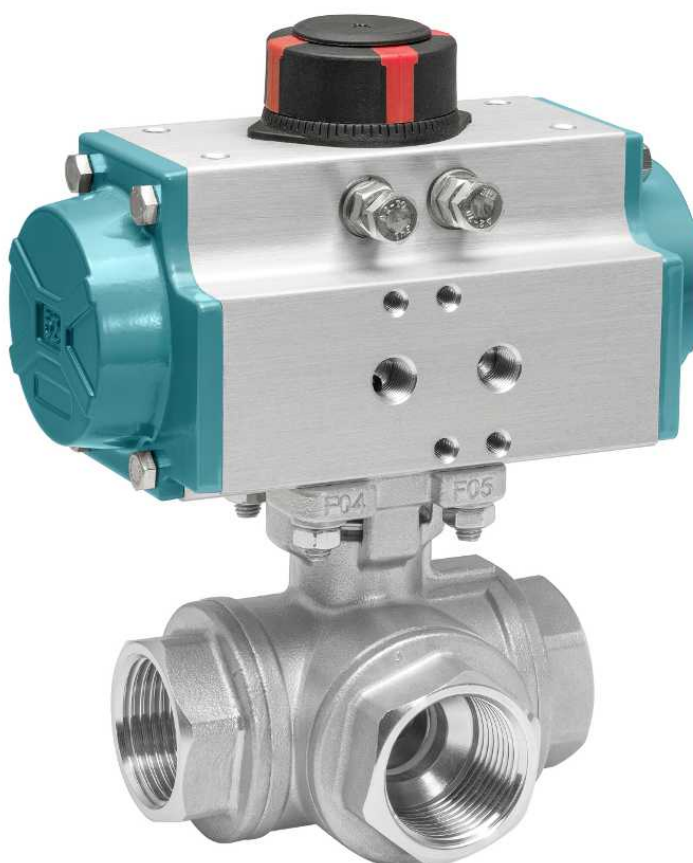


GEMÜ B47

Pneumatically operated 3/2-way ball valve

EN

Operating instructions



webcode: GW-B47



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03.09.2026

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1 General information

1.1 Information

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

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 organized according to the following scheme:

SIGNAL WORD	
Possible symbol for the specific danger	Type and source of the danger
	►Possible consequences in case of non-compliance
	●Measures for avoiding danger

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

The following signal words and danger levels are used:

 DANGER	
	Imminent danger! ► Non-observance can cause death or severe injury
 WARNING	
	Potentially dangerous situation! ► Non-observance can cause death or severe injury

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

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

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

Symbol	Meaning
	Danger of explosion!
	Risk of crushing due to moving parts when the valve is not installed!
	The equipment is subject to pressure!
	Corrosive chemicals!
	Hot plant components!
	Maximum permissible pressure exceeded!
	Leakage!

2 Safety information

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

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

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

The safety information does not take into account:

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

Prior to commissioning:

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

During operation:

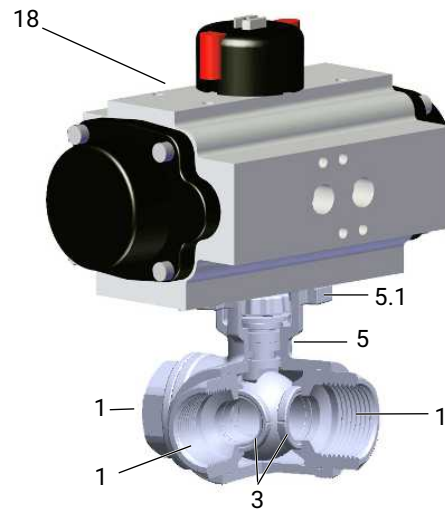
1. Keep this document available at the place of use.
2. Observe the safety information.
3. Operate the product in accordance with this document.
4. Operate the product in accordance with the specifications.
5. Maintain the product correctly.
6. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

In cases of uncertainty:

1. Consult the nearest GEMÜ sales office.

3 Product description

3.1 Construction



Item	Name	Materials
5	Ball valve body	1.4408 / CF8M
1	Pipe connections	1.4408 / CF8M
5.1	Mounting flange ISO 5211	1.4408 / CF8M
18	Pneumatic actuator	Aluminium
3	Seal	PTFE

3.2 Description

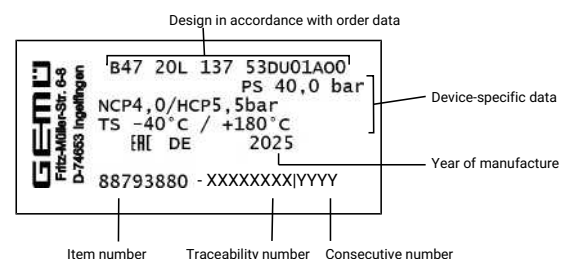
The 3/2-way metal ball valve GEMÜ B47 is pneumatically operated. The seat seal is made of PTFE.

3.3 Function

The product is made of metal and is equipped with a low maintenance aluminium piston actuator. It has an optical position indicator and is available in various designs. The product has two operating states: "Closed" and "Open".

3.4 Product label

The product label is located on the body of the product.



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

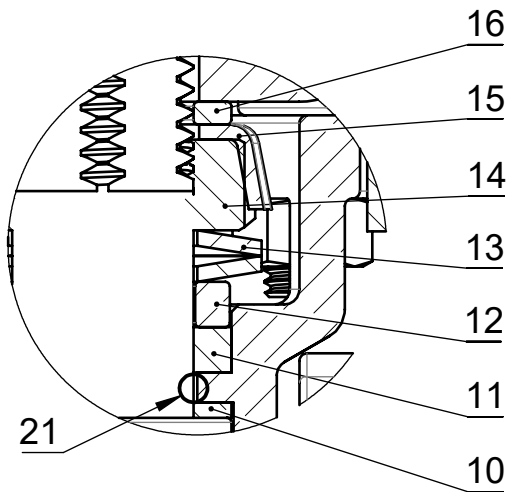
The control pressure is the minimum required control pressure. NCP (normal control pressure) is for normal applications. HCP (high control pressure) is for more difficult applications.

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

There is a clearly assigned serial number as a QR code on the product.

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

4 The spindle seal system



Item	Name	Material
10	Seal	PTFE
11	V-ring	PTFE
12	Stainless steel sleeve	SS304-1.4301
13	Spring washer	SS304-1.4301
14	Spindle nut	A2 70
15	Cap	SS304-1.4301
16	Washer	SS304-1.4301
21	O-ring (spindle seal)	FKM

Long service life due to triple spindle seal

- Conical spindle seal:

The seal **10** arranged at an angle of 45° effectively prevents the leakage of media when operating the spindle

- O-ring:

Stabilising spindle seal **21** with low wear and long service life

- Pretensioned self-adjusting spindle seal:

The spindle packing consists of several V-rings **11**, a spring washer **13** and a stainless steel sleeve **12**. The spring washer **13** is pretensioned via the spindle nut **14**. The pretension force is distributed to the V-rings **11** via the stainless steel sleeve **12**, thereby preventing the leakage of media. The pretension provides low maintenance and reliable spindle sealing even after a long service life.

5 GEMÜ CONEXO

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



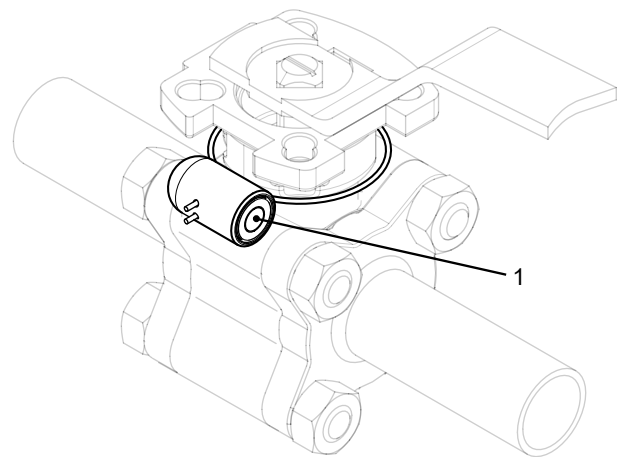
Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves 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 for electronic identification purposes. The position of the RFID chip can be seen below.



6 Correct use

 DANGER	
	<p>Danger of explosion!</p> <ul style="list-style-type: none"> ▶ Risk of severe injury or death ● If there is no corresponding declaration of conformity, the product must not be used in potentially explosive atmospheres! ● Only use the product in potentially explosive zones confirmed in the declaration of conformity.

 WARNING	
<p>Improper use of the product!</p> <ul style="list-style-type: none"> ▶ 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. 	

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.

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 pneumatic actuator.

1. Note the supplement acc. to ATEX.
2. Use the product in accordance with the technical data.

The product must not be exposed to pressure fluctuations. If the product is to be used with pressure fluctuations, please contact GEMÜ.

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	
<p>Build-up of lint!</p> <ul style="list-style-type: none"> ▶ For soft-seated ball valves, due to the relative rotations of the stainless steel ball 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. 	

6.1 Product without special function X

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

6.2 Product with special function X

With the special version X order option, the product is intended for use in potentially explosive areas in zone 1 with gases, mists or vapours and zone 21 with combustible dusts in accordance with EU Directive 2014/34/EU (ATEX).

The explosion protection markings can be found in the document "GEMÜ operating conditions and explosion protection markings for ball valves with special function X".

7 Order data

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, pneumatically operated, multi-port, thread, aluminium double piston actuator, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	B47

2 DN	Code
DN 8	8
DN 10	10
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50

3 Body/ball configuration	Code
Multi-port design, T-port, end position "Open", connection 1 and 3 open, T-port, end position "Closed", connection 1 and 2 open (for port position, see datasheet)	2
Multi-port design, T-port, end position "Open", connection 1 and 2 open, T-port, end position "Closed", connection 2 and 3 open (for port position, see datasheet)	3
Multi-port design, T-port, end position "Open", connection 2 and 3 open, T-port, end position "Closed", connection 1, 2 and 3 open (for port position, see datasheet)	4
Multi-port design, L-port, end position "Open", connection 1 and 3 open, L-port, end position "Closed", connection 1 open (for port position, see datasheet)	6
Multi-port design, L-port, standard end position "Open", connection 2 and 3 open, L-port, standard end position "Closed", connection 1 and 3 open (for port position, see datasheet)	L
Multi-port design, T-port, standard end position "Open", connection 1, 2 and 3 open, T-port, standard end position "Closed", connection 1 and 3 open (for port position, see datasheet)	T

4 Connection type	Code
Threaded socket DIN ISO 228	1
NPT female thread	31

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

6 Seal material	Code
PTFE FKM O-ring	5

7 Control function	Code
Normally closed (NC)	1
Normally open (NO)	2
Double acting (DA)	3

8 Actuator version	Code
Actuator GEMÜ GDR	
Actuator, pneumatic, DA – at 6 bar, 20.6 Nm GDR0050 F03/05 S11 2.5–8.0 bar	HR05AW
Actuator, pneumatic, DA – at 6 bar, 38.8 Nm GDR0065 F05/07 S14 2.5–8.0 bar	HR06AP
Actuator, pneumatic, DA – at 6 bar, 67.1 Nm GDR0075 F05/07 S14 2.5–8.0 bar	HR07AP
Actuator GEMÜ GSR	
Actuator, pneumatic, SA – at 0°, 97.3 Nm GSR0115 SC5F07/10 S17 4.5–8.0 bar	GR11SE
Actuator GEMÜ ADA	
Actuator, pneumatic, DA – at 6 bar, 19.5 Nm, 3.0–10 bar ADA0020U F04 S14S11	BU02AA
Actuator, pneumatic, DA – at 6 bar, 77.0 Nm, 3.0–10 bar ADA0080U F05 07S17S14	BU08AC
Actuator GEMÜ ASR	
Actuator, pneumatic, SA – at 0°, 9.0 Nm, 5.5–8.0 bar ASR0020US08F04 S14S11	AU02FA
Actuator, pneumatic, SA – at 0°, 17.0 Nm, 5.5–8.0 bar ASR0040US14F04 S14S11	AU04KA
Actuator, pneumatic, SA – at 0°, 30.0 Nm, 5.5–8.0 bar ASR0080US14F05 07S17S14	AU08KC
Actuator, pneumatic, SA – at 0°, 73.0 Nm, 5.5–8.0 bar ASR0200US14F07 10S17S14	AU20KE
Actuator GEMÜ DR	
Actuator, pneumatic, DA – at 6 bar, 19.9 Nm, 2.5–8.0 bar DR0015U F04/S11	DU01AO
Actuator, pneumatic, DA – at 6 bar, 69.8 Nm, 2.5–8.0 bar DR0060U F05/07 S17	DU06AC

8 Actuator version	Code
Actuator GEMÜ SC	
Actuator, pneumatic, SA – at 0°, 13.3 Nm, 5.5–8.0 bar SC0030U 6F04/S11	SU03KO
Actuator, pneumatic, SA – at 0°, 60.8 Nm, 5.5–8.0 bar SC0150U 6F05/07 S17	SU15KC
Actuator, pneumatic, SA – at 0°, 98.4 Nm, 5.5–8.0 bar SC0220U 6F07/10 S22	SU22KD

9 Actuator particulars	Code
General industrial version (version A/DR/DL/D3/D4/SC/SO/S3/S4), aluminium housing, 25–35 µm anodised coating, aluminium end caps, powder-coated, C-steel shaft + ENP, A2 screws	0

10 Type of design	Code
Standard	

10 Type of design	Code
Thermal separation between actuator and valve body by mounting kit, mounting kit and mounting parts in stainless steel	5227

11 Special version	Code
Without	
Special version for oxygen Maximum temperature for medium: 100 °C, Operating pressure limited in accordance with product label data Media-wetted materials cleaned, and grease and seal tested in accordance with DIN EN 1797/ISO 21010	0
Explosion protection	X

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

Order example

1 Type	B47	Ball valve, metal, pneumatically operated, multi-port, thread, aluminium double piston actuator, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit
2 DN	15	DN 15
3 Body/ball configuration	T	Multi-port design, T-port, standard end position "Open", connection 1, 2 and 3 open, T-port, standard end position "Closed", connection 1 and 3 open (for port position, see datasheet)
4 Connection type	1	Threaded socket DIN ISO 228
5 Ball valve material	37	1.4408/CF8M (body, connection), 1.4401/SS316 (ball, shaft)
6 Seal material	5	PTFE FKM O-ring
7 Control function	1	Normally closed (NC)
8 Actuator version	BU02AA	Actuator, pneumatic, DA – at 6 bar, 19.5 Nm, 3.0–10 bar ADA0020U F04 S14S11
9 Actuator particulars	0	General industrial version (version A/DR/DL/D3/D4/SC/SO/S3/S4), aluminium housing, 25–35 µm anodised coating, aluminium end caps, powder-coated, C-steel shaft + ENP, A2 screws
10 Type of design		Standard
11 Special version		Without
12 CONEXO		Without

8 Technical data

8.1 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.
For special version for oxygen (code O): Only gaseous oxygen.

8.2 Temperature

Media temperature: -40 – 180 °C
For media temperatures > 100 °C, we recommend using a mounting kit with adapter between the ball valve and the actuator.
For the medium gaseous oxygen (special version code O): Media temperature max. 100 °C.

Ambient temperature: -40 – 60 °C
For ATEX versions, the ambient temperature specifications in the "Supplement acc. to ATEX" and the specifications on the ATEX-marking on the product apply.

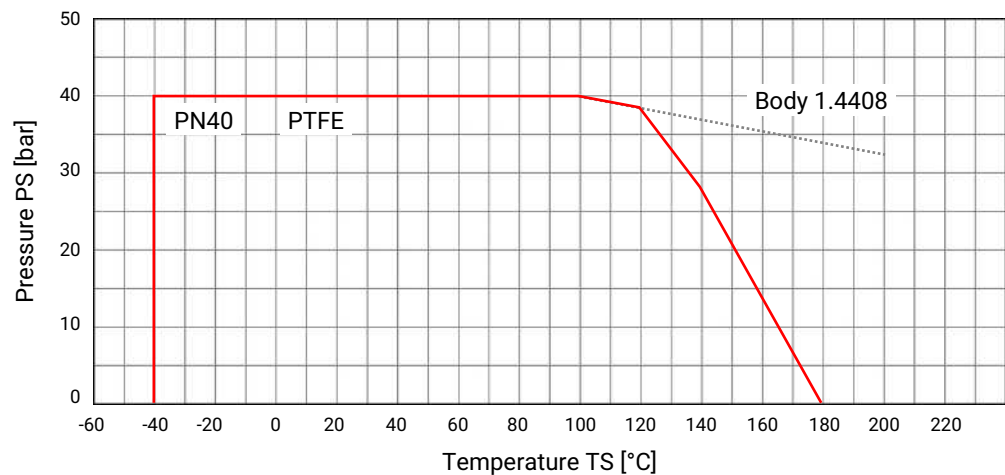
Storage temperature: 0 – 40 °C

8.3 Pressure

Operating pressure: 0 – 40 bar
For the medium gaseous oxygen (special version code O): Operating pressure limited in accordance with product label data.

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.

Pressure/temperature diagram:



Pressure/temperature data in accordance with diagram refers to static operating conditions. Strongly fluctuating or fast-changing parameters can lead to a reduction of the service life. Special applications must be talked through with your technical contact person in advance.

Leakage rate: Leakage rate according to ANSI FCI70 – B16.104
Leakage rate according to EN12266, 6 bar air, leakage rate A

Kv values:

DN	NPS	Kv value	
		T-port	L-port
8	1/4"	5.0	3.4
10	3/8"	5.8	3.5
15	1/2"	11.0	6.7
20	3/4"	21.0	12.0
25	1"	34.0	18.0
32	1¼"	59.0	27.5
40	1½"	70.0	35.6
50	2"	71.5	45.7

Kv values in m³/h

Control pressure: 6 up to 8 bar**8.4 Product conformity****Machinery Directive:** 2006/42/EC**Pressure Equipment Directive:** 2014/68/EU**Oxygen:** Testing of the seal material based on DIN EN 1797 and ISO 21010:2017 (special version code O)

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

The product's ATEX marking is dependent on the respective product configuration with valve body and actuator. This can be found in the document "GEMÜ operating conditions and explosion protection markings for the ball valves with special function X" and the ATEX marking on the product.

8.5 Mechanical data**Torques:**

DN	NPS	Torques
8	1/4"	8.0
10	3/8"	8.0
15	1/2"	10.0
20	3/4"	13.0
25	1"	19.0
32	1¼"	29.0
40	1½"	51.0
50	2"	62.0

Torques in Nm

A safety factor of 1.2 is included

With dry, non-lubricating media the breakaway torque may be increased.

Valid for clean, non-particulate and oil-free media (water, alcohol, etc.), gas or saturated steam (clean and wet). PTFE seal.

Weight:**Body**

DN	NPS	Weight
8	1/4"	0.55
10	3/8"	0.55
15	1/2"	0.55
20	3/4"	0.85
25	1"	1.20
32	1¼"	2.20
40	1½"	3.40
50	2"	4.63

Weights in kg

Actuator type GDR/GSR

Type	GDR Double acting	GSR Single acting
0050	1.05	1.22
0065	1.50	1.80
0075	2.55	3.20
0115	8.20	11,00

Weights in kg

Actuator type ADA/ASR

Type	ADA Double acting	ASR Single acting
0020U	1.4	1.5
0040U	2.1	2.3
0080U	3.0	3.7
0200U	5.6	7.3

Weights in kg

Actuator DR/SC

Type	DR double acting	SC single acting
0015U	1.0	1.1
0030U	1.6	1.7
0060U	2.7	3.1
0100U	3.7	4.3
0220U	8.0	9.3

Weights in kg

90° travel:

GEMÜ GDR/GSR: ±5° adjustable (85° - 95°)

GEMÜ ADA /ASR: ±5° adjustable (85° - 95°)

GEMÜ DR /SC: 20° adjustable (75° - 95°)

9 Dimensions

9.1 Actuator dimensions

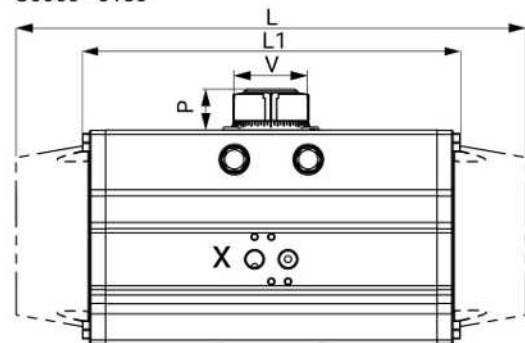
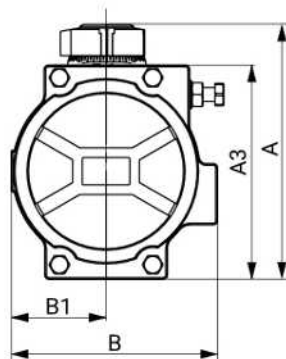
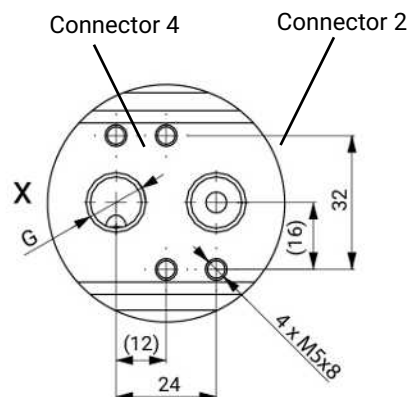
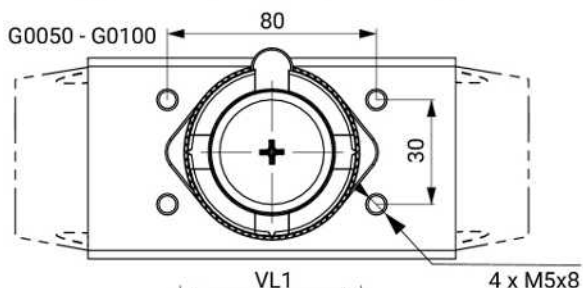
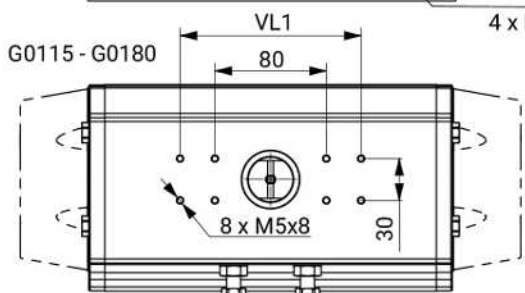
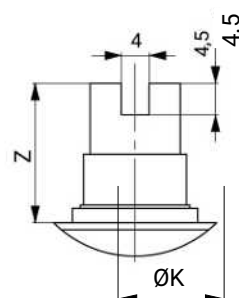
Note on actuator mounting:

Standard mounting orientation – actuator positioned in-line with piping

Only with flanged connections the actuator is mounted across the piping

9.1.1 Actuator type GDR/GSR

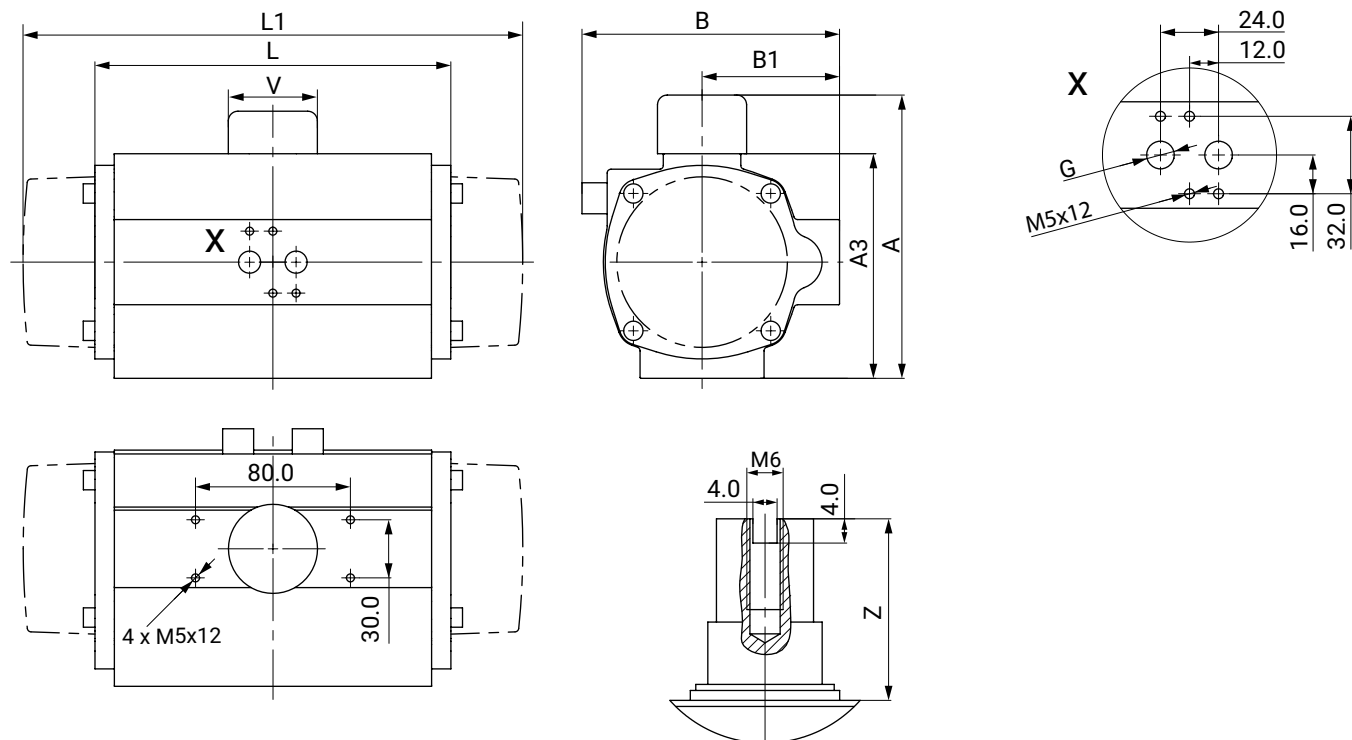
G0050 - 0180



Type	A	A3	B	B1	V	G	P	VL	Z	L	VL1
G0050	92.00	70.00	71.00	30.00	40.00	G1/8"	22.00	80.00	20.00	142.00	-
G0065	102.50	80.50	80.50	35.50	40.00	G1/8"	22.00	80.00	20.00	162.00	-
G0075	119.00	97.00	94.50	42.00	40.00	G1/8"	22.00	80.00	20.00	208.00	-
G0115	174.00	142.00	137.00	64.00	65.00	G1/4"	32.00	80.00	30.00	337.00	130.00

Dimensions in mm

9.1.2 Actuator type ADA/ASR

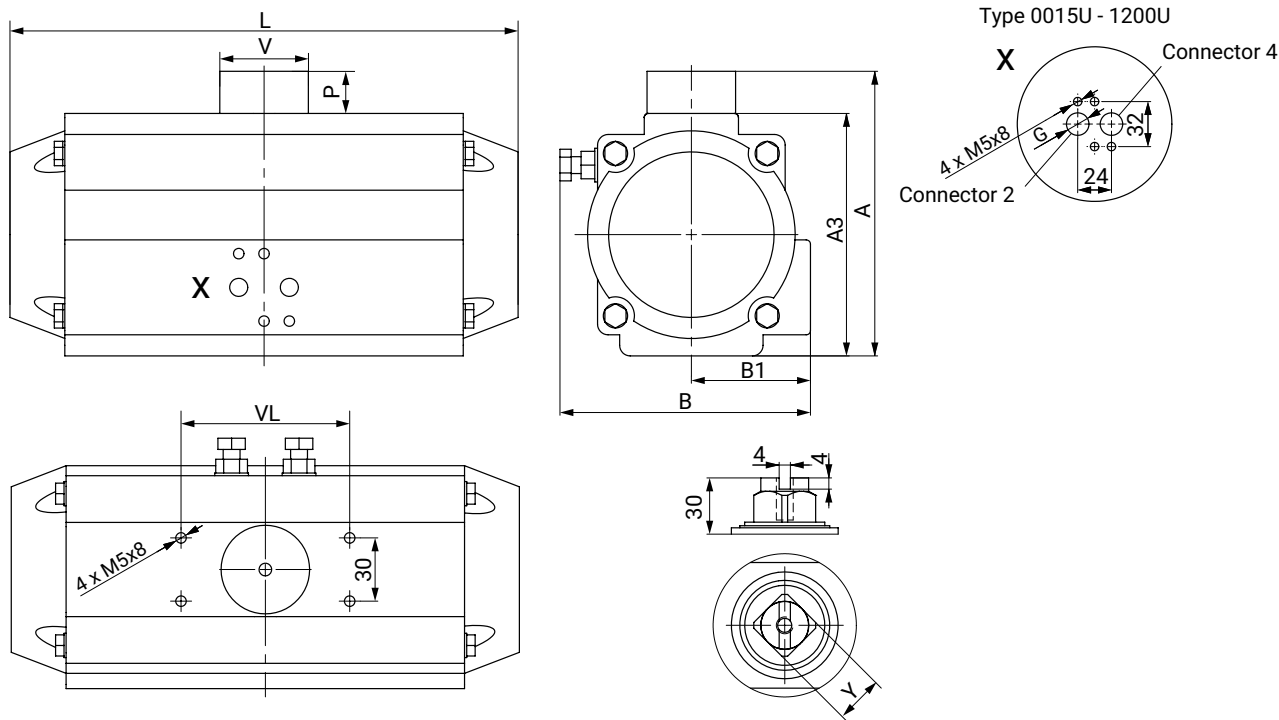


Type	A	A3	B	B1	G	L	L1	V	Z
0020U	96.0	66.0	76.0	48.0	G1/4"	145.0	163.0	40.0	30.0
0040U	115.0	85.0	91.0	56.0	G1/4"	158.0	195.0	40.0	30.0
0080U	137.0	107.0	111.0	66.0	G1/4"	177.0	217.0	40.0	30.0
0200U	165.0	135.0	135.5	78.0	G1/4"	225.0	299.0	40.0	30.0

Dimensions in mm

9.1.3 Actuator type DR/SC

Actuator dimensions

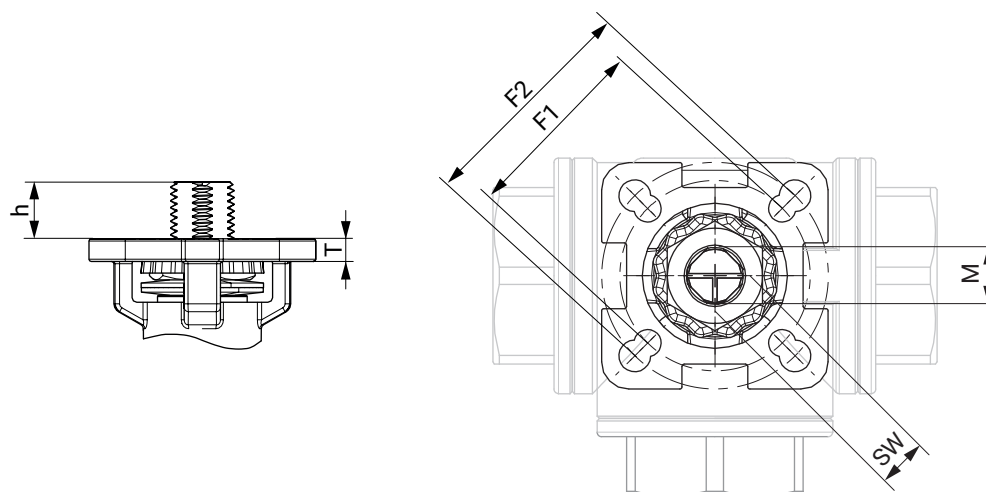


Type	A	A3	B	B1	V	VL	G	P	L	Y
0015U	89.0	69.0	72.0	43.0	42.0	80.0	G1/8"	20.0	136.0	11.0
0030U	105.0	85.0	84.5	48.5	42.0	80.0	G1/8"	20.0	153.5	11.0
0060U	122.0	102.0	93.0	50.5	42.0	80.0	G1/8"	20.0	203.5	17.0
0100U	135.0	115.0	106.0	56.5	42.0	80.0	G1/8"	20.0	241.0	17.0
0150U	147.0	127.0	118.5	63.0	42.0	80.0	G1/4"	20.0	259.0	17.0
0220U	175.0	145.0	136.0	72.0	58.0	80.0	G1/4"	30.0	304.0	27.0

Dimensions in mm

9.2 Body dimensions

9.2.1 Actuator flange

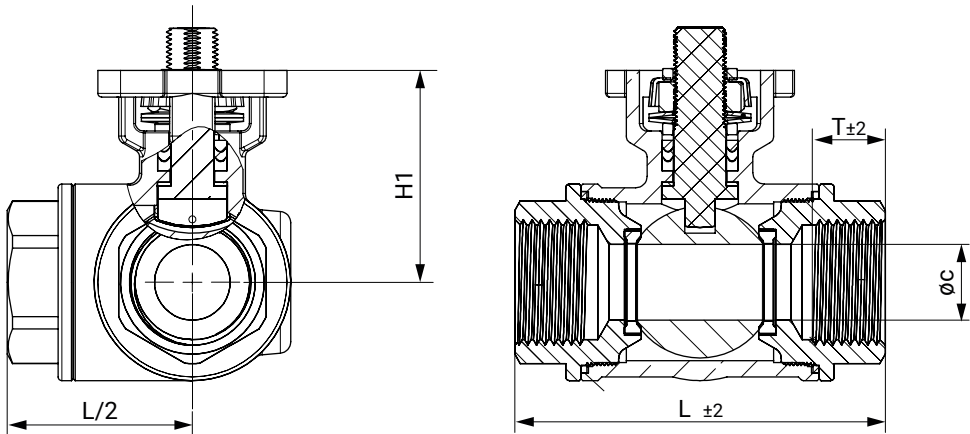


DN	G	F1	ISO 5211	F2	ISO 5211	SW	h	T	M
8	1/4"	36.0	F03	42.0	F04	9.0	9.0	6.5	M12
10	3/8"	36.0	F03	42.0	F04	9.0	9.0	6.5	M12
15	1/2"	36.0	F03	42.0	F04	9.0	9.0	6.5	M12
20	3/4"	36.0	F03	42.0	F04	9.0	8.5	6.0	M12
25	1"	42.0	F04	50.0	F05	11.0	11.5	7.0	M14
32	1 1/4"	42.0	F04	50.0	F05	11.0	11.5	7.0	M14
40	1 1/2"	50.0	F05	70.0	F07	14.0	14.0	8.5	M18
50	2"	50.0	F05	70.0	F07	14.0	14.0	8.5	M18

Dimensions in mm

9.2.2 Body dimensions

9.2.2.1 Threaded socket (connection code 1, 31)



DN	G	øc	H1	L	T
8	1/4"	12.0	40.9	74.0	14.6
10	3/8"	12.0	43.0	74.0	14.6
15	1/2"	12.0	43.0	74.0	14.7
20	3/4"	15.0	45.0	86.0	16.7
25	1"	20.0	56.0	98.0	19.9
32	1¼"	25.0	62.0	118.0	21.9
40	1½"	32.0	74.0	130.0	22.4
50	2"	38.0	78.0	149.0	26.9

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.
5. Close the compressed air connections with protection caps or sealing plugs.
6. Store the ball valves in the "open" position.

11 Installation in piping

11.1 Preparing for installation

WARNING



Risk of crushing due to moving parts when the valve is not installed!

- Upper limbs may get into the valve body openings while working on the valve.
- Ensure that the valve is in the respective end position.
- Do not reach into the crushing area through the valve body openings.

WARNING



The equipment is subject to pressure!

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

WARNING



Corrosive chemicals!

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

CAUTION



Hot plant components!

- Burns
- Only work on plant that has cooled down.
- Wear protective gear.

CAUTION



Maximum permissible pressure exceeded!

- Damage to the product!
- Provide for precautionary measures against exceeding the maximum permissible pressure that may be caused by pressure surges (water hammer).

CAUTION

Use as step!

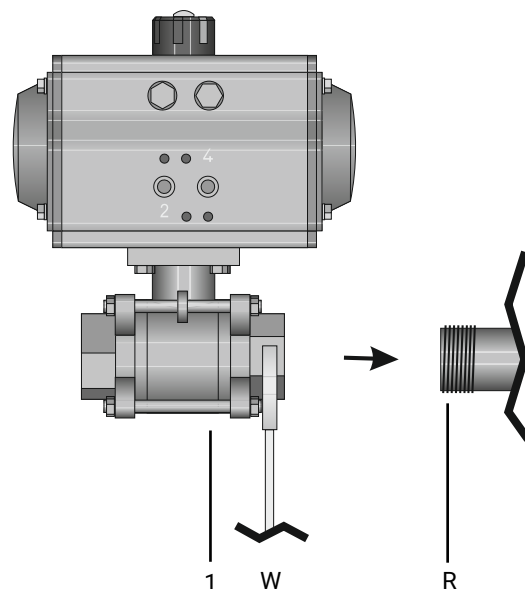
- Damage to the product
- Risk of slipping-off
- Choose the installation location so that the product cannot be used as a foothold.
- Do not use the product as a step or a foothold.

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. Use appropriate protective gear as specified in plant operator's guidelines.
 5. Observe appropriate regulations for connections.
 6. Installation work must be performed by trained personnel.
 7. Shut off plant or plant component.
 8. Secure the plant or plant component against recommissioning.
 9. Depressurize the plant or plant component.
 10. Completely drain the plant or plant component and allow it to cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
 11. Correctly decontaminate, rinse and ventilate the plant or plant component.
 12. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
 13. Only install the product between matching aligned pipes (see chapters below).
 14. Installation position: preferably actuator upwards.
 15. Direction of the working medium: optional.

11.2 Installation with threaded connections

1. Screw ball valve body **1** onto piping **R** using an appropriate thread sealant. The thread sealant is not included in the scope of delivery.
2. Hold in place with open-end wrench **W**.
3. Connect the ball valve body **1** to piping on the other side in a like manner.

11.3 After the installation

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

12 Pneumatic connection

12.1 Control functions

The following control functions are available:

Control function 1

Normally closed (NC)

Ball valve resting position: Closed by spring force. Activation of the actuator (connector 2) opens the ball valve. When the actuator is vented, the ball valve is closed by spring force.

Control function 2

Normally open (NO)

Ball valve resting position: Opened by spring force. Activation of the actuator (connector 4) closes the ball valve. When the actuator is vented, the ball valve is opened by spring force.

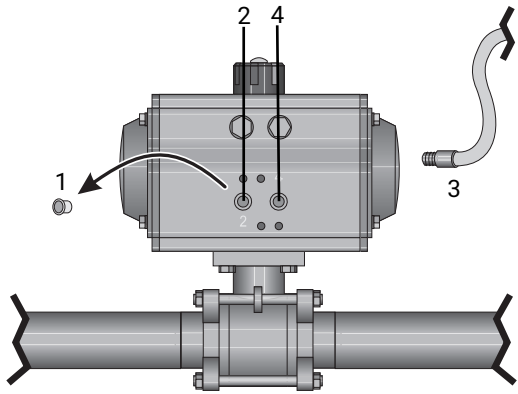
Control function 3

Double acting (DA)

Ball valve resting position: Undefined. The ball valve is opened and closed by activating the respective control medium connectors (connector 2: Open/connector 4: Close).

Control functions	Connections	
	2	4
1 (NC)	+	-
2 (NO)	-	+
3 (DA)	+	+

+ = available / - = not available
(For connectors 2/4, see picture in "Connecting the control medium" chapter)



3. Remove the protection cap 1.
4. Screw the control medium line 3 into control medium connector 2.
5. If appropriate, screw the second control medium line into control medium connector 4.

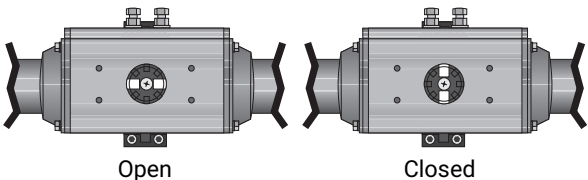
Alternative:

6. Mount solenoid valve
(for double acting actuators:
GEMÜ 8506 5/2 or
GEMÜ 8506 5/3,
for single acting actuators:
GEMÜ 0324 3/2).

Control function		Connectors
1	Normally closed (NC)	2: Control medium (open)
2	Normally open (NO)	4: Control medium (close)
3	Double acting (DA)	2: Control medium (open) 4: Control medium (close)

For connectors 2 / 4 see picture above

12.2 Optical position indicator



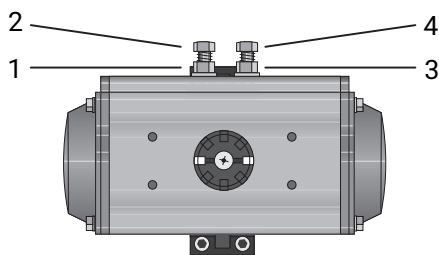
12.3 Connecting the control medium

1. Use suitable connectors.
2. Connect the control medium lines tension-free and without any bends or knots.

Thread size of the control medium connectors: G1/4

13 Setting the end positions

The end positions can be set by $\pm 20^\circ$ ($+5^\circ/-15^\circ$).



15 Operation

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

Setting the 0° end position:

1. Move the ball valve to the closed position.
2. Loosen the lock nut 1.
3. Set the end position via screw 2.
4. Tighten the lock nut 1.

Setting the 90° end position:

5. Move the ball valve to the open position.
6. Loosen the lock nut 3.
7. Set the end position via screw 4.
8. Tighten the lock nut 3.

14 Commissioning

WARNING



Corrosive chemicals!

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

CAUTION



Leakage!

- Emission of dangerous materials
- Provide for precautionary measures against exceeding the maximum permissible pressure that may be caused by pressure surges (water hammer).

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.

16 Troubleshooting

Error	Possible cause	Troubleshooting
The product does not open or does not open fully	Actuator defective	Replace the actuator
	Foreign matter in the product	Remove and clean the product
	Control pressure too low (for control function NC)	Operate the product with the control pressure specified in the datasheet
The product does not close or does not close fully	Actuator defective	Replace the actuator (see chapter "Replacing the actuator")
	Foreign matter in the product	Remove and clean the product
	Control pressure too low	Operate the product with the specified control pressure (see chapter "Technical data")
The product is leaking between actuator and valve body	Faulty product	Check the product for potential damage, replace the product if necessary
	Seals faulty	Replace seals
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
	Threaded connection loose	Retighten the thread
	Thread seals faulty	Replace thread seals
Valve body leaking	Valve body faulty	Check valve body for potential 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 or plant component.
- Completely drain the plant or plant component.

⚠ WARNING



Risk of crushing due to moving parts when the valve is not installed!

- ▶ Upper limbs may get into the valve body openings while working on the valve.
- Ensure that the valve is in the respective end position.
- Do not reach into the crushing area through the valve body openings.

⚠ CAUTION



Hot plant components!

- ▶ Burns
- Only work on plant that has cooled down.
- Wear protective gear.

⚠ CAUTION

- Servicing and maintenance work must only be performed by trained personnel.
- Do not extend hand lever. GEMÜ shall assume no liability 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.

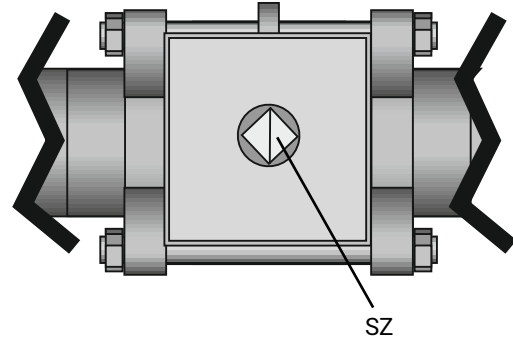
Usually, retightening by between 30° and 60° will be sufficient to rectify the leakage.

17.1 General information regarding actuator replacement

NOTICE

The following tools are required for actuator replacement:

- Allen key



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

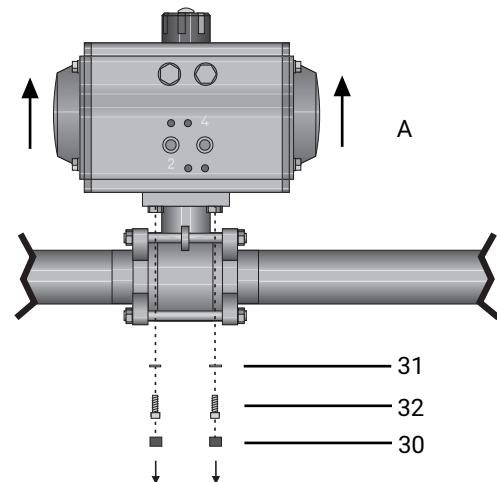
⇒ Groove transverse to piping direction:
Ball valve closed.

⇒ Groove in piping direction:
Ball valve open.

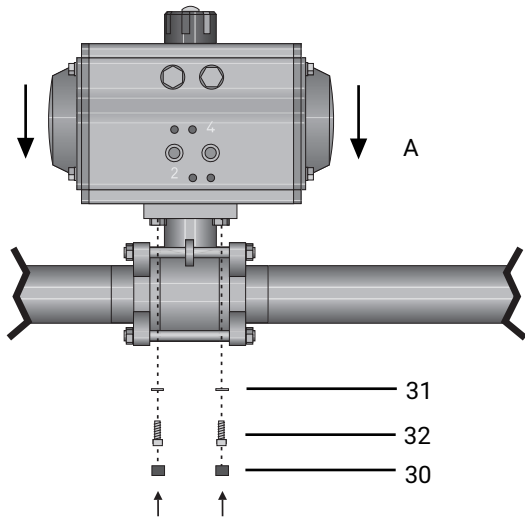
17.1.1 Replacing the actuator

1. Depressurize the control medium.
2. Unscrew the control medium line(s) on the actuator.

17.1.1.1 Removing the actuator



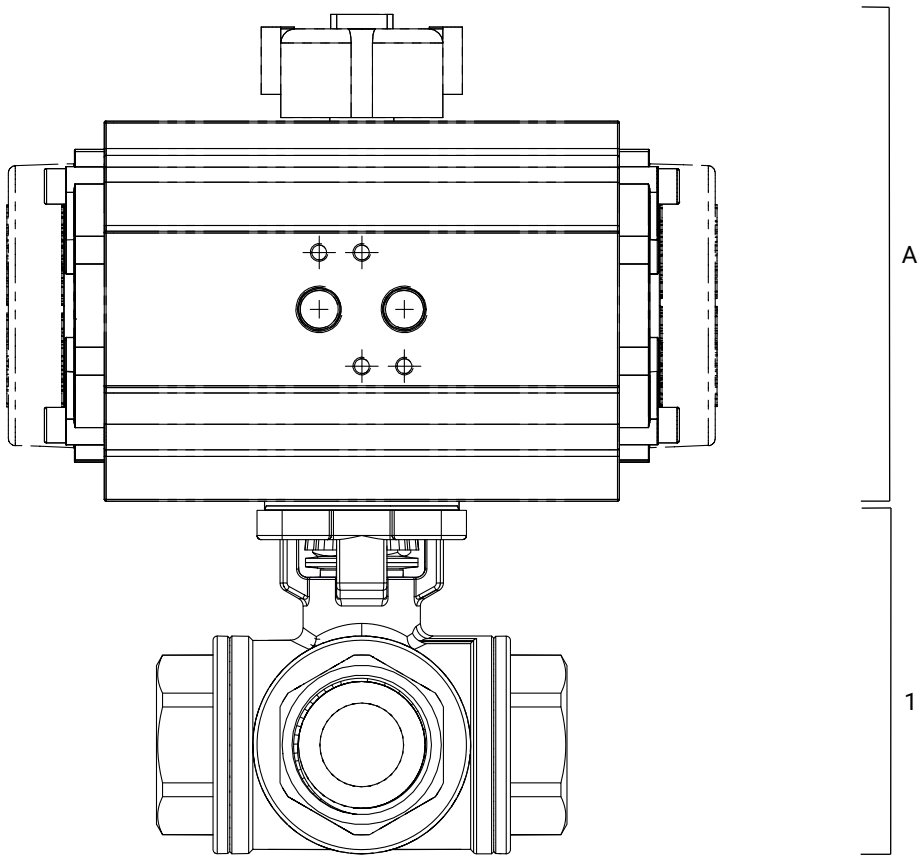
1. Remove the protective caps **30**.
2. Unscrew the hexagon screws **32**.
3. Do not lose the washers **31**.
4. The actuator **A** can be removed from the ball valve body.

17.1.1.2 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. Screw in the hexagon screws **32** with their washers **31** again until hand tight.
4. Diagonally tighten the hexagon screws **32** evenly until they are hand tight.
5. Put the protective caps **30** back on.

17.2 Spare parts

17.2.1 Spare parts for connection types 1, 31



Item	Name	Order designation	
BB07		1	Ball valve body assembly
A	Actuator ADA/ASR, DR/SC, GDR/GSR	ADA	Pneumatic actuator, double acting
		GDR	Pneumatic actuator, double acting
		DR	Pneumatic actuator, double acting
		ASR	Pneumatic actuator, single acting
		GSR	Pneumatic actuator, single acting
		SC	Pneumatic actuator, single acting

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

Version 1.0

GEMÜ

Original EU-Einbauerklärung

EU Declaration of Incorporation

Wir, die Firma

We, the company

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Gert-Müller-Platz 1
74635 Kupferzell
Deutschland

erklären hiermit in alleiniger Verantwortung, dass die nachfolgend bezeichneten Produkte den Vorschriften der genannten Richtlinien entspricht.

hereby declare under our sole responsibility that the below-mentioned products complies with the regulations of the mentioned Directives.

Produkt: GEMÜ B47**Product:** GEMÜ B47**Produktname:** Pneumatisch betätigter 3/2-Wege-Kugelhahn**Product name:** Pneumatically operated 3/2-way ball valve

Inbetriebnahme der unvollständigen Maschine ist nur zulässig, wenn die Gesamtmaschine den Anforderungen der Maschinenrichtlinie bzw. der Maschinenverordnung entspricht.

Commissioning of the incomplete machine is only permitted if the complete machine complies with the requirements of the Machinery Directive resp. the Machinery Regulation (EU) 2023/1230.

Richtlinien/Verordnungen:**Directives/Regulations:**MD 2006/42/EG¹⁾**Folgende harmonisierte Normen (oder Teile hieraus) wurden angewandt:****The following harmonized standards (or parts thereof) have been applied:**

EN ISO 12100:2010

Folgende grundlegenden Sicherheits- und Gesundheitsschutzanforderungen der EG-Maschinenrichtlinie 2006/42/EG, Anhang I bzw. (EU) 2023/1230, Anhang III wurden angewandt und eingehalten:

The following essential health and safety requirements of the EC Machinery Directive 2006/42/EC, Annex I resp. (EU) 2023/1230, Annex III have been applied or adhered to:

1.1.2.; 1.1.3.; 1.1.5.; 1.3.2.; 1.3.3.; 1.3.4.; 1.3.7.; 1.5.13.; 1.5.3.; 1.5.5.; 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.; 2.1.1.; 2.1.2.

¹⁾ MD 2006/42/EG**Bemerkungen:**

Gültig ab 20. Januar 2027

Ferner wird erklärt, dass die speziellen technischen Unterlagen gemäß (EU) 2023/1230 Anhang IV Teil B erstellt wurden.

Der Hersteller verpflichtet sich, einzelstaatlichen Stellen auf begründetes Verlangen die speziellen technischen Unterlagen zu der unvollständigen Maschine zu übermitteln. Diese Übermittlung erfolgt elektronisch.

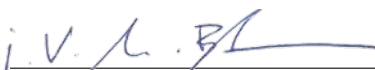
Die gewerblichen Schutzrechte bleiben hiervon unberührt!

¹⁾ MD 2006/42/EG**Remarks:**

It is also declared that the specific technical documentation has been prepared in accordance with Annex VII, Part B resp. (EU) 2023/1230 Annex IV Part B.

The manufacturer undertakes to provide national authorities with the specific technical documentation relating to the partly completed machinery upon reasoned request. This documentation shall be provided electronically.

Industrial property rights remain unaffected by this!



i.V. M. Barghoorn
Leiter Globale Technik

Ingelfingen, 31.08.2026

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Gert-Müller-Platz 1, 74635 Kupferzell, Deutschland

www.gemu-group.com
info@gemu.de

22 EU Declaration of Conformity



Version 1.0



EU-Konformitätserklärung EU Declaration of Conformity

Wir, die Firma

We, the company

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Gert-Müller-Platz 1
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erklären hiermit in alleiniger Verantwortung, dass die nachfolgend bezeichneten Produkte den Vorschriften der genannten Richtlinien entspricht.

hereby declare under our sole responsibility that the below-mentioned products complies with the regulations of the mentioned Directives.

Produkt: GEMÜ B47**Product:** GEMÜ B47**Produktname:** Pneumatisch betätigter 3/2-Wege-Kugelhahn**Product name:** Pneumatically operated 3/2-way ball valve**Richtlinien/Verordnungen:****Directives/Regulations:**PED 2014/68/EU¹⁾**Folgende harmonisierte Normen (oder Teile hieraus) wurden angewandt:****The following harmonized standards (or parts thereof) have been applied:**

EN ISO 1983:2013

Weitere angewandte Normen:**Further applied norms:**

DIN EN ISO 5211; AD 2000

¹⁾ PED 2014/68/EU

Einteilung gemäß Druckgeräterichtlinie 2014/68/EU, Artikel 4 und Anhang II:
Fluidklasse 1 (gasförmig oder flüssig),
Diagramm 6, Kategorie II
Instabile Gase sind ausgeschlossen.

Notifizierte Stelle:
TUV Rheinland Industrie Service GmbH
Am Grauen Stein 1
51105 Köln

Kennnummer der notifizierten Stelle: 0035**Nr. des QS-Zertifikats:** 01 202 173/Q-26 0214**Angewandte(s) Konformitätsbewertungsverfahren:** Modul H**Hinweis für Produkte mit einer Nennweite ≤ DN 25:**

Die Produkte werden entwickelt und produziert nach GEMÜ eigenen Verfahrensanweisungen und Qualitätsstandards, welche die Forderungen der ISO 9001 und der ISO 14001 erfüllen. Die Produkte dürfen gemäß Artikel 4, Absatz 3 der Druckgeräterichtlinie 2014/68/EU keine CE-Kennzeichnung tragen.

¹⁾ PED 2014/68/EU

Classification in accordance with the Pressure Equipment Directive 2014/68/EU, Article 4 and Annex II:

Fluid class 1 (gaseous or liquid),
Diagram 6, Category II
Unstable gases are excluded.

Notified body:
TUV Rheinland Industrie Service GmbH
Am Grauen Stein 1
51105 Cologne

Identification number of the notified body: 0035**QA certificate number:** 01 202 173/Q-26 0214**Applied conformity assessment procedures:** Module H**Note for products with a nominal size ≤ DN 25:**

The products are developed and manufactured in accordance with GEMÜ's own process instructions and quality standards, which meet the requirements of ISO 9001 and ISO 14001. In accordance with Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU, the products may not bear a CE marking.

i.V. M. Barghoorn
Leiter Globale Technik

Ingelfingen, 31.08.2026

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Gert-Müller-Platz 1, 74635 Kupferzell, Deutschland

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