Ball valve, 2-piece, Stainless steel

Construction

GEMÜ 711, 728 and 751 are 2-piece 2/2-way stainless steel ball valves with ANSI top flange in sizes 1/2“ to 4“ (DN 15 - 100). The top flange enables both pneumatic and electric actuators to be mounted.
GEMÜ 711 is manually operated and has a plastic sleeved hand lever with a locking device

GEMÜ 751 is operated by a low maintenance pneumatic piston actuator in single acting (spring return) or double acting design. The actuator has a robust Alodur coated aluminium housing. An integral optical position indicator is standard.

GEMÜ 728 has a low maintenance electric actuator with a powerful DC motor. The reduction gear in the motor provides the rotation through 90°. The actuator has an optical position indicator and a manual override as standard.

Features

- Suitable for inert, corrosive*, liquid and gaseous media and steam
- Suitable for vacuum applications
- The ball valves comply with the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids of groups 1 and 2
- Compliance with the technical requirements of TA Luft (German Clean Air Act) 2002 Sec. 5.2.6.4 VDI 2440 Nov. 2000, Sec. 3.3.1.3
- ATEX version II 2G/2D ATEX 94/9/EC on request
- Relief bore hole

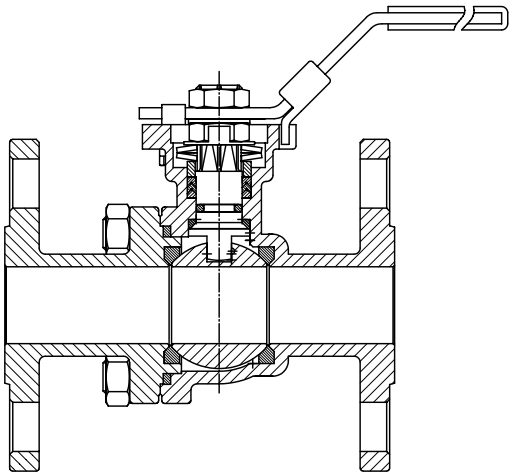
* see information on working medium on page 2

CE
0035
PED/97/23/EC
Category III
Module H

TA-LUFT

II 2G/2D
ATEX 2014/34/EU

Sectional view



GEMÜ 711

GEMÜ 751

GEMÜ 728

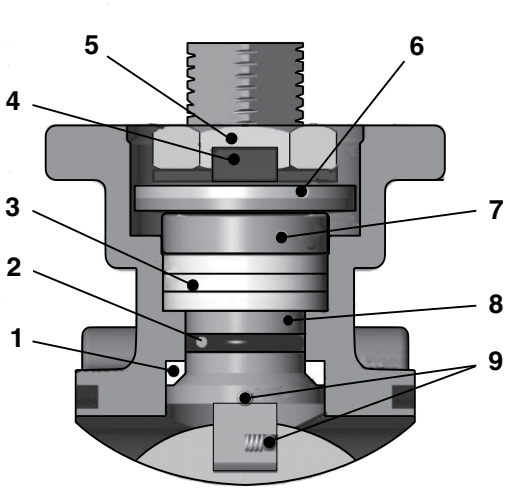
GEMÜ®

K715, 711, 728, 751

The spindle seal system

Long service life due to threefold spindle seal, TA-Luft compliant

- Conical spindle seal: The seal **1** arranged at an angle of 45° effectively prevents the leakage of medium when operating the spindle
- O-ring:
  Stabilising spindle seal **2** with low wear and long service life
- Pretensioned, self-adjusting spindle seal:
  The spindle packing consists of several V-rings **1**, a spring washer **6** and a stainless steel sleeve **7**. The spring washer **6** is pretensioned via the spindle nut **5**. The pretension force is distributed to the V-rings **3** via the stainless steel sleeve **7** thus preventing the leakage of media. The pretension provides low maintenance and reliable spindle sealing even after a long service life.



Parts list

1 Conical spindle seal (PTFE)
2 O-ring (FPM), other materials on request
3 V-rings (PTFE)
4 Lock washer (1.4301), secures the nut thus holding the valve spindle in position
5 Spindle nut (1.4301)
6 Spring washer (1.4310)
7 Stainless steel sleeve (1.4301)
8 Valve spindle (1.4401), the machined spindle surface reduces the friction at the spindle, reduces the actuation forces (torque) and minimizes wear
9 Antistatic device (1.4401), spindle - ball

General technical data

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.	
Maximum permissible pressure of the working medium see diagram (for water and non-hazardous media to which the body material is resistant)	
Maximum permissible operating temperature	180 °C
Maximum permissible ambient temperature	60 °C

Leakage rate

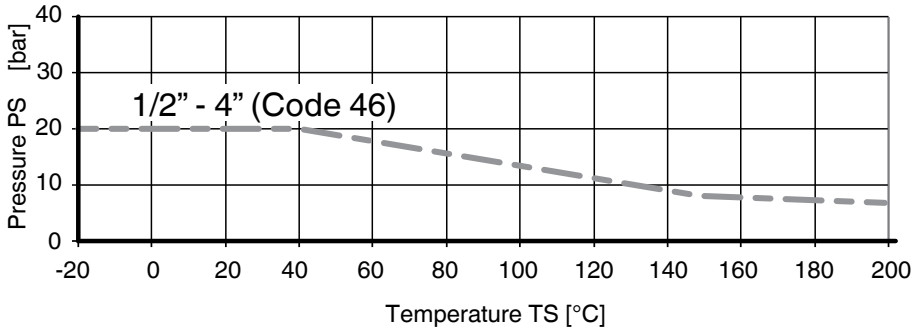
Leakage rate to ANSI B16.104, CLASS IV

Control medium (only GEMÜ 751)

Control pressure	6 to 8 bar
Max. permissible temperature of control medium	60 °C

DN	NPS	Torque [Nm]	Kv values [m^3/h]	Weight [kg] Ball valve without operator
15	1/2”	10	13	2.45
20	3/4”	14	34	3.50
25	1”	17	60	4.70
32	1 ¼”	23	94	5.90
40	1 ½”	40	213	7.80
50	2”	44	366	11.3
65	2 ½”	59	595	16.9
80	3”	94	935	23.9
100	4”	101	1700	34.9

Pressure-temperature diagram



Order data - GEMÜ 711 - manually operated

1 Type	Code
Ball valve with hand lever	711

2 Nominal size	Code
DN 15 - 100	15 - 100

2 Body configuration	Code
Straight through (2/2-way)	D

4 Connection	Code
Flanges ANSI class 125/150 RF, up to DN 100 length EN 558, series 3 ASME/ANSI B16.10 Tab. 1, columns 8 and 9 from DN 125 length EN 558, series 12 ASME/ANSI B16.10 Tab. 1, column 3	46

5 Valve body material	Code
Body: CF8M / 1.4408 Ball: SS316, for DN 8 - 15, CF8M for DN 20 - 100	37

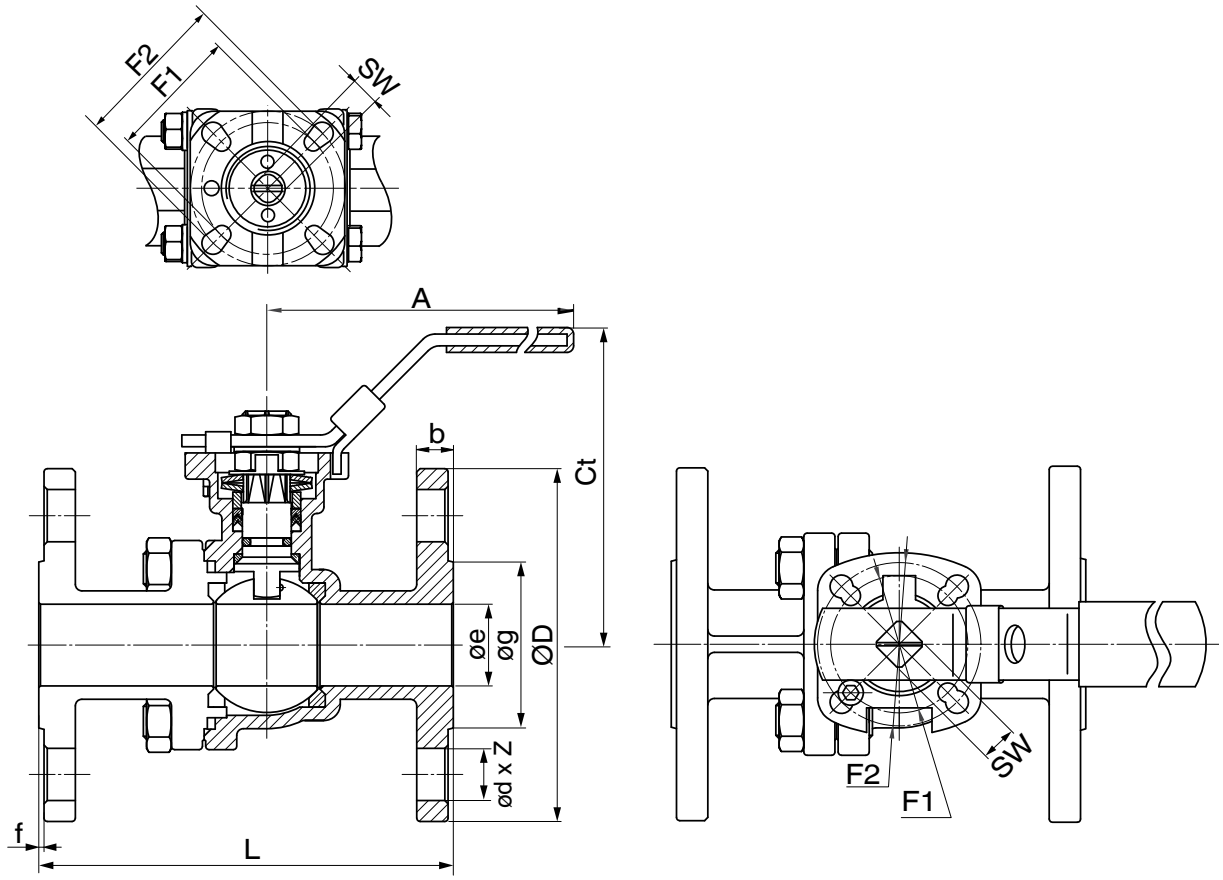
6 Seal material *	Code
PTFE	5
* Spindle seal in FPM (other materials on request)	

7 Control function	Code
Manually operated with lockable hand lever	

Order example	1	2	3	4	5	6	7
Code	711	15	D	46	37	5	L

Body dimensions [mm]

Flanges, connection code 46																			
DN	A	b	Ct	ød	øD	øe	f	F1			F2			øg	øg	f	L	N	SW	Z
15	165	11.2	77	16.0	88.9	15	1.6	F04	42	Ø6x4	F05	50	Ø7x4	35.1	35.1	1.6	108.3	9.9	11	4
20	165	11.2	83	16.0	98.6	20	1.6	F04	42	Ø6x4	F05	50	Ø7x4	42.9	42.9	1.6	117.3	9.9	11	4
25	165	11.2	96	16.0	108.0	25	1.6	F04	42	Ø6x4	F05	50	Ø7x4	50.8	50.8	1.6	127.1	10.3	11	4
32	215	12.7	100	16.0	117.3	32	1.6	F05	50	Ø7x4	F07	70	Ø9x4	63.5	63.5	1.6	139.7	12.9	14	4
40	263	14.3	127	16.0	127.0	38	1.6	F07	70	Ø9x4	F10	102	Ø11x4	73.2	73.2	1.6	165.1	19.0	17	4
50	263	15.9	134	19.0	152.4	50	1.6	F07	70	Ø9x4	F10	102	Ø11x4	91.9	91.9	1.6	178.3	19.0	17	4
65	263	17.6	167	19.0	177.8	65	1.6	F07	70	Ø9x4	F10	102	Ø11x4	104.6	104.6	1.6	190.0	19.0	17	4
80	365	19.0	176	19.0	190.5	80	1.6	F10	102	Ø11x4	F12	125	ø14x4	127.0	127.0	1.6	203.5	23.0	22	4
100	365	23.9	192	19.0	228.6	100	1.6	F10	102	Ø11x4	F12	125	ø14x4	157.2	157.2	1.6	228.6	23.0	22	8



Weight - Hand lever	
DN	[kg]
15	0.014
20	0.014
25	0.200
32	0.200
40	0.372
50	0.372
65	0.716
80	0.874
100	0.874

Order data - GEMÜ 751 - pneumatically operated

1 Type	Code
Ball valve with pneumatic actuator	751

2 Nominal size	Code
DN 15 - 100	15 - 100

2 Body configuration	Code
Straight through (2/2-way)	D

4 Connection	Code
Flanges ANSI class 125/150 RF, up to DN 100 length EN 558, series 3 ASME/ANSI B16.10 Tab. 1, columns 8 and 9 from DN 125 length EN 558, series 12 ASME/ANSI B16.10 Tab. 1, column 3	46

5 Valve body material	Code
Body: CF8M / 1.4408 Ball: SS316, for DN 8 - 15, CF8M for DN 20 - 100	37

6 Seal material *	Code
PTFE	5
* Spindle seal in FPM (other materials on request)	

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

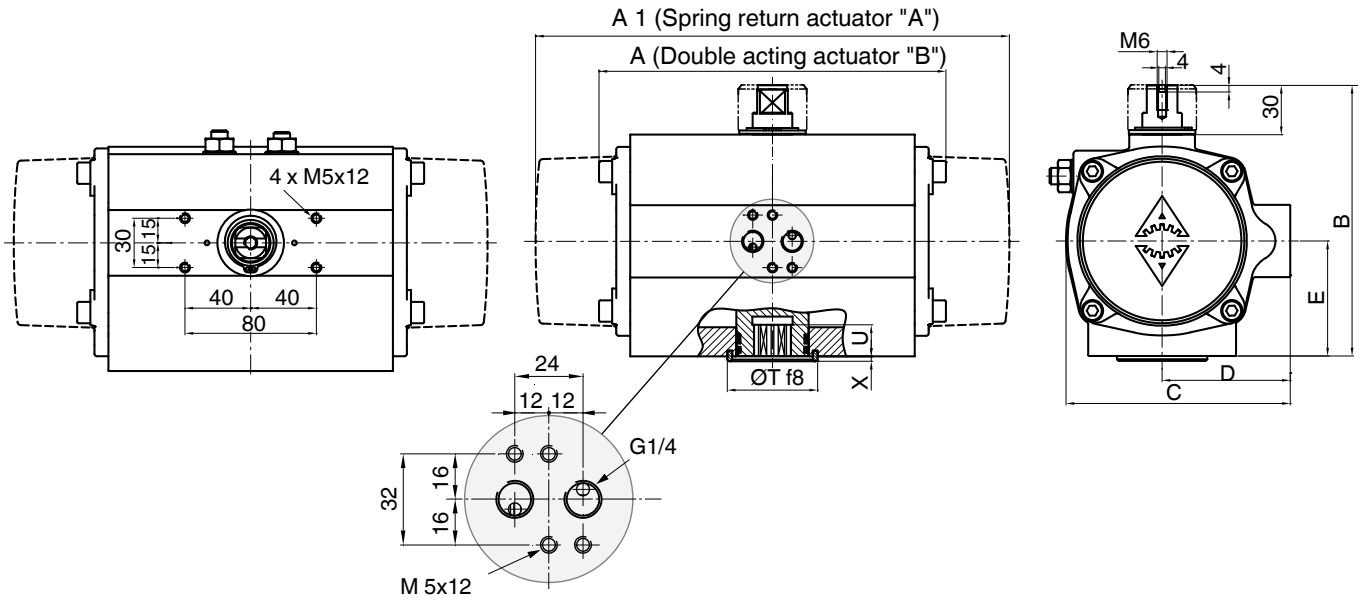
8 Actuator size		Code
DN	**Single acting SC**	
DN 15	SC0030U 6 F04NS11A	SU03KO0
DN 20	SC0030U 6 F04NS11A	SU03KO0
DN 25	SC0060U 6 F05F07NS14A	SU06KP0
DN 32	SC0060U 6 F05F07NS14A	SU06KP0
DN 40	SC0150U 6 F07F10NS17A	SU15KC0
DN 50	SC0150U 6 F07F10NS17A	SU15KC0
DN 65	SC0150U 6 F07F10NS17A	SU15KC0
DN 80	SC0220U 6 F07F10NS22A	SU22KD0
DN 100	SC0300U 6 F07F10NS22A	SU30KD0
	Double acting DR	
DN 15	DR0015U F05NS11A	DU01AW0
DN 20	DR0015U F05NS11A	DU01AW0
DN 25	DR0015U F05NS11A	DU01AW0
DN 32	DR0030U F05F07NS14A	DU03AP0
DN 40	DR0060U F05F07NS17A	DU06AC0
DN 50	DR0060U F05F07NS17A	DU06AC0
DN 65	DR0060U F05F07NS17A	DU06AC0
DN 80	DR0150U F07F10NS22A	DU15AD0
DN 100	DR0150U F07F10NS22A	DU15AD0
	Single acting ASR	
DN 15	ASR0040U S14 F05YS14/S11A	AU04KB0
DN 20	ASR0040U S14 F05YS14/S11A	AU04KB0
DN 25	ASR0040U S14 F05YS14/S11A	AU04KB0
DN 32	ASR0080U S14 F05F07YS17/S14A	AU08KC0
DN 40	ASR0200U S14 F07F10YS17/S14A	AU20KE0
DN 50	ASR0200U S14 F07F10YS17/S14A	AU20KE0
DN 65	ASR0200U S14 F07F10YS17/S14A	AU20KE0
DN 80	ASR0300U S14 F07F10YS22A	AU30KD0
DN 100	ASR0300U S14 F07F10YS22A	AU30KD0
	Double acting ADA	
DN 15	ADA0020U F05YS11A	BU02AB0
DN 20	ADA0020U F05YS11A	BU02AB0
DN 25	ADA0020U F05YS11A	BU02AB0
DN 32	ADA0080U F05F07YS17/S14A	BU08AC0
DN 40	ADA0200U F07F10YS17/S14A	BU20AE0
DN 50	ADA0200U F07F10YS17/S14A	BU20AE0
DN 65	ADA0200U F07F10YS17/S14A	BU20AE0
DN 80	ADA0200U F07F10YS17/S14A	BU20AE0
DN 100	ADA0200U F07F10YS17/S14A	BU20AE0

9 K number	Code
Thermal separation by mounting kit (galvanised steel), coupling (1.4305)	5222
Thermal separation by mounting kit Mounting kit and mounting parts in stainless steel	5227
For operating temperatures > 100° C a mounting flange with an adapter is required between ball valve and actuator!	

Order example	1	2	3	4	5	6	7	8	9
Code	**751**	**15**	**D**	**46**	**37**	**5**	**1**	**SU03KO0**	**5222**

Actuator dimensions - GEMÜ 751 - pneumatically operated

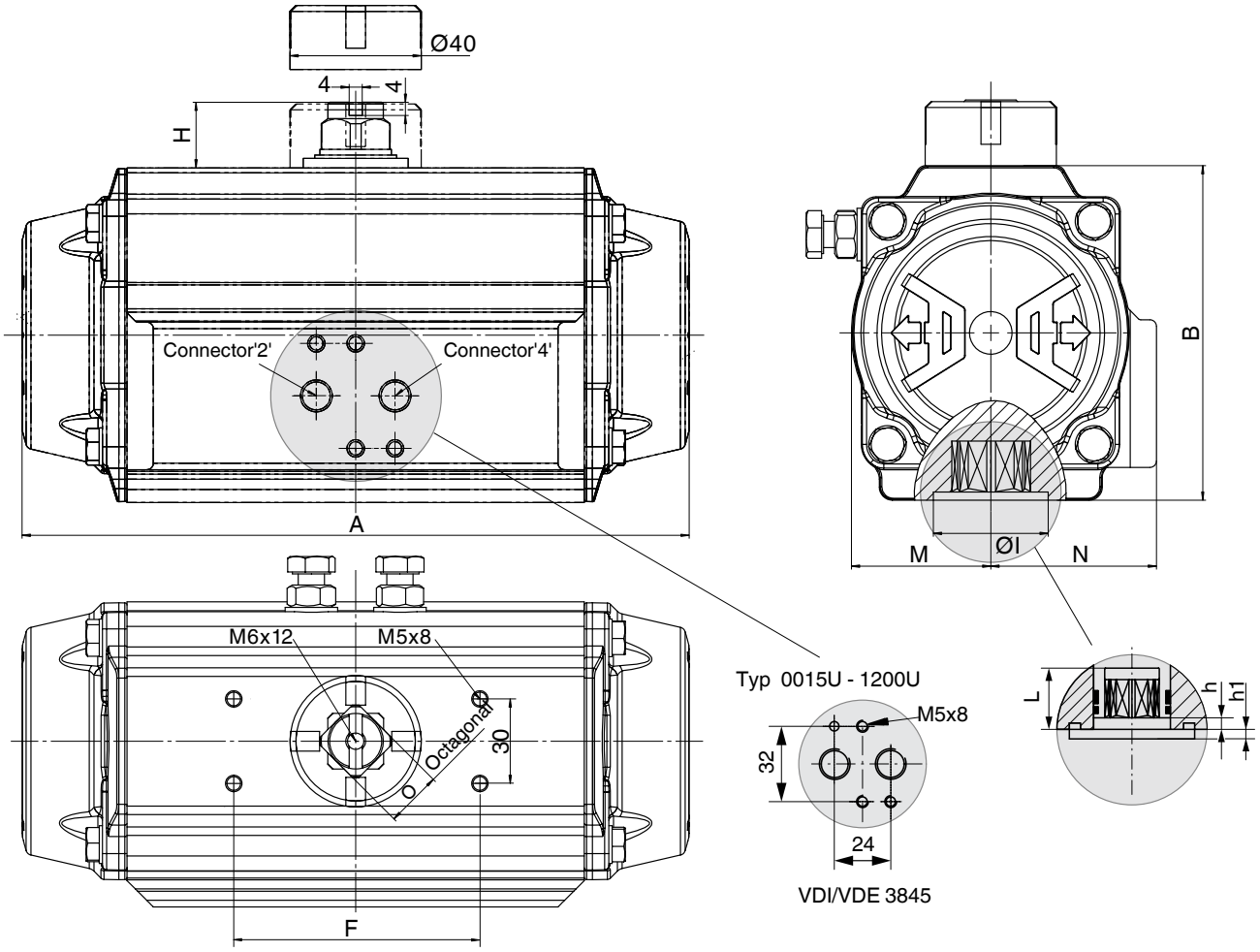
Actuator ADA/ASR [mm]



ADA/ASR	0020U			0040U		0080U	0130U	0200U	0300U	0500U
ISO 5211	F03/F05	F04	F05	F04	F05	F05	F05	F07	F07	F10
Octagonal	9	14		14		17	17	17	22	22
Air connector	G¼			G¼		G¼	G¼	G¼	G¼	G¼
A	145			158		177	196	225	273	304
A1	163			195		217	258	299	348,5	397
B	96			115		137	147	165	182	199
C	76			91		111	122	135. 5	152.5	173
D	48			56		66	71	78	86	96
E	34			45		55	60	70	80	85
ØT	25	35		35		55	55	55	70	70
U	10	12		12		19	22	23	24	32
Weight [kg]										
ADA	1.4			2.1		3.0	3.8	5.6	8.5	11.2
ASR	1.5			2.3		3.7	4.8	7.3	10.8	15.4

Actuator dimensions - GEMÜ 751 - pneumatically operated

Actuator DR/SC [mm]



Stroke limiter on request

Type	0015U	0030U	0060U	0100U	0150U	0220U	0300U	0450U
ISO flange	F04	F04/05	F05/07	F05/07	F07/10	F07/10	F07/10	F10/12
Octagonal	11	14	14	17	17	22	22	27
Air connector	G 1/8	G 1/8	G 1/8	G 1/8	G 1/4	G 1/4	G 1/4	G 1/4
A	136.0	153.5	203.5	241.0	259.0	304.0	333.0	394.5
B	69.0	85.0	102.0	115.0	127.0	145.0	157.0	177.0
H	20	20	20	20	20	30	30	30
Ø I	30	35	35	40	55	55	55	70
M	29.0	36.0	42.5	49.5	55.5	64.0	69.5	80.0
N	43.0	48.5	50.5	56.5	63.0	72.0	77.0	86.0
O	11	11	17	17	17	27	27	27
h	0.5	0.5	0.5	1.5	1.5	1.5	1.5	1.5
h1	1.5	2.0	2.0	1.5	2.0	2.0	2.0	3.0
L	11	11	19	19	19	19	25	32
Weight [kg]								
DR	1.0	1.6	2.7	3.7	5.2	8.0	9.8	14.0
SC	1.1	1.7	3.1	4.3	6.1	9.3	12.0	17.0

Technical data - GEMÜ 728 - motorized

Travel range	
Nominal travel range	90°
Max. travel range	93°
Setting range limit switch Min.	-2 to 12°
Setting range limit switch Max.	76 to 91°

Manual override
With Allen key SW3 for actuator version 1015, 2015, 3035
With hand crank for actuator version 2070, 4100, 4200

Permissible temperatures	
Ambient temperature	-10 to +60 °C
Storage temperature	-20 to +60 °C

Weight	
Actuator version 1015	1.0 kg
Actuator version 2015	1.2 kg
Actuator version 3035	2.4 kg
Actuator version 2070	4.6 kg
Actuator version 4100, 4200	11.0 kg

Protection class to EN 60529
IP 65

Actuator materials

Operator version	1015	2015, 3035	2070	4100, 4200
Housing base	PP (30 % glass reinforced)	PP (30 % glass reinforced)	ABS	Aluminium
Housing cover	PPO (10 % glass reinforced)	P (30 % glass reinforced)	ABS	Aluminium
Optical position indicator	PPR natural	PPR natural	PPR natural	PMMA

Correlation Actuator / Ball valve type 728

Ball valve				Operator version					
DN	Flange type	Torque [Nm]	SW	1015 15 Nm	2015 15 Nm	3035 35 Nm	2070 70 Nm	4100 100 Nm	4200 200 Nm
15	F05	10	11	X	X	-	-	-	-
20	F05	14	11	X	X	-	-	-	-
25	F05	17	11	-	-	X	X*	-	-
32	F07	23	14	-	-	X*	X	-	-
40	F10	40	17	-	-	-	X*	X	-
50	F10	44	17	-	-	-	X*	X	-
65	F10	59	17	-	-	-	X*	X	-
80	F12	94	22	-	-	-	-	-	X*
100	F12	101	22	-	-	-	-	-	X*

* Adapter required

Note: For connection and wiring diagrams for motorized GEMÜ actuators see datasheet

Datasheet GEMÜ 9428: Actuator version code 1006, 1015, 2006, 2015, 3035
Datasheet GEMÜ 9468: Actuator version code 2070, 4100, 4200, 6400

Technical data - GEMÜ 728 - motorized

Correlation Actuator version (torque) / Voltage-frequency

Voltage/Frequency		B1 12V DC	C1 24V DC	B4 12V AC	C4 24V AC	G4 120V AC	L4 230V AC	O4 100-250V AC
Actuator version	1015 (15 Nm)	X	X	-	-	-	-	-
	2015 (15 Nm)	-	-	X	X	-	-	X
	3035 (35 Nm)	-	X	-	X	-	-	X
	2070 (70 Nm)	-	X	-	X	X	X	-
	4100 (100 Nm)	-	X	-	X	X	X	-
	4200 (200 Nm)	-	X	-	X	X	X	-

Correlation Actuator version (torque) / Functional module

Functional module		A0	AE	AP	E2	E1	00	0E	0P
Actuator version	1015 (15 Nm)	X	X	-	-	-	-	-	-
	2015 (15 Nm)	X	X	-	-	-	-	-	-
	3035 (35 Nm)	X	X	-	-	-	-	-	-
	2070 (70 Nm)	X	X	X	X	X	X	X	X
	4100 (100 Nm)	X	X	X	X	X	X	X	X
	4200 (200 Nm)	X	X	X	X	X	X	X	X

Power consumption [W]

Voltage/ Frequency		B1 12 V DC	C1 24 V DC		B4 12 V AC	C4 24 V AC		G4 120 V AC		L4 230 V AC		O4 100-250 V AC
Functional module		A0,AE,AP E1,E2	A0,AE,AP E1,E2	00,0E 0P	A0,AE,AP E1,E2	A0,AE,AP E1,E2	00,0E 0P	A0,AE,AP E1,E2	00,0E 0P	A0,AE,AP E1,E2	00,0E 0P	A0,AE
Actuator version	1015	30	30	-	-	-	-	-	-	-	-	-
	2015	-	-	-	30	30	-	-	-	-	-	50
	3035	-	30	-	-	30	-	-	-	-	-	50
	2070	-	96	63	-	-	63	160	-	161	-	-
	4100	-	96	105	-	-	140	160	105	161	130	-
	4200	-	96	90	-	-	110	160	90	161	105	-

Electrical connection

Operator version	1015, 2015, 3035		2070, 4100, 4200			
Supply voltages	12 V / 24 V	100 - 250 V	24 V, 120 V, 230 V			
Functional module	A0,AE		A0,AE, AP	00, 0E, 0P	E1	E2
Control input voltage	Motor voltage	20 - 250 V AC/DC	24 - 250 V AC/DC	Motor voltage	0...10 V	-
Control input current	-	typ. 1 mA	typ. 1 mA			4...20 mA
Duty cycle	Continuous duty	40% duty	Continuous duty			
Connection	Cable connection PG 13.5	Hirschmann plug type N6RFFS11	Flange plug Binder 692/693			
Cable diameter	7.5 ... 12.5 mm	7 ... 9 mm	max. 8 mm			
Max. cross section of wire	1.5 mm²	1.5 mm²	0.75 mm²			
Recommended connection cable	5x1 mm² Ölflex®	1 connector (standard): 7x1 mm² Ölflex®	7x1 mm² Ölflex®			
Overload protection	Motor protective system by customer	Integrated stall and overload protection plus excess current release T 1A 5x20 mm	Motor protective system by customer			

Order data - GEMÜ 728 - motorized

1 Type	Code
Ball valve with motorized actuator	728

2 Nominal size	Code
DN 15 - 100	15 - 100

2 Body configuration	Code
Straight through (2/2-way)	D

4 Connection	Code
Flanges ANSI class 125/150 RF, up to DN 100 length EN 558, series 3 ASME/ANSI B16.10 Tab. 1, columns 8 and 9 from DN 125 length EN 558, series 12 ASME/ANSI B16.10 Tab. 1, column 3	46

5 Valve body material	Code
Body: CF8M / 1.4408 Ball: SS316, for DN 8 - 15, CF8M for DN 20 - 100	37

6 Seal material *	Code
PTFE	5
* Spindle seal in FPM (other materials on request)	

7 Voltage / Frequency	Code
12 V DC	B1
12 V AC 50/60Hz	B4
24 V DC	C1
24 V AC 50/60Hz	C4
120 V AC 50/60Hz	G4
100-250 V AC 50/60Hz	O4
230 V AC 50/60Hz	L4

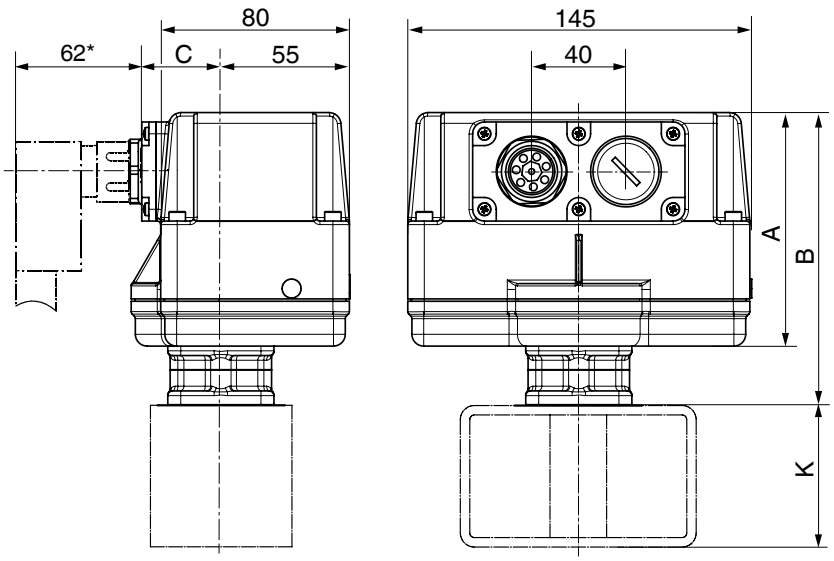
8 Functional module	Code
OPEN / CLOSE control with relay, not reversible	00
OPEN / CLOSE control with 2 additional potential-free limit switches, with relay, not reversible	0E
OPEN / CLOSE control with potentiometer output, with relay, not reversible	0P
Standard OPEN/CLOSE control	A0
OPEN/CLOSE control with 2 additional potential-free limit switches	AE
OPEN / CLOSE control with potentiometer output	AP
Control module for external set value 0-10 V DC	E1
Control module for external set value 4-20 mA	E2

9 Actuator version	Code
DN 8 - 25, (torque 15 Nm) operating time 11 sec; supply voltage B1/C1	1015
DN 8 - 25, (torque 15 Nm) operating time 11 sec; supply voltage B4/C4/O4	2015
DN 25 - 32, (torque 35 Nm) operating time 15 sec; supply voltage C1/O4	3035
DN 32 - 65, (torque 70 Nm) operating time 15 sec; supply voltage C1/C4/G4/L4	2070
DN 80, (torque 100 Nm) operating time 20 sec; supply voltage C1/C4/G4/L4	4100
DN 100, (torque 200 Nm) operating time 16 sec; supply voltage C1/C4/G4/L4	4200

Order example	1	2	3	4	5	6	7	8	9
Code	728	25	D	46	37	5	C1	A0	1015

Actuator dimensions - GEMÜ 728 motorized [mm]

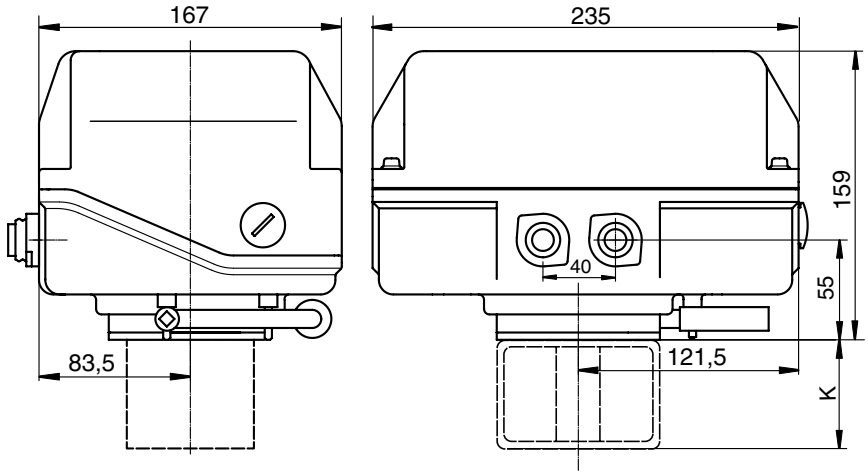
Actuator version 1015 / 2015



* Standard with
supply voltage code O4

DN	Actuator version	Voltages	ISO 5211	SW square drive socket	A	B	C	K
8 - 25	1015	12V, 24V	F04 / F05	9	69	94	34	60
	2015	100V - 250V			99	124	38	60

Actuator version 2070

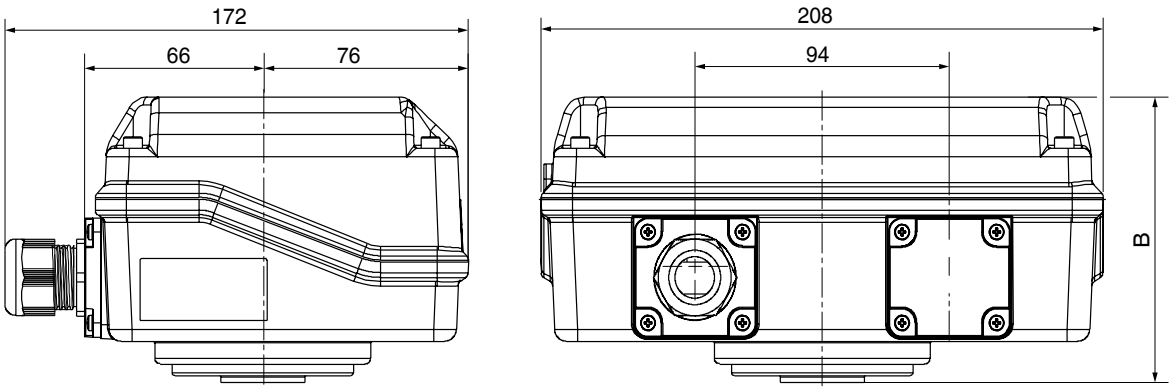


DN	Actuator version	Voltages	ISO 5211	SW square drive socket	K
25, 32	2070	24 V DC	F05*	11	56
40, 50		24,120, 230 V AC 50/60Hz	F07	14	-
65			F10*	17	76

* with mounting bracket

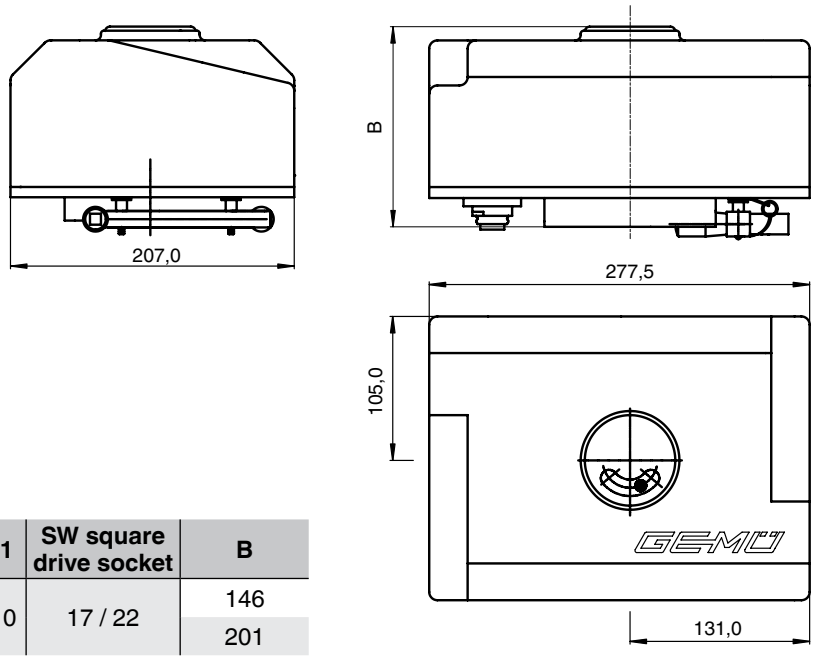
Actuator dimensions - GEMÜ 728 - motorized [mm]

Actuator version 3035



Voltages	B
24 V	100.5
100 V - 250 V	124.5

Actuator version 4100 / 4200



Functional module	ISO 5211	SW square drive socket	B
00, 0E, 0P	F07 + F10	17 / 22	146
A0, AE, AP, E2, E1			201

For further ball valves and other products, please see our Product Range catalogue and Price List.
Contact GEMÜ.

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