

Ball Valve C 10

valve ball completely moulded in place
near-zero dead volume



Advantages

Maximum safety due to

- valve ball completely moulded in place
- ball and ball seal cannot be flushed out -
- high operating safety
- generously dimensioned stem for high torques -
- near-zero dead volume
- the housing encloses the ball due to the special injection moulding process -

Optimised k_v value

- for all dimensions, the internal ball diameter is adapted to the internal pipe diameter.

Application

- chemical plants
- industrial plants

Utilisation

- to shut off pipeline systems

Type of fluids

- neutral and aggressive fluids or gaseous media free of solids provided that the components getting in contact with the medium are resistant at operating temperature according to the ASV resistance guide.

Examinations

- requirements and examinations acc. to DIN 3441, 3442, 8063 and 16962. DIN EN 12266, leakrate A examined.

Nominal pressure (H₂O, 20°C)

- DN 15 - DN 50 PN 10

Media temperature

- see pressure/temperature diagram

Operating pressure

- see pressure/temperature diagram

Size

- DN 15 - DN 50

Body

- PVC-U oder PP

Ball

- PE

Ball seat

- PTFE

Sealings

- EPDM oder FPM

Actuation

- with T-handle, also as position indicator
- with electric actuator acc. to DIN EN ISO 5211
- with pneumatic actuator acc. to DIN EN ISO 5211

Connection

Union DIN 8063 with:

- socket ends for solvent welding DIN/ISO (PVC-U)
- socket ends for fusion welding DIN/ISO (PP)
- spigot ends for fusion welding DIN/ISO (PP)
- GFR flanges DIN 2501, PN 10/16

Mounting

- variable, hand lever or actuator preferably in upright position

Option

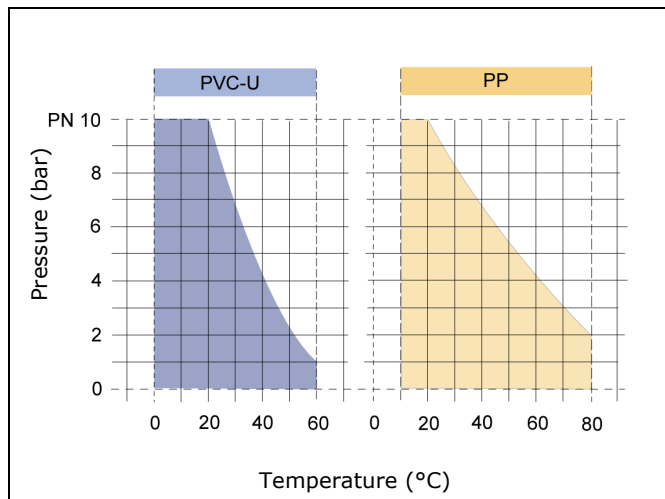
- limit switch
- bracket

Colour

- Body: PVC-U grey, RAL 7011
- PP grey, RAL 7032
- T-handle: PVC-U orange, RAL 2004

Ball Valve C 10

Pressure/temperature diagram



Pressure/temperature diagram

The pressure/temperature limits are applicable for a computed operating life factor of 25 years.

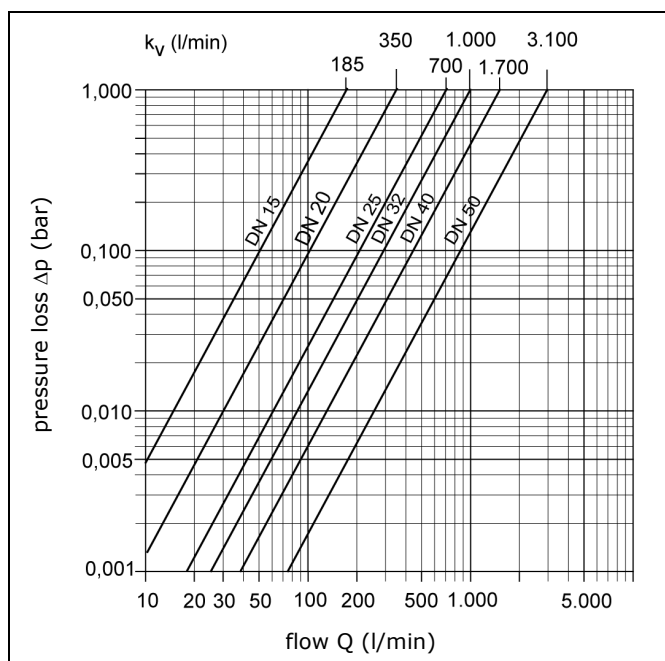
The values are a guide for harmless fluids (DIN 2403) the material of the valve is resistant against.

For other media see the ASV resistance guide.

Durability of wear and tear parts is depending on the operating conditions of the application.

Values below 0 °C (PP < +10 °C) on request with exact data of operation.

Pressure loss curve (appr. values for H₂O, 20°C)



The diagram shows the pressure loss Δp over the flow Q .

For calculation:

$$c_v = k_v \times 0,07$$

$$f_v = k_v \times 0,0585$$

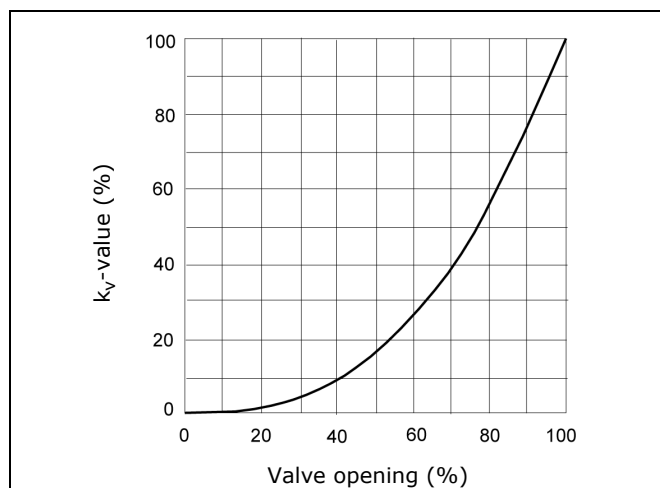
Units:

$$k_v \text{ [l/min]}$$

$$c_v \text{ [gal/min]}$$

$$f_v \text{ [gal/min]}$$

Flow characteristic



Torque Nm (standard value)

d (mm)	20	25	32	40	50	63
MD (Nm)	4	5	6	8	10	16

The stated torques are approximate values.

They have been determined as follows. Operating pressure $p = 10,0$ bar with H₂O, 20 °C.

Depending on the fluid the respective value can be higher or lower.

Operating instructions

ATTENTION

Safe operation of the valve can only be ensured if it is properly installed, operated, serviced or repaired by qualified personnel according to its intended use while observing the accident prevention regulations, safety regulations, relevant standards and technical regulations or data sheets such as e.g. DIN, DIN EN, DIN ISO and DVS* for example.

The intended use includes adhering to the specified limit values for pressure and temperature as well as checking the chemical resistance with regard to the operating conditions.

For this purpose, ensure that all components getting in contact with the media are "resistant" in accordance with the ASV resistance guide.

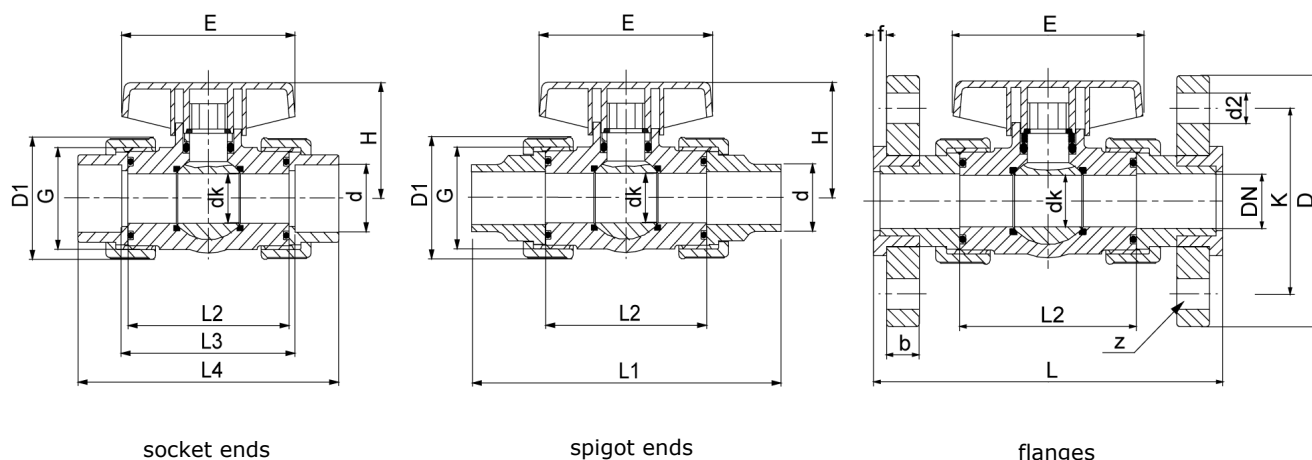
Non-observance of the specified instructions and safety regulations may cause damage to health and/or damage to assets. ✓

*DVS = German Welding Society

ATTENTION

For operation in potentially explosive areas adhere to the data sheet 330550»Ball valves for explosion endangered areas«. ✓

Ball Valve C 10 »manual«



Dimension

d (mm)		20	25	32	40	50	63
DN (mm)		15	20	25	32	40	50
DN (Inch)		1/2	3/4	1	1 1/4	1 1/2	2
PN (bar)		10	10	10	10	10	10
	dk	13,5	18,5	23,5	30,5	38,5	48,5
	b	12,0	14,0	15,0	17,0	17,0	18,0
	D	95,0	105,0	115,0	140,0	150,0	165,0
PVC-U	D1	41,0	51,0	58,0	72,0	80,0	100,0
PP	D1	46,0	56,0	66,0	79,0	87,0	107,0
	d2	14,0	14,0	14,0	18,0	18,0	18,0
	E	60,0	85,0	85,0	120,0	120,0	145,0
	f	6,0	7,0	7,0	8,0	8,0	9,0
	H	42,0	55,0	55,0	70,0	70,0	84,0
	K	65,0	75,0	85,0	100,0	110,0	125,0
	L	130,0	150,0	160,0	180,0	200,0	230,0
	L1	254,0	188,0	211,0	234,0	257,0	293,0
	L2	64,0	76,0	81,0	92,0	95,0	115,0
	L3	70,0	82,0	87,0	98,0	101,0	121,0
PVC-U	L4	102,0	120,0	131,0	150,0	163,0	197,0
PP	L4	99,0	114,0	123,0	139,0	148,0	175,0
	z	4,0	4,0	4,0	4,0	4,0	4,0

Weights (kg)

d (mm)		20	25	32	40	50	63
PVC-U-socket ends	PVC-U	0,130	0,240	0,290	0,550	0,610	1,050
GFR flanges	PVC-U	0,330	0,530	0,680	0,1200	1,400	2,040
PP-socket ends	PP	0,110	0,210	0,270	0,480	0,530	0,860
PP-spigot ends	PP	0,120	0,220	0,280	0,490	0,540	0,870
GFR flanges	PP	0,320	0,530	0,690	1,190	1,370	1,900



Ball Valve C 10 »manual«

Ident-No.

Body: PVC-U

d (mm)		20	25	32	40	50	63
connection	sealing						
PVC-U-socket ends	PTFE-EPDM	60850	60851	60852	60853	60854	60855
PVC-U-socket ends	PTFE-FPM	64680	64681	64682	64683	64684	64685
GFR flanges	PTFE-EPDM	44015	44016	44017	44018	44019	44020
GFR flanges	PTFE-FPM	44021	44022	44023	44024	44025	44026

Body: PP

d (mm)		20	25	32	40	50	63
connection	sealing						
PP-socket ends	PTFE-EPDM	65357	65358	65359	65360	65361	65362
PP-socket ends	PTFE-FPM	64686	64687	64688	64689	64690	64691
PP-spigot ends	PTFE-EPDM	122790	122791	122792	122793	122794	122795
PP-spigot ends	PTFE-FPM	122797	122798	122799	122800	122801	122802
GFR flanges	PTFE-EPDM	44027	44028	44029	44030	44031	44032
GF flanges	PTFE-FPM	44033	44034	44035	44036	44037	44038

Ball Valve C 10 »electric«

Voltage

- siehe technische Daten

Running time

- see technical data

Mounting set

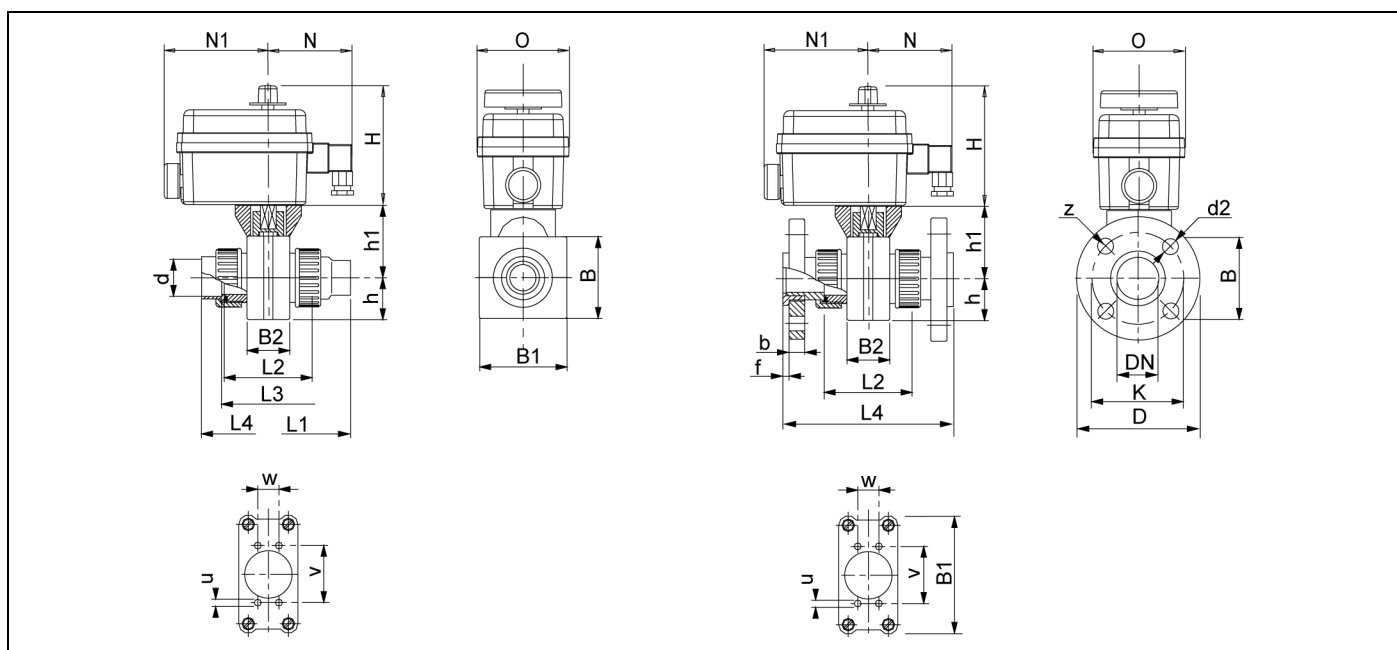
- PVC-U

Coupling

- square steel, zinc coated
- adaptor PA

Screws

- stainless steel, V2A (1,4301)



Dimension

d (mm)	20	25	32	40	50	63
DN (mm)	15	20	25	32	40	50
DN (Inch)	1/2	3/4	1	1 1/4	1 1/2	2
PN (bar)	10	10	10	10	10	10
actuator type	EK20	EK20	EK20	EK35	EK35	EK60
B	65,0	81,0	81,0	109,0	109,0	129,0
B1	84,0	88,0	88,0	112,0	112,0	126,0
B2	33,0	42,0	42,0	56,0	56,0	69,0
H	118,0	118,0	118,0	176,0	176,0	176,0
h1	63,0	71,0	71,0	90,0	90,0	100,0
L	130,0	150,0	160,0	180,0	200,0	230,0
L1	254,0	188,0	211,0	234,0	257,0	293,0
L2	64,0	76,0	81,0	92,0	95,0	115,0
L3	70,0	82,0	87,0	98,0	101,0	121,0
PVC-U L4	102,0	120,0	131,0	150,0	163,0	197,0
PP L4	99,0	114,0	123,0	139,0	148,0	175,0
N	84,0	84,0	84,0	92,5	92,5	92,5
N1	105,0	105,0	105,0	95,5	95,5	95,5
O	92,0	92,0	92,0	188,0	189,0	190,0
u	6,5	6,5	6,5	6,5	6,5	6,5
v	38,0	48,0	48,0	54,0	54,0	60,0
w	-	-	-	20,0	20,0	32,0
z	4,0	4,0	4,0	4,0	4,0	4,0



Ball Valve C 10 »electric«

Weights (kg)

Body: PVC-U

d (mm)	20	25	32	40	50	63
socket ends	1,83	1,94	1,99	3,55	3,61	4,05
GFR flanges	2,03	2,23	2,38	4,20	4,40	5,04

Body: PP

d (mm)	20	25	32	40	50	63
socket ends	1,81	1,91	1,97	3,48	3,53	3,86
spigot ends	1,82	1,92	1,98	3,49	3,54	3,87
GFR flanges	2,02	2,23	2,39	4,19	4,37	4,90

Possible actuator variants:

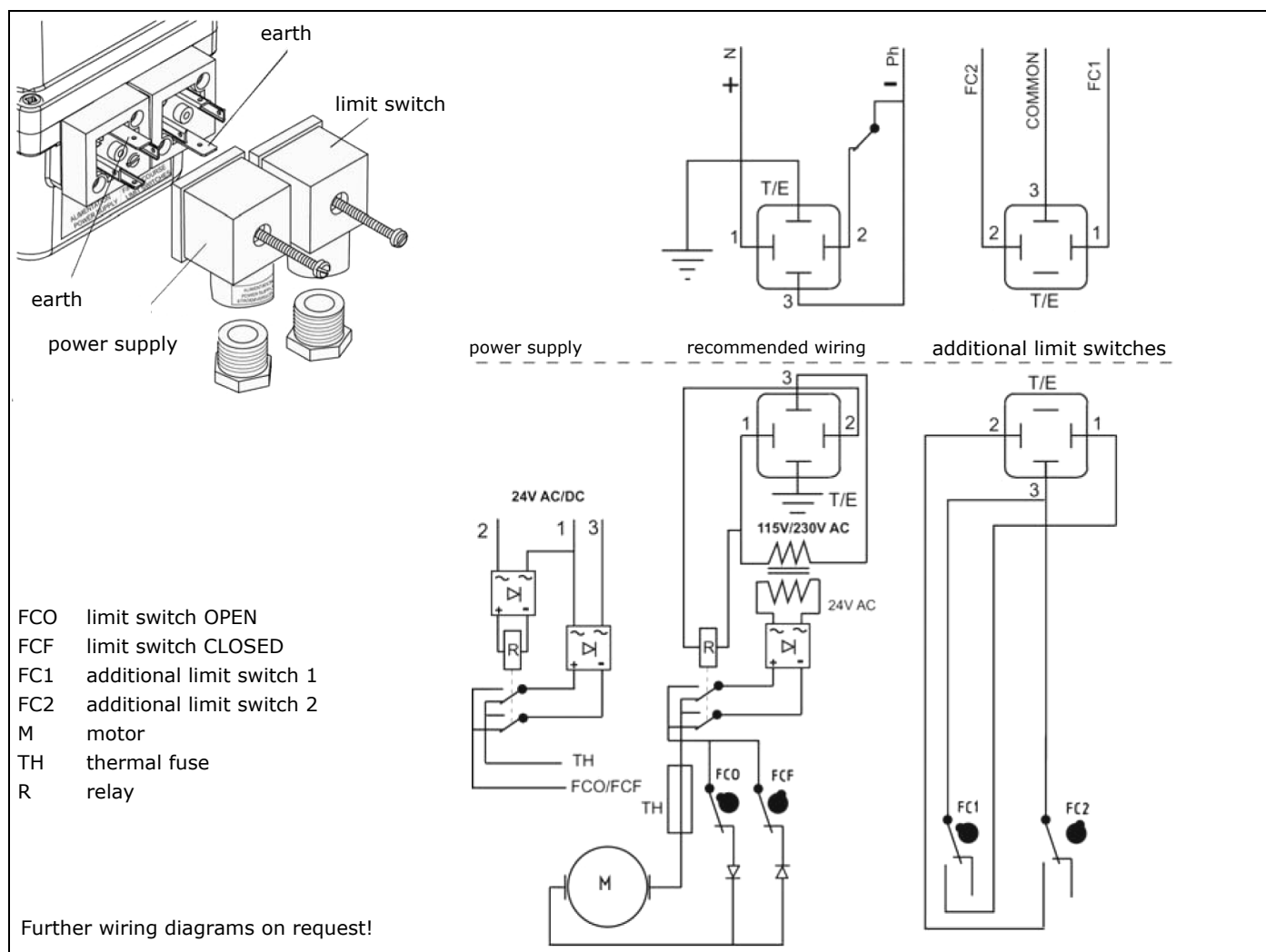
Variant 1 (standard):	Variant 2:	Variant 3:
Type »EK-line«	Type »ER-line«	Type »V-line«
Manual emergency control	Manual emergency control	Manual emergency control
Visual position indicator	Visual position indicator	Visual position indicator
Protection type: IP 65	Protection type: IP 65	Protection type: IP 67
2 DIN 43650 plug connectors	PG union	PG union
2 additional limit switches	2 additional limit switches	2 additional limit switches
Torque limiter	Torque limiter	Torque limiter
Duty cycle: 30%	Duty cycle: 50% 230 V	Duty cycle: 50%
Voltage: 230 V AC 50/60 Hz or	Duty cycle: 30% 24 V	Heating resistance 3 W
Voltage: 115 V AC 50/60 Hz or	Voltage: 230 V AC 50/60 Hz or	Voltage: 400 V AC 50/60 Hz or
Voltage: 24 V AC/DC	Voltage: 115 V AC 50/60 Hz or	Voltage: 100 - 240 V AC 50/60 Hz and
Running time: 7s	Voltage: 24 V AC/DC	120 - 350 V DC
	Running time: 10 - 35s	Voltage: 24 V AC/DC
		Running time: 7 - 20s
	Options:	Options:
	2 additional limit switches	2 additional limit switches
	2 DIN 43650 plug connectors	Long hand lever
	Long hand lever	Fail-safe rechargeable battery pack (internal/external)
	Fail-safe rechargeable battery pack (internal/external)	Positioner
	Heating resistor + thermal switch	Feedback: Potentiometer
	Positioner	Feedback: 4...20 mA
	Feedback: Potentiometer	Positioner: 4...20 mA/0...10 V
	Feedback: 4...20 mA	ASI BUS connection
	Positioner: 4...20 mA/0...10 V	ATEX version
	ASI BUS connection	Duty cycle: 80%
	Multivoltage:	
	Voltage: 110 - 240 V AC 50/60 Hz and	
	120 - 350 V DC	

Ball Valve C 10 »electric«

Technical data

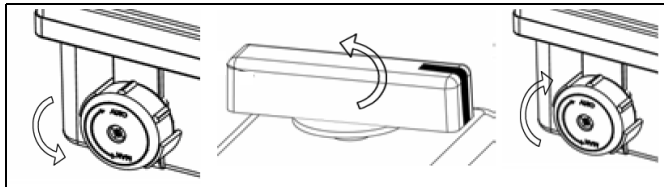
Actuator	Type	EK20	EK35	EK60
Rated load torque	Nm	20	35	60
Voltage – frequency (±10%)	V AC	230 bzw. 24 50/60 Hz		
Voltage (±10%)	V DC	24		
Power consumption	W	9	26	26
Insulation class (according to actuator)		Class F (CEI85) = +155°C/Class B (VDE 0530) = +130°C		
Limit switch (NO)		125 V/5 A		
Duty cycle (NFE29-408:09/1992)		Open/closed = class 2 (30% = 40°C)		
Protection type (EN 60529: 06/2000)		IP 65		
Corrosion resistance		All untreated metal components: Stainless steel 316		
Fire resistance (EN 60695)		Electronics: Class 94V-0 Plastic components: Class 94HB		
Permissible ambient temperature	°C	-10°C bis +55°C		
Degree of humidity	°H	< 70%		
Degree of soiling (C15100)		Class 2: Electronics:		
Weight	kg	1,2	2,5	2,5
Mounting position		Not upside down, but any other position		
Electrical connections		2 plug socket DIN43650		
Device safety requirements		We confirm that all moving parts are guarded by the actuator cladding and do not pose a risk to the user		

Electrical connection EK-line

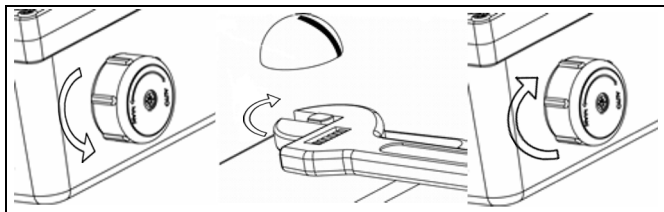


Ball Valve C 10 »electric«

Emergency manual control EK20



Emergency manual control EK35/60



Manual emergency control EK20

The valve can be manually operated in the event of an interruption of the power supply.

To allow manual emergency control, turn the switch from »AUTO« to »MANU« and hold in the »MANU« position.

Use the lever to turn the actuator shaft.

Release the coupling switch to re-engage the gearing

Manual emergency control EK35/60

The valve can be manually operated in the event of an interruption of the power supply.

To operate the manual override, by turning the clutch knob from »AUTO« to »MAN«.

Turn the shaft actuator with an adjustable spanner.

The motor will return to the »AUTO« mode by turning the clutch knob to the »AUTO« position.

Ball Valve C 10 »pneumatic«

Control pressure

- 6 bar

Standard

- visual position indicator

Control functions

- NC (normally closed)
- NO (normally open)
- DA (double acting)

Mounting set

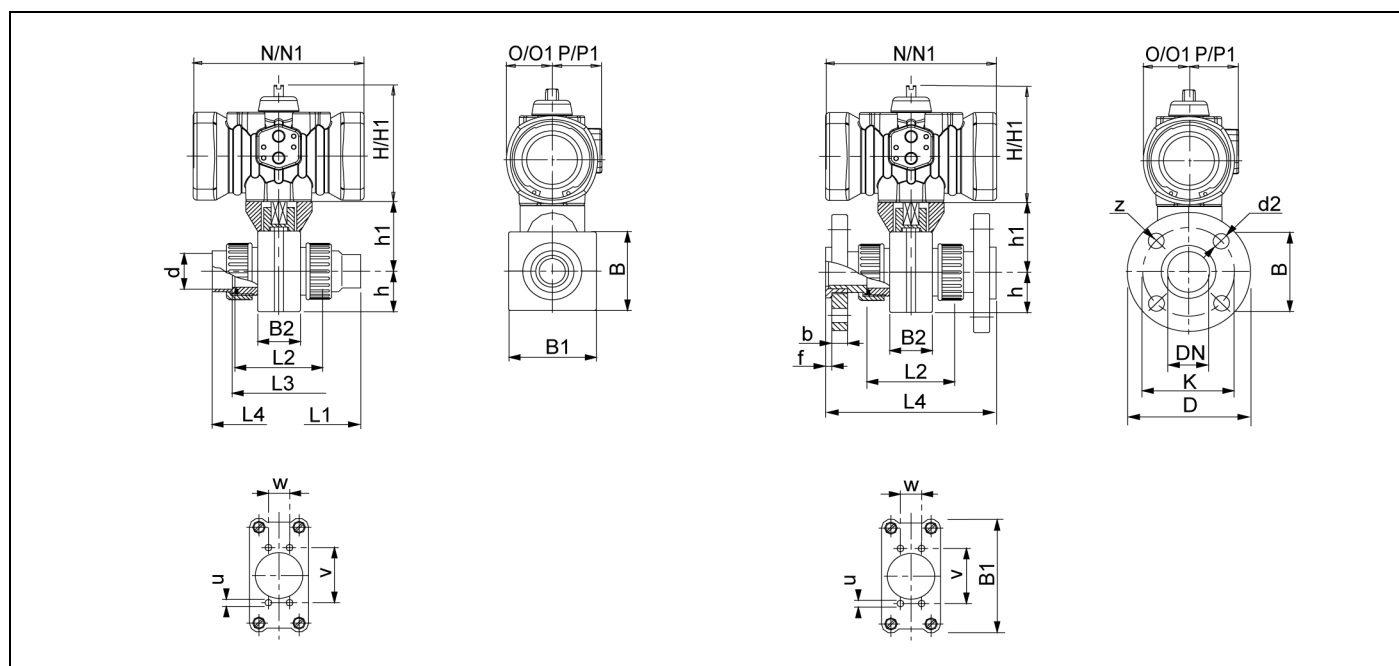
- PVC-U

Coupling

- square steel, zinc coated
- adaptor PA

Screws

- stainless steel, V2A (1,4301)



Dimension

d (mm)		20	25	32	40	50	63
DN (mm)		15	20	25	32	40	50
DN (Inch)		1/2	3/4	1	1 1/4	1 1/2	2
PN (bar)		10	10	10	10	10	10
actuator type	NC/NO	PP00S	PP10S	PP10S	PP10S	PP10S	PP20S
	DA	PP00	PP00	PP00	PP00	PP00	PP10
	B	65,0	81,0	81,0	109,0	109,0	129,0
	B1	84,0	88,0	88,0	112,0	112,0	126,0
	B2	33,0	42,0	42,0	56,0	56,0	69,0
NC / NO	H	110,0	128,0	128,0	128,0	128,0	162,0
DA	H1	110,0	110,0	110,0	110,0	110,0	128,0
	h	32,5	40,5	40,5	54,5	54,5	64,5
	h1	63,0	71,0	71,0	90,0	90,0	100,0
	L	130,0	150,0	160,0	180,0	200,0	230,0
	L1	254,0	188,0	211,0	234,0	257,0	293,0
	L2	64,0	76,0	81,0	92,0	95,0	115,0
	L3	70,0	82,0	87,0	98,0	101,0	121,0
PVC-U	L4	102,0	120,0	131,0	150,0	163,0	197,0
PP	L4	99,0	114,0	123,0	139,0	148,0	175,0
NC / NO	N	155,0	230,0	230,0	230,0	230,0	304,0
DA	N1	125,0	125,0	125,0	125,0	125,0	182,0



Ball Valve C 10 »pneumatic«

d (mm)		20	25	32	40	50	63
NC / NO	O	49,0	49,0	49,0	49,0	49,0	60,0
DA	O1	36,0	36,0	36,0	36,0	36,0	49,0
NC / NO	P	44,0	53,0	53,0	53,0	53,0	65,0
DA	P1	44,0	44,0	44,0	44,0	44,0	53,0
	u	6,5	6,5	6,5	6,5	6,5	6,5
	v	38,0	48,0	48,0	54,0	54,0	60,0
	w	-	-	-	20,0	20,0	32,0
	z	4,0	4,0	4,0	4,0	4,0	4,0

Weights (kg)

d (mm)		20	25	32	40	50	63
PVC-U/socket ends	NC/NO	1,66	2,89	2,94	3,2	3,26	6,5
PVC-U/GFR flanges	NC/NO	1,86	3,18	3,33	3,85	4,05	7,49
PP/socket ends	NC/NO	1,64	2,86	2,92	3,13	3,18	6,31
PP/spigot ends	NC/NO	1,65	2,87	2,93	3,14	3,19	6,32
PP/GFR flanges	NC/NO	1,85	3,18	3,34	3,84	4,02	7,35
PVC-U/socket ends	DA	1,39	1,5	1,55	1,81	1,87	3,42
PVC-U/GFR flanges	DA	1,59	1,79	1,94	2,46	2,66	4,41
PP/socket ends	DA	1,37	1,47	1,53	1,74	1,79	3,23
PP/spigot ends	DA	1,38	1,48	1,54	1,75	1,8	3,24
PP/GFR flanges	DA	1,58	1,79	1,95	2,45	2,63	4,27

Technical data

Actuator: single acting NC/NO

type	torque		air volume (L)		running time (sec.)		air-connection	weight kg
	Nm at 6 bar		opening	closing	opening	closing		
	Anfang	Ende						
PP00S	15,90	11,30	0,150	-	0,20	0,20	1/4	1,03
PP10S	46,6	32,30	0,350	-	0,30	0,30	1/4	2,15
PP20S	103,30	64,20	0,800	-	0,5	0,5	1/4	4,95

Actuator: double acting DA

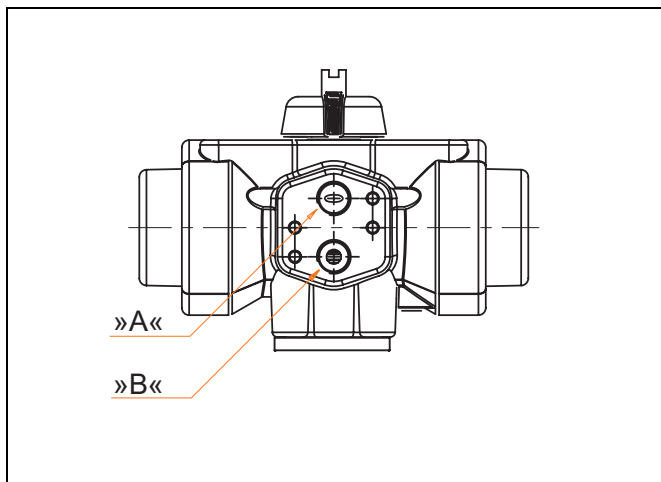
type	torque		air volume (L)		running time (sec.)		air-connection	weight kg
	Nm at 6 bar		opening	closing	opening	closing		
	Anfang	Ende						
PP00	25,0	-	0,150	0,10	0,15	0,15	1/4	0,76
PP10	71,000	-	0,35	0,32	0,25	0,25	1/4	1,410

Application conditions

control medium	temperature range	max. pressure	housing/body
filtered, dry compressed air, non-corrosive medium	-32°C to +90°C	8 bar	Typ PP: PA, glass fibre reinforced Typ P: aluminium

Ball Valve C 10 »pneumatic«

Compressed air connection



Single acting actuators:

- compressed air to connection »B«

Double acting actuators:

- compressed air to connection »A« (closes)
- compressed air to connection »B« (opens)

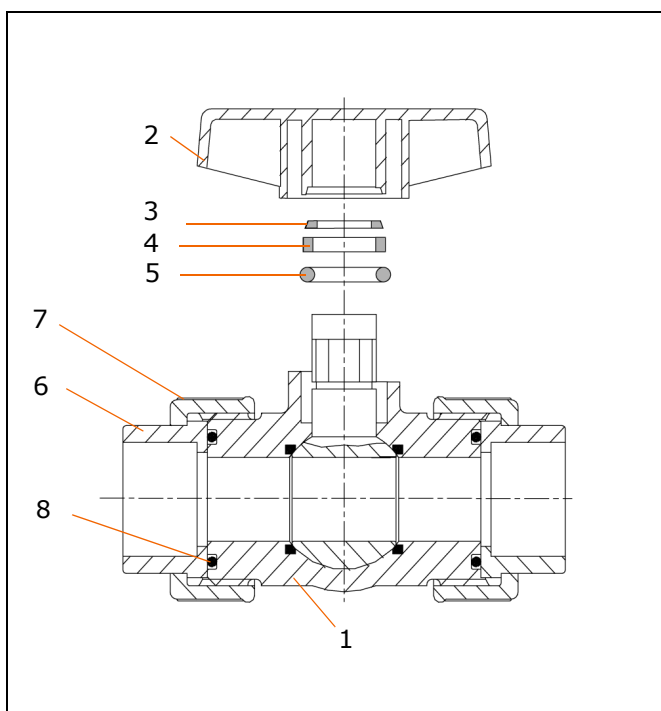
Control

- 3/2-way solenoid valves for NC/NO actuators
- 5/2-way solenoid valves for DA actuators

Options

- micro switches or proximity switches as directly mounted variant or as variant in limit switch box
- positioner
- handwheel
- ASI Bus
- pilot solenoid valve

Parts lists and designations



pos.	qty.	designation
1	1	Body with ball
2	1	T-handle
3	1	circlip
4	1	back-up ring
5	1	o-ring
6	2	socket end
7	2	union
8	2	o-ring



Ident No. for automated valves

Subject to technical modifications

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Ident No. manual valve

Actuated valve

Line

EK-line (electric)	0
ER-line (electric)	1
V-line (electric)	2
	3
	4
PA (pneumatic)	5
Alu (pneumatic)	6
Steel (pneumatic)	7
	8
	9

Version

12 V DC	0
24 V AC/DC	1
115 V AC	2
230 V AC	3
400 V AC	4
100-240 V AC/120-350 V DC	5
NC	6
NO	7
DA	8

Option (electric)

Standard version	0
DIN connector	1
Additional limit switch	2
Rechargeable battery pack	3
Heating resistor	4
Positioner	5
Feedback: Potentiometer	6
Feedback: 4...20 mA	7
ASI BUS	8
	9

Option (pneumatic)

Standard version	0
Handwheel (for DA)	1
Micro switch	2
Proximity switches	3
Limit switch box with micro switches	4
Limit switch box with proximity switches	5
Safety spring	6
Pilot valve	7
ASI BUS	8
Positioner	9

Example:

Type: C 10, DN 50

Body/housing: PVC-U

Seal: PTFE-EPDM

Connection: socket ends

Actuator: EK-line, 230 V AC

	6	0	8	5	5	9	0	3	0
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Subject to technical modifications