.0	2.0	68.5	73.5	17.5	40.5	3.0	8.0	25.0
		B	53.0	75.0	4.0	68.5	72.5	17.5	39.5	2.0	8.0	25.0
		C	53.0	75.0	6.0	68.5	71.5	17.5	38.5	1.0	8.0	25.0
	10	A	53.0	75.0	2.0	67.5	74.5	18.5	41.5	4.0	10.0	34.0
		B	53.0	75.0	4.0	67.5	73.5	18.5	40.5	3.0	10.0	34.0
		C	53.0	75.0	6.0	67.5	72.5	18.5	39.5	2.0	10.0	34.0
		D	53.0	75.0	8.0	67.5	71.5	18.5	38.5	1.0	10.0	34.0
	15	A	53.0	75.0	2.0	64.5	77.5	21.5	44.5	7.0	16.0	34.0
		B	53.0	75.0	4.0	64.5	76.5	21.5	43.5	6.0	16.0	34.0
		C	53.0	75.0	6.0	64.5	75.5	21.5	42.5	5.0	16.0	34.0
		D	53.0	75.0	8.0	64.5	74.5	21.5	41.5	4.0	16.0	34.0
		E	53.0	75.0	10.0	64.5	73.5	21.5	40.5	3.0	16.0	34.0
		G	53.0	75.0	15.0	64.5	71.0	21.5	38.0	0.5	16.0	34.0

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 86: Clamp DIN 32676 series A

5.2.14 Clamp with bypass code 88



AG	DN	Connection type code 88 [1]										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	15	A	53.0	75.0	2.0	67.8	74.20	18.2	41.20	3.70	9.40	25.0
		B	53.0	75.0	4.0	67.8	73.20	18.2	40.20	2.70	9.40	25.0
		C	53.0	75.0	6.0	67.8	72.20	18.2	39.20	1.70	9.40	25.0
		D	53.0	75.0	8.0	67.8	71.20	18.2	38.20	0.70	9.40	25.0
	20	A	53.0	75.0	2.0	64.6	77.38	21.4	44.38	6.88	15.75	25.0
		B	53.0	75.0	4.0	64.6	76.38	21.4	43.38	5.88	15.75	25.0
		C	53.0	75.0	6.0	64.6	75.38	21.4	42.38	4.88	15.75	25.0
		D	53.0	75.0	8.0	64.6	74.38	21.4	41.38	3.88	15.75	25.0
		E	53.0	75.0	10.0	64.6	73.38	21.4	40.38	2.88	15.75	25.0
		G	53.0	75.0	15.0	64.6	70.88	21.4	37.88	0.38	15.75	25.0

Dimensions in mm
AG = actuator size

1) **Connection type**
Code 88: Clamp ASME BPE

6 Manufacturer's information

The controller required for valve operation is not included in the scope of delivery.

6.1 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.

6.2 Packaging

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

6.3 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.

6.4 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.

7 Installation in piping

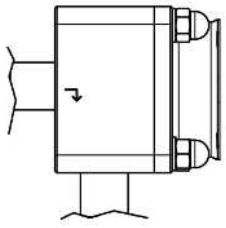
7.1 Installation location

⚠ CAUTION

- Do not apply external force to the valve.
- Choose the installation location so that the valve cannot be used as a foothold.
- Lay the pipeline so that the valve body is protected against transverse and bending forces, and also vibrations and tension.
- Only install the valve between matching aligned pipes.

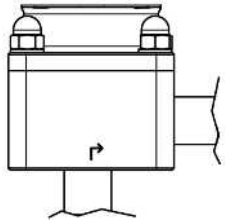
NOTICE

- Install the actuator horizontally for optimized draining.
- The flow direction of the working medium is indicated by an arrow on the valve body.



in closed and open position

Actuator horizontal



in open position

Actuator horizontal or vertical

Control range

We recommend designing the valves in such a way that the control range is within an opening stroke of 20% to 90% of the control valve.

7.2 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 appropriate protective gear.
- Completely drain the plant.

⚠ CAUTION

Hot plant components!

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

⚠ 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").

7.3 Installation with clamp connections

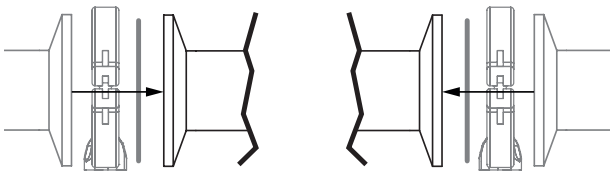


Fig. 1: Clamp connection

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 preparation for installation (see chapter "Preparing for installation").
3. Insert the corresponding gasket between the body of the product and the pipe connection.
4. Connect the gasket between the body of the product and the pipe connection using clamps.
5. Re-attach or reactivate all safety and protective devices.

7.4 Installation with butt weld spigots

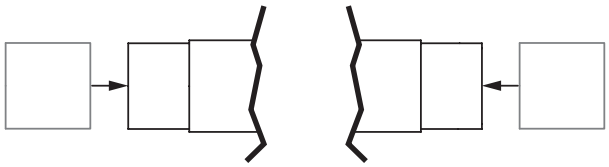
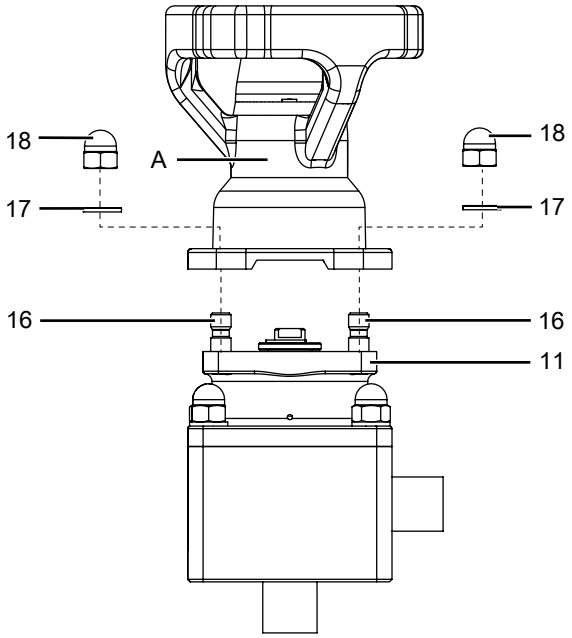


Fig. 2: Butt weld spigots

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

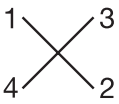
8 Mounting

Mounting the actuator on the distance piece:

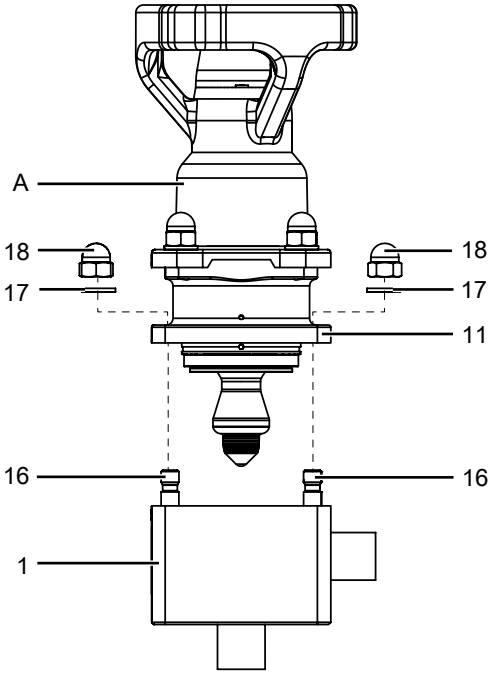


1. Move actuator **A** to the open position.
2. Place actuator **A** on distance piece **11**.
3. Place washers **17** and cap nuts **18** on stud bolts **16** and position by hand.
4. Tighten the cap nuts **18** diagonally.

Actuator size	Tightening torque
2	16-20 Nm
3	30-35 Nm
4	40 Nm
5	70 Nm



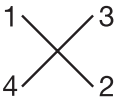
Mounting the actuator and the distance piece:



✓ **Actuator size 4/5:** Actuator **A** in open position.

5. Place actuator **A** and distance piece **11** on valve body **1**.
6. Place washers **17** and cap nuts **18** on stud bolts **16** and position by hand.
7. Tighten the cap nuts **18** diagonally.

Actuator size	Tightening torque
2	16-20 Nm
3	30-35 Nm
4	40 Nm
5	70 Nm



8.1 Mounting for option with a bypass valve

8.1.1 Mounting the diaphragm

NOTICE

► **Important:** Mount the correct diaphragm that suits the valve (suitable for medium, medium concentration, temperature and pressure). The diaphragm is a wearing part. Check the technical condition and function of the diaphragm valve before commissioning and during the whole term of use. Carry out checks regularly and determine the check intervals in accordance with the conditions of use and/or the regulatory codes and provisions applicable for this application.

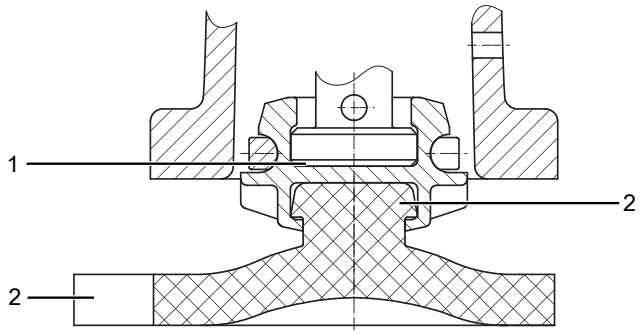
NOTICE

► **Important:** Incorrectly mounted diaphragm may cause valve leakage / emission of medium. In this case remove the diaphragm, check the complete valve and diaphragm and reassemble again proceeding as described above.

Diaphragm size 8:

Compressor and actuator flange seen from below:

Push-fit diaphragm:



Item	Name
1	Recess of compressor
2	Diaphragm tab
3	Fastening spigot

1. Move the actuator to the closed position.
2. Place the diaphragm with the fastening spigot in an inclined position at the recess of the compressor and push it in.

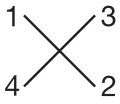
NOTICE

► **Important:** Do not use greases or lubricants!

3. Align diaphragm tab with identifying manufacturer and material in parallel to compressor weir.

8.1.2 Mounting the actuator

1. Move the actuator to the open position.
2. Position the actuator with the mounted diaphragm on the valve body.
   ⇨ Take care to align the compressor weir and valve body weir (diaphragm size 8).
3. Tighten the fastening elements by hand.
4. Move the actuator to the closed position.
5. Fully tighten the bolts with nuts diagonally



6. Ensure that the diaphragm is compressed evenly (approx. 10-15 %, visible by an even bulge to the outside).
7. Check tightness of completely assembled valve.

NOTICE

► **Important:** Diaphragms set in the course of time. After valve disassembly / assembly check that the bolts and nuts on the body are tight and retighten if necessary (at the very latest after the first sterilisation process).

9 Troubleshooting

Error	Error cause	Troubleshooting
Working medium escaping from leak detection hole	Plug diaphragm faulty	Check plug diaphragm for potential damage, replace plug diaphragm if necessary
The product does not open or does not open fully	Actuator faulty	Replace actuator cartridge, replace actuator if necessary
	Plug diaphragm incorrectly mounted	Remove actuator, check plug diaphragm mounting, replace plug diaphragm if necessary
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
	Plug diaphragm incorrectly mounted	Remove actuator, check plug diaphragm mounting, correct if necessary
	Foreign matter between plug diaphragm and valve seat	Remove actuator, remove foreign matter, check plug diaphragm and valve body for damage and replace if necessary
	Plug diaphragm faulty	Check plug diaphragm for potential damage, replace plug diaphragm if necessary
The product is leaking in the passage (does not close or does not close completely).	Valve body leaking or damaged	Carry out initialisation, check valve body for damage, replace valve body if necessary.
The product is leaking between actuator and valve body	Plug diaphragm incorrectly mounted	Remove actuator, check plug diaphragm mounting, correct if necessary
	Bolting between valve body and actuator loose	Tighten bolting between valve body and actuator
	Plug diaphragm faulty	Check plug diaphragm for potential damage, replace plug diaphragm if necessary
	Actuator/valve body damaged	Replace actuator/valve body
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
	Sealing material faulty	Replace sealing material
Valve body leaking	Valve body leaking or corroded	Check valve body for damage, replace valve body if necessary

10 Inspection and maintenance

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 dependent 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 the 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.

10.1 Replacing the actuator

10.1.1 Remove the actuator from the distance piece.

⚠ WARNING

The equipment is subject to pressure!

► Risk of severe injury or death

● Depressurize the plant.

● Completely drain the plant.

⚠ CAUTION

Hot plant components!

► Risk of burns

● Only work on plant that has cooled down.

⚠ WARNING

Corrosive chemicals!

► Risk of caustic burns

● Wear appropriate protective gear.

● Completely drain the plant.

⚠ CAUTION

Use of incorrect spare parts!

► Damage to the GEMÜ product

► Manufacturer liability and guarantee will be void

● Use only genuine parts from GEMÜ.

NOTICE

Important:

► After disassembly, clean all parts of contamination. Take care not to damage the parts in the process. Afterwards, check parts for potential damage. If parts are damaged, replace them.

⚠ CAUTION

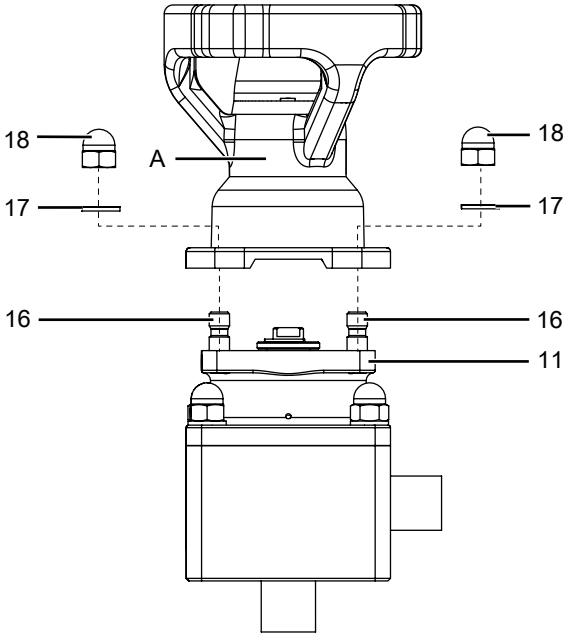
Valve is no longer functioning correctly

► Damaged parts are reused.

● Remove and clean all parts, check for damage and replace if necessary.

NOTICE

► The piping need not be drained when replacing the actuator, as the valve spindle is sealed by the plug diaphragm.

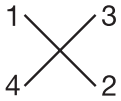


1. Move the actuator **A** to the open position.
2. Undo the cap nuts **18** from the stud bolts **16**.
3. Remove the washers **17**.
4. Remove the actuator **A** from the distance piece **11**.

10.1.2 Mounting the actuator on the distance piece

1. Move actuator **A** to the open position.
2. Place actuator **A** on distance piece **11**.
3. Place washers **17** and cap nuts **18** on stud bolts **16** and position by hand.
4. Tighten the cap nuts **18** diagonally.

Actuator size	Tightening torque
2	16-20 Nm
3	30-35 Nm
4	40 Nm
5	70 Nm



10.1.3 Removing the actuator with the distance piece

⚠ WARNING

The equipment is subject to pressure!

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

⚠ CAUTION

Hot plant components!

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

⚠ WARNING

Corrosive chemicals!

- ► Risk of caustic burns
- ● Wear appropriate protective gear.
- ● Completely drain the plant.

⚠ CAUTION

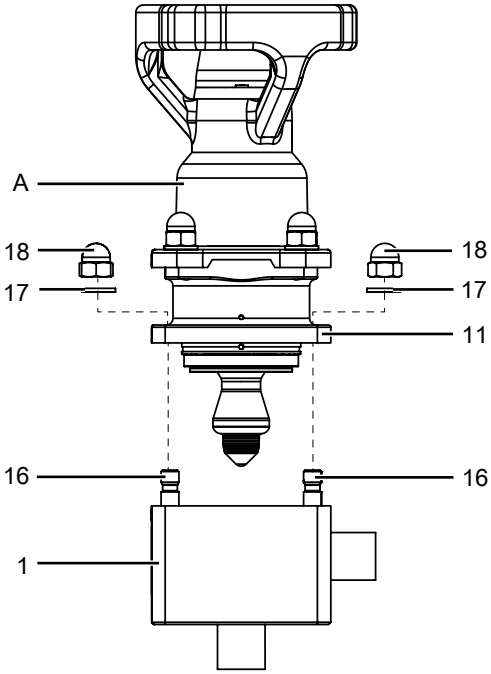
Use of incorrect spare parts!

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

⚠ CAUTION

Valve is no longer functioning correctly

- ► Damaged parts are reused.
- ● Remove and clean all parts, check for damage and replace if necessary.



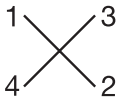
1. Undo the cap nuts **18** from the stud bolts **16**.
2. Remove the washers **17**.
3. Remove the actuator **A**, including the distance piece **11**, from the valve body **1**.
   ⇨ Do not damage the sealing surface!

10.1.4 Mounting the actuator with the distance piece

✓ **Actuator size 4/5:** Actuator **A** in open position.

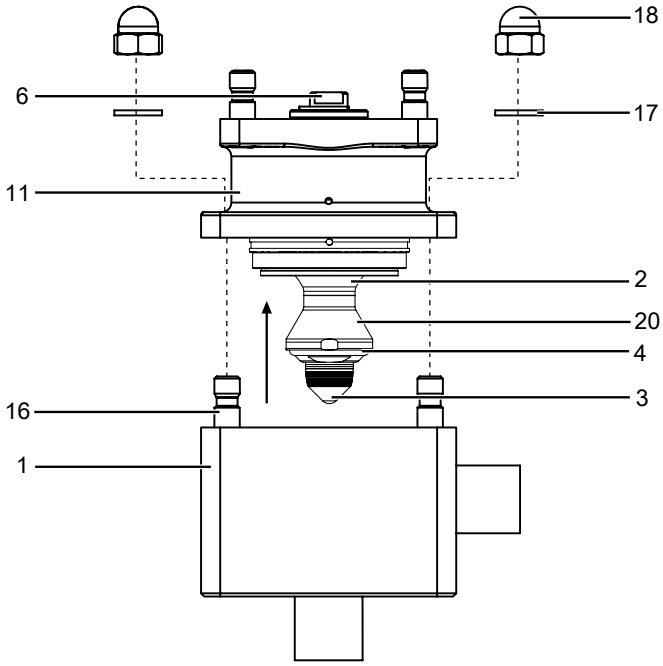
1. Place actuator **A** and distance piece **11** on valve body **1**.
2. Place washers **17** and cap nuts **18** on stud bolts **16** and position by hand.
3. Tighten the cap nuts **18** diagonally.

Actuator size	Tightening torque
2	16-20 Nm
3	30-35 Nm
4	40 Nm
5	70 Nm

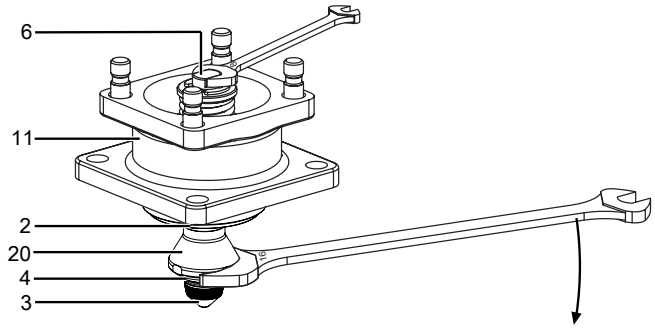


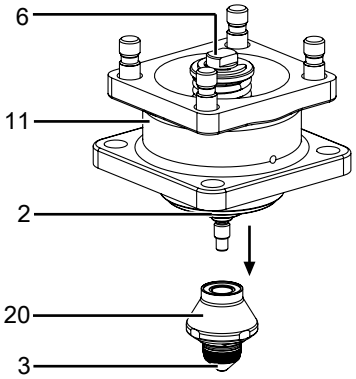
10.2 Replacing the regulating cone

10.2.1 Removing the regulating cone

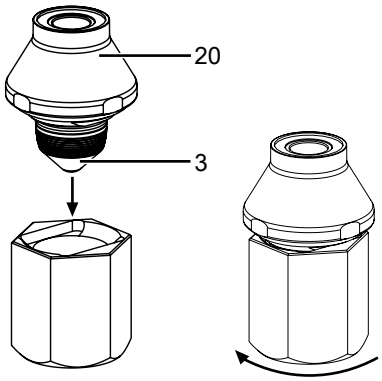


1. Remove the actuator (see chapter "Removing the actuator from the distance piece").
2. Undo the cap nuts **18** from the stud bolts **16**.
3. Remove the washers **17**.
4. Remove the valve body **1** from the distance piece **11**.
   ⇨ Do not damage the sealing surfaces!

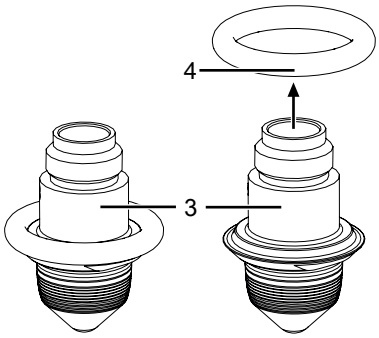




5. Position a **WAF 8** open-end wrench on the wrench surface of the valve spindle **6** (do not damage the spindle surfaces in the process).
6. Simultaneously, position a **WAF 16** open-end wrench on the support ring **20**. By counterholding both open-end wrenches, carefully release the support ring **20** with the regulating cone **3** from the valve spindle **6**.

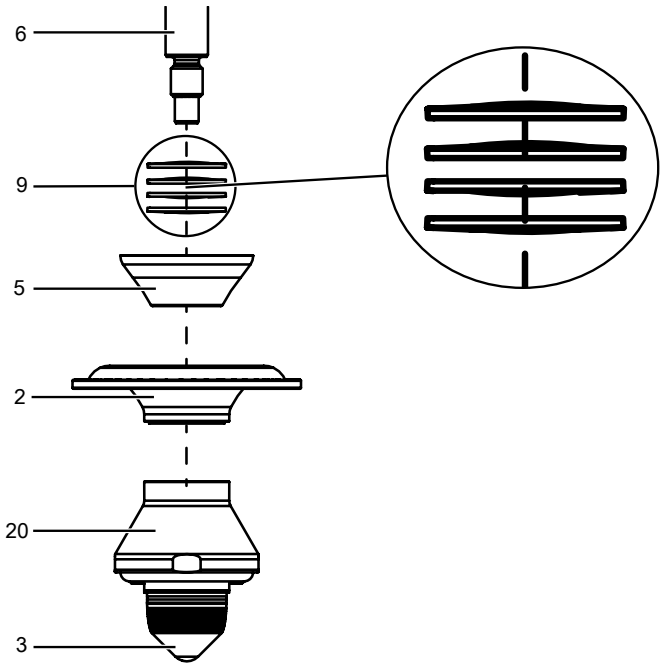


7. Hold the support ring **20** in place and release the regulating cone **3** using the assembly tool. Do not damage the regulating cone surface in the process.

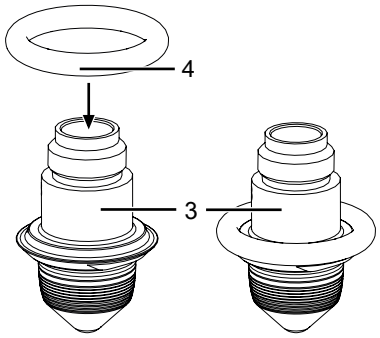


8. Remove the O-ring **4** from the regulating cone **3**.
9. Carefully remove the solvent cement from the thread on the regulating cone **3** (e.g. using a stainless steel brush).
   ⇨ Do not damage the regulating cone surface in the process.

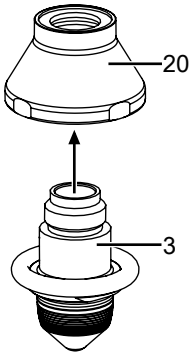
10.2.2 Mounting the regulating cone



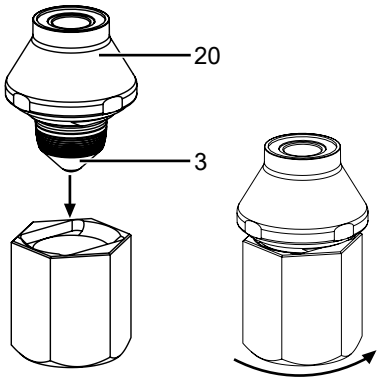
If when removing the regulating cone **3** the plug diaphragm **2**, the adjustable insert **5** and the spring washers **9** are loosened, these must be placed back in the correct position before mounting the regulating cone **3**!



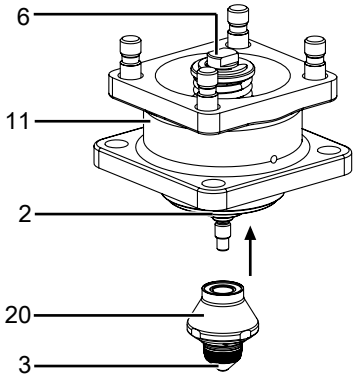
1. Mount the O-ring **4** on the regulating cone **3**.



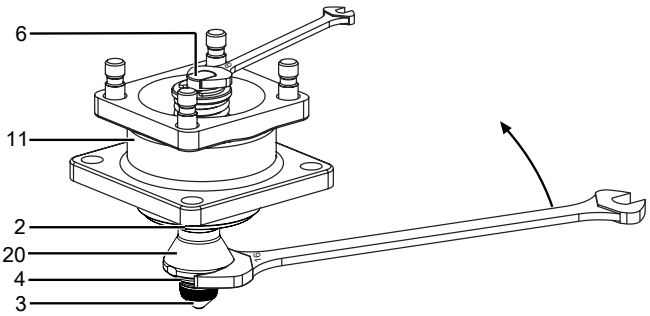
2. Wet the thread of the regulating cone **3** with suitable thread locking compound (e.g. WEICONLOCK AN 301-65).
3. Screw the regulating cone **3** into the support ring **20** until it is hand tight.



4. Hold the support ring **20** in place and secure the regulating cone **3** using the assembly tool and hand-tighten it.
   ⇨ Do not damage the regulating cone surface in the process.



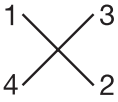
5. Screw the support ring **20** to the valve spindle **6** and hand-tighten it.
   ⇨ Where necessary, wet the thread of the valve spindle **6** with suitable thread locking compound (e.g. WEICONLOCK AN 301-65).



6. Position a **WAF 16** open-end wrench on the regulating cone **3**. Simultaneously, position a **WAF 8** open-end wrench on the wrench surface of the valve spindle **6**. By counterholding both open-end wrenches, carefully bolt the support ring **20** with the regulating cone **3** to the valve spindle **6** (tightening torque: 7-9 Nm).
7. Place the distance piece **11** onto the valve body **1**.
8. Place washers **17** and cap nuts **18** on stud bolts **16** and position by hand.
9. Tighten the cap nuts **18** diagonally.

Actuator size	Tightening torque
2	16-20 Nm
3	30-35 Nm

Actuator size	Tightening torque
4	40 Nm
5	70 Nm



10.3 Replacing the plug diaphragm (code 4)

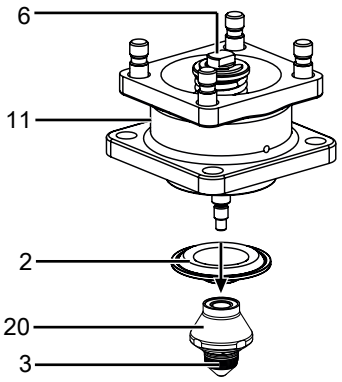
10.3.1 Removing the plug diaphragm

⚠ CAUTION

Use of incorrect spare parts!

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

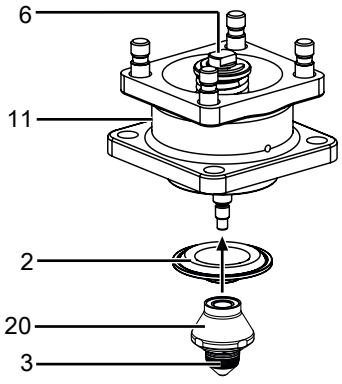
1. Remove the support ring **20** and the regulating cone **3** (see chapter "Removing the regulating cone").



2. Remove the plug diaphragm **2** from the valve spindle **6**.
3. Clean all parts and check them for potential damage.
   ⇨ Do not scratch or damage parts during cleaning!
4. Replace damaged parts (only use genuine parts from GEMÜ).

10.3.2 Mounting the plug diaphragm

1. Position plug diaphragm **2** at distance piece **11** via valve spindle **6**



   ⇨ Where necessary, wet the thread of the valve spindle **6** with suitable thread locking compound (e.g. WEICON-LOCK AN 301-65).
2. Mount the support ring **20** and the regulating cone **3** (see chapter "Mounting the regulating cone").

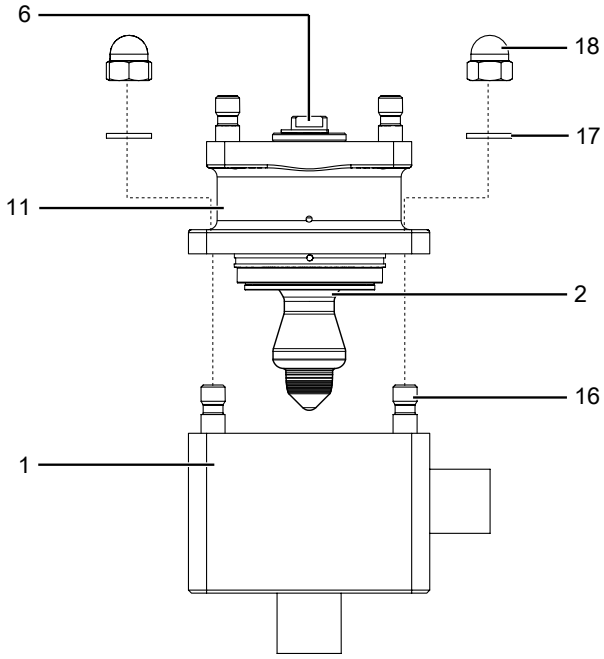
10.4 Replacing the plug diaphragm (code 5)

10.4.1 Removing the plug diaphragm

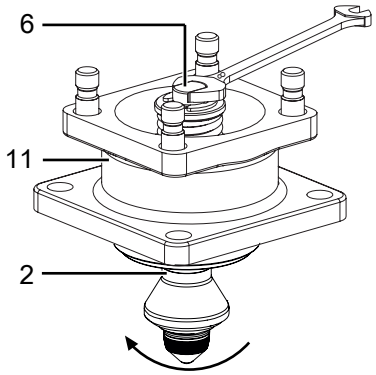
⚠ CAUTION

Use of incorrect spare parts!

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

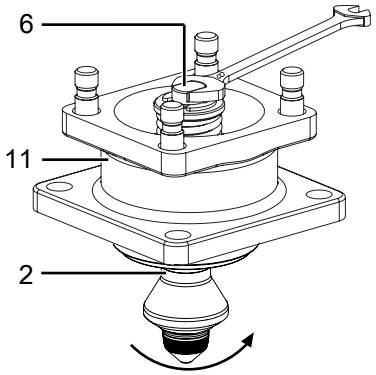


1. Remove the actuator (see chapter "Removing the actuator from the distance piece").
2. Undo the cap nuts **18** from the stud bolts **16**.
3. Remove the washers **17**.
4. Remove the valve body **1** from the distance piece **11**.
   ⇨ Do not damage the sealing surfaces!



5. Position a **WAF 8** open-end wrench on the wrench surface of the valve spindle **6** (do not damage the spindle surfaces in the process).
6. Undo the plug diaphragm **2**.

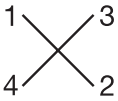
10.4.2 Mounting the plug diaphragm



✓ **Actuator size 4/5:** Press valve spindle **6** downwards to screw in the plug diaphragm **2** completely.

1. Screw the plug diaphragm **2** to the valve spindle **6** and hand-tighten it.
2. Place the distance piece **11** onto the valve body **1**.
3. Place washers **17** and cap nuts **18** on stud bolts **16** and position by hand.
4. Tighten the cap nuts **18** diagonally.

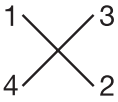
Actuator size	Tightening torque
2	16-20 Nm
3	30-35 Nm
4	40 Nm
5	70 Nm



10.5 Replacing the bypass valve actuator

10.5.1 Removing the actuator

1. Move the actuator to the open position.
2. Loosen fastening elements between the valve body and the actuator diagonally and remove them.



3. Remove the actuator from the valve body.
4. Move the actuator to the closed position.

NOTICE

Important:

► After disassembly, clean all parts of contamination. Take care not to damage the parts in the process. Afterwards, check parts for potential damage. If parts are damaged, replace them.

10.5.2 Removing the diaphragm

NOTICE

► Before removing the diaphragm, remove the actuator, see previous chapter "Removing the actuator").

1. Pull out the diaphragm (diaphragm size 8).

NOTICE

Important:

► After disassembly, clean all parts of contamination. Take care not to damage the parts in the process. Afterwards, check parts for potential damage. If parts are damaged, replace them.

2. Use only genuine parts from GEMÜ.

10.5.3 Mounting the diaphragm

NOTICE

► **Important:** Mount the correct diaphragm that suits the valve (suitable for medium, medium concentration, temperature and pressure). The diaphragm is a wearing part. Check the technical condition and function of the diaphragm valve before commissioning and during the whole term of use. Carry out checks regularly and determine the check intervals in accordance with the conditions of use and/or the regulatory codes and provisions applicable for this application.

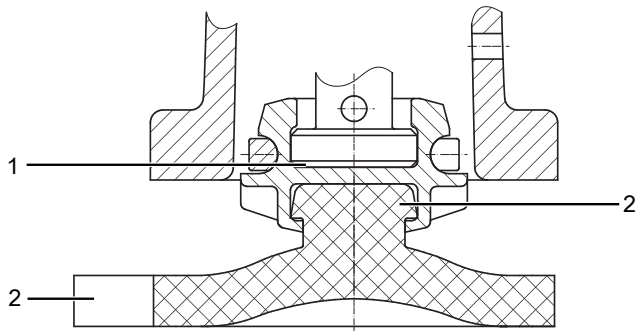
NOTICE

► **Important:** Incorrectly mounted diaphragm may cause valve leakage / emission of medium. In this case remove the diaphragm, check the complete valve and diaphragm and reassemble again proceeding as described above.

Diaphragm size 8:

Compressor and actuator flange seen from below:

Push-fit diaphragm:



Item	Name
1	Recess of compressor
2	Diaphragm tab
3	Fastening spigot

1. Move the actuator to the closed position.
2. Place the diaphragm with the fastening spigot in an inclined position at the recess of the compressor and push it in.

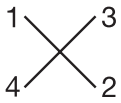
NOTICE

► **Important:** Do not use greases or lubricants!

3. Align diaphragm tab with identifying manufacturer and material in parallel to compressor weir.

10.5.4 Mounting the actuator

1. Move the actuator to the open position.
2. Position the actuator with the mounted diaphragm on the valve body.
   ⇨ Take care to align the compressor weir and valve body weir (diaphragm size 8).
3. Tighten the fastening elements by hand.
4. Move the actuator to the closed position.
5. Fully tighten the bolts with nuts diagonally



6. Ensure that the diaphragm is compressed evenly (approx. 10-15 %, visible by an even bulge to the outside).
7. Check tightness of completely assembled valve.

NOTICE

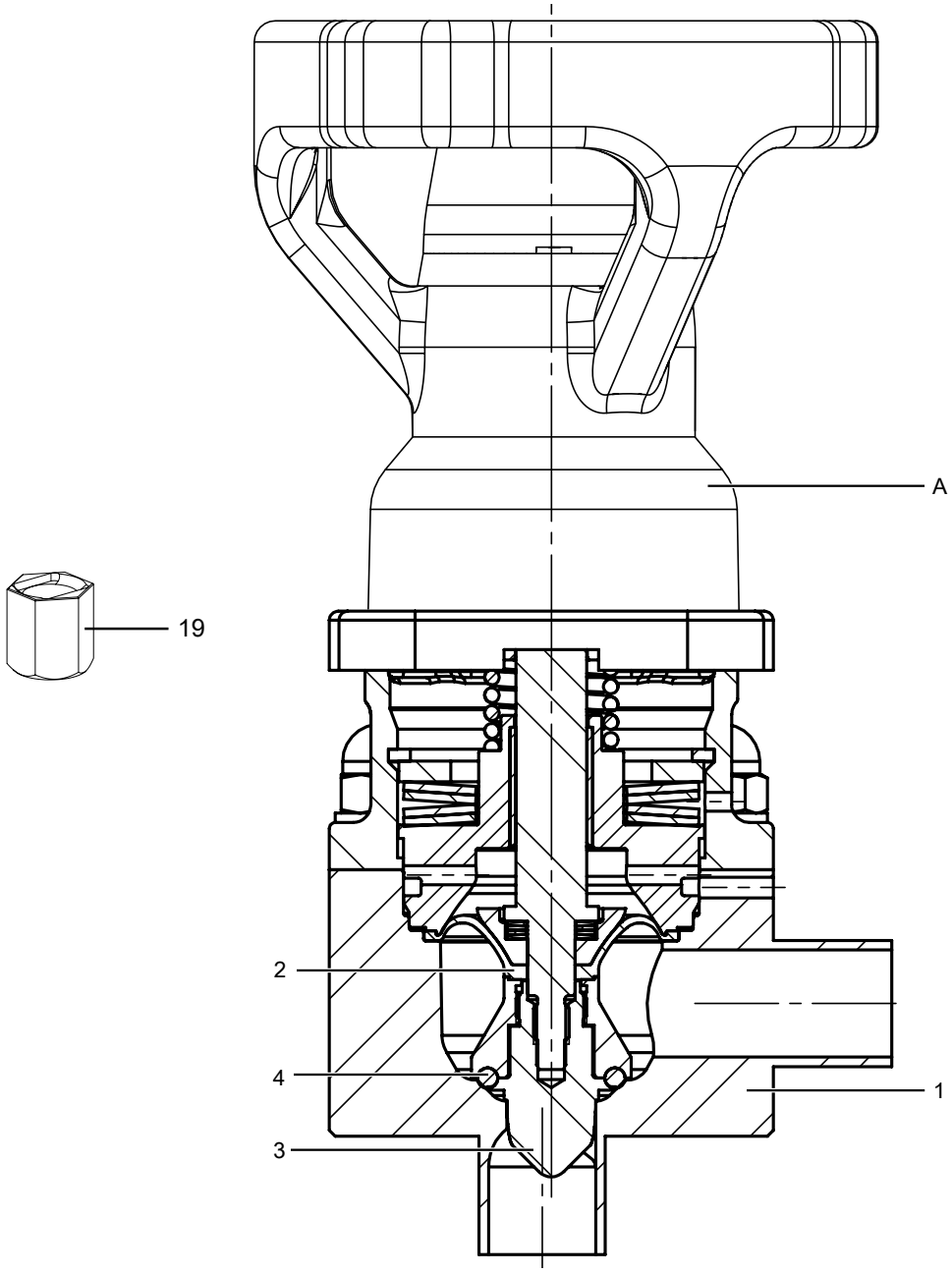
► **Important:** Diaphragms set in the course of time. After valve disassembly / assembly check that the bolts and nuts on the body are tight and retighten if necessary (at the very latest after the first sterilisation process).

10.6 Cleaning the product

- Clean the product with a damp cloth.
- Do **not** clean the product with a high pressure cleaning device.

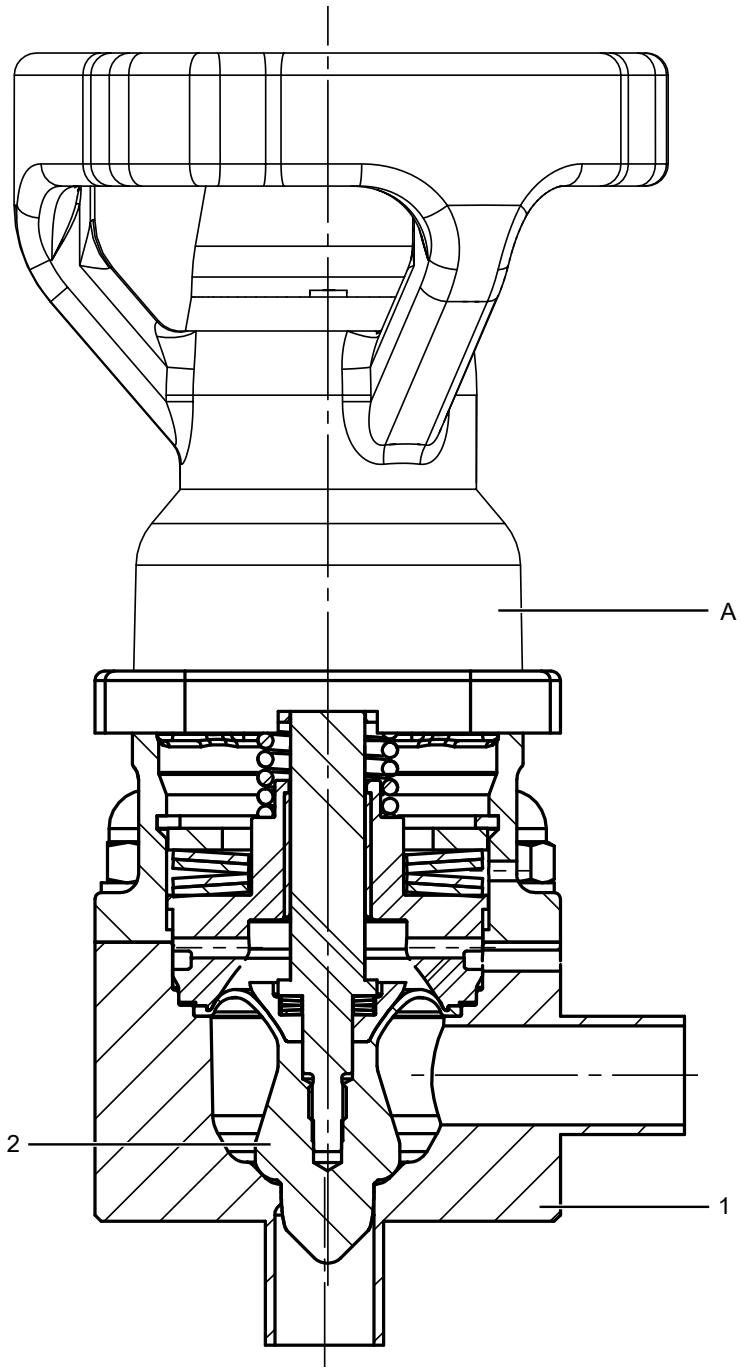
10.7 Spare parts

10.7.1 Seal material code 4, 43, 45. 47



Item	Name	Order description
A	Actuator	9567
1	Valve body	K567
2	Plug diaphragm	567 SVS...
4	O-ring	
2	Plug diaphragm	567 SVM...
4	O-ring	
19	Assembly tool	
2	Plug diaphragm	567 SRK 4...
3	Regulating cone	
4	O-ring	
19	Assembly tool	
	Set of screws (88491207)	567 S30E 41 2

10.7.2 Seal material code 5, 55



Item	Name	Order description
A	Actuator	9567
1	Valve body	K567
2	Plug diaphragm with regulating cone	567 SRK 5…
	Set of screws (88491207)	567 S30E 41 2

11 Removal from piping

1. Remove the clamp or screw connections in reverse order to installation.
2. Remove welded or solvent cemented connections using a suitable cutting tool.
3. Observe the safety information and accident prevention regulations.

12 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.

13 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.

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

EU Declaration of Conformity

in accordance with 2014/68/EU (Pressure Equipment Directive)

We, the company

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.

Note for products with a nominal size ≤ 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.

Description of the pressure equipment:	GEMÜ 567
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:	AD 2000

2023-11-23

Joachim Brien
Head of BU Industry

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