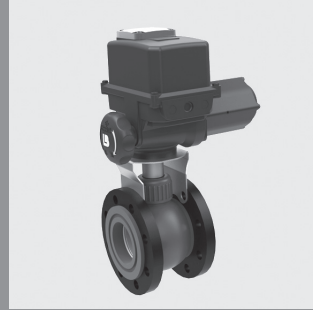
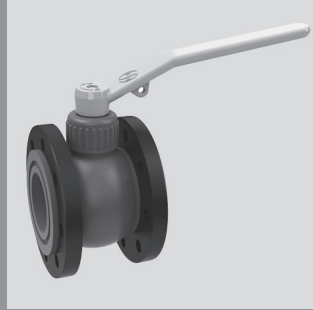
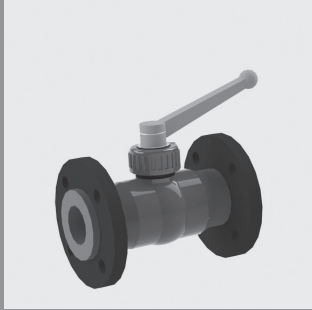


Ball valve C 16

valve ball completely moulded in place, extremely low clearance volume, high k_v value



Advantage

- maximum safety due to valve ball completely moulded in place - ball and ball seat cannot be flushed out
- high operating reliability - no shearing of the high grade steel stem injected into the ball, even at high torque
- extremely low clearance volume - the body encloses the ball due to the special die casting method
- optimised k_v value - for all sizes, the internal ball diameter is constructively adapted to the internal pipe diameter
- DN 65 - DN 150 lockable - manipulations are excluded due to the optionally available locking plate

Application

- chemical plants
- industrial plants
- water treatment

Utilisation

- for shutting off pipeline systems

Flow Media

- Neutral and aggressive fluid or gaseous media free of solid particles, provided that the valve components coming into contact with the media are resistant at the operating temperature in accordance with the ASV resistance guide.

Testing

- Requirements and tests/inspections according to DIN 3441, 3442 and 8063. DIN EN 12266, leakage rate A tested.

Nominal Pressure (H₂O, 20°C)

- PN 6 - PN 16

Fluid Temperature

- see pressure/temperature diagram

Operating Pressure

- see pressure/temperature diagram

Size

- DN 50 - DN 150

Body

- PVC-U

Stem

- stainless steel (1.4301)

Ball

- PE

Ball Seat

- PTFE
- FPM

Sealing

- FPM

Actuation

- with T-handle, simultaneously serving as a position indicator
- with electric actuator, DIN EN ISO 5211
- with pneumatic actuator, DIN EN ISO 5211

Connection

- GFR flange DIN 2501, PN 10/16, with DIN face-to-face dimension (DN 50 DIN 3202 F1; > DN 50 DIN 3202 F1)
- PP/steel flange DIN 2501, PN 10/16, with DIN face-to-face dimension (DN 50 DIN 3202 F1; > DN 50 DIN 3202 F1)

Mounting

- as required

Accessories

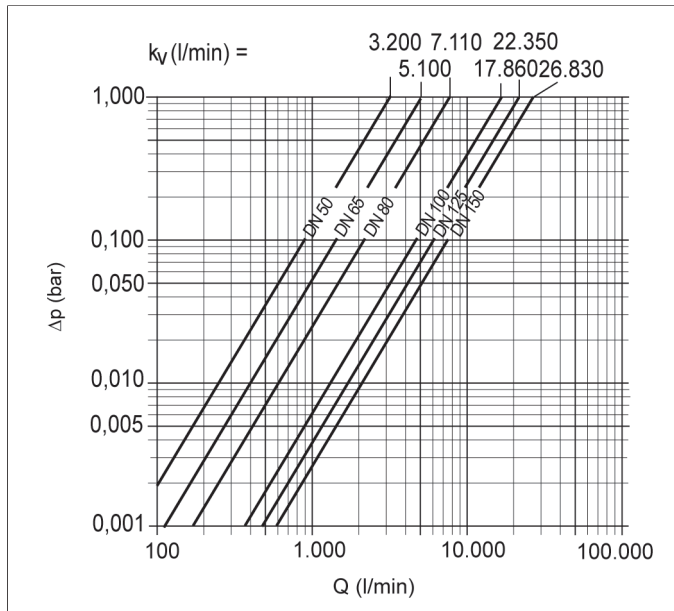
- limit switch unit
- lockable hand lever
- locking plate

Colour

- body: PVC-U, grey, RAL 7011
- hand lever: PVC-U, orange, RAL 2004
- hand lever: die casting, orange, RAL 2004
- GFR Flanges: black, RAL 9011
- PP/Steel Flanges: black, RAL 9011

Ball valve C 16

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



ΔP = pressure loss

Q = flow

pressure loss and k_v value

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

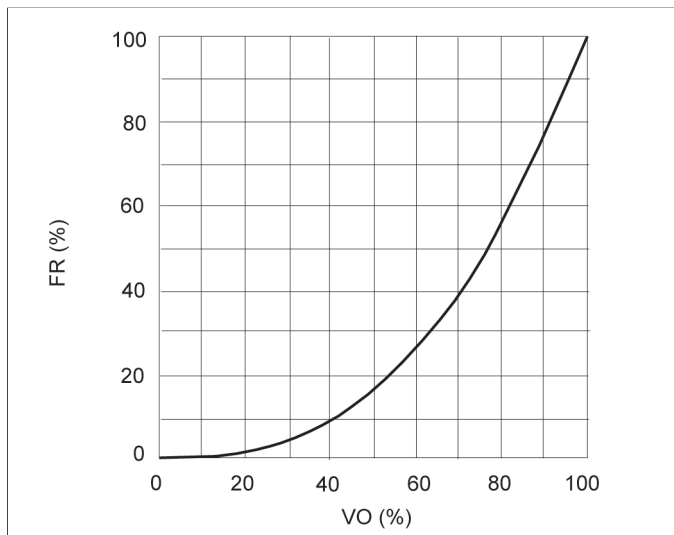
Conversion aid:

$$c_v = k_v \times 0.07; f_v = k_v \times 0.0585$$

Units:

k_v [l/min]; c_v [gal/min] US; f_v [gal/min] GB

Flow characteristic



VO = valve opening

FR = K_v value

Torque (Nm)

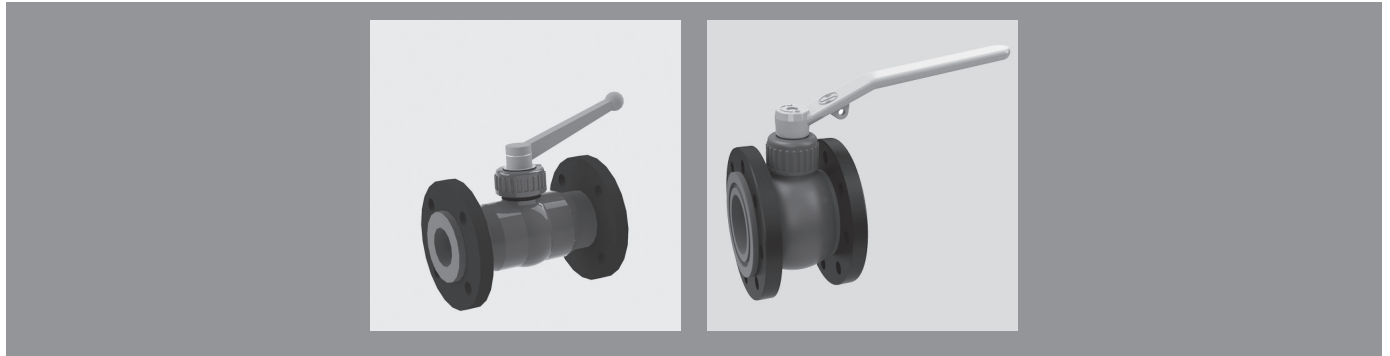
d (mm)	63	75	90	110	140	160
PVC-U	17	30	40	50	100	80

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.

Operating note

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, directives/technical regulations or codes of practice such as e.g. DIN, DIN EN, DIN ISO and DVS*. *DVS = German Welding Society. The intended use includes adhering to specified limit values for pressure and temperature, as well as checking the resistance. This requires all components coming into contact with the medium to be "resistant" in accordance with the ASV resistance guide.

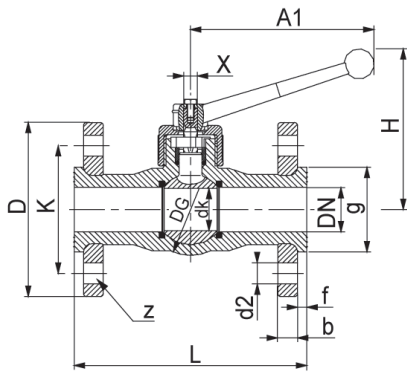
Ball valve C 16, manual



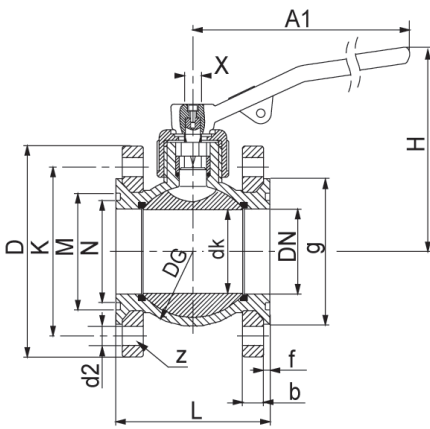
body PVC-U		ball PE							
<i>size</i>	d(mm)		63	75	90	110	140	160	
<i>pressure range</i>	DN(mm)		50	65	80	100	125	150	
	DN(inch)		2	2 1/2	3	4	5	6	
	PN(bar)		16	10	10	10	6	6	
<i>Connection</i>	<i>ball seat</i>	<i>sealing</i>	<i>ident No.</i>						
GFR flange DIN EN 1092	FPM	FPM	142624	142617	142334	142618	142619		
	PTFE	FPM	51457	51458	51459	51460	51461	51854	
	<i>weight</i>		3.20 kg	3.60 kg	4.20 kg	5.50 kg	8.10 kg	11.60 kg	
PP / steel flange DIN EN 1092	FPM	FPM	142642	142620	142621	142622	142623		
	PTFE	FPM	64044	62299	61349	61157	67964	57675	
	<i>weight</i>		3.90 kg	4.86 kg	5.80 kg	7.16 kg	9.94 kg	14.26 kg	

Ball valve C 16, manual

DN 50



DN 65 - DN 150



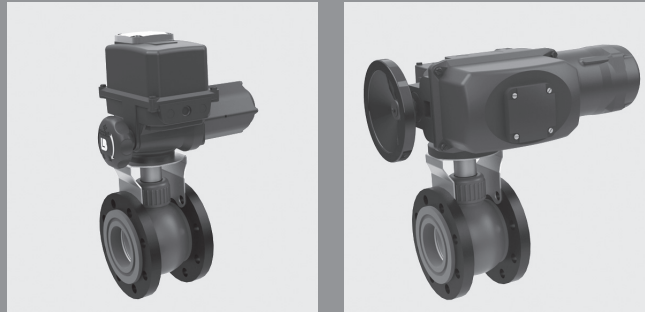
dimensions

d(mm)	63	75	90	110	140	160
DN(mm)	50	65	80	100	125	150
DN(inch)	2	2 1/2	3	4	5	6

dimensions(mm)

	A1	320	320	320	320	320	480
GFR	b	18	18	20	20	26	28
PP / steel	b	19	19	21	22	26	27
	d2	18	18	18	18	18	23
	dk	486	645	793	933	125	150
	D	165	185	200	220	250	285
	DG	95	122	142	168	224	260
GFR	f	9	6	7	7	16	9
PP / steel	f	6	6	7	7	16	9
	g	90	122	138	158	188	200
	H	186	190	190	220	250	285
	K	125	145	160	180	210	240
	L	230	138	146	167	267	267
	M	-	92	111	133	164	190
	N	-	78	97	115	146	172
	X	12 x 14	12 x 14	14 x 16	16 x 18	16 x 18	22 x 22
	z	4	4	8	8	8	8

Ball valve C 16, electric



Voltage

- please refer to the technical data
- further drive variants and options on request

Mounting Set

- DN 50 - 125: stainless steel (1.4301); DN 150: painted steel

Coupling

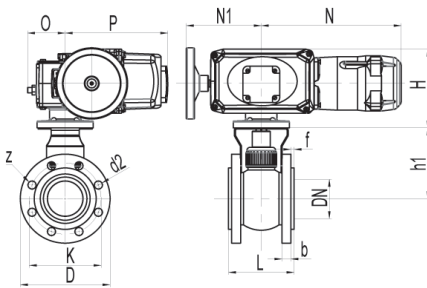
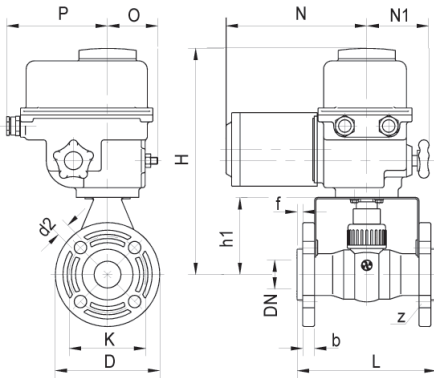
- steel square, galvanised
- adaptor made of aluminium

Screws

- stainless steel (1.4301)

Actuator variant 230 V		body PVC-U		ball PE					
<i>size</i> <i>pressure range</i>	d(mm)			63	75	90	110	140	160
	DN(mm)			50	65	80	100	125	150
	DN(inch)			2	2 1/2	3	4	5	6
	PN(bar)			16	10	10	10	6	6
<i>Connection</i>	<i>ball seat</i>	<i>sealing</i>	<i>ident No.</i>						
GFR flange DIN EN 1092	FPM	FPM		1426249830	1426179830	1423349830	1426189830	1426199830	
	PTFE	FPM		514579830	514589830	514599830	514609830	514619830	518549830
	<i>weight</i>			<i>9.70 kg</i>	<i>10.10 kg</i>	<i>11.70 kg</i>	<i>13.00 kg</i>	<i>28.60 kg</i>	<i>32.10 kg</i>
PP / steel flange DIN EN 1092	FPM	FPM		1426429830	1426209830	1426219830	1426229830	1426239830	
	PTFE	FPM		640449830	622999830	613499830	611579830	679649830	576759830
	<i>weight</i>			<i>10.40 kg</i>	<i>11.36 kg</i>	<i>13.30 kg</i>	<i>14.66 kg</i>	<i>30.44 kg</i>	<i>34.76 kg</i>

Ball valve C 16, electric



dimensions

d(mm)	63	75	90	110	140	160
DN(mm)	50	65	80	100	125	150
DN(inch)	2	2 1/2	3	4	5	6
actuator type	OA6	OA6	OA8	OA8	AS18	AS18

dimensions(mm)

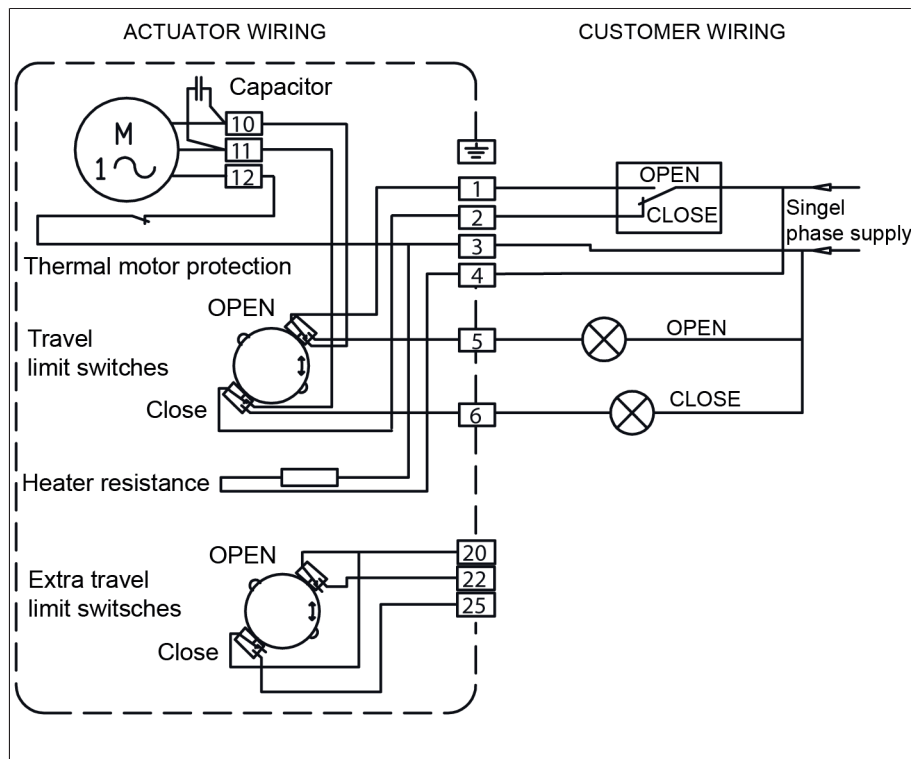
GFR	b	18	18	20	20	26	28
PP / steel	b	19	19	21	22	26	27
	d2	18	18	18	18	18	23
	dk	486	645	793	933	125	150
	D	165	185	200	220	250	285
GFR	f	9	6	7	7	16	9
PP / steel	f	6	6	7	7	16	9
	h1	127	146	159	186	211	230
	H	206	206	206	206	177	177
	K	125	145	160	180	210	240
	L	230	138	146	167	267	267
	N	205	205	205	205	395	395
	N1	90	90	90	90	168	168
	O	75	75	75	75	80	80
	O1	-	-	85	85	85	85
	P	145	145	145	145	230	230
	z	4	4	8	8	8	8

Ball valve C 16, electric

Technical data

actuator type	OA6	OA8	OA6 (*)	OA8 (*)
Torque	60	100	60	100
Voltage	230 VAC	230 VAC	400 VAC	400 VAC
Manipulating time(s)	6	6	6	6
Power consumption(W)	30	60	40	100
Setting angle(°)	90	90	90	90
Weight(kg)	6	7	6	7
Duty cycle(%)	30	30	30	30
Type of protection	IP 67	IP 67	IP 67	IP 67
Temperature(°C)	-20 ... 70	-20 ... 70	-20 ... 70	-20 ... 70

(*) Drive variants: please order separately.



Customer's wiring is given as an example only and is not part of the actuator supply, Check power supply specifications prior to installing the device.

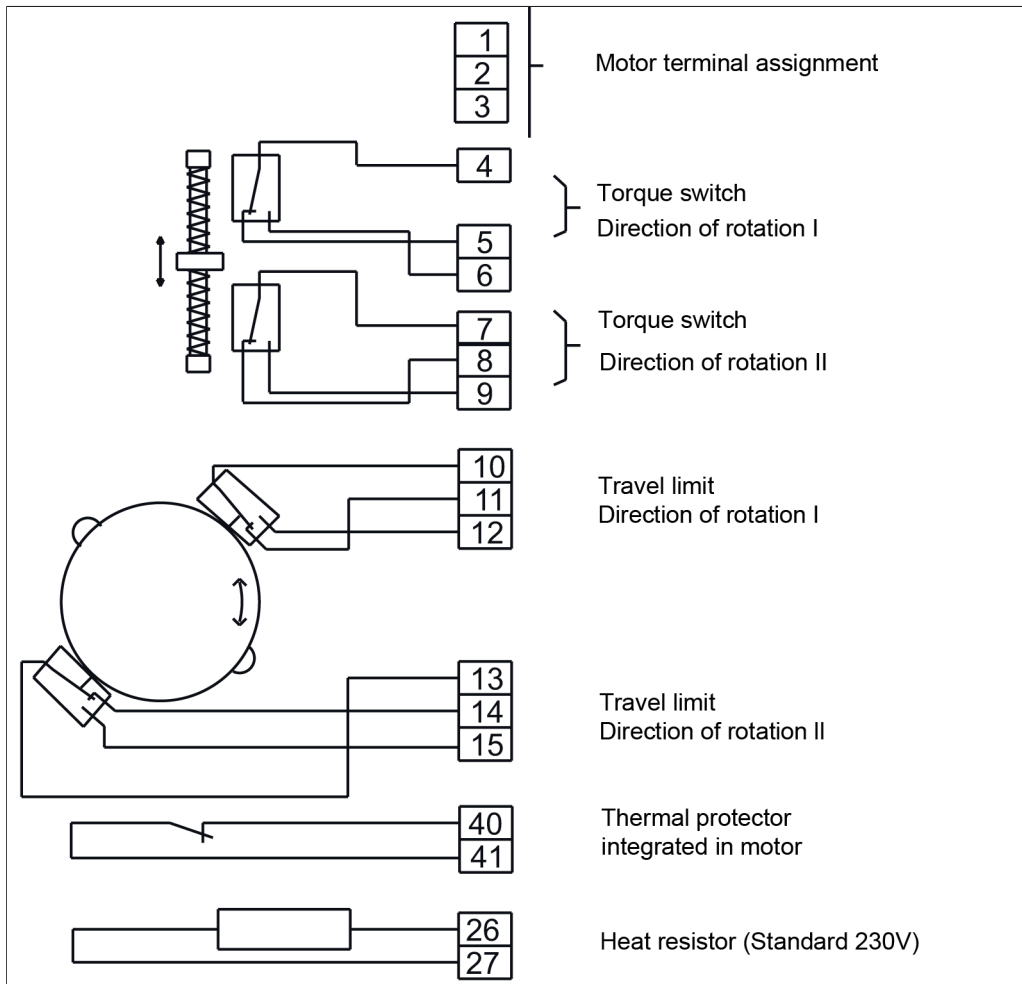
Warning : Open and Close commands must not be activated simultaneously in order to properly isolate the unused motor winding.

Technical data

actuator type	AS18	AS18 (*)
Torque	200	200
Voltage	230 VAC	400 VAC
Manipulating time(s)	5	5
Power consumption(W)	20	100
Setting angle(°)	90	90
Weight(kg)	20	20
Duty cycle(%)	30	30
Type of protection	IP 67	IP 67
Temperature(°C)	-20 ... 70	-20 ... 70

(*) Drive variants: please order separately.

Ball valve C 16, electric



Function of switches:

Direction of rotation (viewed from top through the actuator onto the valve shaft)

I) Anti-clockwise (normally open).

II) Clockwise (normally close).

Note:

The torque switches provide a momentary contact.

Exception: Type SRA6.2 drive

The travel limits provide a continuous contact.

Ball valve C 16, pneumatic



Control Pressure

- 6 bar

Control Function

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

Standard

- visual position indicator
- further options such as limit switch unit, positioner or pilot valves on request

Mounting Set

- DN 50 - 125: stainless steel (1.4301); DN 150: painted steel

Coupling

- steel square, galvanised
- adaptor made of aluminium

Screws

- stainless steel (1.4301)

Actuator variant NC		body PVC-U			ball PE				
<i>size</i>	d(mm)			63	75	90	110	140	160
	<i>pressure range</i>	DN(mm)		50	65	80	100	125	150
		DN(inch)		2	2 1/2	3	4	5	6
		PN(bar)		16	10	10	10	6	6
<i>Connection</i>	<i>ball seat</i>	<i>sealing</i>	<i>ident No.</i>						
GFR flange DIN EN 1092	FPM	FPM	1426249560	1426179560	1423349660	1426189660	1426199660		
	PTFE	FPM	514579560	514589560	514599660	514609660	514619660	518549660	
	<i>weight</i>		7.70 kg	8.10 kg	12.90 kg	20.90 kg	44.00 kg	46.50 kg	
PP / steel flange DIN EN 1092	FPM	FPM	1426429560	1426209560	1426219660	1426229660	1426239660		
	PTFE	FPM	640449560	622999560	613499660	611579660	679649660	576759660	
	<i>weight</i>		8.30 kg	9.30 kg	14.50 kg	22.60 kg	45.80 kg	49.20 kg	

Actuator variant NO		body PVC-U			ball PE				
<i>size</i>	d(mm)			63	75	90	110	140	160
	<i>pressure range</i>	DN(mm)		50	65	80	100	125	150
		DN(inch)		2	2 1/2	3	4	5	6
		PN(bar)		16	10	10	10	6	6
<i>Connection</i>	<i>ball seat</i>	<i>sealing</i>	<i>ident No.</i>						
GFR flange DIN EN 1092	FPM	FPM	1426249570	1426179570	1423349670	1426189670	1426199670		
	PTFE	FPM	514579570	514589570	514599670	514609670	514619670	518549670	
	<i>weight</i>		7.70 kg	8.10 kg	12.90 kg	20.90 kg	44.00 kg	46.50 kg	
PP / steel flange DIN EN 1092	FPM	FPM	1426429570	1426209570	1426219670	1426229670	1426239670		
	PTFE	FPM	640449570	622999570	613499670	611579670	679649670	576759670	
	<i>weight</i>		8.30 kg	9.30 kg	14.50 kg	22.60 kg	45.80 kg	49.20 kg	

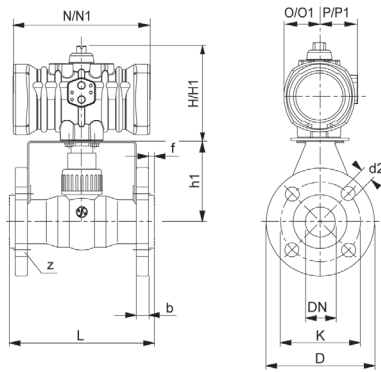
Ball valve C 16, pneumatic



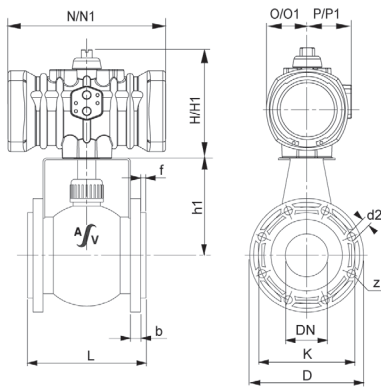
Actuator variant DA		body PVC-U		ball PE					
size pressure range	d(mm)			63	75	90	110	140	160
	DN(mm)			50	65	80	100	125	150
	DN(inch)			2	2 1/2	3	4	5	6
	PN(bar)			16	10	10	10	6	6
Connection	ball seat	sealing	ident No.						
GFR flange DIN EN 1092	FPM	FPM		1426249580	1426179580	1423349680	1426189680	1426199680	
	PTFE	FPM		514579580	514589580	514599580	514609580	514619680	518549680
	weight			4.10 kg	4.50 kg	6.60 kg	7.90 kg	13.50 kg	16.00 kg
PP / steel flange DIN EN 1092	FPM	FPM		1426429580	1426209580	1426219680	1426229680	1426239680	
	PTFE	FPM		640449580	622999580	613499580	611579580	679649680	576759680
	weight			4.80 kg	5.80 kg	8.20 kg	9.60 kg	15.30 kg	18.70 kg

Ball valve C 16, pneumatic

DN 50



DN 65 - DN 150



N/O/P/H = NC-NO
 N₁/O₁/P₁/H₁ = DA

dimensions

d(mm)		63	75	90	110	140	160
DN(mm)		50	65	80	100	125	150
DN(inch)		2	2 1/2	3	4	5	6
actuator type		PP10 DA PP20S NC/NO	PP10 DA PP20S NC/NO	PP20 DA PA25S NC/NO	PP20 DA PA30S NC/NO	PA25 DA P40S NC/NO	PA25 DA P40S NC/NO
dimensions(mm)							
GFR/PP / steel	b	18	18	20	20	26	28
PP / steel/GFR	b	19	19	21	22	26	27
	d2	18	18	18	18	18	23
	dk	486	645	793	933	125	150
	D	165	185	200	220	250	285
GFR/PP / steel	f	9	6	7	7	16	9
PP / steel/GFR	f	6	6	7	7	16	9
	h1	127	146	159	186	211	230
	H	162	162	184.3	211	272	272
	H1	128	128	162	162	184.3	184.3
	K	125	145	160	180	210	240
	L	230	138	146	167	267	267
	N	304	304	356.2	479	598	598
	N1	182	182	233	233	356.2	356.2
	O	60	60	64.3	83	106	106
	O1	49	49	60	60	64.3	64.3
	P	65	65	89.2	94	120	120
	P1	53	53	65	65	89.2	89.2
	z	4	4	8	8	8	8

Ball valve C 16, pneumatic

Technical data

PA-Line

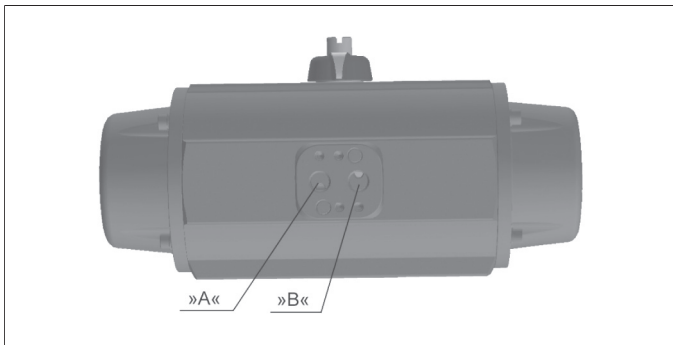
Option (to be ordered additionally if required)

limit switch unit; positioner; handwheel; pilot solenoid valve; AS Interface connection

actuator type	PA30S	PA25S
Function	NC/NO	NC/NO
Torque (start) at 6 bar(Nm)	289.3	170.6
Torque (end) at 6 bar(Nm)	195.5	108.2
Control volume (Opening)(Liter)	2.05	1.5
Manipulating time (Opening)(s)	1.2	0.8
Manipulating time (Closing)(s)	1.2	0.8
Control pressure connection(inch)	1/4	1/4
Weight(kg)	15.9	11.3

actuator type	PA25
Function	DA
Torque (start) at 6 bar(Nm)	290
Control volume (Opening)(Liter)	1.5
Control volume (Closing)(Liter)	2.02
Manipulating time (Opening)(s)	0.5
Manipulating time (Closing)(s)	0.5
Control pressure connection(inch)	1/4
Weight(kg)	9.3

Control pressure connection



Normally closed NC: control pressure to connection »B«, valve opens

Normally open NO: control pressure to connection »B«, valve closes

Double acting DA: control pressure to connection »A«, valve closes control pressure to connection »B«, valve opens

Control:

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

5/2-way solenoid valves for DA actuators

Note:

The drives require a control pressure of 6 bar for optimum function. Malfunctions may occur, if the control pressure deviates. In this case, a new drive configuration is necessary.

Technical data

PP-Line

Option (to be ordered additionally if required)

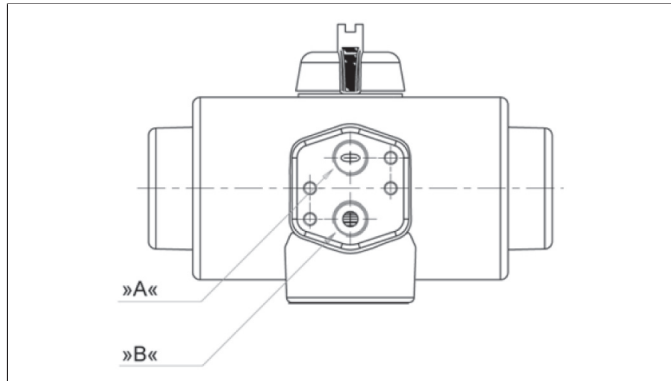
limit switch unit; positioner; handwheel; pilot solenoid valve; AS Interface connection

actuator type	PP20S
Function	NC/NO
Torque (start) at 6 bar(Nm)	103.3
Torque (end) at 6 bar(Nm)	64.2
Control volume (Opening)(Liter)	0.8
Manipulating time (Opening)(s)	0.5
Manipulating time (Closing)(s)	0.5
Control pressure connection(inch)	1/4
Weight(kg)	4.95

Ball valve C 16, pneumatic

actuator type	PP10	PP20
Function	DA	DA
Torque (start) at 6 bar(Nm)	71	165.5
Control volume (Opening)(Liter)	0.35	0.8
Control volume (Closing)(Liter)	0.32	0.7
Manipulating time (Opening)(s)	0.25	0.4
Manipulating time (Closing)(s)	0.25	0.4
Control pressure connection(inch)	1/4	1/4
Weight(kg)	1.41	2.94

Control pressure connection



Normally closed NC: control pressure to connection »B«, valve opens

Normally open NO: control pressure to connection »B«, valve closes

Double acting DA: control pressure to connection »A«, valve closes control pressure to connection »B«, valve opens

Control:

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

5/2-way solenoid valves for DA actuators

Note:

The drives require a control pressure of 6 bar for optimum function. Malfunctions may occur, if the control pressure deviates. In this case, a new drive configuration is necessary.

Technical data

P-Line

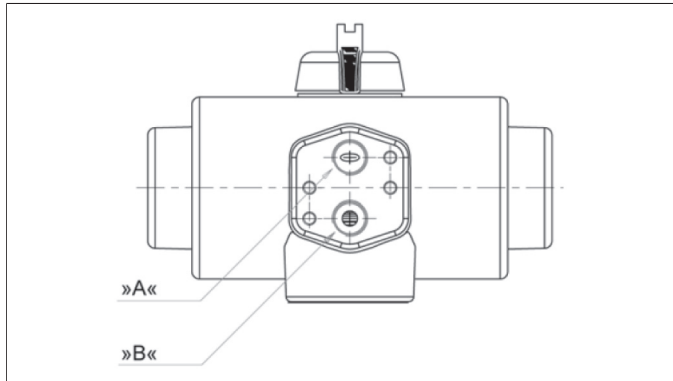
Option (to be ordered additionally if required)

limit switch unit; positioner; handwheel; pilot solenoid valve; AS Interface connection

actuator type	P4oS
Function	NC/NO
Torque (start) at 6 bar(Nm)	766.9
Torque (end) at 6 bar(Nm)	491.6
Control volume (Opening)(Liter)	5.3
Manipulating time (Opening)(s)	2
Manipulating time (Closing)(s)	2
Control pressure connection(inch)	1/4
Weight(kg)	36.4

Ball valve C 16, pneumatic

Control pressure connection



Normally closed NC: control pressure to connection »B«, valve opens

Normally open NO: control pressure to connection »B«, valve closes

Double acting DA: control pressure to connection »A«, valve closes control pressure to connection »B«, valve opens

Control:

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

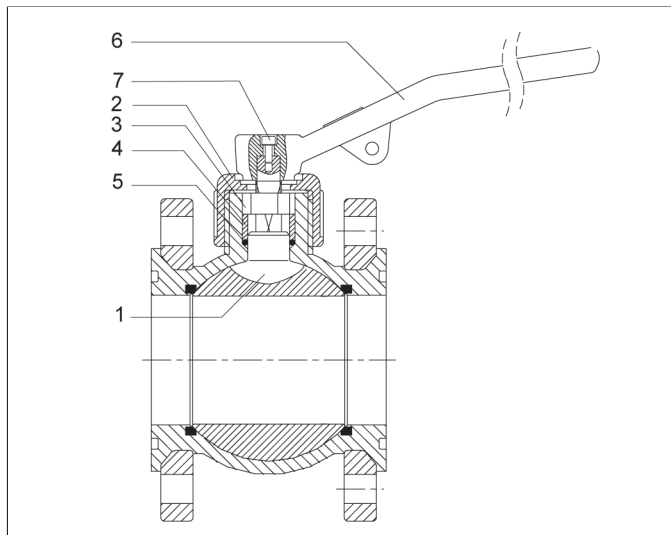
5/2-way solenoid valves for DA actuators

Note:

The drives require a control pressure of 6 bar for optimum function. Malfunctions may occur, if the control pressure deviates. In this case, a new drive configuration is necessary.

Ball valve C 16

parts lists



position	quantity	designation
1	1	body with ball
2	1	cap
3	1	end position limiter
4	1	pressure piece
5	1	O-ring
6	1	hand lever
7	1	hexagon bolt

Ball valve C 16