GEMÜ BB06

Compact flanged ball valve with bare shaft

Features

- High flow rate
- Full-flow bore
- Compact design
- 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 356 °F
- **Ambient temperature:** -40 to 140 °F
- **Operating pressure:** 0 to 580 psi
- **Nominal sizes:** 1/2" (DN 15) to 4" (DN 100)
- **Body configurations:** 2/2-way body
- **Ball configurations:** Control ball
- **Connection types:** Flange
- **Connection standards:** ANSI I EN
- **Body materials:** 1.4408, investment casting material
- **Seal materials:** PTFE
- **Conformities:** ATEX I EAC I FDA 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

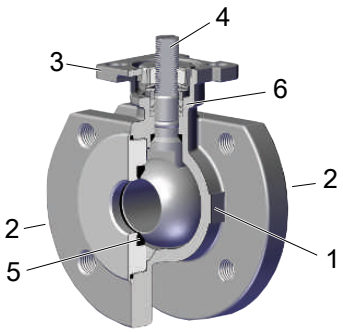
further information
webcode: GW-BB06

Product line

				
	GEMÜ BB06	**GEMÜ B26**	**GEMÜ B46**	**GEMÜ B56**
Operation				
With bare shaft	●	-	-	-
Manual	-	●	-	-
pneumatic	-	-	●	-
Motorized	-	-	-	●
Nominal sizes	1/2" (DN 15) to 4" (DN 100)	1/2" (DN 15) to 4" (DN 100)	1/2" (DN 15) to 4" (DN 100)	1/2" (DN 15) to 4" (DN 100)
Media temperature	-40 to 356 °F	-40 to 356 °F	-40 to 356 °F	-40 to 356 °F
Operating pressure	0 to 580 psi	0 to 580 psi	0 to 580 psi	0 to 580 psi
Connection types				
Flange	●	●	●	●

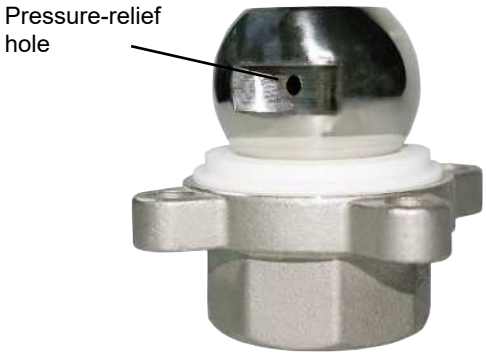
Product description

Construction

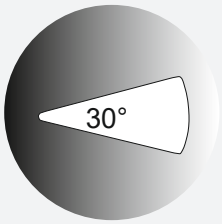
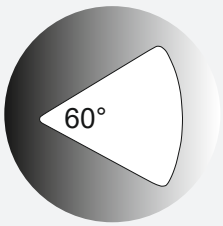
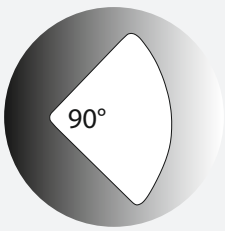


Item	Name	Materials
1	Ball valve body	1.4408 / CF8M
2	Pipe connections	1.4408 / CF8M
3	Mounting flange ISO 5211	1.4408 / CF8M
4	Ball valve shaft	1.4401 / SS316
5	Seal	PTFE
6	Antistatic unit	1.4408

Pressure-relief hole

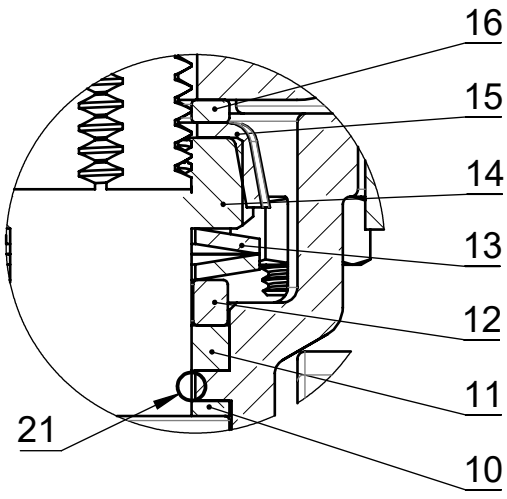


Control ball

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)	Viton

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

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

4 Connection type	Code
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	**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 via mounting kit, mounting kit and mounting parts in stainless steel	5227
K-no. 5227, K-no. 7056, 5227 - Thermal separation via mounting kit, 7056 - Drilled shaft, shortened hand lever	5237
Hand lever shortened for mounting feedback units. Shaft face drilled for mounting kit: DN8-DN20 M5 X 12.5/depth of thread 9.0mm, DN25-DN100 M6 x 15/depth of thread 10.0mm	7056

8 Special version	Code
Without	
ATEX certification	X

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

Order example

Order 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
5 Ball valve material	37	1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)
6 Seal material	5	PTFE
7 Type of design		Without
8 Special version		Standard

Order option	Code	Description
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.

Temperature

Media temperature: -40 — 356 °F

For media temperatures > 212 °F , we recommend using a mounting kit with adapter between the ball valve and the actuator.

Ambient temperature: -40 — 140 °F

Higher temperatures on request

Storage temperature: -76 — 140 °F

Pressure

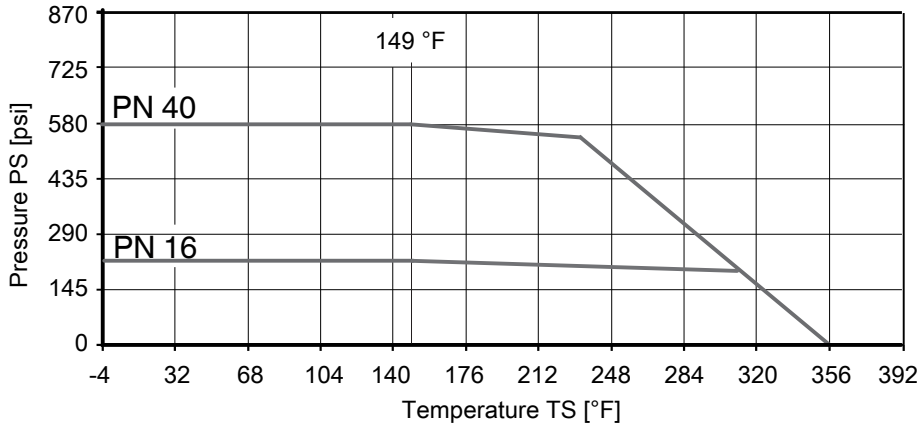
Operating pressure: 0 — 580 psi

Vacuum: Can be used up to a vacuum of 1.5 inhg (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

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

Cv-values:

DN	NPS	Kv values
15	1/2”	15.21
20	3/4”	39.78
25	1”	70.20
32	1¼”	109.98
40	1½”	249.21
50	2”	428.22
65	2½”	696.15
80	3”	1093.95
100	4”	1989.00

Cv values in gpm

V-ball 30° (code U)

DN	NPS	Opening angle										
		0	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
15	**1/2"**	0	0.100	0.100	0.200	0.300	0.500	0.800	1.090	1.590	2.190	2.590
20	**3/4"**	0	0.100	0.200	0.500	0.700	1.090	1.790	2.390	3.280	4.480	5.370
25	**1"**	0	0.100	0.300	0.800	1.290	2.290	3.480	5.070	6.970	9.510	9.950
32	**1¼"**	0	0.200	0.400	1.090	1.990	3.680	5.470	7.960	9.950	12.930	14.920
40	**1½"**	0	0.300	0.600	1.590	2.980	4.970	7.460	10.940	13.920	16.910	19.890
50	**2"**	0	0.400	1.190	3.780	5.970	9.950	14.920	22.870	30.830	42.760	59.670
65	**2½"**	0	0.400	0.990	3.980	7.960	11.930	17.900	27.850	36.800	61.660	74.590
80	**3"**	0	0.500	1.190	3.980	7.960	13.920	22.870	32.820	45.750	64.640	81.550
100	**4"**	0	0.600	1.990	5.970	14.920	28.840	47.740	70.610	99.450	129.290	158.180

Cv values in gpm

V-ball 60° (code Y)

DN	NPS	Opening angle										
		0	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
15	**1/2"**	0	0.100	0.100	0.300	0.500	0.900	1.390	1.990	3.280	4.380	5.970
20	**3/4"**	0	0.100	0.200	0.700	0.990	1.690	2.780	3.980	6.460	8.950	11.930
25	**1"**	0	0.200	0.400	1.090	1.790	3.380	5.270	7.860	12.240	15.220	20.880
32	**1¼"**	0	0.200	0.600	1.790	2.980	5.470	9.450	12.730	18.900	25.860	38.790
40	**1½"**	0	0.400	0.800	2.490	3.980	7.960	12.930	18.900	26.850	39.780	51.710
50	**2"**	0	0.400	1.490	4.570	8.950	16.420	26.850	38.790	54.700	82.540	109.400
65	**2½"**	0	0.400	1.490	4.970	9.950	20.880	33.810	52.710	74.590	102.430	149.180
80	**3"**	0	0.500	2.490	5.970	13.920	24.860	39.780	64.640	90.500	127.300	164.150
100	**4"**	0	0.700	2.980	10.940	24.860	39.780	58.680	89.510	140.280	210.830	354.040

Cv values in gpm

Cv-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	0.100	0.200	0.400	0.600	0.900	1.490	2.190	3.780	5.370	6.860
20	**3/4"**	0	0.200	0.400	0.800	1.190	1.990	3.080	4.570	7.960	11.240	13.920
25	**1"**	0	0.200	0.600	1.790	3.380	5.070	8.060	11.340	15.910	20.880	28.840
32	**1¼"**	0	0.300	0.800	1.990	4.970	7.960	13.920	18.900	27.850	38.790	54.700
40	**1½"**	0	0.500	0.900	3.480	6.960	12.930	19.890	30.830	41.770	62.650	77.570
50	**2"**	0	0.700	1.990	5.970	11.930	21.880	34.810	44.750	69.620	104.420	134.320
65	**2½"**	0	0.500	1.690	6.960	13.920	27.850	47.740	69.620	105.420	159.120	216.800
80	**3"**	0	0.700	3.480	7.960	17.900	34.810	59.670	89.510	134.320	203.930	308.300
100	**4"**	0	0.990	3.480	15.910	39.780	74.590	124.370	188.960	293.440	439.570	666.320

Cv values in gpm

Product conformities

Pressure Equipment Directive: 2014/68/EU

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

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

ATEX marking:

Up to DN 65
Gas: Ⓔx II 2G Ex h IIC T6 ... T2 Gb X
Dust: Ⓔx II -/2D Ex h -/IIIC T180 °C -/Db X

DN 80 and 100
Gas: Ⓔx II 2G Ex h IIB T6 ... T2 Gb X
Dust: Ⓔx II -/2D Ex h -/IIIC T180 °C -/Db X

Mechanical data

Torques:

DN	NPS	Breakaway torque
15	**1/2"**	61.69
20	**3/4"**	70.61
25	**1"**	88.51
32	**1¼"**	123.91
40	**1½"**	256.67
50	**2"**	513.34
65	**2½"**	548.75
80	**3"**	1062.09
100	**4"**	1540.03

Torques in lbf in

Weight:

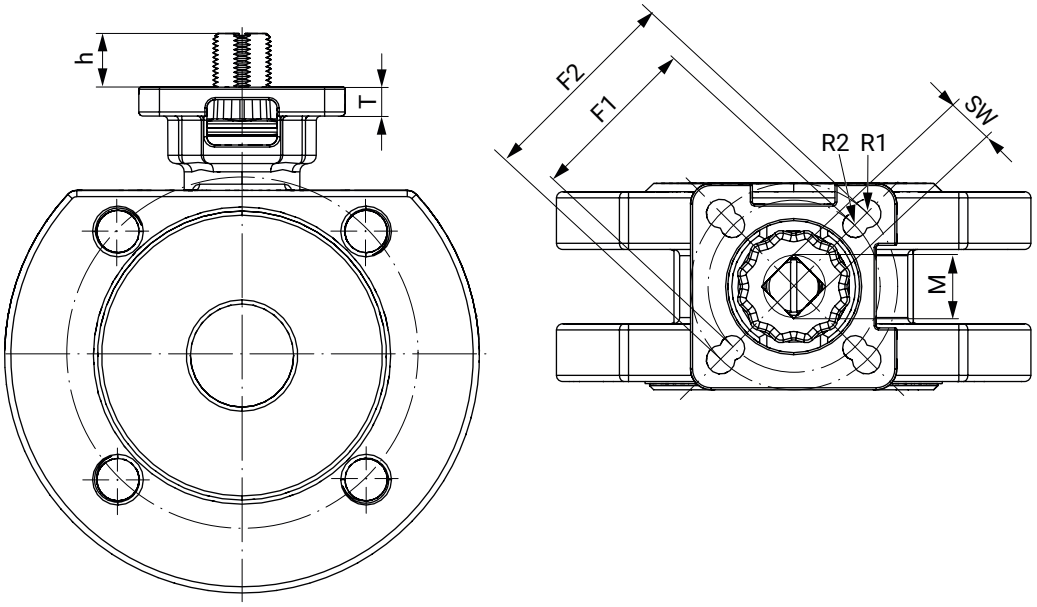
Ball valve

DN	NPS	Weight
15	**1/2"**	2.87
20	**3/4"**	4.41
25	**1"**	6.17
32	**1¼"**	9.26
40	**1½"**	11.68
50	**2"**	14.77
65	**2½"**	26.24
80	**3"**	32.85
100	**4"**	44.97

Weight in lb

Dimensions

Actuator flange

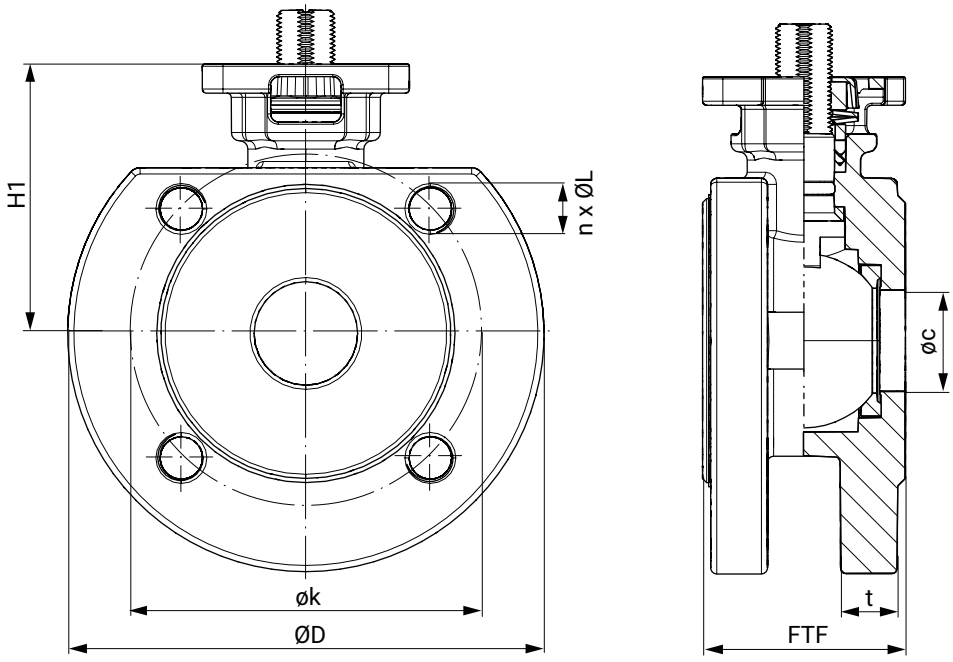


DN	G	F1	R1	F2	R2	SW [mm]	h	T	M
15	**1/2“**	1.42	0.12	1.65	0.12	9.0	0.35	0.20	M12
20	**3/4“**	1.42	0.12	1.65	0.12	9.0	0.30	0.20	M12
25	**1“**	1.65	0.12	1.97	0.14	11.0	0.51	0.28	M14
32	**1¼“**	1.65	0.12	1.97	0.14	11.0	0.51	0.28	M14
40	**1½“**	1.97	0.14	2.76	0.18	14.0	0.59	0.35	M18
50	**2“**	1.97	0.14	2.76	0.18	14.0	0.63	0.35	M18
65	**2½“**	2.76	0.20	4.02	0.24	17.0	0.71	0.41	M22
80	**3“**	2.76	0.20	4.02	0.24	17.0	0.71	0.41	M22
100	**4“**	2.76	0.20	4.02	0.24	17.0	0.71	0.41	M22

Dimensions in inch

Body dimensions

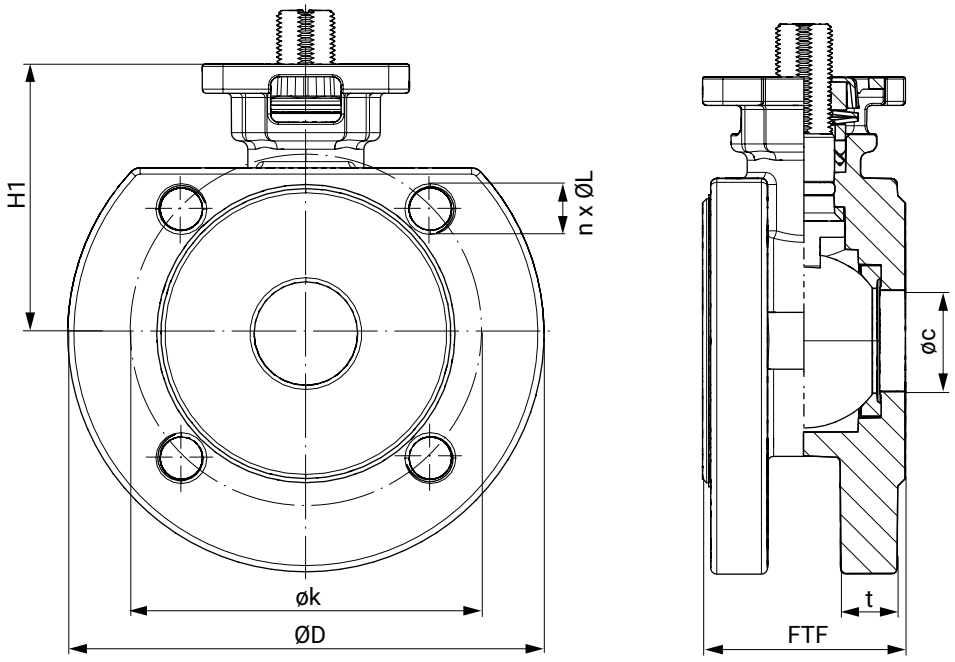
Flange (connection code 39)



DN	øc	ØD	øk	t	FTF	H1	n x ØL
15	0.59	3.50	2.38	0.36	1.50	1.91	4x1/2-13UNC
20	0.79	3.90	2.75	0.43	1.57	2.13	4x1/2-13UNC
25	0.98	4.25	3.12	0.53	1.81	2.56	4x1/2-13UNC
32	1.26	4.61	3.50	0.55	2.20	3.07	4x1/2-13UNC
40	1.50	5.00	3.88	0.61	2.56	3.35	4x1/2-13UNC
50	1.97	5.98	4.75	0.67	3.07	3.66	4x5/8-11UNC
65	2.56	7.01	5.50	0.81	3.90	4.21	4x5/8-11UNC
80	2.99	7.48	6.00	0.87	4.57	4.69	4x5/8-11UNC
100	3.94	9.02	7.50	0.87	5.87	5.20	8x5/8-11UNC

Dimensions in inch

Flange (connection code 68)



DN	øc	ØD	øk	t	FTF	H1	n x ØL
15	0.59	3.23	2.56	0.55	1.65	1.91	4 x M12
20	0.79	3.86	2.95	0.55	1.73	2.13	4 x M12
25	0.98	4.53	3.35	0.55	1.97	2.56	4 x M12
32	1.26	5.51	3.94	0.63	2.36	3.07	4 x M16
40	1.50	5.91	4.33	0.59	2.72	3.35	4 x M16
50	1.97	6.50	4.92	0.61	3.23	3.66	4 x M16
65	2.56	7.28	5.71	0.61	4.06	4.21	4 x M16
80	2.99	7.87	6.30	0.67	4.69	4.69	8 x M16
100	3.94	8.66	7.09	0.67	5.91	5.20	8 x M16

Dimensions in inch

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

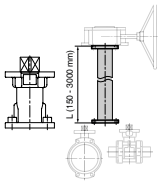
The GEMÜ LS series electrical position indicators are used to feed back and verify the position of quarter turn valves. Depending on the version, they have either one or two mechanical microswitches or 2-wire or 3-wire proximity switches.

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

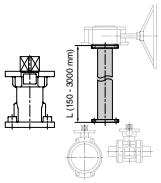


GEMÜ RC0

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

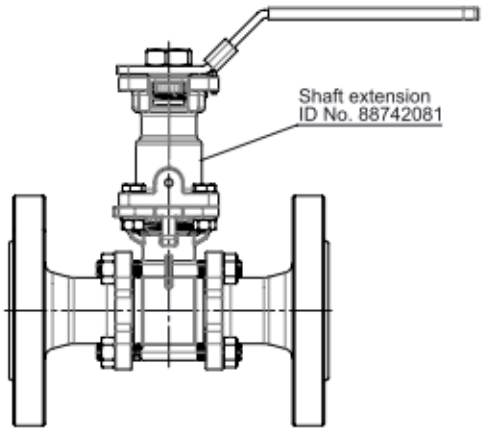


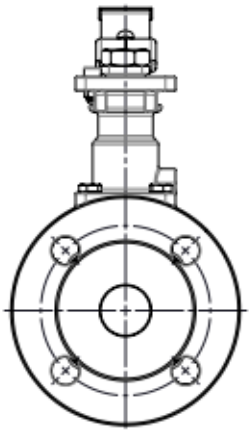
GEMÜ RC0

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.

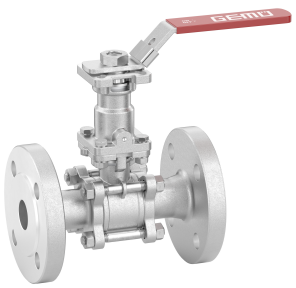
Ordering information for ball valve with RC0 shaft neck extension, for thermal separation, cleaned so that it's PWIS-free (K-no. 7039 - 5227, 0107)

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

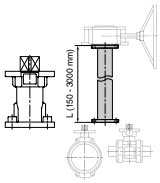
The shaft neck height is dependent on the nominal size of the ball valve.

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.

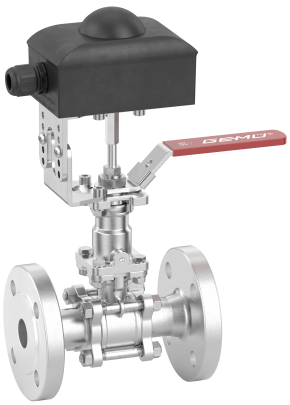
Ordering information for ball valve with RC0 shaft neck extension, prepared for mounting a position indicator (K-no. 5241 - 5227, 0107, 7056)

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

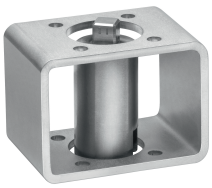
The media wetted area is degreased.

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 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.

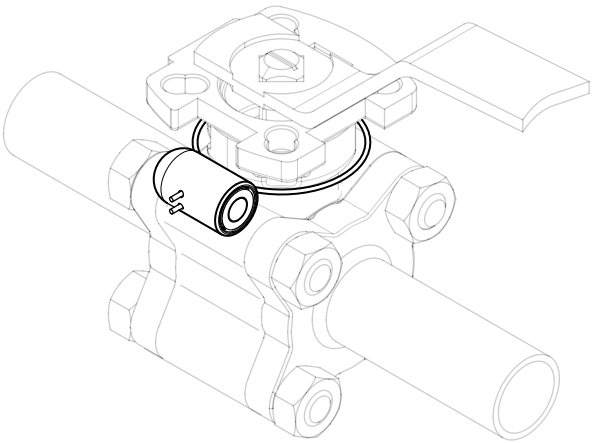
For further information on GEMÜ CONEXO please visit:
www.gemu-group.com/conexo

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.



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