



## 2/2-way Angle-Seat Valve for media up to +180 °C, DN13-65

- High flow rates
- Very high cycle life
- Threaded and weld end body according to ISO and DIN
- Deliverable with flow direction below or above seat
- Simple conversion of the circuit function

Type 2000 can be combined with...



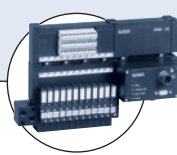
**Type 6012/6014 P**

Pilot valve



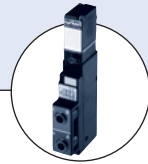
**Type 8631**

TopControl On/Off



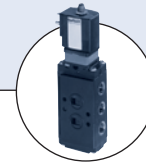
**Type 8640/8644**

Valve block



**Type 5470**

Solenoid valve



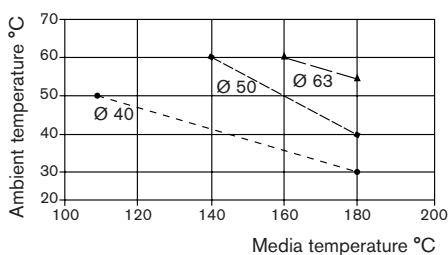
**Type 6519 Namur**

NAMUR valve

The externally piloted angle-seat valve is operated with a single or double-acting piston actuator. The actuator is available in two different materials, PA and PPS depending on the ambient temperature. The reliable self-adjusting packing gland provides high sealing integrity. High flow rates are attained with the gunmetal or stainless steel 2-way body.

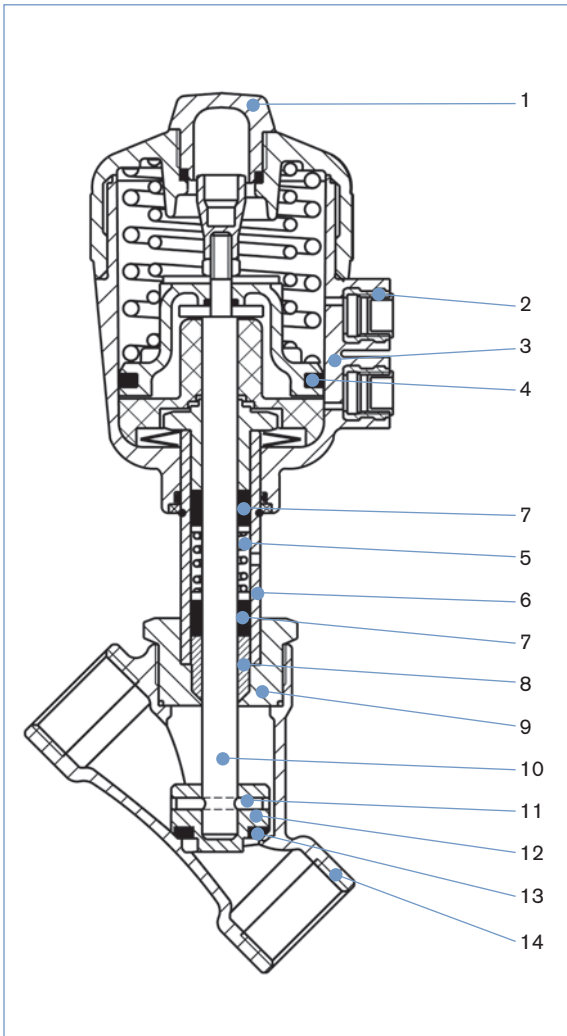
These maintenance-free and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

1) **Note:** For PA actuators in the sizes 40, 50 and 63, the combination of max. media temperature and max. ambient temperature is as shown in the following chart



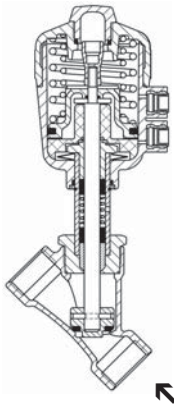
Technical Data	
<b>Orifice</b>	DN13 to 65
<b>Body materials</b>	Threaded port body Weld end body
	Gunmetal, precision casting 316L Precision casting 316L
<b>Actuator material</b>	PA or PPS
<b>Seal material</b>	PTFE (NBR, FKM, EPDM on request)
<b>Medien</b>	Water, alcohol, oils, fuel, hydraulic fluids, salt solution, alkali solutions, organic solvents, steam
<b>Viscosity</b>	max. 600 mm <sup>2</sup> /s
<b>Packing gland</b> (with silicone grease)	PTFE V-rings with spring compensation
<b>Media temperature<sup>1)</sup></b>	-10 to +180 °C with PTFE seal
<b>Ambient temperature</b>	PA actuator <sup>1)</sup> PPS actuator <sup>1)</sup> Ø 40-80 PPS actuator <sup>1)</sup> Ø 100-125
	-10 to +60 °C +5 to +140 °C +5 to +90 °C
<b>Installation</b>	As required, preferably with actuator in upright position
<b>Control medium</b>	Neutral gases, air
<b>Max. pilot pressure</b>	Actuator size Ø 40-80 Actuator size Ø 100 Actuator size Ø 100 Actuator size Ø 125
	PA and PPS 10 bar PA 10 bar PPS 7 bar PA and PPS 7 bar
<b>Port connection</b>	Threaded port Weld end port
	G 3/8 to G 2 1/2 (NPT on request) acc. to EN ISO 1127/ISO 4200 acc to DIN 11850 Series 2 SMS 3008 (on request) BS 4821 Part 1 (on request) ASME BPE (on request)
<b>Flow-rate</b>	Measured at +20 °C, 1 bar pressure at valve inlet and free outlet
<b>Pressure values [bar]</b>	Measured as overpressure to the atmospheric pressure

Materials



	<b>Brass body</b>	<b>Stainless steel body</b>
<b>1</b> Transparent cap	PC/PSU	PC/PSU
<b>2</b> Pilot air ports	Brass	Stainless steel 1.4305
<b>3</b> Actuator	PA/PPS	PA/PPS
<b>4</b> Piston seal	NBR/FKM	NBR/FKM
<b>5</b> Spring	Stainless steel 1.4310	Stainless steel 1.4310
<b>6</b> Tube	Brass CuZn39Pb3	Stainless steel 1.4401
<b>7</b> V-Seals	PTFE, FKM	PTFE, FKM
<b>8</b> Wiper	PTFE	PTFE
<b>9</b> Nipple	Brass CuZn	Stainless steel 1.4401
<b>10</b> Spindle	Stainless steel 1.4021	Stainless steel 1.4401
<b>11</b> Pins	Stainless steel 1.4401	Stainless steel 1.4401
<b>12</b> Swivel plate	Brass CuZn36Pb1.5	Stainless steel 1.4401
<b>13</b> Seal	PTFE	PTFE
<b>14</b> Valve body	Gunmetal  GCuSn5ZnPb2%Ni	Stainless steel 1.4408 (Threaded connection) Stainless steel 1.4581 (Weld end connection)

Technical Data for valves with flow direction below seat (for Gas and liquid)



Flow direction below seat

Orifice [mm]	Actuator size [mm]	Kv value water (m <sup>3</sup> /h)	Min. pilot pressure CFA [bar]	Max. operating pressure up to ±180°		Weight [kg]
				CFA [bar]	CFB [bar]	
13	40	3.7	4.0	15	16	0.7
13	50	4.2	3.9	16	16	0.8
20	40	7.9	4.0	6.5	16	0.9
20	50	8.0	3.9	11	16	1.0
20	63	10	4.2	16	-	1.4
25	50	14.5	-	-	16	1.2
25	63	19	4.2	11	16	1.8
25	80	20	5.0	16	16	2.2
32	63	27	4.2	6	16	2.3
32	80	28	5.0	15	16	3.1
40	63	35	-	-	16	2.7
40	80	38	5.0	10	16	3.5
40	100	42	4.4	12.5	-	5.6
40	125	42	3.2	16	-	9.0
50	63	49	-	-	13	4.0
50	80	52	-	-	15	4.8
50	100	55	4.4	7.2	-	7.0
50	125	55	3.2	10	-	9.4
65	80	77	-	-	16	6.4
65	125	90	3.2	5.2	-	11.0

Pilot pressure diagram with control function B and flow direction below seat

Diagram 1

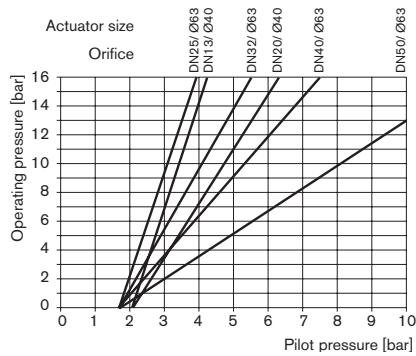
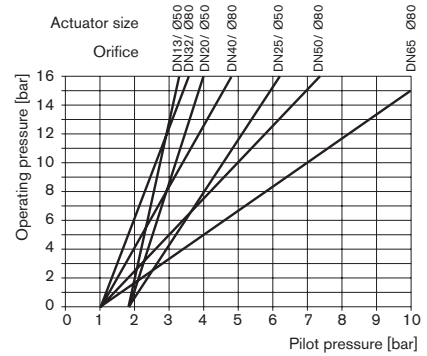
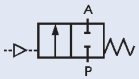
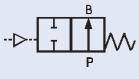


Diagram 2

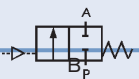
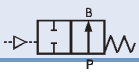


Ordering chart for valves with flow direction below seat (further versions on request)

Valve with threaded connection, flow direction below seat, actuator material PA

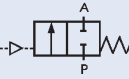
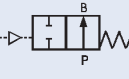
Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection Threaded		Min. pilot pressure [bar]	Operating pressure up to 180 °C [bar]	Item no. St.st. body	
			EN ISO 1127/ ISO 4200	DIN 11850 R2			EN ISO 1127/ ISO 4200	DIN 11850 Reihe 2
	13	40	G 3/8		4	15	142 613	-
	13	40	G 1/2		4	15	002 196	002 198
	13	50	G 1/2		3.9	16	001 135	001 130
	20	40	G 3/4		4	6.5	002 197	002 199
	20	50	G 3/4		3.9	11	001 136	001 131
	20	63	G 3/4		4.2	16	130 175	002 185
	25	63	G 1		4.2	11	001 446	007 225
	25	80	G 1		5	16	130 176	001 983
	32	63	G 1 1/4		4.2	6	130 177	130 339
	32	80	G 1 1/4		5	15	001 138	001 132
	40	80	G 1 1/2		5	10	001 139	001 133
	40	125	G 1 1/2		3.2	16	130 460	130 459
	50	100	G 2		4.4	7.2	001 140	001 134
	50	125	G 2		3.2	10	001 601	001 593
65	125	G 2 1/2		3.2	5.2	001 373	001 368	
	13	40	G 3/8		see diagram 1 and 2, page 3	16	142 616	140 368
	13	40	G 1/2			16	130 178	130 326
	13	50	G 1/2			16	001 150	001 144
	20	40	G 3/4			16	130 179	130 327
	20	50	G 3/4			16	001 151	001 145
	25	50	G 1			16	130 180	130 328
	25	63	G 1			16	001 152	001 146
	32	63	G 1 1/4			16	001 374	001 369
	40	63	G 1 1/2			16	001 375	001 370
	50	63	G 2			16	001 376	001 371
	65	80	G 2 1/2			15	001 377	001 372

Valve with weld end connection, flow direction below seat, actuator material PA

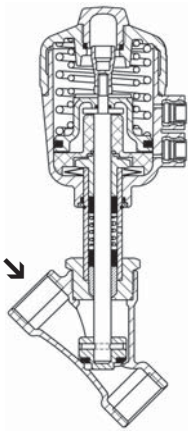
Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection Weld end Tube - Ø [mm]		Min. Pilot pressure [bar]	Operating pressure up to 180 °C [bar]	Item no. St.st. body		
			EN ISO 1127/ ISO 4200	DIN 11850 R2			EN ISO 1127/ ISO 4200	DIN 11850 Reihe 2	
	15	50	21.3 x 1.6	19 x 1.5	3.9	16	001 392	143 443	
	20	50	26.9 x 1.6	23 x 1.5	3.9	11	001 393	143 444	
	25	63	33.7 x 2	29 x 1.5	4.2	11	001 394	143 445	
	32	80	42.4 x 2	35 x 1.5	5	15	001 395	143 446	
	40	80	48.3 x 2	41 x 1.5	5	10	001 396	143 447	
	50	100	60.3 x 2.6	53 x 1.5	4.4	7.2	001 397	143 448	
	65	125	76.1 x 2.3	70 x 2.0	3.2	5.2	165 985	169 344	
		15	50	21.3 x 1.6	19 x 1.5	see diagram 1 and 2, page 3	16	001 488	143 449
		20	50	26.9 x 1.6	23 x 1.5		16	001 489	143 450
		25	63	33.7 x 2	29 x 1.5		16	001 490	143 451
		32	63	42.4 x 2	35 x 1.5		16	001 491	143 452
		40	63	48.3 x 2	41 x 1.5		16	001 492	143 453
		50	63	60.3 x 2.6	53 x 1.5		14	001 493	143 454
		65	80	76.1 x 2.3	70 x 2.0		15	168 835	169 989

## Ordering chart for valves with flow direction below seat (further versions on request)

Valve with threaded connection, flow direction below seat, actuator material PPS

Control function	Orifice [mm]	Actuator size ø [mm]	Port connection Threaded	Min. Pilot pressure [bar]	Operating pressure up to 180 °C [bar]	Item no. St.st. body	Item no. Gunmetal body
	13	50	G 1/2	3.9	16	001 234	002165
	20	50	G 3/4	3.9	11	001 698	001 852
	20	63	G 3/4	4.2	16	140 767	-
	25	63	G 1	4.2	11	001 236	002 166
	32	80	G 1 1/4	5	15	001 237	002 167
	40	80	G 1 1/2	5	10	001 238	002 168
	40	100	G 1 1/2	4.4	12.5	002 161	002 169
	50	100	G 2	4.4	7.2	001 239	002 170
	50	125	G 2	3.2	10	-	002 171
	65	125	G 2 1/2	3.2	5.2	001 703	-
	13	50	G 1/2	see diagram 1 and 2, page 3	16	001 704	002 173
	20	50	G 3/4		16	001 705	002 174
	25	63	G 1		16	001 706	-
	32	63	G 1 1/4		16	001 707	002 176
	40	63	G 1 1/2		16	001 708	002 177
	50	63	G 2		16	001 709	002 179
	50	125	G 2		10	-	002 171
	65	80	G 2 1/2		15	001 710	002 181

Technical Data for valves with flow direction above seat (only for gas and steam)



Flow direction above seat

Attention!

Valves with flow direction above the seat are only conditionally usable for liquid media. There is a danger of waterhammer!

Orifice [mm]	Actuator size [mm]	Kv value water (m³/h)	Max. operating pressure up to ±180°	Weight [kg]
13	40	3.7	16	0.7
13	50	4.2	16	0.8
20	40	7.9	16	0.9
20	50	8.0	16	1.0
25	50	14.5	16	1.2
25	63	19.0	16	1.8
32	63	27.0	16	2.2
40	63	35.0	16	2.7
40	80	38.0	16	3.5
50	63	49.0	16	4.0
50	80	52.0	16	4.8
65	80	77.0	14	6.4
65	100	92.0	16	8.6

Pilot pressure diagram with control function A and flow direction above seat

Diagram 3

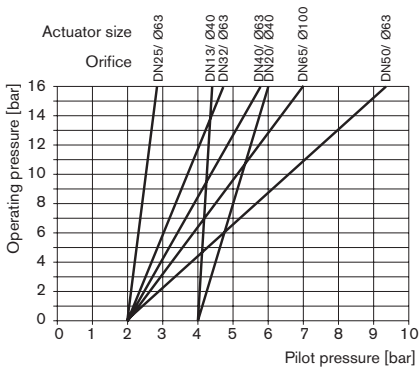
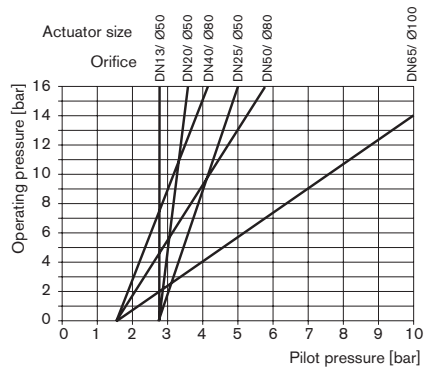
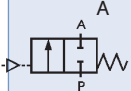


Diagram 4

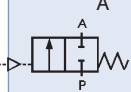


### Technical Data for valves with flow direction above seat (only for gas and steam)

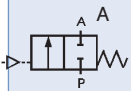
Valves with threaded connection, flow direction above seat, actuator material PA, minimal pilot pressure, see Diagram 3 and 4, page 6

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection Threaded	Operating pressure up to 180 °C [bar]	Item no.	
					St.st. body	Gunmetal body
	13	40	G 3/8	16	142 615	-
	13	40	G 1/2	16	130 407	002 373
	13	50	G 1/2	16	001 421	001 252
	20	40	G 3/4	16	130 181	130 329
	20	50	G 3/4	16	001 422	001 253
	25	50	G 1	16	130 182	001 985
	32	63	G 1 1/4	16	001 399	001 249
	40	63	G 1 1/2	16	001 400	001 250
	50	63	G 2	16	001 401	001 251
	65	80	G 2 1/2	14	001 402	001 398
	65	100	G 2 1/2	16	130 333	130 332

valves with weld en connection, flow direction above seat, actuator material PA, minimal pilot pressure, see Diagram 3 and 4, page 6

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection Weld end Tube - Ø [mm]		Operating pressure up to 180 °C [bar]	Item no. St.st. body	
			EN ISO 1127/ ISO 4200	DIN 11850 R2		EN ISO 1127/ ISO 4200	DIN 11850 Series 2
	15	50	21.3 x 1.6	19 x 1.5	16	001 449	143 455
	20	50	26.9 x 1.6	23 x 1.5	16	001 448	143 456
	25	63	33.7 x 2	29 x 1.5	16	001 447	143 457
	32	63	42.4 x 2	35 x 1.5	16	001 414	143 458
	40	63	48.3 x 2	41 x 1.5	16	001 415	143 459
	50	63	60.3 x 2.6	53 x 1.5	16	001 416	143 460
	65	80	71.1 x 2.3	70 x 2.0	14	431 530	171 013

Valves with threaded connection, flow direction above seat, actuator material PPS, minimal pilot pressure, see Diagram 3 and 4, page 6

Control function	Orifice [mm]	Actuator size Ø [mm]	Port connection Threaded	Operating pressure up to 180 °C [bar]	Item no.	
					St.st. body	Gunmetal body
	13	50	G 1/2	16	002 152	002 018
	20	50	G 3/4	16	-	002 144
	25	63	G 1	16	002 154	002 145
	32	63	G 1 1/4	16	-	002 146
	40	63	G 1 1/2	16	002 156	002 147
	50	63	G 2	16	-	002 149
	65	80	G2 1/2	14	-	002 151

Ordering chart for Accessories

Pilot valve according to actuator size	Voltage	Item no.
<b>3/2-way pilot valve, Type 6012 P/6014 P with banjo bolt</b>		
Type 6012 P for actuator - Ø 40 mm	024 V/DC	425 299
Control media inserts G 1/8	230 V/50 Hz	425 304
Type 6012 P for actuator - Ø 50 and 63 mm	024 V/DC	425 285
Control media inserts G 1/4	230 V/50 Hz	425 290
Type 6014 P for actuator - Ø 80 to 125 mm	024 V/DC	424 103
Control media inserts G 1/4	230 V/50 Hz	424 107

**Cable plug for Type 2506 Form C or Type 2508 Form A**

(for further versions see datasheets, Type 2506/2508)

Plug configuration acc. to DIN EN 175301-803 (previously DIN 43650)	Item no.
Form C, 0 to 250 V without circuitry (f. Type 6012 P)	008 353
Form A, 0 to 250 V without circuitry (f. Type 6014 P)	008 376

**Options and accessories (on request)**

- Circuit function I (double-acting actuator)
- Electrical position feedback, Type 1060 and 1062
- Magnetic-inductive proximity sensors, Type 1071
- Stroke limitation max. and min./max.
- Manual actuator
- Namur adapter for pilot valves
- Mounting key for actuator cover

**Note:**

For design reasons, some of the accessories cannot be supplied for actuator size Ø 40 mm. Please request the Accessories datasheet 2XXX

**Approvals**

GL approvals on request  
 Approvals according to european gas device guidelines (DVGW) on request

**Further accessories for TopControl On/Off Type 8631**

**Electro-pneumatic control for process valves**

With **TopControl ON/OFF Type 8631**, the process valve Type 2000 can be easily operated. On offer are devices with different electrical connection types (e.g. direct control, ASI communication, explosion prevention and others).

Position feedback is a possible option over highly adjustable inductive proximity switches or mechanical limit switches. In case of failure of the operating voltage or pneumatic emergency current a preset safety valve is automatically activated. Please request datasheet Type 8631 TopControl on/off.

**Ordering Information for valve Type 2000 with TopControl ON/OFF type 8631.**

To order a drive system with TopControl please use:

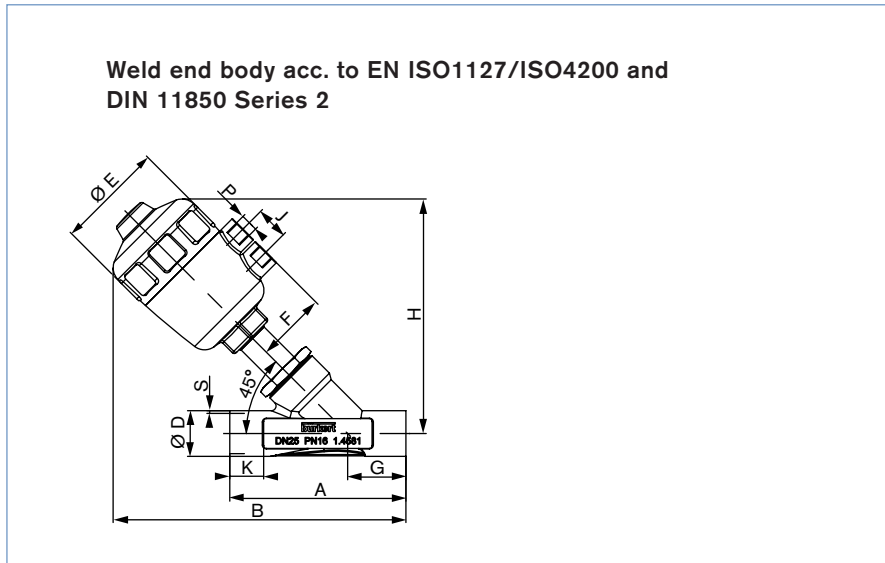
- The **Item no.** of the selected process valve and
- The **Item no.** of the **TopControl ON/OFF**



Type 2000 with 8631



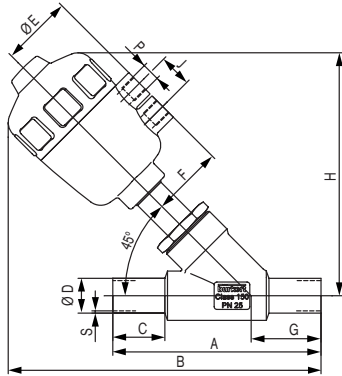
Dimensions [mm]



All bodies						All Weld end bodies				Weld end body acc. to EN ISO 1127/ ISO 4200			Weld end body acc. to DIN11850 Series 2		
DN	Actuator size Ø	Ø E	F	P	J	B	H	A	G	K	Ø D	S	K	Ø D	S
15	40	53	33	G 1/8	16.5	148	114	100	34	20	21.3	1.6	20	19	1.5
	50	64	44	G 1/4	24	174	137								
	63	80	52	G 1/4	24	-	-								
	80	101	60	G 1/4	24	-	-								
20	40	53	33	G 1/8	16.5	158	119	115	39	25	26.9	1.6	25	23	1.5
	50	64	44	G 1/4	24	181	145								
	63	80	52	G 1/4	24	209	170								
	80	101	60	G 1/4	24	-	-								
25	40	53	33	G 1/8	16.5	-	-	-	-	-	-	-	-	-	-
	50	64	44	G 1/4	24	191	148								
	63	80	52	G 1/4	24	217	173								
	80	101	60	G 1/4	24	238	195								
32	63	80	52	G 1/4	24	230	186	145	45	30	42.4	2	30	35	1.5
	80	101	60	G 1/4	24	259	210								
	100	127	73	G 1/4	30	301	256								
40	63	80	52	G 1/4	24	238	189	160	49	30	48.3	2	30	41	1.5
	80	101	60	G 1/4	24	258	213								
	100	127	73	G 1/4	30	309	260								
	125	158	86	G 1/4	30	337	288								
50	63	80	52	G 1/4	24	255	205	175	50	30	60.3	2.6	30	53	1.5
	80	101	60	G 1/4	24	275	225								
	100	127	73	G 1/4	30	327	271								
	125	158	86	G 1/4	30	351	301								
65	63	80	52	G 1/4	24	271	221	210	50	26	76.1	2.3	26	70	2.0
	80	101	60	G 1/4	24	292	242								
	100	127	73	G 1/4	30	340	290								
	125	158	86	G 1/4	30	370	320								

Dimensions [mm]

Weld end body acc. to SMS 3008,  
BS 4825 Part 1 and ASME BPE

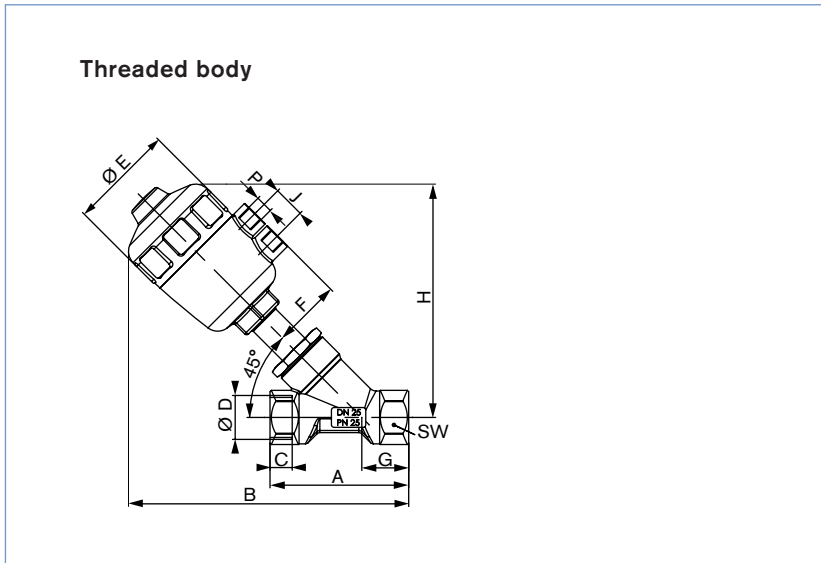


DTS 1000010961 EN Version: E Status: RL (released | freigegeben | validé) printed: 05.02.2007

All bodies							Weld end body acc. to SMS 3008						Weld end body acc. to BS4825 Part 1						Weld end body acc. to ASME BPE							
DN	Actuator size Ø	Ø E	H	F	P	J	A <sup>1)</sup>	B	C	Ø D	G	S	A <sup>1)</sup>	B	C	Ø D	G	S	A <sup>1)</sup>	B	C	Ø D	G	S		
15	40	53	120	33	G 1/8	16.5	135	166	38	12	46	1	135	166	38	12.7	46	1.2	135	166	38	12.7	46	1.65		
	50	64	145	44	G 1/4	24		191						191							191					
	63	80	177	52	G 1/4	24		223						223							223					
	80	101	198	60	G 1/4	24		244						244							244					
20	40	53	125	33	G 1/8	16.5	145	177	38	18	52	1	145	177	38	19.05	52	1.2	145	177	38	19.05	52	1.65		
	50	64	149	44	G 1/4	24		201						201							201					
	63	80	176	52	G 1/4	24		228						228							228					
	80	101	198	60	G 1/4	24		250						250							250					
25	40	53	128	33	G 1/8	16.5	152	179	38	25	51	1.2	152	179	38	25.4	51	1.65	152	179	38	25.4	51	1.65		
	50	64	152	44	G 1/4	24		203						203							203					
	63	80	178	52	G 1/4	24		229						229							229					
	80	101	199	60	G 1/4	24		250						250							250					
32	63	80	188	52	G 1/4	24	145	228				1.2	-	-	-	-	-	-	-	-	-	-	-	-		
	80	101	209	60	G 1/4	24		249																		
	100	127	260	73	G 1/4	30		300																		
40	63	80	191	52	G 1/4	24	182	251	38	38	60	1.2	182	251	38	38.1	60	1.65	182	251	38	38.1	60	1.65		
	80	101	213	60	G 1/4	24		273						273							273					
	100	127	263	73	G 1/4	30		323						323							323					
	125	158	293	86	G 1/4	30		353						353							353					
50	63	80	209	52	G 1/4	24	210	273	45	51	64	1.2	210	273	45	50.8	64	1.65	210	273	45	50.8	64	1.65		
	80	101	230	60	G 1/4	24		294						294							294					
	100	127	277	73	G 1/4	30		341						341							341					
	125	158	307	86	G 1/4	30		371						371							371					
65	63	80	221	52	G 1/4	30	230	277	26	63.5	56	1.65	230	277	26	63.5	56	1.65	230	277	26	63.5	56	1.65		
	80	101	242	60	G 1/4	24		298						298							298					
	100	127	290	73	G 1/4	30		346						346							346					
	125	158	320	86	G 1/4	30		376						376							376					

<sup>1)</sup> Long version (Code AF93)

Dimensions [mm]



All bodies						Threaded body						
DN	Actuator size Ø	Ø E	F	P	J	B	H	A	C	Ø D	G	SW
13	40	53	33	G 1/8	16.5	137	113	65	12	G 3/8	24	27
13	40	53	33	G 1/8	16.5	146	115	85	14	G 1/2	31	27
	50	64	44	G 1/4	24	170	140					
	63	80	52	G 1/4	24	203	172					
	80	101	60	G 1/4	24	224	193					
20	40	53	33	G 1/8	16.5	155	120	95	16	G 3/4	35	32
	50	64	44	G 1/4	24	179	144					
	63	80	52	G 1/4	24	206	171					
	80	101	60	G 1/4	24	225	190					
25	40	53	33	G 1/8	16.5	160	126	105	18	G 1	35.5	41
	50	64	44	G 1/4	24	188	152					
	63	80	52	G 1/4	24	213	177					
	80	101	60	G 1/4	24	234	198					
32	63	80	52	G 1/4	24	224	183	120	20	G 1 1/4	41	50
	80	101	60	G 1/4	24	246	205					
	100	127	73	G 1/4	30	296	255					
40	63	80	52	G 1/4	24	227.3	188	130	22	G 1 1/2	40	55
	80	101	60	G 1/4	24	249	209					
	100	127	73	G 1/4	30	299.3	260					
	125	153	86	G 1/4	30	329	289					
50	63	80	52	G 1/4	24	249	204	150	24	G 2	45	70
	80	101	60	G 1/4	24	270	225					
	100	127	73	G 1/4	30	317	272					
	125	153	86	G 1/4	30	347	302					
65	63	80	52	G 1/4	30	275	218	185	26	G 2 1/2	57	85
	80	101	60	G 1/4	24	296	239					
	100	127	73	G 1/4	30	344	287					
	125	153	86	G 1/4	30	374	317					

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In case of special application conditions, please consult for advice.

We reserve the right to make technical changes without notice.

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