GEMÜ BB06

Compact flanged ball valve with bare shaft

Features

- Compact design
- Blow-out proof shaft
- High flow rate
- Full-flow bore
- ATEX version available as an option

Description

The GEMÜ BB06 metal one-piece 2/2-way ball valve has a bare shaft. The seat seal is made of PTFE.

Technical specifications

- **Media temperature:** -40 to 180 °C
- **Ambient temperature:** -40 Up to 60 °C
- **Operating pressure :** 0 Up to 40 bar
- **Nominal sizes:** DN 15 to 100
- **Body configurations:** Straight through body
- **Ball configurations:** Control ball
- **Connection types:** Flange
- **Connection standards :** ANSI I EN
- **Body materials:** 1.4408, investment casting material
- **Seal materials:** PTFE
- **Conformities:** EAC I FDA I FMEDA I Functional safety I Reg. (EU) No. 10/2011 I Regulation (EC) No. 1935/2004 I Regulation (EC) No. 2023/2006 I TA Luft (German Clean Air Act)

Technical data depends on the respective configuration

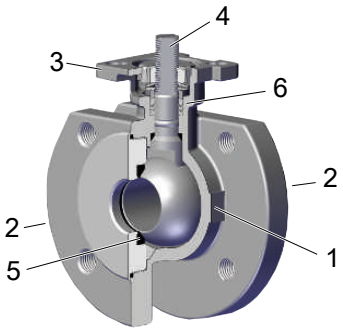
further information
webcode: GW-BB06

Product line

				
	GEMÜ BB06	**GEMÜ B26**	**GEMÜ B46**	**GEMÜ B56**
Operation				
With bare shaft	●	-	-	-
manually	-	●	-	-
Pneumatic	-	-	●	-
Motorized	-	-	-	●
Nominal sizes	DN 15 to 100	DN 15 to 100	DN 15 to 100	DN 15 to 100
Media temperature	-40 to 180 °C	-20 to 180 °C	-20 to 180 °C	-20 to 180 °C
Operating pressure	0 to 40 bar	0 to 40 bar	0 to 40 bar	0 to 40 bar
Connection types				
Flange	●	●	●	●

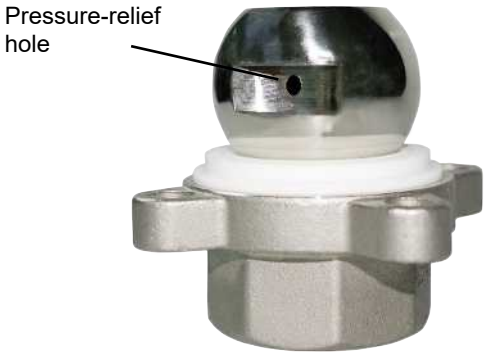
Product description

Construction

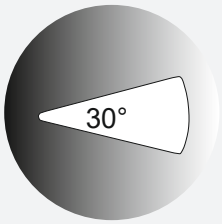
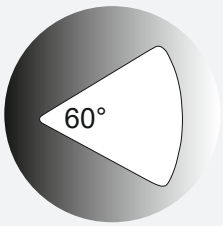
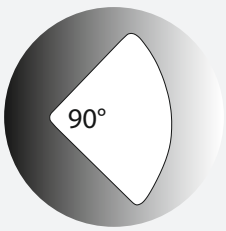


Item	Name	Materials
1	Ball valve body	1.4408 / CF8M
2	Pipe connections	1.4408 / CF8M
3	Mounting flange ISO 5211	1.4408 / CF8M
4	Ball valve shaft	1.4401 / SS316
5	Seal	PTFE
6	Antistatic unit	1.4408

Pressure-relief hole

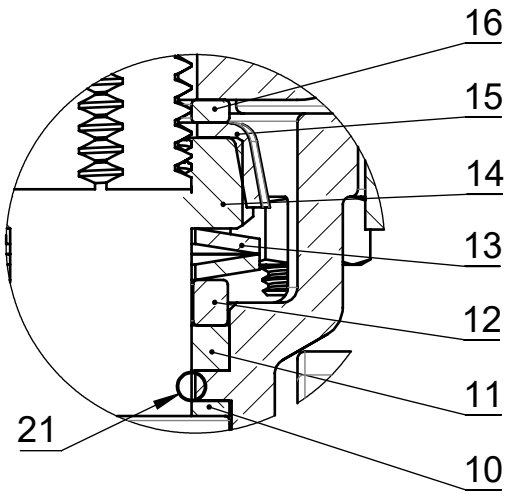


Control ball

Control ball	Code U	Code Y	Code W
			

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

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

Item	Name	Material
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.

Application

- Heating systems
- Beverage industry
- Foodstuff industry
- Chemical industry
- Drinking water installations
- Processing industry
- HVAC

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, one-piece body, compact flange, ISO 5211, top flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	BB06

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° (Kv value, see datasheet)	U
2/2-way body, V-ball, 60° (Kv value, see datasheet)	Y
2/2-way body, V-ball, 90° (Kv value, see datasheet)	W

4 Connection type	Code
Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D	39
Flange EN 1092, PN16/PN40, form B DN15 to DN50, Flange EN1092, PN 16, form B DN65 to DN100	**68**

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 Type of design	Code
Standard	
Thermal separation between actuator and valve body via mounting kit	5222
Thermal separation between actuator and valve body by mounting kit, mounting kit and mounting parts in stainless steel	5227
K-no. 5227, K-no. 7056, 5227 – thermal separation by mounting kit, 7056 – drilled shaft, shortened toggle	5237
Shortened toggle for construction of feedback units. Shaft face drilled for mounting kit: DN8-DN20 M5 x 12.5/depth of thread 9.0 mm, DN25-DN100 M6 x 15/depth of thread 10.0 mm	7056

8 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	O
Explosion protection	X

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

Order example

Ordering option	Code	Description
1 Type	BB06	Ball valve body, metal, one-piece body, compact flange, ISO 5211, top flange, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit
2 DN	25	DN 25
3 Body/ball configuration	D	2/2-way body
4 Connection type	39	Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

Order data

Ordering option	Code	Description
5 Ball valve material	37	1.4408/CF8M (body, connection), 1.4401/SS316 (ball, shaft)
6 Seal material	5	PTFE FKM O-ring
7 Type of design		Standard
8 Special version		Without
9 CONEXO		Without

Technical data

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.

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

Higher temperatures on request

Storage temperature:

-60 — 60 °C

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)

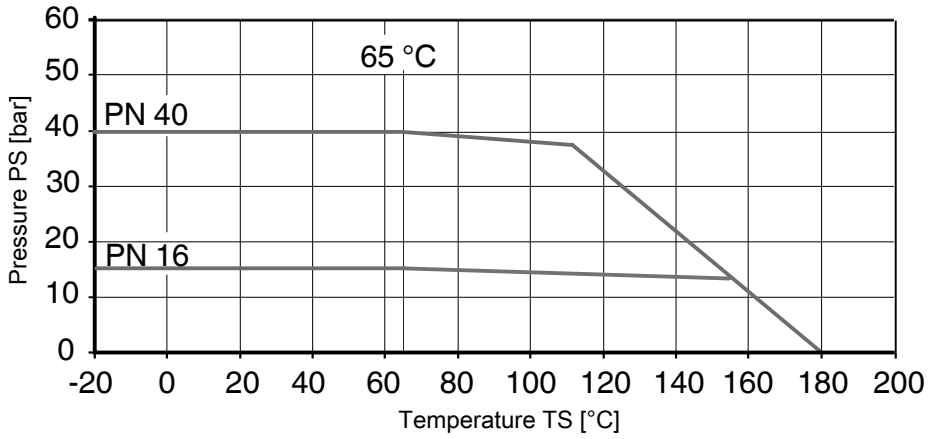
These values apply to room temperature and air. The values may deviate for other media and other temperatures.

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/temperature data according to the diagram refer to static operating conditions. Strongly fluctuating parameters or parameters that change quickly over time can lead to a reduction in service life. Special applications are to be discussed with your technical contact in advance.

Pressure rating:

DN 15 – 50: PN40
DN 65 – 100: PN16

Kv values:

DN	NPS	Kv value
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	0.170	0.255	0.425	0.680	0.935	1.360	1.870	2.210
20	**3/4"**	0	0.085	0.170	0.425	0.595	0.935	1.530	2.040	2.805	3.825	4.590
25	**1"**	0	0.085	0.255	0.680	1.105	1.955	2.975	4.335	5.961	8.128	8.500
32	**1¼"**	0	0.170	0.340	0.935	1.700	3.145	4.675	6.800	8.500	11.050	12.750
40	**1½"**	0	0.255	0.510	1.360	2.550	4.250	6.375	9.350	11.900	14.450	17.000
50	**2"**	0	0.340	1.020	3.230	5.100	8.500	12.750	19.550	26.350	36.550	51.000
65	**2½"**	0	0.340	0.850	3.400	6.800	10.200	15.300	23.800	31.450	52.700	63.750
80	**3"**	0	0.425	1.020	3.400	6.800	11.900	19.550	28.050	39.100	55.250	69.700
100	**4"**	0	0.510	1.700	5.100	12.750	24.650	40.800	60.350	85.000	110.50	135.20

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	1.190	1.700	2.805	3.740	5.100
20	**3/4"**	0	0.085	0.170	0.595	0.850	1.445	2.380	3.400	5.525	7.650	10.200
25	**1"**	0	0.170	0.340	0.935	1.530	2.890	4.505	6.715	10.460	13.010	17.850
32	**1¼"**	0	0.170	0.510	1.530	2.550	4.675	8.075	10.880	16.150	22.100	33.150
40	**1½"**	0	0.340	0.680	2.125	3.400	6.800	11.050	16.150	22.950	34.000	44.200
50	**2"**	0	0.340	1.275	3.910	7.650	14.030	22.950	33.150	46.750	70.550	93.500
65	**2½"**	0	0.340	1.275	4.250	8.500	17.850	28.900	45.050	63.750	87.550	127.50
80	**3"**	0	0.425	2.125	5.100	11.900	21.250	34.000	55.250	77.350	108.800	140.30
100	**4"**	0	0.595	2.550	9.350	21.250	34.000	50.150	76.500	119.900	180.200	302.60

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	0.170	0.340	0.510	0.765	1.275	1.870	3.230	4.590	5.865
20	**3/4"**	0	0.170	0.340	0.680	1.020	1.700	2.635	3.910	6.800	9.605	11.900
25	**1"**	0	0.170	0.510	1.530	2.890	4.335	6.885	9.690	13.600	17.850	24.650
32	**1¼"**	0	0.255	0.680	1.700	4.250	6.800	11.900	16.150	23.800	33.150	46.750
40	**1½"**	0	0.425	0.765	2.975	5.950	11.050	17.000	26.350	35.700	53.550	66.300
50	**2"**	0	0.595	1.700	5.100	10.200	18.700	29.750	38.250	59.500	89.250	114.800
65	**2½"**	0	0.425	1.445	5.950	11.900	23.800	40.800	59.500	90.100	136.000	185.300
80	**3"**	0	0.595	2.975	6.800	15.300	29.750	51.000	76.500	114.800	174.300	263.500
100	**4"**	0	0.850	2.975	13.600	34.000	63.750	106.300	161.50	250.800	375.700	569.500

Kv values in m^3/h

Product conformities

Pressure Equipment Directive: 2014/68/EU

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

Oxygen: Testing of the seal material based on DIN EN 1797 and ISO 21010:2017 (special version code O)

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:

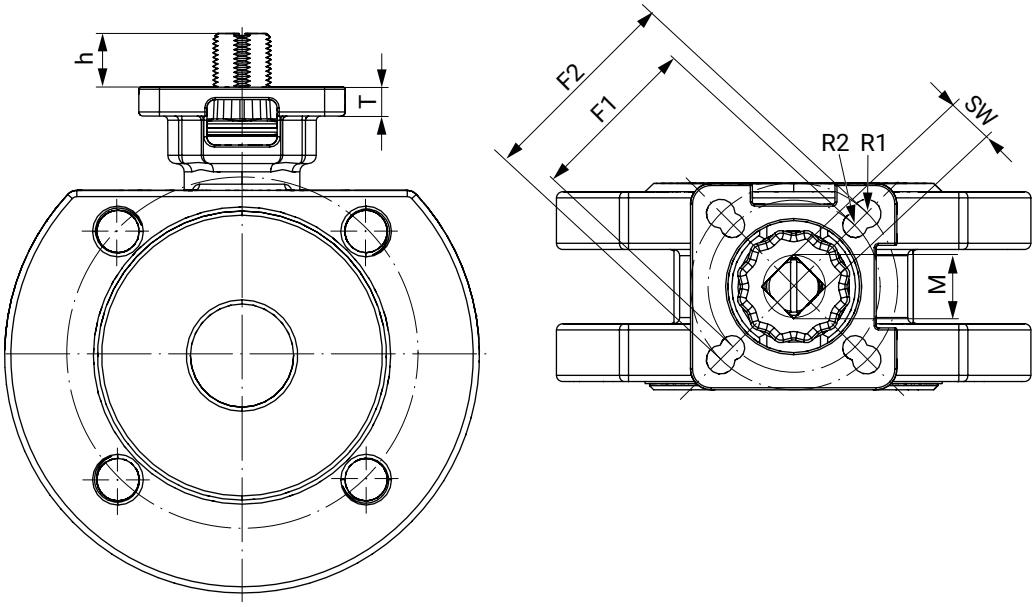
Ball valve

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

Dimensions

Actuator flange

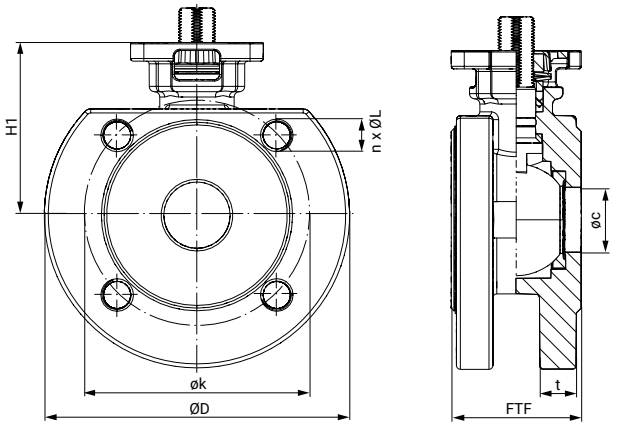


DN	G	F1	R1	F2	R2	SW	h	T	M
15	**1/2“**	36.0	3.0	42.0	3.0	9.0	9.0	5.0	M12
20	**3/4“**	36.0	3.0	42.0	3.0	9.0	7.5	5.0	M12
25	**1“**	42.0	3.0	50.0	3.5	11.0	13.0	7.0	M14
32	**1¼“**	42.0	3.0	50.0	3.5	11.0	13.0	7.0	M14
40	**1½“**	50.0	3.5	70.0	4.5	14.0	15.0	9.0	M18
50	**2“**	50.0	3.5	70.0	4.5	14.0	16.0	9.0	M18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

Body dimensions

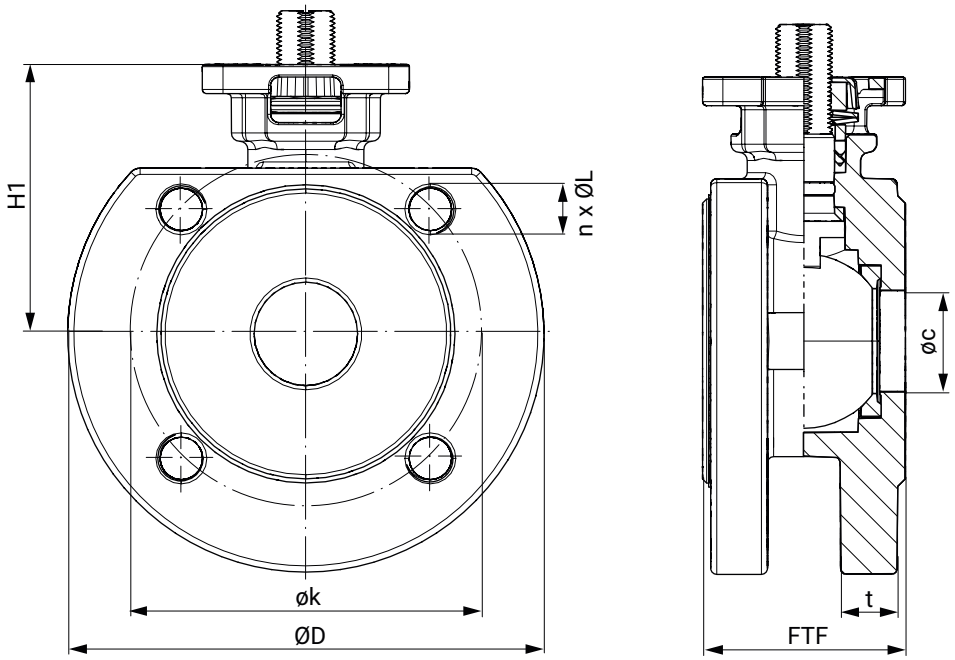
Flange (connection code 39)



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

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

DN	øc	ØD	øk	t	FTF	H1	n x ØL
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

Add-on components

GEMÜ ADA

Pneumatic quarter turn actuator

GEMÜ ADA is a pneumatic double acting quarter turn actuator. It works according to the double piston rack and pinion principle and is suitable for mounting to butterfly valves or ball valves.

GEMÜ ASR

Pneumatic quarter turn actuator

GEMÜ ASR is a pneumatic single acting quarter turn actuator. It works according to the double piston rack and pinion principle and is suitable for mounting to butterfly valves or ball valves.

GEMÜ 9428

Motorized quarter turn actuator

The product is a motorized quarter turn actuator. The actuator is designed for DC or AC operating voltages. A manual override and an optical position indicator are integrated as standard. The torque in the end positions is increased. This enables a closing curve matched to the valves.

GEMÜ J4C

Motorized quarter turn actuator

The J4C actuator is a motorized quarter turn actuator. The motor is designed for DC and AC operating voltages. A manual override and an optical position indicator are integrated as standard. The end positions are potential-free and adjustable.

GEMÜ AB26

Hand lever or gearbox with handwheel

Hand lever with standard flange according to EN ISO 5211 for the manual operation of quarter turn valves.

GEMÜ LSR

Electrical position indicators for quarter turn actuators

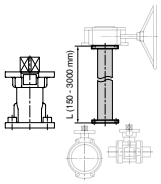
The GEMÜ LS series electrical position indicators are used to feed back and verify the position of quarter turn valves. Depending on the version, they have either one or two mechanical microswitches or 2-wire or 3-wire proximity switches.

GEMÜ LSC

Limit switch box for quarter turn actuators

The GEMÜ LSC limit switch box is suitable for mounting to manually and pneumatically operated quarter turn valves. It is also fitted with an optical position indicator for visual confirmation of position.

Accessories

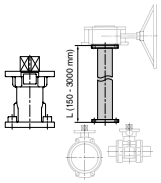


GEMÜ RC0

Shaft extension

The RC0 shaft extension for quarter turn valves is a distance piece between manually, pneumatically or electrically operated valves. This means that valves can be protected from flooding or better access for operation of the valve can be ensured (also for manual override).

Nominal size	GEMÜ RC0 shaft extension		GEMÜ AB22 hand lever	
	Item no.	Designation	Item no.	Designation
DN 15 - 20	88742081	RC0VAF04 D09KF04 D09 60 M12	88658096	AB22 20D 0SET
DN 25 - 32	88742082	RC0VAF05 D11KF05 D11 65 M14	88658097	AB22 32D 0SET
DN 40 - 50	88742083	RC0VAF07 D14KF07 D14 80 M18	88658099	AB22 50D 0SET
DN 65	88742085	RC0VAF07 D17KF07 D17100 M22	88658101	AB22 65D 0SET
DN 80	88742085	RC0VAF07 D17KF07 D17100 M22	88658102	AB22 80D 0SET
DN 100	88742085	RC0VAF07 D17KF07 D17100 M22	88658103	AB22100D 0SET

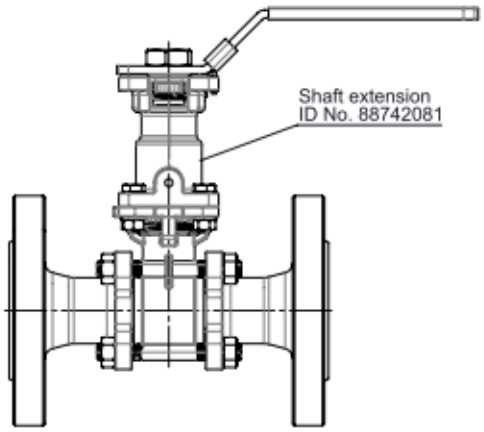


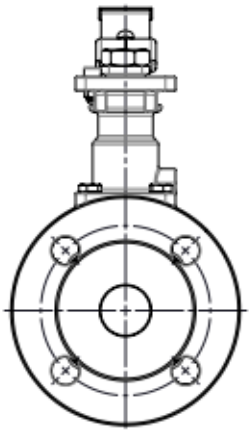
GEMÜ RC0

Shaft extension

The RC0 shaft extension for quarter turn valves is a distance piece between manually, pneumatically or electrically operated valves. This means that valves can be protected from flooding or better access for operation of the valve can be ensured (also for manual override).

Ball valve with shaft neck extension,
K-no. 5227, as well as variants thereof
K-no. 7132, 7138, 5232, 5234, 5235, 5238, 5239





Ordering information for ball valve with RC0 shaft neck extension, for thermal separation (K-no. 5227)

The manual ball valve is equipped with an RC0 shaft neck extension and a hand lever.

The shaft neck height is dependent on the nominal size of the ball valve.

Ordering information for ball valve with RC0 shaft neck extension, for thermal separation, cleaned so that it's PWIS-free (K-no. 7097 - 5227, 0101)

The manual ball valve is equipped with an RC0 shaft neck extension and a hand lever.

The shaft neck height is dependent on the nominal size of the ball valve.

The media wetted area is cleaned without compromising the paint coating.

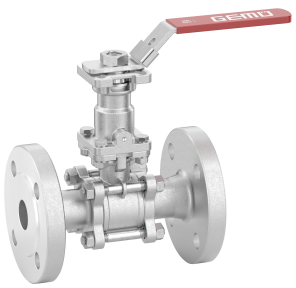
Ordering information for ball valve with RC0 shaft neck extension, for thermal separation, cleaned so that it's PWIS-free (K-no. 7039 - 5227, 0107)

The manual ball valve is equipped with an RC0 shaft neck extension and a hand lever.

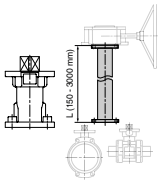
The shaft neck height is dependent on the nominal size of the ball valve.

The media wetted area is degreased.

Mounting example



Ball valve with RC0 shaft neck extension



GEMÜ RC0

Shaft extension

The RC0 shaft extension for quarter turn valves is a distance piece between manually, pneumatically or electrically operated valves. This means that valves can be protected from flooding or better access for operation of the valve can be ensured (also for manual override).

Preparation for mounting a position indicator (K-no. 5237 - 5227, 7056)

NOTE: The corresponding mounting kit must be entered separately.

Ordering information for ball valve with RC0 shaft neck extension, prepared for mounting a position indicator (K-no. 5237 - 5227, 7056)

The manual ball valve is equipped with an RC0 shaft neck extension and a modified hand lever.

Different limit switches can then be mounted. These must be ordered separately. See GEMÜ LSF or LSC for this.

Ordering information for ball valve with RC0 shaft neck extension, prepared for mounting a position indicator (K-no. 5240 - 5227, 0101, 7056)

The manual ball valve is equipped with an RC0 shaft neck extension and a modified hand lever.

The media wetted area is cleaned without compromising the paint coating.

Different limit switches can then be mounted.

These must be ordered separately. See GEMÜ LSF or LSC for this.

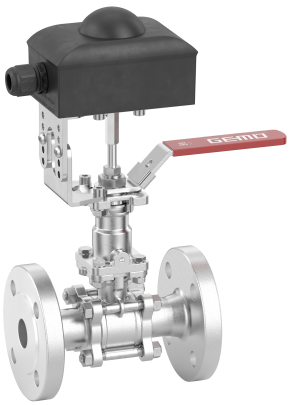
Ordering information for ball valve with RC0 shaft neck extension, prepared for mounting a position indicator (K-no. 5241 - 5227, 0107, 7056)

The manual ball valve is equipped with an RC0 shaft neck extension and a modified hand lever.

The media wetted area is degreased.

Different limit switches can then be mounted. These must be ordered separately. See GEMÜ LSF or LSC for this.

Mounting example



Ball valve with RC0 shaft neck extension

GEMÜ MSC

Mounting kit

The MSC mounting kit is an interface, for the same and different ends, to join flange designs according to ISO 5211. This mounting kit ensures thermal separation of actuator and valve body. It can also be used as height compensation for insulated pipelines. The mounting kit is available in steel, electrogalvanized and stainless steel in an open or closed design.

GEMÜ MSC refers to mounting kits for ADA, ASR, DR and SC pneumatic actuators. The mounting kits contain different parts depending on the butterfly valve actuator configuration. Fixing screws are not included.

GEMÜ ADH

Mounting sleeve

The mounting sleeve accessories are available in the square and star geometry designs. These are used for the shaft and hub support for quarter turn actuators. Both sleeves have an internal square drive (please observe stated measurement dimensions here). The sleeve material is sintered metal and they are chemically nickel plated with a surface of 25 µm.

Certificates

Certificate	Standard	Item number
3.1 Material	EN 10204	88333336

GEMÜ CONEXO

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

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

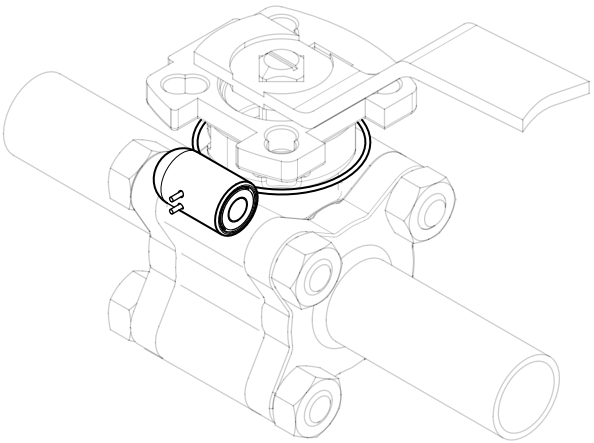
For further information on GEMÜ CONEXO please visit:
www.gemu-group.com/conexo

Ordering

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

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.



GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Gert-Müller-Platz 1, 74635 Kupferzell, Germany
Phone +49 (0) 7940 1230 · info@gemue.de
www.gemu-group.com