

## **GEMÜ 567 BioStar control** Manually operated control valve



### **Features**

- Hermetic separation between medium and actuator due to PD sealing technology
- Easy, fast, and error-optimized maintenance
- Actuator can be replaced under operating pressure without contaminating the medium
- FDA compliant as standard and suitable for contact with food according to Regulation (EC) No. 1935/2004
- Highly suitable for precise control applications

### **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.

### **Technical specifications**

- **Media temperature:** 14 to 320 °F
- **Ambient temperature:** 14 to 140 °F
- **Operating pressure:** 0 to 150 psi
- **Nominal sizes:** 1/4" (DN 8) to 1" (DN 25)
- **Body configurations:** Angle valve body | Multi-port body
- **Connection standards:** ASME | DIN | EN | ISO
- **Body materials:** 1.4410, block material | 1.4435 (316L), block material | 1.4435 (BN2), block material | 1.4529, block material | 1.4539 (904L), block material | 2.4602, block material
- **Seal materials:** PTFE | Stainless steel/FKM/PTFE
- **Conformities:** 3A | ATEX | EAC | FDA | Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 | Regulation (EC) No. 2023/2006 | USP

Technical data depends on the respective configuration



further information  
webcode: GW-567



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## Product comparison



**GEMÜ 567  
eSyDrive**

**GEMÜ 567  
servoDrive**

**GEMÜ 567  
BioStar control**

**GEMÜ 567  
BioStar control**

	<b>GEMÜ 567 eSyDrive</b>	<b>GEMÜ 567 servoDrive</b>	<b>GEMÜ 567 BioStar control</b>	<b>GEMÜ 567 BioStar control</b>
<b>Operation</b>				
Manual	-	-	●	-
pneumatic	-	-	-	●
Motorized	●	●	-	-
<b>Nominal sizes</b>	DN 8 to 65	DN 8 to 20	DN 8 to 25	DN 8 to 65
<b>Operating pressure</b>	0 to 10 bar	0 to 7 bar	0 to 10 bar	0 to 10 bar
<b>Body material</b>				
1.4410, block material	●	●	●	●
1.4435 (316L), block material	●	●	●	●
1.4435 (BN2), block material	●	●	●	●
1.4529, block material	●	●	●	●
1.4539 (904L), block material	●	●	●	●
2.4602, block material	●	●	●	●
<b>Connection types</b>				
Clamp	●	●	●	●
Spigot	●	●	●	●

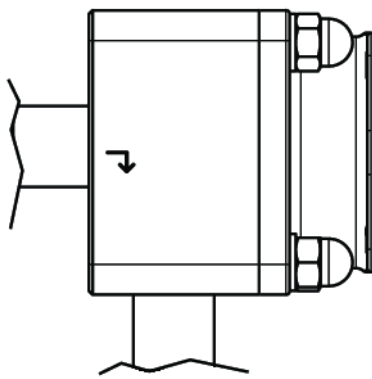
## Product description

### Construction

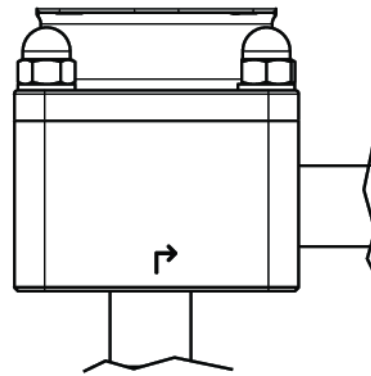
Item	Name	Materials
1	Handwheel	
2	Actuator housing	1.4305
3	Distance piece	1.4404
4	Valve body with leak detection hole	1.4435, 1.4539, 2.4602, 1.4410, 1.4529
5	CONEXO RFID chip	
6	Plug diaphragm	PTFE

### Flow direction

#### Installation position for optimized draining



in closed and open position  
Actuator horizontal

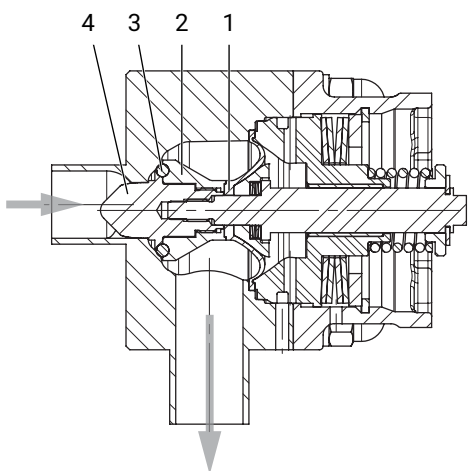


in open position  
Actuator horizontal or vertical

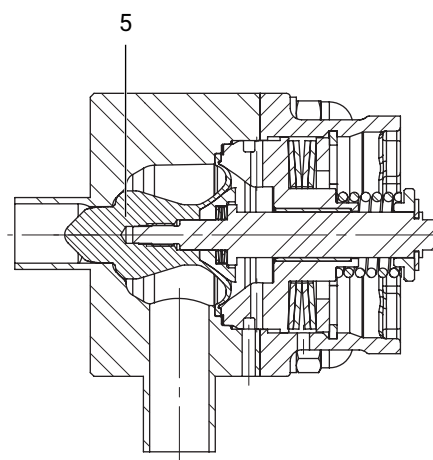
### Control range

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.

### PD seal system without bypass



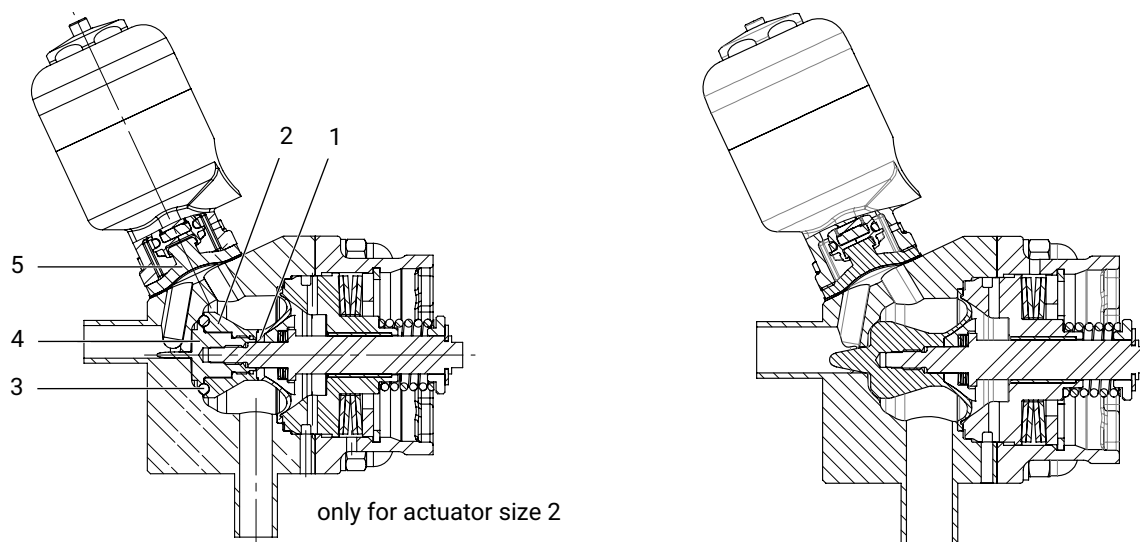
Seal material code 4



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

### **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

## **GEMÜ CONEXO**

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



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

**For further information on GEMÜ CONEXO please visit:**

[www.gemu-group.com/conexo](http://www.gemu-group.com/conexo)

### **Ordering**

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

## Availability

### Availability of valve bodies

#### Spigot without bypass

DN	Connection type code <sup>1)</sup>			
	0	17	59	60
8	-	X	-	X
10	-	X	-	X
15	X	X	X	X
20	X	X	X	X
25	X	X	X	X

1) **Connection type**

Code 0: Spigot DIN

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

Code 59: Spigot ASME BPE / DIN 11866 series C

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

#### Spigot with bypass

DN	Connection type code <sup>1)</sup>			
	0	17	59	60
8	-	X	-	X
10	-	X	-	X
15	X	X	X	X
20	-	-	X	-

1) **Connection type**

Code 0: Spigot DIN

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

Code 59: Spigot ASME BPE / DIN 11866 series C

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

**Clamp without bypass**

DN	Connection type code <sup>1)</sup>		
	82	86	88
<b>8</b>	X	X	-
<b>10</b>	X	X	-
<b>15</b>	X	X	X
<b>20</b>	X	X	X
<b>25</b>	X	X	X

1) **Connection type**

Code 82: Clamp DIN 32676 series B

Code 86: Clamp DIN 32676 series A

Code 88: Clamp ASME BPE

**Clamp with bypass**

DN	Connection type code <sup>1)</sup>		
	82	86	88
<b>8</b>	X	X	-
<b>10</b>	X	X	-
<b>15</b>	X	X	X
<b>20</b>	-	-	X

1) **Connection type**

Code 82: Clamp DIN 32676 series B

Code 86: Clamp DIN 32676 series A

Code 88: Clamp ASME BPE



## Availability of grades of surface finish

### Internal surface finishes for forged and block material bodies<sup>1)</sup>

Readings for Process Contact Surfaces	Mechanically polished <sup>2)</sup>		Electropolished	
	Hygienic class DIN 11866	Code	Hygienic class DIN 11866	Code
Ra ≤ 0.80 µm	H3	1502	HE3	1503
Ra ≤ 0.60 µm	-	1507	-	1508
Ra ≤ 0.40 µm	H4	1536	HE4	1537
Ra ≤ 0.25 µm <sup>3)</sup>	H5	1527	HE5	1516

Readings for Process Contact Surfaces acc. to ASME BPE 2016 <sup>4)</sup>	Mechanically polished <sup>2)</sup>		Electropolished	
	ASME BPE Surface Designation	Code	ASME BPE Surface Designation	Code
Ra Max. = 0.76 µm (30 µinch)	SF3	SF3	-	-
Ra Max. = 0.64 µm (25 µinch)	SF2	SF2	SF6	SF6
Ra Max. = 0.51 µm (20 µinch)	SF1	SF1	SF5	SF5
Ra Max. = 0.38 µm (15 µinch)	-	-	SF4	SF4

### Internal surface finishes for investment cast bodies

Readings for Process Contact Surfaces	Mechanically polished <sup>2)</sup>	
	Hygienic class DIN 11866	Code
Ra ≤ 6.30 µm	-	1500
Ra ≤ 0.80 µm	H3	1502
Ra ≤ 0.60 µm	-	1507

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

- 1) Surface finishes of customized valve bodies may be limited in special cases.
- 2) Or any other finishing method that meets the Ra value (acc. to ASME BPE).
- 3) The maximum Ra finish achievable for pipe connections with an internal pipe diameter < 6 mm is 0.38 µm.
- 4) When using these surfaces, the bodies are marked according to the specifications of ASME BPE.  
The surfaces are only available for valve bodies which are made of materials (e.g. GEMÜ material codes 40, 41, F4, 44)) and use connections (e.g. GEMÜ connection codes 59, 80, 88) according to ASME BPE.

## 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
<b>Spigot</b>	
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
<b>Clamp</b>	
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, $\Delta$ 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
<b>Stainless steel handwheel</b>	
<b>Actuator size 2</b>	
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
<b>Actuator size 3</b>	
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
<b>Plastic handwheel</b>	
<b>Actuator size 2</b>	
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
<b>Actuator size 3</b>	
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 m <sup>3</sup> /h	CG
1.6 m <sup>3</sup> /h	DH
2.6 m <sup>3</sup> /h	EJ
4.1 m <sup>3</sup> /h	G1
8.0 m <sup>3</sup> /h	H2
12.5 m <sup>3</sup> /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

13 Special version	Code
Special version for 3A	M
Special version for oxygen, maximum medium temperature: 60 °C, media wetted seal materials and auxiliary materials with BAM testing	S

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

**Order example without bypass**

Order 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 m <sup>3</sup> /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**

Order 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 m <sup>3</sup> /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

## Technical data

### Medium

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

### Temperature

<b>Media temperature:</b>	Without bypass	14 to 320 °F
	With bypass	14 to 212 °F
	Observe pressure/temperature diagram	
<b>Sterilisation temperature:</b>	Seat seal FKM without bypass, (code 4)	320 °F <sup>1)</sup> , steam max. 30 min <sup>2)</sup>
	Seat seal PTFE without bypass, (code 5)	320 °F <sup>1)</sup> , steam max. 30 min <sup>2)</sup>
	Seat seal FKM bypass diaphragm material EPDM, (code 43)	302 °F <sup>3)</sup> , max. 30 min
	Seat seal FKM bypass diaphragm material PTFE/EPDM, PTFE laminated, (code 45)	302 °F <sup>3)</sup> , max. 30 min
	Seat seal FKM bypass diaphragm material EPDM, (code 47)	302 °F <sup>3)</sup> , max. 30 min
	Seat seal PTFE	302 °F <sup>3)</sup> , max. 30 min
	bypass diaphragm material PTFE/EPDM, PTFE laminated, (code 55)	302 °F <sup>3)</sup> , max. 30 min

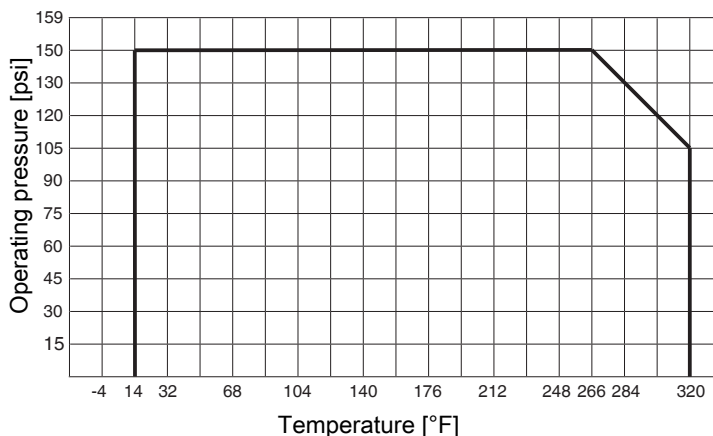
- 1) The sterilisation temperature is only valid for steam (saturated steam) or superheated water.
- 2) Longer sterilization times or continuous operation on request.
- 3) If the sterilisation temperatures listed above are applied to the EPDM diaphragms for longer periods of time, the service life of the diaphragms will be reduced. In these cases, maintenance cycles must be adapted accordingly

**Storage temperature:** 14 – 104 °F

### Pressure

**Operating pressure:** 0 – 150 psi  
 All pressures are psi - gauge pressures. Operating pressure values were determined with static operating pressure applied on one side of a closed valve. Sealing at the valve seat and atmospheric sealing is ensured for the given values.  
 Information on operating pressures applied on both sides and for high purity media on request.

**Pressure/Temperature diagram**



**Leakage rate:**

**Control valve**

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

**Cv-values:**

Seal material code	Control characteristic	Kv value	DN 8	DN 10	DN 15	DN 20	DN 25
<b>4, 43, 45, 47, F, F5</b>	<b>GAA, LAA</b>	80 l/h	X	X	X	-	-
	<b>GAB, LAB</b>	100 l/h	X	X	X	-	-
	<b>GBC, LBC</b>	160 l/h	X	X	X	-	-
	<b>GBD, LBD</b>	250 l/h	X	X	X	-	-
	<b>GBE, LBE</b>	400 l/h	X	X	X	-	-
<b>5, 55</b>	<b>GCF, LCF</b>	630 l/h	X	X	X	-	-
	<b>GCG, LCG</b>	1.0 m <sup>3</sup> /h	-	X	X	-	-
	<b>GDH, LDH</b>	1.6 m <sup>3</sup> /h	-	X	X	-	-
	<b>GEJ, LEJ</b>	2.6 m <sup>3</sup> /h	-	-	X	-	-
	<b>GG1, LG1</b>	4.1 m <sup>3</sup> /h	-	-	X	-	-
	<b>GH2, LH2</b>	8.0 m <sup>3</sup> /h	-	-	-	X	X
	<b>GJ3, LJ3</b>	12.5 m <sup>3</sup> /h	-	-	-	-	X

Kv values of bypass 2.1 m<sup>3</sup>/h

Kv values determined acc.to DIN EN 60534.

## **Product compliance**

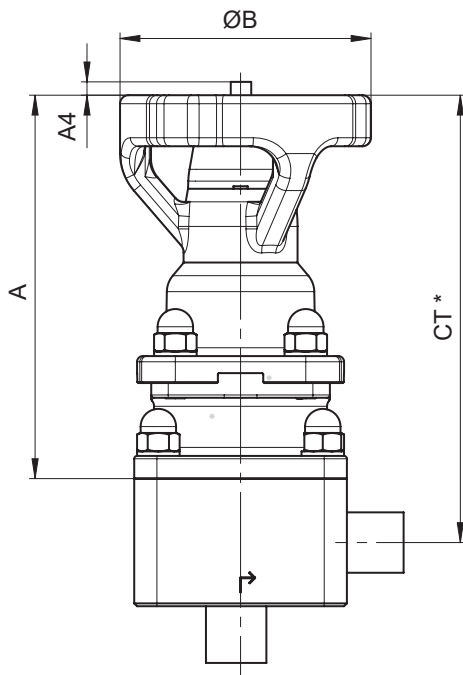
<b>Machinery Directive:</b>	2006/42/EC
<b>EMC Directive:</b>	2014/30/EU
<b>Food:</b>	FDA USP Regulation (EC) No. 1935/2004 Regulation (EC) No. 10/2011

## **Mechanical data**

<b>Weight:</b>	<b>Valve assembly</b>	
	Actuator version 2	5.29 lb
	Actuator version 3	17.20 lb

## Dimensions

### Actuator dimensions



DN	Actuator size	A	A4	ØB
8, 10, 15, 20	2	5.31	0.20	3.54
20, 25	3	7.60	0.35	4.49

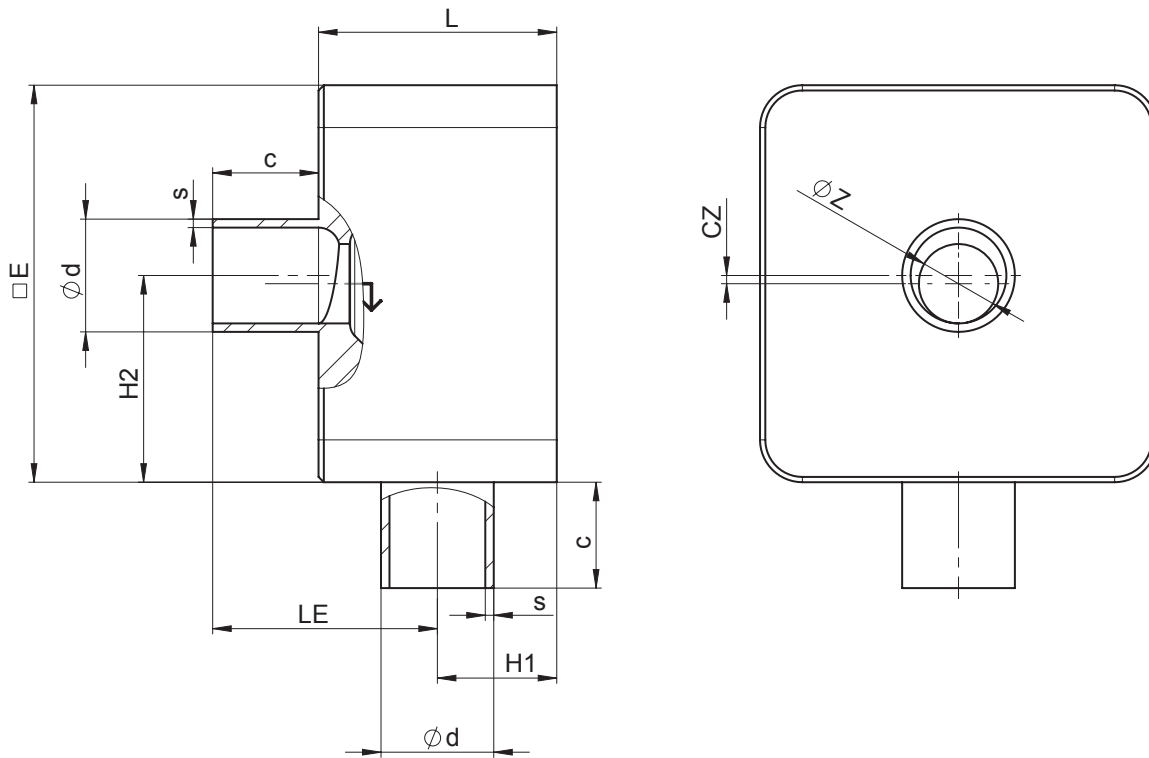
Dimensions in inch

\* CT = A + H1 (see body dimensions)



**Body dimensions**

**Spigot without bypass code 0**



AG	DN	Connection type code 0 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	1.77	2.95	0.79	0.08	1.73	0.83	1.59	0.26	0.71	0.06
		B	1.77	2.95	0.79	0.16	1.73	0.83	1.56	0.22	0.71	0.06
		C	1.77	2.95	0.79	0.24	1.73	0.83	1.52	0.18	0.71	0.06
		D	1.77	2.95	0.79	0.31	1.73	0.83	1.61	0.14	0.71	0.06
		E	1.77	2.95	0.79	0.39	1.73	0.83	1.57	0.10	0.71	0.06
		G	1.77	2.95	0.79	0.59	1.73	0.83	1.48	0.00	0.71	0.06
3	20	H	2.17	3.74	0.98	0.79	2.13	1.02	1.97	0.00	0.87	0.06
	25	H	2.17	3.74	0.98	0.79	2.13	1.02	1.97	0.10	1.10	0.06
		J	2.17	3.74	0.98	0.98	2.13	1.02	1.87	0.00	1.10	0.06

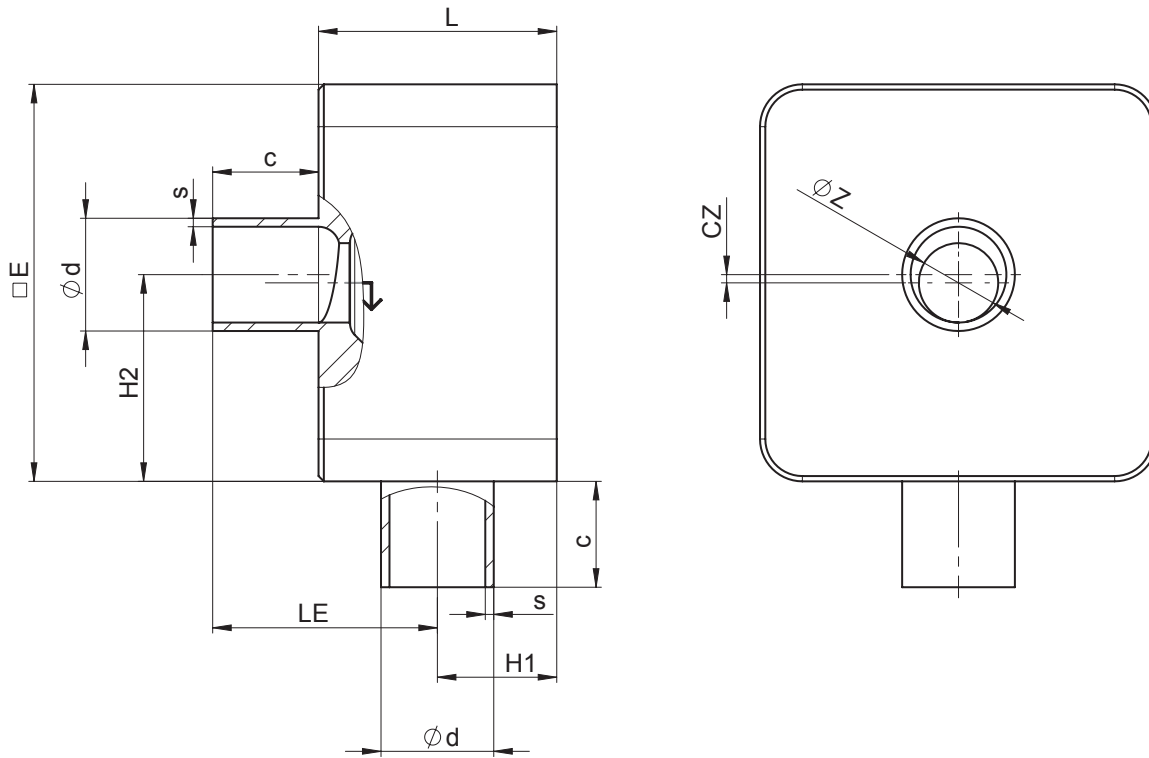
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 0: Spigot DIN

**Spigot without bypass code 17**



AG	DN	Connection type code 17 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	1.77	2.95	0.79	0.08	1.87	0.69	1.59	0.12	0.39	0.04
		B	1.77	2.95	0.79	0.16	1.87	0.69	1.56	0.08	0.39	0.04
		C	1.77	2.95	0.79	0.24	1.87	0.69	1.52	0.04	0.39	0.04
	10	A	1.77	2.95	0.79	0.08	1.83	0.73	1.63	0.16	0.51	0.06
		B	1.77	2.95	0.79	0.16	1.83	0.73	1.59	0.12	0.51	0.06
		C	1.77	2.95	0.79	0.24	1.83	0.73	1.56	0.08	0.51	0.06
		D	1.77	2.95	0.79	0.31	1.83	0.73	1.52	0.04	0.51	0.06
	15	A	1.77	2.95	0.79	0.08	1.71	0.85	1.75	0.28	0.75	0.06
		B	1.77	2.95	0.79	0.16	1.71	0.85	1.71	0.24	0.75	0.06
		C	1.77	2.95	0.79	0.24	1.71	0.85	1.67	0.20	0.75	0.06
D		1.77	2.95	0.79	0.31	1.71	0.85	1.63	0.16	0.75	0.06	
E		1.77	2.95	0.79	0.39	1.71	0.85	1.59	0.12	0.75	0.06	
3	20	H	2.17	3.74	0.98	0.79	2.22	0.93	1.87	0.00	0.91	0.06
		J	2.17	3.74	0.98	0.98	2.11	1.04	1.89	0.02	1.14	0.06
	25	H	2.17	3.74	0.98	0.79	2.11	1.04	1.99	0.12	1.14	0.06

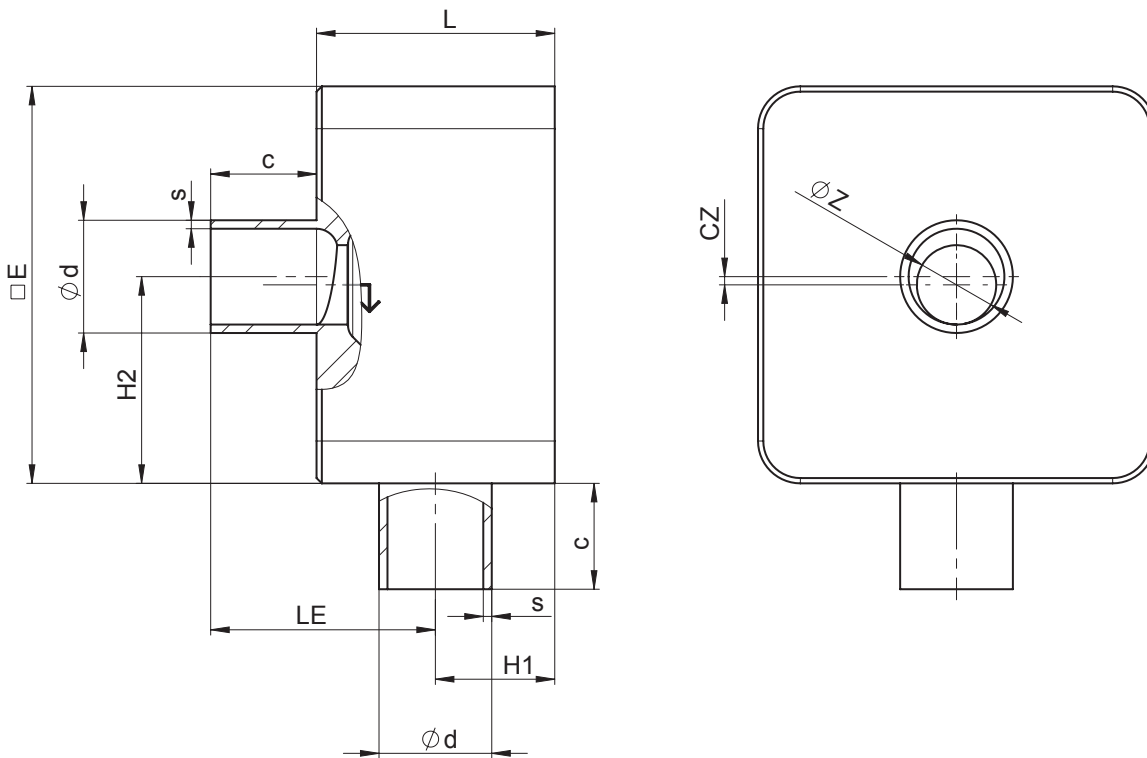
Dimensions in inch

AG = actuator size

1) **Connection type**

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

**Spigot without bypass code 59**

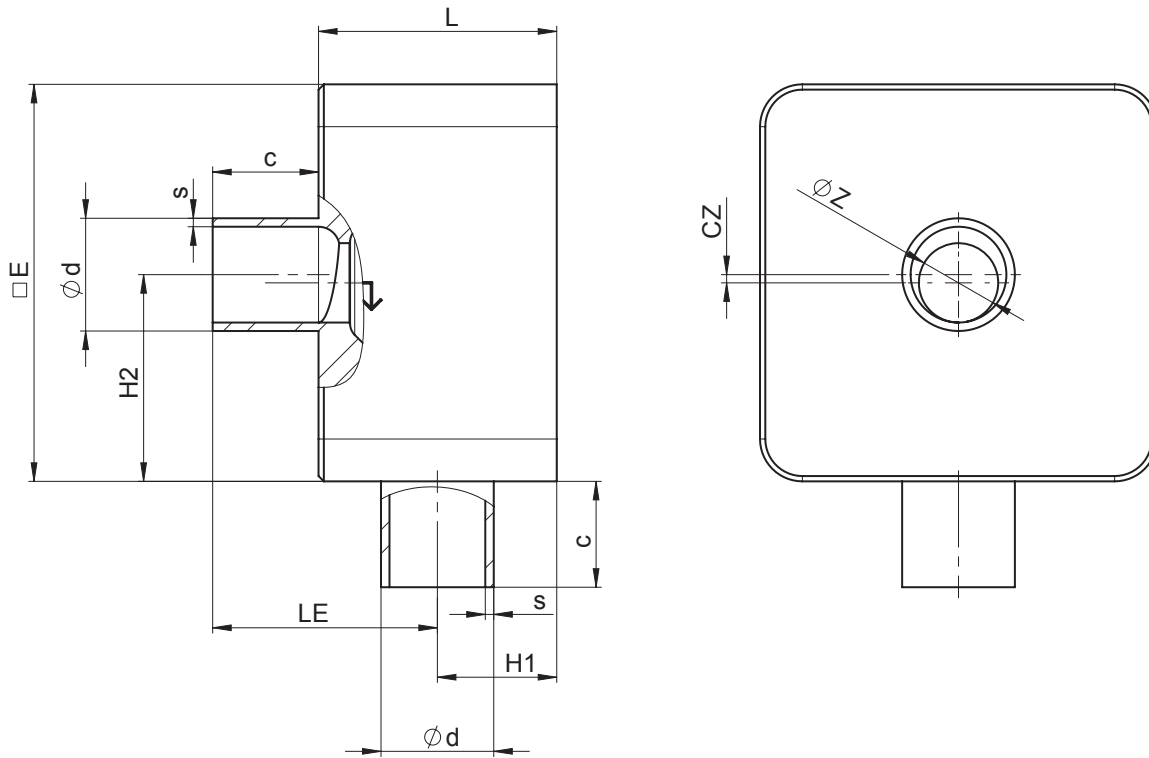


AG	DN	Connection type code 59 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	1.77	2.95	0.79	0.08	1.84	0.72	1.62	0.15	0.50	0.06
		B	1.77	2.95	0.79	0.16	1.84	0.72	1.58	0.11	0.50	0.06
		C	1.77	2.95	0.79	0.24	1.84	0.72	1.54	0.07	0.50	0.06
		D	1.77	2.95	0.79	0.31	1.84	0.72	1.50	0.03	0.50	0.06
	20	A	1.77	2.95	0.79	0.08	1.91	0.84	1.75	0.27	0.75	0.06
		B	1.77	2.95	0.79	0.16	1.72	0.84	1.71	0.23	0.75	0.06
		C	1.77	2.95	0.79	0.24	1.72	0.84	1.67	0.19	0.75	0.06
		D	1.77	2.95	0.79	0.31	1.72	0.84	1.63	0.15	0.75	0.06
3	25	E	1.77	2.95	0.79	0.39	1.72	0.84	1.59	0.11	0.75	0.06
		G	1.77	2.95	0.79	0.59	1.72	0.84	1.49	0.01	0.75	0.06
		H	2.17	3.74	0.98	0.79	2.18	0.97	1.91	0.04	1.00	0.06

Dimensions in inch  
AG = actuator size

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

**Spigot without bypass code 60**



AG	DN	Connection type code 60 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	1.77	2.95	0.79	0.08	1.82	0.74	1.64	0.16	0.53	0.06
		B	1.77	2.95	0.79	0.16	1.82	0.74	1.60	0.12	0.53	0.06
		C	1.77	2.95	0.79	0.24	1.82	0.74	1.56	0.08	0.53	0.06
	10	A	1.77	2.95	0.79	0.08	1.75	0.81	1.71	0.24	0.68	0.06
		B	1.77	2.95	0.79	0.16	1.75	0.81	1.67	0.20	0.68	0.06
		C	1.77	2.95	0.79	0.24	1.75	0.81	1.63	0.16	0.68	0.06
		D	1.77	2.95	0.79	0.31	1.75	0.81	1.59	0.12	0.68	0.06
	15	A	1.77	2.95	0.79	0.08	1.67	0.89	1.79	0.32	0.84	0.06
		B	1.77	2.95	0.79	0.16	1.67	0.89	1.75	0.28	0.84	0.06
		C	1.77	2.95	0.79	0.24	1.67	0.89	1.71	0.24	0.84	0.06
D		1.77	2.95	0.79	0.31	1.67	0.89	1.68	0.20	0.84	0.06	
E		1.77	2.95	0.79	0.39	1.67	0.89	1.64	0.16	0.84	0.06	
3	20	H	2.17	3.74	0.98	0.79	2.15	1.00	1.94	0.07	1.17	0.06
		J	2.17	3.74	0.98	0.98	2.03	1.12	1.96	0.09	1.33	0.08
	25	H	2.17	3.74	0.98	0.79	2.15	1.12	2.06	0.19	1.33	0.08

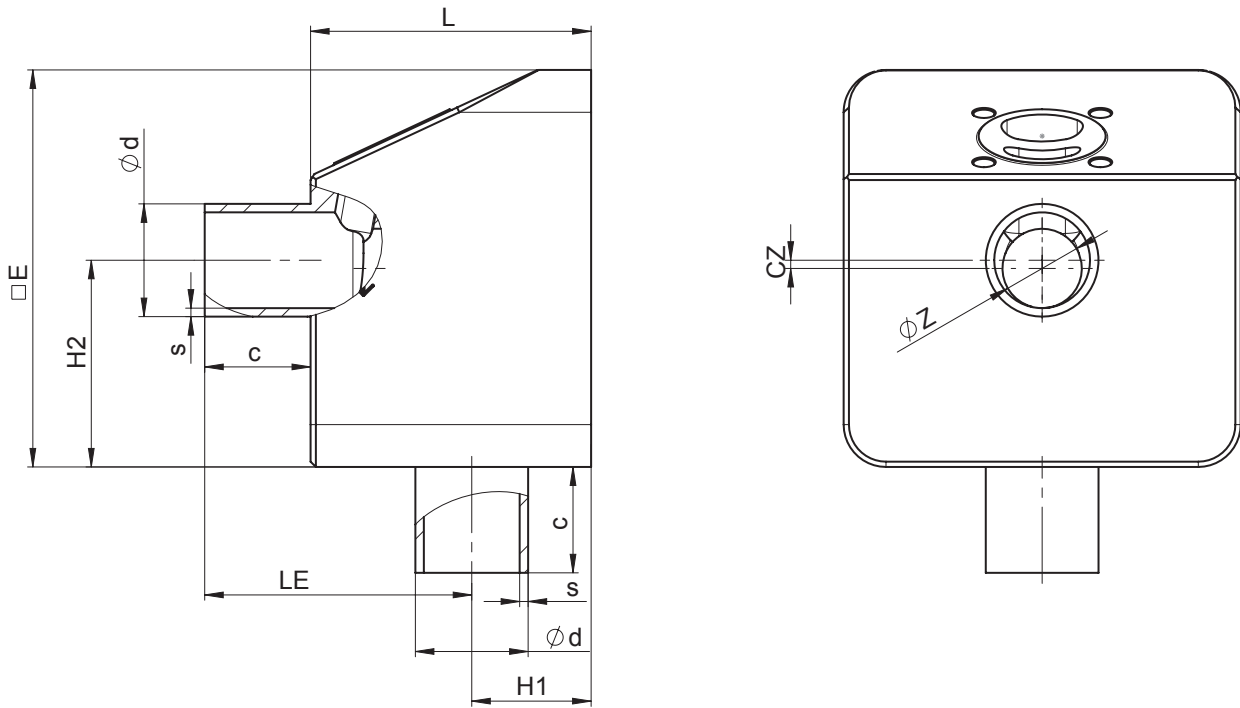
Dimensions in inch

AG = actuator size

1) **Connection type**

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

**Spigot with bypass code 0**

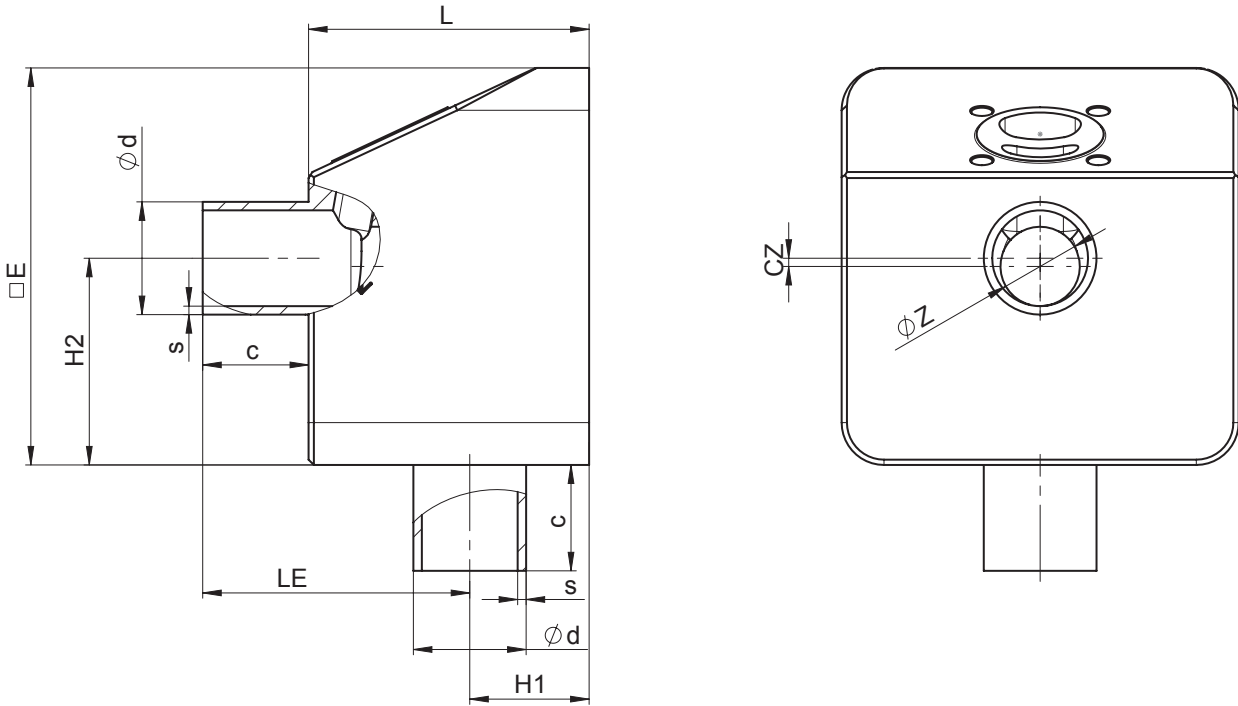


AG	DN	Connection type code 0 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	20.87	29.53	7.87	0.79	20.47	8.27	17.32	2.56	7.09	0.59
		B	20.87	29.53	7.87	1.57	20.47	8.27	16.93	2.17	7.09	0.59
		C	20.87	29.53	7.87	2.36	20.47	8.27	16.54	1.77	7.09	0.59
		D	20.87	29.53	7.87	3.15	20.47	8.27	16.14	1.38	7.09	0.59
		E	20.87	29.53	7.87	3.94	20.47	8.27	15.75	0.98	7.09	0.59
		G	20.87	29.53	7.87	5.91	20.47	8.27	14.76	-	7.09	0.59

Dimensions in inch  
AG = actuator size

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

**Spigot with bypass code 17**

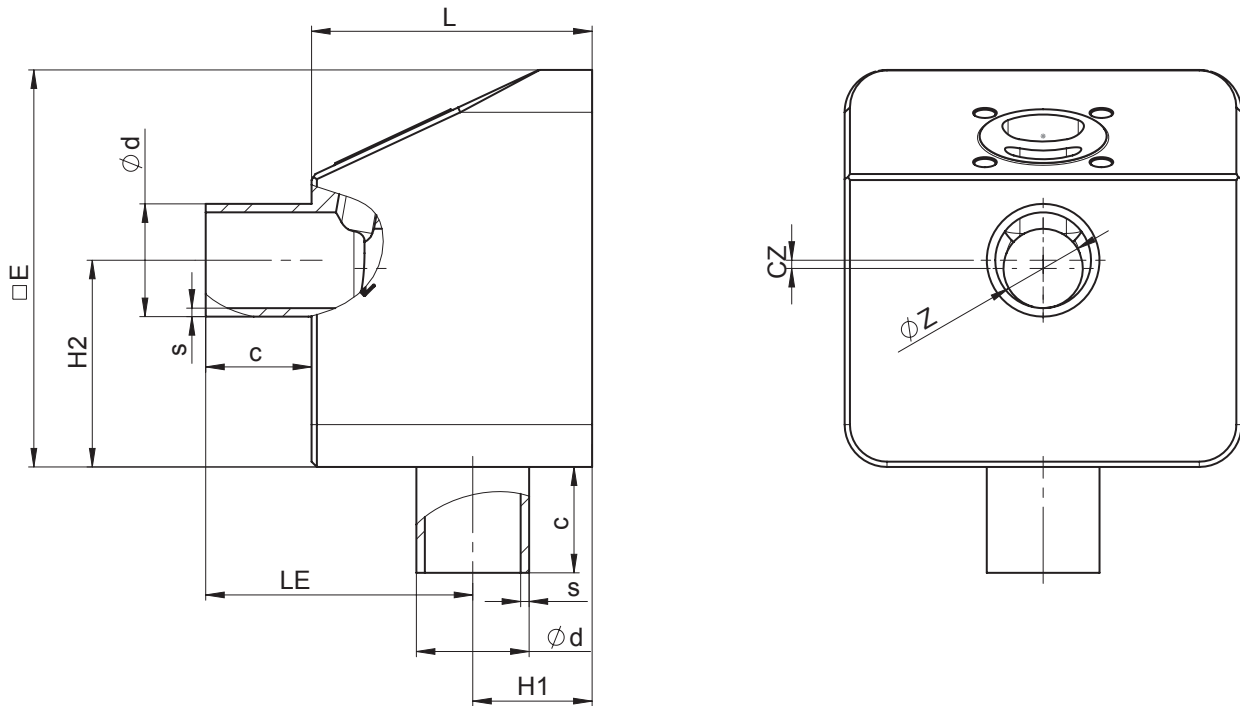


AG	DN	Connection type code 17 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	8	A	20.87	29.53	7.87	0.79	21.85	6.89	15.94	1.18	3.94	0.39
		B	20.87	29.53	7.87	1.57	21.85	6.89	15.55	0.79	3.94	0.39
		C	20.87	29.53	7.87	2.36	21.85	6.89	15.16	0.39	3.94	0.39
	10	A	20.87	29.53	7.87	0.79	21.46	7.28	16.34	1.57	5.12	0.59
		B	20.87	29.53	7.87	1.57	21.46	7.28	15.94	1.18	5.12	0.59
		C	20.87	29.53	7.87	2.36	21.46	7.28	15.55	0.79	5.12	0.59
		D	20.87	29.53	7.87	3.15	21.46	7.28	15.16	0.39	5.12	0.59
	15	A	20.87	29.53	7.87	0.79	20.28	8.46	17.52	2.76	7.48	0.59
		B	20.87	29.53	7.87	1.57	20.28	8.46	17.13	2.36	7.48	0.59
		C	20.87	29.53	7.87	2.36	20.28	8.46	16.73	1.97	7.48	0.59
		D	20.87	29.53	7.87	3.15	20.28	8.46	16.34	1.57	7.48	0.59
		E	20.87	29.53	7.87	3.94	20.28	8.46	15.94	1.18	7.48	0.59
		G	20.87	29.53	7.87	5.91	20.28	8.46	14.96	0.20	7.48	0.59

Dimensions in inch  
AG = actuator size

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

**Spigot with bypass code 59**



AG	DN	Connection type code 59 <sup>1)</sup>										
		Seat size (code)	L	□E	c	Øz	LE	H1	H2	cz	Ød	s
2	15	A	20.87	29.53	7.87	0.79	21.57	7.17	162.20	14.57	50.00	6.50
		B	20.87	29.53	7.87	1.57	21.57	7.17	158.27	10.63	50.00	6.50
		C	20.87	29.53	7.87	2.36	21.57	7.17	154.33	6.69	50.00	6.50
		D	20.87	29.53	7.87	3.15	21.57	7.17	150.39	2.76	50.00	6.50
	20	A	20.87	29.53	7.87	0.79	20.31	8.43	174.72	14.57	50.00	6.50
		B	20.87	29.53	7.87	1.57	20.31	8.43	170.79	10.63	50.00	6.50
		C	20.87	29.53	7.87	2.36	20.31	8.43	166.85	6.69	50.00	6.50
		D	20.87	29.53	7.87	3.15	20.31	8.43	162.91	2.76	50.00	6.50
		E	20.87	29.53	7.87	3.94	20.31	8.43	158.98	11.34	75.00	6.50
		G	20.87	29.53	7.87	5.91	20.31	8.43	149.13	1.50	75.00	6.50

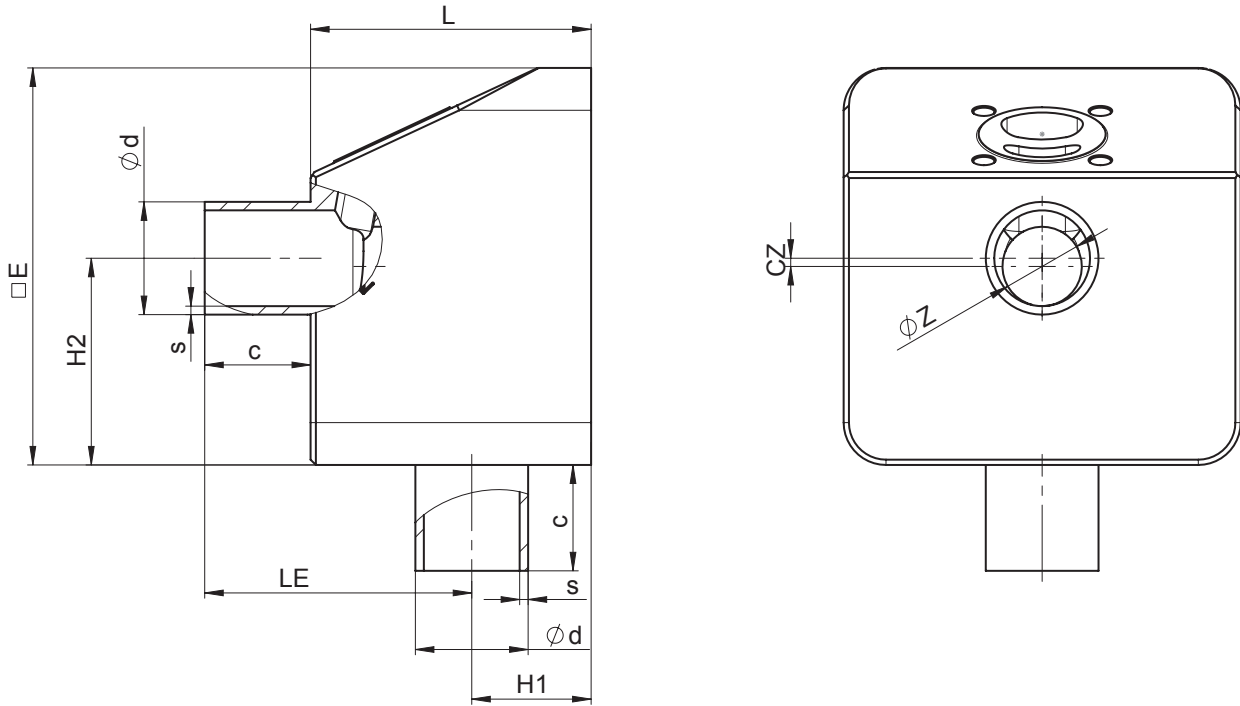
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 59: Spigot ASME BPE / DIN 11866 series C

**Spigot with bypass code 60**

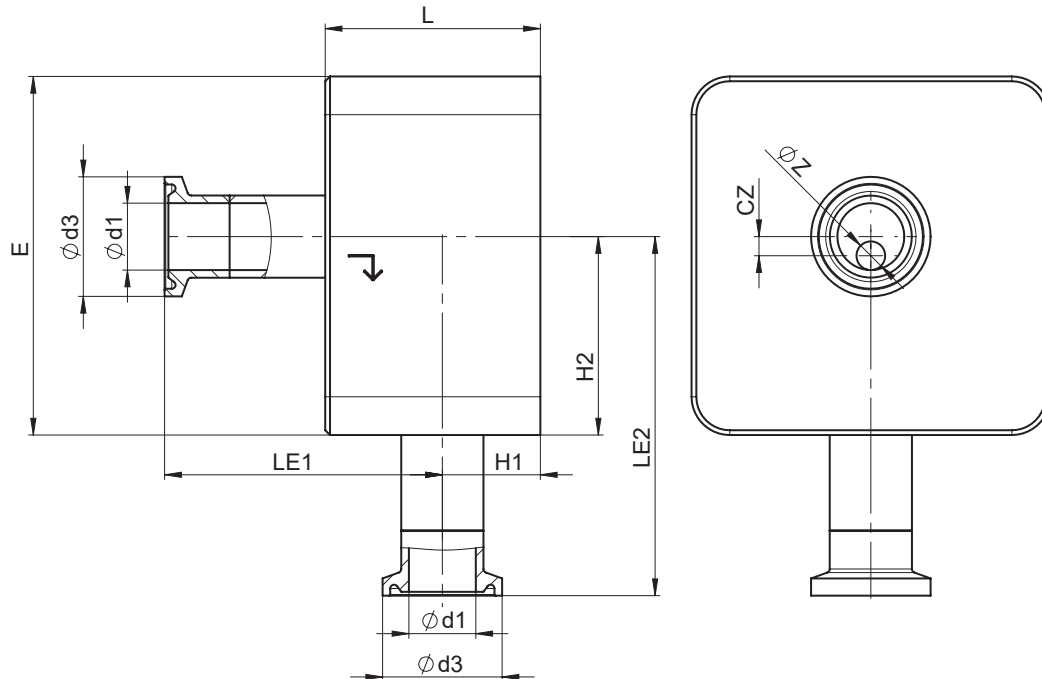


AG	DN	Connection type code 60 <sup>1)</sup>										
		Seat size (code)	L	$\square E$	c	$\phi z$	LE	H1	H2	cz	$\phi d$	s
2	8	A	20.87	29.53	7.87	0.79	21.38	7.36	163.98	16.34	5.31	0.63
		B	20.87	29.53	7.87	1.57	21.38	7.36	160.04	12.40	5.31	0.63
		C	20.87	29.53	7.87	2.36	21.38	7.36	156.10	8.46	5.31	0.63
	10	A	20.87	29.53	7.87	0.79	20.67	8.15	171.26	23.62	6.77	0.63
		B	20.87	29.53	7.87	1.57	20.67	8.15	167.32	19.69	6.77	0.63
		C	20.87	29.53	7.87	2.36	20.67	8.07	163.39	15.75	6.77	0.63
		D	20.87	29.53	7.87	3.15	20.67	8.07	159.45	11.81	6.77	0.63
	15	A	20.87	29.53	7.87	0.79	19.84	8.90	179.33	31.69	8.39	0.63
		B	20.87	29.53	7.87	1.57	19.84	8.90	175.39	27.76	8.39	0.63
		C	20.87	29.53	7.87	2.36	19.84	8.90	171.46	23.82	8.39	0.63
		D	20.87	29.53	7.87	3.15	19.84	8.90	167.52	19.88	8.39	0.63
		E	20.87	29.53	7.87	3.94	19.84	8.90	163.58	15.94	8.39	0.63
		G	20.87	29.53	7.87	5.91	19.84	8.90	153.74	6.10	8.39	0.63

Dimensions in inch  
AG = actuator size

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



**Clamp without bypass code 82**

AG	DN	Connection type code 82 <sup>1)</sup>											
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3	
2	8	A	1.77	2.95	0.08	2.33	2.94	0.74	1.64	0.16	0.41	1.00	
		B	1.77	2.95	0.16	2.33	2.90	0.74	1.60	0.12	0.41	1.00	
		C	1.77	2.95	0.24	2.33	2.86	0.74	1.56	0.08	0.41	1.00	
	10	A	1.77	2.95	0.08	2.26	3.01	0.81	1.71	0.24	0.55	1.00	
		B	1.77	2.95	0.16	2.26	2.97	0.81	1.67	0.20	0.55	1.00	
		C	1.77	2.95	0.24	2.26	2.93	0.81	1.63	0.16	0.55	1.00	
		D	1.77	2.95	0.31	2.26	2.89	0.81	1.59	0.12	0.55	1.00	
	15	A	1.77	2.95	0.08	2.18	3.09	0.89	1.79	0.32	0.71	1.99	
		B	1.77	2.95	0.16	2.18	3.05	0.89	1.75	0.28	0.71	1.99	
		C	1.77	2.95	0.24	2.18	3.01	0.89	1.71	0.24	0.71	1.99	
		D	1.77	2.95	0.31	2.18	2.97	0.89	1.68	0.20	0.71	1.99	
		E	1.77	2.95	0.39	2.18	2.94	0.89	1.64	0.16	0.71	1.99	
3	20	H	2.17	3.74	0.79	2.60	3.44	1.06	1.94	0.07	0.75	1.99	
		25	H	2.17	3.74	0.79	2.46	3.56	1.20	2.06	0.19	0.98	1.99
			J	2.17	3.74	0.98	2.46	3.46	1.20	1.96	0.09	0.98	1.99

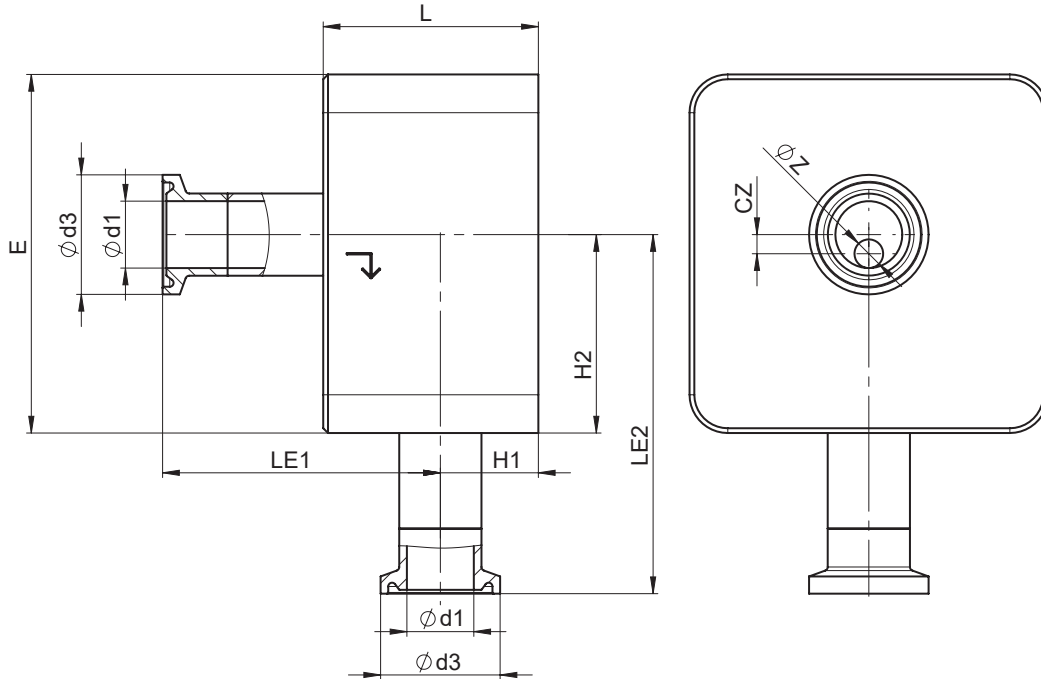
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 82: Clamp DIN 32676 series B

**Clamp without bypass code 86**



AG	DN	Connection type code 86 <sup>1)</sup>										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	1.77	2.95	0.08	2.38	2.89	0.69	1.59	0.12	0.31	0.98
		B	1.77	2.95	0.16	2.38	2.85	0.69	1.56	0.08	0.31	0.98
		C	1.77	2.95	0.24	2.38	2.81	0.69	1.52	0.04	0.31	0.98
	10	A	1.77	2.95	0.08	2.34	2.93	0.73	1.63	0.16	0.39	1.34
		B	1.77	2.95	0.16	2.34	2.89	0.73	1.59	0.12	0.39	1.34
		C	1.77	2.95	0.24	2.34	2.85	0.73	1.56	0.08	0.39	1.34
		D	1.77	2.95	0.31	2.34	2.81	0.73	1.52	0.04	0.39	1.34
	15	A	1.77	2.95	0.08	2.22	3.05	0.85	1.75	0.28	0.63	1.34
		B	1.77	2.95	0.16	2.22	3.01	0.85	1.71	0.24	0.63	1.34
		C	1.77	2.95	0.24	2.22	2.97	0.85	1.67	0.20	0.63	1.34
		D	1.77	2.95	0.31	2.22	2.93	0.85	1.63	0.16	0.63	1.34
		E	1.77	2.95	0.39	2.22	2.89	0.85	1.59	0.12	0.63	1.34
3	20	H	2.17	3.74	0.79	2.74	3.37	0.91	1.87	0.00	0.79	1.34
		J	2.17	3.74	0.98	2.56	3.48	1.11	1.87	0.00	1.02	1.99
	25	H	2.17	3.74	0.79	2.56	3.46	1.11	1.97	0.10	1.02	1.99

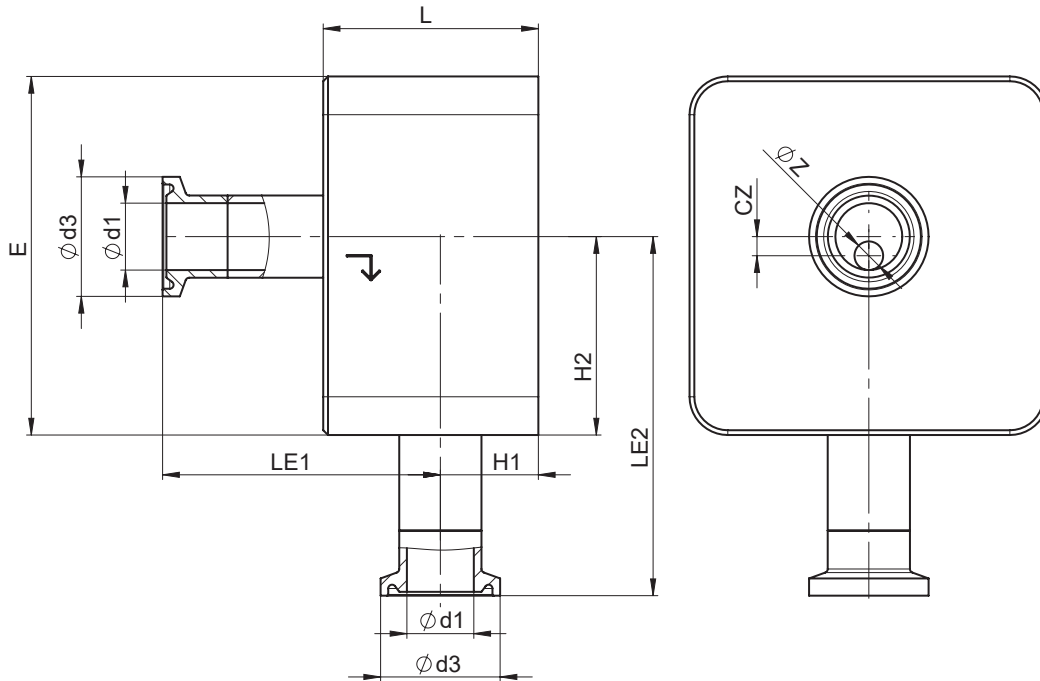
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 86: Clamp DIN 32676 series A

**Clamp without bypass code 88**



AG	DN	Connection type code 88 <sup>1)</sup>										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	15	A	1.77	2.95	0.08	2.35	2.92	0.72	1.62	0.15	0.37	0.98
		B	1.77	2.95	0.16	2.35	2.88	0.72	1.58	0.11	0.37	0.98
		C	1.77	2.95	0.24	2.35	2.84	0.72	1.54	0.07	0.37	0.98
		D	1.77	2.95	0.31	2.35	2.80	0.72	1.50	0.03	0.37	0.98
	20	A	1.77	2.95	0.08	2.22	3.05	0.84	1.75	0.27	0.62	0.98
		B	1.77	2.95	0.16	2.22	3.01	0.84	1.71	0.23	0.62	0.98
		C	1.77	2.95	0.24	2.22	2.97	0.84	1.67	0.19	0.62	0.98
		D	1.77	2.95	0.31	2.22	2.93	0.84	1.63	0.15	0.62	0.98
		E	1.77	2.95	0.39	2.22	2.89	0.84	1.59	0.11	0.62	0.98
		G	1.77	2.95	0.59	2.22	2.79	0.84	1.49	0.01	0.62	0.98
3	25	H	2.17	3.74	0.79	2.63	3.45	1.04	1.91	0.04	0.87	1.99

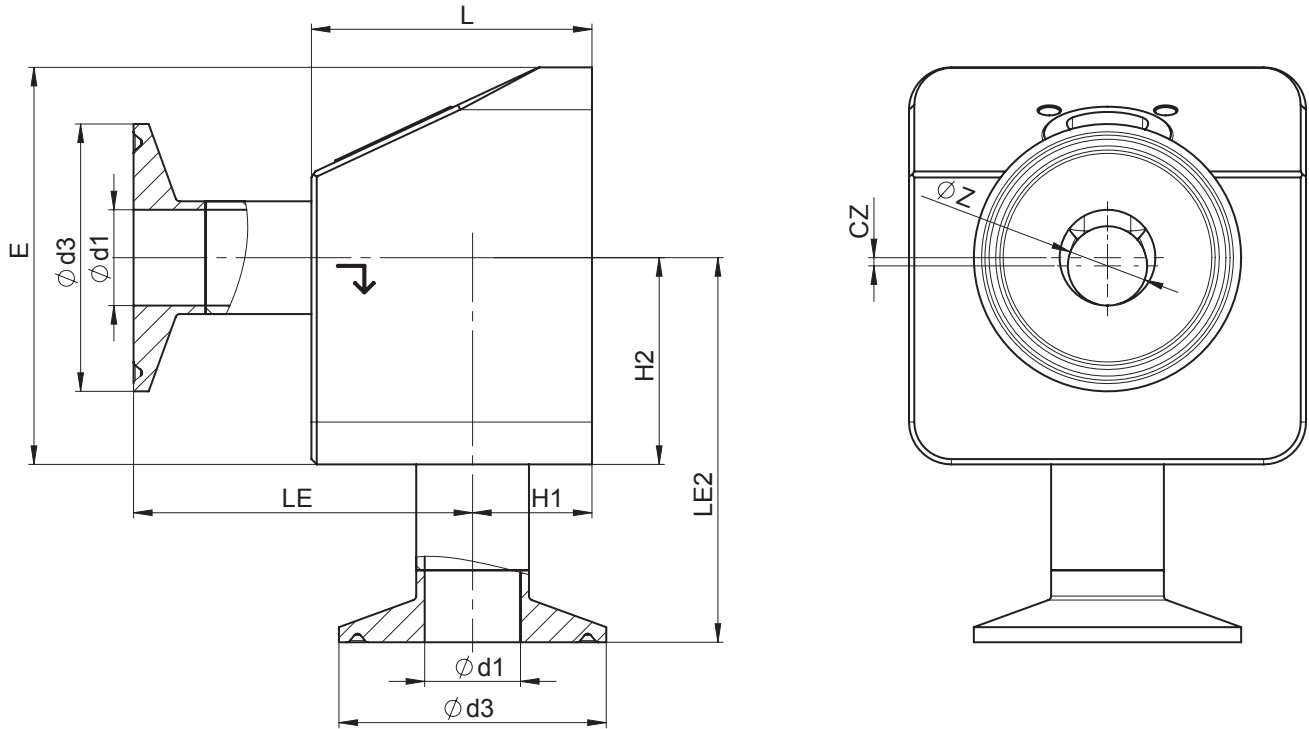
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 88: Clamp ASME BPE

**Clamp with bypass code 82**



AG	DN	Connection type code 82 <sup>1)</sup>										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	20.87	29.53	0.79	26.50	293.90	7.36	163.98	16.34	4.06	10.00
		B	20.87	29.53	1.57	26.50	289.96	7.36	160.04	12.40	4.06	10.00
		C	20.87	29.53	2.36	26.50	286.02	7.36	156.10	8.46	4.06	10.00
	10	A	20.87	29.53	0.79	25.79	301.18	8.07	171.26	23.62	5.51	10.00
		B	20.87	29.53	1.57	25.79	297.24	8.07	167.32	19.69	5.51	10.00
		C	20.87	29.53	2.36	25.79	293.31	8.07	163.38	15.75	5.51	10.00
		D	20.87	29.53	3.15	25.79	289.37	8.07	159.44	11.81	5.51	10.00
	15	A	20.87	29.53	0.79	24.96	309.25	8.90	179.33	31.69	7.13	19.88
		B	20.87	29.53	1.57	24.96	305.31	8.90	175.39	27.76	7.13	19.88
		C	20.87	29.53	2.36	24.96	301.38	8.90	171.46	23.82	7.13	19.88
		D	20.87	29.53	3.15	24.96	297.44	8.90	167.52	19.88	7.13	19.88
		E	20.87	29.53	3.94	24.96	293.50	8.90	163.58	15.94	7.13	19.88
		G	20.87	29.53	5.91	24.96	283.66	8.90	153.74	6.10	7.13	19.88

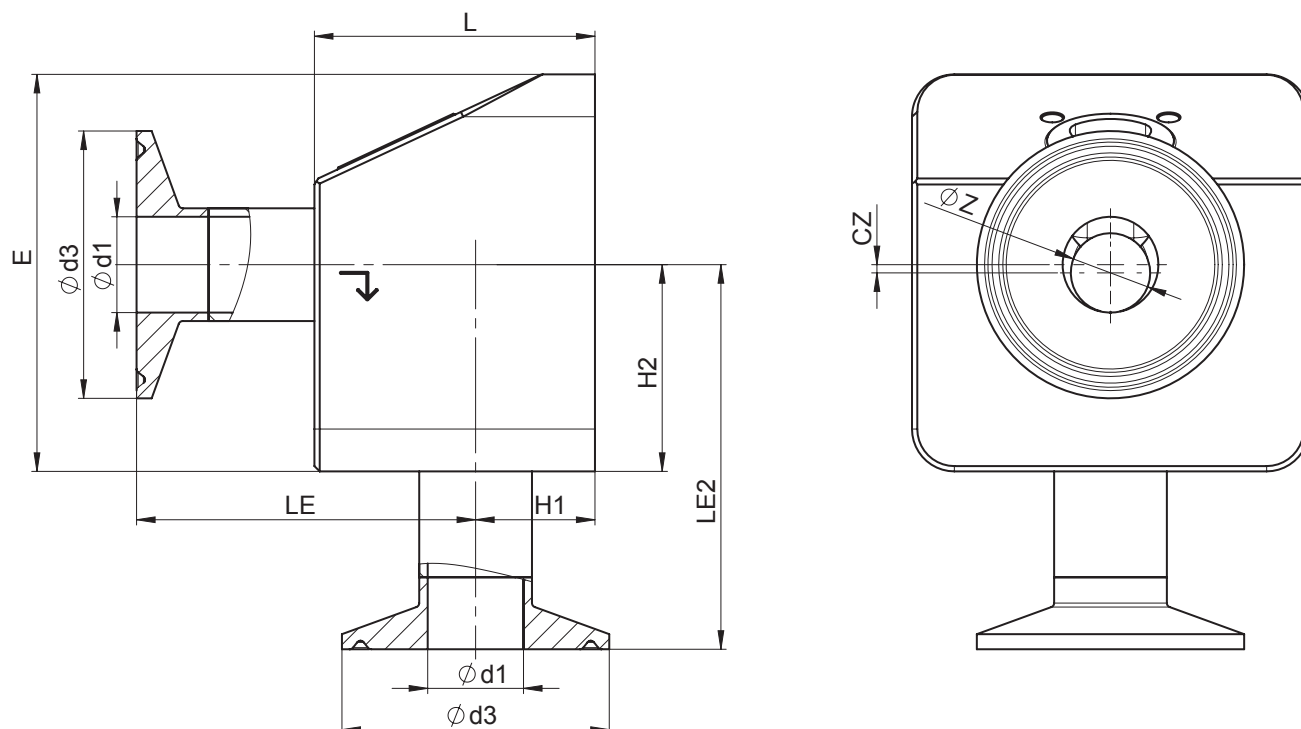
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 82: Clamp DIN 32676 series B

**Clamp with bypass code 86**



AG	DN	Connection type code 86 <sup>1)</sup>										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	8	A	20.87	29.53	0.79	26.97	28.94	6.89	15.94	1.18	3.15	9.84
		B	20.87	29.53	1.57	26.97	28.54	6.89	15.55	0.79	3.15	9.84
		C	20.87	29.53	2.36	26.97	28.15	6.89	15.16	0.39	3.15	9.84
	10	A	20.87	29.53	0.79	26.57	29.33	7.28	16.34	1.57	3.94	13.39
		B	20.87	29.53	1.57	26.57	28.94	7.28	15.94	1.18	3.94	13.39
		C	20.87	29.53	2.36	26.57	28.54	7.28	15.55	0.79	3.94	13.39
		D	20.87	29.53	3.15	26.57	28.15	7.28	15.16	0.39	3.94	13.39
	15	A	20.87	29.53	0.79	25.39	30.51	8.46	17.52	2.76	6.30	13.39
		B	20.87	29.53	1.57	25.39	30.12	8.46	17.13	2.36	6.30	13.39
		C	20.87	29.53	2.36	25.39	29.72	8.46	16.73	1.97	6.30	13.39
		D	20.87	29.53	3.15	25.39	29.33	8.46	16.34	1.57	6.30	13.39
		E	20.87	29.53	3.94	25.39	28.94	8.46	15.94	1.18	6.30	13.39
		G	20.87	29.53	5.91	25.39	27.95	8.46	14.96	0.20	6.30	13.39

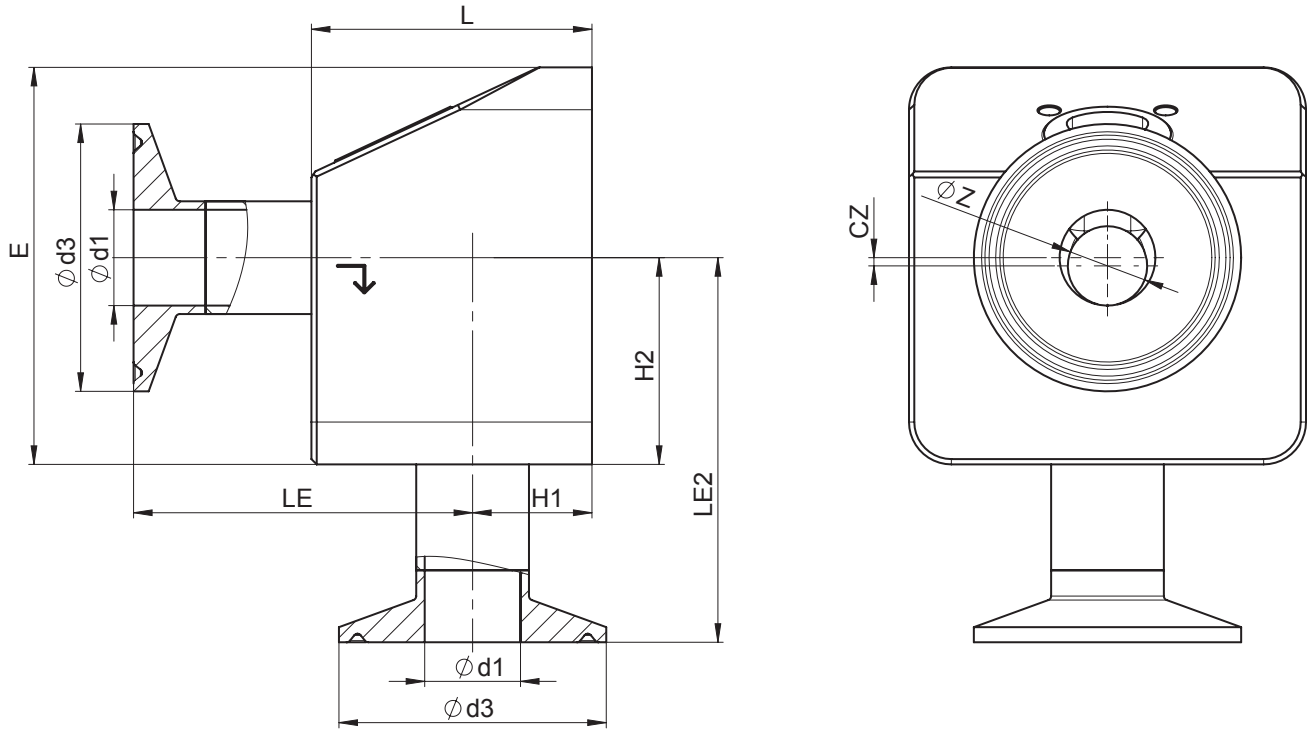
Dimensions in inch

AG = actuator size

1) **Connection type**

Code 86: Clamp DIN 32676 series A

**Clamp with bypass code 88**



AG	DN	Connection type code 88 <sup>1)</sup>										
		Seat size (code)	L	□E	Øz	LE1	LE2	H1	H2	cz	Ød1	Ød3
2	15	A	20.87	29.53	0.79	26.69	292.13	7.17	162.20	14.57	37.01	9.84
		B	20.87	29.53	1.57	26.69	288.19	7.17	158.27	10.63	37.01	9.84
		C	20.87	29.53	2.36	26.69	284.25	7.17	154.33	6.69	37.01	9.84
		D	20.87	29.53	3.15	26.69	280.31	7.17	150.39	2.76	37.01	9.84
	20	A	20.87	29.53	0.79	25.43	304.65	8.43	174.72	27.09	62.01	9.84
		B	20.87	29.53	1.57	25.43	300.71	8.43	170.79	23.15	62.01	9.84
		C	20.87	29.53	2.36	25.43	296.77	8.43	166.85	19.21	62.01	9.84
		D	20.87	29.53	3.15	25.43	292.83	8.43	162.91	15.28	62.01	9.84
		E	20.87	29.53	3.94	25.43	288.90	8.43	158.98	11.34	62.01	9.84
		G	20.87	29.53	5.91	25.43	279.06	8.43	149.13	1.50	62.01	9.84

Dimensions in inch

AG = actuator size

1) **Connection type**

Code 88: Clamp ASME BPE



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