GEMÜ B56

Motorized compact flanged ball valve

EN **Operating instructions**

further information
webcode: GW-B56

Contents

1 General information

1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.

1.2 Symbols used

The following symbols are used in this document:

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

1.3 Definition of terms

Working medium

The medium that flows through the GEMÜ product.

1.4 Warning notes

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

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

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

The following signal words and danger levels are used:

⚠ DANGER

Imminent danger!

▶ Non-observance can cause death or severe injury.

⚠ WARNING

Potentially dangerous situation!

▶ Non-observance can cause death or severe injury.

⚠ CAUTION

Potentially dangerous situation!

▶ Non-observance can cause moderate to light injury.

NOTICE

Potentially dangerous situation!

▶ Non-observance can cause damage to property.

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

Symbol	Meaning
	Corrosive chemicals!
	Hot plant components!
	Risk of electric shock!

2 Safety information

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

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

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

The safety information does not take into account:

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

Prior to commissioning:

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

During operation:

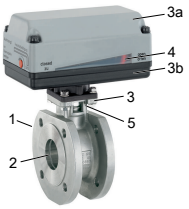
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not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

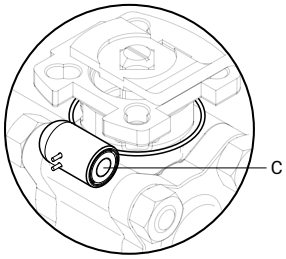
In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

3 Product description

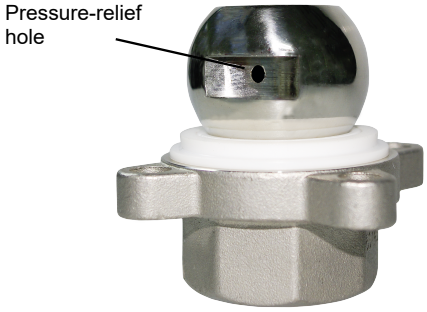
3.1 Construction



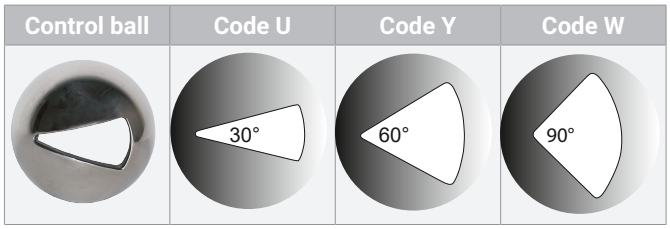


Item	Name	Materials
1	Ball valve body	1.4408 / CF8M
2	Pipe connections	1.4408 / CF8M
3	Mounting flange ISO 5211	1.4408 / CF8M
3a	Actuator housing cover Actuator version 1015 Actuator version 2070 Actuator version 4100, 4200	 PPO (10% glass fibre reinforced) ABS Aluminium
3b	Actuator housing base Actuator version 1015 Actuator version 2070 Actuator version 4100, 4200	 PP (30% glass fibre reinforced) ABS Aluminium
4	Optical position indicator	PP-R natural
	Seal	PTFE
5	Anti-static unit	1.4408
C	CONEXO RFID chip	

3.2 Pressure-relief hole



3.3 Control ball



Note: The control ball cannot be retrofitted to standard 2/2-way bodies at a later date.

3.4 Description

The GEMÜ B56 3-piece 2/2-way metal ball valve is motorized. It has a plastic actuator housing. A manual override and an optical position indicator are integrated as standard. The seat seal is made of PTFE.

3.5 Function

The product is equipped with a top flange in stainless steel. It has an electric actuator with a powerful DC motor. The reduction gear in the motor, consisting of a threaded spindle with a lever, provides the rotation through 90°. The actuator has an optical position indicator and a manual override as standard.

4 GEMÜ CONEXO

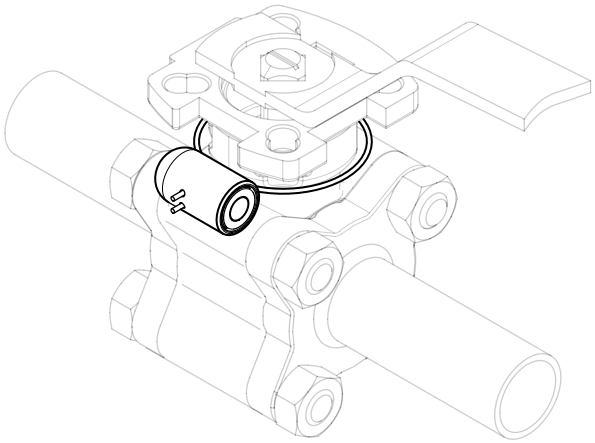
The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.

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

Installing the RFID chip

In the corresponding design with CONEXO, this product has an RFID chip (1) for electronic recognition. The position of the RFID chip can be seen below.



5 Correct use

Ball valves are used to isolate media flows.

Only clean, liquid or gaseous media must be used, and the body and seal materials used must be resistant to and suitable for this. Contaminated media and / or applications outside of the pressure and temperature data may lead to damage to the body and, in particular, to the seals on the ball valve.

The "Technical data" chapter describes the permissible pressure / temperature range for these ball valves.

⚠ WARNING

Improper use of the product!

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

The product is suitable for installation in piping and for controlling a media flow. The operating conditions according to the technical data apply to the media to be controlled.

The product is controlled via a motorized actuator.

The product is not intended for use in potentially explosive areas.

Due to the design, in the open and closed position, a low volume of medium may be trapped within the ball or between the ball and the body.

Expansion of the medium due to temperature differences, change in state or a chemical response may lead to a high pressure build-up. In order to prevent unacceptable pressure increases, a special version with pressure-relief hole in the ball is available on request for this case.

NOTICE

Build-up of lint!

- ► For soft-seated ball valves, due to the relative rotations of the stainless steel ball valve to the seat seal, slight wear of the PTFE seals must always be anticipated. Despite this, the safety of the ball valve is not affected by any potential build-up of lint and the seal materials are compliant in accordance with FDA directives.

6 Order data

6.1 Ball valve with GEMÜ 9428, 9468 actuator

The order data provide an overview of standard configurations.

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

Products ordered with **bold marked ordering options** are so-called preferred series. Depending on the nominal size, these are available more quickly.

Order codes

1 Type	Code
Ball valve, metal, electrically operated, one-piece body, compact flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	B56

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65
DN 80	80
DN 100	100

3 Body/ball configuration	Code
2/2-way body	**D**
2/2-way body, V-ball 30° (for Kv value see datasheet)	U
2/2-way body, V-ball 60° (for Kv value see datasheet)	Y
2/2-way body, V-ball 90° (for Kv value see datasheet)	W

4 Connection type	Code
Flange ANSI Class 125/150 RF	39
Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only	**68**

5 Ball valve material	Code
1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)	**37**

6 Seal material	Code
PTFE	**5**

7 Voltage/Frequency	Code
12 VDC	B1
24 VDC	C1

8 Control module	Code
ON/OFF actuator	A0
ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE
ON/OFF actuator, relay, not reversible	00

8 Control module	Code
ON/OFF actuator, 2 additional potential-free limit switches, relay, not reversible	0E
ON/OFF actuator, potentiometer output, relay, not reversible	0P

9 Actuator version	Code
Actuator, motorized, operating time 11s, torque 15Nm, GEMUE, size 1 supply voltage B1, C1	1015
Actuator, motorized, operating time 15s, torque 70Nm, GEMUE, size 2 supply voltage C1	2070
Actuator, motorized, operating time 20s, torque 100Nm, GEMUE, size 4 supply voltage C1	4100
Actuator, motorized, operating time 16s, torque 200Nm, GEMUE, size 4 supply voltage C1	4200

10 Type of design	Code
Standard	
Thermal separation between actuator and valve body via mounting kit	5222
Thermal separation between actuator and valve body via mounting kit, mounting kit and mounting parts made from stainless steel	5227

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

Order example

Ordering option	Code	Description
1 Type	B56	Ball valve, metal, electrically operated, one-piece body, compact flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit
2 DN	15	DN 15
3 Body/ball configuration	D	2/2-way body
4 Connection type	39	Flange ANSI Class 125/150 RF
5 Ball valve material	37	1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)
6 Seal material	5	PTFE
7 Voltage/Frequency	C1	24 VDC
8 Control module	A0	ON/OFF actuator
9 Actuator version	1015	Actuator, motorized, operating time 11s, torque 15Nm, GEMUE, size 1 supply voltage B1, C1
10 Type of design		Standard
11 CONEXO		Without

6.2 Ball valve with J+J actuator

The order data provide an overview of standard configurations.

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

Products ordered with **bold marked ordering options** are so-called preferred series. Depending on the nominal size, these are available more quickly.

Order codes

1 Type	Code
Ball valve, metal, electrically operated, one-piece body, compact flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	B56

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65
DN 80	80
DN 100	100

3 Body/ball configuration	Code
2/2-way body	**D**
2/2-way body, V-ball 30° (for Kv value see datasheet)	U
2/2-way body, V-ball 60° (for Kv value see datasheet)	Y
2/2-way body, V-ball 90° (for Kv value see datasheet)	W

4 Connection type	Code
Flange ANSI Class 125/150 RF	39
Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only	**68**

5 Ball valve material	Code
1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)	**37**

6 Seal material	Code
PTFE	**5**

7 Voltage/Frequency	Code
24 - 240 V AC 24 - 135 V DC for model 20, 35, 55, 85, 140, 300	U5

8 Control module	Code
ON/OFF 3-position actuator, additional potential-free limit switches	A3
ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE

8 Control module	Code
ON/OFF actuator, 2 additional potential-free limit switches, BSR battery pack (NC)	AE1
ON/OFF actuator, 2 additional potential-free limit switches, BSR battery pack (NO)	AE2
ON/OFF actuator, potentiometer output, Class A (EN15714-2)	AP
ON/OFF actuator, 2 additional potential-free limit switches, potentiometer output 5 kOhm, Failsafe battery pack (NC), preferred direction adjustable	AP1
Control actuator, external set value 0-10 VDC	E1
Positioner DPS, external set value 0-10V, BSR battery pack (NC)	E11
Control actuator, external set value 0/4-20 mA	E2
Positioner DPS, external set value 4-20mA, BSR battery pack (NO)	E22

9 Actuator version	Code
Actuator, motorized, operating time 10s, torque 20Nm, J+J, type J4 heating, IP67	J4C20
Actuator, motorized, operating time 10s, torque 35Nm, J+J, type J4 heating, IP67	J4C35
Actuator, motorized, operating time 29s, torque 85Nm, J+J, type J4 heating, IP67	J4C85
Actuator, motorized, operating time 34s, torque 140Nm, J+J, type J4 heating, IP67	J4C14
Actuator, motorized, operating time 58s, torque 300Nm, J+J, type J4 heating, IP67	J4C30

10 Type of design	Code
Standard	
Thermal separation between actuator and valve body via mounting kit	5222
Thermal separation between actuator and valve body via mounting kit, mounting kit and mounting parts made from stainless steel	5227

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

Order example

Ordering option	Code	Description
1 Type	B56	Ball valve, metal, electrically operated, one-piece body, compact flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit
2 DN	15	DN 15
3 Body/ball configuration	D	2/2-way body
4 Connection type	39	Flange ANSI Class 125/150 RF
5 Ball valve material	37	1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)
6 Seal material	5	PTFE
7 Voltage/Frequency	U5	24 - 240 V AC 24 - 135 V DC for model 20, 35, 55, 85, 140, 300
8 Control module	AE	ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)
9 Actuator version	J4C20	Actuator, motorized, operating time 10s, torque 20Nm, J+J, type J4 heating, IP67
10 Type of design		Standard
11 CONEXO		Without

6.3 Ball valve with Bernard actuator

The order data provide an overview of standard configurations.

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

Products ordered with **bold marked ordering options** are so-called preferred series. Depending on the nominal size, these are available more quickly.

Order codes

1 Type	Code
Ball valve, metal, electrically operated, one-piece body, compact flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	B56

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65
DN 80	80
DN 100	100

3 Body/ball configuration	Code
2/2-way body	**D**
2/2-way body, V-ball 30° (for Kv value see datasheet)	U
2/2-way body, V-ball 60° (for Kv value see datasheet)	Y
2/2-way body, V-ball 90° (for Kv value see datasheet)	W

4 Connection type	Code
Flange ANSI Class 125/150 RF	39
Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only	**68**

5 Ball valve material	Code
1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)	**37**

6 Seal material	Code
PTFE	**5**

7 Voltage/Frequency	Code
230V 50Hz	L2
24VDC 85-260VAC	Y5

8 Control module	Code
ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)	AB
ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE

8 Control module	Code
ON/OFF actuator, potentiometer output, Class A (EN15714-2)	AP
ON/OFF actuator, analogue position feedback, external set value 0/4-20mA, 2 additional potential-free limit switches	AT
Control actuator, external set value 0/4-20 mA	E2
ON/OFF actuator, on-site control, 2 additional potential-free limit switches, Basic (Logic ON/OFF), (S4 30% duty, 120 starts/hour, actuator class A/B)	ALS
Position control, external set value 4-20mA, input and output, on-site control, 2 additional potential-free limit switches, Basic (Logic Positioner), (S4 50% duty, 360 starts/hour, actuator class C)	ELS

9 Actuator version	Code
Actuator, motorized, operating time 13s, torque 15Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP67	BC1L
Actuator, motorized, operating time 15s, torque 30Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP67	BC3L
Actuator, motorized, operating time 15s, torque 70Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP67	BC7L
Actuator, motorized, operating time 30s, torque 150Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC15
Actuator, motorized, operating time 30s, torque 250Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC25

10 Type of design	Code
Standard	
Thermal separation between actuator and valve body via mounting kit	5222
Thermal separation between actuator and valve body via mounting kit, mounting kit and mounting parts made from stainless steel	5227

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

Order example

Ordering option	Code	Description
1 Type	B56	Ball valve, metal, electrically operated, one-piece body, compact flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit
2 DN	15	DN 15
3 Body/ball configuration	D	2/2-way body
4 Connection type	39	Flange ANSI Class 125/150 RF
5 Ball valve material	37	1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)
6 Seal material	5	PTFE
7 Voltage/Frequency	Y5	24VDC 85-260VAC
8 Control module	AE	ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)
9 Actuator version	BC1L	Actuator, motorized, operating time 13s, torque 15Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP67
10 Type of design		Standard
11 CONEXO		Without

7 Ball valve technical data

7.1 Medium

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

7.2 Temperature

Media temperature: -20 — 180 °C

For media temperatures > 100 °C , we recommend using a mounting kit with adapter between the ball valve and the actuator.

Ambient temperature: -20 — 60 °C

Higher temperatures on request

Storage temperature: 5 — 40 °C

7.3 Pressure

Operating pressure: 0 — 40 bar

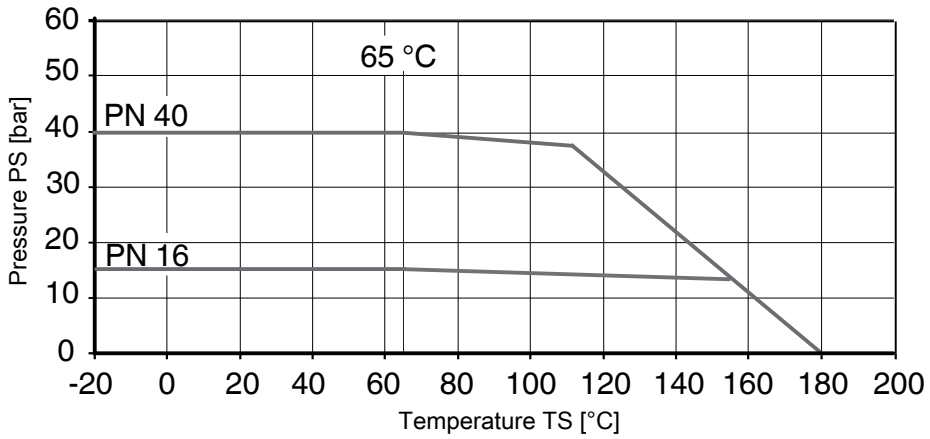
Vacuum: Can be used up to a vacuum of 50 mbar (absolute)

These values apply to room temperature and air. The values may deviate for other media and other temperatures.

Leakage rate: Leakage rate according to ANSI FCI70 – B16.104

Leakage rate according to EN12266, 6 bar air, leakage rate A

Pressure/temperature diagram:



Pressure rating: DN 15 – 50: PN40
DN 65 – 100: PN16

Kv values:

DN	NPS	Kv values
15	1/2"	13.0
20	3/4"	34.0
25	1"	60.0
32	1¼"	94.0
40	1½"	213.0
50	2"	366.0
65	2½"	595.0
80	3"	935.0
100	4"	1700.0

Kv values in m³/h

V-ball 30° (code U)

DN	NPS	Opening angle										
		0	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
15	**1/2"**	0	0.085	0.085	0.17	0.255	0.425	0.68	0.935	1.36	1.87	2.21
20	**3/4"**	0	0.085	0.17	0.425	0.595	0.935	1.53	2.04	2.805	3.825	4.59
25	**1"**	0	0.085	0.255	0.68	1.105	1.955	2.975	4.335	5.961	8.128	8.5
32	**1¼"**	0	0.17	0.34	0.935	1.7	3.145	4.675	6.8	8.5	11.05	12.75
40	**1½"**	0	0.255	0.51	1.36	2.55	4.25	6.375	9.35	11.9	14.45	17.0
50	**2"**	0	0.34	1.02	3.23	5.1	8.5	12.75	19.55	26.35	36.55	51.0
65	**2½"**	0	0.34	0.85	3.4	6.8	10.2	15.3	23.8	31.45	52.7	63.75
80	**3"**	0	0.425	1.02	3.4	6.8	11.9	19.55	28.05	39.1	55.25	69.7
100	**4"**	0	0.51	1.7	5.1	12.75	24.65	40.8	60.35	85.0	110.5	135.2

Kv values in m³/h

V-ball 60° (code Y)

DN	NPS	Opening angle										
		0	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
15	**1/2"**	0	0.085	0.085	0.255	0.425	0.765	1.19	1.7	2.805	3.74	5.1
20	**3/4"**	0	0.085	0.17	0.595	0.85	1.445	2.38	3.4	5.525	7.65	10.2
25	**1"**	0	0.17	0.34	0.935	1.53	2.89	4.505	6.715	10.46	13.01	17.85
32	**1¼"**	0	0.17	0.51	1.53	2.55	4.675	8.075	10.88	16.15	22.1	33.15
40	**1½"**	0	0.34	0.68	2.125	3.4	6.8	11.05	16.15	22.95	34.0	44.2
50	**2"**	0	0.34	1.275	3.91	7.65	14.03	22.95	33.15	46.75	70.55	93.5
65	**2½"**	0	0.34	1.275	4.25	8.5	17.85	28.9	45.05	63.75	87.55	127.5
80	**3"**	0	0.425	2.125	5.1	11.9	21.25	34.0	55.25	77.35	108.8	140.3
100	**4"**	0	0.595	2.55	9.35	21.25	34.0	50.15	76.5	119.9	180.2	302.6

Kv values in m³/h

Kv values:

V-ball 90° (code W)

DN	NPS	Opening angle										
		0	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
15	**1/2"**	0	0.085	0.17	0.34	0.51	0.765	1.275	1.87	3.23	4.59	5.865
20	**3/4"**	0	0.17	0.34	0.68	1.02	1.7	2.635	3.91	6.8	9.605	11.9
25	**1"**	0	0.17	0.51	1.53	2.89	4.335	6.885	9.69	13.6	17.85	24.65
32	**1¼"**	0	0.255	0.68	1.7	4.25	6.8	11.9	16.15	23.8	33.15	46.75
40	**1½"**	0	0.425	0.765	2.975	5.95	11.05	17.0	26.35	35.7	53.55	66.3
50	**2"**	0	0.595	1.7	5.1	10.2	18.7	29.75	38.25	59.5	89.25	114.8
65	**2½"**	0	0.425	1.445	5.95	11.9	23.8	40.8	59.5	90.1	136.0	185.3
80	**3"**	0	0.595	2.975	6.8	15.3	29.75	51.0	76.5	114.8	174.3	263.5
100	**4"**	0	0.85	2.975	13.6	34.0	63.75	106.3	161.5	250.8	375.7	569.5

Kv values in m^3/h

7.4 Product conformities

Pressure Equipment Directive: 2014/68/EU

Food: FDA
Regulation (EC) No. 10/2011
Regulation (EC) No. 1935/2006

Explosion protection: ATEX (2014/34/EU) and IECEx, order code Special version X

ATEX marking: The ATEX marking of the product depends on the respective product configuration with valve body and actuator. It can be found in the product-specific ATEX documentation and the ATEX type plate.

7.5 Mechanical data

Torques:

DN	NPS	Breakaway torque
15	**1/2"**	7
20	**3/4"**	8
25	**1"**	10
32	**1¼"**	14
40	**1½"**	29
50	**2"**	58
65	**2½"**	62
80	**3"**	120
100	**4"**	174

Torques in Nm

Weight:

Ball valve

DN	NPS	Weight
15	**1/2"**	1.3
20	**3/4"**	2.0
25	**1"**	2.8
32	**1¼"**	4.2
40	**1½"**	5.3
50	**2"**	6.7
65	**2½"**	11.9
80	**3"**	14.9
100	**4"**	20.4

Weights in kg

8 Technical data of actuator

8.1 GEMÜ 9428, 9468 actuators

8.1.1 Mechanical data

Weight:

GEMÜ 9428

Supply voltage 12 V / 24 V:	1.0 kg

Actuator type 9468

Actuator version 2070:	4.6 kg
Actuator version 4100, 4200:	11.6 kg

8.1.2 Product compliance

Machinery Directive: 2006/42/EC

EMC Directive: 2014/30/EU

Low Voltage Directive: 2014/35/EU

8.1.3 Electrical data

Rated voltage: 12 V / 24 V AC or DC (± 10 %)

Rated frequency: 50/60 Hz (at AC rated voltage)

Electrical protection class: I (DIN EN 61140)

Power consumption:

Actuator version (code)	Control module (code)	12 V DC (code B1)	24 V DC (code C1)
1015, 3015	**A0, AE**	30.0	30.0
2070	**00, 0E, 0P**	-	63.0
4100	**00, 0E, 0P**	-	105.0
4200	**00, 0E, 0P**	-	90.0

Power consumption in W

Current consumption:

Actuator version (code)	Control module (code)	12 V DC (code B1)	24 V DC (code C1)
1015, 3015	**A0, AE**	2.2	1.20
2070	**00, 0E, 0P**	-	2.60
4100	**00, 0E, 0P**	-	4.40
4200	**00, 0E, 0P**	-	3.60

Current data in A

Max. switching current:

Actuator version (code)	Control module (code)	12 V DC (code B1)	24 V DC (code C1)
1015, 3015	**A0, AE**	9.2	3.8
2070	**00, 0E, 0P**	-	14.0
4100	**00, 0E, 0P**	-	35.0
4200	**00, 0E, 0P**	-	35.0

Current data in A

Input signal: 24 V DC, 24 V AC, 120 V AC, 230 V AC
dependent on rated voltage

Duty cycle: Continuous duty

Electrical protection:

GEMÜ 9428

Motor protective system by customer

GEMÜ 9468

Internal for functional module 0x

Actuator version 2070: MT 6.3 A
Actuator version 4100, 4200: MT 10.0 A

Motor protective system by customer, see "Recommended motor protection"

Recommended motor protection:

GEMÜ 9428

Voltage	12 V DC	24 V DC
Motor protection switch type	Siemens 3RV 1011-1CA10	Siemens 3RV 1011-1BA10
Set current	2.20	1.70

Current data in A

GEMÜ 9468

Motor protection switch type:	Siemens 3RV 1011-1FA10
Set current:	4.0 A

8.2 Bernard, J+J actuators

Note: For technical data see manufacturer's original datasheets

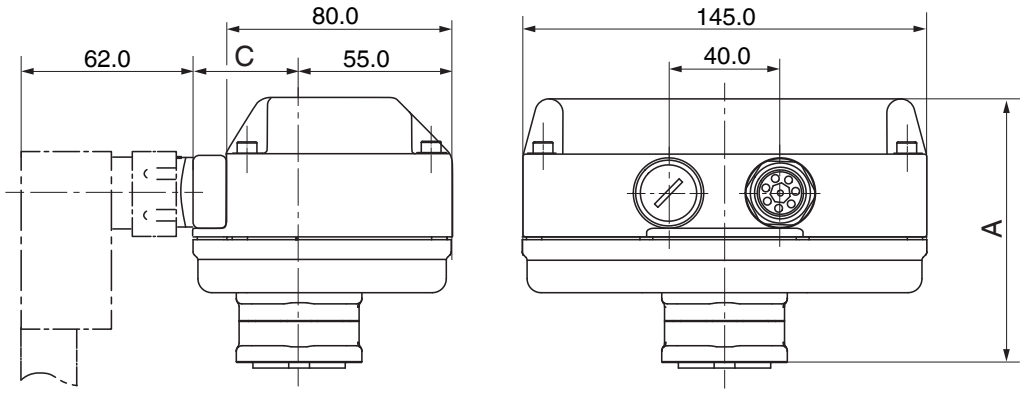
9 Dimensions

9.1 Actuator dimensions

9.1.1 GEMÜ 9428, 9468 actuators

Note on actuator mounting:
Standard mounting orientation – actuator positioned in-line with piping
Only with flanged connections the actuator is mounted across the piping

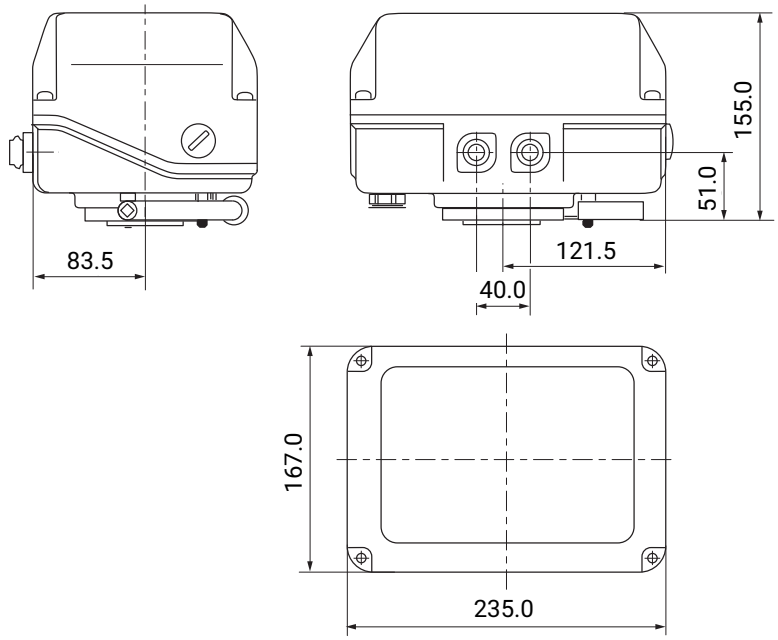
9.1.1.1 Actuator version 1015



Actuator version	A	C
1015	94.0	49.0

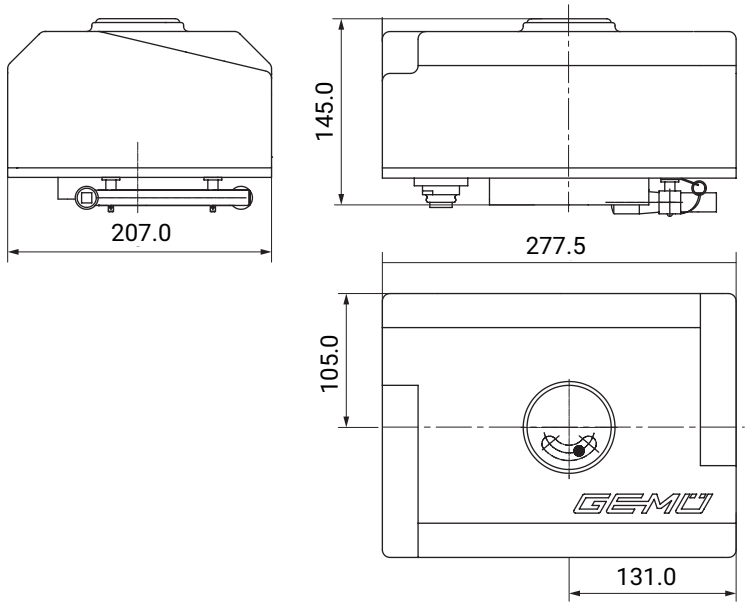
Dimensions in mm

9.1.1.2 Actuator version 2070



Dimensions in mm

9.1.1.3 Actuator version 4100, 4200



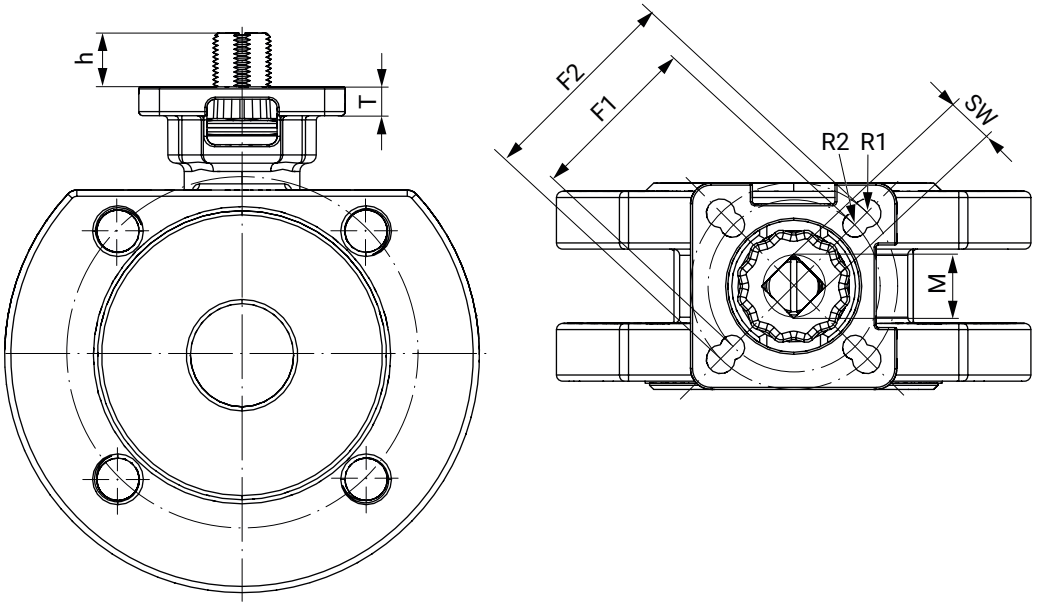
Dimensions in mm

9.1.2 Bernard, AUMA, J+J actuators

For more detailed information on third-party actuators, refer to the manufacturers' documentation

9.2 Ball valve

9.2.1 Actuator flange

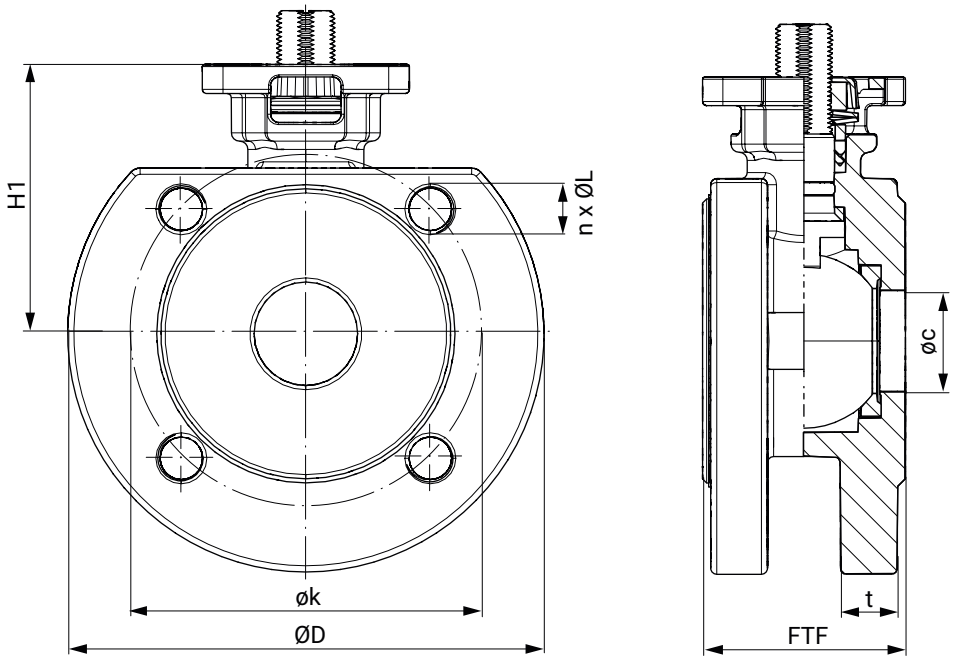


DN	G	F1	R1	F2	R2	SW	h	T	M
15	**1/2“**	36.0	3.0	42.0	3.0	9.0	9.0	5.0	M12
20	**3/4“**	36.0	3.0	42.0	3.0	9.0	7.5	5.0	M12
25	**1“**	42.0	3.0	50.0	3.5	11.0	13.0	7.0	M14
32	**1¼“**	42.0	3.0	50.0	3.5	11.0	13.0	7.0	M14
40	**1½“**	50.0	3.5	70.0	4.5	14.0	15.0	9.0	M18
50	**2“**	50.0	3.5	70.0	4.5	14.0	16.0	9.0	M18
65	**2½“**	70.0	5.0	102.0	6.0	17.0	18.0	10.5	M22
80	**3“**	70.0	5.0	102.0	6.0	17.0	18.0	10.5	M22
100	**4“**	70.0	5.0	102.0	6.0	17.0	18.0	10.5	M22

Dimensions in mm

9.2.2 Body dimensions

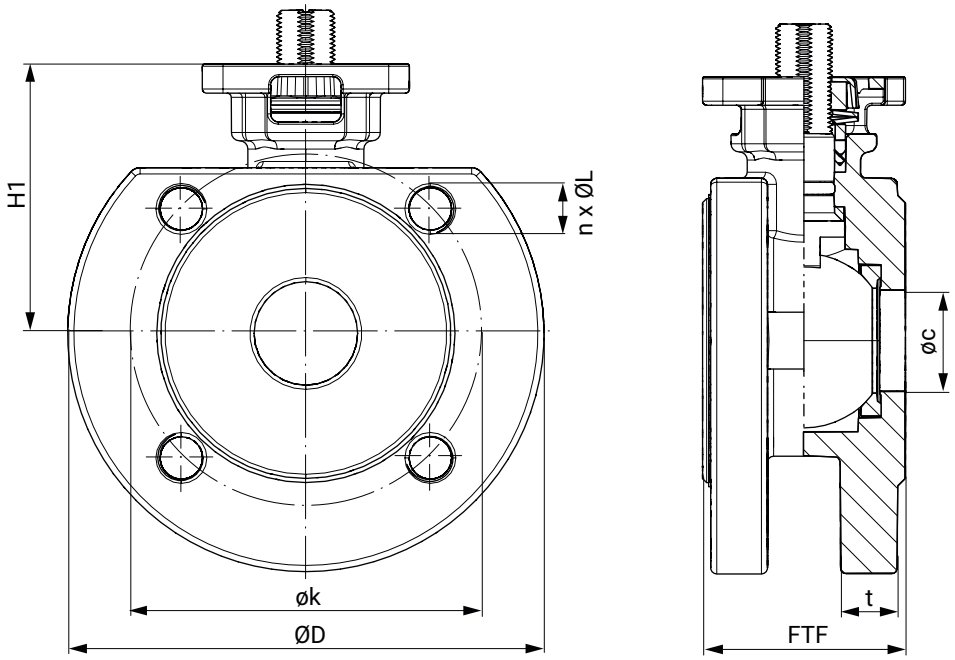
9.2.2.1 Flange (connection code 39)



DN	øc	ØD	øk	t	FTF	H1	n x ØL
15	15.0	89.0	60.5	9.2	38.0	48.5	4x1/2-13UNC
20	20.0	99.0	69.8	11.0	40.0	54.0	4x1/2-13UNC
25	25.0	108.0	79.2	13.5	46.0	65.0	4x1/2-13UNC
32	32.0	117.0	88.9	14.0	56.0	78.0	4x1/2-13UNC
40	38.0	127.0	98.6	15.5	65.0	85.0	4x1/2-13UNC
50	50.0	152.0	120.6	17.0	78.0	93.0	4x5/8-11UNC
65	65.0	178.0	139.7	20.5	99.0	107.0	4x5/8-11UNC
80	76.0	190.0	152.4	22.0	116.0	119.0	4x5/8-11UNC
100	100.0	229.0	190.5	22.0	149.0	132.0	8x5/8-11UNC

Dimensions in mm

9.2.2.2 Flange (connection code 68)



DN	øc	ØD	øk	t	FTF	H1	n x ØL
15	15.0	82.0	65.0	14.0	42.0	48.5	4 x M12
20	20.0	98.0	75.0	14.0	44.0	54.0	4 x M12
25	25.0	115.0	85.0	14.0	50.0	65.0	4 x M12
32	32.0	140.0	100.0	16.0	60.0	78.0	4 x M16
40	38.0	150.0	110.0	15.0	69.0	85.0	4 x M16
50	50.0	165.0	125.0	15.5	82.0	93.0	4 x M16
65	65.0	185.0	145.0	15.5	103.0	107.0	4 x M16
80	76.0	200.0	160.0	17.0	119.0	119.0	8 x M16
100	100.0	220.0	180.0	17.0	150.0	132.0	8 x M16

Dimensions in mm

10 Manufacturer's information

10.1 Delivery

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

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

10.2 Packaging

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

10.3 Transport

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

10.4 Storage

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

11 Installation in piping

11.1 Preparing for installation

⚠ WARNING

The equipment is subject to pressure!

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

⚠ WARNING

Corrosive chemicals!

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

⚠ CAUTION

Hot plant components!

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

⚠ CAUTION

Exceeding the maximum permissible pressure.

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

⚠ CAUTION

Use as step.

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

NOTICE

Suitability of the product!

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

NOTICE

Tools

► The tools required for installation and assembly are not included in the scope of delivery.

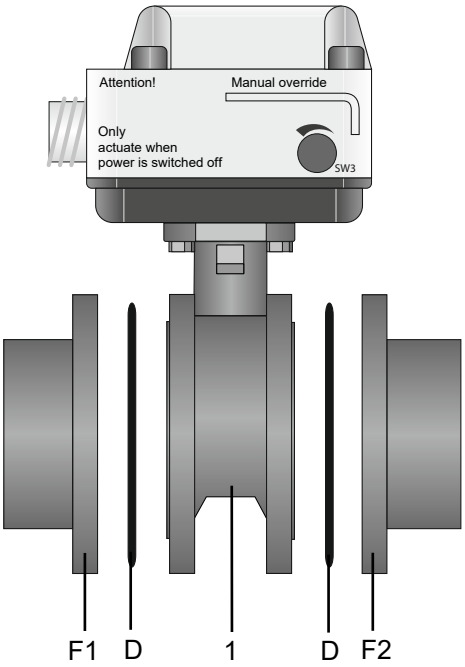
● Use appropriate, functional and safe tools.

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

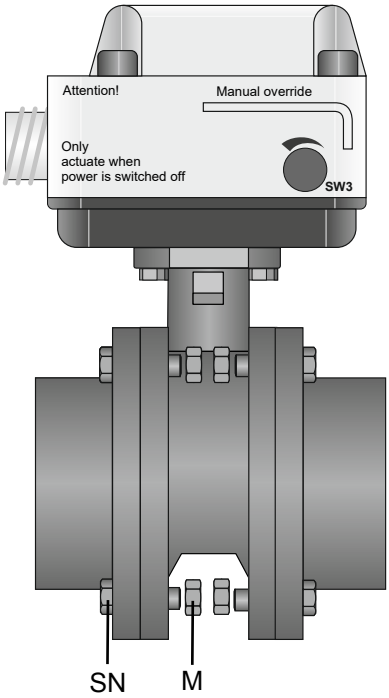
11.2 Installation with flanged connections

NOTICE

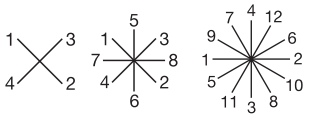
► Observe valid standards for mounting flanges!



1. Ensure sealing surfaces on the mating flanges are clean and undamaged.
2. Only use connector elements made of approved materials!
3. Install the ball valve in the state it is delivered.
4. Carefully align the ball valve body **1** centrally between the pipes with flanges (**F1** and **F2**).
5. Centre the seals **D** accurately. Seals are not included in the scope of delivery.
6. Connect the ball valve flange and the piping flange using appropriate sealing material and matching bolting. Sealing material and bolts are not included in the scope of delivery.



7. Insert bolts **SN** in all holes in the flange.
8. Slightly tighten the bolts **SN** and nuts **M** diagonally.



9. Check the alignment of the piping.
10. Tighten nuts **M** diagonally.

Comply with appropriate regulations for the connections!

After the installation:

11. Re-attach or reactivate all safety and protective devices.

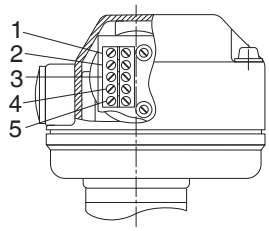
12 Electrical connection

12.1 Connection and wiring diagram – actuator version 1015

12.1.1 ON/OFF actuator (code A0)

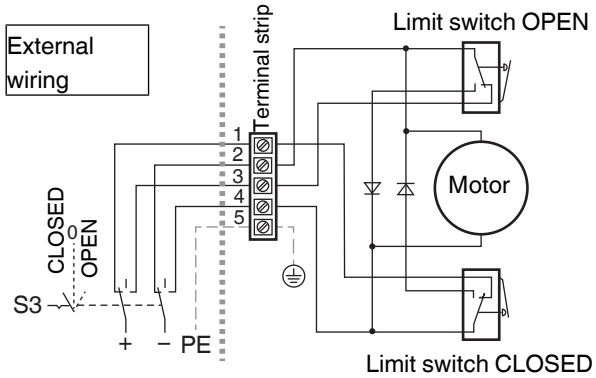
12 V DC (code B1) / 24 V DC (code C1)

Assignment of the terminal strips



Item	Description
1	Uv+, direction of travel CLOSED
2	Uv-, direction of travel CLOSED
3	Uv+, direction of travel OPEN
4	Uv-, direction of travel OPEN
5	PE, protective earth conductor

Connection diagram



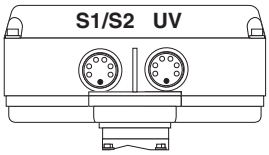
S3	Actuator
CLOSED	Direction of travel CLOSED
0	OFF
OPEN	Direction of travel OPEN

12.1.2 ON/OFF actuator with 2 potential-free limit switches (code AE)

12 V DC (code B1) / 24 V DC (code C1)

Position of the connectors

Actuator version 1015



Electrical connection

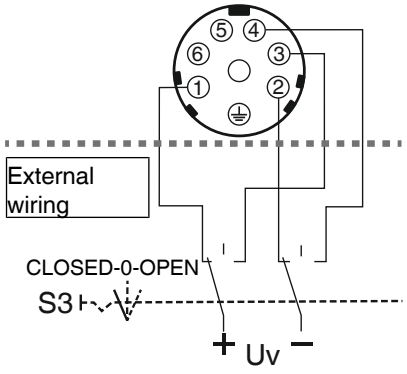
Plug assignment X1, UV

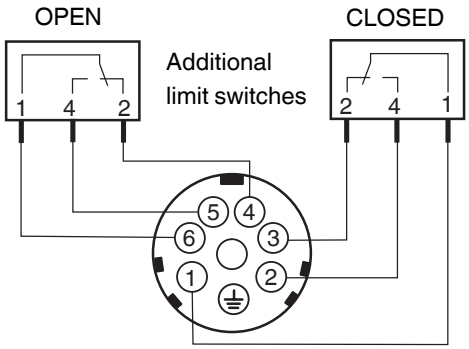
Pin	Description
1	Uv+, direction of travel CLOSED
2	Uv-, direction of travel CLOSED
3	Uv+, direction of travel OPEN
4	Uv-, direction of travel OPEN
5	n.c.
6	n.c.
⏚	PE, protective earth conductor

Plug assignment X2, S1/S2

Pin	Description
1	Change-over contact limit switch CLOSED
2	Make contact limit switch CLOSED
3	Break contact limit switch CLOSED
4	Break contact limit switch OPEN
5	Make contact limit switch OPEN
6	Change-over contact limit switch OPEN
⏚	PE, protective earth conductor

Connection diagram





Connection assignment X1, UV

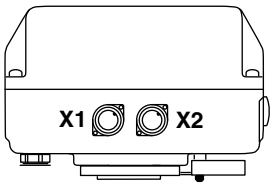
S3	Actuator
CLOSED	Direction of travel CLOSED
0	OFF
OPEN	Direction of travel OPEN

12.2 Connection and wiring diagram – actuator version 2070, 4100, 4200

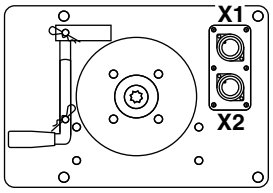
12.2.1 Connection/wiring diagram

12.2.1.1 On/Off actuator with relay (code 00), 24 V DC (code C1)

12.2.1.1.1 Position of the connectors

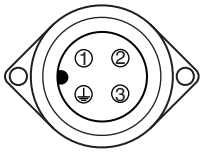


Actuator version 2070



Actuator version 4100, 4200

12.2.1.1.2 Electrical connection

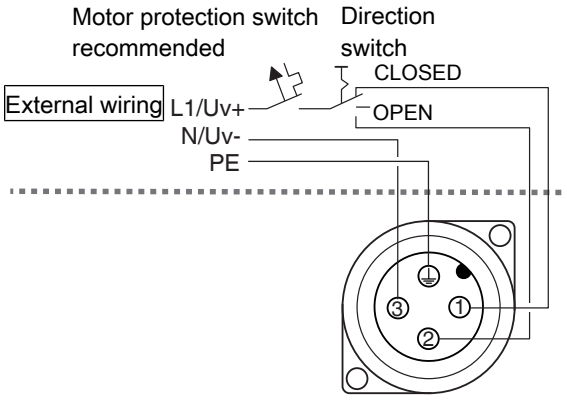


Plug assignment X1

Pin	Description
1	L1 / Uv+, direction of travel CLOSED
2	L1 / Uv+, direction of travel OPEN
3	N / Uv-, neutral conductor
⏚	PE, protective earth conductor

N / L- signals in the unit are separated.
The potential must be assigned by the user.
When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

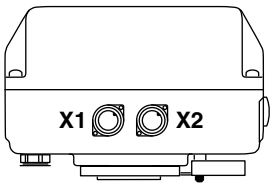
12.2.1.1.3 Connection diagram



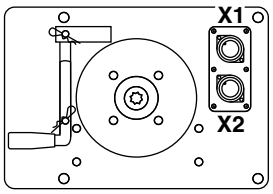
Connection assignment X1

12.2.1.2 On/Off actuator with 2 additional potential-free limit switches, with relay (code 0E), 24 V DC (code C1)

12.2.1.2.1 Position of the connectors

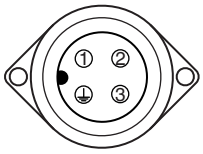


Actuator version 2070



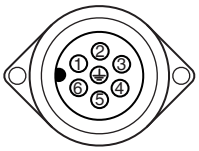
Actuator version 4100, 4200

12.2.1.2.2 Electrical connection



Plug assignment X1

Pin	Description
1	L1 / Uv+, direction of travel CLOSED
2	L1 / Uv+, direction of travel OPEN
3	N / Uv-, neutral conductor
⏚	PE, protective earth conductor

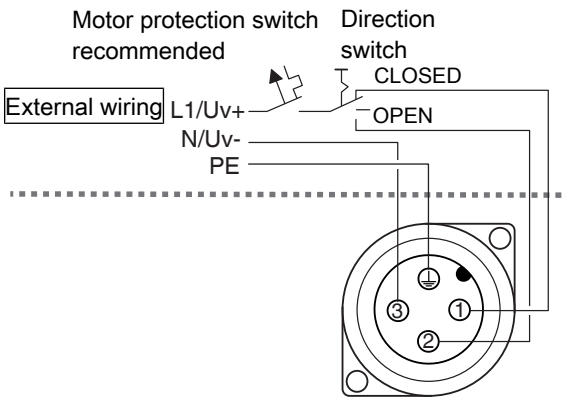


Plug assignment X2

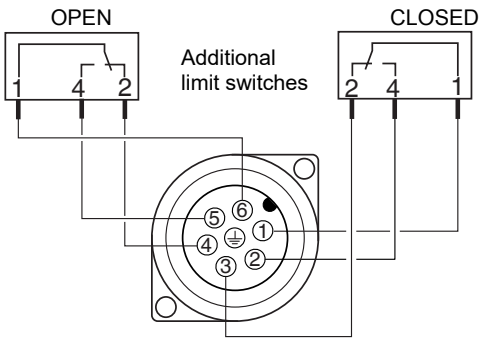
Pin	Description
1	Change-over contact limit switch CLOSED
2	Make contact limit switch CLOSED
3	Break contact limit switch CLOSED
4	Break contact limit switch OPEN
5	Make contact limit switch OPEN
6	Change-over contact limit switch OPEN
⏚	PE, protective earth conductor

N / L- signals in the unit are separated.
The potential must be assigned by the user.
When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

12.2.1.2.3 Connection diagram



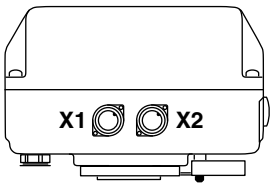
Connection assignment X1



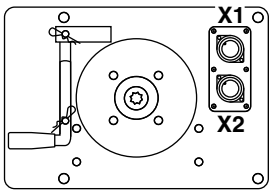
Connection assignment X2

12.2.1.3 On/Off actuator with potentiometer output, with relay (code 0P), 24 V DC (code C1)

12.2.1.3.1 Position of the connectors

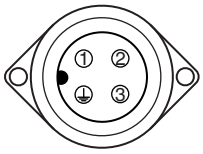


Actuator version 2070



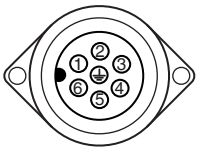
Actuator version 4100, 4200

12.2.1.3.2 Electrical connection



Plug assignment X1

Pin	Description
1	L1 / Uv+, direction of travel CLOSED
2	L1 / Uv+, direction of travel OPEN
3	N / Uv-, neutral conductor
⏚	PE, protective earth conductor

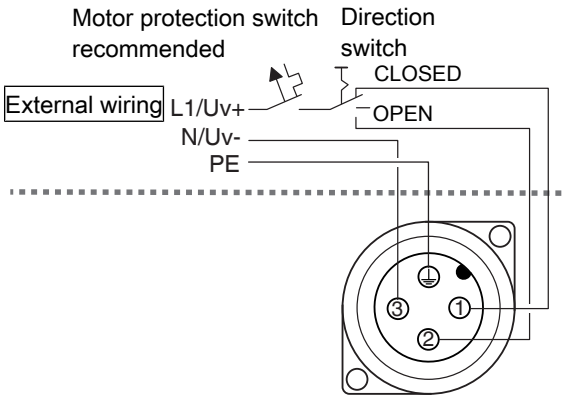


Plug assignment X2

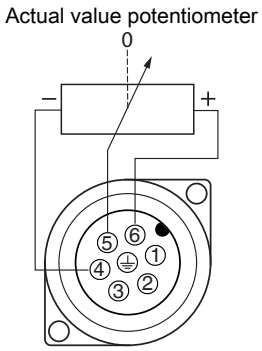
Pin	Description
1	n. c.
2	n. c.
3	n. c.
4	Us-, actual value potentiometer signal voltage minus
5	Us ⌐, actual value potentiometer signal output
6	Us+, actual value potentiometer signal voltage plus
⏚	PE, protective earth conductor

N / L- signals in the unit are separated.
The potential must be assigned by the user.
When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

12.2.1.3.3 Connection diagram



Connection assignment X1



Connection assignment X2

13 Limit switches

⚠ DANGER

Risk of electric shock!

- ► Risk of injury or death (if operating voltage is higher than safe extra low voltage).
- ► Adjustments are made with the actuator cover removed.
- ► Electric shock can cause severe burns and fatal injury.
- ● **Always** disconnect the product from power supply!
- ● Therefore, have all work performed only by qualified electricians.

⚠ CAUTION

Incorrectly adjusted limit switch!

- ► Actuator continues running.
- ► Damage to the actuator.
- ● Do not move the limit switch too far outwards.

NOTICE

Tools required for setting the limit switches:

- ● Allen key SW3
- ● Small Philips head screw driver

NOTICE

- ● Always switch the limit switch for signal so that the motor switch is actuated first.
- ⇨ Limit switches for signal and motor are already preset.

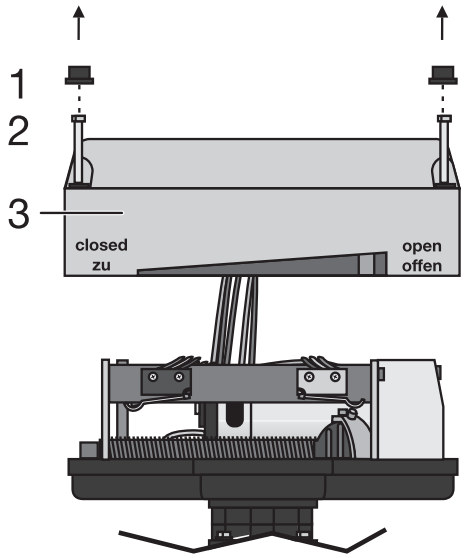
13.1 Setting the limit switch for 1015, 2015 and 3035

The motorized actuator versions 1015, 2015 and 3035 are supplied in the open position.

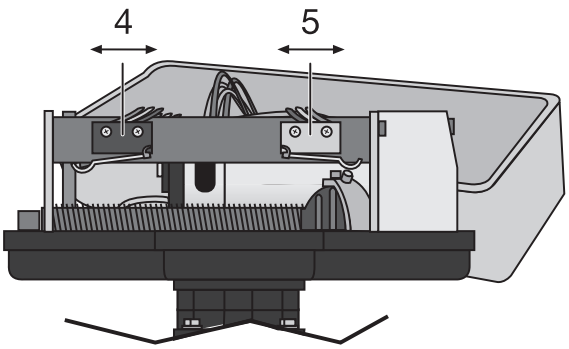
The "OPEN" and "CLOSED" end positions are set using limit switches. These are actuated using the levers and can be adjusted by loosening the 2 screws.

The following drawings differ depending on the actuator version!

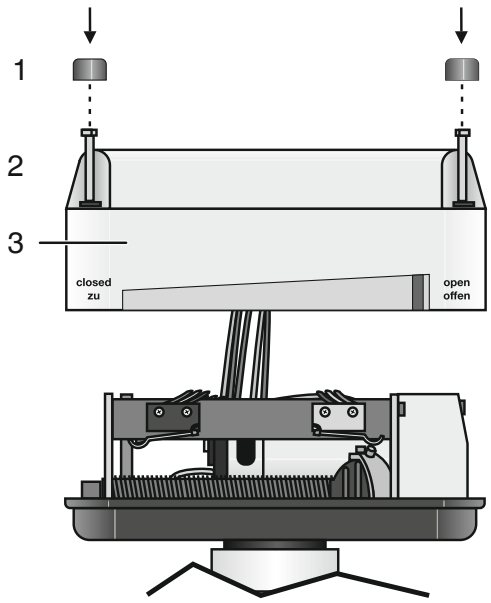
1. Disconnect the plant from power supply and secure against recommissioning.



2. Remove the protective caps **1**.
3. Undo screws **2**.
4. Remove the cover of the actuator **3**.



5. Undo the screws on the corresponding limit switch (**4** = "CLOSED", **5** = "OPEN").
6. Move limit switches to the desired position.
7. Tighten limit switch screws.



8. Put on cover of actuator **3**.
9. Tighten cover **3**.
10. Put on protective caps **1**.

⇨ Limit switches are set.

13.2 Setting the limit switch for 2070, 4100, 4200

The motorized actuator versions 2070, 4100 and 4200 are supplied in the open position.

The "OPEN" and "CLOSED" end positions are set using limit switches. These are actuated using the levers and can be adjusted by loosening the 2 screws.

⚠ CAUTION

Incorrectly adjusted limit switch!

► Actuator continues running.
► Damage to the actuator.
● Do not move the limit switch too far outwards.

Versions 00, 0E, 0P:

- The actuator is not reversible, i.e. it must be stopped briefly when switching over from "OPEN" to "CLOSED" or "CLOSED" to "OPEN".
- For the above actuator types, overall height 1 applies.

Versions A0, AE, AP, E1, E2:

- The actuator is reversible, i.e. it can be switched directly from "OPEN" to "CLOSED". To this end, a dead zone of 200 ms is integrated into the electronic system, i.e. when switching over, the actuator does not run for this time.
- Independent of the supply voltage, the OPEN/CLOSE control is freely selectable via a mains supply of 24 V DC, 24 V AC up to 250 V AC or operated directly via a PLC.
- An electronic current limitation limits the torque.
- For the above actuator types (except for code 2070), overall height 2 applies.

⚠ DANGER

Risk of electric shock!

► Risk of injury or death (if operating voltage is higher than safe extra low voltage).
► Adjustments are made with the actuator cover removed.
► Electric shock can cause severe burns and fatal injury.
● **Always** disconnect the product from power supply!
● Therefore, have all work performed only by qualified electricians.

14 Commissioning

✓ The product is installed in piping.
✓ The product is connected electrically.
✓ Limit switches on the product are set.

1. Check the tightness and the function of the product (close and reopen the product).
2. Flush the piping system of new plant and following repair work (the product must be fully open).

   ⇨ Harmful foreign matter has been removed.

   ⇨ The product is ready for use.
3. Commission the product.

15 Operation

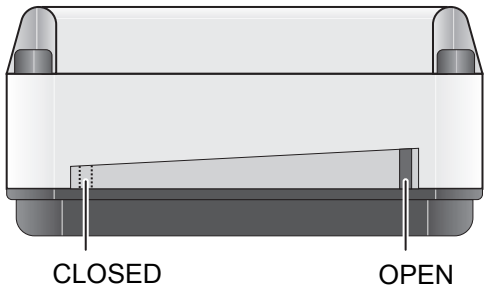
15.1 Normal operation

For opening or closing, the product must be activated in accordance with the electrical connection.

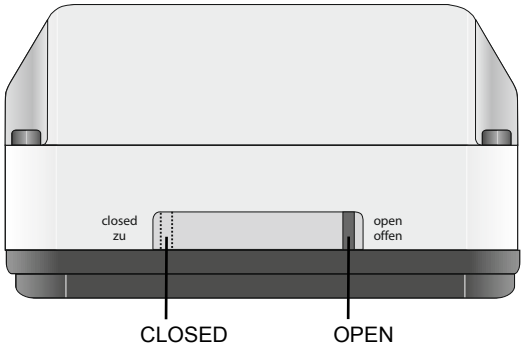
15.2 Optical position indicator

The actuator has an optical position indicator which indicates the position of the actuator.

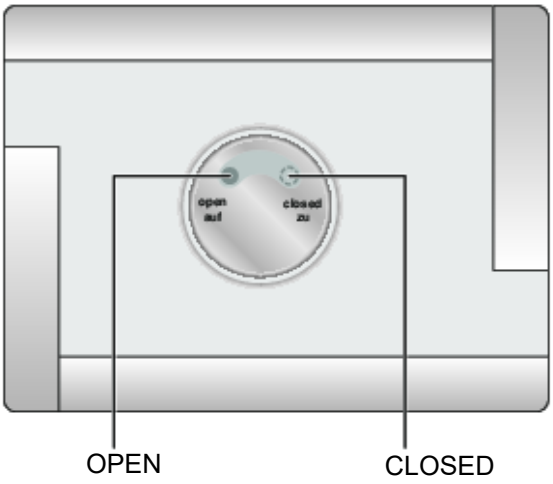
Actuator versions 1015, 2015, 3035



Actuator version 2070



Actuator versions 4100, 4200



15.3 Manual override

⚠ CAUTION

Only actuate the manual override when the power is switched off.

► Damage to the actuator!

⚠ CAUTION

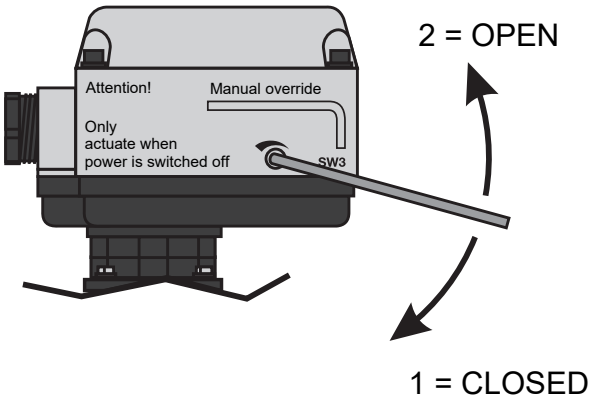
Set the actuator position to "centred" after using the manual override!

► Trip cams may be outside the limit switches as the limit switch position was manually exceeded by the manual override.

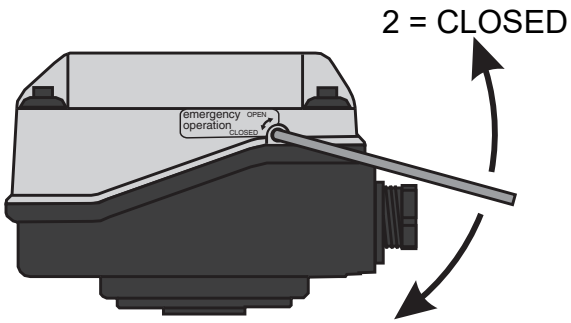
► Damage to the actuator.

● Set the actuator position to "centred" before electrical operation.

15.3.1 Manual overrides 1015, 2015, 3035



Actuator version 1015 and 2015



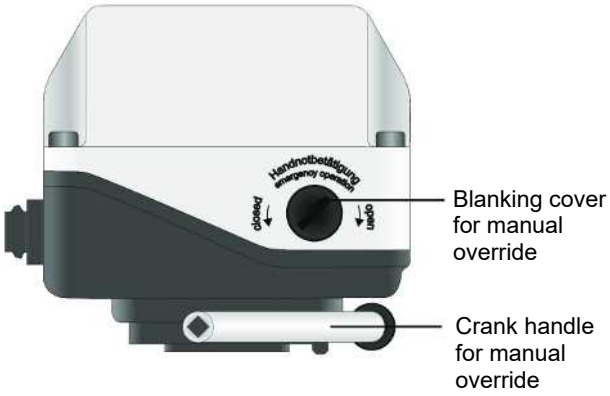
Actuator version 3035

1. Disconnect the plant from power supply and secure against recommissioning.
2. Remove red protective cap.
3. To open the valve, turn the Allen key (SW3) clockwise **1** until the position indicator shows "open".
4. To close the valve turn the Allen key (SW3) anti-clockwise **2** until the position indicator shows "closed".
5. Reinsert red protective cap.

15.3.2 Manual overrides 2070, 4100, 4200

On the side of the actuator there is a blanking cover for the manual override. The crank handle for manual override is located on the base of the actuator. Actuation of the manual override additionally actuates a switch that shuts off power to the actuator.

Example: Actuator version 2070



If manual override is required, take the following steps:

1. Unscrew the blanking cover using a screw driver.
2. Insert crank handle and actuate the actuator by hand.

Crank into the desired valve position (in the direction indicated on label):

Actuator version 2070	
Clockwise:	OPEN
Anticlockwise:	CLOSED

Actuator versions 4100, 4200	
Clockwise:	CLOSED
Anticlockwise:	OPEN

16 Troubleshooting

Error	Possible cause	Troubleshooting
Valve does not open/close or does not open/close fully	Operating pressure too high	Operate the product with operating pressure specified in datasheet
	The actuator design is not suitable for the operating conditions	Use an actuator that is designed for the operating conditions
	Seat and flange seals incorrectly mounted	Replace seat and flange seals or mount them correctly (see chapter "Replacing seals")
	Actuator defective	Replace the actuator
	Voltage is not connected	Connect voltage
	Cable ends incorrectly wired	Wire cable ends correctly
	End positions incorrectly set	Correctly set the end positions
	Foreign matter in the product	Remove and clean the product
The product is leaking between actuator and valve body	Actuator/valve body damaged	Replace actuator/valve body
	Bolting between valve body and actuator loose	Tighten bolting between valve body and actuator
	Seals faulty	Replace seals
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
	Flange bolting loose/thread leaking	Retighten flange bolting / reseal threads
	Flange seals faulty	Replace flange seals
Valve body leaking	Incorrect installation	Check installation of valve body in piping
	Seat and flange seals incorrectly mounted	Mount seat and flange seals correctly (see chapter "Replacing seat seals")
	Wrong seat and flange seals mounted	Replace seat and flange seals (see chapter "Replacing seat seals")
	Seat and flange seals faulty	Replace seat and flange seals (see chapter "Replacing seat seals")
	Valve body leaking or corroded	Check valve body for damage, replace valve body if necessary

17 Inspection/maintenance

⚠ WARNING

The equipment is subject to pressure!

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

⚠ CAUTION

Hot plant components!

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

⚠ CAUTION

- Servicing and maintenance work must only be performed by trained personnel.
- Do not extend hand lever. GEMÜ shall assume no liability whatsoever for damages caused by improper handling or third-party actions.
- In case of doubt, contact GEMÜ prior to commissioning.

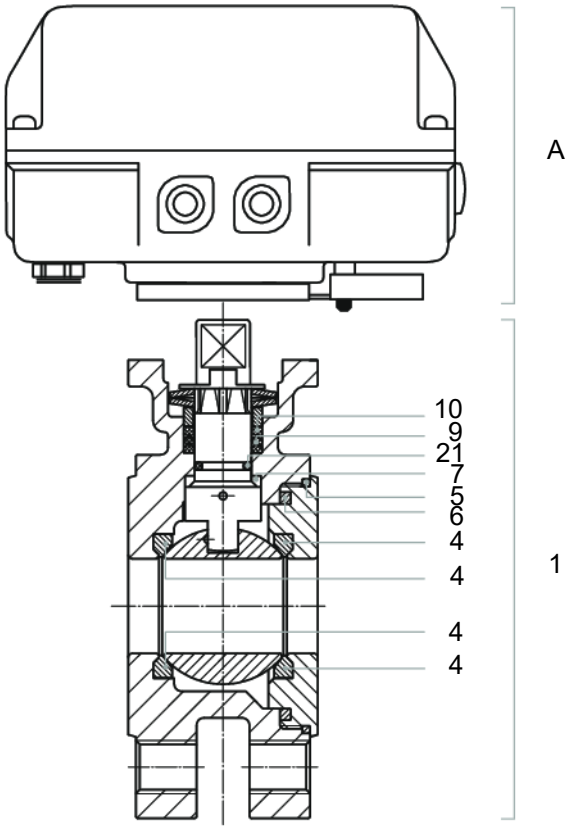
1. Use appropriate protective gear as specified in plant operator's guidelines.
2. Shut off plant or plant component.
3. Secure against recommissioning.
4. Depressurize the plant or plant component.

Ball valves are maintenance-free. No lubrication or routine maintenance of the ball valve shaft is required. The shaft is guided through a PTFE gland packing in the ball valve body. The shaft seal is pretensioned and self-adjusting. However, the operator must carry out regular visual examinations of the ball valves, dependent on the operating conditions and the potential danger in order to prevent leakage and damage.

If there is a leakage at the spindle nut, this can generally be rectified by retightening the spindle nut. However, overtightening the spindle nut must be avoided.

Usually, retightening by between 30° and 60° will be sufficient to rectify the leakage.

17.1 Spare parts



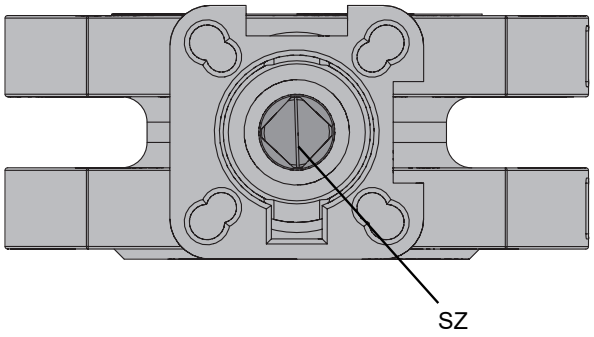
Item	Name	Order designation
1	Ball valve body assembly	BB06
4	Seat and flange seals	BB06DN...
5	Seal	
6	Seal	
7	Conical spindle seal	
9	V-ring spindle packing	
10	V-ring	
21	O-ring	
A	Actuator	See actuator designation. Dependent on the actuator version.

17.2 General information regarding actuator replacement

NOTICE

The following tools are required for actuator replacement:

- Open-end wrench
- Ring wrench



- Check the position of the ball indicated by the groove **SZ** and compare with position indicator, rotate ball valve to correct position if necessary.

⇨ Groove transverse to piping direction:
Ball valve closed.

⇨ Groove in piping direction:
Ball valve open.

NOTICE

► For flanged bodies, the actuator is fitted offset by 90°.

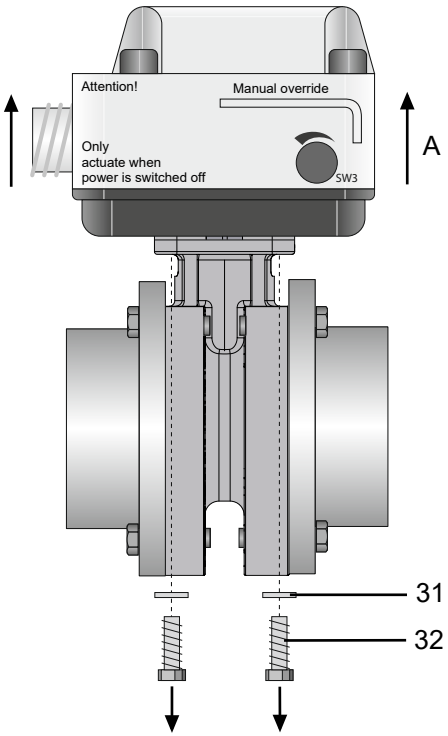
17.3 Replacing the actuator

⚠ DANGER

Risk of electric shock!

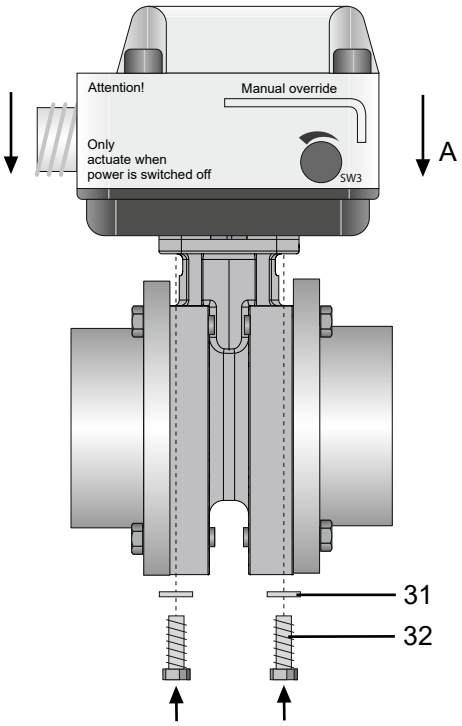
- ► Risk of injury or death (if operating voltage is higher than safe extra low voltage).
- ► Adjustments are made with the actuator cover removed.
- ► Electric shock can cause severe burns and fatal injury.
- **Always** disconnect the product from power supply!
- Therefore, have all work performed only by qualified electricians.

17.3.1 Removing the actuator



1. Disconnect the actuator from the power supply.
2. Remove the protective caps **30**.
3. Unscrew the hexagon screws **32**.
4. Do not lose the washers **31**.
5. The actuator **A** can be removed from the ball valve body.

17.3.2 Mounting the actuator



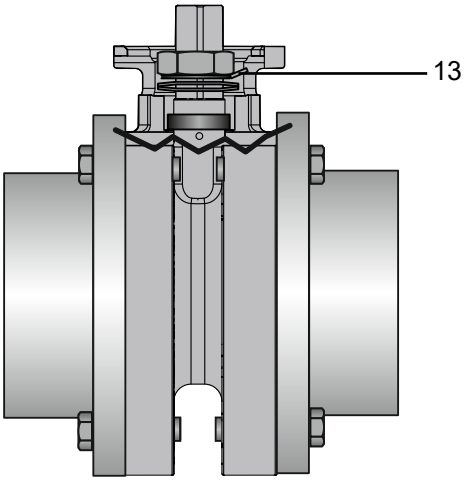
1. Push the new actuator **A** onto the ball valve body.
2. Turn the actuator until the hexagon screws **32** can be inserted.
3. Tighten the hexagon screws **32** with their washers **31** until hand tight.
4. Diagonally tighten the hexagon screws **32** evenly until they are hand tight.
5. Put the protective caps **30** back on.
6. Reconnect the actuator to the power supply.

17.4 Replacing the seals

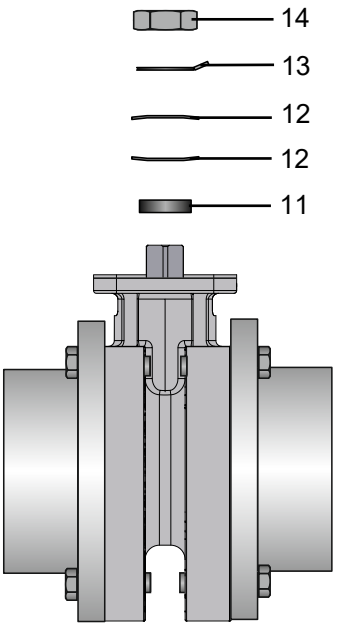
NOTICE

- Only use genuine GEMÜ spare parts.
- When ordering spare parts, specify the complete order number of the ball valve.

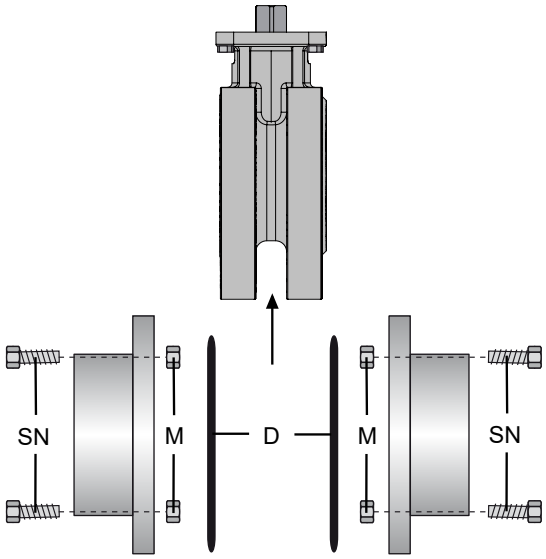
1. Remove actuator (see chapter "Removing the actuator").



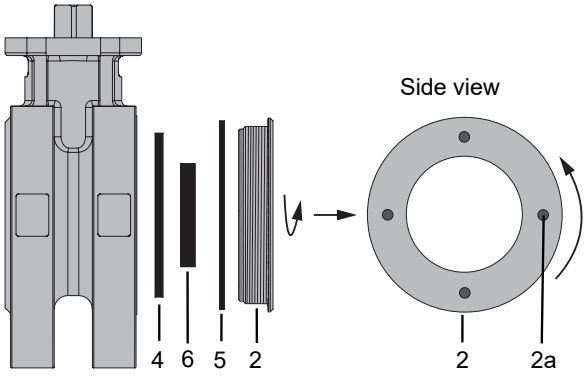
2. Bend the tab **13** of the screw locking device downwards.



3. Loosen spindle nut **14** and remove.
4. Remove screw locking device **13**.
5. Remove upper spring washer **12**.
6. Remove lower spring washer **12**.
7. Remove stainless steel sleeve **11**.



8. Loosen bolts **SN** with nuts **M** and remove with seals **D**.
9. Remove the ball valve from the piping.

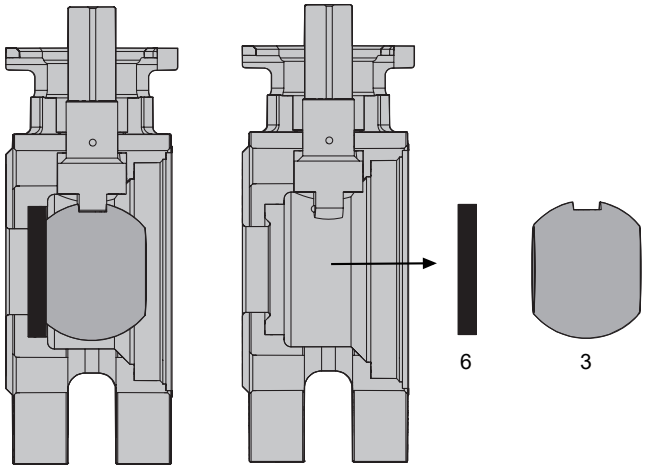


10. Remove screwed in side piece **2** of the ball valve:
    - Insert a suitable tool into the holes **2a**.
    - Unscrew the side piece **2**.

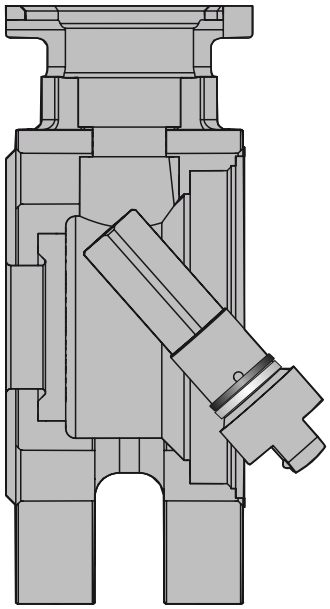
NOTICE

► DN 100: Seal 4 non existent.

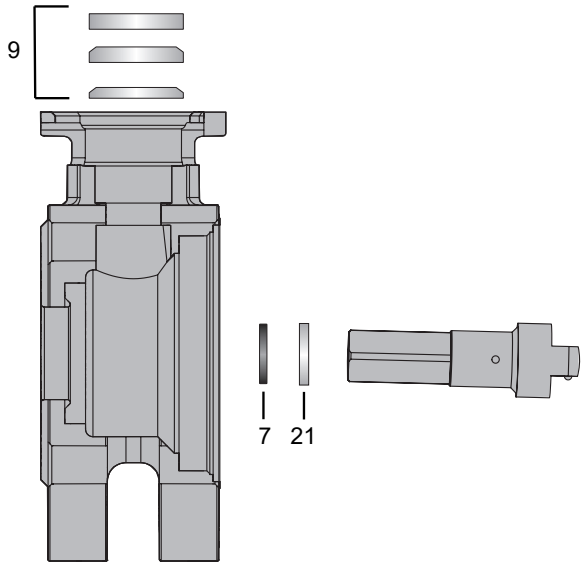
11. Remove seals **4**, **5** and front seat seal **6** from main part of ball valve.



12. Move the ball to the closed position.
13. Remove the ball **3** and the rear seat seal **6**.



14. Press shaft carefully into the body and remove it.



15. Remove seals 9 upwards from the ball valve.

NOTICE

- ► Seals **9**:
- ► DN 15-80: 2 pieces
- ► DN 100: 3 pieces

16. Take off O-ring **7** from shaft.
17. Take off seal **21** from shaft.
18. Mount the seals and the ball valve in reverse order.

18 Removal from piping

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

19 Disposal

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

20 Returns

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

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

21 EU Declaration of Incorporation according to the EC Machinery Directive 2006/42/EC, Annex II B

EU Declaration of Incorporation

according to the EC Machinery Directive 2006/42/EC, Annex II B

We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the relevant essential health and safety requirements in accordance with Annex I of the above-mentioned Directive.

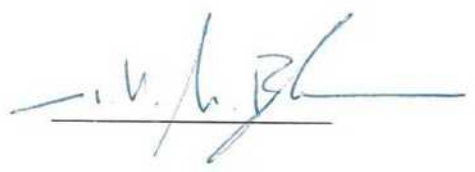
Product:	GEMÜ B56
Product name:	Motorized compact flanged ball valve
The following essential health and safety requirements of the EC Machinery Directive 2006/42/EC, Annex I have been applied or adhered to:	1.1.2.; 1.1.3.; 1.1.5.; 1.3.2.; 1.3.4.; 1.3.7.; 1.3.8.; 1.5.1.; 1.5.13.; 1.5.2.; 1.5.4.; 1.5.6.; 1.5.7.; 1.5.8.; 1.6.1.; 1.6.3.; 1.6.5.; 1.7.1.; 1.7.1.1.; 1.7.2.; 1.7.3.; 1.7.4.; 1.7.4.1.; 1.7.4.2.; 1.7.4.3.
The following harmonized standards (or parts thereof) have been applied:	EN ISO 12100:2010

We also declare that the specific technical documents have been created in accordance with part B of Annex VII.

The manufacturer undertakes to transmit relevant technical documents on the partly completed machinery to the national authorities in response to a reasoned request. This communication takes place electronically.

This does not affect the industrial property rights.

The partly completed machinery may be commissioned only if it has been determined, if necessary, that the machinery into which the partly completed machinery is to be installed meets the provisions of the Machinery Directive 2006/42/EC.



M. Barghoorn
Head of Global Technics

Ingelfingen, 01/02/2023

22 EU Declaration of Conformity in accordance with 2014/68/EU (Pressure Equipment Directive)

EU Declaration of Conformity

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

We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the regulations of the above-mentioned Directive.

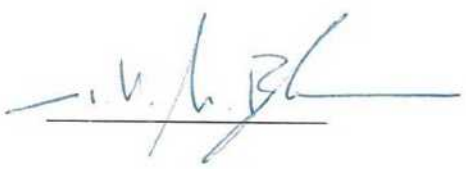
Product:	GEMÜ B56
Product name:	Motorized compact flanged ball valve
Notified body:	TÜV Rheinland Industrie Service GmbH Am Grauen Stein 1 51105 Cologne, Germany
ID number of the notified body:	0035
No. of the QA certificate:	01 202 926/Q-02 0036
Conformity assessment procedure:	Module H1
The following harmonized standards (or parts thereof) have been applied:	EN ISO 1983:2013

Information for products with a nominal size ≤ DN 25:

The products are developed and produced according to GEMÜ's in-house process instructions and standards of quality which comply with the requirements of ISO 9001 and ISO 14001. According to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU, these products must not be identified by a CE-marking.

Other applied technical standards / Remarks:

- DIN EN ISO 5211; DIN EN 558; AD 2000



M. Barghoorn
Head of Global Technics

Ingelfingen, 01/02/2023

23 EU Declaration of Conformity in accordance with 2014/30/EU (EMC Directive)

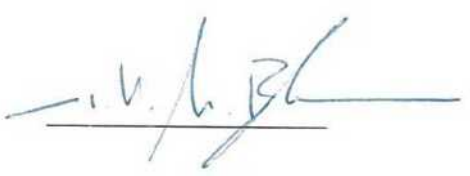
EU Declaration of Conformity

in accordance with 2014/30/EU (EMC Directive)

We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the regulations of the above-mentioned Directive.

Product:	GEMÜ B56
Product name:	Motorized compact flanged ball valve
The following harmonized standards (or parts thereof) have been applied:	EN 61000-6-4:2007/A1:2011



M. Barghoorn
Head of Global Technics

Ingelfingen, 01/02/2023

24 EU Declaration of Conformity in accordance with 2014/35/EU (Low Voltage Directive)

EU Declaration of Conformity

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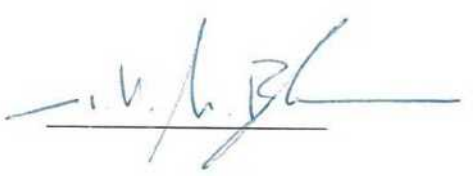
We, the company	GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Strasse 6–8 74653 Ingelfingen-Criesbach, Germany

hereby declare under our sole responsibility that the below-mentioned product complies with the regulations of the above-mentioned Directive.

Product:	GEMÜ B56
Product name:	Motorized compact flanged ball valve
Product version:	Valid for product versions with GEMÜ type 9428 and 9468 actuators
The following harmonized standards (or parts thereof) have been applied:	EN IEC 61010-2-201:2018; EN 61010-1:2010/A1:2019/AC:2019-04



M. Barghoorn
Head of Global Technics

Ingelfingen, 07/02/2023

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

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