

Ball Valve Profi M

one-piece, safefloat ball, high k_v -value



Advantages

- connection with trapezoidal thread
- one-piece with safefloat ball
- high k_v -value
- excellent price/performance ratio

Application

- chemical plants
- water treatment
- electroplating

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. DIN EN 12266, leak rate A examined.

Nominal pressure (H_2O , 20°C)

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

Media temperature

- see pressure/temperature diagram

Operating pressure

- see pressure/temperature diagram

Size

- DN 15 - DN 50

Body, ball, stem

- PVC-U or PP

Ball seat

- PTFE

Sealings

- EPDM or FPM

Actuation

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

Connection

- customary trapezoidal thread, union socket ends for solvent welding acc. to DIN/ISO (PVC-U)
- customary trapezoidal thread, union socket ends for fusion welding acc. to DIN/ISO (PP)
- inserts acc. to BS, ANSI or JIS on request

Mounting

- variable

Option

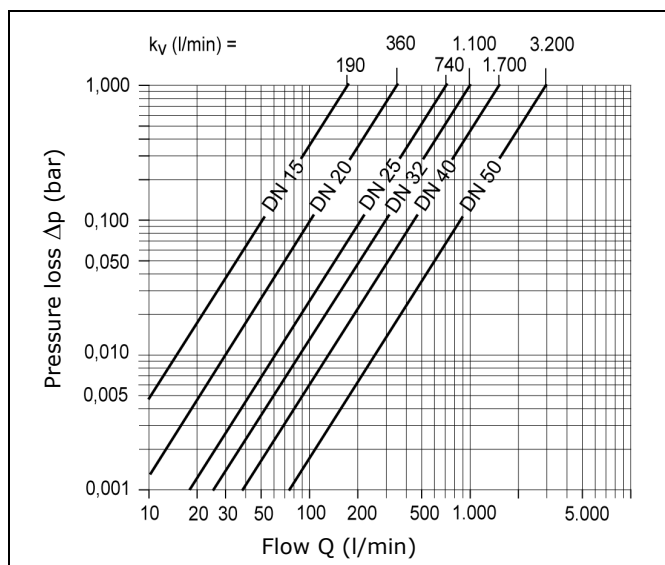
- bracket
- limit switch unit

Colour

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

Ball Valve Profi M

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



Pressure loss and kv-value

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

For calculation:

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

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

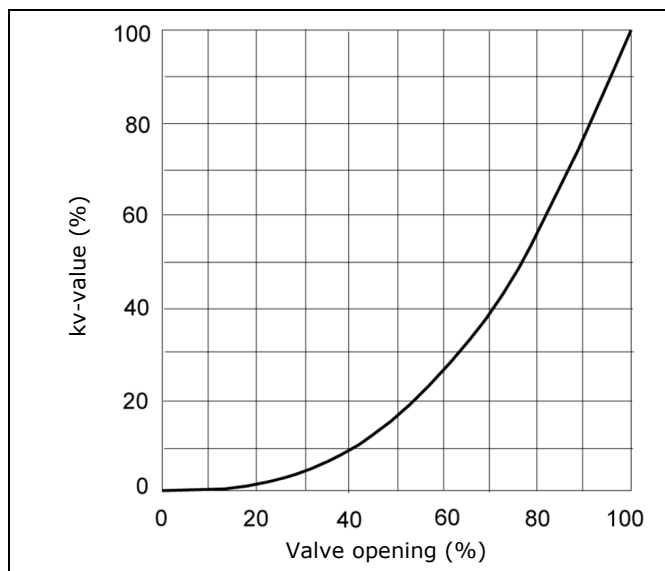
Units:

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

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

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

Flow characteristic



Torque Nm (standard value)

d (mm)	20	25	32	40	50	63
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

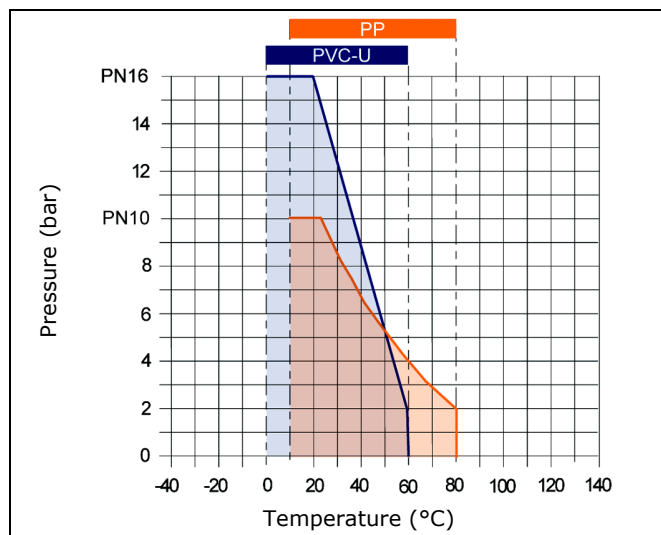
The stated torques are approximate values.

They have been determined as follows. Operating pres-

sure $p = 10,0$ bar (PP) and $p = 16$ bar (PVC-U) with H₂O, 20 °C.

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

Pressure/temperature diagram



The pressure/temperature limits are applicable for a computed operating life factor of 25 years at PN 10 (PP) and PN 16 (PVC-U).

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

For other media see the ASV resistance guide.

The durability of wear and tear parts 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.

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 check of the chemical resistance.

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

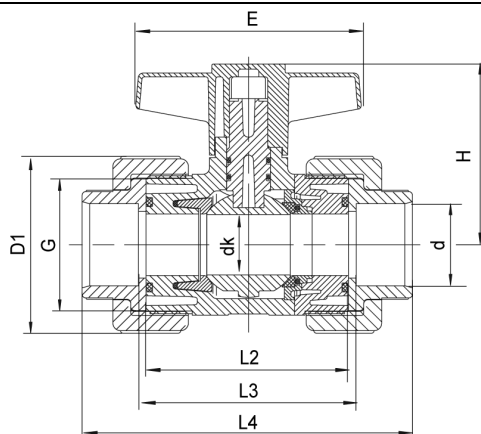
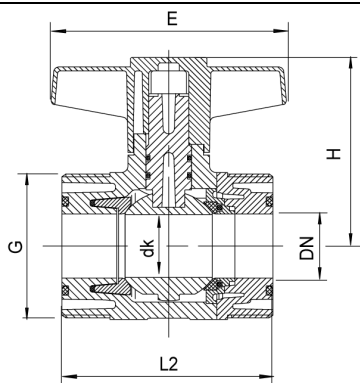
Non-observance of the specified information and safety instructions may lead to injuries and/or property damages.

*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 Profi M «manual»



dimensions	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
	dk	13,5	18,0	23,5	30,5	38,5	49,0
	D1	49,0	59,0	69,0	86,0	101,0	123,0
	E	68,0	78,0	88,0	98,0	108,0	118,0
	G	TSG	TSG	TSG	TSG	TSG	TSG
	H	48,0	58,0	67,0	78,0	87,0	105,0
	L2	64,0	76,0	79,0	91,0	95,0	115,0
PVC-U	L3	70,0	82,0	85,0	98,0	101,0	122,0
PP	L3	73,0	88,0	93,0	109,0	116,0	142,0
PVC-U	L4	102,0	120,0	129,0	150,0	163,0	199,0
PP	L4	102,0	120,0	129,0	150,0	162,0	197,0
weights (kg)							
PVC-U-socket	PVC-U	0,16	0,27	0,38	0,68	0,98	1,68
PP-socket	PP	0,13	0,20	0,29	0,47	0,74	1,17

Ident-No.: complete with union

body PVC-U	d (mm)	20	25	32	40	50	63
connection	sealing						
PVC-U-socket	PTFE-EPDM	135761	135762	135763	135764	135765	135766
PVC-U-socket	PTFE-FPM	135773	135774	135775	135776	135777	135778
body PP	d (mm)	20	25	32	40	50	63
connection	sealing						
PP-socket	PTFE-EPDM	135767	135768	135769	135770	135771	135772
PP-socket	PTFE-FPM	135779	135780	135781	135782	135783	135784

Ident-No.: threaded neck with O-rings

body PVC-U	d (mm)	20	25	32	40	50	63
connection	sealing						
threaded neck	PTFE-EPDM	136196	136197	136198	136199	136200	136201
threaded neck	PTFE-FPM	136208	136209	136210	136211	136212	136213
body PP	d (mm)	20	25	32	40	50	63
connection	sealing						
threaded neck	PTFE-EPDM	136202	136203	136204	136205	136206	136207
threaded neck	PTFE-FPM	136214	136215	136216	136217	136218	136219

Ball Valve Profi M »electric«

Voltage

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

Running time

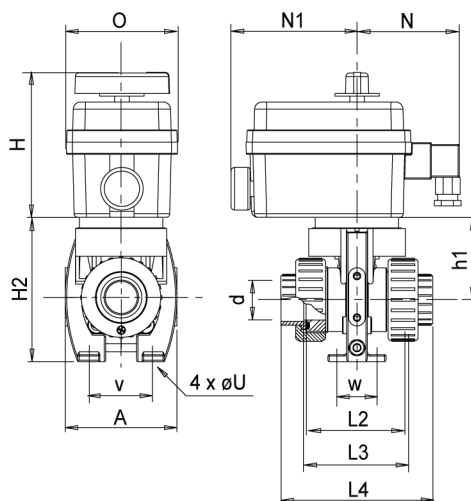
- EK20 7 sek.

Mounting set/coupling/bracket

- PA, glass fibre reinforced

Screws

- V2A (stainless steel)



dimensions	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
actuator type		EK20	EK20	EK20	EK20	EK20	EK20
running time	s	7	7	7	7	7	7
	A	78,0	82,0	104,0	102,0	130	134,0
	dk	13,5	18,0	23,5	30,5	38,5	49,0
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
	H	118,0	118,0	118,0	118,0	118,0	118,0
	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
PVC-U	L2	64,0	76,0	79,0	91,0	95,0	115,0
PP	L2	63,0	75,0	79,0	91,0	95,0	115,0
PVC-U	L3	70,0	82,0	85,0	98,0	101,0	122,0
PP	L3	73,0	88,0	93,0	109,0	116,0	142,0
PVC-U	L4	102,0	120,0	129,0	150,0	163,0	199,0
PP	L4	102,0	120,0	129,0	150,0	162,0	197,0
PVC-U	L2	64,0	76,0	79,0	91,0	95,0	115,0
PP	L2	63,0	75,0	79,0	91,0	95,0	115,0
	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 ±5 mm	44,0	47,0	58,0	51,0	88,0	88,0
	w	30,0	30,0	30,0	30,0	30,0	30,0

weights (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

Ball Valve Profi M »electric«

Possible actuator variants

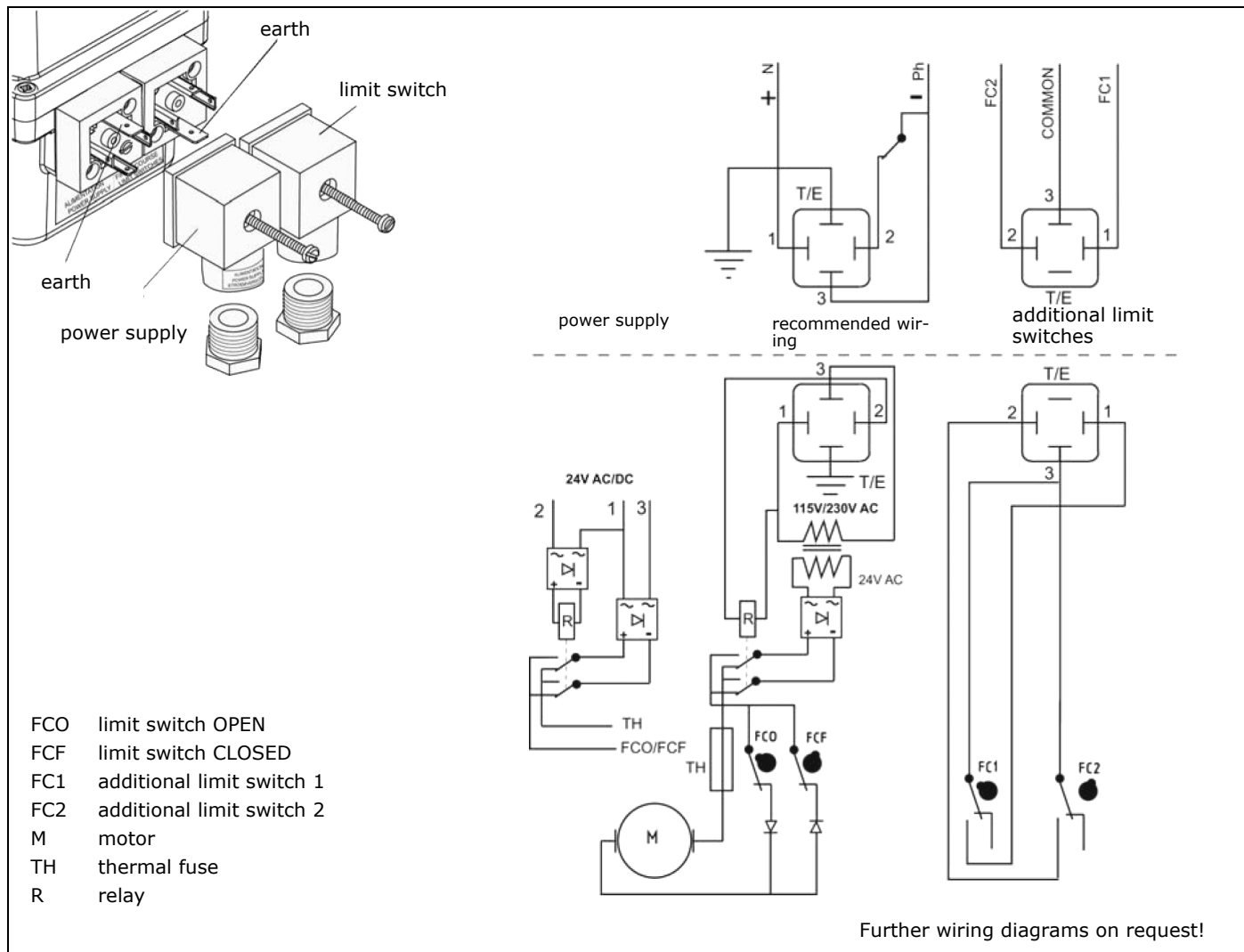
Variant 1 (standard):	Variant 2:	Variant 3:
Type »EK-line«	Type »ER-line«	Type »V-line«
Manual emergency control	Manual emergency control	Manual emergency control
Visual position indicator	Visual position indicator	Visual position indicator
Protection type: IP 65	Protection type: IP 65	Protection type: 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:		
	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	

Technical data

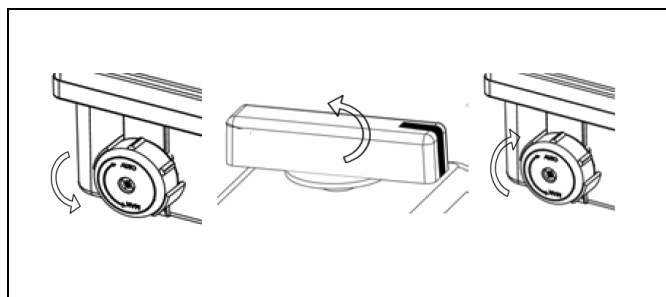
Actuator	Type	EK20
Rated load torque	Nm	20
Voltage - frequency ($\pm 10\%$)	V AC	230 and/or 24 50/60 Hz
Voltage ($\pm 10\%$)	V DC	24
Power consumption	W	9
Insulation class (according to actuator)		Class F (CEI85) = +155°C/class B (VDE 0530) = +130°C
Limit switch (NO)		125 V/5 A
Duty cycle (NFE29-408:09/1992)		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 to +55°C
Degree of humidity	°H	< 70%
Degree of soiling (C15100)		Class 2: Electronics:
Weight	kg	1,2
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

Ball Valve Profi M »electric«

Electrical connection EK20



Type EK20



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 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.

Ball Valve Profi M »pneumatic«

Control pressure

- 6 bar

Standard

- visual position indicator

Control functions

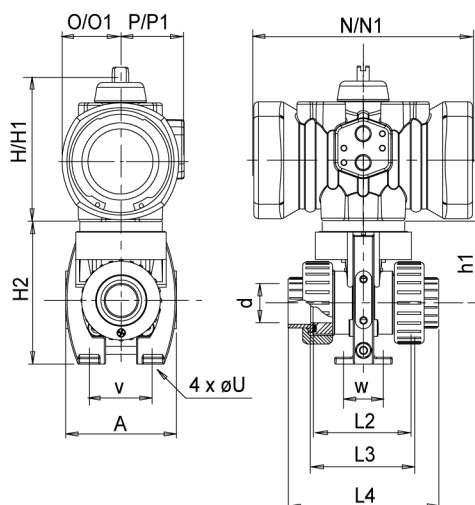
- NC (normally closed)
- NO (normally open)
- DA (double acting)

Mounting set/coupling/bracket

- PA, glass fibre reinforced

Screws

- V2A (stainless steel)



dimensions	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
actuator type	NC-NO	PPWS	PP00S	PP00S	PP00S	PP10S	PP10S
actuator type	DA	PPW	PPW	PPW	PP00	PP10	PP10
	dk	13,5	18,0	23,5	30,5	38,5	49,0
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
NC/NO	H	85,0	110,0	110,0	110,0	128,0	128,0
DA	H1	85,0	85,0	85,0	110,0	128,0	128,0
	H2	97,0	105,0	128,0	128,0	189,0	193,0
	h1	50,0	60,0	66,0	74,0	95,5	104,0
PVC-U	L2	64,0	76,0	79,0	91,0	95,0	115,0
PP	L2	63,0	75,0	79,0	91,0	95,0	115,0
PVC-U	L3	70,0	82,0	85,0	98,0	101,0	122,0
PP	L3	73,0	88,0	93,0	109,0	116,0	142,0
PVC-U	L4	102,0	120,0	129,0	150,0	163,0	199,0
PP	L4	102,0	120,0	129,0	150,0	162,0	197,0
NC/NO	N	142,0	142,0	155,0	155,0	155,0	230,0
DA	N1	107,0	107,0	107,0	107,0	125,0	182,0
NC/NO	O	31,0	31,0	36,0	36,0	36,0	49,0
DA	O1	31,0	31,0	31,0	31,0	36,0	49,0
NC/NO	P	37,5	37,5	44,0	44,0	44,0	53,0
DA	P1	37,5	37,5	37,5	37,5	44,0	53,0
	U	5,5	5,5	5,5	5,5	5,5	5,5
	V± 5 mm	44,0	47,0	58,0	51,0	90,0	88,0
	W	30,0	30,0	30,0	30,0	30,0	27,5
NC/NO	A (inch)	1/4	1/4	1/4	1/4	1/4	1/4
DA	B (inch)	1/4	1/4	1/4	1/4	1/4	1/4

Ball Valve Profi M »pneumatic«

Weights (kg)

d (mm)	20	25	32	40	50	63
NC-NO	PPWS	PP00S	PP00S	PP00S	PP10S	PP10S
PVC-U/socket	1,13	1,80	1,91	2,21	3,63	4,33
PP/socket	1,10	1,73	1,82	2,00	3,39	3,82
DA	PPW	PPW	PPW	PP00	PP10	PP10
PVC-U/socket	0,99	1,10	1,21	1,94	2,89	3,59
PP/socket	0,96	1,03	1,12	1,73	2,65	3,08

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		
	start	end						
PPWS	10,40	6,50	0,075	-	0,15	0,15	1/4	0,47
PP00S	15,90	11,30	0,150	-	0,20	0,20	1/4	1,03
PP10S	46,60	32,30	0,350	-	0,30	0,30	1/4	2,15

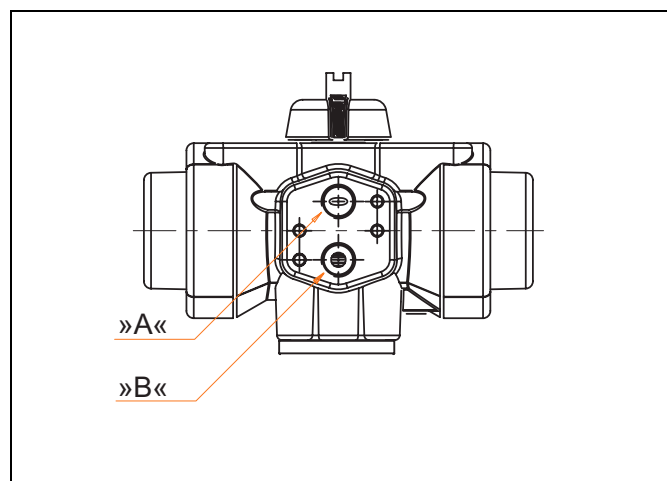
Actuator: double acting DA

type	torque		air volume (L)		running time (sec.)		air-connection	weight kg
	Nm at 6 bar		opening	closing	opening	closing		
	start	end						
PPW	17,00	-	0,075	0,05	0,10	0,10	1/4	0,33
PP00	25,00	-	0,150	0,10	0,15	0,15	1/4	0,76
PP10	71,00	-	0,350	0,32	0,25	0,25	1/4	1,41

Application conditions

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

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)

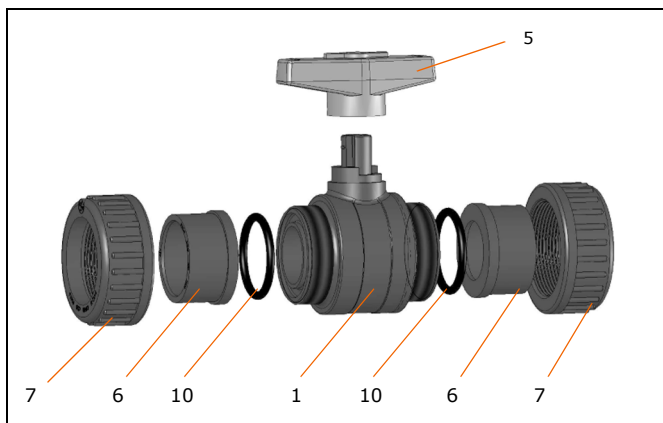
Control

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

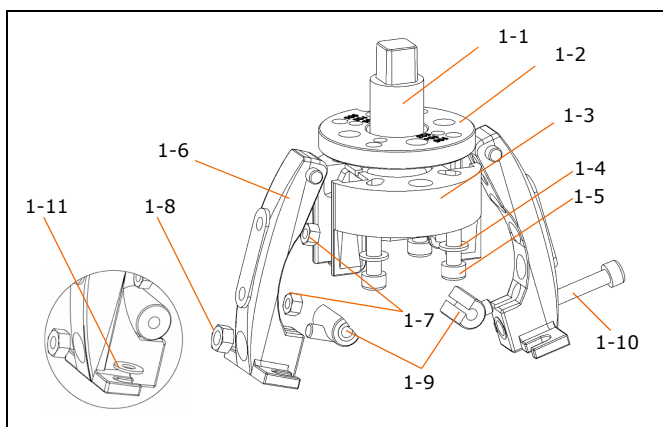
Options

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

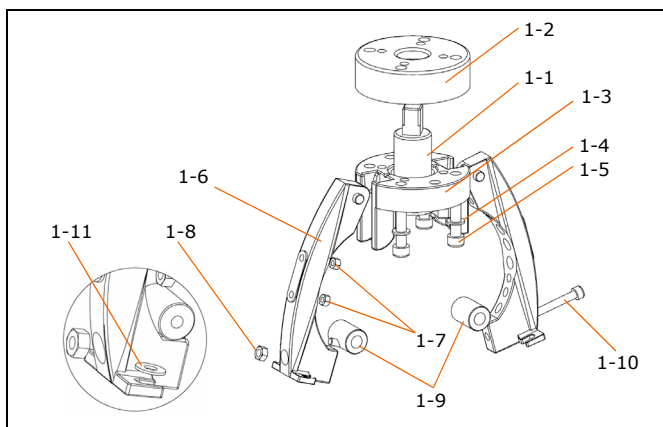
Parts lists and designations



Actuator mounting kit DN 10 to DN 32

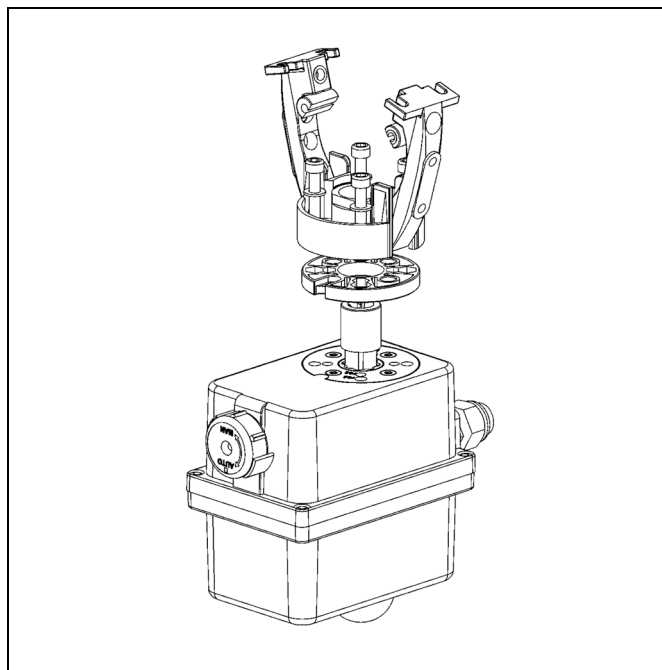


Actuator mounting kit DN 40 to DN 50

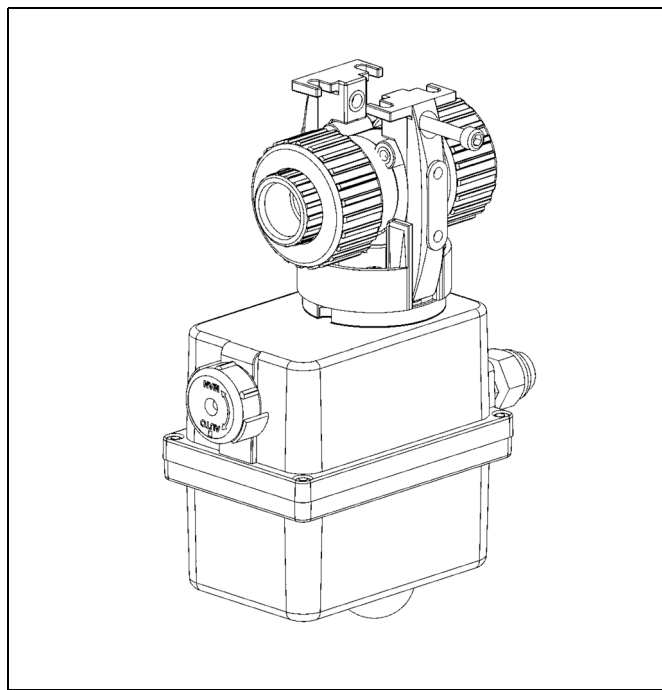


pos.	qty.	designation
1	1	housing/body
5	1	T-handle
6	2	union end
7	2	union nut
10	2	O-ring

Assembly: Mounting kit with the actuator



Assembly: Mounting kit with the valve



pos.	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	hexagon socket screw M6
1-6	2	flange
1-7	2	hexagon nut M5
1-8	1	hexagon nut M6
1-9	2	wedges
1-10	1	hexagon socket screw M6
1-11	4	washer ø5



Ident No. for automated valves

						9			
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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
	9

Example:

Type: Profi M, DN 40

Body/housing: PVC-U

Seal: PTFE-EPDM

Connection: PVC-U socket

Actuator: EK-line, 230 V AC, additional limit switches

1	3	5	7	6	5	9	0	3	2
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Subject to technical modifications



Notizen / notes



Notizen / notes