

GEMÜ B2F

Manually operated 2/2-way ball valve



Features

- Suitable for chemical applications
- Low maintenance and reliable spindle sealing
- Antistatic device
- Fire Safe API 607 and DIN EN ISO 10497

Description





The GEMÜ B2F two-piece 2/2-way metal ball valve is manually operated. It has a plastic sleeved hand lever with a locking device. The seat seal is made of PTFE with glass fibre reinforcement.

Technical specifications

- **Media temperature:** -40 to 220 °C
- **Ambient temperature:** -20 to 60 °C
- **Operating pressure :** 0 to 40 bar
- **Nominal sizes:** DN 15 to 200
- **Body configurations:** 2/2-way body
- **Ball configurations:** Control ball | Standard ball, full bore
- **Connection types:** Flange
- **Connection standards:** ASME | DIN | EN
- **Body materials:** 1.4408, investment casting material
- **Seal materials:** PTFE, reinforced
- **Conformities:** ATEX | EAC | FireSafe | Functional safety | TA Luft (German Clean Air Act)

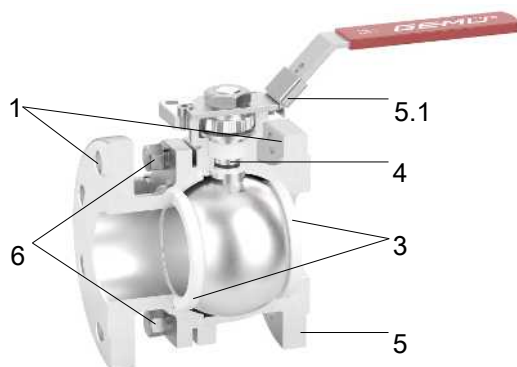
Technical data depends on the respective configuration

Product line

				
	GEMÜ BB0F	GEMÜ B2F	GEMÜ B4F	GEMÜ B5F
Operation				
Manual	-	●	-	-
Pneumatic	-	-	●	-
Motorized	-	-	-	●
Nominal sizes	DN 15 to 200	DN 15 to 200	DN 15 to 200	DN 15 to 200
Media temperature	-40 to 220 °C	-40 to 220 °C	-40 to 220 °C	-40 to 220 °C
Operating pressure *	0 to 40 bar	0 to 40 bar	0 to 40 bar	0 to 40 bar
Connection types				
Flange	●	●	●	●

* depending on version and/or operating parameters

Product description



DN 15-65

18



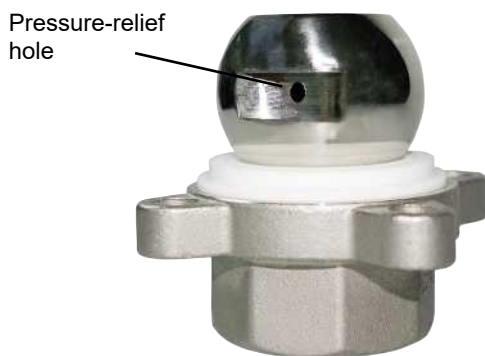
DN 80-200

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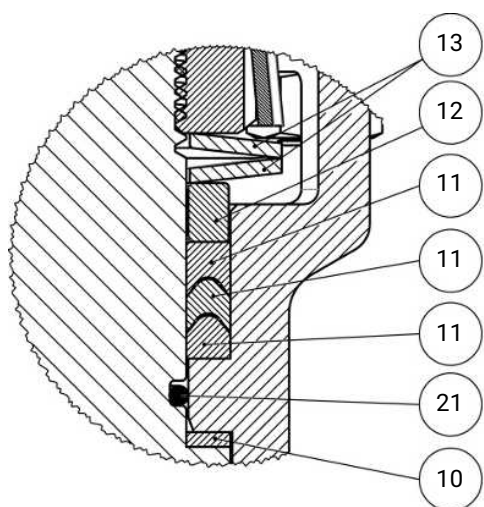


Item	Name	Materials
5	Ball valve body	1.4408 / CF8M
1	Pipe connections	1.4408 / CF8M
5.1	ISO 5211 mounting flange	1.4408 / CF8M
4	Ball valve shaft	1.4408 / SS316
18	Hand lever	SS304
6	Bolt	A2 70
3	Seal	PTFE reinforced with glass fibres

Pressure-relief hole



The spindle seal system



Item	Name	Material
10	Seal	316
11	V-ring	Graphite
12	Stainless steel sleeve	SS304
13	Spring washer	SS301
21	O-ring (spindle seal)	Viton

Long service life thanks to the triple spindle seal

- Conical spindle seal:

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

- O-ring:

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

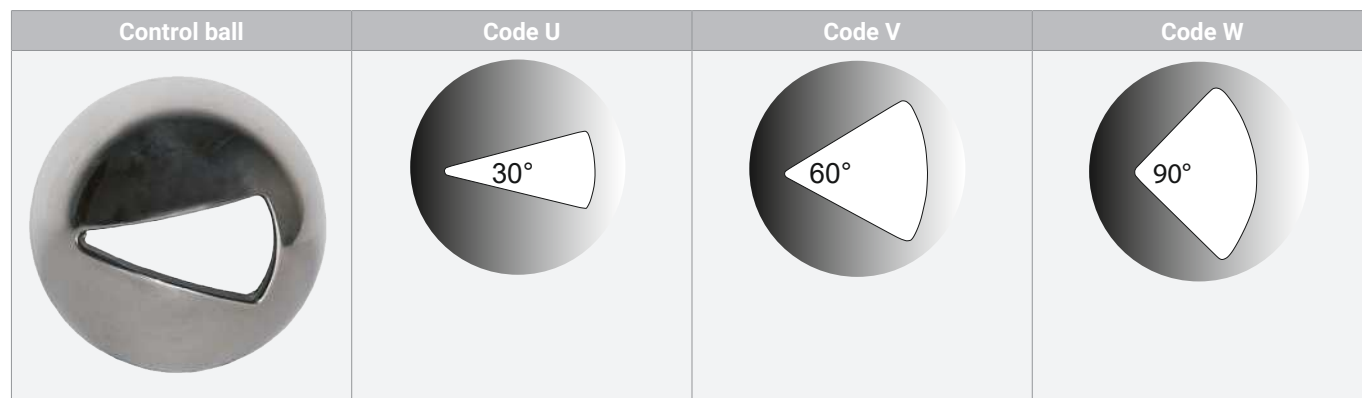
- Pretensioned self-adjusting spindle seal:

The spindle packing comprises several V-rings **11**, a spring washer **13** and a stainless steel sleeve **12**. The spring washer **13** is pretensioned via the spindle nut. 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

Control ball

DN 15 to DN 100



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

Application

- Heating systems
- Chemical industry
- Drinking water installation
- Processing industry
- HVAC

Order data

Order codes

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.

1 Type	Code
Ball valve, metal, manually operated, two-piece body, flange, ISO 5211, top flange, lockable hand lever, low-maintenance spindle seal and blow-out proof shaft, with anti-static unit	B2F

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
DN 125	125
DN 150	150
DN 200	200

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

4 Connection type	Code
Flange ANSI class 125/150 RF, up to DN 100 face-to-face dimension FTF EN 558 series 3, ASME/ANSI B16.10 table 1, columns 8 and 9, from DN 125 face-to-face dimension FTF EN 558 series 12,	46
Flange DIN EN 558 series 27 PN40	3E
Flange DIN EN 558 series 27 PN16	3G

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

6 Seal material	Code
Seat seal = PTFE with glass fibre reinforcement Body seal = stainless steel with graphite Spindle seal = stainless steel with graphite, Viton O-ring	5F

7 Control function	Code
Manually operated, hand lever, lockable	L

8 Type of design	Code
Standard	
Media wetted area cleaned to ensure suitability for paint applications, parts sealed in plastic bag	0101
Valve free of oil and grease, media wetted area cleaned and packed in PE bag	0107
Hand lever shortened for mounting 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
K-no. 0101, K-no. 7056, 0101 – Media wetted area cleaned to ensure suitability for paint applications, 7056 – Drilled shaft, shortened hand lever	7097

9 Special version	Code
Without	
ASME B31.3	P
ATEX version	X

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

Order data

Order example

Ordering option	Code	Description
1 Type	B2F	Ball valve, metal, manually operated, two-piece body, flange, ISO 5211, top flange, lockable hand lever, 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	3E	Flange DIN EN 558 series 27 PN40
5 Ball valve material	37	1.4408/CF8M (body, connection), 1.4401/SS316 (ball, shaft)
6 Seal material	5F	Seat seal = PTFE with glass fibre reinforcement Body seal = stainless steel with graphite Spindle seal = stainless steel with graphite, Viton O-ring
7 Control function	L	Manually operated, hand lever, lockable
8 Type of design		Standard
9 Special version		Without
10 CONEXO	C	Integrated RFID chip for electronic identification and traceability

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 – 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

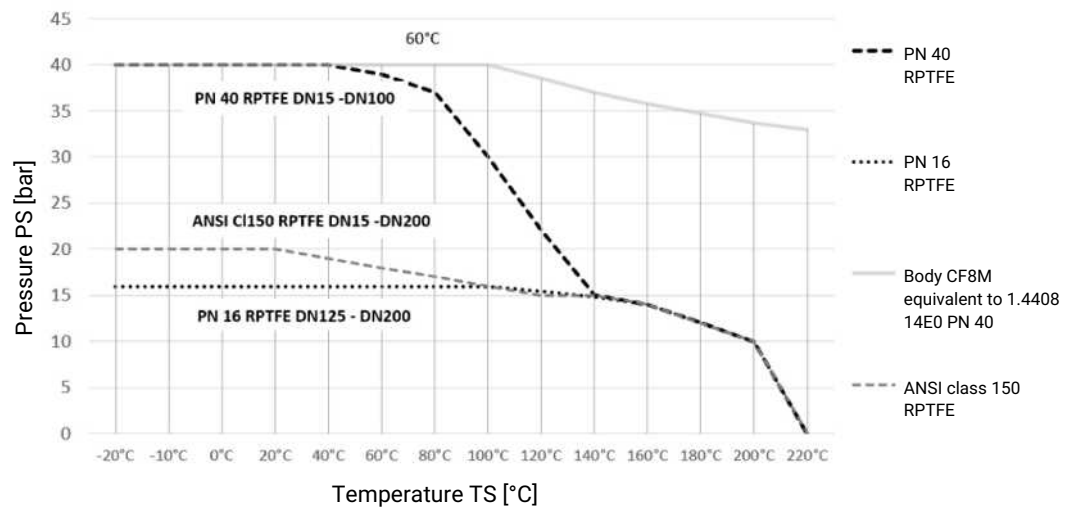
Storage temperature: -60 – 60 °C

Pressure

Operating pressure: 0 – 40 bar

Vacuum: Can be used up to a vacuum of 50 mbar (absolute)
These values apply to room temperature and air. The values may deviate for other media and other temperatures.

Pressure/temperature diagram:



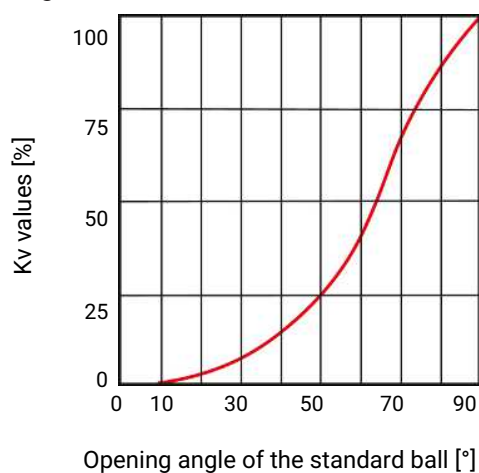
Pressure/temperature data in accordance with diagram refers to static operating conditions. Strongly fluctuating or fast-changing parameters can lead to a reduction of the service life. Special applications must be talked through with your technical contact person in advance.

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

Kv values:
Standard ball (code D)

DN	NPS	Kv values
15	1/2"	26
20	3/4"	47
25	1"	82
32	1¼"	146
40	1½"	231
50	2"	403
65	2½"	668
80	3"	985
100	4"	1799
125	5"	2999
150	6"	4284
200	8"	8141

 Kv values in m³/h

Diagrammatic view


Opening angle of the standard ball [°]

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	12.75	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	52.70	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

Kv values:
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	10.46	13.010	17.850
32	1¼"	0	0.170	0.510	1.530	2.550	4.675	8.075	10.880	16.15	22.100	33.150
40	1½"	0	0.340	0.680	2.125	3.400	6.800	11.050	16.150	22.95	34.000	44.200
50	2"	0	0.340	1.275	3.910	7.650	14.030	22.950	33.150	46.75	70.550	93.500
65	2½"	0	0.340	1.275	4.250	8.500	17.850	28.900	45.050	63.75	87.550	127.50
80	3"	0	0.425	2.125	5.100	11.900	21.250	34.000	55.250	77.35	108.80	140.30
100	4"	0	0.595	2.550	9.350	21.250	34.000	50.150	76.500	119.9	180.20	302.60

Kv values in m³/h

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	114.80
65	2½"	0	0.425	1.445	5.950	11.900	23.800	40.800	59.500	90.100	136.00	185.30
80	3"	0	0.595	2.975	6.800	15.300	29.750	51.000	76.500	114.80	174.30	263.50
100	4"	0	0.850	2.975	13.600	34.000	63.750	106.30	161.50	250.80	375.70	569.50

Kv values in m³/h

Technical data

Pressure rating:

DN	Flange		
	46	3E	3G
15	Class 150	PN40	-
20	Class 150	PN40	-
25	Class 150	PN40	-
32	Class 150	PN40	-
40	Class 150	PN40	-
50	Class 150	PN40	-
65	Class 150	PN40	-
80	Class 150	PN40	-
100	Class 150	PN40	-
125	Class 150	-	PN16
150	Class 150	-	PN16
200	Class 150	-	PN16

* on request

Connection type	Code
Flange ANSI class 125/150 RF, up to DN 100 face-to-face dimension FTF EN 558 series 3, ASME/ANSI B16.10 table 1, columns 8 and 9, from DN 125 face-to-face dimension FTF EN 558 series 12,	46
Flange DIN EN 558 series 27 PN40	3E
Flange DIN EN 558 series 27 PN16	3G

Product conformity

Pressure Equipment Directive:	ASME GEMÜ B31.3 (DN 15–200) 2014/68/EU
Fire Safe:	API 607 and DIN EN ISO 10497
Explosion protection:	Based on ATEX (2014/34/EU), order code special version X
ATEX assessment:	<p>External Gas: Zone 1, 2 IIB Dust: Zone 21, 22 IIIC</p> <p>Internal Up to DN 65 Gas: Zone 1, 2 IIC Dust: No zone</p> <p>DN 80 and 100 Gas: Zone 1, 2 IIB Dust: No zone</p>

Mechanical data

Torques:

DN	NPS	Breakaway torque
15	1/2"	14
20	3/4"	14
25	1"	20
32	1¼"	24
40	1½"	36
50	2"	53
65	2½"	91
80	3"	120
100	4"	174
125	5"	264
150	6"	368
200	8"	552

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.) or gas or saturated steam (clean and wet). Seal, PTFE with glass fibre reinforcement.

Technical data

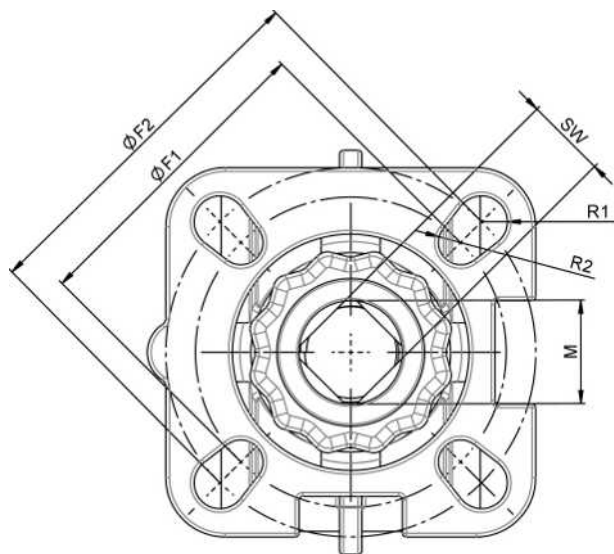
Weight:
Ball valve

DN	NPS	Connection code 46	Connection code 3E, 3G
15	1/2"	1.4	2.2
20	3/4"	1.75	2.8
25	1"	2.75	3.7
32	1¼"	3.45	5.3
40	1½"	5.1	6.4
50	2"	7.45	8.9
65	2½"	11.65	14.8
80	3"	15.55	19.9
100	4"	26.65	27
125	5"	41.3	43
150	6"	61.7	61
200	8"	127.55	120.6

Weights in kg

Dimensions

Actuator flange

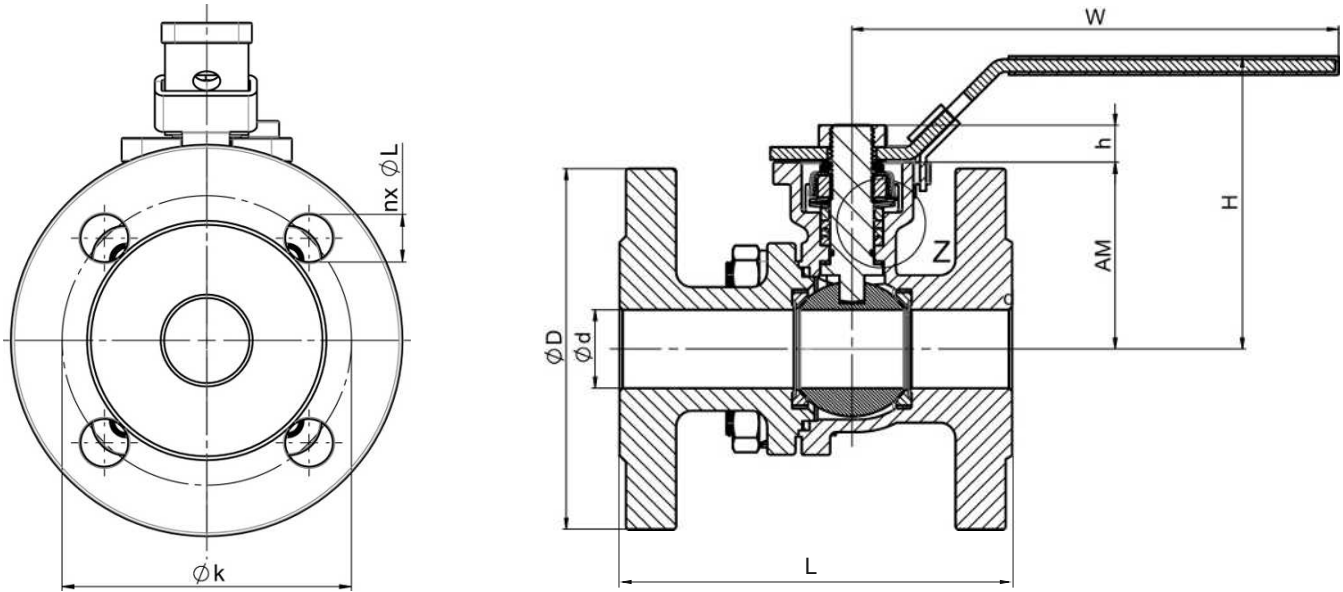


DN	G	F1	ISO 5211	R1	F2	ISO 5211	R2	SW	M	
15	1/2"	36	F03	3	42	F04	3	9	M12	ANSI/PN
20	3/4"	36	F03	3	42	F04	3	9	M12	ANSI/PN
25	1"	42	F04	3	50	F05	3.5	11	M14	ANSI/PN
32	1¼"	42	F04	3	50	F05	3.5	11	M14	ANSI/PN
40	1½"	50	F05	3.5	70	F07	4.5	14	M18	ANSI/PN
50	2"	50	F05	3.5	70	F07	4.5	14	M18	ANSI/PN
65	2½"	70	F07	5	102	F10	4.5	17	M22	PN40
80	3"	70	F07	5	102	F10	6	17	M22	PN40
100	4"	102	F10	5	125	F12	6	22	M27	PN40
65	2½"	50	F05	3.5	70	F07	4.5	14	M18	ANSI
80	3"	70	F07	5	102	F10	4.5	17	M22	ANSI
100	4"	70	F07	5	102	F10	6	17	M22	ANSI
125	5"	102	F10	5	125	F12	6	27	M34	ANSI
150	6"	102	F10	5	125	F12	6	27	M34	ANSI
200	8"	-	-	5	125	F12	6	27	M34	ANSI
100	4"	70	F07	5	102	F10	4.5	17	M22	PN16
125	5"	102	F10	5	125	F12	6	22	M27	PN16
150	6"	102	F10	5	125	F12	6	22	M27	PN16
200	8"	-	-	5	125	F12	6	27	M34	PN16

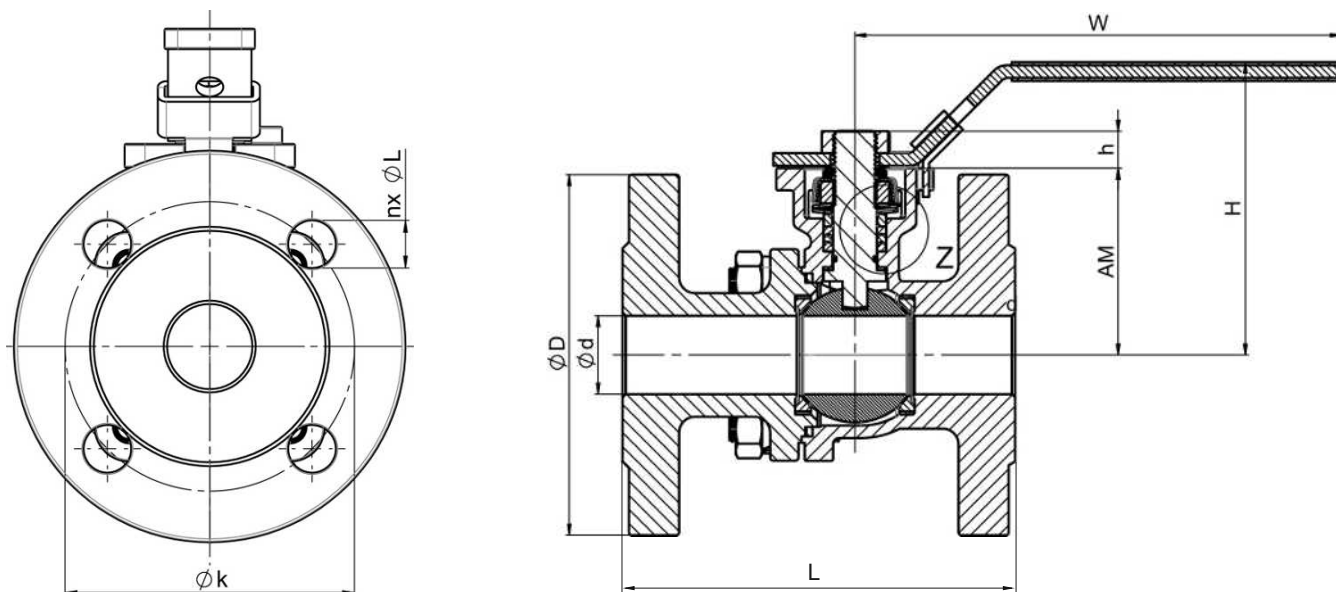
Dimensions in mm

Ball valve

Flange (connection code 3E, 3G)



DN	Conne- tion code	$\varnothing d$	$\varnothing D$	h	$\varnothing k$	n x $\varnothing L$	W	H	AM	L
15	3E	15.0	95.0	10	65.0	4 x 14.0	125	80	48	115
20	3E	20.0	105.0	10	75.0	4 x 14.0	125	84	54	120
25	3E	25.0	115.0	12	85.0	4 x 14.0	155	93	59	125
32	3E	32.0	140.0	12	100.0	4 x 18.0	155	105	71	130
40	3E	38.0	150.0	15	110.0	4 x 18.0	195	122	78	140
50	3E	50.0	165.0	15	125.0	4 x 18.0	195	129	85	150
65	3E	65.0	185.0	17	145.0	8 x 18.0	257	162	107	170
80	3E	76.0	200.0	18	160.0	8 x 18.0	221	173	117	180
100	3E	100.0	235.0	23	190.0	8 x 22.0	254	203	150	190
125	3G	125	270	23	210	8 x 18.0	430	248	180	325
150	3G	150	300	23	240	8 x 22.0	430	266	198	350
200	3G	200	375	31	340	12 x 22.0	700	329	252	400

Flange (connection code 46)


DN	Conne- tion code	$\varnothing d$	$\varnothing D$	h	$\varnothing k$	n x $\varnothing L$	W	H	AM	L
15	46	15.0	95.0	10	65.0	4 x 16.0	125	80	48	108
20	46	20.0	105.0	10	75.0	4 x 16.0	125	84	54	117
25	46	25.0	115.0	12	85.0	4 x 16.0	155	93	59	127
32	46	32.0	140.0	12	100.0	4 x 16.0	155	105	71	140
40	46	38.0	150.0	15	110.0	4 x 16.0	195	122	78	165
50	46	50.0	165.0	15	125.0	4 x 19.0	195	129	85	178
65	46	65.0	185.0	17	145.0	4 x 19.0	257	162	107	190
80	46	76.0	200.0	18	160.0	4 x 19.0	221	173	117	203
100	46	100.0	235.0	23	190.0	8 x 19.0	254	203	150	229
125	46	125	255	23	216	8 x 19.0	430	248	180	356
150	46	150	280	23	252	8 x 19.0	430	266	198	394
200	46	200	345	31	298	8 x 19.0	700	329	252	457

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".

Certificates

Certificate	Standard	Item number
3.1 Material	EN 10204	88333336

