

GEMÜ 649 eSyDrive

Motorized diaphragm valve



Features

- Open/Close function, positioner and process controller
- Force and speed are variably adjustable
- Extensive diagnostic functions
- Operable via web interface eSy-Web or Modbus TCP
- Hollow shaft drive based on brushless and sensorless technology
- Various functions of add-on components and accessories are already integrated (e.g. position indicators, stroke limiters, etc.)
- Hermetic separation between medium and actuator

Description

The GEMÜ 649 eSyDrive diaphragm valve is actuated by a motorized hollow shaft actuator. It is based on technology that does not use brushes or sensors and therefore guarantees high performance and a long service life. In addition to Open/Close applications, the valve is ideal for variable and complex control applications. The actuator has an integrated web server for parameterization and diagnostics purposes.

Technical specifications

- **Media temperature:** -10 to 100 °C
- **Sterilization temperature:** max. 150 °C
- **Ambient temperature:** -10 Up to 60 °C
- **Operating pressure :** 0 Up to 10 bar
- **Nominal sizes:** DN 4 to 65
- **Body configurations:** i-body | Multi-port body | Straight through body | T body | Tank valve body | Welding configuration
- **Connection types:** Clamp | Flange | Spigot | thread
- **Connection standards :** ANSI | ASME | BS | DIN | EN | ISO | JIS | SMS
- **Body materials:** (316L), forging material | 1.4408, investment casting material | 1.4408, investment casting material, PFA lined | 1.4435 (BN2), forged material | 1.4435, investment casting material | 1.4539 (904L), forged material | EN-GJS-400-18-LT (GGG 40.3) | EN-GJS-400-18-LT, SG iron material with hard rubber lining | EN-GJS-400-18-LT, SG iron material, PFA lined | EN-GJS-400-18-LT, SG iron material, PP lined
- **Body lining:** Hard rubber | PFA | PP
- **Diaphragm materials:** CR | EPDM | FKM | NBR | PTFE/EPDM
- **Supply voltage:** 24 V DC
- **Actuating speed:** Max. 6 mm/s
- **Protection class :** IP 65
- **Conformities:** Belgaqua | BSE/TSE | EAC | EHEDG | FDA | Oxygen | Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 | Regulation (EC) No. 2023/2006 | TA Luft (German Clean Air Act) | USP

Technical data depends on the respective configuration



webcode: GW-649



Technical drawing of a 24VDC solenoid valve. The drawing shows the valve assembly with various components labeled with numbers 1 through 12. The valve has a black plastic top section, a transparent middle section showing internal components, and a stainless steel bottom section. The top section includes a solenoid coil (12) and a red LED indicator (9). The middle section shows the internal plunger and valve mechanism (10). The bottom section features a stainless steel body (3) with a flange (4) and a port (5). The flange has two red LED indicators (8 and 7) and a black switch (6). The port (5) is connected to a pipe (11). The valve is shown in a side view.

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GEMÜ CONEXO

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



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

For further information on GEMÜ CONEXO please visit:

www.gemu-group.com/conexo

Ordering

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

Availability

Availability of grades of surface finish

Internal surface finishes for forged and block material bodies ¹⁾

Process contact surfaces	Mechanically polished ²⁾		Electropolished	
	Hygiene class DIN 11866	Code	Hygiene class DIN 11866	Code
$Ra \leq 0.80 \mu m$	H3	1502	HE3	1503
$Ra \leq 0.60 \mu m$	-	1507	-	1508
$Ra \leq 0.40 \mu m$	H4	1536	HE4	1537
$Ra^{3)} \leq 0.25 \mu m$	H5	1527	HE5	1516

Process contact surfaces in accordance with ASME BPE 2016 ⁴⁾	Mechanically polished ²⁾		Electropolished	
	ASME BPE surface designation	Code	ASME BPE surface designation	Code
$Ra \text{ Max.} = 0.76 \mu m$	SF3	SF3	-	-
$Ra \text{ Max.} = 0.64 \mu m$	SF2	SF2	SF6	SF6
$Ra \text{ Max.} = 0.51 \mu m$	SF1	SF1	SF5	SF5
$Ra \text{ Max.} = 0.38 \mu m$	-	-	SF4	SF4

Internal surface finishes for investment cast bodies

Process contact surfaces	Mechanically polished ²⁾	
	Hygiene class DIN 11866	Code
$Ra \leq 6.30 \mu m$	-	1500
$Ra \leq 0.80 \mu m$	H3	1502
$Ra^{5)} \leq 0.60 \mu m$	-	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 smallest possible Ra value for pipe inside 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.
- 5) Not possible for GEMÜ connection code 59, DN 8 and GEMÜ connection code 0, DN 4.

Availability of valve bodies

Spigot

MG	DN	Connection type code ¹⁾																
		0		16	17	18	35	36	37		55	59		60		63	64	65
		Material code ²⁾																
		C3	40, 42, F4	40, 42, F4	C3, 40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4	C3	40, 42, F4	40, 42, F4	C3	40, 42, F4	C3	40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4
8	4	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	X	-	-	X	-	-	-	-	-	-	X	X	-	X
	8	-	-	-	X	-	-	X	-	-	X	X	X	X	X	X	-	X
	10	-	-	X	X	X	-	-	-	-	X	X	X	-	-	-	-	-
	15	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	-
10	10	-	-	X	X	X	-	X	-	-	X	-	X	X	X	X	-	X
	15	-	X	X	X	X	-	X	-	-	X	-	X	X	X	X	X	X
	20	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	-
25	15	-	X	X	X	X	-	X	-	-	-	-	-	X	X	X	X	X
	20	-	X	X	X	X	-	X	-	-	X	X	X	X	X	X	X	X
	25	-	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X
40	32	-	X	X	X	X	X	X	-	X	-	-	-	X	X	X	X	X
	40	-	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X
50	50	-	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	-
	65	-	-	-	-	-	X	-	-	X	-	-	X	-	-	-	-	-

MG = diaphragm size, X = standard

1) Connection type

Code 0: Spigot DIN

Code 16: Spigot DIN EN 10357 series B (2014 edition; formerly DIN 11850 series 1)

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

Code 18: Spigot DIN 11850 series 3

Code 35: Spigot JIS-G 3447

Code 36: Spigot JIS-G 3459 schedule 10s

Code 37: Spigot SMS 3008

Code 55: Spigot BS 4825, Part 1

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

Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

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

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

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

2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code C3: 1.4435, investment casting

Code F4: 1.4539 / UNS N08904, forged body

Code A1: 3.7035, titanium

Threaded connection

MG	DN	Connection type code ¹⁾			
		1, 1L		31	6, 6K
		Material code ²⁾			
		37	90	37, 90	40, 42
8	8	X	-	-	-
	10	-	-	-	W
10	10	-	-	-	W
	12	X	-	-	-
	15	X	-	-	W
25	15	X	X	X	W
	20	X	X	X	W
	25	X	X	X	W
40	32	X	X	X	W
	40	X	X	X	W
50	50	X	X	X	W

MG = diaphragm size, X = standard

W = welded assembly

1) Connection type

Code 1: Threaded socket DIN ISO 228

Code 1L: Threaded socket DIN ISO 228 body length (FTF): 75 mm

Code 31: NPT female thread

Code 6: Threaded spigot DIN 11851

Code 6K: Cone spigot and union nut DIN 11851

2) Valve body material

Code 37: 1.4408, investment casting

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Flange

MG	DN	Connection type code ¹⁾					
		8		34	38	39	
		Material code ²⁾					
		17, 18, 39, 83, 90	40, 42, C3	39	17, 18 ³⁾ , 39, 83	17, 18, 39, 83, 90	40, 42, C3
25	15	X	W	X	-	X	W
	20	X	W	X	X	X	W
	25	X	W	X	X	X	W
40	32	X	W	X	-	X	W
	40	X	W	X	X	X	W
50	50	X	W	X	X	X	W
	65	X	-	-	X	X	-

MG = diaphragm size, X = standard

W = welded assembly

1) Connection type

Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

Code 34: Flange JIS B2220, 10K, RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

Code 38: Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D

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

2) Valve body material

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Code C3: 1.4435, investment casting

3) On request

Clamp

MG	DN	Connection type code ¹⁾																	
		80, 8P		82		84		86		88, 8T		8A		8E		8F		8H	
		Material code ²⁾																	
		40, 42	F4	40, 42	F4	40, 42	F4	40, 42	F4	40, 42	F4	40, 42	F4	40, 42	F4	40, 42	F4	40, 42	F4
8	6	-	-	K	K	-	-	-	-	-	-	K	K	-	-	-	-	-	-
	8	K	K	K	K	-	-	-	-	-	-	K	K	-	-	-	-	W	W
	10	K	K	-	-	-	-	W	W	-	-	W	W	-	-	-	-	-	-
	15	K	K	-	-	W	W	-		W	W	-	-	-	-	-	-	-	-
10	10	K	W	K	W	-	-	W	W	-	-	K	W	-	-	-	-	K	W
	15	K	W	W	W	K	W	W	W	K	W	K	W	-	-	-	-	K	W
	20	K	W	-	-	K	W	-	-	K	W	-	-	-	-	-	-	-	-
25	15	-	-	W	W	K	K	W	W	-	-	K	K	-	-	-	-	K	W
	20	K	K	K	W	K	K	W	W	K	K	K	K	-	-	-	-	-	-
	25	K	W	K	W	-	-	W	W	K	W	K	W	K	W	K	W	-	-
40	32	-	-	W	W	-	-	W	W	-	-	K	K	K	K	K	K	-	
	40	K	K	W	W	-	-	W	W	K	K	K	K	K	K	K	K	-	-
50	50	K	K	W	W	-	-	W	W	K	K	K	K	K	K	K	K	-	-
	65	W	W	-	-	-	-	-	-	W	W	-	-	W	W	W	W	-	-

MG = diaphragm size

K = connections completely machined (not welded)

W = welded assembly

1) Connection type

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

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 84: Clamp for pipe BS 4825 Part 1, DN 15 and DN 20, clamp OD 25.0 mm, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 86: Clamp DIN 32676 series A

Code 88: Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configurations D & F

Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 8E: Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8F: Clamp IDF/ISO for pipe JIS-G 3447, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8H: Clamp IDF/ISO for pipe JIS-G 3459, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8P: Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configurations D & F

Code 8T: Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configurations D & F

2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code F4: 1.4539 / UNS N08904, forged body

Availability of product compliance

	Diaphragm material code ¹⁾	Body material code
Drinking water		
Belgaqua (B)	28	37, C3

1) Diaphragm material

Code 28: EPDM

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Diaphragm valve, motorized, electro-mechanical hollow shaft actuator, eSyDrive	649

2 DN	Code
4	4
DN 6	6
DN 8	8
DN 10	10
DN 12	12
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65

3 Body configuration	Code
Tank bottom valve body	B
Body configuration code B: Dimensions and designs on request	
2/2-way body	D
T body	T
Body configuration code T: Dimensions on request	

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot DIN EN 10357 series B (2014 edition; formerly DIN 11850 series 1)	16
Spigot EN 10357 series A/DIN 11866 series A, formerly DIN 11850 series 2	17
Spigot DIN 11850 series 3	18
Spigot JIS-G 3447	35
Spigot JIS-G 3459 schedule 10s	36
Spigot SMS 3008	37
Spigot BS 4825, Part 1	55
Spigot ASME BPE/DIN EN 10357 series C (from 2022 edition)/DIN 11866 series C	59
Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B	60
Spigot ANSI/ASME B36.19M schedule 10s	63
Spigot ANSI/ASME B36.19M schedule 5s	64
Spigot ANSI/ASME B36.19M schedule 40s	65
Threaded connection	
Threaded socket DIN ISO 228	1

4 Connection type	Code
Threaded socket DIN ISO 228 body length (FTF): 75 mm	1L
NPT female thread	31
Threaded spigot DIN 11851	6
Cone spigot and union nut DIN 11851	6K
Flange	
Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	8
Flange JIS B2220, 10K, RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	34
Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D	38
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	39
Clamp	
Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configurations D & F	80
Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	82
Clamp for pipe BS 4825 Part 1, DN 15 and DN 20, clamp OD 25.0 mm, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D	84
Clamp DIN 32676 series A	86
Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configurations D & F	88
Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D	8A
Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	8E
Clamp IDF/ISO for pipe JIS-G 3447, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	8F
Clamp IDF/ISO for pipe JIS-G 3459, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	8H

Order data

4 Connection type	Code
Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configurations D & F	8P
Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configurations D & F	8T

5 Valve body material	Code
SG iron material	
EN-GJS-400-18-LT (GGG 40.3), PFA lined	17
EN-GJS-400-18-LT (GGG 40.3), PP lined	18
EN-GJS-400-18-LT (GGG 40.3), hard rubber lined	83
EN-GJS-400-18-LT (GGG 40.3)	90
Investment casting material	
1.4408, investment casting	37
1.4408, PFA lined	39
1.4435, investment casting	C3
Forged material	
1.4435 (F316L), forged body	40
1.4435 (BN2), forged body, Δ Fe < 0.5%	42
1.4539 / UNS N08904, forged body	F4

6 Diaphragm material	Code
Elastomer	
NBR	2
FKM	4
CR	8
EPDM	13
EPDM	17
EPDM	19
EPDM	28
EPDM	29
PTFE	
PTFE/EPDM one-piece	54
PTFE/EPDM two-piece	5M
PTFE/EPDM two-piece for lining bodies	5Y
PTFE/FKM two-piece	5T
PTFE/PVDF/EPDM three-piece	71
Note: The PTFE/EPDM diaphragm (code 5M, code 5T, code 71) is available from diaphragm size 25.	
Note: The PTFE/EPDM diaphragm (code 5Y) is available for diaphragm size 25 and can only be combined with PFA-lined valve bodies.	

7 Voltage/Frequency	Code
24 V DC	C1

8 Control module	Code
OPEN/CLOSE, positioner and process controller	L0

9 Surface	Code
Ra ≤ 6.3 µm for media wetted surfaces, mechanically polished internal	1500
Ra ≤ 0.8 µm for media wetted surfaces, in accordance with DIN 11866 H3, mechanically polished internal	1502
Ra ≤ 0.8 µm for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external	1503
Ra ≤ 0.6 µm for media wetted surfaces, mechanically polished internal	1507
Ra ≤ 0.6 µm for media wetted surfaces, electropolished internal/external	1508
Ra ≤ 0.4 µm for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal	1536
Ra ≤ 0.4 µm for media wetted surfaces, in accordance with DIN 11866 HE4, electropolished internal/external	1537
Ra ≤ 0.25 µm for media wetted surfaces *), in accordance with DIN 11866 HE5, electropolished internal/external, *) for inner pipe diameter < 6 mm, in spigot Ra ≤ 0.38 µm	1516
Ra ≤ 0.25 µm for media wetted surfaces *), in accordance with DIN 11866 H5, mechanically polished internal, *) for inner pipe diameter < 6 mm, in spigots Ra ≤ 0.38 µm	1527
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF1, mechanically polished internal	SF1
Ra max. 0.64 µm (25 µin.) for media wetted surfaces, in accordance with ASME BPE SF2, mechanically polished internal	SF2
Ra max. 0.76 µm (30 µin.) for media wetted surfaces, in accordance with ASME BPE SF3, mechanically polished internal	SF3
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
Ra max. 0.64 µm (25 µin.) for media wetted surfaces, in accordance with ASME BPE SF6, electropolished internal/external	SF6

10 Actuator version	Code
DN 4 - 15, diaphragm size 8	
Actuator size 0 diaphragm size 8	0B
DN 10–20, diaphragm size 10	
Actuator size 0	0A
DN 15 - 25, diaphragm size 25	
Actuator size 1	1A
DN 32 - 40, diaphragm size 40	
Actuator size 1	1A
Actuator size 2	2A

10 Actuator version	Code
DN 50–65, diaphragm size 50	
Actuator size 2	2A

11 Special version	Code
Without	
BELGAQUA certification	B
Special version for oxygen applications. Operating temperature restricted according to product label. Media wetted materials cleaned. Seals and oxygen grease used tested according to DIN EN 1797 / ISO 21010	S

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

Order example

Ordering option	Code	Description
1 Type	649	Diaphragm valve, motorized, electro-mechanical hollow shaft actuator, eSyDrive
2 DN	50	DN 50
3 Body configuration	D	2/2-way body
4 Connection type	60	Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B
5 Valve body material	40	1.4435 (F316L), forged body
6 Diaphragm material	5M	PTFE/EPDM two-piece
7 Voltage/Frequency	C1	24 V DC
8 Control module	L0	OPEN/CLOSE, positioner and process controller
9 Surface	1503	Ra ≤ 0.8 µm for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external
10 Actuator version	2A	Actuator size 2
11 Special version	S	Special version for oxygen applications. Operating temperature restricted according to product label. Media wetted materials cleaned. Seals and oxygen grease used tested according to DIN EN 1797 / ISO 21010
12 CONEXO		Without

Technical data

Medium

Working medium: Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.
For special oxygen version (code S): only gaseous oxygen

Temperature

Media temperature:

Diaphragm material	Standard	Special version for oxygen
NBR (code 2)	-10 – 100 °C	-
FKM (code 4)	-10 – 90 °C	-
CR (code 8)	-10 – 100 °C	-
EPDM (code 13)	-10 – 100 °C	0 – 60 °C
EPDM (code 17)	-10 – 100 °C	-
EPDM (code 19)	-10 – 100 °C	0 – 60 °C
EPDM (code 28)	-10 – 85 °C	-
EPDM (code 29)	-10 – 100 °C	-
PTFE/EPDM (code 54)	-10 – 100 °C	0 – 60 °C
PTFE/EPDM (code 5M)	-10 – 100 °C	0 – 60 °C
PTFE/EPDM (code 5Y)	-10 to 100 °C	0–100 °C

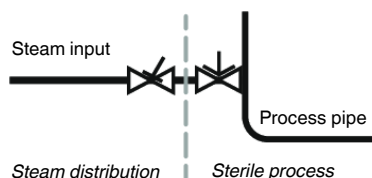
Sterilization temperature:

EPDM (code 13)	max. 150 °C, max. 60 min per cycle
EPDM (code 17)	max. 150 °C, max. 180 min per cycle
EPDM (code 19)	max. 150 °C, max. 180 min per cycle
PTFE/EPDM (code 54)	max. 150 °C, constant temperature per cycle
PTFE/EPDM (code 5M)	max. 150 °C, constant temperature per cycle
PTFE/EPDM (Code 5Y)	Max. 150 °C, constant temperature per cycle

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

If the sterilization temperatures listed above are applied to the EPDM diaphragms for longer periods of time, the service life of the diaphragms will be reduced. In these cases, maintenance cycles must be adapted accordingly.

PTFE diaphragms can also be used as steam barriers; however, this will reduce their service life. This also applies to PTFE diaphragms exposed to high temperature fluctuations. The maintenance cycles must be adapted accordingly. GEMÜ 555 and 505 globe valves are particularly suitable for use in the area of steam generation and distribution. The following valve arrangement for interfaces between steam pipes and process pipes has proven itself over time: A globe valve for shutting off steam pipes and a diaphragm valve as an interface to the process pipes.



Ambient temperature: -10 – 60 °C

Storage temperature: 0 – 40 °C

Pressure

Operating pressure:

MG	DN	Actuator version	Diaphragm material		
			Elastomer	PTFE	
				Forged body	Cast body with and without lining
8	4 - 15	0B	0 - 10	0 - 10	0 - 6
10	10 - 20	0A	0 - 10	0 - 10	0 - 6
25	15 - 25	1A	0 - 10	0 - 10	0 - 6
40	32 - 40	1A	0 - 5	0 - 2	0 - 2
		2A	0 - 10	0 - 10	0 - 6
50	50 - 65	2A	0 - 10	0 - 10	0 - 6

MG = diaphragm size

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.

Pressure rating:

PN 16

Leakage rate:

Leakage rate A to P11/P12 EN 12266-1

Kv values:

MG	DN	Connection type code								
		0	16	17	18	37	59	60	1, 1L	31
8	4	0.5	-	-	-	-	-	-	-	-
	6	-	-	1.1	-	-	-	1.2	-	-
	8	-	-	1.3	-	-	0.6	2.2	1.4	-
	10	-	2.1	2.1	2.1	-	1.3	-	-	-
	15	-	-	-	-	-	2.0	-	-	-
10	10	-	2.4	2.4	2.4	-	2.2	3.3	-	-
	12	-	-	-	-	-	-	-	3.2	-
	15	3.3	3.8	3.8	3.8	-	2.2	4.0	3.4	-
	20	-	-	-	-	-	3.8	-	-	-
25	15	4.1	4.7	4.7	4.7	-	-	7.4	6.5	6.5
	20	6.3	7.0	7.0	7.0	-	4.4	13.2	10.0	10.0
	25	13.9	15.0	15.0	15.0	12.6	12.2	16.2	14.0	14.0
40	32	25.3	27.0	27.0	27.0	26.2	-	30.0	26.0	26.0
	40	29.3	30.9	30.9	30.9	30.2	29.5	32.8	33.0	33.0
50	50	46.5	48.4	48.4	48.4	51.7	50.6	55.2	60.0	60.0
	65	-	-	-	-	62.2	61.8	-	-	-

MG = diaphragm size

Kv values in m³/h

Kv values determined in accordance with DIN EN 60534 standard, inlet pressure 5 bar, Δp 1 bar, stainless steel valve body and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.

The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and term of use.

Kv values:

MG	DN	Cast body without lining		Rubber lining	Plastic lining
		Threaded body	Flanged body		
		Material code 90		Material code 83	Material code 17, 18, 39
25	15	8.0	10.0	6.0	5.0
	20	11.5	14.0	11.0	9.0
	25	11.5	17.0	15.0	13.0
40	32	28.0	36.0	29.0	23.0
	40	28.0	40.0	32.0	26.0
50	50	60.0	68.0	53.0	47.0
	65	-	68.0	53.0	47.0

MG = diaphragm size, Kv values in m³/h

Kv values determined in accordance with DIN EN 60534, inlet pressure 5 bar, Δp 1 bar, with connection flange EN 1092 length EN 558 series 1 (or threaded socket DIN ISO 228 for body material GGG40.3) and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.

The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and term of use.

Product conformity

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

EMC Directive: 2014/30/EU

Interference emission

Category: C3

The product is only intended for operation in industrial environments.

The product is not intended for use in a public low-voltage network supplying residential areas. Connection to a mains of this kind can cause radio frequency interference.

Food: Regulation (EC) No. 1935/2004*

Regulation (EC) No. 10/2011*

FDA*

USP* Class VI

Drinking water: Belgaqua*

RoHS Directive: 2011/65/EU

TA Luft (German Clean Air Act):

The product meets the following requirements under the maximum permissible operating conditions:

- Tightness or compliance with the specific leak rate as defined in TA Luft (German Clean Air Act) and VDI 2440 and VDI 2290

- Compliance with the requirements in accordance with DIN EN ISO 15848-1, Table C.2, Class BH

* depending on version and/or operating parameters

Mechanical data**Protection class:** IP 65 acc. to EN 60529

Actuating speed: Actuator version 0A, 0B adjustable, max. 6 mm/s
 Actuator version 1A adjustable, max. 6 mm/s
 Actuator version 2A adjustable, max. 4 mm/s

Flow direction: Optional

Installation position: Optional
 Observe the angle of rotation for optimized draining when it comes to installation.
 See separate document, "Angle of rotation technical information".

Weight: **Actuator**
 Actuator version 0A, 0B 2.1 kg
 Actuator version 1A 3.0 kg
 Actuator version 2A 9.0 kg

Body

Connection type code		0, 16, 17, 18, 35, 36, 37, 55, 59, 60, 63, 64, 65	1, 1L	1, 31	31	6, 6K	8, 38, 39	80, 82, 88, 8A, 8E, 8P, 8T
Valve body		Spigot	Threaded socket			Threaded spigot	Flange	Clamp
Material code			37	90	37			
MG	DN							
8	4	0.09	-	-	-	-	-	-
	6	0.09	-	-	-	-	-	-
	8	0.09	0.09	-	-	-	-	0.15
	10	0.09	-	-	-	0.21	-	0.18
	15	0.09	-	-	-	-	-	0.18
10	10	0.30	-	-	-	0.33	-	0.30
	12	-	0.17	-	-	-	-	-
	15	0.30	0.26	-	-	0.35	-	0.43
	20	-	-	-	-	-	-	0.43
25	15	0.62	0.32	0.50	0.32	0.71	1.50	0.75
	20	0.58	0.34	0.60	0.34	0.78	2.20	0.71
	25	0.55	0.39	0.90	0.39	0.79	2.80	0.63
40	32	1.45	0.88	1.40	0.88	1.66	3.40	1.62
	40	1.32	0.93	1.90	0.93	1.62	4.50	1.50
50	50	2.25	1.56	2.70	1.56	2.70	6.30	2.50
	65	2.20	-	-	-	-	10.30	2.30

MG = diaphragm size, weight in kg

Actuator duty cycle and service life

Service life:	Control operation - Class C acc. to EN 15714-2 (1,800,000 start-ups and 1200 start-ups per hour). Open / Close duty - Minimum 1,000,000 switching cycles at room temperature and permissible duty cycle.
Duty cycle:	Control operation - Class C acc. to EN 15714-2. Open/Close duty - 100%

Electrical data

Supply voltage:	Actuator size 0	Actuator size 1	Actuator size 2
Voltage	U _V = 24 V DC ± 10%		
Rating	Max. 28 W	Max. 65 W	Max. 100 W
Reverse battery protection	Yes		

Analogue input signals

Set value

Input signal:	0/4 - 20 mA; 0 – 10 V DC (selectable using software)
Input type:	passive
Input resistance:	250 Ω
Accuracy/linearity:	≤ ±0.3% of full scale value
Temperature drift:	≤ ±0.1% / 10°K
Resolution:	12 bit
Reverse polarity protection:	No
Overload proof:	Yes (up to ± 24 V DC)

Process actual value

Input signal:	0/4 - 20 mA; 0 – 10 V DC (selectable using software)
Input type:	passive
Input resistance:	250 Ω
Accuracy/linearity:	≤ ±0.3% of full scale value
Temperature drift:	≤ ±0.1% / 10°K
Resolution:	12 bit
Reverse polarity protection:	No
Overload proof:	Yes (up to ± 24 V DC)

Digital input signals

Digital inputs:	3
Function:	Can be selected using software
Voltage:	24 V DC
Logic level "1":	>14 V DC
Logic level "0":	< 8 V DC
Input current:	typ. 2.5 mA (at 24 V DC)

Analogue output signals

Actual value

Output signal:	0/4 - 20 mA; 0 – 10 V DC (selectable using software)
Output type:	Active (AD5412)
Accuracy:	$\leq \pm 1\%$ of full scale value
Temperature drift:	$\leq \pm 0.1\% / 10^\circ\text{K}$
Load resistor:	$\leq 750\text{ k}\Omega$
Resolution:	10 bit
Overload proof:	Yes (up to $\pm 24\text{ V DC}$)
Short-circuit proof:	Yes

Digital output signals

Switching outputs 1 and 2

Design:	2x make contact, potential-free
Switching voltage:	max. 48 V DC / 48 V AC
Switch rating:	max. 60 W / 2A
Switch points:	Adjustable 0 - 100 %

Switching output 3

Function:	Signal fault
Type of contact:	Push-Pull
Switching voltage:	Supply voltage
Switching current:	$\leq 0.1\text{ A}$
Drop voltage:	Max. 2.5 V DC at 0.1 A
Overload proof:	Yes (up to $\pm 24\text{ V DC}$)
Short-circuit proof:	Yes
Pull-Down resistance:	120 k Ω

Communication eSy-Web

Interface:	Ethernet
Function:	Parameterisation via web browser
IP address:	192.168.2.1 alterable via web browser
Subnet screen:	255.255.252.0 alterable via web browser

The actuator and the PC must be in the same network to use the web server. The IP address of the actuator is entered in the web browser and the actuator can then be parametrised. In order to use more than one actuator, a definitive IP address must be assigned to each actuator in the same network.

Communication Modus TCP

Interface:	Modbus TCP
IP address:	192.168.2.1 alterable via web browser
Subnet screen:	255.255.252.0 alterable via web browser
Port:	502

Supported function codes:

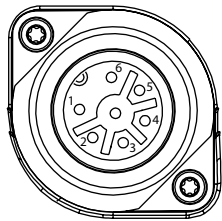
Code Dezimal	Code Hex	Function
3	0x03	Read Holding Registers
4	0x04	Read Input Registers
6	0x06	Write Single Register
16	0x10	Write Multiple Registers
23	0x17	Read / Write Multiple Registers

Behaviour in the event of an error

Function:	In the event of an error the valve moves to the error position. Notes: Moving to the error position is only possible with full power supply. This behaviour is not a safety position. The valve must be operated with a GEMÜ 1571 emergency power supply module (see accessories) to ensure the function in case of voltage loss.
Error position:	Closed, open or hold (adjustable via eSy-web web interface).

Electrical connection

Connection X1



7-pin plug, Binder, type 693

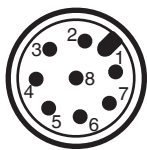
Pin	Signal name
Pin 1	Uv, 24 V DC supply voltage
Pin 2	Uv GND
Pin 3	Relay output K1, common
Pin 4	Relay output K1, make contact
Pin 5	Relay output K2, common
Pin 6	Relay output K2, make contact
Pin PE	Function earth

Connection X2



5-pin M12 built-in socket, D-coded

Pin	Signal name
Pin 1	Tx + (Ethernet)
Pin 2	Rx + (Ethernet)
Pin 3	Tx - (Ethernet)
Pin 4	Rx - (Ethernet)
Pin 5	Shield

Connection X3

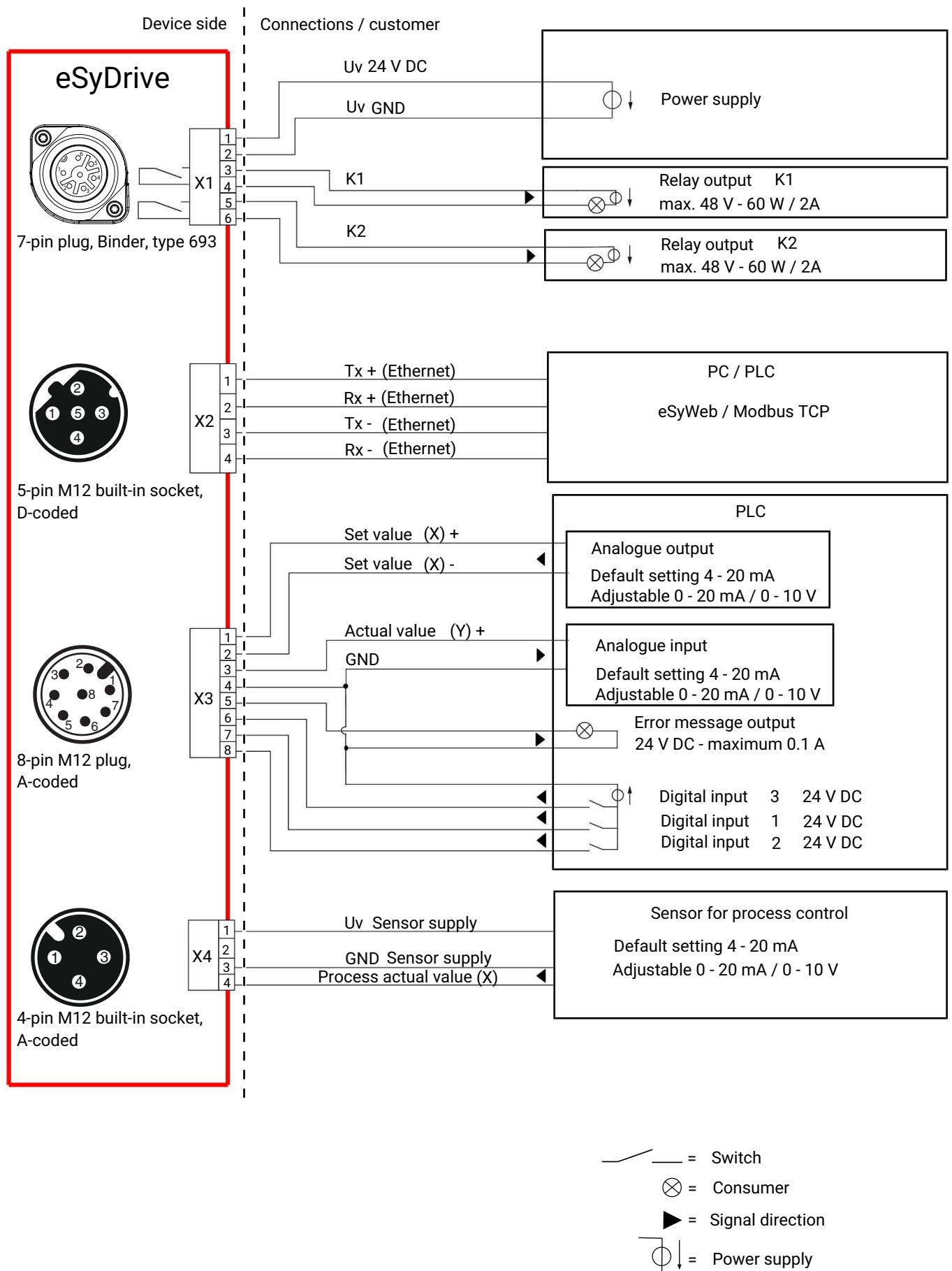
8-pin M12 plug, A-coded

Pin	Signal name
Pin 1	W+ set value input
Pin 2	W – set value input
Pin 3	X + actual value output
Pin 4	GND (actual value output, digital input 1 – 3, error message output)
Pin 5	Error message output 24 V DC
Pin 6	Digital input 3
Pin 7	Digital input 1
Pin 8	Digital input 2

Connection X4

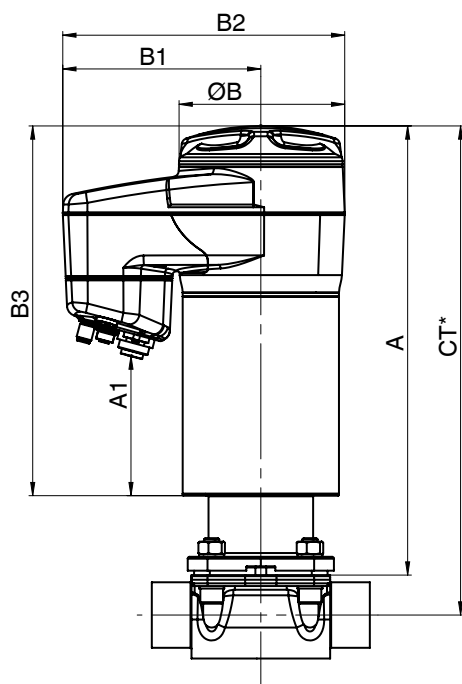
4-pin M12 built-in socket, A-coded

Pin	Signal name
Pin 1	UV, 24 V DC actual value supply
Pin 2	n.c.
Pin 3	GND (actual value supply, actual value input)
Pin 4	X+, process actual value input
Pin 5	n.c.

Connection diagram

Dimensions

Actuator dimensions



MG	DN	Actuator version	A	A1	Ø B	B1	B2	B3
8	4 - 15	0B	215,9	44.0	68.0	126.0	160.0	190.0
10	10 - 20	0A	230.0	44.0	68.0	126.0	160.0	190.0
25	15 - 25	1A	305.0	83.0	82.0	132.0	172.0	250.0
40	32 - 40	1A	303.0	75.0	82.0	132.0	172.0	243.0
		2A	360.0	111.0	134.0	157.0	224.0	296.0
50	50 - 65	2A	360.0	111.0	134.0	157.0	224.0	296.0

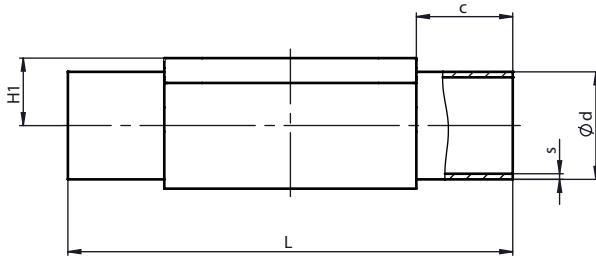
Dimensions in mm

MG = diaphragm size

* CT = A + H1 (see body dimensions)

Body dimensions

Spigot DIN/EN/ISO (code 0, 16, 17, 18, 60)



Connection type spigot DIN/EN/ISO (code 0, 16, 17, 18, 60)¹⁾, forged material (code 40, 42, F4)²⁾

MG	DN	NPS	c (min)	ød					H1	L	s				
				Connection type							Connection type				
				0	16	17	18	60			0	16	17	18	60
8	4	-	20.0	6.0	-	-	-	-	8.5	72.0	1.0	-	-	-	-
	6	-	20.0	-	-	8.0	-	10.2	8.5	72.0	-	-	1.0	-	1.6
	8	1/4"	20.0	-	-	10.0	-	13.5	8.5	72.0	-	-	1.0	-	1.6
	10	3/8"	20.0	-	12.0	13.0	14.0	-	8.5	72.0	-	1.0	1.5	2.0	-
10	10	3/8"	25.0	-	12.0	13.0	14.0	17.2	12.5	108.0	-	1.0	1.5	2.0	1.6
	15	1/2"	25.0	18.0	18.0	19.0	20.0	21.3	12.5	108.0	1.5	1.0	1.5	2.0	1.6
25	15	1/2"	25.0	18.0	18.0	19.0	20.0	21.3	19.0	120.0	1.5	1.0	1.5	2.0	1.6
	20	3/4"	25.0	22.0	22.0	23.0	24.0	26.9	19.0	120.0	1.5	1.0	1.5	2.0	1.6
	25	1"	25.0	28.0	28.0	29.0	30.0	33.7	19.0	120.0	1.5	1.0	1.5	2.0	2.0
40	32	1¼"	25.0	34.0	34.0	35.0	36.0	42.4	26.0	153.0	1.5	1.0	1.5	2.0	2.0
	40	1½"	30.5	40.0	40.0	41.0	42.0	48.3	26.0	153.0	1.5	1.0	1.5	2.0	2.0
50	50	2"	30.0	52.0	52.0	53.0	54.0	60.3	32.0	173.0	1.5	1.0	1.5	2.0	2.0

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 0: Spigot DIN

Code 16: Spigot DIN EN 10357 series B (2014 edition; formerly DIN 11850 series 1)

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

Code 18: Spigot DIN 11850 series 3

Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

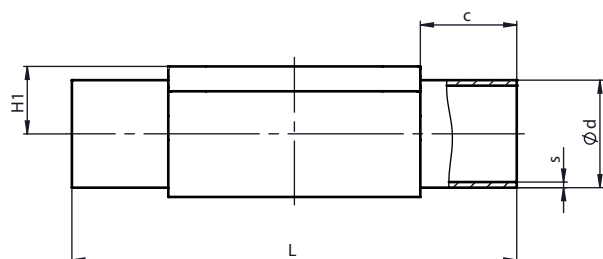
2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code F4: 1.4539 / UNS N08904, forged body

Code A1: 3.7035, titanium



Connection type spigot DIN/EN/ISO (code 0, 17, 60)¹⁾, investment casting material (code C3)²⁾

MG	DN	NPS	c (min)	ød			H1	L	s		
				Connection type					Connection type		
				0	17	60			0	17	60
8	4	-	20.0	6.0	-	-	8.5	72.0	1.0	-	-
	6	-	20.0	-	8.0	-	8.5	72.0	-	1.0	-
	8	1/4"	20.0	-	10.0	13.5	8.5	72.0	-	1.0	1.6
	10	3/8"	20.0	-	13.0	-	8.5	72.0	-	1.5	-
10	10	3/8"	25.0	-	13.0	17.2	12.5	108.0	-	1.5	1.6
	15	1/2"	25.0	-	19.0	21.3	12.5	108.0	-	1.5	1.6
25	15	1/2"	25.0	-	19.0	21.3	13.0	120.0	-	1.5	1.6
	20	3/4"	25.0	-	23.0	26.9	16.0	120.0	-	1.5	1.6
	25	1"	25.0	-	29.0	33.7	19.0	120.0	-	1.5	2.0
40	32	1¼"	25.0	-	35.0	42.4	24.0	153.0	-	1.5	2.0
	40	1½"	30.5	-	41.0	48.3	26.0	153.0	-	1.5	2.0
50	50	2"	30.0	-	53.0	60.3	32.0	173.0	-	1.5	2.0

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 0: Spigot DIN

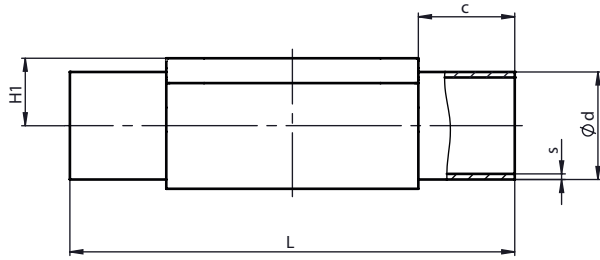
Code 17: Spigot EN 10357 series A/DIN 11866 series A, formerly DIN 11850 series 2

Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

2) **Valve body material**

Code C3: 1.4435, investment casting

Spigot ASME/BS (code 55, 59, 63, 64, 65)



Connection type spigot ASME/BS (code 55, 59, 63, 64, 65)¹⁾, forged material (code 40, 42, F4)²⁾

MG	DN	NPS	c (min)	ød					H1	L	s				
				Connection type							Connection type				
				55	59	63	64	65			55	59	63	64	65
8	6	-	20.0	-	-	10.3	-	10.3	8.5	72.0	-	-	1.24	-	1.73
	8	1/4"	20.0	6.35	6.35	13.7	-	13.7	8.5	72.0	1.2	0.89	1.65	-	2.24
	10	3/8"	20.0	9.53	9.53	-	-	-	8.5	72.0	1.2	0.89	-	-	-
	15	1/2"	20.0	12.70	12.70	-	-	-	8.5	72.0	1.2	1.65	-	-	-
10	10	3/8"	25.0	9.53	9.53	17.1	-	17.1	12.5	108.0	1.2	0.89	1.65	-	2.31
	15	1/2"	25.0	12.70	12.70	21.3	21.3	21.3	12.5	108.0	1.2	1.65	2.11	1.65	2.77
	20	3/4"	25.0	19.05	19.05	-	-	-	12.5	108.0	1.2	1.65	-	-	-
25	15	1/2"	25.0	-	-	21.3	21.3	21.3	19.0	120.0	-	-	2.11	1.65	2.77
	20	3/4"	25.0	19.05	19.05	26.7	26.7	26.7	19.0	120.0	1.2	1.65	2.11	1.65	2.87
	25	1"	25.0	-	25.40	33.4	33.4	33.4	19.0	120.0	-	1.65	2.77	1.65	3.38
40	32	1¼"	25.0	-	-	42.2	42.2	42.2	26.0	153.0	-	-	2.77	1.65	3.56
	40	1½"	30.5	-	38.10	48.3	48.3	48.3	26.0	153.0	-	1.65	2.77	1.65	3.68
50	50	2"	30.0	-	50.80	60.3	60.3	60.3	32.0	173.0	-	1.65	2.77	1.65	3.91
	65	2½"	30.0	-	63.50	-	-	-	34.0	173.0	-	1.65	-	-	-

Connection type spigot ASME BPE (code 59)¹⁾, investment casting material (code C3)²⁾

MG	DN	NPS	c (min)	Ød	H1	L	s
8	8	1/4"	20.0	6.35	8.5	72.0	0.89
	10	3/8"	20.0	9.53	8.5	72.0	0.89
	15	1/2"	20.0	12.70	8.5	72.0	1.65
10	20	3/4"	25.0	19.05	12.5	108.0	1.65
25	20	3/4"	25.0	19.05	16.0	120.0	1.65
	25	1"	25.0	25.40	19.0	120.0	1.65
40	40	1 1/2"	30.5	38.10	26.0	153.0	1.65
50	50	2"	30.0	50.80	32.0	173.0	1.65

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 55: Spigot BS 4825, Part 1

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

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

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

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

2) Valve body material

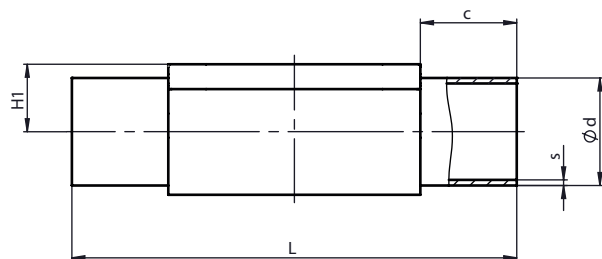
Code 40: 1.4435 (F316L), forged body

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

Code C3: 1.4435, investment casting

Code F4: 1.4539 / UNS N08904, forged body

Code A1: 3.7035, titanium

Spigot JIS/SMS (code 35, 36, 37)**Connection type spigot JIS/SMS (code 35, 36, 37)¹⁾, forged material (code 40, 42, F4)²⁾**

MG	DN	NPS	c (min)	ød			H1	L	s		
				Connection type					Connection type		
				35	36	37			35	36	37
8	6	-	20.0	-	10.5	-	8.5	72.0	-	1.20	-
	8	1/4"	20.0	-	13.8	-	8.5	72.0	-	1.65	-
10	10	3/8"	25.0	-	17.3	-	12.5	108.0	-	1.65	-
	15	1/2"	25.0	-	21.7	-	12.5	108.0	-	2.10	-
25	15	1/2"	25.0	-	21.7	-	19.0	120.0	-	2.10	-
	20	3/4"	25.0	-	27.2	-	19.0	120.0	-	2.10	-
	25	1"	25.0	25.4	34.0	25.0	19.0	120.0	1.2	2.80	1.2
40	32	1¼"	25.0	31.8	42.7	33.7	26.0	153.0	1.2	2.80	1.2
	40	1½"	30.5	38.1	48.6	38.0	26.0	153.0	1.2	2.80	1.2
50	50	2"	30.0	50.8	60.5	51.0	32.0	173.0	1.5	2.80	1.2
	65	2½"	30.0	63.5	-	63.5	34.0	173.0	2.0	-	1.6

Connection type spigot SMS (code 37)¹⁾, investment casting material (code C3)³⁾

MG	DN	NPS	c (min)	Ød	H1	L	s
25	25	1"	25.0	25.0	19.0	120.0	1.2
40	40	1 1/2"	30.5	38.0	26.0	153.0	1.2
50	50	2"	30.0	51.0	32.0	173.0	1.2

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 35: Spigot JIS-G 3447

Code 36: Spigot JIS-G 3459 schedule 10s

Code 37: Spigot SMS 3008

2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code C3: 1.4435, investment casting

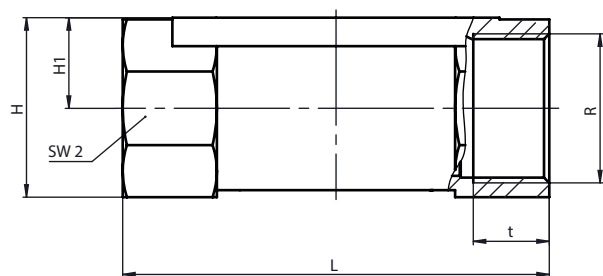
Code F4: 1.4539 / UNS N08904, forged body

Code A1: 3.7035, titanium

3) Valve body material

Code C3: 1.4435, investment casting

Threaded socket DIN (code 1)



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

MG	DN	NPS	H	H1	L	n	R	SW 2	t
8	8	1/4"	19.0	9.0	72.0	6	G 1/4	18.0	11.0
10	15	1/2"	30.0	15.0	68.0	2	G 1/2	27.0	15.0
25	15	1/2"	28.3	14.8	85.0	6	G 1/2	27.0	15.0
	20	3/4"	33.3	17.3	85.0	6	G 3/4	32.0	16.0
	25	1"	42.3	21.8	110.0	6	G 1	41.0	19.0
40	32	1 1/4"	51.3	26.3	120.0	8	G 1 1/4	50.0	20.0
	40	1 1/2"	56.3	28.8	140.0	8	G 1 1/2	55.0	18.0
50	50	2"	71.3	36.0	165.0	8	G 2	70.0	26.0

Connection type threaded socket (code 1)¹⁾, SG iron material (code 90)²⁾

MG	DN	NPS	H	H1	L	n	R	SW 2	t
25	15	1/2"	32.7	16.7	85.0	6	G 1/2	32	15.0
	20	3/4"	42.0	21.5	85.0	6	G 3/4	41	16.3
	25	1"	46.7	23.7	110.0	6	G 1	46	19.1
40	32	1 1/4"	56.0	28.5	120.0	6	G 1 1/4	55	21.4
	40	1 1/2"	66.0	33.5	140.0	6	G 1 1/2	65	21.4
50	50	2"	76.0	38.5	165.0	6	G 2	75	25.7

Dimensions in mm

MG = diaphragm size

n = number of flats

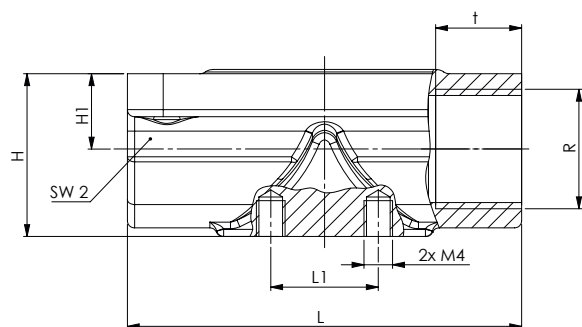
1) **Connection type**

Code 1: Threaded socket DIN ISO 228

2) **Valve body material**

Code 37: 1.4408, investment casting

Code 90: EN-GJS-400-18-LT (GGG 40.3)

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

MG	DN	NPS	H	H1	L	n	R	SW 2	t	L1
10	12	3/8"	22.7	10.5	55.0	2	G3/8	28	12.0	15

Connection type threaded socket (code 1L)³⁾, investment casting material (code 37)²⁾

MG	DN	NPS	H	H1	L	n	R	SW 2	t	L1
10	15	1/2"	28.1	13.0	75.0	2	G 1/2	32	15.0	15

Dimensions in mm

MG = diaphragm size

n = number of flats

1) Connection type

Code 1: Threaded socket DIN ISO 228

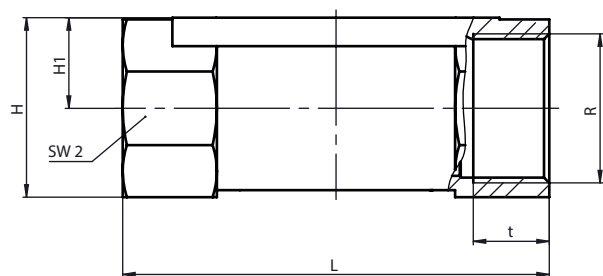
2) Valve body material

Code 37: 1.4408, investment casting

3) Connection type

Code 1L: Threaded socket DIN ISO 228 body length (FTF): 75 mm

Threaded socket NPT (code 31)



Connection type threaded socket NPT (code 31)¹⁾, investment casting material (code 37)²⁾

MG	DN	NPS	H	H1	L	n	R	SW 2	t
25	15	1/2"	28.3	14.8	85.0	6	NPT 1/2	27.0	14.0
	20	3/4"	33.3	17.3	85.0	6	NPT 3/4	32.0	14.0
	25	1"	42.3	21.8	110.0	6	NPT 1	41.0	17.0
40	32	1 1/4"	51.3	26.3	120.0	8	NPT 1 1/4	50.0	17.0
	40	1 1/2"	56.3	28.8	140.0	8	NPT 1 1/2	55.0	17.0
50	50	2"	71.3	36.3	165.0	8	NPT 2	70.0	18.0

Connection type threaded socket NPT (code 31)¹⁾, SG iron material (code 90)²⁾

MG	DN	NPS	H	H1	L	n	R	SW 2	t
25	15	1/2"	32.7	16.7	85.0	6	NPT 1/2	32	13.6
	20	3/4"	42.0	21.5	85.0	6	NPT 3/4	41	14.1
	25	1"	46.7	23.7	110.0	6	NPT 1	46	16.8
40	32	1 1/4"	56.0	28.5	120.0	6	NPT 1 1/4	55	17.3
	40	1 1/2"	66.0	33.5	140.0	6	NPT 1 1/2	65	17.3
50	50	2"	76.0	38.5	165.0	6	NPT 2	75	17.7

Dimensions in mm

MG = diaphragm size

n = number of flats

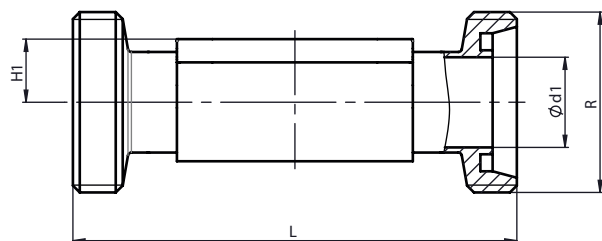
1) **Connection type**

Code 31: NPT female thread

2) **Valve body material**

Code 37: 1.4408, investment casting

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Threaded spigot DIN (code 6)**Connection type threaded spigot DIN (code 6)¹⁾, forged material (code 40, 42)²⁾**

MG	DN	NPS	Ød1	H1	L	R
8	10	3/8"	10.0	8.5	92.0	Rd 28 x 1/8
10	10	3/8"	10.0	12.5	118.0	Rd 28 x 1/8
	15	1/2"	16.0	12.5	118.0	Rd 34 x 1/8
25	15	1/2"	16.0	19.0	118.0	Rd 34 x 1/8
	20	3/4"	20.0	19.0	118.0	Rd 44 x 1/6
	25	1"	26.0	19.0	128.0	Rd 52 x 1/6
40	32	1 1/4"	32.0	26.0	147.0	Rd 58 x 1/6
	40	1 1/2"	38.0	26.0	160.0	Rd 65 x 1/6
50	50	2"	50.0	32.0	191.0	Rd 78 x 1/6

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 6: Threaded spigot DIN 11851

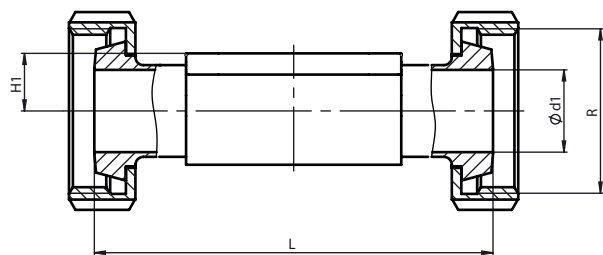
2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code A1: 3.7035, titanium

Cone spigot DIN (code 6K)



Connection type cone spigot DIN (code 6K)¹⁾, forged material (code 40, 42)²⁾

MG	DN	NPS	Ød1	H1	L	R
8	10	3/8"	10.0	8.5	90.0	Rd 28 x 1/8
10	10	3/8"	10.0	12.5	116.0	Rd 28 x 1/8
	15	1/2"	16.0	12.5	116.0	Rd 34 x 1/8
25	15	1/2"	16.0	19.0	116.0	Rd 34 x 1/8
	20	3/4"	20.0	19.0	114.0	Rd 44 x 1/6
	25	1"	26.0	19.0	127.0	Rd 52 x 1/6
40	32	1 1/4"	32.0	26.0	147.0	Rd 58 x 1/6
	40	1 1/2"	38.0	26.0	160.0	Rd 65 x 1/6
50	50	2"	50.0	32.0	191.0	Rd 78 x 1/6

Dimensions in mm

MG = diaphragm size

1) **Connection type**

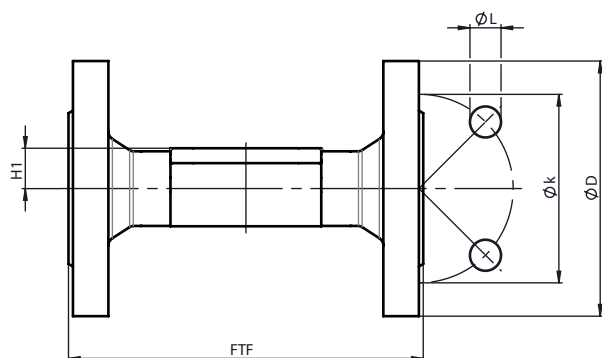
Code 6K: Cone spigot and union nut DIN 11851

2) **Valve body material**

Code 40: 1.4435 (F316L), forged body

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

Code A1: 3.7035, titanium

Flange EN (code 8)

Connection type flange, length EN 558 (code 8)¹⁾, SG iron material (code 17, 18, 83, 90)²⁾, investment casting material (code 39, C3)²⁾, forged material (code 40, 42)²⁾

MG	DN	NPS	øD	FTF		H1				øk	øL	n
				Material		Material						
				17, 18, 39, 83, 90	40, 42, C3	17, 18, 39, 83	40, 42	C3	90			
25	15	1/2"	95.0	130.0	150.0	18.0	19.0	13.0	14.0	65.0	14.0	4
	20	3/4"	105.0	150.0	150.0	20.5	19.0	16.0	16.5	75.0	14.0	4
	25	1"	115.0	160.0	160.0	23.0	19.0	19.0	19.5	85.0	14.0	4
40	32	1¼"	140.0	180.0	180.0	28.7	26.0	24.0	23.0	100.0	18.0	4
	40	1½"	150.0	200.0	200.0	33.0	26.0	26.0	27.0	110.0	18.0	4
50	50	2"	165.0	230.0	230.0	39.0	32.0	32.0	32.0	125.0	18.0	4
	65	2½"	185.0	290.0	-	51.0	-	-	38.7	145.0	18.0	4

Dimensions in mm

MG = diaphragm size

n = number of bolt holes

1) **Connection type**

Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

Code 40: 1.4435 (F316L), forged body

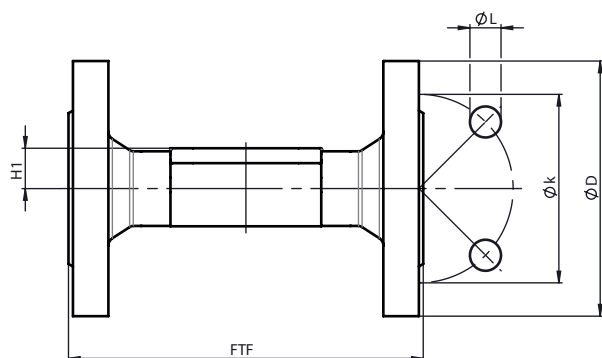
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Code C3: 1.4435, investment casting

Flange JIS (code 34)



Connection type flange, length 558 (code 34)¹⁾, investment casting material (code 39)²⁾

MG	DN	NPS	øD	øk	øL	n	H1	FTF
25	15	1/2"	95.0	70.0	15.0	4	18.0	130.0
	20	3/4"	100.0	75.0	15.0	4	20.5	150.0
	25	1"	125.0	90.0	19.0	4	23.0	160.0
40	32	1¼"	135.0	100.0	19.0	4	28.7	180.0
	40	1½"	140.0	105.0	19.0	4	33.0	200.0
50	50	2"	155.0	120.0	19.0	4	39.0	230.0

Dimensions in mm

MG = diaphragm size

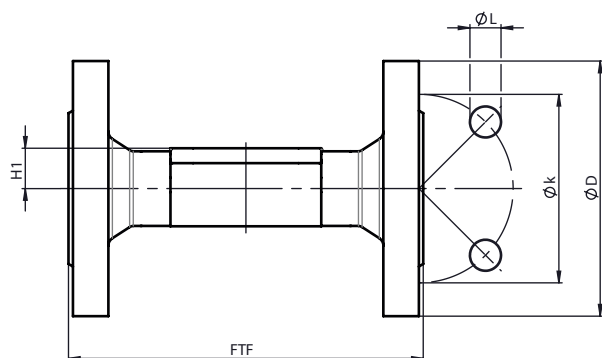
n = number of bolt holes

1) Connection type

Code 34: Flange JIS B2220, 10K, RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) Valve body material

Code 39: 1.4408, PFA lined

Flange ANSI Class (code 38, 39)

Connection type flange, length MSS SP-88 (code 38)¹⁾, SG iron material (code 17, 18, 83)²⁾, investment casting material (code 39)²⁾

MG	DN	NPS	øD	FTF		H1	øk	øL	n
				Material					
				17, 18, 39	83				
25	20	3/4"	100.0	146.0	146.4	20.5	69.9	15.9	4
	25	1"	110.0	146.0	146.4	23.0	79.4	15.9	4
40	40	1½"	125.0	175.0	171.4	33.0	98.4	15.9	4
50	50	2"	150.0	200.0	197.4	39.0	120.7	19.0	4
	65	2½"	180.0	226.0	222.4	51.0	139.7	19.0	4

Dimensions in mm

MG = diaphragm size

n = number of bolt holes

1) **Connection type**

Code 38: Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D

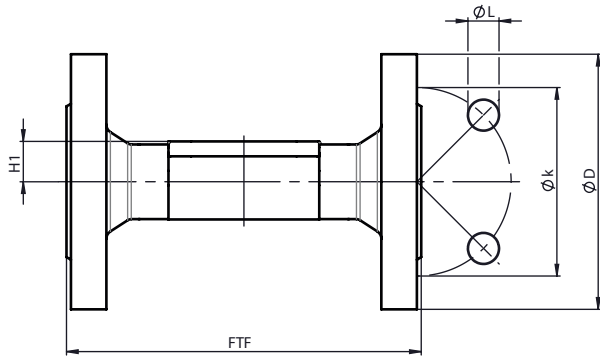
2) **Valve body material**

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined



Connection type flange, length EN 558 (code 39)¹⁾, SG iron material (code 17, 18, 83, 90)²⁾, investment casting material (code 39, C3)²⁾, forged material (code 40, 42)²⁾

MG	DN	NPS	øD	FTF		H1				øk	øL	n
				Material		Material						
				17, 18, 39, 83, 90	40, 42, C3	17, 18, 39, 83	C3	40, 42	90			
25	15	1/2"	90.0	130.0	150.0	-	13.0	19.0	14.0	60.3	15.9	4
	20	3/4"	100.0	150.0	150.0	20.5	16.0	19.0	16.5	69.9	15.9	4
	25	1"	110.0	160.0	160.0	23.0	19.0	19.0	19.5	79.4	15.9	4
40	32	1¼"	115.0	180.0	180.0	28.7	24.0	26.0	23.0	88.9	15.9	4
	40	1½"	125.0	200.0	200.0	33.0	26.0	26.0	27.0	98.4	15.9	4
50	50	2"	150.0	230.0	230.0	39.0	32.0	32.0	32.0	120.7	19.0	4
	65	2½"	180.0	290.0	-	51.0	-	-	38.7	139.7	19.0	4

Dimensions in mm

MG = diaphragm size

n = number of bolt holes

1) Connection type

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

2) Valve body material

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

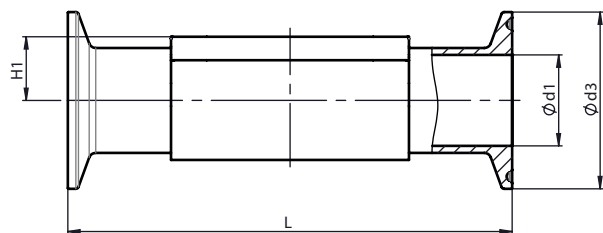
Code 40: 1.4435 (F316L), forged body

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

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Code C3: 1.4435, investment casting

Clamp (code 80, 82, 84, 86, 88, 8A, 8E, 8F, 8H, 8P, 8T)**Connection type clamp DIN/ASME (code 80, 88, 8P, 8T)¹⁾, forged material (code 40, 42, F4)²⁾**

MG	DN	NPS	ød1		ød3		H1	L	
			Connection type		Connection type			Connection type	
			80, 8P	88, 8T	80, 8P	88, 8T		80, 8P	88, 8T
8	8	1/4"	4.57	-	25.0	-	8.5	63.5	-
	10	3/8"	7.75	-	25.0	-	8.5	63.5	-
	15	1/2"	9.40	9.40	25.0	25.0	8.5	63.5	108.0
10	10	3/8"	7.75	-	25.0	-	12.5	88.9	-
	15	1/2"	9.40	9.40	25.0	25.0	12.5	88.9	108.0
	20	3/4"	15.75	15.75	25.0	25.0	12.5	101.6	117.0
25	20	3/4"	15.75	15.75	25.0	25.0	19.0	101.6	117.0
	25	1"	22.10	22.10	50.5	50.5	19.0	114.3	127.0
40	40	1½"	34.80	34.80	50.5	50.5	26.0	139.7	159.0
50	50	2"	47.50	47.50	64.0	64.0	32.0	158.8	190.0
	65	2½"	60.20	60.20	77.5	77.5	34.0	193.8	216.0

Dimensions in mm

MG = diaphragm size

1) Connection type

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

Code 88: Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configurations D & F

Code 8P: Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configurations D & F

Code 8T: Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configurations D & F

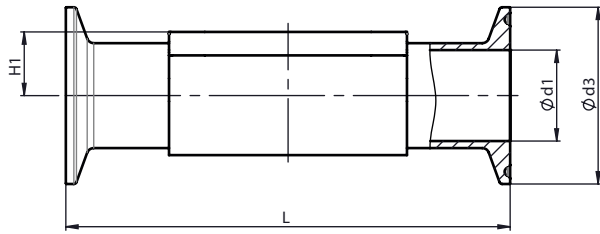
2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code F4: 1.4539 / UNS N08904, forged body

Dimensions



Connection type clamp DIN/ISO (code 82, 86, 8A, 8E)¹⁾, forged material (code 40, 42, F4)²⁾

MG	DN	NPS	ød1				ød3				H1	L			
			Connection type									Connection type			
			82	86	8A	8E	82	86	8A	8E		82	86	8A	8E
8	6	1/8"	7.0	-	6.0	-	25.0	-	25.0	-	8.5	63.5	-	63.5	-
	8	1/4"	10.3	-	8.0	-	25.0	-	25.0	-	8.5	63.5	-	63.5	-
	10	3/8"	-	10.0	10.0	-	-	34.0	34.0	-	8.5	-	115.0	88.9	-
10	10	3/8"	14.0	10.0	10.0	-	25.0	34.0	34.0	-	12.5	108.0	151.0	108.0	-
	15	1/2"	18.1	16.0	16.0	-	50.5	34.0	34.0	-	12.5	108.0	151.0	108.0	-
25	15	1/2"	18.1	16.0	16.0	-	50.5	34.0	34.0	-	19.0	108.0	165.0	108.0	-
	20	3/4"	23.7	20.0	20.0	-	50.5	34.0	34.0	-	19.0	117.0	165.0	117.0	-
	25	1"	29.7	26.0	26.0	22.6	50.5	50.5	50.5	50.5	19.0	1270	165.0	127.0	127.0
40	32	1¼"	38.4	32.0	32.0	31.3	64.0	50.5	50.5	50.5	26.0	146.0	198.0	146.0	146.0
	40	1½"	44.3	38.0	38.0	35.6	64.0	50.5	50.5	50.5	26.0	159.0	198.0	159.0	159.0
50	50	2"	56.3	50.0	50.0	48.6	77.5	64.0	64.0	64.0	32.0	190.0	218.0	190.0	190.0
	65	2½"	-	-	-	60.3	-	-	-	77.5	34.0	-	-	-	216.0

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 86: Clamp DIN 32676 series A

Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

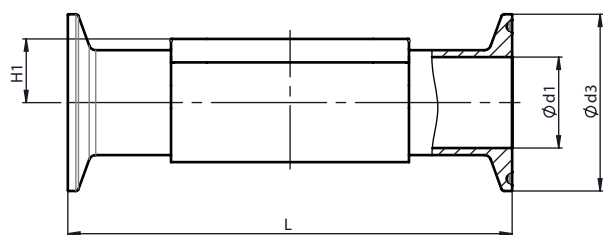
Code 8E: Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) Valve body material

Code 40: 1.4435 (F316L), forged body

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

Code F4: 1.4539 / UNS N08904, forged body



Connection type clamp BS/JIS (code 84, 8F, 8H) ¹⁾, forged material (code 40, 42, F4) ²⁾

Connection type clamp 20/316 (code 84, 8F, 8H) , forged material (code 40, 42, 44)												
MG	DN	NPS	ød1			ød3			H1	L		
			Connection type							Connection type		
			84	8F	8H	84	8F	8H		84	8F	8H
8	8	1/4"	-	-	10.5	-	-	34.0	8.5	-	-	88.9
	10	3/4"	-	-	-	-	-	-	-	-	-	
	15	1/2"	10.3	-	-	25.0	-	-	8.5	108.0	-	-
10	10	3/8"	-	-	14.0	-	-	34.0	12.5	-	-	108.0
	15	1/2"	10.3	-	17.5	25.0	-	34.0	12.5	108.0	-	108.0
	20	3/4"	16.7	-	-	25.0	-	-	12.5	117.0	-	-
25	15	1/2"	10.3	-	17.5	25.0	-	34.0	19.0	108.0	-	108.0
	20	3/4"	16.7	-	-	25.0	-	-	19.0	117.0	-	-
	25	1"	-	23.0	-	-	50.5	-	19.0	-	127.0	-
40	32	1 1/4"	-	29.4	-	-	50.5	-	26.0	-	146.0	-
	40	1 1/2"	-	35.7	-	-	50.5	-	26.0	-	159.0	-
50	50	2"	-	47.8	-	-	64.0	-	32.0	-	190.0	-
	65	2 1/2"	-	59.5	-	-	77.5	-	34.0	-	216.0	-

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 84: Clamp for pipe BS 4825 Part 1, DN 15 and DN 20, clamp OD 25.0 mm, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 8F: Clamp IDF/ISO for pipe JIS-G 3447, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8H: Clamp IDF/ISO for pipe JIS-G 3459, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) **Valve body material**

Code 40: 1.4435 (F316L), forged body

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

Code F4: 1.4539 / UNS N08904, forged body

Accessories



GEMÜ 1218

Connector

GEMÜ 1218 is a connector (cable socket/cable plug), 7-pin. Straight or 90° angled plug type.

GEMÜ 1218 Binder connector			
Connection X1 – supply voltage, relay outputs			
Binder plug	468/eSy series mating connector	Terminal compartment/ screws, 7-pin	88220649 ¹⁾
		Terminal compartment/ screws, 7-pin, 90°	88377714
		Terminal compartment/ screws, 7-pin, 90°, fitted with a 2 metre cable set	88770522

1) provided in the scope of delivery

**GEMÜ 1219****Cable socket / cable plug M12**

The GEMÜ 1219 is a connector (cable socket / cable plug) M12, 5-pin. Straight and/or 90° angled plug type. Defined cable length or with threaded connection without cable. Various materials available for the threaded ring.

GEMÜ 1219 Ethernet/M12 cable			
Connection X2 - network connection			
M12 cable plug, straight, 4-pin	Fitted with a 1 metre cable set	Ethernet RJ45	88450499
	Fitted with a 4 metre cable set		88450500
	Fitted with a 15 metre cable set		88450502
M12 cable plug, angled, 4-pin	Fitted with a 4 metre cable set		88715615
Connection X3 – analogue/digital inputs and outputs			
M12 cable socket, straight, 8-pin	Without cable dia. 6–8 mm		88304829 ¹⁾
	Fitted with a 5 metre cable set, PUR black cable		88758155
M12 cable socket, angled, 8-pin	Without cable dia. 6–8 mm		88422823
	Fitted with a 5 metre cable set, PUR black cable		88374574
Connection X4 – actual value supply, actual value input			
M12 cable plug, straight, 5-pin	Without cable PG7	Nickel-plated brass	88208641
	Fitted with a 2 metre cable set, PUR black cable	5 x 0.34, nickel-plated brass	88208643
	Fitted with a 5 metre cable set, PUR black cable	5 x 0.34, nickel-plated brass	88208644
M12 cable plug, angled, 5-pin	Without cable dia. 6–8 mm	Nickel-plated brass	88208645
	Fitted with a 2 metre cable set, PUR black cable	5 x 0.34, nickel-plated brass	88208649
	Fitted with a 5 metre cable set, PUR black cable	5 x 0.34, nickel-plated brass	88208650

1) provided in the scope of delivery

**GEMÜ 1571****Emergency power supply module**

The GEMÜ 1571 capacitive emergency power supply module is suitable for valves with motorized actuators such as GEMÜ eSyStep and eSyDrive as well as the GEMÜ C53 iComLine control valve. In the event of a power failure, the product provides an uninterrupted power supply so that the valve can be moved to the safety position. The emergency power supply module is available individually or with an expansion module and can supply several valves. The input and output voltage is 24 V.

GEMÜ 1571 emergency power supply module			
Input voltage	Output voltage	Capacity	Item number
24 V	24 V	1700 Ws	88660398
24 V	24 V	13200 Ws	88751062

**GEMÜ 1573****Switching power supply unit**

The GEMÜ 1573 switching power supply unit converts unstable input voltages from 100 to 240 V AC into a continuous DC voltage. It can be used as an accessory for valves with motorized actuators e. g. GEMÜ eSyLite, eSyStep und eSyDrive and for additional devices with a 24 V DC power supply. Different power levels, output currents and a 48 V DC version for servoDrive actuators are available.

GEMÜ 1573 switching power supply unit			
Input voltage	Output voltage	Output current	Item number
100 - 240 V AC	24 V DC	5 A	88660400
		10 A	88660401



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