STÜBBE

C 110 BALL VALVE
DATASHEET

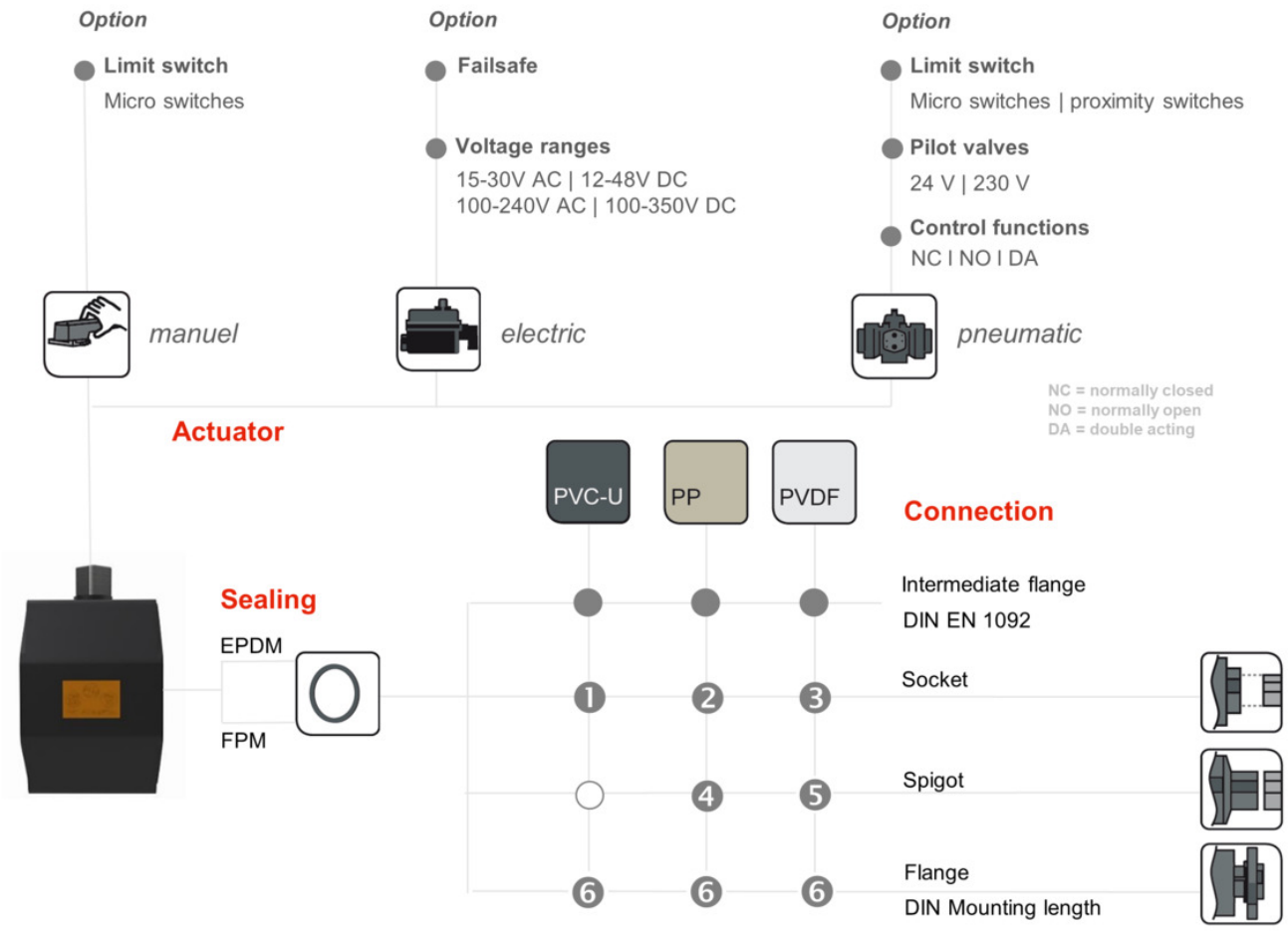
PVC-U PP PVDF

Nominal size DN 65 - 150
Nominal size in inches 2 1/2 - 6
Nominal pressure PN in bar 6 - 10

Characteristics

- system ball valve, solid version
- space-saving wafer flange version with high-quality stainless steel bushes
- modular upgrading of connection possible up to flange version in DIN face-to-face dimension
- excellent flow characteristics
- replaceable ball seat and ball

https://www.stuebbe.com/en/products-and-systems/valves/



Basic nominal diameters

● Available
○ not available

DN 8	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400
								●	●	●		●					

Connection Material (process connection)

1. PVC-U socket DIN, ANSI
   DN 65,80,100,150.
2. PP socket DIN
   DN 65,80,100.
3. PVDF socket DIN
   DN 65,80,100.
4. PP spigot DIN
   DN 150.
5. PVDF spigot DIN
   DN 150.
6. PP-St. flange DIN
   DN 65,80,100,125,150.

   PP-St. flange ANSI
   DN 65,80,100,150.

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C 110 Ball Valve

Use	- Chemical plant manufacture - electroplating plants - Industrial plants
Application	- for shutting off pipeline systems
Connection	- PP/steel flange DIN EN 1092, PN 10/16, with DIN face-to-face dimension - wafer type flange for short face-to-face dimension - socket flange DIN ISO (PVC-U) - socket flange DIN/ISO (PP) - socket flange DIN/ISO (PVDF)
Process pressure	- see pressure-/temperature diagram
Flow medium	- Neutral and aggressive fluid or gaseous media, provided that the valve components coming into contact with the media are resistant at the operating temperature in accordance with the STÜBBE resistance guide.
STÜBBE resistance guide	- www.stuebbe.com/pdf_resistance/300051.pdf
Housing material (with medium contact)	- PVC-U - PP - PVDF
Material sealing element (in contact with medium)	- EPDM - FPM
Material Ball sealing	- PTFE
Material ball	- PVC-U - PP - PVDF
Nominal pressure PN in bar	- 6 - 10
Colours	- Casing: PVC-U, grey RAL 7011 - Casing: PP, grey RAL 7032 - Casing: PVDF, opaque, yellowish-white - Hand lever: PVC-U, orange, RAL 2004 - PP/Steel Flanges: black RAL 9011
Mounting position	- any - do not install the electric drive suspended downwards
Actuation	- hand-operated - with electric and pneumatic actuating drive
Fastening	- body with integrated mounting plate
Testing	- according to DIN 3441, 3442, 8063 and 16962, leakage rate A tested

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CE Conformity - Pressure equipment directive 2014/68/EU

Accessories - Spindle extension

Weblink Product - https://www.stuebbe.com/en/products-and-systems/valves/

Torque (Nm) -

d	75	90	110	140	160
DN	**65**	**80**	**100**	**125**	**150**
DN*	**2 1/2**	**3**	**4**	**5**	**6**
PVC-U	25	40	50	50	80
PP	25	40	50	50	80
PVDF	25	40	50	50	80

- The specified torques are standard values. They were determined at the specified nominal pressures with H2O, 20°C. These values can be higher or lower, depending on the operating pressure and the medium.

Screw tightening torque (Nm) -

d	75	90	110	140	160
DN	**65**	**80**	**100**	**125**	**150**
DN*	**2 1/2**	**3**	**4**	**5**	**6**
Md (Nm)	20	20	20	20	20

- all dimensions in mm / * in inch

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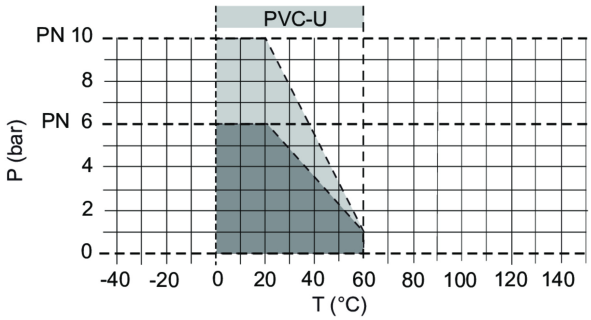
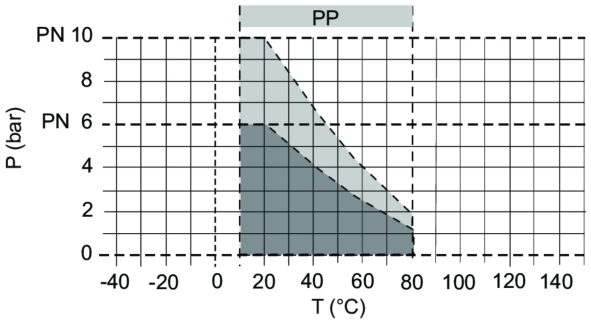
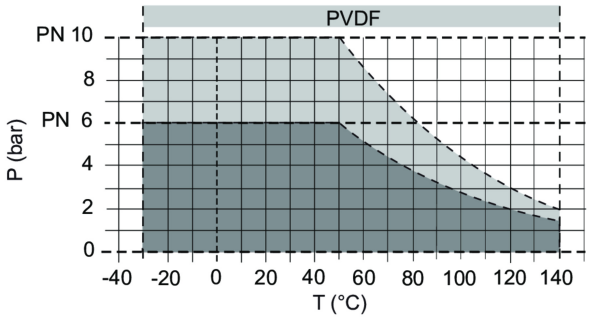
Pressure and temperature diagram PVC-U



Pressure and temperature diagram PP



Pressure and temperature diagram PVDF



P = Operating pressure
T = Temperature

The pressure/temperature limits of the materials are valid for the stated nominal pressures and a service life of 25 years. These values are guide values for flow medium types which do not negatively impact the physical and chemical characteristics of the valve material. It may be necessary to take diminution factors into consideration.

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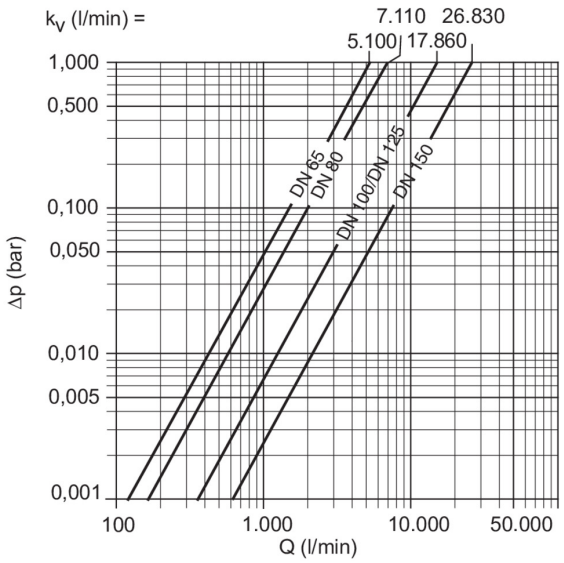
Pressure loss curve (standard values for H2O, 20°C)



Δp = Pressure loss
Q = Flow

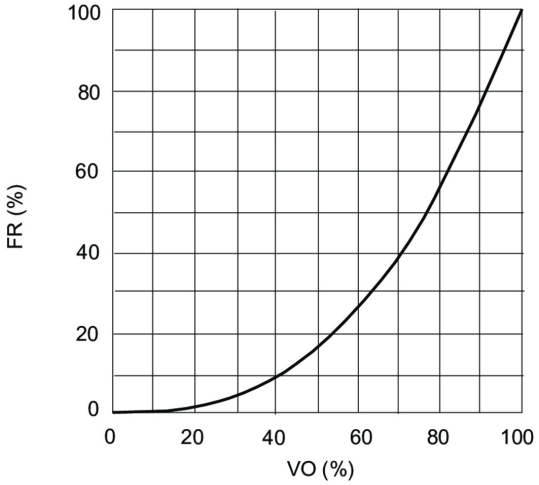
pressure loss and kv value:

The diagram shows the pressure loss ΔP in relation to the flow Q.

Conversion formulas
cv = kv x 0.07
fv = kv x 0.0585

Units:
kv [l/min]
cv [gal/min] US
fv [gal/min] GB

Flow characteristic



FR =k_V-value

VO = Valve opening

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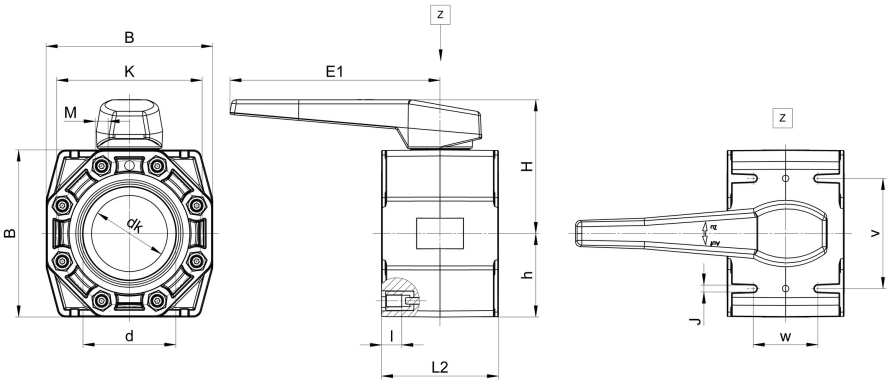
C 110 Ball Valve

C110 manual intermediate flange



d	-	75	90	110	140	160
DN	**-**	**65**	**80**	**100**	**125**	**150**
DN*	**-**	**2 1/2**	**3**	**4**	**5**	**6**
B	PP/PVC-U	168	186	206,3	206,3	270
	PVDF	168	184	206,3	206,3	266
dk	PP/PVC-U	64	77	94	-	135
	PVDF	64	77	94	-	129,5
E1	PP/PVC-U/PVDF	210	210	260	260	310
h	PP/PVC-U	84	93	103,2	103,2	135
	PVDF	84	92	103,2	103,2	133
H	PP/PVC-U	139	148	163,2	163,2	208
	PVDF	139	147	163,2	163,2	206
l	PP/PVC-U/PVDF	20	20	20	-	30
J	PP/PVC-U/PVDF	8,5	8,5	8,5	-	8,5
K	DIN	145	160	180	210	240
	ANSI	140	152	190,5	-	240
L2	PP/PVC-U	113	124	145	-	205
	PVDF	111	123	141	-	196,5
M	PP/PVC-U/PVDF	M 16	M 16	M 16	-	M 20
v	PP/PVC-U	110	124	136	136	180
	PVDF	110	124	136	136	175
w	PP/PVC-U	60	60	80	80	130
	PVDF	58	58	76	76	126
z	PP/PVC-U/PVDF	4	8	8	8	8

all dimensions in mm / * in inch

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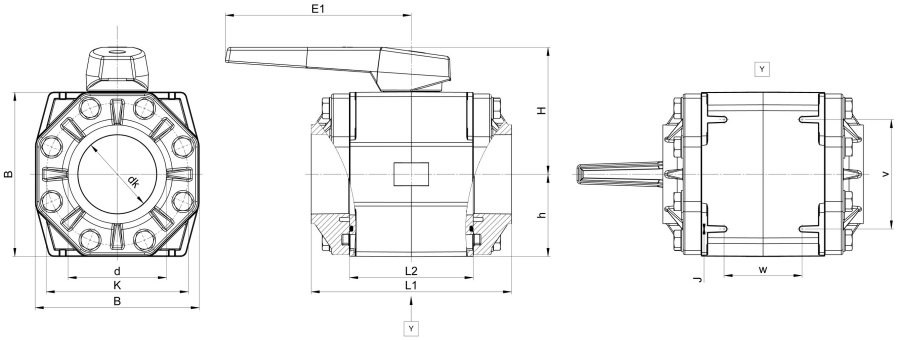
C 110 Ball Valve

C110 manual spigot



d	**-**	**160**
DN	**-**	**150**
DN*	**-**	**6**
B	PP/PVC-U	270
	PVDF	266
dk	PP/PVC-U	135
	PVDF	129,5
E1	PP/PVC-U/PVDF	310
h	PP/PVC-U	135
	PVDF	133
H	PP/PVC-U	208
	PVDF	206
J	PP/PVC-U/PVDF	8,5
K	DIN	240
	ANSI	240
L1	PP	332
	PVDF	323,5
L2	PP/PVC-U	205
	PVDF	196,5
v	PP/PVC-U	180
	PVDF	175
w	PP/PVC-U	130
	PVDF	126

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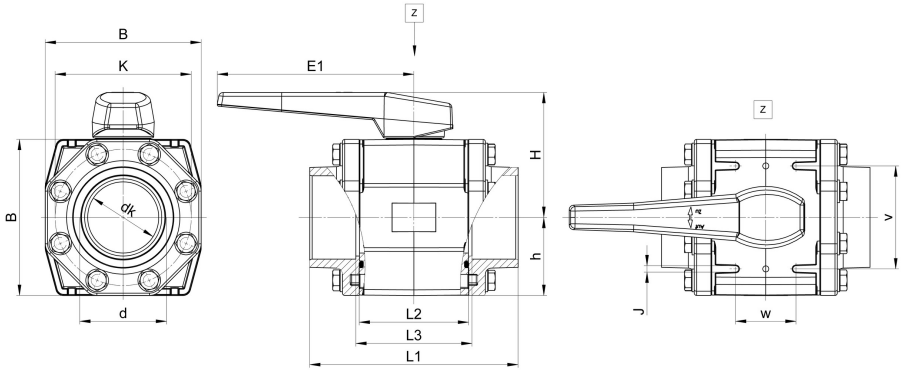
C 110 Ball Valve

C110 manual socket



d	-	75	90	110	140	160
DN	**-**	**65**	**80**	**100**	**125**	**150**
DN*	**-**	**2 1/2**	**3**	**4**	**5**	**6**
B	PP/PVC-U	168	186	206,3	206,3	270
	PVDF	168	184	206,3	206,3	266
dk	PP/PVC-U	64	77	94	-	135
	PVDF	64	77	94	-	129,5
E1	PP/PVC-U/PVDF	210	210	260	260	310
h	PP/PVC-U	84	93	103,2	103,2	135
	PVDF	84	92	103,2	103,2	133
H	PP/PVC-U	139	148	163,2	163,2	208
	PVDF	139	147	163,2	163,2	206
J	PP/PVC-U/PVDF	8,5	8,5	8,5	-	8,5
K	DIN	145	160	180	210	240
	ANSI	140	152	190,5	-	240
L1	PP/PVDF	180	206	238	-	364
	PVC-U	206	236	276	-	386
L2	PP/PVC-U	113	124	145	-	205
	PVDF	111	123	141	-	196,5
L3	PP/PVC-U DIN	119	132,7	154,6	-	215
	PVDF DIN	117	131,7	150,6	-	-
	PVC-U ANSI	118,1	132,7	154,6	-	215
v	PP/PVC-U	110	124	136	136	180
	PVDF	110	124	136	136	175
w	PP/PVC-U	60	60	80	80	130
	PVDF	58	58	76	76	126

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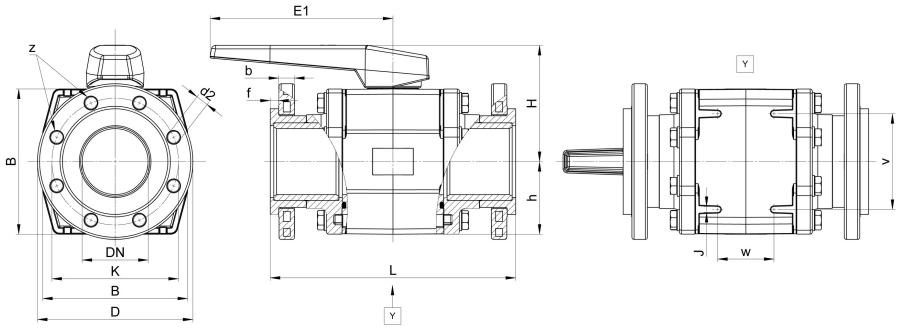
C 110 Ball Valve

C110 manual flange



d	-	75	90	110	140	160
DN	-	**65**	**80**	**100**	**125**	**150**
DN*	-	**2 1/2**	**3**	**4**	**5**	**6**
B	PP/PVC-U	168	186	206,3	206,3	270
	PVDF	168	184	206,3	206,3	266
dk	PP/PVC-U	64	77	94	-	135
	PVDF	64	77	94	-	129,5
E1	PP/PVC-U/PVDF	210	210	260	260	310
h	PP/PVC-U	84	93	103,2	103,2	135
	PVDF	84	92	103,2	103,2	133
H	PP/PVC-U	139	148	163,2	163,2	208
	PVDF	139	147	163,2	163,2	206
J	PP/PVC-U/PVDF	8,5	8,5	8,5	-	8,5
K	DIN	145	160	180	210	240
	ANSI	140	152	190,5	-	240
L1	PP/PVDF	180	206	238	-	364
	PVC-U	206	236	276	-	386
L2	PP/PVC-U	113	124	145	-	205
	PVDF	111	123	141	-	196,5
L3	PP/PVC-U DIN	119	132,7	154,6	-	215
	PVDF DIN	117	131,7	150,6	-	-
	PVC-U ANSI	118,1	132,7	154,6	-	215
v	PP/PVC-U	110	124	136	136	180
	PVDF	110	124	136	136	175
w	PP/PVC-U	60	60	80	80	130
	PVDF	58	58	76	76	126

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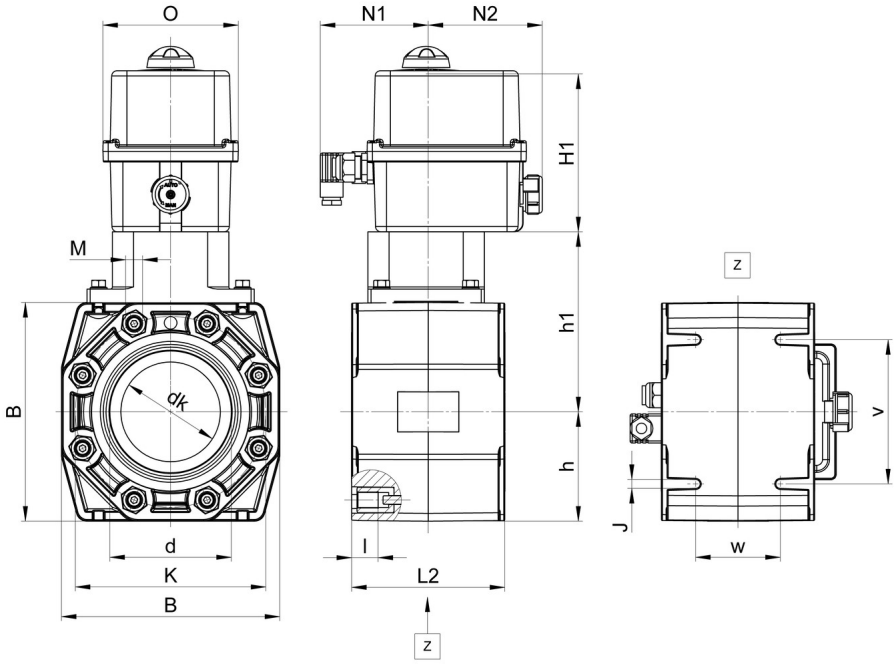
C 110 Ball Valve

C110 electric intermediate flange



d	-	75	90	110	140	160
DN	-	**65**	**80**	**100**	**125**	**150**
DN*	-	**2 1/2**	**3**	**4**	**5**	**6**
B	PP/PVC-U	168	186	206,3	206,3	270
	PVDF	168	184	206,3	206,3	266
dk	PP/PVC-U	64	77	94	-	135
	PVDF	64	77	94	-	129,5
h	PP/PVC-U	84	93	103,2	103,2	135
	PVDF	84	92	103,2	103,2	133
h1	PP/PVC-U	144	153	170,2	170,2	205
	PVDF	144	152	170,2	170,2	203
H1	PP/PVC-U/PVDF	176	176	176	176	176
l	PP/PVC-U/PVDF	20	20	20	-	30
J	PP/PVC-U/PVDF	8,5	8,5	8,5	-	8,5
K	DIN	145	160	180	210	240
L2	PP/PVC-U	113	124	145	-	205
	PVDF	111	123	141	-	196,5
M	PP/PVC-U/PVDF	M 16	M 16	M 16	-	M 20
N1	PP/PVC-U/PVDF	97	97	97	97	97
N2	PP/PVC-U/PVDF	107	107	107	107	107
O	PP/PVC-U/PVDF	128	128	128	128	128
v	PP/PVC-U	110	124	136	136	180
	PVDF	110	124	136	136	175
w	PP/PVC-U	60	60	80	80	130
	PVDF	58	58	76	76	126

all dimensions in mm / * in inch

For the ball valves with electric actuators, only the intermediate flange version is shown as an example. The dimensions for socket/spigot and flange version correspond to the manual variants.

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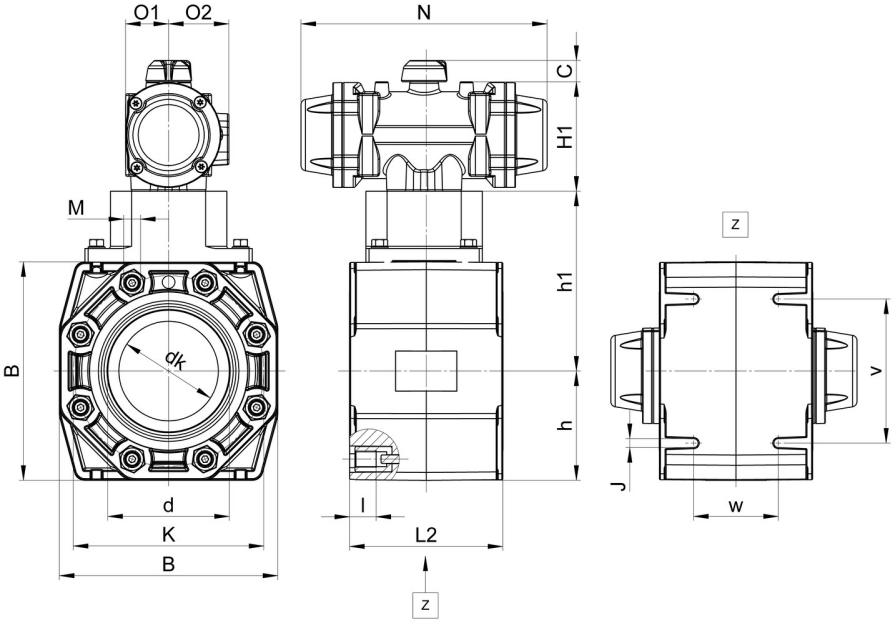
C 110 Ball Valve

C110 pneumatic intermediate flange



d	-	75	90	110	140	160
DN	**-**	**65**	**80**	**100**	**125**	**150**
DN*	**-**	**2 1/2**	**3**	**4**	**5**	**6**
B	PP/PVC-U	168	186	206,3	206,3	270
	PVDF	168	184	206,3	206,3	266
C	PP/PVC-U/PVDF	20	20	20	20	20
dk	PP/PVC-U	64	77	94	-	135
	PVDF	64	77	94	-	129,5
h	PP/PVC-U	84	93	103,2	103,2	135
	PVDF	84	92	103,2	103,2	133
h1	PP/PVC-U	144	153	170,2	170,2	205
	PVDF	144	152	170,2	170,2	203
H1	PP/PVC-U/PVDF	176	176	176	176	176
l	PP/PVC-U/PVDF	20	20	20	-	30
J	PP/PVC-U/PVDF	8,5	8,5	8,5	-	8,5
K	DIN	145	160	180	210	240
L2	PP/PVC-U	113	124	145	-	205
	PVDF	111	123	141	-	196,5
M	PP/PVC-U/PVDF	M 16	M 16	M 16	-	M 20
N	PP/PVC-U/PVDF	313	313	313	313	358
O1	PP/PVC-U/PVDF	54	54	54	54	64
O2	PP/PVC-U/PVDF	68	68	68	68	89
v	PP/PVC-U	110	124	136	136	180
	PVDF	110	124	136	136	175
w	PP/PVC-U	60	60	80	80	130
	PVDF	58	58	76	76	126

all dimensions in mm / * in inch

For the ball valves with pneumatic actuators, only the intermediate flange version is shown as an example. The dimensions for socket/spigot and flange version correspond to the manual variants.

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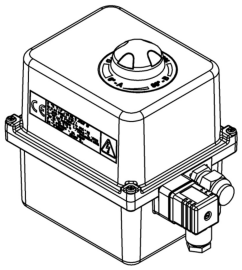
C 110 Ball Valve

Electric actuator



Variants	Low voltage	Mains voltage
Types	ER 60 Plus AC 15-30V/ DC12-48V	ER 60 Plus AC 100-240V / DC 100-350V

Technical data	ER 60 Plus AC 15-30V/ DC12-48V	ER 60 Plus AC 100-240V / DC 100-350V
Variants	Low voltage	Mains voltage
Torque (Nm)	60	60
Voltage AC (V)	15–30	100–240
Voltage DC (V)	12–48	100–350
Manipulating time (s)	12	12
Setting angle (°)	90	90
Power consumption (W)	15	15
Weight (kg)	2,1	2,1
Duty cycle (%)	50	50
Protection type (IP)	66	66
Temperature (°C)	-10–55	-10–55
Heating	Included	Included
Options	Fail-Safe/rechargeable battery pack	Fail-Safe/rechargeable battery pack

Product assignment

d	75	90	110	140	160
DN	65	80	100	125	150
DN*	2 1/2	3	4	5	6
Low voltage	ER 60 Plus AC 15-30V DC12-48V	ER 60 Plus AC 15-30V DC12-48V	ER 60 Plus AC 15-30V DC12-48V	ER 60 Plus AC 15-30V DC12-48V	ER 60 Plus AC 15-30V DC12-48V
Mains voltage	ER 60 Plus AC 100-240V DC 100-350V	ER 60 Plus AC 100-240V DC 100-350V	ER 60 Plus AC 100-240V DC 100-350V	ER 60 Plus AC 100-240V DC 100-350V	ER 60 Plus AC 100-240V DC 100-350V

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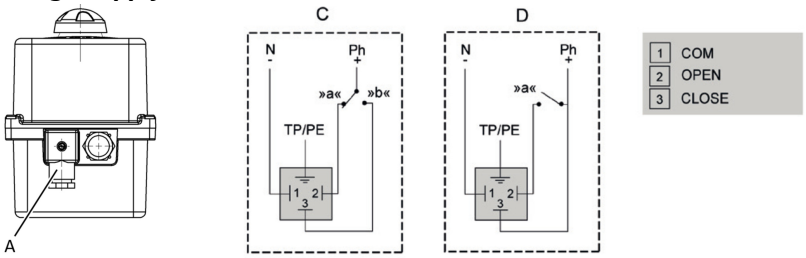
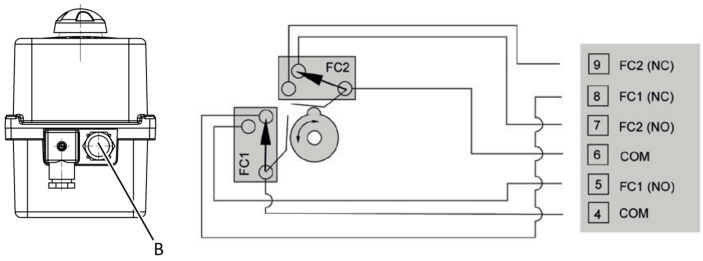
C 110 Ball Valve

Voltage supply



	Description
A	Voltage supply
C	3-point mode
D	OPEN-CLOSED mode
a	Valve »OPEN«
b	Valve »CLOSED«
1	COM
2	Valve »OPEN«
3	Valve »CLOSED«

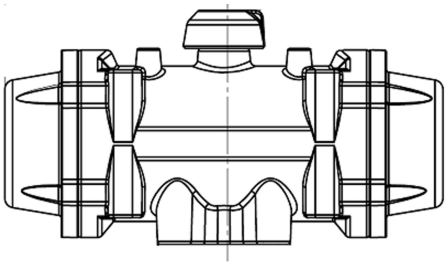
Feedback



	Description
B	Feedback
FC1	Limit switch, valve »OPEN«
FC2	Limit switch, valve »CLOSED«
9	FC2 (NC)
8	FC1 (NC)
7	FC2 (NO)
6	COM
5	FC1 (NO)
4	COM

C 110 Ball Valve

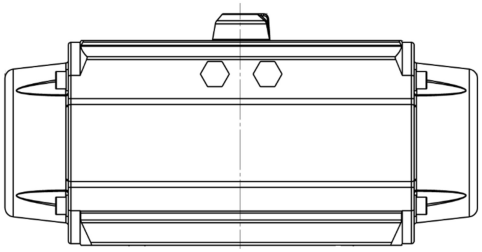
Pneumatic actuator



Variants	DA	NC/NO
Types	PP10, PP20	PP20S

Technical data	PP10	PP20	PP20S
Function	DA	DA	NC/NO
Torque start at 6 bar (Nm)	71	165,5	99,7
Torque end at 6 bar (Nm)	-	-	60,8
Control volume, opening (litres)	0,35	0,8	0,8
Manipulating time, opening (s)	0,25	0,4	0,5
Manipulating time, closing (s)	0,25	0,4	0,5
Control pressure connection (inch)	1/4	1/4	1/4
Weight (kg)	1,41	2,94	4,22
Options	Limit switches	Limit switches	Limit switches
Options	Pilot valve VS 6519	Pilot valve VS 6519	Pilot valve VS 6014

Connection details	PP10	PP20	PP20S
Control pressure connection (inch)	1/4	1/4	1/4



Variants	NC/NO
Types	PA25S

Technical data	PA25S
Function	NC/NO
Torque start at 6 bar (Nm)	170,6
Torque end at 6 bar (Nm)	108,2
Control volume, opening (litres)	1,5
Manipulating time, opening (s)	0,8
Manipulating time, closing (s)	0,8
Control pressure connection (inch)	1/4
Weight (kg)	11,3
Options	Limit switches
Options	Pilot valve VS 6014

Connection details	PA25S
Control pressure connection (inch)	1/4

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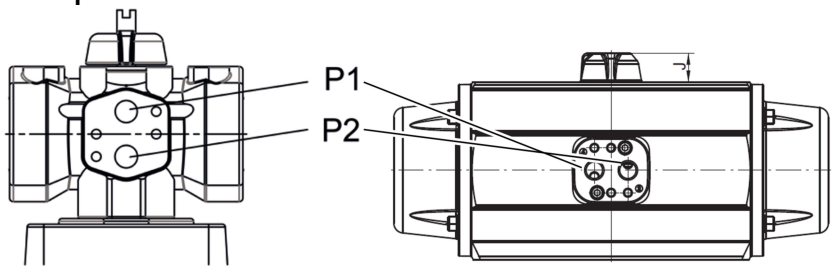
Product assignment

d	75	90	110	140	160
DN	**65**	**80**	**100**	**125**	**150**
DN**	**2 1/2**	**3**	**4**	**5**	**6**
DA	PP10	PP10	PP10	PP10	PP20
NC/NO	PP20S	PP20S	PP20S	PP20S	PA25S

all dimensions in mm / ** in inch

-

Control pressure connection



Function	Control pressure open Connection P1	Control pressure open
Normally closed (NC)		»OPEN«
Normally open (NO)		»CLOSED«
Double-acting (DA)	»CLOSED«	»OPEN«

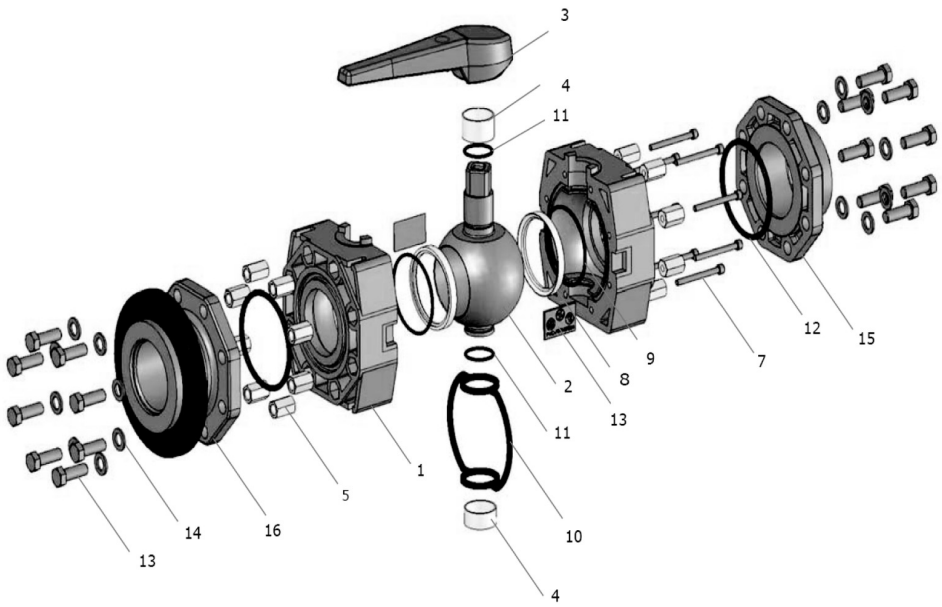
Control
3/2-way solenoid valves for NC/NO actuators VS6014
5/2-way solenoid valves for DA actuators VS 6519

The actuators require a control pressure of 6 bar for optimum function. Malfunctions may occur, if the control pressure deviates. In this case, a new actuator configuration is necessary. Ensure that the control medium is free of dust and oil.

Ensure that the maximum particle size does not exceed 30 µm (ISO 8573 Part 1, Class 5).

To prevent water condensation and/or formation of ice (at work temperatures under 0°C), ensure that the medium has a dew point of -20°C or at least 10°C below the ambient temperature (ISO 8573 Part 1, Class 3).

Basic valve with hand lever



position	quantity	designation
1	2	housing/body
2	1	ball
3	1	hand lever
4	2	bearing bush
5	16	Application
7	8	hexagon socket screw
8	2	ball seat
9	2	O-ring
10	1	sealing
11	2	O-ring
12	2	O-ring
13	16	hexagon bolt
14	16	washer
15	2	socket
16	2	Flange

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