

Dosing Ball Valve ProfiProp(pat.)

patented ball valve with proportional flow characteristic
the low-price alternative to a diaphragm valve



Advantage

- safefloat ball
- radial mounting and removal
- one-piece, compact design
- union acc. DIN 8063

Application

- chemical plants
- water treatment
- galvano technics

Utilisation

- for exact dosing of fluids
- the low-price alternative to a diaphragm valve

Dosing range

- 0° to 90°
- scale graduation 5°

Flow media

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

Examinations

- Requirements and examinations according to DIN 3441, 3442, 8063 and DIN EN 12266.

Nominal pressure (H₂O, 20°C)

- PVC-U: PN 16
- PP: PN 10
- PVDF: PN 16

Media temperature

- see pressure/temperature diagram

Operating pressure

- see pressure/temperature diagram

Size

- DN 15 up to DN 50

Body, ball, stem

- PVC-U, PP or PVDF

Ball seat

- PTFE

Sealings

- EPDM or FPM

Actuation

- manual valve with T-handle, also as position indicator
- with electrical positioner

Connection

- union DIN 8063
- socket ends for solvent welding DIN ISO (PVC-U)
- socket ends or spigot ends for fusion welding DIN ISO (PP, PVDF)
- socket ends acc. to BS, ANSI or JIS on request

Mounting

- variable

Flow direction

- direction of flow always in direction of arrow

Option

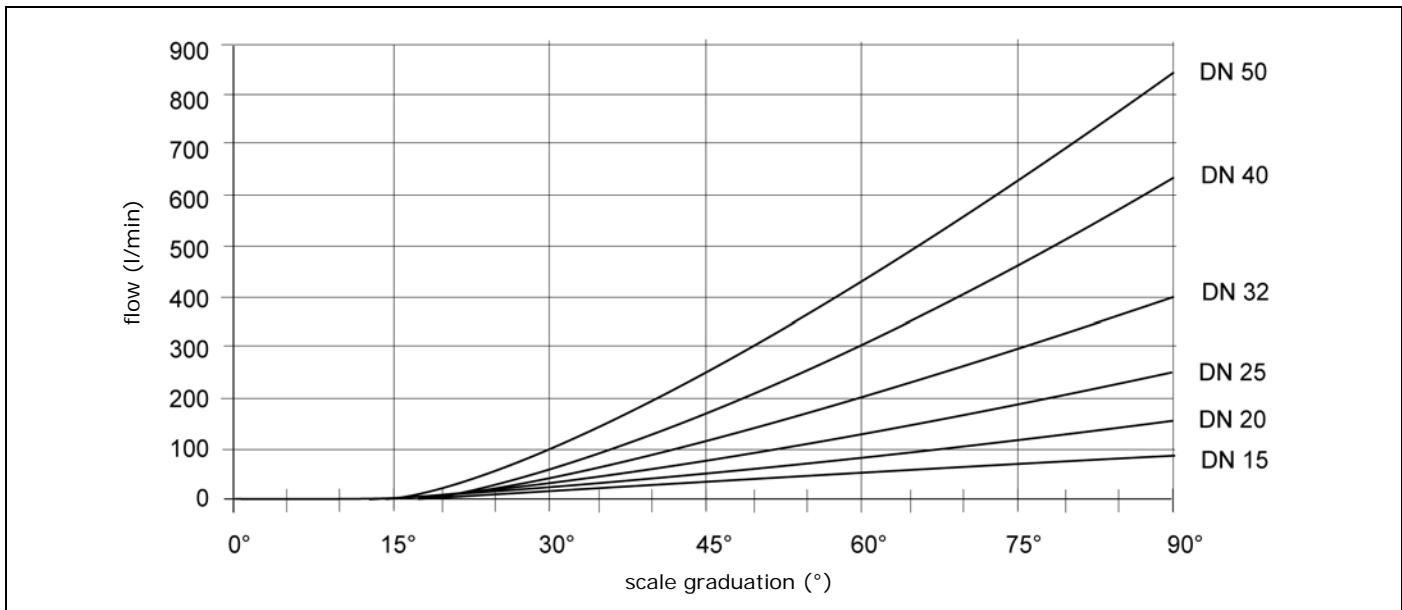
- bracket

Colour

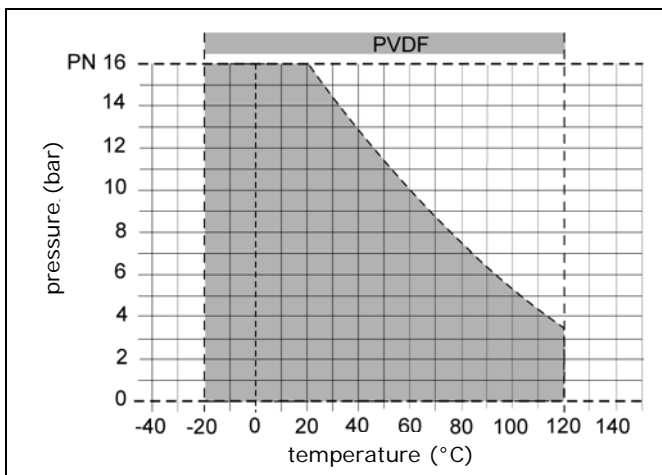
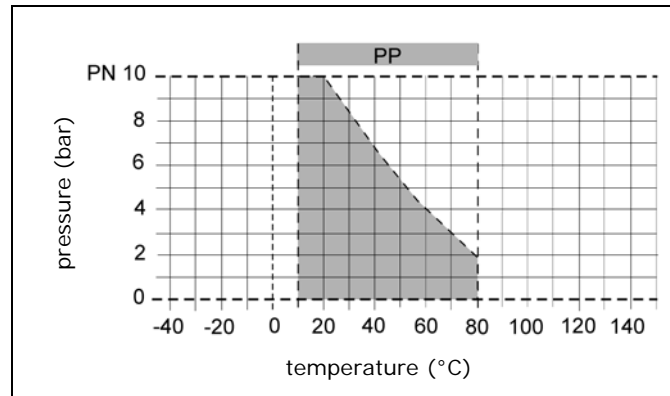
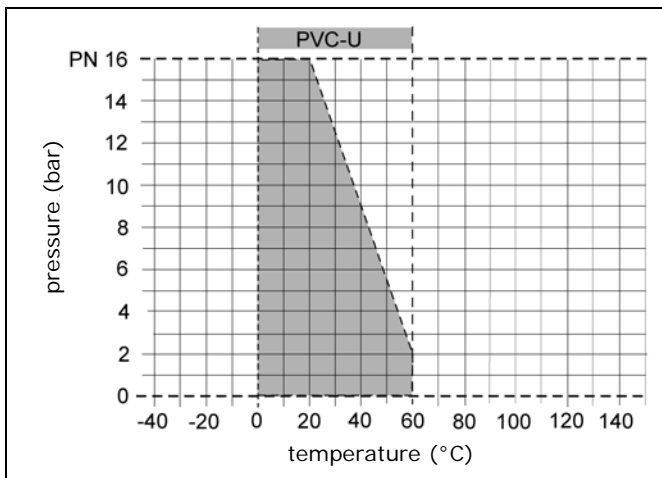
- body: PVC-U: grey, RAL 7011
PP: grey, RAL 7032
PVDF: PVDF, opaque, yellowish-white
- T-handle: PVC-U: orange, RAL 2004

Dosing Ball Valve ProfiProp

Flow Q at Δp 1 bar (H₂O)



Pressure/temperature diagram



The pressure/temperature limits are applicable for the stated nominal pressures and a computed operating life factor of 25 years.

The values are a guide for harmless media (DIN 2403), to which the material of the valve is resistant.

For other media see the ASV resistance guide.

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

For temperatures below 0°C (PP < +10°C) please specify the precise operating conditions of the application.



Torque Nm (standard value)

d (mm)	20	25				
PVC-U	2,5	3,6	4,5	6,2	8,5	11,0
PP	2,0	3,0	4,0	5,8	8,0	10,3
PVDF	2,5	3,6	4,5	6,2	8,5	11,0

The stated torques are approximate values. They have been determined as follows. Operating pressure p = 10.0 bar (PP) and p = 16 bar (PVC-U/PVDF) 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 like DIN, DIN EN, DIN ISO and DVS* for example.

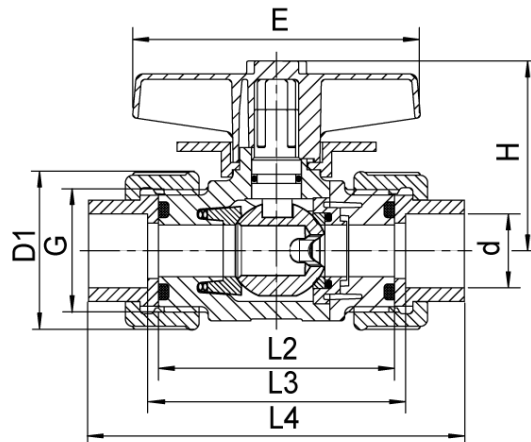
The intended use includes adhering to the specified limit values for pressure and temperature as well as the chemical resistance referring to the operating conditions.

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

Non-observance of the specified information and safety instructions may lead to injuries and/or property damages.

*DVS = German Welding Society

Dosing Ball Valve ProfiProp »manual«



dimension	d (mm)	20	25	32	40	50	63
	DN (mm)	15	20	25	32	40	50
	DN (Zoll)	1/2	3/4	1	1 1/4	1 1/2	2
PVC-U	PN (bar)	16	16	16	16	16	16
PP	PN (bar)	10	10	10	10	10	10
PVDF	PN (bar)	16	16	16	16	16	16
	dk	13,5	18,0	23,5	30,5	38,5	49,0
PVC-U	D1	44,0	53,0	60,0	74,0	83,0	103,0
PP	D1	46,0	56,0	66,0	79,0	87,0	107,0
PVDF	D1	43,0	52,0	58,0	72,0	81,0	100,0
	E	68,0	78,0	88,0	98,0	108,0	118,0
	G (Zoll)	1	1 1/4	1 1/2	2	2 1/4	2 3/4
	H	51,0	61,0	70,0	81,0	90,0	110,0
PVC-U	L2	64,0	76,0	81,0	92,0	95,0	115,0
PP	L2	63,0	75,0	79,0	91,0	95,0	115,0
PVDF	L2	63,0	74,0	78,0	90,0	94,0	115,0
PVC-U	L3	70,0	82,0	87,0	98,0	101,0	121,0
PP	L3	69,0	81,0	85,0	97,0	101,0	121,0
PVDF	L3	69,0	80,0	84,0	96,0	100,0	121,0
PVC-U	L4	102,0	120,0	131,0	150,0	163,0	197,0
PP	L4	98,0	113,0	121,0	138,0	148,0	176,0
PVDF	L4	98,0	112,0	120,0	137,0	162,0	176,0
weight (kg)							
PVC-U-socket end	PVC-U	0,16	0,27	0,38	0,68	0,98	1,68
PP-socket end	PP	0,13	0,20	0,29	0,47	0,74	1,17
PVDF-socket end	PVDF	0,18	0,29	0,40	0,70	1,10	1,75

Ident number

body PVC-U	d (mm)	20	25	32	40	50	63
connection	sealing						
PVC-U-socket end	PTFE-EPDM	140298	140300	140304	140308	140312	140316
PVC-U-socket end	PTFE-FPM	138454	140302	140306	140310	140314	140318
body PP							
body PP	d (mm)	20	25	32	40	50	63
connection	sealing						
PP-socket end	PTFE-EPDM	140299	140301	140305	140309	140313	140317
PP-socket end	PTFE-FPM	138455	140303	140307	140311	140315	140319
body PVDF							
body PVDF	d (mm)	20	25	32	40	50	63
connection	sealing						
PVDF-socket end	PTFE-FPM	140594	140595	140596	140597	140598	140599

Dosing Ball Valve ProfiProp »electric«

Voltage

- 230 V AC 50/60 Hz
- 24 V AC/DC

Running time 90°

- ER20 20 sek.

Control range

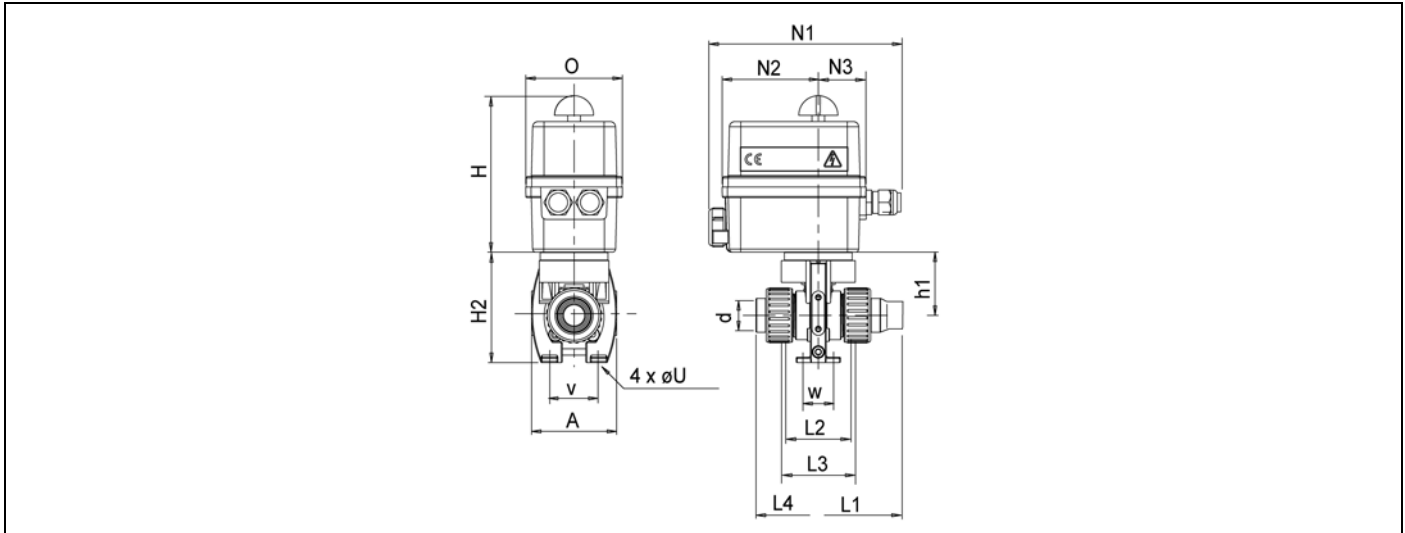
- 0 - 90°

Actuator mounting set/coupling/bracket

- PPA, glass fibre reinforced

Screws

- Edelstahl (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
PVC-U	PN (bar)	16	16	16	16	16	16
PP	PN (bar)	10	10	10	10	10	10
PVDF	PN (bar)	16	16	16	16	16	16
actuator type		ER20	ER20	ER20	ER20	ER20	ER20
PVC-U	D1	44,0	53,0	60,0	74,0	83,0	103,0
PP	D1	46,0	56,0	66,0	79,0	87,0	107,0
PVDF	D1	43,0	52,0	58,0	72,0	81,0	100,0
	H	147,0	147,0	147,0	147,0	147,0	147,0
	h1	50,0	60,0	66,0	74,0	95,5	104,0
	H2	97,0	105,0	128,0	128,0	189,0	193,0
PP	L1	173,0	185,0	189,0	201,0	205,0	225,0
PVDF	L1	169,0	186,0	196,0	214,0	224,0	251,0
PVC-U	L2	64,0	76,0	81,0	92,0	95,0	115,0
PP	L2	63,0	75,0	79,0	91,0	95,0	115,0
PVDF	L2	63,0	74,0	78,0	90,0	94,0	115,0
PVC-U	L3	70,0	82,0	87,0	98,0	101,0	121,0
PP	L3	69,0	81,0	85,0	97,0	101,0	121,0
PVDF	L3	69,0	80,0	84,0	96,0	100,0	121,0
PVC-U	L4	102,0	120,0	131,0	150,0	163,0	197,0
PP	L4	98,0	113,0	121,0	138,0	148,0	176,0
PVDF	L4	98,0	112,0	120,0	137,0	162,0	176,0
	N1	189,0	189,0	189,0	189,0	189,0	189,0
	N2	91,0	91,0	91,0	91,0	91,0	91,0
	N3	45,0	45,0	45,0	45,0	45,0	45,0
	O	92,0	92,0	92,0	92,0	92,0	92,0
	U	5,5	5,5	5,5	5,5	5,5	5,5
	v ±5mm	44,0	47,0	58,0	51,0	90,0	88,0
	w	30,0	30,0	30,0	30,0	30,0	30,0
weight (kg)							
PVC-U/socket		1,86	1,97	2,08	2,38	2,68	3,38
PP/socket		1,83	1,90	1,99	2,17	2,44	2,87
PVDF/socket		1,90	2,00	2,10	2,40	2,80	3,45



Dosing Ball Valve ProfiProp »electric«

Possible actuator variants

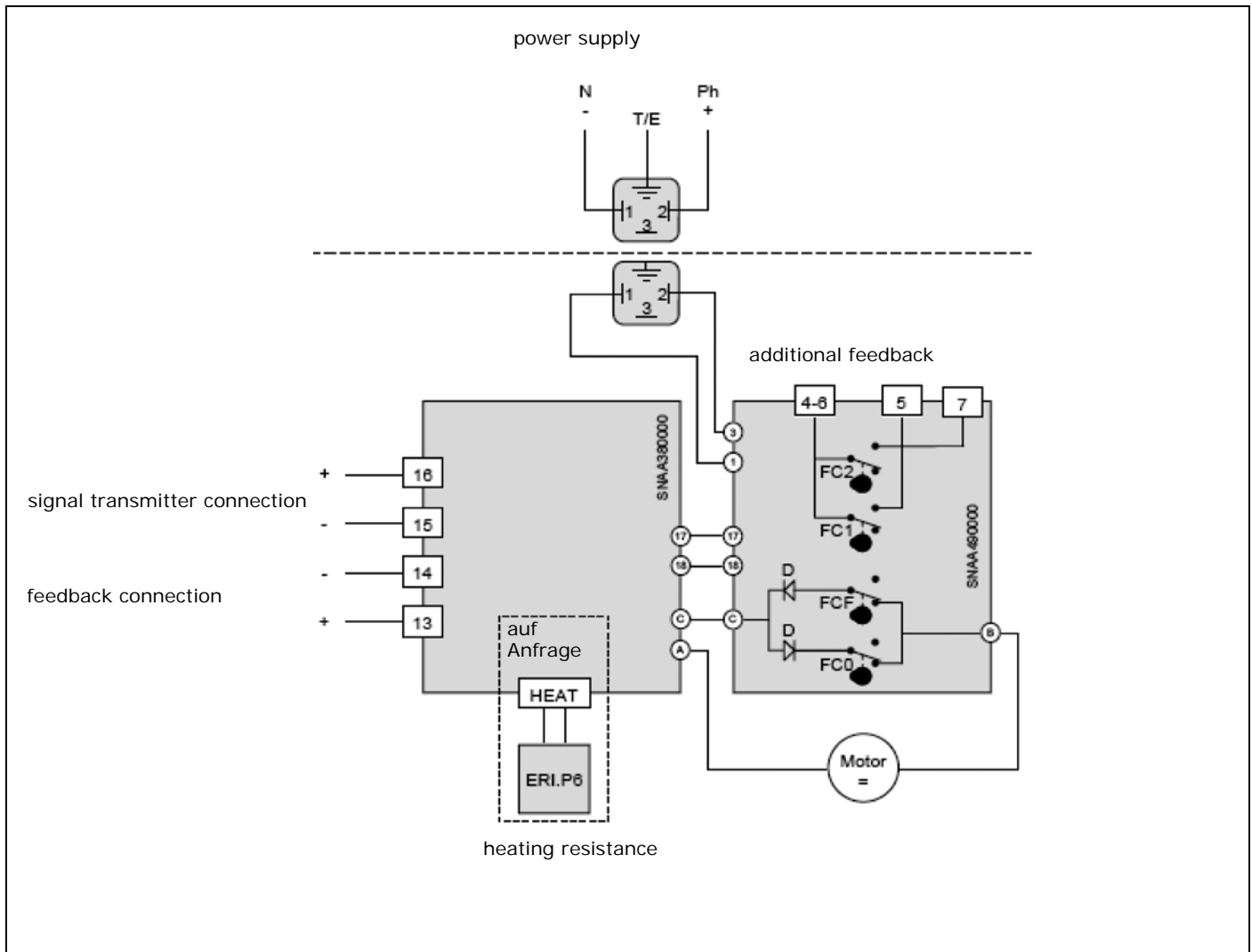
positioner version
type »ER-line«
connection with PG union and DIN 43650 connection plug
4 adjustable limit switches, 2 of which are freely assignable
manual emergency control
internal torque limiter
visual position indicator
duty cycle: 50%
protection type: IP 65
temperature: -10°C to +55°C
input/output: 0...20 mA / 4...20 mA / 0...10 V (programmable)
voltage: please refer to »Technical data«
running time: please refer to »Technical data«

Technical data

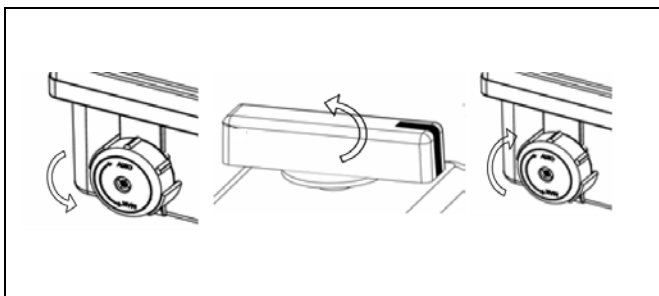
actuator	type		
rated load torque	Nm	20	20
voltage	V	100 - 240 V AC	24 V AC/DC
running time 90°/180°	sec	20/40	20/40

Dosing Ball Valve ProfiProp »electric«

Electrical connection, type ER20



Type ER20



Manual emergency control

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

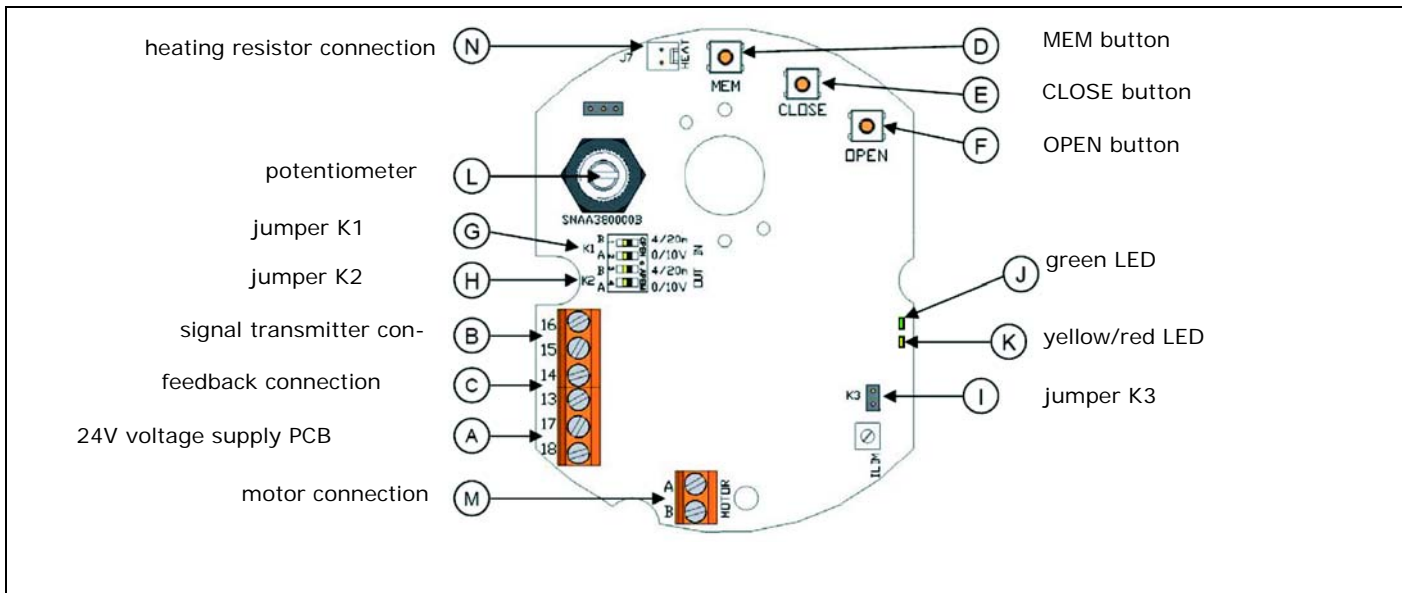
To allow manual emergency control, turn the coupling switch from »AUTO« to »MANU« and hold in the »MANU« position.

Use the lever to turn the actuator shaft.

Release the coupling switch to re-engage the gearing.

Dosing Ball Valve ProfiProp »electric«

Parametrization steps



ATTENTION

Prior to performing any adjustments, always disconnect the voltage supply plug from the actuator!



1. Defining the direction of rotation

1.1 Normal direction of rotation (preset)

- Press the »OPEN« button, connect the voltage supply plug to the actuator while keeping the button pressed,
- the green LED lights up. Release the »OPEN« button,
- disconnect the plug from the actuator for 5 seconds, then reconnect.

1.2 Reverse direction of rotation

- Press the »CLOSE« button, connect the voltage supply plug to the actuator while keeping the button pressed,
- the red LED lights up. Release the »CLOSE« button,
- disconnect the plug from the actuator for 5 seconds, then reconnect.



2. Defining the feedback

2.1 Feedback at voltage 0...10 V

- Press the »MEM« button, connect the voltage supply plug to the actuator while keeping the button pressed,
- the red LED flashes three times. Release the button,
- disconnect the plug from the actuator for 5 seconds, then reconnect.



2.2 Feedback at current 0...20 mA

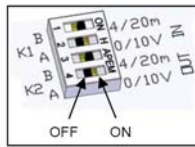
- Press the »MEM« and »OPEN« buttons, connect the voltage supply plug to the actuator while keeping the button pressed,
- the red LED flashes three times. Release the buttons,
- disconnect the plug from the actuator for 5 seconds, then reconnect.



2.3 Feedback at current 4...20 mA (preset)

- Press the »MEM« and »CLOSE« buttons, connect the voltage supply plug to the actuator while keeping the button pressed,
- the red LED flashes three times. Release the buttons,
- disconnect the plug from the actuator for 5 seconds, then reconnect.





3. Learning mode (setting »OPEN/CLOSE« limits)

- Press the »OPEN« and »CLOSE« buttons, connect the voltage supply plug to the actuator while keeping the button pressed,
- the two LEDs light up. Release the button, the two LEDs extinguish.
- The learning mode is selected.
- Press the »CLOSE« button to close the valve.
- The red LED lights up.
- Save the closed position by pressing the »MEM« and »CLOSE« buttons, the red LED flashes three times as an acknowledgement.
- Press the »OPEN« button to open the valve.
- The green LED lights up.
- Save the opened position by pressing the »MEM« and »OPEN« buttons, the green LED flashes three times as an acknowledgement.
- The positions are saved, disconnect the plug from the actuator for 5 seconds, then reconnect.

4. Position of jumpers K1, K2 and K3

Jumper positioning:

Prior to performing any changes, disconnect the voltage supply plug from the actuator!

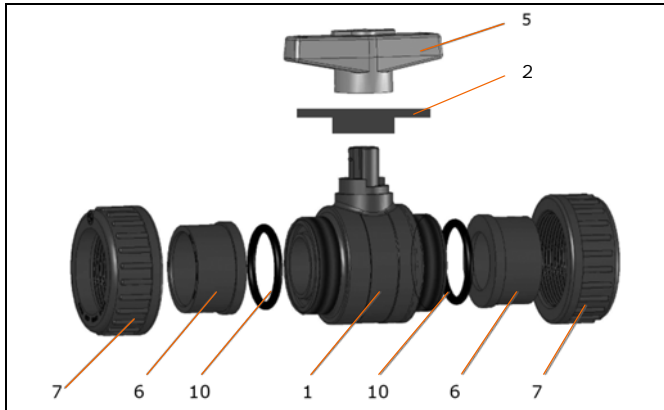
input	output	jumper 1		jumper 2		jumper 3
		A	B	A	B	
0...10 V	0...10 V	ON	OFF	ON	OFF	OFF
0...10 V	0...20 mA	ON	OFF	OFF	ON	OFF
0...10 V	4...20 mA	ON	OFF	OFF	ON	ON
0...20 mA	0...10 V	OFF	ON	ON	OFF	OFF
0...20 mA	0...20 mA	OFF	ON	OFF	ON	OFF
0...20 mA	4...20 mA	OFF	ON	OFF	ON	ON
4...20 mA	0...10 V	OFF	ON	ON	OFF	OFF
4...20 mA	0...20 mA	OFF	ON	OFF	ON	OFF
4...20 mA	4...20 mA	OFF	ON	OFF	ON	ON

Standard operation

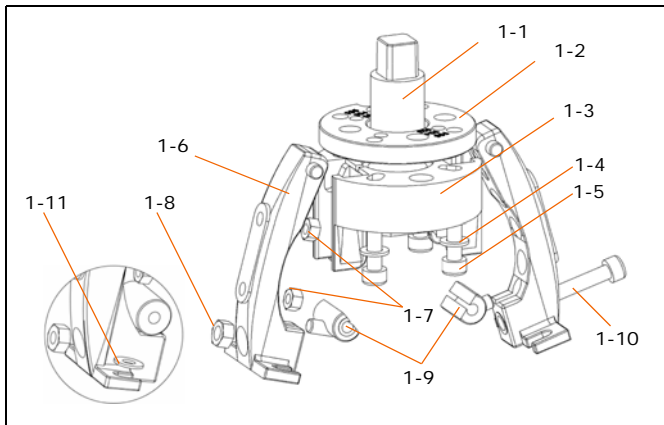
- Connect the voltage supply plug to the actuator. The green LED flashes three times to show that the starting process has been correctly performed.
- In standard operation the green LED lights up when the actuator opens the valve, and the red LED when the actuator closes the valve.
- If neither of the two LEDs lights up, the actuator has not been selected.
- Both LEDs light up and the actuator stops in the event of excessive torque. To restart the actuator it is necessary to change the direction of rotation.

Dosing Ball Valve ProfiProp

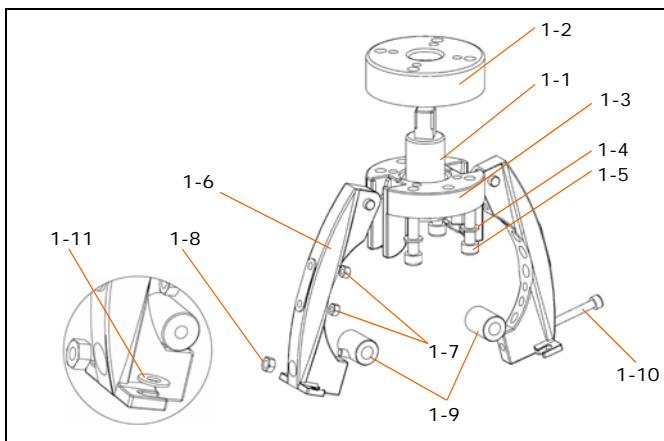
Parts lists and designations



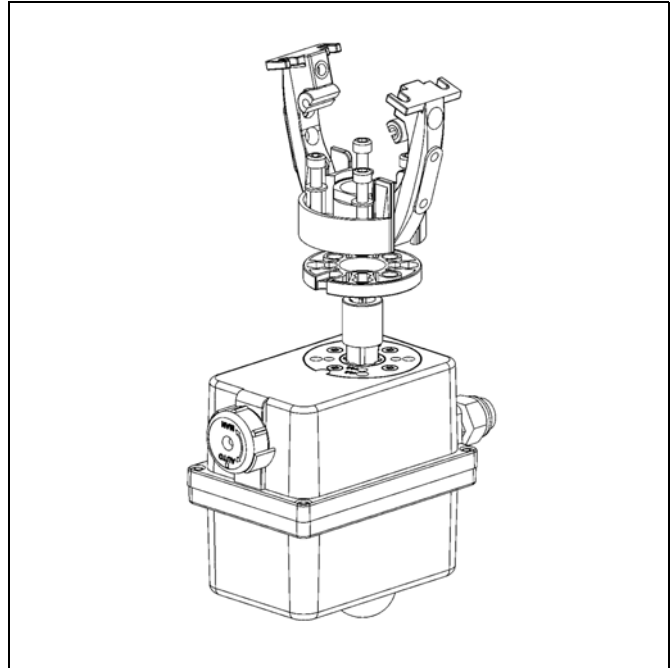
Actuator mounting set DN 10 to DN 32



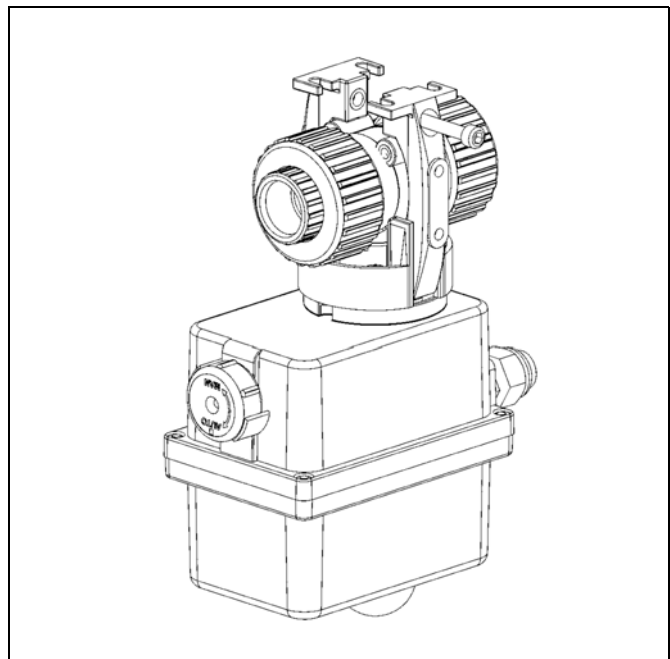
Actuator mounting set DN 40 and DN 50



Assembly: Mounting kit with the actuator



Assembly: Mounting kit with the valve



item	qty.	designation
1	1	body
2	1	scale
5	1	T-handle
6	2	union end
7	2	union nut
10	2	O-ring

item	qty.	designation
1-1	1	coupling
1-2	1	spacer plate (DN 20 - DN 32)
1-3	1	plate
1-4	4	washer
1-5	4	hexagonal socket screw M6
1-6	2	flange
1-7	2	hexagonal nut M5
1-8	1	hexagonal nut M6
1-9	2	wedges
1-10	1	hexagonal socket screw M6
1-11	4	washer ø5



Ident number for automated valves

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ident No. manual valve							9			
actuated valve	-----									
line	-----									
	0	1	2	3	4	5	6	7	8	9
ER-line (electric)										
V-line (electric)										
version	-----									
	0	1	2	3	4	5	6	7	8	9
24 V AC/DC										
100-240 V AC/120-350 V DC										
option (electric)	-----									
	0	1	2	3	4	5	6	7	8	9
positioner										

Example:
 Type: ProfiProp 101, DN 32
 Body/housing: PVC-U
 Sealing: PTFE-EPDM 1 4 0 3 0 0 9 1 1 5
 Connection: PVC-U socket
Actuator: ER-line, 24 V DC/AC, variable speed actuator 0...180° regulation range

