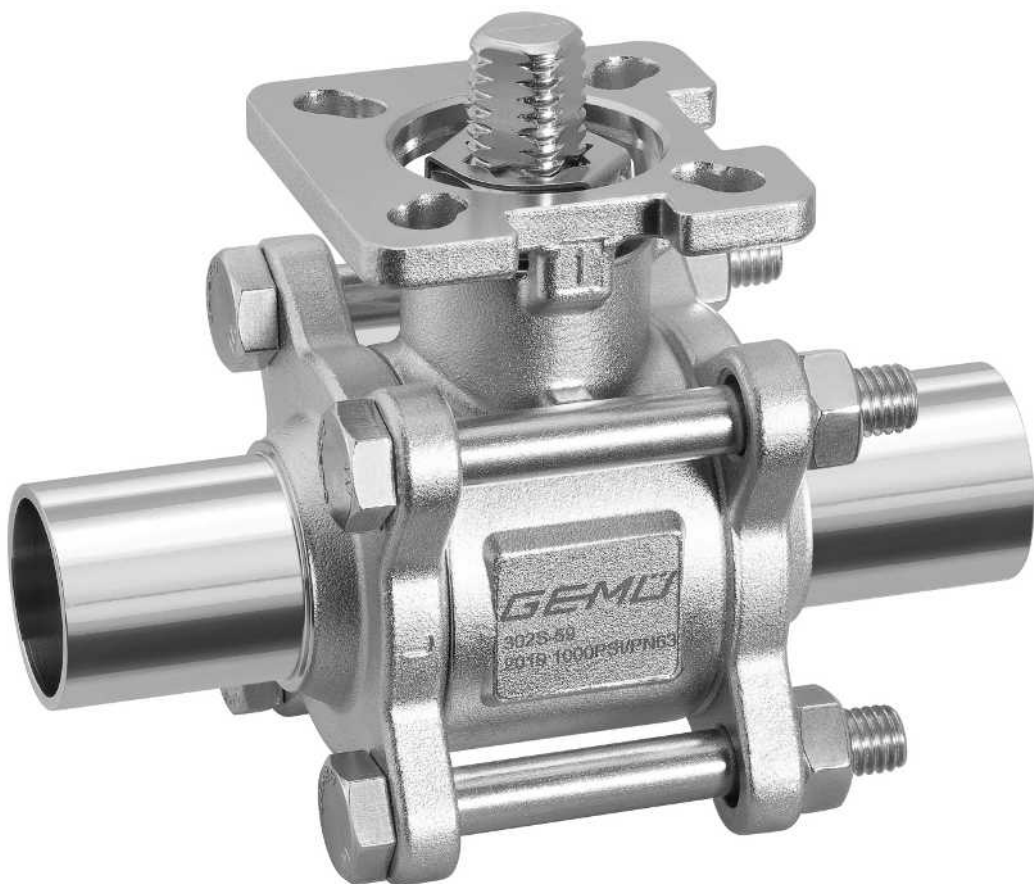


GEMÜ BB04

Ball valve with bare shaft

EN

Operating instructions



EAC

FDA



further information
webcode: GW-BB04



All rights including copyrights or industrial property rights are expressly reserved.

Keep the document for future reference.

© GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
13.03.2023

Contents

1 General information	4
1.1 Information	4
1.2 Symbols used	4
1.3 Definition of terms	4
1.4 Warning notes	4
2 Safety information	5
3 Product description	5
3.1 Construction	5
3.2 Description	5
3.3 Function	5
3.4 Product label	5
4 GEMÜ CONEXO	6
5 Correct use	7
6 Order data	8
7 Technical data	10
7.1 Medium	10
7.2 Temperature with note	10
7.3 Pressure	10
7.4 Product conformities	11
7.5 Mechanical data	12
8 Dimensions	13
9 Manufacturer's information	20
9.1 Delivery	20
9.2 Packaging	20
9.3 Transport	20
9.4 Storage	20
10 Installation in piping	20
10.1 Preparing for installation	20
10.2 Installation with clamp connections	21
10.3 Installation with butt weld spigots	21
10.4 After the installation	21
11 Commissioning	22
12 Operation	22
13 Troubleshooting	23
14 Inspection/maintenance	24
14.1 Spare parts	25
15 Removal from piping	26
16 Disposal	26
17 Returns	26
18 Declaration of conformity according to 2014/68/ EU (Pressure Equipment Directive)	27

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.

Control medium

The medium whose increasing or decreasing pressure causes the GEMÜ product to be actuated and operated.

Control function

The possible actuation functions of 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 <ul style="list-style-type: none"> ► 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! <ul style="list-style-type: none"> ► Non-observance can cause death or severe injury.

 WARNING	
	Potentially dangerous situation! <ul style="list-style-type: none"> ► Non-observance can cause death or severe injury.

 CAUTION	
	Potentially dangerous situation! <ul style="list-style-type: none"> ► Non-observance can cause moderate to light injury.

NOTICE	
	Potentially dangerous situation! <ul style="list-style-type: none"> ► 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!
	Corrosive chemicals!
	Hot plant components!

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 screws 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:

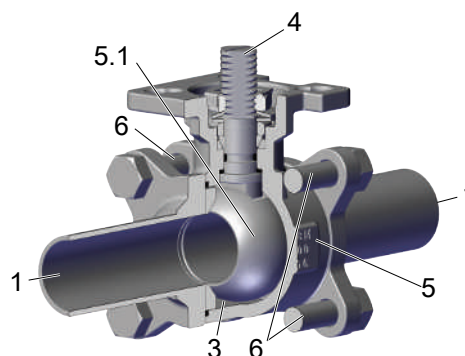
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not 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
5	Ball valve body	ASTM A351/1.4435 (316L)
1	Pipe connections	ASTM A351/1.4435 (316L)
5.1	Ball	ASTM A351/1.4435 (316L)
4	Ball valve shaft	1.4409 (SS316L)
6	Bolt	A2 70
3	Seals	PTFE, TFM

3.2 Description

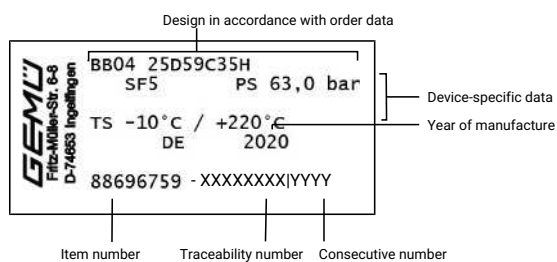
The three-piece 2/2-way GEMÜ BB04 metal ball valve with a bare shaft and an actuator flange in accordance with DIN ISO 5211 for simple mounting of various actuator types is particularly suited to applications in the supply sector for the pharmaceutical, foodstuffs processing and biotechnology (such as water treatment and steam generation) industries thanks to the 1.4435 stainless steel alloy material composition used (compliant with 316L) with a low delta ferrite proportion of < 3%. Only those plastics which are compliant with FDA, USP Class VI and Regulation (EU) No.10/2011 are used for the seals.

3.3 Function

The product is designed for use in piping. It controls a flowing medium after a bonnet (see GEMÜ B24), pneumatic actuator (see GEMÜ B44) or motorized actuator (see GEMÜ B54) has been mounted.

3.4 Product label

The product label is located on the actuator. Product label data (example):



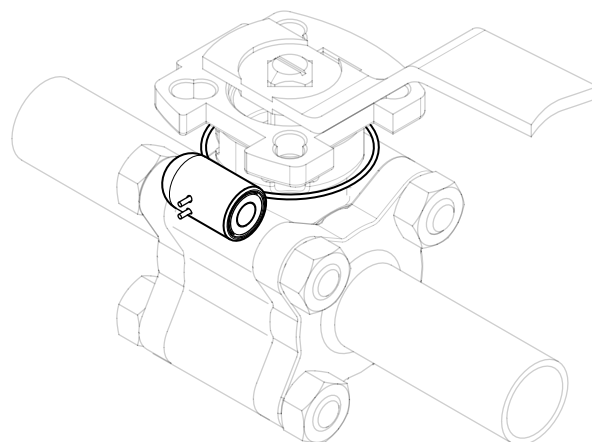
The month of manufacture is encoded in the traceability number and can be obtained from GEMÜ. The product was manufactured in Germany.

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 GEMÜ 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.

DANGER



Danger of explosion!

- ▶ Risk of severe injury or death.
- Do not use the product in potentially explosive zones.
- Only use the product in potentially explosive zones confirmed in the declaration of conformity.

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 designed for installation in piping systems and for controlling a working medium.

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

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

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 body, metal, three-piece body, Sanitary, ISO 5211, top flange, controlled delta ferrite material and media wetted surfaces according to ASME SF5, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	BB04
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
DN 65	65
DN 80	80
DN 100	100
3 Body/ball configuration	Code
2/2-way body	D
4 Connection type	Code
Spigot EN 10357 series A / DIN 11866 series A formerly DIN 11850 series 2	17
Spigot SMS 3008	37
Spigot ASME BPE/DIN 11866 series C	59
Spigot ISO 1127/EN 10357 series C/DIN 11866 series B	60
Clamp ASME BPE	80
One side clamp ASME BPE corresponding to code 80, other side butt weld spigot code 59, for pipe ASME BPE	93
5 Ball valve material	Code
1.4435 / ASTM A351, low ferrite <3% (equivalent to 316L Δ Fe<3%) (body, connection, ball), 1.4409 / SS316L (spindle)	C3

6 Seal material	Code
TFM 1600 (FDA certification)	5T
TFM 1600 (FDA certification), cavity filled	5H

7 Type of design	Code
Standard	
Ra ≤ 0.4 μm (15 μin.) for media wetted surfaces *), in accordance with DIN 11866 HE4, electropolished internal/external, *) for inner pipe diameter ≤ 6 mm, in spigots Ra ≤ 0.8 μm	1537
K-no. SF5, K-no. 7056, SF5 - Ra max. 0.51 μm (20 μin.) electropolished internal/external, 7056 - Drilled shaft, shortened hand lever	7137
K-no. SF5, K-no. 0101, SF5 - Ra max. 0.51 μm (20 μin.) electropolished internal/external, 0101 - Media wetted area cleaned to ensure suitability for paint applications	7140
K-no. SF5, K-no. 0104, SF5 - Ra max. 0.51 μm (20 μin.) electropolished internal/external, 0104 - Media wetted parts cleaned for high purity media	7141
K-no. SF5, K-no. 0107, SF5 - Ra max. 0.51 μm (20 μin.) electropolished internal/external, 0107 - Valve free of oil and grease, media wetted area cleaned	7142
Ra max. 0.38 μm (15 μin.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external	SF4
Ra max. 0.51 μm (20 μin.) for media wetted surfaces, in accordance with ASME BPE SF5, electropolished internal/external	SF5

8 Special version	Code
Without	
ATEX version	X

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

Order example

Ordering option	Code	Description
1 Type	BB04	Ball valve body, metal, three-piece body, Sanitary, ISO 5211, top flange, controlled delta ferrite material and media wetted surfaces according to ASME SF5, 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	59	Spigot ASME BPE/DIN 11866 series C
5 Ball valve material	C3	1.4435 / ASTM A351, low ferrite <3% (equivalent to 316L Δ Fe<3%) (body, connection, ball), 1.4409 / SS316L (spindle)
6 Seal material	5T	TFM 1600 (FDA certification)
7 Type of design		Standard
8 Special version		Without
9 CONEXO		Without

7 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 with note

Media temperature: -10 – 220 °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

Storage temperature: -60 – 60 °C

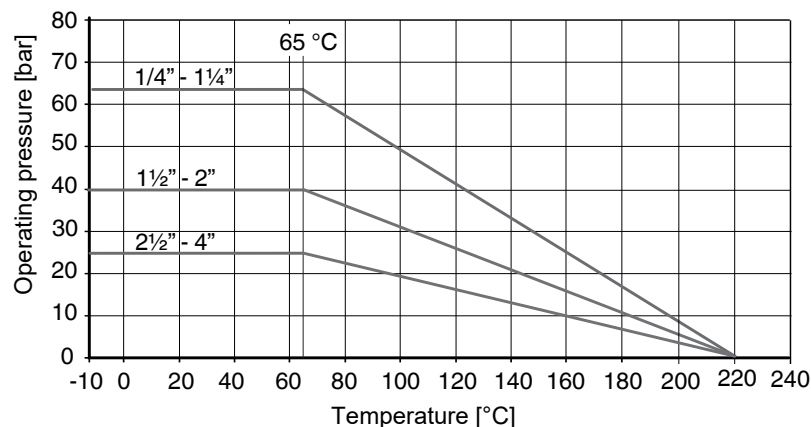
7.3 Pressure

Operating pressure: 0 – 63 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.

Pressure/temperature diagram:



Use the clamped union with the correct pressure rating for a safe and correct pipeline design. Pressure ratings of the clamp alone are generally higher, but do not take into account the fully clamped assembly with gasket

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	Connection type (code)		
		17	37, 59, 80, 93	60
8	1/4"	7.0	-	7.0
10	3/8"	7.0	-	7.0
15	1/2"	18.0	9.0	18.0
20	3/4"	43.0	26.0	43.0
25	1"	77.0	56.0	77.0
32	1¼"	95.0	-	95.0
40	1½"	206.0	172.0	206.0
50	2"	344.0	327.0	344.0
65	2½"	602.0	516.0	602.0
80	3"	844.0	817.0	844.0
100	4"	1462.0	1376.0	1462.0

Kv values in m³/h

Pressure rating:

DN	Connection type (code)			
	17	37, 59	60	80, 93
8	-	-	PN63	-
10	PN63	-	PN63	-
15	PN63	PN63	PN63	PN25
20	PN63	PN63	PN63	PN25
25	PN63	PN63	PN63	PN25
32	PN63	-	PN63	-
40	PN63	PN63	PN63	PN25
50	PN63	PN63	PN63	PN16
65	PN40	PN40	PN40	PN16
80	PN40	PN40	PN40	PN10
100	PN25	PN25	PN25	PN10





For clamp connections, the permissible pressures are designed for a temperature of -10 to 140 °C when using suitable clamps and sealing materials.

7.4 Product conformities

Pressure Equipment Directive: 2014/68/EU

Food: FDA
Regulation (EC) No. 1935/2004
Regulation (EC) No. 10/2011

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

ATEX marking: **Up to DN 65**
Gas:  II 2G Ex h IIC T6 ... T2 Gb X
Dust:  II -/2D Ex h -/IIIC T180 °C -/Db X
DN 80 and 100
Gas:  II 2G Ex h IIB T6 ... T2 Gb X
Dust:  II -/2D Ex h -/IIIC T180 °C -/Db X

7.5 Mechanical data**Torques:**

DN	NPS	Seal material (code)	
		5T	5H
8	1/4"	4	4
10	3/8"	4	4
15	1/2"	8	12
20	3/4"	8	12
25	1"	13	19
32	1¼"	16	22
40	1½"	32	47
50	2"	34	51
65	2½"	91	105
80	3"	104	120
100	4"	140	209

Free of oil and grease incl. 25% safety
Torques in Nm

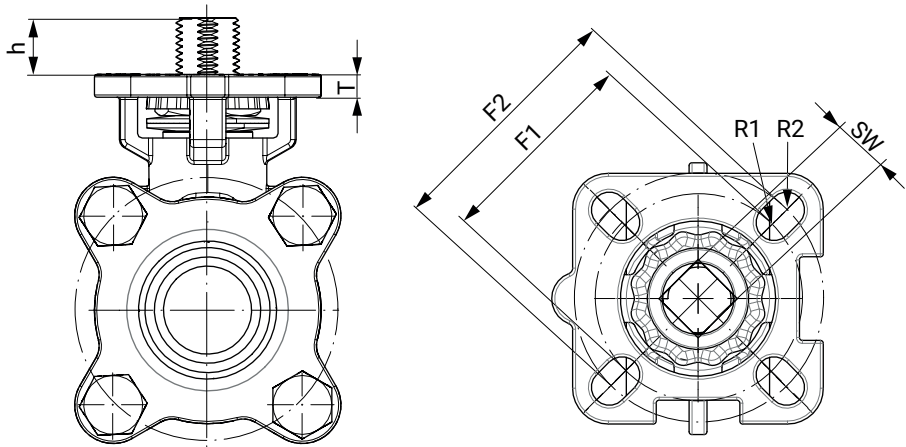
Weight:

DN	NPS	Connection type (code)			
		17	37, 59	60	80, 93
8	1/4"	-	-	0.5	-
10	3/8"	-	-	0.5	-
15	1/2"	0.8	0.5	0.5	0.5
20	3/4"	0.8	0.5	0.8	0.5
25	1"	1.1	1.0	1.1	1.1
32	1¼"	1.6	-	1.6	-
40	1½"	2.7	2.1	2.7	2.2
50	2"	4.2	3.5	4.2	3.5
65	2½"	8.2	7.0	8.2	7.1
80	3"	11.6	11.0	11.6	11.8
100	4"	24.0	20.0	24.0	20.5

Weights in kg

8 Dimensions

8.1 Actuator flange

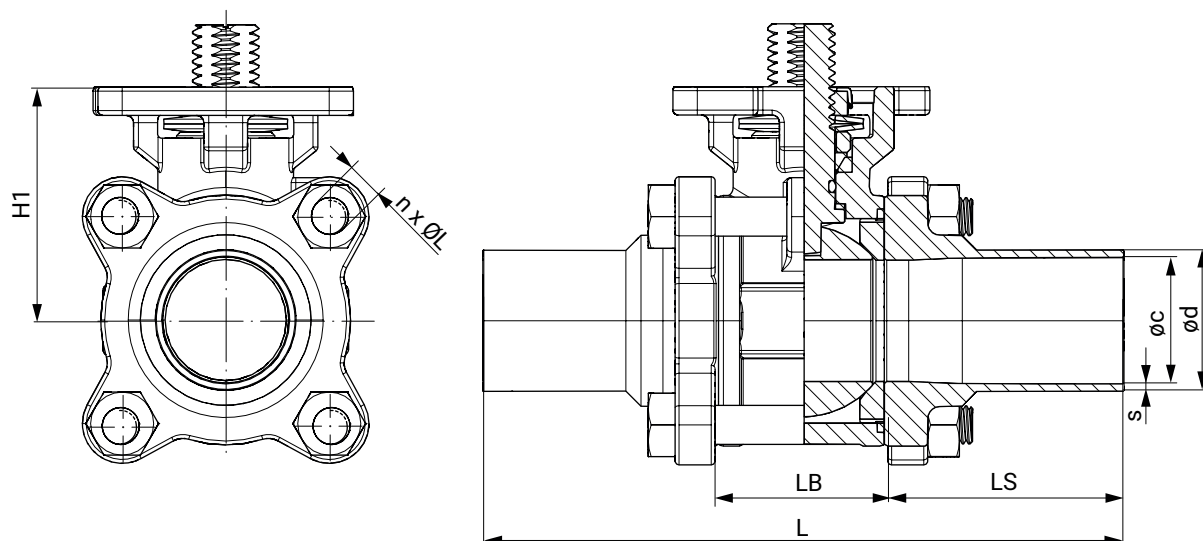


DN	G	F1	ISO 5211 (F1)	R1	F2	ISO 5211 (F2)	R2	SW	h	T
8	1/4"	36.0	F03	3.0	42.0	F04	3.0	9.0	9.0	5.0
10	3/8"	36.0	F03	3.0	42.0	F04	3.0	9.0	9.0	5.0
15	1/2"	36.0	F03	3.0	42.0	F04	3.0	9.0	9.0	5.0
20	3/4"	36.0	F03	3.0	42.0	F04	3.0	9.0	7.5	5.0
25	1"	42.0	F04	3.0	50.0	F05	3.5	11.0	13.0	7.0
32	1 1/4"	42.0	F04	3.0	50.0	F05	3.5	11.0	13.0	7.0
40	1 1/2"	50.0	F05	3.5	70.0	F07	4.5	14.0	15.0	9.0
50	2"	50.0	F05	3.5	70.0	F07	4.5	14.0	16.0	9.0
65	2 1/2"	50.0	F07	3.5	70.0	F10	4.5	17.0	18.0	10.5
80	3"	70.0	F07	4.5	102.0	F10	5.5	17.0	18.0	10.5
100	4"	102.0	F10	4.5	125.0	F12	5.5	22.0	26.0	10.5

Dimensions in mm

8.2 Body dimensions

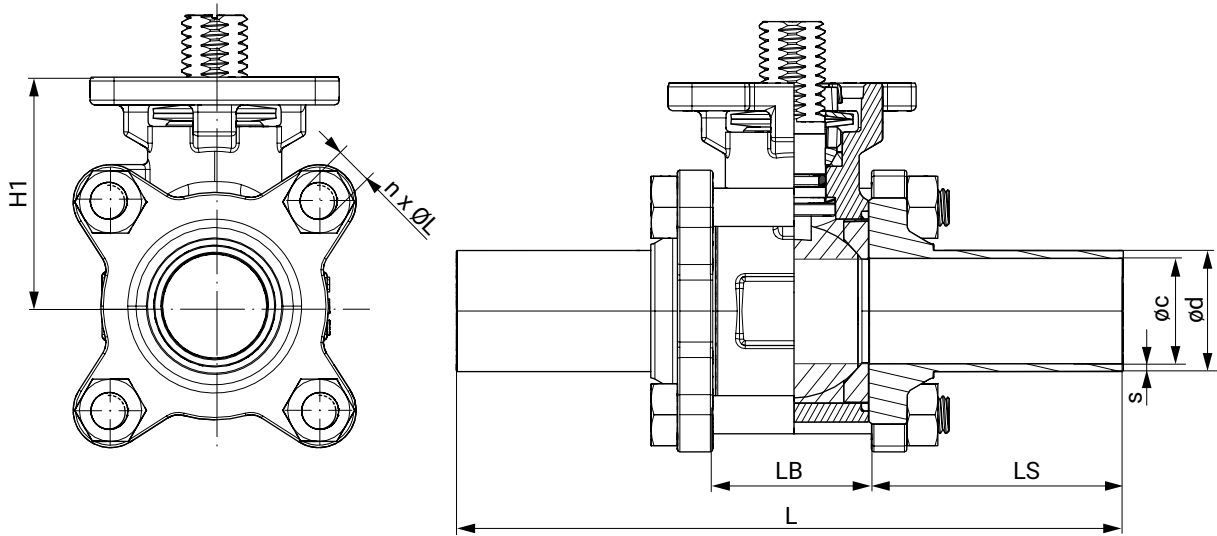
8.2.1 Spigot DIN EN 10357 (connection code 17)



DN	Øc	Ød	L	LB	LS	H1	n x ØL	s
10	10.0	13.0	120.1	24.3	47.9	37.0	4 x M6	1.5
15	16.0	19.0	140.1	24.3	57.9	37.0	4 x M6	1.5
20	20.0	23.0	140.0	31.2	54.4	40.0	4 x M8	1.5
25	26.0	29.0	152.0	34.0	59.0	48.0	4 x M8	1.5
32	32.0	35.0	165.0	44.0	60.5	53.0	4 x M10	1.5
40	38.0	41.0	190.0	55.0	67.5	63.0	4 x M12	1.5
50	50.0	53.0	203.0	68.9	67.0	72.0	4 x M14	1.5
65	66.0	70.0	254.0	82.0	86.0	92.0	4 x M14	2.0
80	81.0	85.0	280.0	96.0	92.0	102.0	4 x M16	2.0
100	100.0	104.0	308.0	122.0	93.0	132.0	6 x M20	2.0

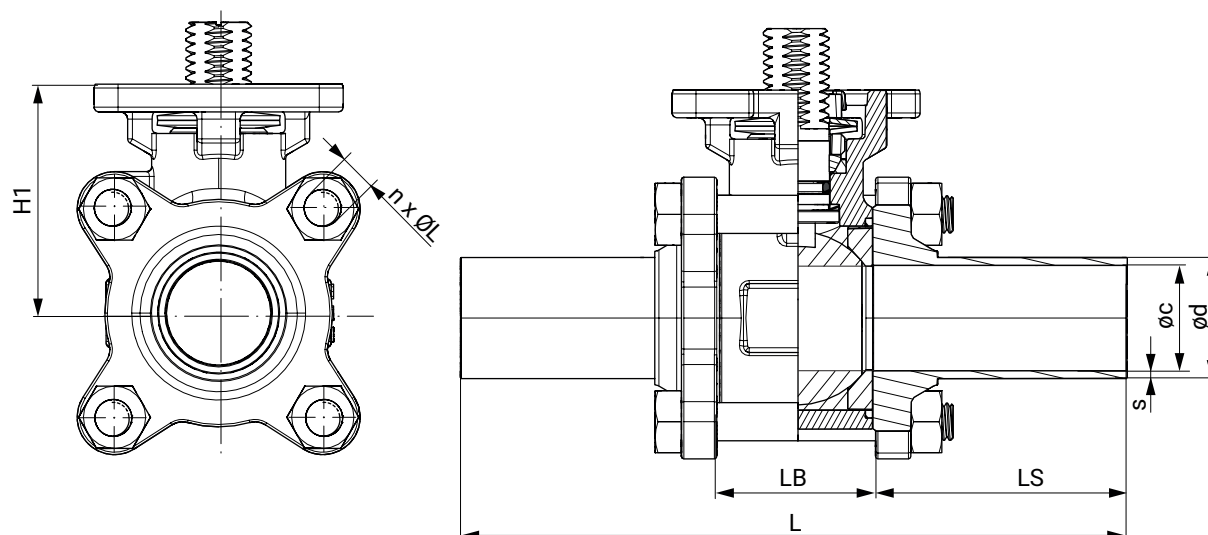
Dimensions in mm

8.2.2 Spigot SMS 3008 (connection code 37)



DN	Øc	Ød	s	t	L	LB	LS	H1	n x ØL
20	16.0	18.0	1.0	6.1	142.2	28.0	58.6	38.0	4 x M6
25	22.6	25.0	1.2	7.4	162.3	32.1	65.1	48.0	4 x M8
40	35.6	38.0	1.2	8.3	182.2	46.0	68.1	60.0	4 x M12
50	48.6	51.0	1.2	10.2	193.0	59.6	66.7	69.0	4 x M14
65	60.3	63.5	1.6	12.5	254.1	77.1	88.5	89.0	4 x M14
80	72.9	76.1	1.6	14.0	276.9	91.7	92.6	98.0	4 x M16
100	97.6	101.6	2.0	14.5	304.9	118.3	93.3	130.0	6 x M16

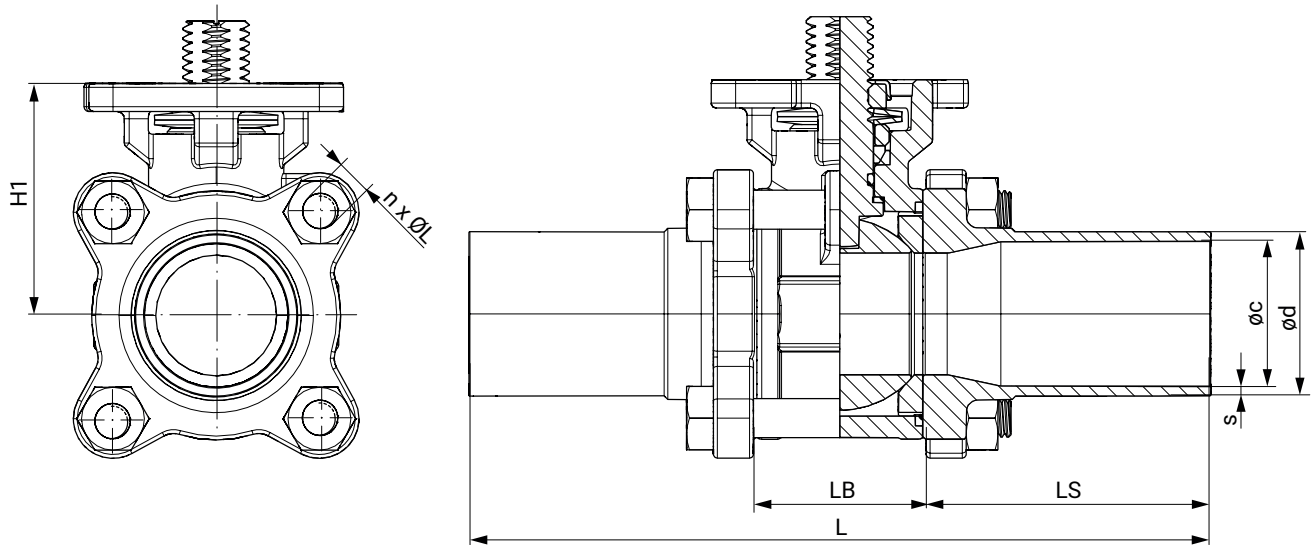
Dimensions in mm

8.2.3 Spigot ASME BPE (connection code 59)

DN	Øc	Ød	s	L	LB	LS	H1	n x ØL
15	9.4	12.7	1.65	124.4	25.0	49.7	38.0	4 x M6
20	15.7	19.0	1.65	142.2	28.0	58.6	38.0	4 x M6
25	22.1	25.4	1.65	162.3	32.1	65.1	48.0	4 x M8
40	34.8	38.1	1.65	182.2	46.0	68.1	60.0	4 x M12
50	47.5	50.8	1.65	193.0	59.6	66.7	69.0	4 x M14
65	60.2	63.5	1.65	254.1	77.1	88.5	89.0	4 x M14
80	72.9	76.2	1.65	276.9	91.7	92.6	98.0	4 x M16
100	97.4	101.6	2.1	304.9	118.3	93.3	130.0	6 x M16

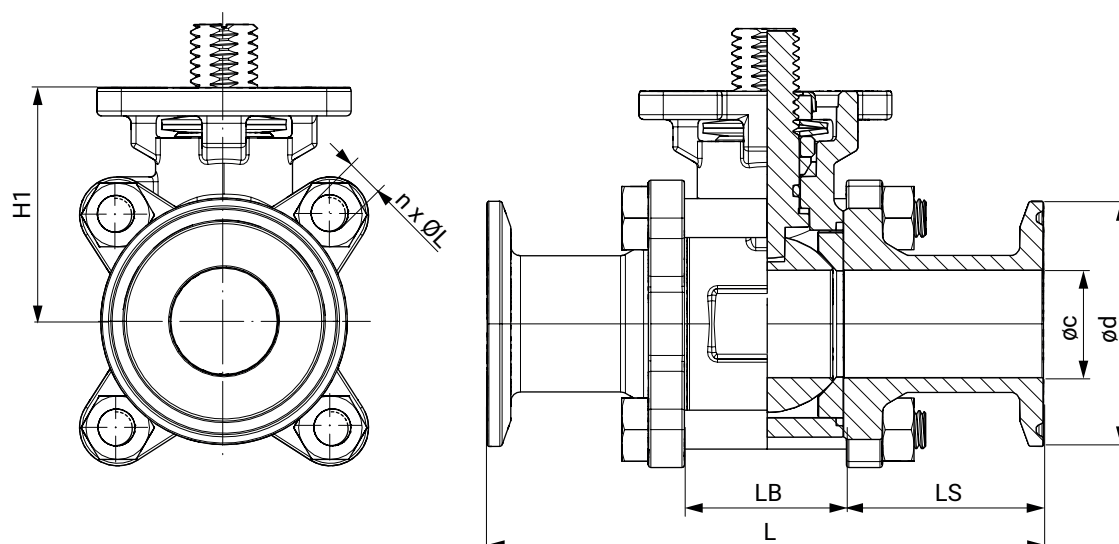
Dimensions in mm

8.2.4 Spigot ISO 1127 / EN 10357 (connection code 60)



DN	øc	ød	s	L	LB	LS	H1	n x ØL
8	10.3	13.5	1.6	120.1	24.3	47.9	37.0	4 x M6
10	14.0	17.2	1.6	120.1	24.3	47.9	37.0	4 x M6
15	18.1	21.3	1.6	140.1	24.3	57.9	37.0	4 x M6
20	23.7	26.9	1.6	140.0	31.2	54.4	40.0	4 x M8
25	29.7	33.7	2.0	152.0	34.0	59.0	48.0	4 x M8
32	38.4	42.4	2.0	165.0	44.0	60.5	53.0	4 x M10
40	44.3	48.3	2.0	190.0	55.0	67.5	63.0	4 x M12
50	56.3	60.3	2.0	203.0	68.9	67.0	72.0	4 x M14
65	72.1	76.1	2.0	254.0	82.0	86.0	92.0	4 x M14
80	84.3	88.9	2.3	280.0	96.0	92.0	102.0	4 x M16
100	109.7	114.3	2.3	308.0	122.0	93.0	132.0	6 x M20

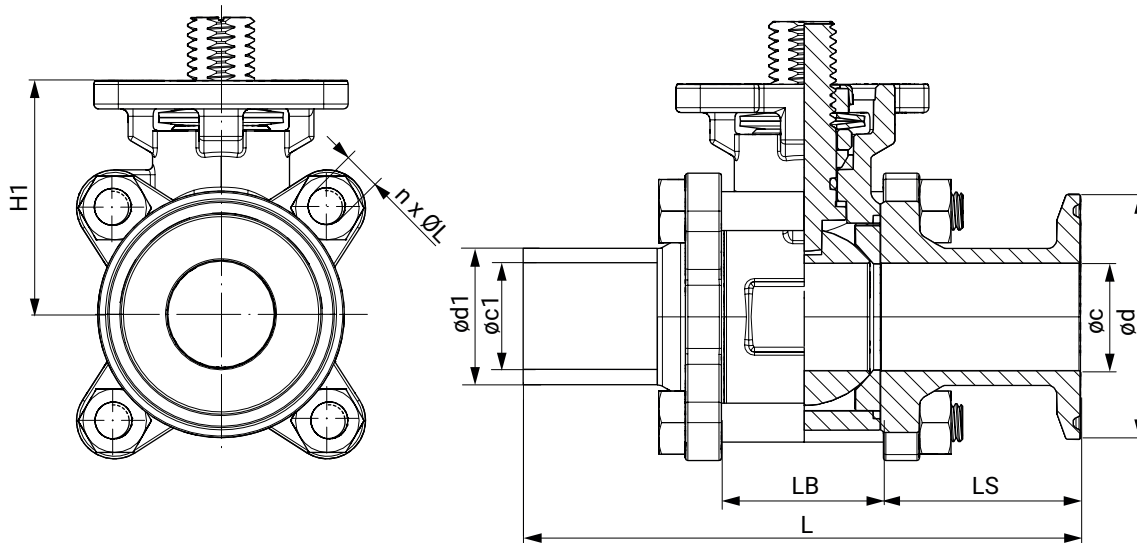
Dimensions in mm

8.2.5 Clamp ASME BPE (connection code 80)

DN	Øc	Ød	s	L	LB	LS	H1	n x ØL
15	9.4	25.0	1.65	88.8	25.0	31.9	38.0	4 x M6
20	15.8	25.0	1.65	101.6	25.0	38.3	38.0	4 x M6
25	22.1	50.4	1.65	114.3	32.1	41.1	48.0	4 x M8
40	34.8	50.4	1.65	139.8	46.0	46.9	60.0	4 x M12
50	47.5	63.9	1.65	158.8	59.6	49.6	69.0	4 x M14
65	60.2	77.4	1.65	171.5	77.1	47.2	89.0	4 x M14
80	72.9	90.9	1.65	196.3	91.7	52.3	98.0	4 x M16
100	97.4	118.9	2.1	241.3	118.3	61.5	130.0	6 x M16

Dimensions in mm

8.2.6 Mixed ends ASME BPE (connection code 93)



DN	Øc	Ød	Øc1	Ød1	s	t	L	LB	LS	H1	n x ØL
15	9.4	25.0	9.4	12.7	1.65	6.1	106.6	25.0	49.7	38.0	4 x M6
20	15.8	25.0	15.8	19.0	1.65	6.1	121.9	28.0	58.6	38.0	4 x M6
25	22.1	50.4	22.1	25.4	1.65	7.4	138.3	32.1	65.1	48.0	4 x M8
40	34.8	50.4	34.8	38.1	1.65	8.3	161.0	46.0	68.1	60.0	4 x M12
50	47.5	63.9	47.5	50.8	1.65	10.2	175.9	59.6	66.7	69.0	4 x M14
65	60.2	77.4	60.2	63.5	1.65	12.5	212.8	77.1	88.5	89.0	4 x M14
80	72.9	90.9	72.9	76.2	1.65	14.0	236.6	91.7	92.6	98.0	4 x M16
100	97.4	118.9	97.4	101.6	2.10	14.5	273.1	118.3	93.3	130.0	6 x M16

Dimensions in mm

9 Manufacturer's information

9.1 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.

9.2 Packaging

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

9.3 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.

9.4 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. Store the ball valves in the "open" position.

10 Installation in piping

10.1 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

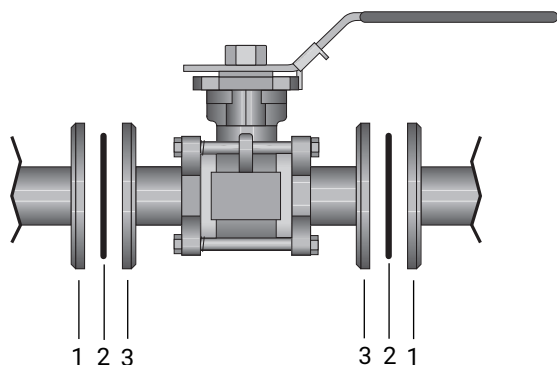
Tools

- The tools required for installation and assembly are not included in the scope of delivery.
- Use appropriate, functional and safe tools.

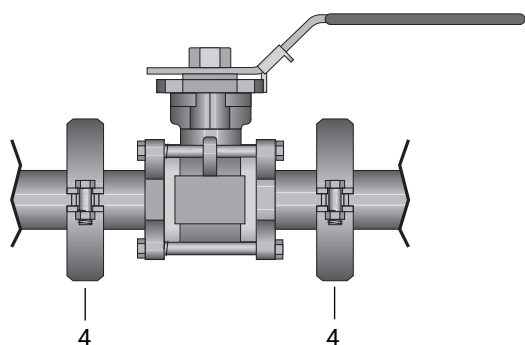
1. Ensure the product is suitable for the relevant application.
2. Check the technical data of the product and the materials.
3. Keep appropriate tools ready.
4. Wear appropriate protective gear, as specified in the plant operator's guidelines.
5. Observe appropriate regulations for connections.
6. Have 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.

10.2 Installation with clamp connections

1. Ensure sealing surfaces on the connection clamps are clean and undamaged.



2. Carefully align connection clamps **1** and **3** before connecting.
3. Centre the seals **2** accurately.



4. Connect the clamp of the ball valve and the clamp of the piping with the appropriate sealing clamp **4**.
5. Only use connector elements made of approved materials!

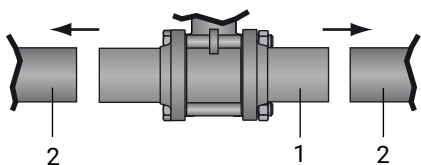
10.3 Installation with butt weld spigots

NOTICE

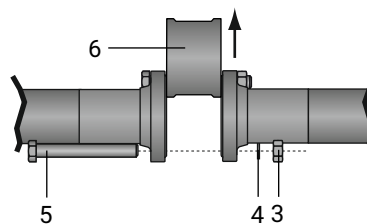
- Adhere to good welding practices!

1. Installation variant:

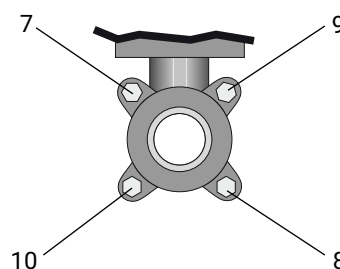
Undo one bolt, remove the other bolts and swivel the centre section aside instead of removing it.



2. Centre and fix butt weld spigots **1** right and left on piping **2**.



3. Fully unscrew the nuts **3**.
4. Remove the washers **4**.
5. Pull out the bolts **5**.
6. Remove the centre section **6**.
7. Weld butt weld spigots **1** right and left to the piping **2**.
8. Allow the butt weld spigots to cool down.
9. Reassemble the ball valve.



10. Tighten nuts **7 - 10** diagonally, holding them with a wrench.

Nominal size	Torque [Nm]
DN8	8
DN10	8
DN15	8
DN20	14
DN25	14
DN32	20
DN40	23
DN50	28
DN65	45
DN80	60
DN100	75

10.4 After the installation

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

11 Commissioning

WARNING



Corrosive chemicals!

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

CAUTION

Leakage

- ▶ Emission of dangerous materials.
 - Provide precautionary measures against exceeding the maximum permitted pressures 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.

12 Operation

The product is operated via manual, pneumatic or motorized actuators.

- Observe the enclosed actuator instructions.

13 Troubleshooting

Error	Possible cause	Troubleshooting
The product does not open or does not open fully	Foreign matter in the product	Remove and clean the product
The product does not close or does not close fully	Foreign matter in the product	Remove and clean the product
Connection between valve body and piping leaking	For clamp connections: Sealing clamp is loose	Retighten sealing clamp
	For clamp connections: Gasket faulty	Replace gasket
	Incorrect installation	Check installation of valve body in piping
Valve body leaking	Valve body leaking or corroded	Check valve body for damage, replace valve body if necessary
	Bolts of the ball valve body are loose	Retighten bolts

14 Inspection/maintenance

⚠ CAUTION



Hot plant components!

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

⚠ WARNING

The equipment is subject to pressure!

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

⚠ CAUTION

- Servicing and maintenance work must only be performed by trained personnel.
- 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.

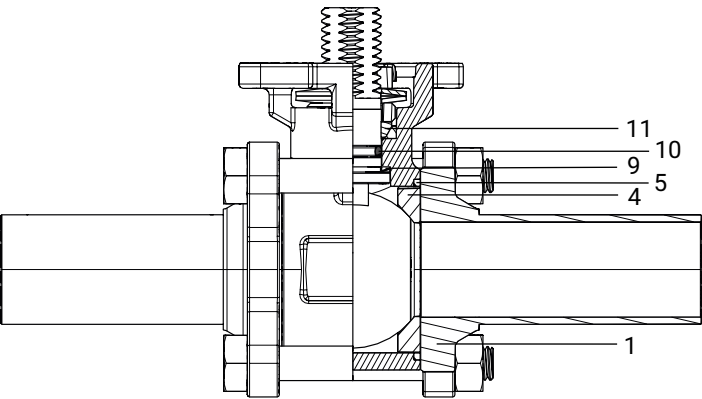
Ball valves are maintenance-free. No lubrication or routine maintenance of the ball valve shaft is required. The shaft is guided through a PTFE gland packing in the ball valve body. The shaft seal is pretensioned and self-adjusting. However, the operator must carry out regular visual examinations of 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.

14.1 Spare parts

14.1.1 Spare parts for connection types 17, 60



Item	Name	Order designation
1	Ball valve body	BB04
4	Seat seal (2 x)	BB04 SDS
5	Flange seal (2 x)	
9	Sealing washer spindle	
10	O-ring	
11	V-ring spindle packing	

14.1.2 Spare parts for connection types 59, 80

Item	Name	Order designation
1	Ball valve body	BB04
4	Seat seal (2 x)	BB04 SDS
5	Flange seal (2 x)	
9	Sealing washer spindle	
10	O-ring	
11	V-ring spindle packing	

15 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.

16 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.

17 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.

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

EU Declaration of Conformity

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

We, GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6-8
74653 Ingelfingen-Criesbach, Germany

declare that the product listed below complies with the safety requirements of the Pressure Equipment Directive 2014/68/EU.

Description of the pressure equipment: GEMÜ BB04
Notified body: TÜV Rheinland Industrie Service GmbH
Number: 0035
Certificate no.: 01 202 926/Q-02 0036
Conformity assessment procedure: Module H1
Technical standard used in parts: EN 1983, AD 2000

Note for products with a nominal size \leq DN 25:

The products are developed and produced according to GEMÜ process instructions and quality standards which comply with the requirements of ISO 9001 and ISO 14001.

According to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU these products must not be identified by a CE-label.

The sole responsibility for issuing this declaration of conformity lies with the company GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG.

2023-02-01



Joachim Brien
Head of Technical Department



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

Subject to alteration

03.2023 | 88711547