

# GEMÜ®

## Ball Valve, Stainless steel Multi-port

### Construction

GEMÜ 711, 728 and 751 are 2/2-way stainless steel ball valves with top flange EN ISO 5211 in sizes 1/4" to 2" (DN 8 to DN 50). 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 as 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 on request



\*see information on working medium on page 2

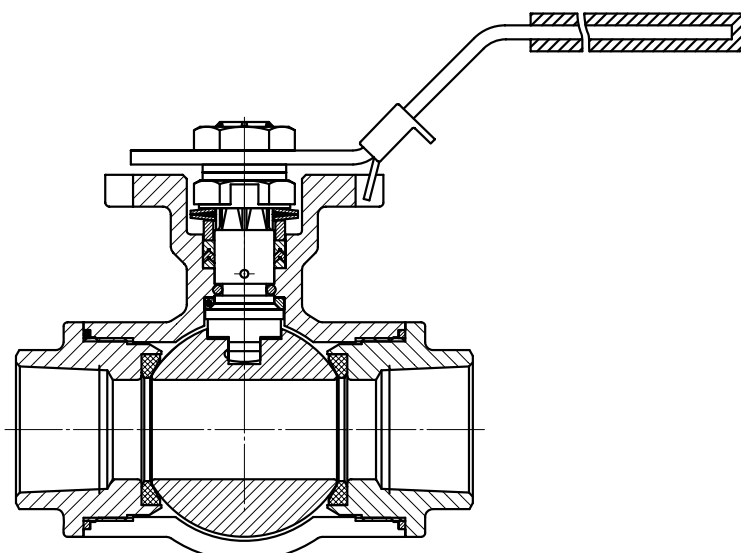


GEMÜ 711



GEMÜ 751

### Sectional drawing



GEMÜ 728

# GEMÜ®

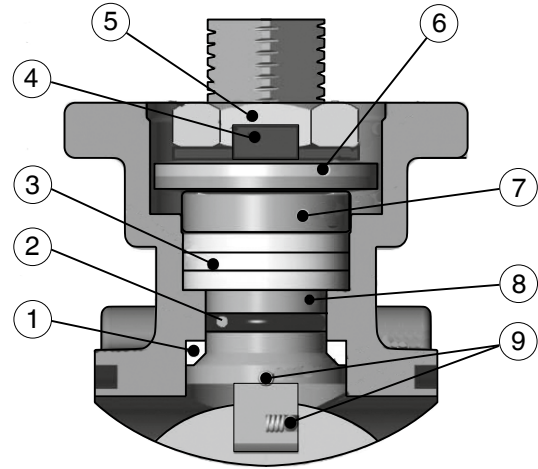
## 711, 728, 751

## Product description

### 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 ③, 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.



### Part list

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

### Port positions

	T - port (Code T)		L - port (Code L)
	End position „Closed“	End position „Open“	
As supplied			
Optional port positions, can be user adjusted			

## 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

### Material

Valve body material CF8M 1.4408 investment casting

Ball material 1.4401 (316)

Seat material PTFE

### Control medium (only GEMÜ 751)

Control pressure 6 - 8 bar

Max. perm. temperature of control medium 60 °C

DN	NPS	Torque [Nm]	Weight* [kg]	Kv values		
				[m <sup>3</sup> /h]		
8	1/4"	8	0.66	6.9	5.2	6.0
10	3/8"	8	0.64	6.9	5.2	6.0
15	1/2"	10	0.85	11.2	6.9	9.5
20	3/4"	13	1.46	16.3	9.5	12.9
25	1"	23	2.18	29.2	18.9	29.2
32	1 1/4"	42	3.28	46.4	35.3	40.4
40	1 1/2"	51	5.24	72.2	46.4	60.2
50	2"	59	9.48	135.9	83.4	114.4

\* without actuator

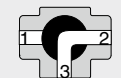
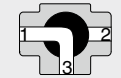
**T - port**  
(Code T)



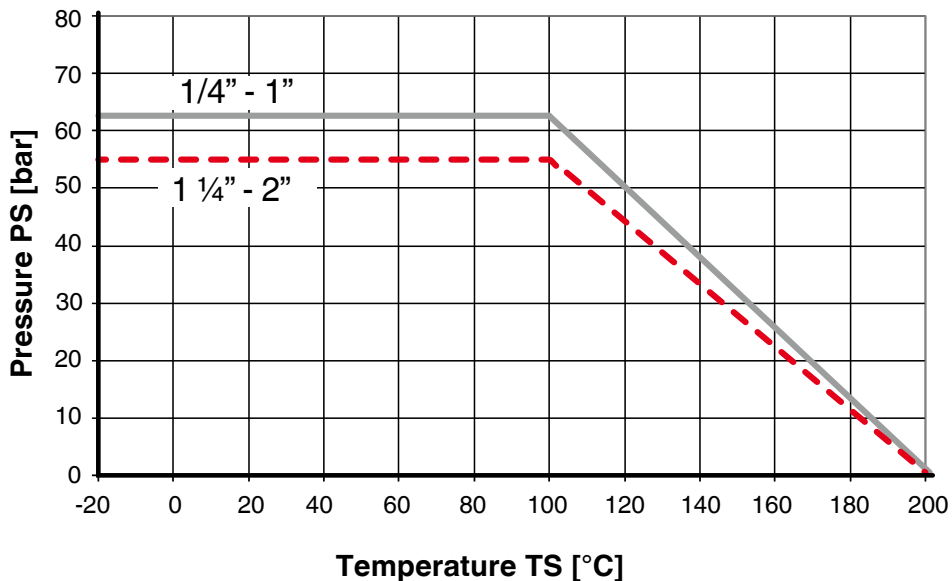
**T - port**  
(Code T)



**L - port**  
(Code L)



## Pressure-temperature diagram



## Order data - GEMÜ 711 - manually operated

Type	Code
Ball valve with hand lever	711

Connection	Code
Threaded sockets DIN ISO 228	1

Nominal size	Code
DN 8      1/4"	8
DN 10     3/8"	10
DN 15     1/2"	15
DN 20     3/4"	20
DN 25     1"	25
DN 32     1 1/4"	32
DN 40     1 1/2"	40
DN 50     2"	50

Valve body material	Code
1.4408 (316) body (investment cast)	37
1.4401 (316) ball	

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

Body configuration	Code
Straight through (2/2-way), see separate data sheet	
Multi-port body (3/2-way)	M

Ball configuration (only with body type M)	Code
T-port	T
L-port	L

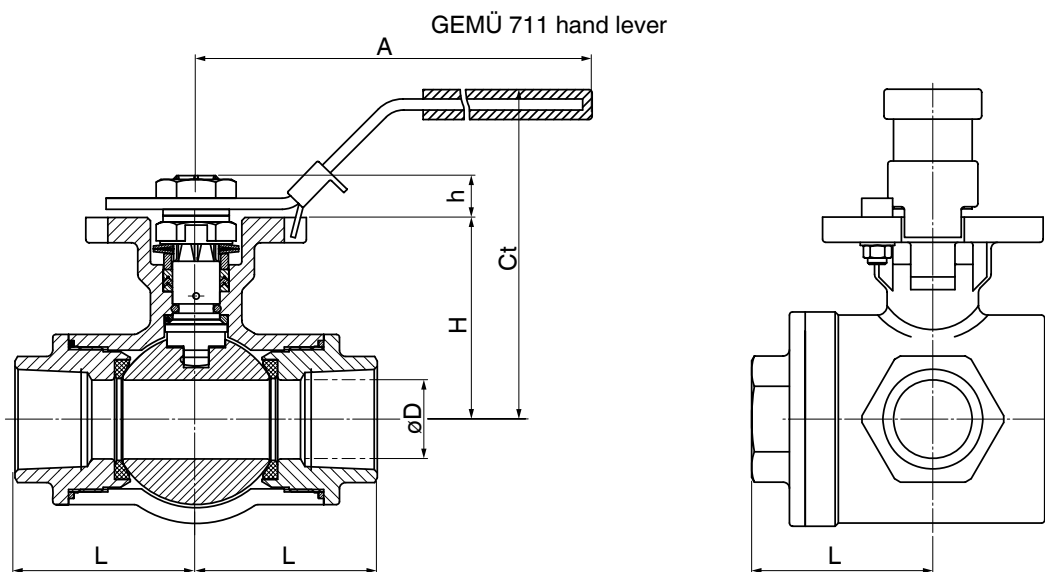
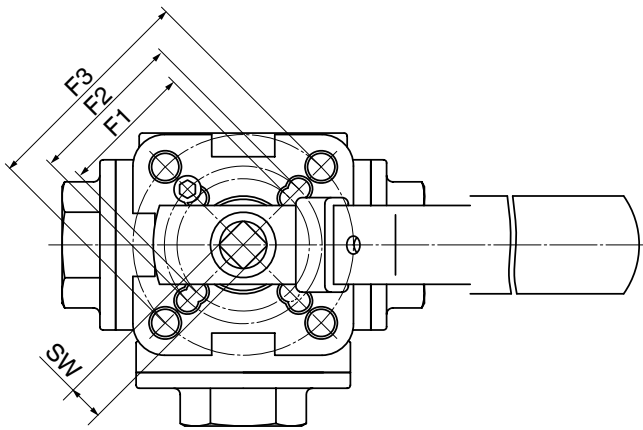
Control function	Code
Manually operated with lockable hand lever	L

Order example	711	15	D	1	37	5	T	L
Type (code)	711							
Nominal size (code)		15						
Body configuration (code)			D					
Connection (code)				1				
Valve body material (code)					37			
Seat material (code)						5		
Ball configuration (code)							T	
Control function (code)								L

**Note:** Wearing parts kit - order code: SP.K715-DN... (dependent on nominal size) contains replacement parts for the spindle seal and seat: Conical spindle seal (PTFE), O-ring (FPM), V-ring spindle packing (PTFE), seat and flange seals (PTFE)

## Body dimensions [mm]

										GEMÜ 711	
DN	NPS	Top flange								Hand lever	
		F1	F2	F3	SW	H	h	L	ØD	A	Ct
8	1/4"	F03	F04	-	9	38.1	9.0	36.0	11.0	140	75
10	3/8"	F03	F04	-	9	38.1	9.0	36.0	12.5	140	75
15	1/2"	F03	F04	F05	9	43.9	9.0	41.5	15.0	151	88
20	3/4"	F04	F05	-	11	54.2	10.5	49.5	20.0	166	93
25	1"	F04	F05	F07	11	64.1	10.5	56.0	25.0	183	109
32	1 1/4"	F05	F07	-	14	78.5	13.5	62.5	32.0	216	128
40	1 1/2"	F07	F10	-	17	94.9	18.5	74.5	38.0	263	154
50	2"	F07	F10	-	17	101.6	19.5	87.0	50.0	313	161



## Order data - GEMÜ 751 - pneumatically operated

Type	Code
Ball valve with pneumatic actuator	751

Valve body material	Code
1.4408 (316) body (investment cast)	37
1.4401 (316) ball	

Nominal	Code
DN 8 1/4"	8
DN 10 3/8"	10
DN 15 1/2"	15
DN 20 3/4"	20
DN 25 1"	25
DN 32 1 1/4"	32
DN 40 1 1/2"	40
DN 50 2"	50

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

Ball configuration (only with body type M)	Code
T-port	T
L-port	L

Body configuration	Code
Straight through (2/2-way), see separate data sheet	M
Multi-port body (3/2-way)	

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

Connection	Code
Threaded sockets DIN ISO 228	1

K number	Code
Mounting flange with adapter	5222
For operating temperatures > 100° C a mounting flange with an adapter is required between ball valve and actuator! See data sheet: -Accessories for quarter turn valves-	

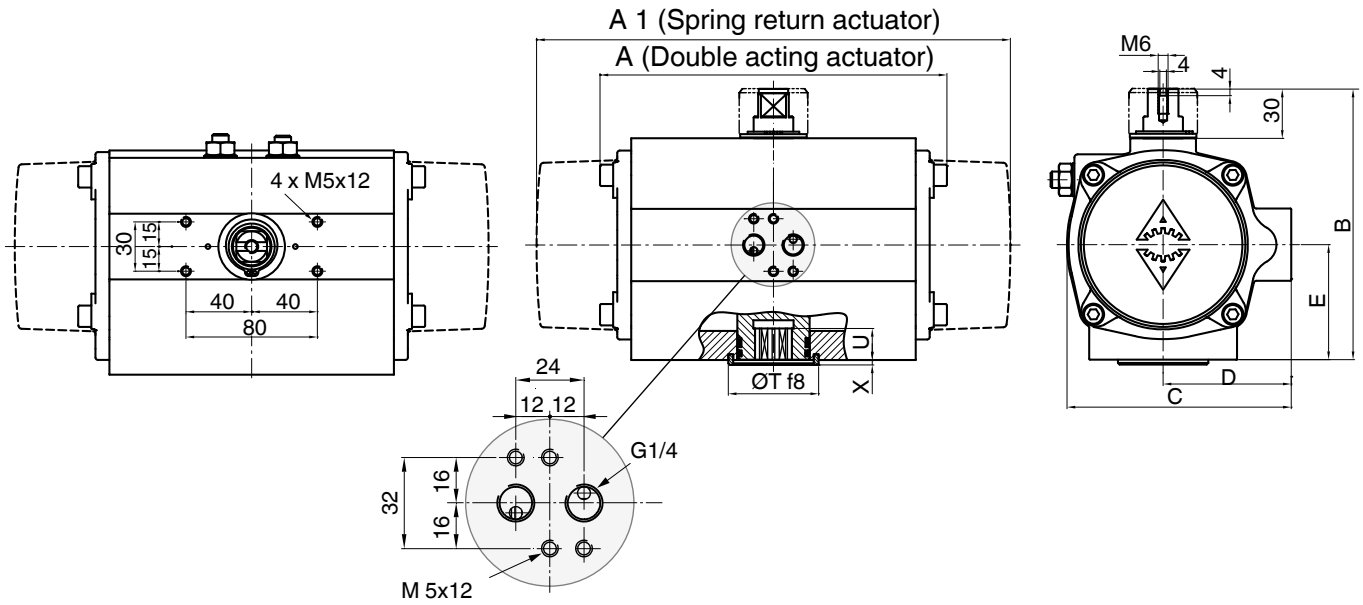
Actuator size			Code	Actuator size			Code
DN	Single acting SC			DN	Single acting ASR		
DN 8	751 8M 137 51		SU03KO0	DN 8	751 8M 137 51		AU04KB0
DN 10	751 10M 137 51		SU03KO0	DN 10	751 10M 137 51		AU04KB0
DN 15	751 15M 137 51		SU03KO0	DN 15	751 15M 137 51		AU04KB0
DN 20	751 20M 137 51		SU06KP0	DN 20	751 20M 137 51		AU04KB0
DN 25	751 25M 137 51		SU06KP0	DN 25	751 25M 137 51		AU08KC0
DN 32	751 32M 137 51		SU10KC0	DN 32	751 32M 137 51		AU13KC0
DN 40	751 40M 137 51		SU15KC0	DN 40	751 40M 137 51		AU20KE0
DN 50	751 50M 137 51		SU15KC0	DN 50	751 50M 137 51		AU20KE0
Double acting DR				Double acting ADA			
DN 8	751 8M 137 53		DU01AO0	DN 8	751 8M 137 53		BU02AN0
DN 10	751 10M 137 53		DU01AO0	DN 10	751 10M 137 53		BU02AN0
DN 15	751 15M 137 53		DU01AO0	DN 15	751 15M 137 53		BU02AN0
DN 20	751 20M 137 53		DU01AO0	DN 20	751 20M 137 53		BU02AA0
DN 25	751 25M 137 53		DU03AP0	DN 25	751 25M 137 53		BU04AB0
DN 32	751 32M 137 53		DU06AP0	DN 32	751 32M 137 53		BU08AC0
DN 40	751 40M 137 53		DU06AP0	DN 40	751 40M 137 53		BU08AC0
DN 50	751 50M 137 53		DU06AC0	DN 50	751 50M 137 53		BU08AC0

Order example	751	15	D	1	37	5	L	1	SU03KO0	5222
Type (code)	751									
Nominal size (code)		15								
Body configuration (code)			D							
Connection (code)				1						
Valve body material (code)					37					
Seat material (code)						5				
Ball configuration (code)							L			
Control function (code)								1		
Actuator size (code)									SU03KO0	
K number (code)										5222

**Note:** Wearing parts kit - order code: SP.K715-DN... (dependent on nominal size) contains replacement parts for the spindle seal and seat: Conical spindle seal (PTFE), O-ring (FPM), V-ring spindle packing (PTFE), seat and flange seals (PTFE).

## Actuator dimensions - GEMÜ 751 - pneumatically operated

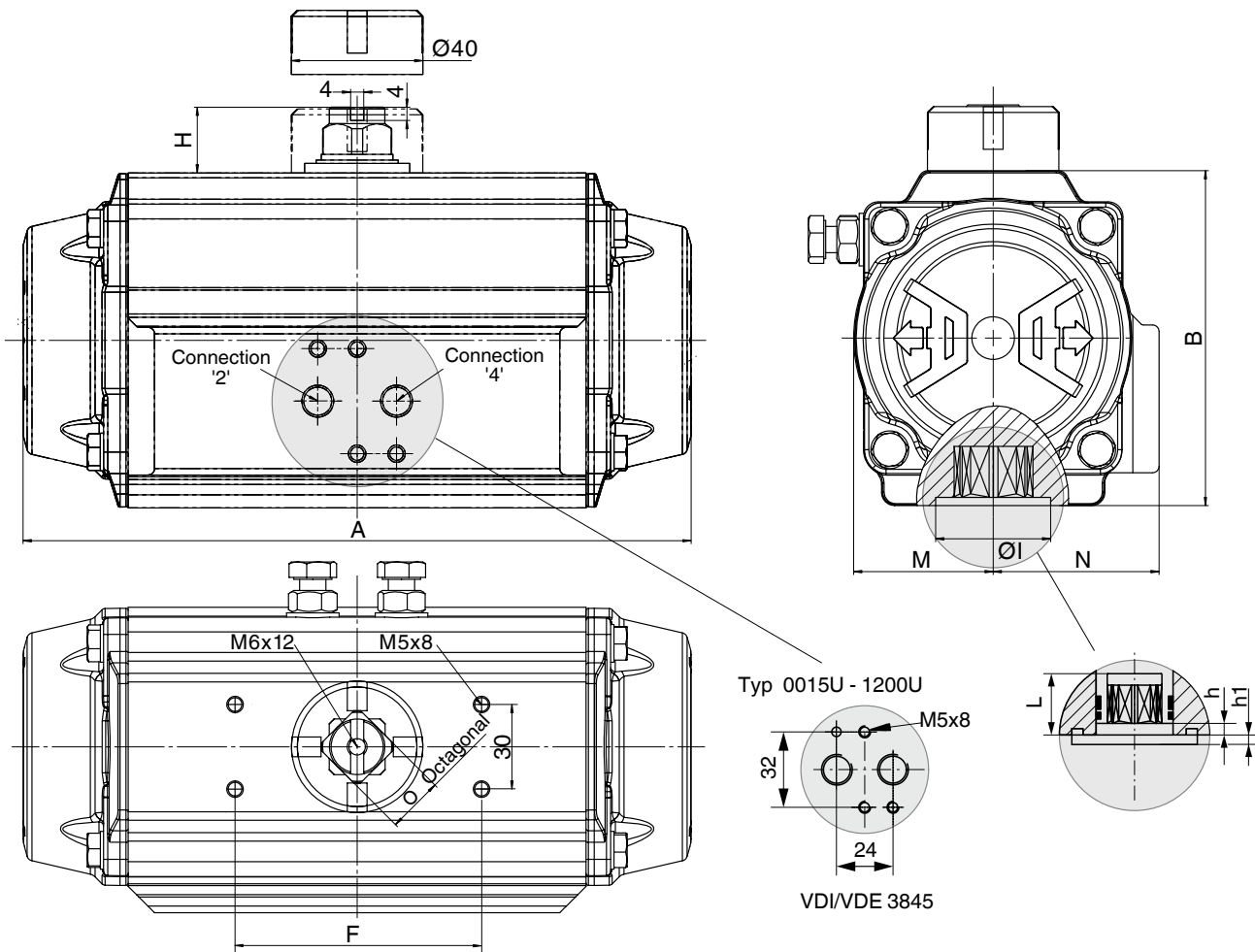
### Actuator ADA/ASR [mm]



ADA/ASR	0020U			0040U		0080U	0130U	0200U	0300U	0500U
	F03/F05	F04	F05	F04	F05	F05	F05	F07	F07	F10
ISO 5211	F03/F05	F04	F05	F04	F05	F05	F05	F07	F07	F10
Octagonal	9	14		14		17	17	17	22	22
Air connector		G1/4		G1/4		G1/4	G1/4	G1/4	G1/4	G1/4
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
<b>Weight [kg]</b>										
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

Typ	0015U	0030U	0060U	0100U	0150U	0220U	0300U	0450U
<b>ISO Flange</b>	F04	F04/05	F05/07	F05/07	F07/10	F07/10	F07/10	F10/12
<b>Octagonal</b>	11	14	14	17	17	22	22	27
<b>Air Connector</b>	G 1/8	G 1/8	G 1/8	G 1/8	G 1/4	G 1/4	G 1/4	G 1/4
<b>A</b>	136.0	153.5	203.5	241.0	259.0	304.0	333.0	394.5
<b>B</b>	69.0	85.0	102.0	115.0	127.0	145.0	157.0	177.0
<b>H</b>	20	20	20	20	20	30	30	30
<b>Ø I</b>	30	35	35	40	55	55	55	70
<b>M</b>	29.0	36.0	42.5	49.5	55.5	64.0	69.5	80.0
<b>N</b>	43.0	48.5	50.5	56.5	63.0	72.0	77.0	86.0
<b>O</b>	11	11	17	17	17	27	27	27
<b>h</b>	0.5	0.5	0.5	1.5	1.5	1.5	1.5	1.5
<b>h1</b>	1.5	2.0	2.0	1.5	2.0	2.0	2.0	3.0
<b>L</b>	11	11	19	19	19	19	25	32
<b>Weight [kg]</b>								
<b>DR</b>	1.0	1.6	2.7	3.8	5.4	8.4	10.2	14.5
<b>SC</b>	1.1	1.7	3.2	4.4	6.5	9.8	12.6	18.1



## 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

### 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

### Protection class to EN 60529

IP 65

### Actuator materials

Actuator version	1015	2015, 3035	2070
Housing base	PP (30% glass reinforced)	PP (30% glass reinforced)	ABS
Housing cover	PPO (10% glass reinforced)	PP (30% glass reinforced)	ABS
Optical position indicator	PPR natural	PPR natural	PPR natural

### Correlation Actuator / Ball valve type 728

Ball valve			Actuator version			
DN	Flange type	SW	1015 15 Nm	2015 15 Nm	3035 35 Nm	2070 70 Nm
8	F04	9	F04/F05	F04/F05	-	-
10	F04	9	F04/F05	F04/F05	-	-
15	F04	9	F04/F05	F04/F05	-	-
20	F05	11	F04/F05	F04/F05	-	-
25	F05	11	-	-	F05	F07
32	F07	14	-	-	-	F07
40	F10	17	-	-	-	F07
50	F10	17	-	-	-	F07

**Note: For connection and wiring diagrams for motorized GEMÜ actuators see data sheet**

Data sheet GEMÜ 9428: Actuator version code 1015, 2015, 3035

Data sheet GEMÜ 9468: Actuator version code 2070

## Technical data - GEMÜ 728 - motorized

### Correlation Actuator version (torque) / Voltage-frequency

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
Actuator version	1015 ( 15 Nm)	X	X	-	-	-	-	-
	2015 ( 15 Nm)	-	-	X	X	-	-	X
	3035 ( 35 Nm)	-	X	-	X	-	-	-
	2070 ( 70 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

### 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	00,0E 0P	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,AP E1,E2	00,0E 0P	A0,AE,AP E1,E2	00,0E 0P	A0,AE,AP E1,E2	00,0E 0P
Actuator version	1015	24	-	24	-	-	-	-	-	-	-	-	-	-	-
	2015	-	-	-	-	24	-	24	-	-	-	-	-	30	-
	3035	-	-	24	-	-	-	24	-	-	-	-	-	-	-
	2070	-	-	96	63	-	-	-	63	160	-	161	-	-	-

### Electrical connection

Actuator version	1015, 2015, 3035				2070				
	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 to 10 V	-
Control input current	-		typ. 1 mA		typ. 1 mA				0/4 to 20 mA
Rating	Continuously rated		rated 40%		Continuously rated				
Connection	Cable connection PG 13,5		Hirschmann plug type Typ 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 mm <sup>2</sup>		1,5 mm <sup>2</sup>		0,75 mm <sup>2</sup>				
Recommended connection cable	5x1 mm <sup>2</sup>		1 connector (standard): 7x1 mm <sup>2</sup>		7x1 mm <sup>2</sup>				
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

Type	Code
Ball valve with pneumatic actuator	728

Nominal size		Code
DN 8	1/4"	8
DN 10	3/8"	10
DN 15	1/2"	15
DN 20	3/4"	20
DN 25	1"	25
DN 32	1 1/4"	32
DN 40	1 1/2"	40
DN 50	2"	50

Body configuration	Code
Straight through (2/2-way), see separate data sheet	
Multi-port body (3/2-way)	M

Connection	Code
Threaded sockets DIN ISO 228	1

Valve body material	Code
1.4408 (316), body (investment cast)	37
1.4401 (316), ball	

Seat material*	Code
PTFE	5

\* Spindle seal in FPM (other materials on request)

Ball configuration (only with body type M)	Code
T-port	T
L-port	L

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

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 0-10V DC	E1
Control module for external set value 0/4-20 mA	E2

Actuator version	Code
DN 8 - 20 (Torque 15 Nm) operating time 11 sec; supply voltage B1/C1	1015
DN 8 - 20 (Torque 15 Nm) operating time 11 sec; supply voltage B4/C4/O4	2015
DN 25 (Torque 35 Nm) operating time 15 sec; supply voltage C1,C4,O4	3035
DN 32 - 50 (Torque 70 Nm) operating time 15 sec; supply voltage C1/C4/G4/L4	2070

K number	Code
Mounting flange with adapter	5222

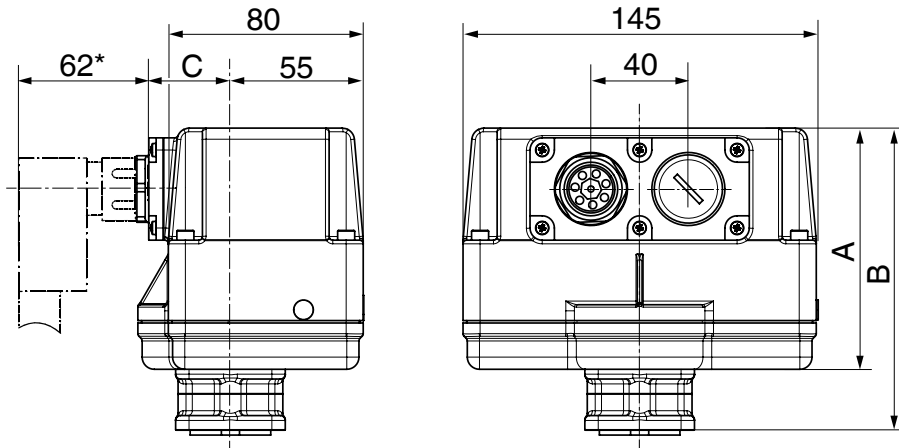
For operating temperatures > 100° C a mounting flange with an adapter is required between ball valve and actuator!  
See data sheet: -Accessories for quarter turn valves-

Order example	728	20	M	1	37	5	L	C1	A0	1015	-
Type	728										
Nominal size		20									
Body configuration (code)			M								
Connection (code)				1							
Valve body material (code)					37						
Seat material (code)						5					
Ball configuration (code)							L				
Voltage/Frequency (code)								C1			
Functional module (code)									A0		
Actuator version (code)										1015	
K number (code)											-

**Note:** Wearing parts kit - order code: SPK715-DN... (dependent on nominal size) contains replacement parts for the spindle seal and seat: Conical spindle seal (PTFE), O-ring (FPM), V-ring spindle packing (PTFE), seat and flange seals (PTFE)

**Actuator dimensions - GEMÜ 728 motorized [mm]**

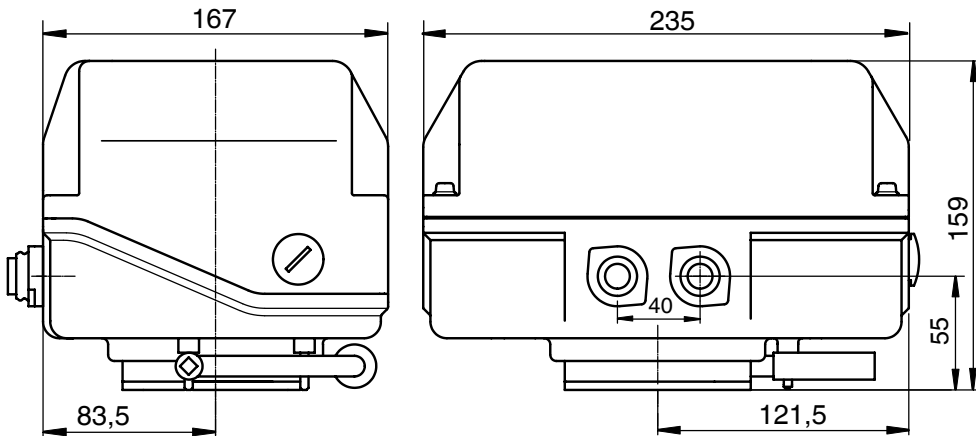
**Actuator version 1015 / 2015**



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

\* Standard with supply voltage code O4

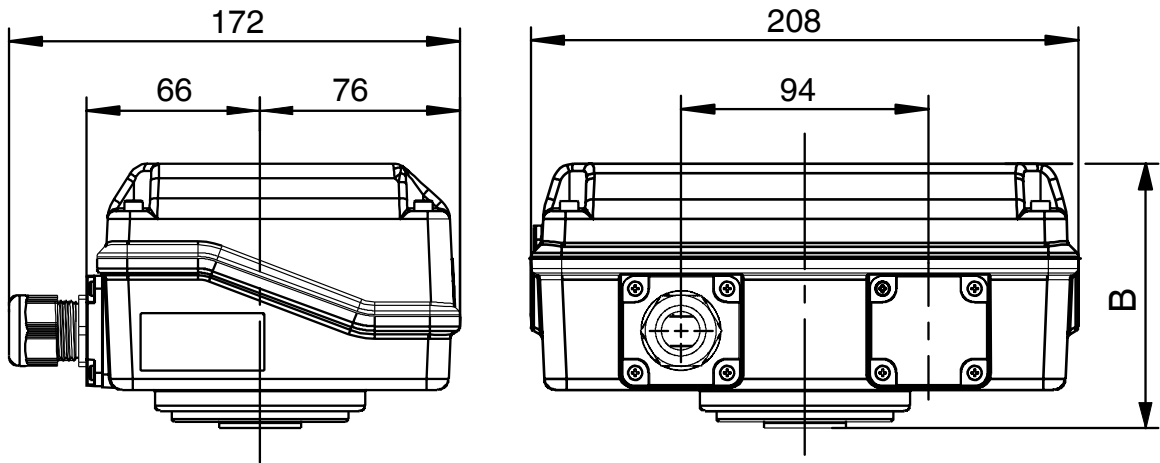
**Actuator version 2070**



DN	Voltages	ISO 5211	SW square drive socket
25	24 V DC	F07	11
32	24, 120, 230 V		14
40, 50	AC 50/60Hz		17

Actuator dimensions - GEMÜ 728 motorized [mm]

Actuator version 3035

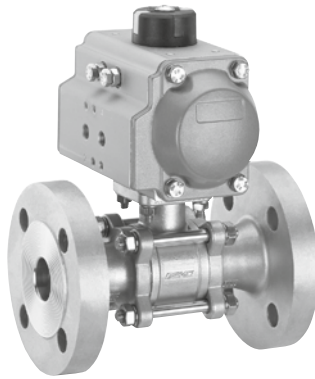


DN	Voltages	B
25	24 V	100,5
	100 V - 250 V	124,5

## GEMÜ 3-piece 2/2-way stainless steel ball valves



**GEMÜ 711**



**GEMÜ 751**



**GEMÜ 728**

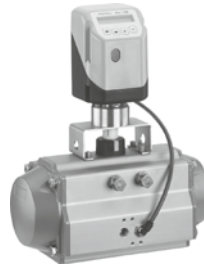
## Instrumentation for quarter turn valves



**GEMÜ ES2**  
Electrical  
position indicator  
on pneumatic actuator



**GEMÜ 1436 cPos**  
Intelligent positioner and  
process controller on  
pneumatic actuator



**GEMÜ 1435 ePos**  
Intelligent positioner  
on pneumatic actuator

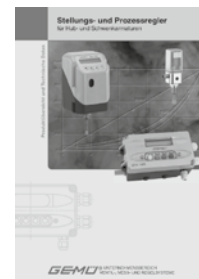


**GEMÜ 4221**  
Combi switchbox with  
integrated pilot valve on  
pneumatic actuator

For detailed information on electrical position indicators, combi switchboxes and positioners for quarter turn valves please refer to the adjacent brochures.



Electrical position indicators and combi switchboxes



Positioners and process controllers

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

**GEMÜ**® VALVES, MEASUREMENT  
AND CONTROL SYSTEMS

