



Pneumatically operated 2-way Globe Control Valve

- Excellent control characteristics
- High cycle life and maintenance-free operation
- Flow optimised body in stainless steel
- Several K_{VS} value per port size due to removable valve seats
- Control units can be mounted directly without external tubing

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

	Type 8692 Digital electro-pneumatic positioner for integrated mounting on process control valves	▶
	Type 8694 Digital electropneumatic positioner for integrated mounting on process control valves	▶
	Type 8696 Digital electropneumatic positioner for integrated mounting on process control valves	▶
	Type 8693 Digital electropneumatic process controller for integrated mounting on process control valves	▶
	Type 8792 Digital electropneumatic positioner SideControl	▶
	Type 8791 Digital electropneumatic positioner SideControl	▶
	Type 8793 Digital electropneumatic Process Controller SideControl	▶
	Type 8802 ELEMENT continuous control valve systems – overview	▶

Type description

In line with Bürkert's philosophy the construction of the type 2301 globe valve fulfils tough criteria for process environments. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. Each globe valve body can be fitted with up to five sizes of trim sets. These parabolic trims provide a reliable and repeatable characteristic to vary the flow. The control cones are available in either stainless steel or with a durable PTFE seal or PEEK seal for tight shut-off. Leakage class III, IV or VI are available. The design enables the easy integration of automation modules whether they are digital electropneumatic positioner or process controller. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67 protection class and superior chemical resistance.

1. General technical data

Product properties	
Dimensions	Further information can be found in chapter "6. Dimensions" on page 10.
Material	Further information can be found in chapter "5. Materials" on page 7.
Design	Globe control valve
Nominal diameter (port connection)	DN 10...DN 100, NPS 3/8...NPS 4
Safety setting in case of power failure	Normally closed (control function A), normally open (control function B)
Flow direction	Flow to open (below seat)
Performance data	
Operating pressure	0...25 bar(g), 40 bar(g) on request (see "7.1. Fluidic data" on page 17) Vacuum version... - 0.9 bar(g) (option)
Nominal pressure	PN 25/PN 40 (DIN EN 1333), Class 150 (DIN EN 1759)
Seat leakage according to DIN EN 60534 - 4:2006	Leakage class III and IV for stainless steel Leakage class VI for PTFE and PEEK (see "7.1. Fluidic data" on page 17)
K _v value	0.1 m³/h...140 m³/h (see "7.1. Fluidic data" on page 17)
Operating characteristic	Equal percentage, linear (others on request)
Theoretical rangeability	...50:1
Medium data	
Medium	Steam, water, neutral gases, alcohols, oils, fuels, hydraulic fluids, salt solutions, organic solvents, oxygen and fuel gases of families I, II and III in accordance with the Gas Appliances Regulation (EU) 2016/426, Hydrogen (optional), lyes (optional)
Medium temperature	- 40 °C...+ 230 °C (see "7.2. Operating limits" on page 22)
Viscosity	Max. 600 mm²/s
Control medium	Air, neutral gases
Process/Port connection & communication	
Port connection ^{2,1)}	
Flange connection	DIN EN 1092 - 1 ANSI B 16.5 JIS 10K
Threaded connection	G (DIN ISO 228 - 1) NPT (ASME B1.20.1) RC (ISO 7 - 1)
Welded connection	DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B DIN 11850 - 2 / DIN 11866 series A ASME BPE / DIN 11866 series C SMS 3008
Clamp connection	DIN 32676 series B (pipe: ISO 4200) DIN 32676 series A (pipe: DIN 11850 - 2) ASME BPE
Approvals and conformities	
Further information can be found in chapter "4. Approvals and conformities" on page 6	
Environment and installation	
Ambient temperature	- 10...+ 80 °C (with positioner or process controller Type 8791/8792/8793) - 10...+ 55 °C (with positioner or process controller Type 8692/8693/8694) (see "7.2. Operating limits" on page 22)
Degree of protection	IP65/67
Installation position	As required, preferably with actuator upright

1.) Others are available on request.

2. Product versions

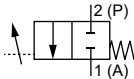
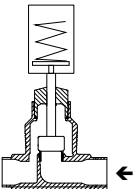
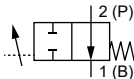
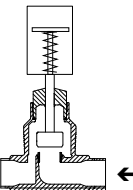
2.1. ELEMENT

Product properties	
Nominal diameter (port connection)	DN 10...DN 100
Actuator size	50 mm (D), 70 mm (M), 90 mm (N), 130 mm (P)
Performance data	
Pilot pressure (CF A)	5.6...7 bar(g) for control function B (see “Pilot pressure diagram with flow direction below seat (control function B)” on page 21)

2.2. Stainless steel drive guide for higher drive forces

Product properties	
Nominal diameter (port connection)	DN 65...DN 100
Actuator size	225 mm (L)
Performance data	
Pilot pressure (CF A)	DN 65, 3.7 bar(g)...7 bar(g) DN 80, DN 100, 5.5 bar(g)...7 bar(g) 5 bar(g) for control function B (see “Pilot pressure diagram with flow direction below seat (control function B)” on page 21)

3. Control functions

Symbol	Description	
Flow direction below seat for fluids, steam and gases		
	Control function A (CF A) Pneumatically operated 2/2-way control valve Flow direction below seat Normally closed by spring force	
	Control function B (CF B) Pneumatically operated 2/2-way control valve Flow direction below seat Normally opened by spring force	

4. Approvals and conformities

4.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available versions can be supplied with the below mentioned approvals or conformities.

4.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives. This includes the following directives:

- Pressure Equipment Directive 2014/68/EU
- Machinery Directive 2006/42/EG

4.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

4.4. Explosion protection

Approval	Description			
 	Optional: Explosion protection As a category 2 device suitable for zone 1/21 and zone 2/22 (optional).			
	ATEX: EPS 18 ATEX 2 008 X II 2G Ex h IIC T4...T2 Gb II 2D Ex h IIIC T135 °C...T300 °C Db			
	IECEx: IECEx EPS 18.0007 X Ex h IIC T4...T2 Gb Ex h IIIC T135 °C...T300 °C Db			
	Temperature class	T2	T3	T4
	Permissible surface temperature	+ 300 °C	+ 200 °C	+ 135 °C
	Ambient temperature Restrictions from the device	- 40...+ 80 °C	- 40...+ 80 °C	- 40...+ 80 °C
	Maximum medium temperature Restrictions from the device	+ 230 °C	+ 185 °C	+ 125 °C

4.5. Drinking water

Conformity	Description
	Suitable for use in drinking water applications The materials comply with the assessment principles (UBA) for materials in contact with drinking water (TrinkwasserV).
	Stainless steel body PF39: Suitable for products with medium temperature up to 85 °C (hot water)

4.6. Foods and beverages/Hygiene

Conformity	Description
FDA	FDA – Code of Federal Regulations (valid for the variable code PL02) All wetted materials are compliant with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA) according to the manufacturer's declaration.
	EC Regulation 1935/2004 of the European Parliament and of the Council (valid for the variable code PL01, PL02) All wetted materials are compliant with EC Regulation 1935/2004/EC according to the manufacturer's declaration.

4.7. Others

Oxygen

Conformity	Description
	Optional: Suitability for oxygen (valid for the variable code NL02) The products are suitable for use with gaseous oxygen, according to the manufacturer's declaration.

Fuel gases

Conformity	Description
	Fuel gases (valid for the variable code PO19, PO20) The products comply with: • Regulation (EU) 2016/426 – Appliances burning gaseous fuels and • DVGW DIN EN 161 (Automatic shut-off valves for gas burners and gas appliances) and • DIN EN 16678, Class A or Class D (Safety and control devices for gas burners and gas burning appliances – Automatic shut-off valves for operating pressure of above 500 kPa up to and including 6 300 kPa)

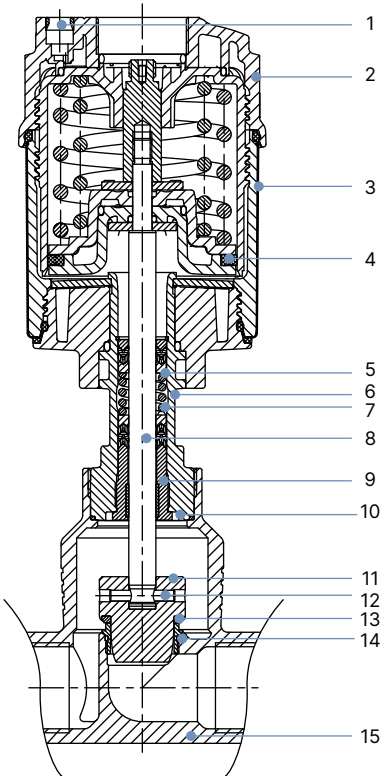
Hydrogen

Conformity	Description
	Optional: Suitability for hydrogen (valid for the variable code NG18) The products are suitable for use with gaseous hydrogen, according to the manufacturer's declaration.

5.2. Material specifications

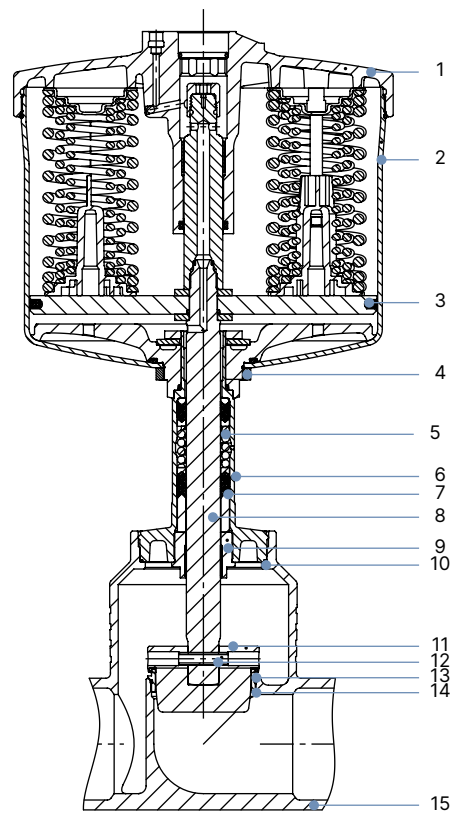
ELEMENT

Note:
The Type 2301 globe control valve is supplied with different port connections (flange, thread, welded connection and clamp). These connections are not shown. They correspond to the valve body material.



No.	Element	Material
1	Pilot air ports	Push-in connector PP
2	Actuator	PPS
3	Cover	Stainless steel 1.4561 (316Ti)
4	Piston seal	FKM
5	Spring	Stainless steel 1.4310
6	Pipe	Stainless steel CF3M
7	Spindle sealing	PTFE V-Rings (filled), with spring compensation
8	Spindle	Stainless steel 1.4401 (316)/1.4404 (316L)
9	Spindle guide	Stainless steel 1.4404 (316L), PTFE filled
10	Body seal	Graphite or PTFE
11	Control cone	Stainless steel 1.4571 (optionally hardened)
12	Spring straight pin	Stainless steel 1.4310
13	Seat seal	Stainless steel 1.4571 (optionally hardened), PTFE or PEEK
14	Valve seat with o-Ring	Stainless steel 1.4571, EPDM
15	Valve body	Stainless steel 316L / CF3M

Stainless steel for higher drive forces

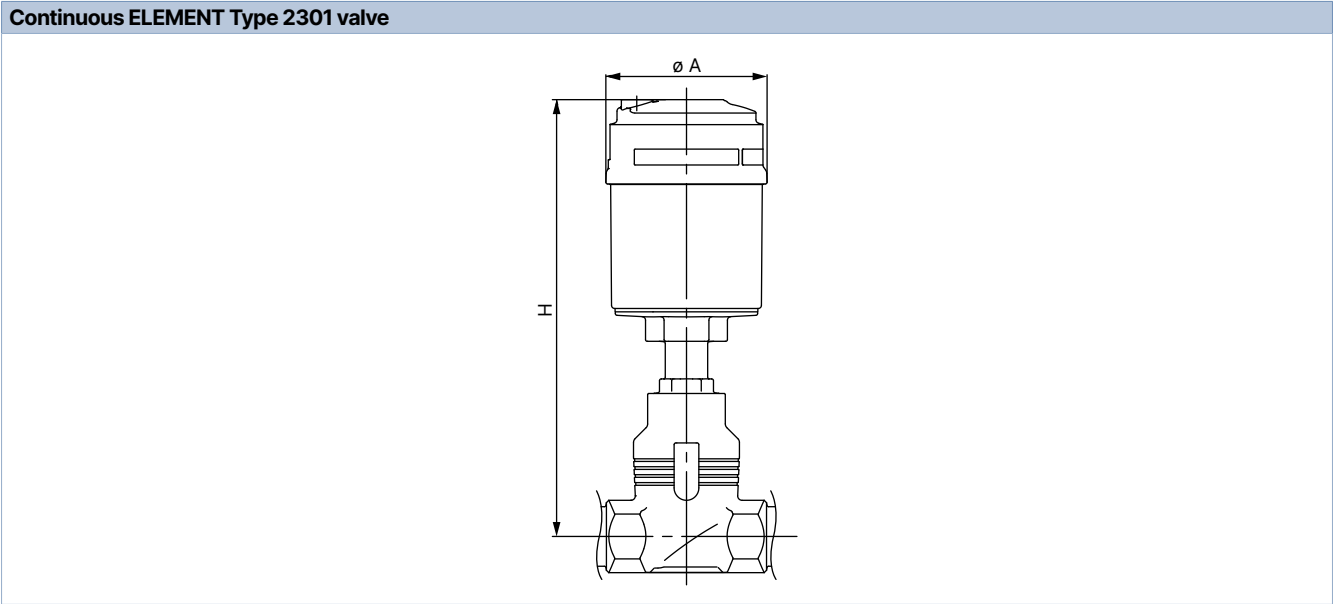


No.	Element	Material
1	Cover	Stainless steel 1.4308
2	Actuator	Stainless steel 1.4404
3	Piston seal	FKM
4	Nut	Stainless steel 1.4301
5	Spring	Stainless steel 1.4310
6	Pipe	Stainless steel CF3M
7	Spindle sealing	PTFE V-rings (filled), with spring compensation
8	Spindle	Stainless steel 1.4021
9	Spindle guide	Stainless steel 1.4404 (316L) / PTFE filled
10	Body seal	Graphite or PTFE
11	Control cone	Stainless steel 1.4571 (optionally hardened)
12	Spring straight pin	Stainless steel 1.4310
13	Seat seal	Stainless steel 1.4571 (optionally hardened), PTFE or PEEK
14	Valve seat with o-ring	Stainless steel 1.4571, EPDM
15	Valve body	Stainless steel 316L / CF3M

6. Dimensions

6.1. Actuator

Note:
Dimensions in mm

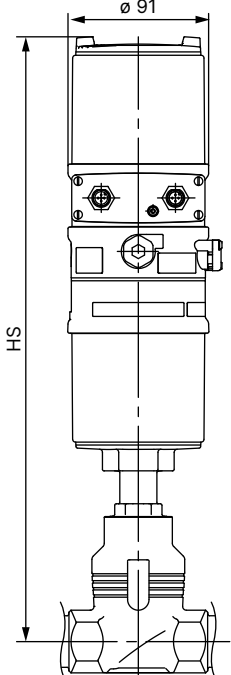
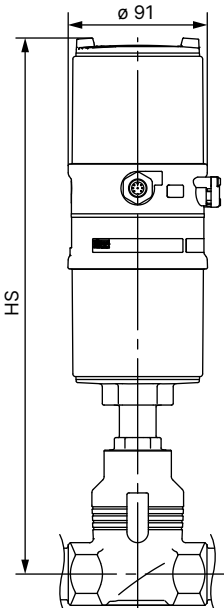
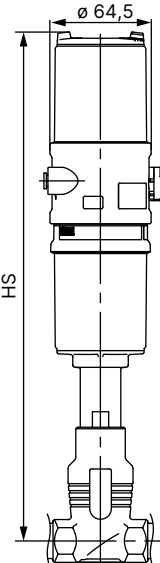
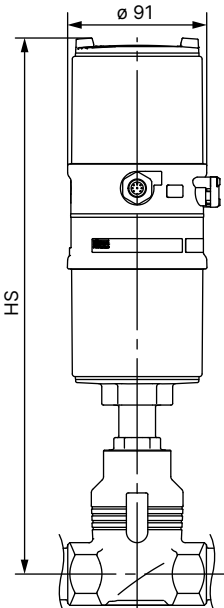


Nominal diameter (port connection)		Actuator size Ø	Ø A	H
DN	NPS			
10	3/8	50 (D)	64.5	226
		70 (M)	91	239
15	1/2	50 (D)	64.5	226
		70 (M)	91	239
20	3/4	50 (D)	64.5	232
		70 (M)	91	245
		90 (N)	120	307
25	1	50 (D)	64.5	235
		70 (M)	91	248
		90 (N)	120	301
32	1 1/4	90 (N)	120	329
		130 (P)	159	381
40	1 1/2	90 (N)	120	334
		130 (P)	159	386
50	2	90 (N)	120	340
		130 (P)	159	392
65	2 1/2	130 (P)	159	446
		225 (L)	245	460
80	3	130 (P)	159	454
		225 (L)	245	467
100	4	130 (P)	159	464
		225 (L)	245	477

Valve system Continuous ELEMENT

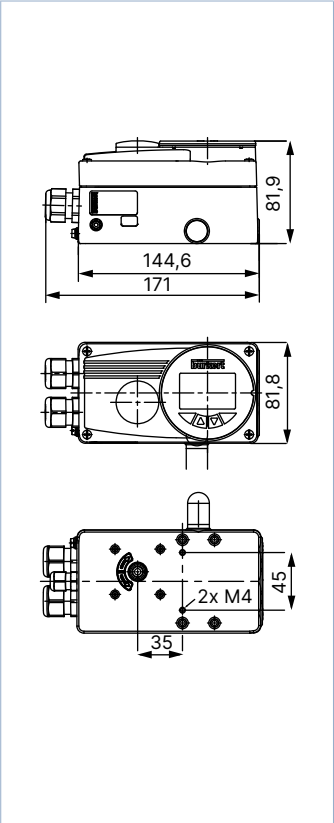
Note:

- Dimensions in mm
- Please note actuator size A in table “6.1. Actuator” on page 10

With positioner TopControl			With remote positioner SideControl
Type 8692 or with process controller TopControl	Type 8694	Type 8696	Type 8792 or with remote process controller SideControl
Type 8693			Type 8793
			

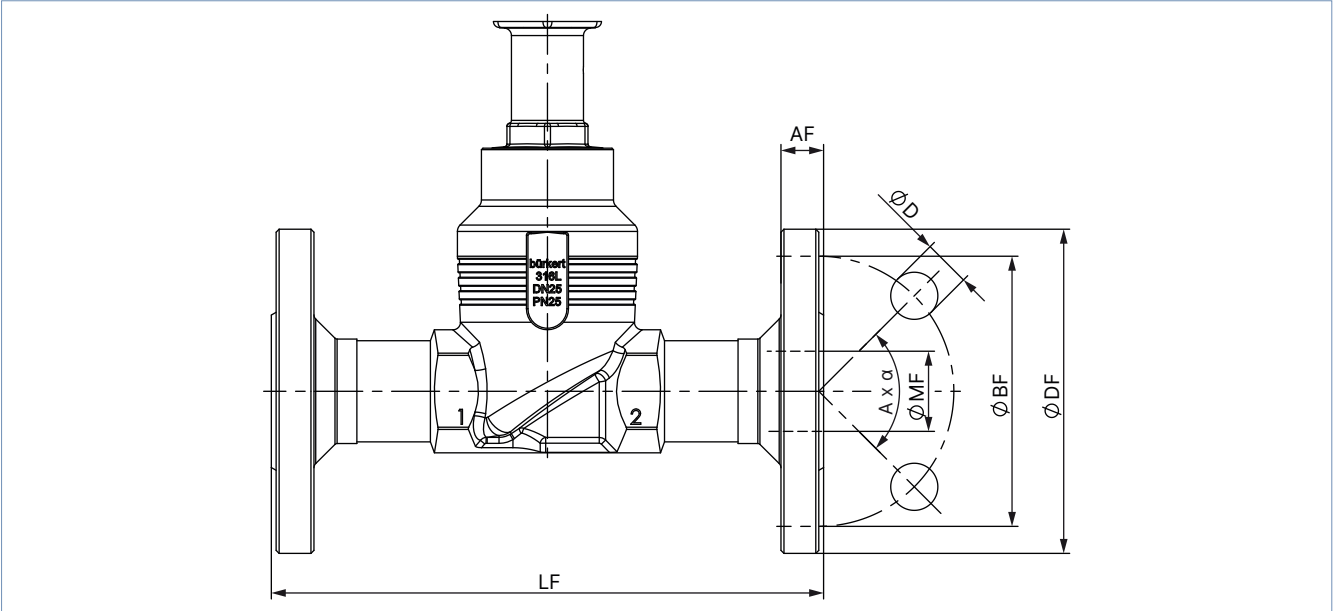
Type 2301

Nominal diameter (port connection)		Actuator size Ø	HS with		
DN	NPS		Type 8692 or Type 8693	Type 8694 or Type 8696	Type 8792 or Type 8793
10	3⁄8	50 (D)	–	329	–
		70 (M)	383	342	342
15	1⁄2	50 (D)	–	329	–
		70 (M)	383	342	342
20	3⁄4	50 (D)	–	335	–
		70 (M)	389	348	348
		90 (N)	449	405	413
25	1	50 (D)	–	342	–
		70 (M)	392	351	351
		90 (N)	445	404	404
32	1¼	90 (N)	473	432	432
		130 (P)	525	484	484
40	1½	90 (N)	478	437	437
		130 (P)	530	489	489
50	2	90 (N)	484	443	443
		130 (P)	536	495	495
65	2½	130 (P)	590	549	549
		225 (L)	603	564	564
80	3	130 (P)	598	557	557
		225 (L)	611	572	572
100	4	130 (P)	608	567	567
		225 (L)	621	582	582



6.2. Body with flange connection

Note:
Dimensions in mm

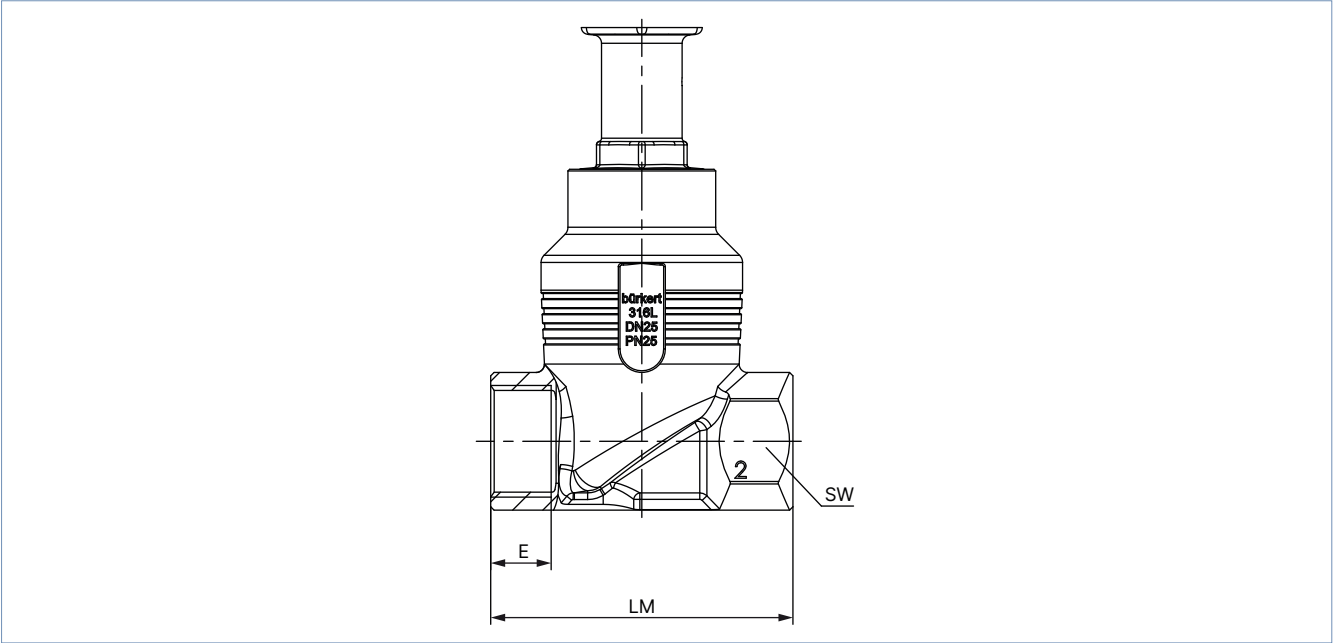


Nominal diameter (pipe)	DIN EN 1092 PN 25 FTF 1 according to DIN EN 558 - 1							JIS 10K FTF 10 according to DIN EN 558 - 2						
DN	Ø DF	LF	Ø BF	AF	Ø D	A x α	Ø MF	Ø DF	LF	Ø BF	AF	Ø D	A x α	Ø MF
10	90	130	60	16	14	4 x 90°	13.6	–	–	–	–	–	–	–
15	95	130	65	16	14	4 x 90°	18.1	95	108	70	12	15	4 x 90°	18.1
20	105	150	75	18	14	4 x 90°	23.7	100	117	75	14	15	4 x 90°	23.7
25	115	160	85	18	14	4 x 90°	29.7	125	127	90	14	19	4 x 90°	29.7
32	140	180	100	18	18	4 x 90°	38.4	135	140	100	16	19	4 x 90°	38.4
40	150	200	110	18	18	4 x 90°	44.3	140	165	105	16	19	4 x 90°	44.3
50	165	230	125	20	18	4 x 90°	56.3	155	203	120	16	19	4 x 90°	56.3
65	185	290	145	22	18	8 x 45°	66.0	175	216	140	18	19	4 x 90°	71.5
80	200	310	160	24	18	8 x 45°	81.0	185	241	150	18	19	8 x 45°	84.3
100	235	350	190	24	22	8 x 45°	100.0	292	292	175	18	19	8 x 45°	109.1

Nominal diameter (pipe)	ANSI B 16.5 Class 150 FTF 37 according to DIN EN 558 - 2						
NPS	Ø DF	LF	Ø BF	AF	Ø D	A x α	Ø MF
½	89	184	60.5	11.2	15.7	4 x 90°	15.7
¾	99	184	69.9	12.7	15.7	4 x 90°	20.8
1	108	184	79.2	14.2	15.7	4 x 90°	26.7
1½	127	222	98.6	17.5	15.7	4 x 90°	40.9
2	152	254	120.7	19.1	19.1	4 x 90°	52.6
2½	178	276	139.7	22.3	19.1	4 x 90°	62.7
3	190	298	152.5	23.9	19.1	4 x 90°	78.0
4	229	352	190.5	23.9	19.1	8 x 45°	102.4

6.3. Body with threaded connection

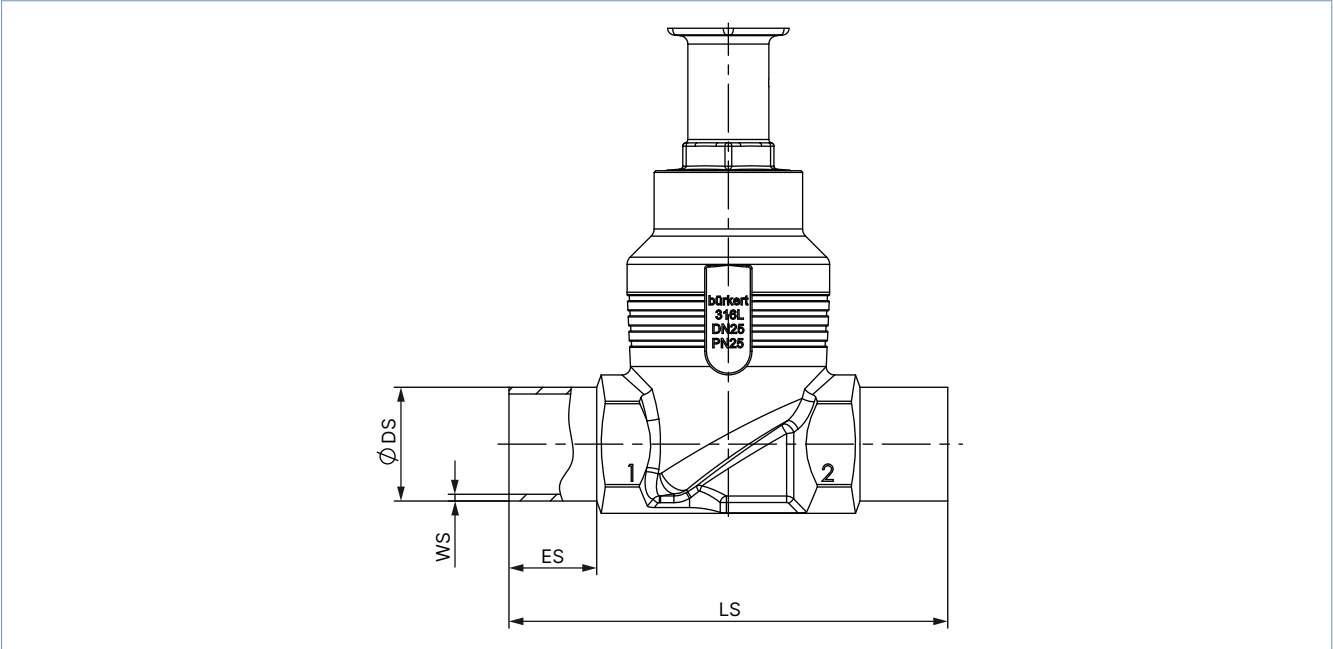
Note:
Dimensions in mm



Nominal diameter (port connection)		G (DIN ISO 228 - 1) NPT (ASME B1.20.1) RC (ISO 7 - 1)				
		E			LM	SW
DN	NPS	G	NPT	RC		
10	3/8	12	10.3	10.1	65	27
15	1/2	14	13.7	13.2	65	27
20	3/4	16	14	14.5	75	34
25	1	18	16.8	16.8	90	41
32	1 1/4	20	17.3	19.1	110	50
40	1 1/2	22	17.3	19.1	120	55
50	2	24	17.6	23.4	150	70
65	2 1/2	26	23.7	26.7	185	85
80	3	28	30.5	29.8	205	100
100	4	32	33	35.8	240	125

6.4. Body with welded connection

Note:
Dimensions in mm

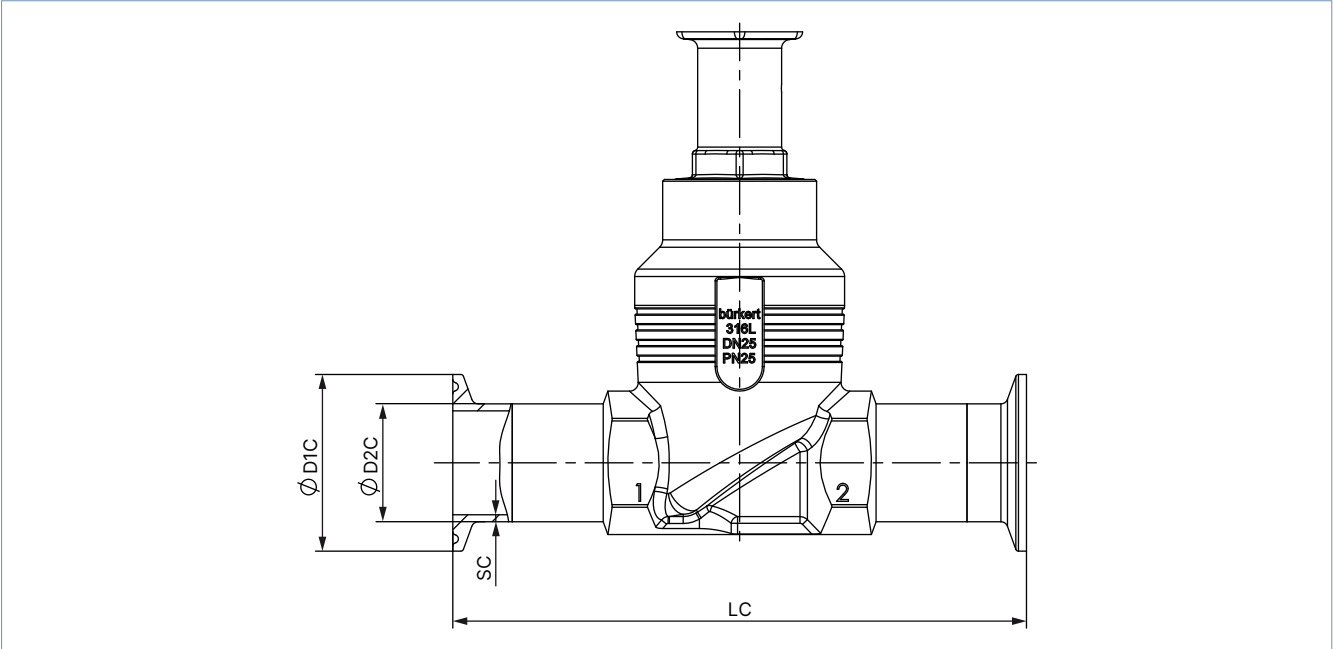


Nominal diameter (port connection) DN	ES	LS	DIN EN ISO 1127 - 1 / ISO 4200 / DIN 11866 series B		DIN 11850 - 2 / DIN 11866 series A / DIN EN 10357 series A	
			Ø DS	WS	Ø DS	WS
10	20	90	17.2	1.6	13	1.5
15	20	90	21.3	1.6	19	1.5
20	20	100	26.9	1.6	23	1.5
25	26	130	33.7	2.0	29	1.5
32	26	140	42.4	2.0	35	1.5
40	26	150	48.3	2.0	41	1.5
50	26	175	60.3	2.0	53	1.5
65	26	210	76.1	2.3	70	2.0
80	26	230	88.9	2.3	85	2.0
100	26	260	114.3	2.6	104	2.0

Nominal diameter (port connection) NPS	ES	LS	ASME BPE / DIN 11866 series C	
			Ø DS	WS
1/2	20	90	12.7	1.65
3/4	20	90	19.05	1.65
1	20	100	25.4	1.65
1 1/2	26	140	38.1	1.65
2	26	150	50.8	1.65
2 1/2	26	175	63.5	1.65
3	26	210	76.2	1.65
4	26	260	101.6	2.11

6.5. Body with clamp connection

Note:
Dimensions in mm



Nominal diameter (port connection)	Clamp: DIN 32676 series A Pipe: DIN 11850 - 2 / DIN 11866 series A / DIN EN 10357 series A				Clamp: DIN 32676 series B Pipe: DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B			
DN	LC	Ø D2 C	Ø D1 C	SC	LC	Ø D2 C	Ø D1 C	SC
15	126	19	34	1.5	146	21.3	50.5	1.6
20	136	23	34	1.5	136	26.9	50.5	1.6
25	173	29	50.5	1.5	164	33.7	50.5	2.0
40	193	41	50.5	1.5	193	48.3	64.0	2.0
50	218	53	64	1.5	218	60.3	77.5	2.0

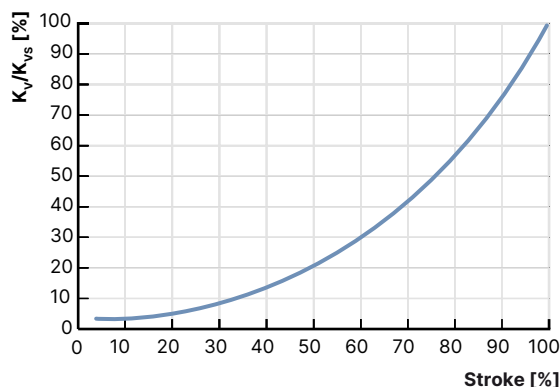
Nominal diameter (port connection)	Clamp: ASME BPE / DIN 11866 series C Pipe: ASME BPE / DIN 11866 series C			
NPS	LC	Ø D2 C	Ø D1 C	SC
½	122	12.7	25.0	1.65
¾	126	19.05	25.0	1.65
1	126	25.4	50.5	1.65
1½	172	38.1	50.5	1.65
2	182	50.8	64.0	1.65
2½	231	63.5	77.5	1.65
3	265	76.2	91.0	1.65
4	315	101.6	119.0	2.11

7. Performance specifications

7.1. Fluidic data

Flow characteristics

- Equal-percentage flow characteristic according to DIN EN 60534 - 2 - 4 (linear characteristic curve on request)
- K_{VR} value at 5 % of the stroke for seat size > 10 mm
 K_{VR} value at 10 % of the stroke for seat size ≤ 10 mm
- Actuator size 70 offers a better control quality compared to actuator size 50 and is therefore preferred (K_{VR} value = smallest K_V value, at which the tilt tolerance according to DIN EN 60534 - 2 - 4 is still maintained).



Equal percentage flow curve - detailed values please see below

Overview of fluidic data for flow below seat (for liquids, steam and gases)

Note:

- K_V value [m³/h]: measurement with water according to DIN EN 60534 - 2 - 4
- Operating limits (see "7.2. Operating limits" on page 22)

Nominal diameter (port connection)		Seat size	Actuator size Ø	Operating pressure max. (Seat leakage class)			Theoretical rangeability	K _V value water at stroke [m³/h]											K _{VS} value
				Seat seal				5 %	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %	
				CF A															
				Stainless steel	PTFE	PEEK													
DN	NPS		[mm]	[bar(g)]				[m³/h]											
10	¾ ²⁾	3	50 (D)	16 (IV)	–	–	10:1	–	0.005	0.009	0.013	0.019	0.026	0.034	0.044	0.060	0.077	0.1	
			70 (M)	25 (IV) 40 (IV) ⁴⁾															
		3	50 (D)	16 (IV)			20:1	–	0.009	0.015	0.023	0.033	0.046	0.063	0.085	0.11	0.16	0.2	
			70 (M)	25 (IV) 40 (IV) ⁴⁾															
		4	50 (D)	16 (IV)			30:1	–	0.023	0.033	0.049	0.070	0.097	0.14	0.18	0.26	0.35	0.5	
			70 (M)	25 (IV) 40 (IV) ⁴⁾															
		6	50 (D)	16 (IV)	16 (VI)	10 (VI)	50:1	0.005	0.007	0.011	0.045	0.085	0.16	0.26	0.41	0.65	1.1	1.25	
			70 (M)	25 (IV) 40 (IV) ⁴⁾	25 (IV) 40 (IV) ⁴⁾	25 (VI)													
		8	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.060	0.070	0.090	0.12	0.18	0.26	0.42	0.61	0.92	1.5	2.0	
			70 (M)	25 (IV) 40 (IV) ⁴⁾	25 (IV) 40 (IV) ⁴⁾	25 (VI)													
		10	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.090	0.11	0.13	0.19	0.30	0.48	0.73	1.0	1.6	2.3	2.7	
			70 (M)	25 (IV) 40 (IV) ⁴⁾	25 (IV) 40 (IV) ⁴⁾	25 (VI)													

Nominal diameter (port connec- tion)		Seat size	Actua- tor size Ø	Operating pressure max. (Seat leakage class)			Theo- retical range- ability	K _v value water at stroke [m³/h]											K _{vs} value
				Seat seal															
				CF A															
				Stainless steel	PTFE	PEEK		5 %	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %	
DN	NPS		[mm]	[bar(g)]				[m³/h]											
15	½ ^{2.)}	3	50 (D)	16 (IV)	–	–	10:1	–	0.005	0.009	0.013	0.019	0.026	0.034	0.044	0.060	0.077	0.1	
			70 (M)	25 (IV) 40 (IV) ^{4.)}															
		3	50 (D)	16 (IV)			20:1	–	0.009	0.015	0.023	0.033	0.046	0.063	0.085	0.11	0.16	0.2	
			70 (M)	25 (IV) 40 (IV) ^{4.)}															
		4	50 (D)	16 (IV)			30:1	–	0.023	0.033	0.049	0.070	0.097	0.14	0.18	0.26	0.35	0.5	
			70 (M)	25 (IV) 40 (IV) ^{4.)}															
		6	50 (D)	16 (IV)	16 (VI)	10 (VI)	50:1	0.005	0.007	0.011	0.045	0.085	0.16	0.26	0.41	0.65	1.1	1.25	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		8	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.070	0.080	0.11	0.13	0.19	0.27	0.43	0.63	0.95	1.6	2.1	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		10	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.090	0.11	0.15	0.19	0.31	0.49	0.75	1.1	1.7	2.5	3.1	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		15	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.14	0.17	0.22	0.35	0.52	0.80	1.2	1.8	2.7	3.7	4.3	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (IV)													
20	¾ ^{2.)}	10	50 (D)	16 (IV)	16 (VI)	10 (VI)	0.11	0.12	0.16	0.20	0.33	0.52	0.77	1.2	1.8	2.6	3.2		
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	10 (VI)													
		15	50 (D)	16 (IV)	16 (VI)	10 (VI)	0.14	0.17	0.22	0.35	0.52	0.80	1.2	1.8	2.9	4.0	5.2		
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		20	70 (M)	16 (IV)	16 (VI)	10 (VI)	0.20	0.25	0.30	0.45	0.70	1.1	1.6	2.4	3.5	5.2	7.1		
			90 (N)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													

Nominal diameter (port connection)		Seat size	Actuator size Ø	Operating pressure max. (Seat leakage class)			Theoretical range-ability	K _v value water at stroke [m³/h]											K _{vs} value
				Seat seal															
				CF A															
				Stainless steel	PTFE	PEEK													
DN	NPS		[mm]	[bar(g)]				5 %	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %	
25	1	3	50 (D)	16 (IV)	–	–	10:1	–	0.005	0.009	0.013	0.019	0.026	0.034	0.044	0.060	0.077	0.1	
			70 (M)	25 (IV) 40 (IV) ^{4.)}															
		3	50 (D)	16 (IV)			20:1	–	0.009	0.015	0.023	0.033	0.046	0.063	0.085	0.11	0.16	0.2	
			70 (M)	25 (IV) 40 (IV) ^{4.)}															
		4	50 (D)	16 (IV)			30:1	–	0.023	0.033	0.049	0.070	0.097	0.14	0.18	0.26	0.35	0.5	
			70 (M)	25 (IV) 40 (IV) ^{4.)}															
		6	50 (D)	16 (IV)	16 (VI)	10 (VI)	50:1	0.005	0.007	0.011	0.045	0.085	0.16	0.26	0.41	0.65	1.1	1.25	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		8	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.070	0.080	0.11	0.13	0.19	0.27	0.43	0.63	0.95	1.6	2.1	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		10	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.11	0.12	0.16	0.20	0.33	0.52	0.77	1.2	1.8	2.6	3.2	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		15	50 (D)	16 (IV)	16 (VI)	10 (VI)		0.14	0.17	0.22	0.35	0.52	0.80	1.2	1.8	2.9	4.1	5.3	
			70 (M)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		20	70 (M)	16 (IV)	16 (VI)	10 (VI)		0.20	0.25	0.31	0.47	0.70	1.1	1.6	2.5	3.8	5.4	7.2	
			90 (N)	25 (IV) 40 (IV) ^{4.)}	25 (VI) 40 (VI) ^{4.)}	25 (VI)													
		25	70 (M)	12 (IV)	12 (VI)	7 (VI)		0.35	0.38	0.65	1.0	1.5	2.2	3.4	5.1	7.0	9.4	12.0	
			90 (N)	25 (IV)	25 (VI)	20 (VI)													
32	1¼ ^{2.)}	20	90 (N)	25 (IV)	25 (VI)	25 (VI)	0.21	0.24	0.32	0.43	0.60	0.85	1.2	1.6	2.3	3.3	4.8		
			130 (P)			25 (VI)	0.22	0.25	0.35	0.50	0.70	1.1	1.6	2.5	3.8	5.8	8.0		
		25	90 (N)			20 (VI)	0.38	0.45	0.65	0.93	1.3	1.8	2.6	3.7	5.1	6.7	8.9		
			130 (P)			25 (VI)	0.40	0.47	0.73	1.1	1.6	2.5	3.7	5.4	7.5	10.3	13.0		
		32	90 (N)	16 (IV)	16 (VI)	10 (VI)	0.45	0.58	0.80	1.1	1.7	2.5	3.5	4.9	7.0	10.1	13.4		
			130 (P)	25 (IV)	25 (VI)	20 (VI)	0.48	0.60	0.85	1.3	2.1	3.1	4.5	6.8	10.2	14.0	17.8		
40	1½ ^{2.)}	25	90 (N)	25 (IV)	25 (VI)	10 (VI)	0.38	0.47	0.68	0.95	1.4	1.9	2.7	3.7	5.2	7.2	9.4		
			130 (P)			25 (VI)	0.40	0.50	0.75	1.1	1.7	2.6	3.8	5.6	8.0	10.7	13.6		
		32	90 (N)	16 (IV)	16 (VI)	10 (VI)	0.45	0.55	0.80	1.1	1.7	2.5	3.6	5.0	7.2	10.8	14.4		
			130 (P)	25 (IV)	25 (VI)	20 (VI)	0.48	0.60	0.85	1.3	2.1	3.2	4.6	6.9	11.0	15.0	20.0		
		40	90 (N)	12 (IV)	12 (VI)	7 (VI)	0.55	0.67	1.0	1.5	2.3	3.2	4.5	6.5	9.5	13.7	17.5		
			130 (P)	25 (IV)	25 (VI)	20 (VI)	0.60	0.70	1.1	1.7	2.7	4.0	6.0	9.2	13.8	18.2	24.0		

Nominal diameter (port connection)		Seat size	Actuator size Ø	Operating pressure max. (Seat leakage class)			Theoretical range-ability	K _v value water at stroke [m³/h]											K _{vs} value	
				Seat seal																
				CF A																
				Stainless steel	PTFE	PEEK		5 %	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %		
DN	NPS		[mm]	[bar(g)]				[m³/h]												
50	2 ²⁾	20	90 (N)	25 (20 ¹⁾) (IV)	–	–	50:1	–	0.12	0.23	0.33	0.47	0.67	0.96	1.4	1.9	2.7	3.8		
			130 (P)	25 (20 ¹⁾) (IV)					0.14	0.25	0.38	0.57	0.85	1.3	1.9	2.8	4.1	6.3		
		32	90 (N)	16 (IV)					0.29	0.46	0.66	0.95	1.3	1.9	2.7	3.7	5.2	7.4		
			130 (P)	25 (20 ¹⁾) (IV)	0.31	0.51			0.76	1.1	1.7	2.5	3.6	5.3	7.9	12.0				
		32	90 (N)	16 (IV)	16 (VI)	10 (VI)		0.45	0.56	0.80	1.1	1.7	2.5	3.6	5.0	7.2	11.4	15.3		
			130 (P)	25 (20 ¹⁾) (IV)	25 (20 ¹⁾) (VI)	20 (VI)		0.48	0.60	0.90	1.3	2.1	3.2	4.6	6.9	11.6	16.0	21.0		
		40	90 (N)	12 (IV)	12 (VI)	7 (VI)		0.57	0.68	0.90	1.5	2.1	3.2	4.5	6.4	9.5	13.8	18.0		
			130 (P)	25 (20 ¹⁾) (IV)	25 (20 ¹⁾) (VI)	20 (VI)		0.60	0.70	1.0	1.7	2.6	4.0	5.9	9.2	14.0	18.9	24.5		
		50	90 (N)	7 (III)	7 (VI)	–		0.85	1.1	1.7	2.6	3.8	5.4	7.7	11.4	16.0	21.5	28.0		
			130 (P)	25 (20 ¹⁾) (IV)	25 (20 ¹⁾) (VI)	20 (VI)		0.90	1.1	1.9	2.9	4.5	6.8	10.5	15.5	22.0	29.5	37.0		
		65	2 ^{1/2 2)}	40	130 (P)	25 (15 ¹⁾) (IV)		25 (15 ¹⁾) (VI)	20 (15 ¹⁾) (VI)	0.65	0.75	1.1	1.8	2.8	4.3	6.5	10.4	16.0	22.0	29.0
				50	130 (P)			1.0	1.2	2.0	3.1	4.8	6.7	9.7	16.0	24.0	35.0	45.0		
				65	130 (P)	16 (15 ¹⁾) (IV)		16 (15 ¹⁾) (VI)	10 (VI)	1.6	2.0	3.0	5.0	8.0	13.5	22.0	33.0	45.0	56	65
					225 (L) ³⁾	20 (15 ¹⁾) (IV)		20 (15 ¹⁾) (VI)	12 (VI)	1.1	1.4	2.1	3.2	4.9	8.0	12.0	18.5	31.5	46.5	62
					225 (L)	25 (15 ¹⁾) (IV)		25 (15 ¹⁾) (VI)	16 (15 ¹⁾) (VI)											
80	3 ²⁾	50	130 (P)	25 (12.5 ¹⁾) (IV)	25 (12.5 ¹⁾) (VI)	20 (12.5 ¹⁾) (VI)		1.0	1.2	2.0	3.4	5.3	8.3	13.0	19.0	26.0	35.0	45.0		
			65	130 (P)	16 (12.5 ¹⁾) (IV)	10 (VI)		1.6	2.0	2.9	5.0	8.2	13.0	22.0	35.0	48.0	61	73		
		225 (L) ³⁾		25 (12.5 ¹⁾) (IV)	25 (12.5 ¹⁾) (VI)	16 (12.5 ¹⁾) (VI)		1.4	1.7	2.5	3.8	5.7	8.2	12.2	19.5	32.5	50	70		
		225 (L)		25 (12.5 ¹⁾) (IV)	25 (12.5 ¹⁾) (VI)	20 (12.5 ¹⁾) (VI)														
		80		130 (P)	10 (IV)	10 (VI)		10 (VI)	2.5	3.4	6.3	10.7	16.0	27.0	42.5	58	73	87	100	
			225 (L) ³⁾	16 (12.5 ¹⁾) (IV)	16 (12.5 ¹⁾) (VI)	10 (VI)		2.1	2.6	4.2	7.0	10.5	16.0	25.0	40.0	60	83	100		
			225 (L)	25 (12.5 ¹⁾) (IV)	25 (12.5 ¹⁾) (VI)	15 (12.5 ¹⁾) (VI)														
		100	4	65	130 (P)	16 (10 ¹⁾) (IV)	16 (10 ¹⁾) (VI)	10 (VI)	50:1	1.4	1.8	2.8	5.0	8.8	15.0	25.0	37.0	50	64	77
					225 (L) ³⁾	25 (10 ¹⁾) (IV)	25 (10 ¹⁾) (VI)	16 (10 ¹⁾) (VI)		1.4	1.7	2.6	3.8	5.7	8.3	12.6	20.0	32.0	51	75
					225 (L)	25 (10 ¹⁾) (IV)	25 (10 ¹⁾) (VI)	20 (10 ¹⁾) (VI)												
				80	130 (P)	10 (IV)	10 (VI)	10 (VI)		2.2	3.1	5.9	10.3	17.5	30.0	48.0	66	82	97	110
					225 (L) ³⁾	16 (10 ¹⁾) (IV)	16 (10 ¹⁾) (VI)	10 (VI)		2.1	2.6	4.3	7.0	11.0	17.0	26.5	44.0	65	89	115
225 (L)	25 (10 ¹⁾) (IV)				25 (10 ¹⁾) (VI)	15 (10 ¹⁾) (VI)														
100	130 (P)			6 (IV)	6 (VI)	–	3.8	5.2		9.5	15.0	26.0	46.5	68	90	111	128	140		
	225 (L) ³⁾	10 (IV)	10 (VI)	6 (VI)	3.2	3.9	5.7	9.0		13.5	20.5	32.0	51	83	118	140				
	225 (L)	16 (10 ¹⁾) (IV)	16 (10 ¹⁾) (VI)	10 (VI)																

1.) According to the Pressure Equipment Directive 97/23/EC for compressible fluids of Group 1 (hazardous gases and vapours according to Article 3 No. 1.3 letter a first dash) 2.) Deviation for port connections according to ASME BPE: the next largest nominal diameter is used, e.g. NPS 1 instead of NPS ¾.

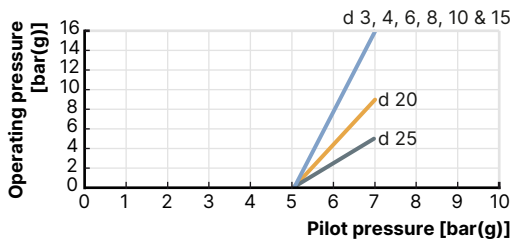
3.) Reduced spring force

4.) Only for housing variants with nominal pressure PN 40 (optional)

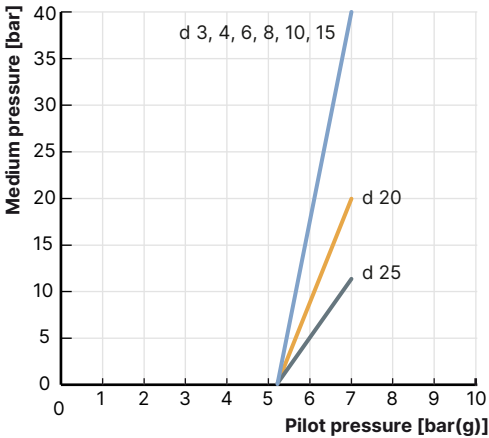
Pilot pressure diagram with flow direction below seat (control function B)

Note:
d = Seat size

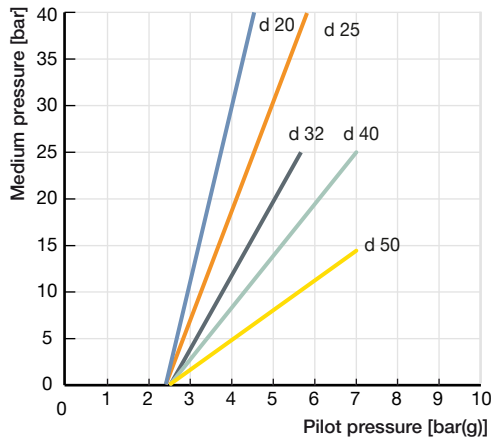
Actuator size Ø 50 mm
Maximum control pressure 7 bar(g)



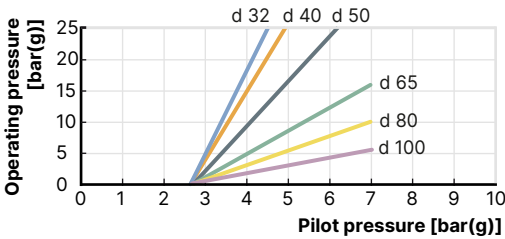
Actuator size Ø 70 mm
Maximum control pressure 7 bar(g)



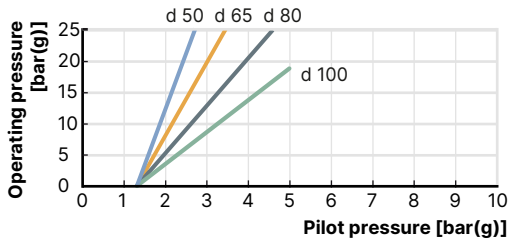
Actuator size Ø 90 mm
Maximum control pressure 7 bar(g)



Actuator size Ø 130 mm
Maximum control pressure 7 bar(g)



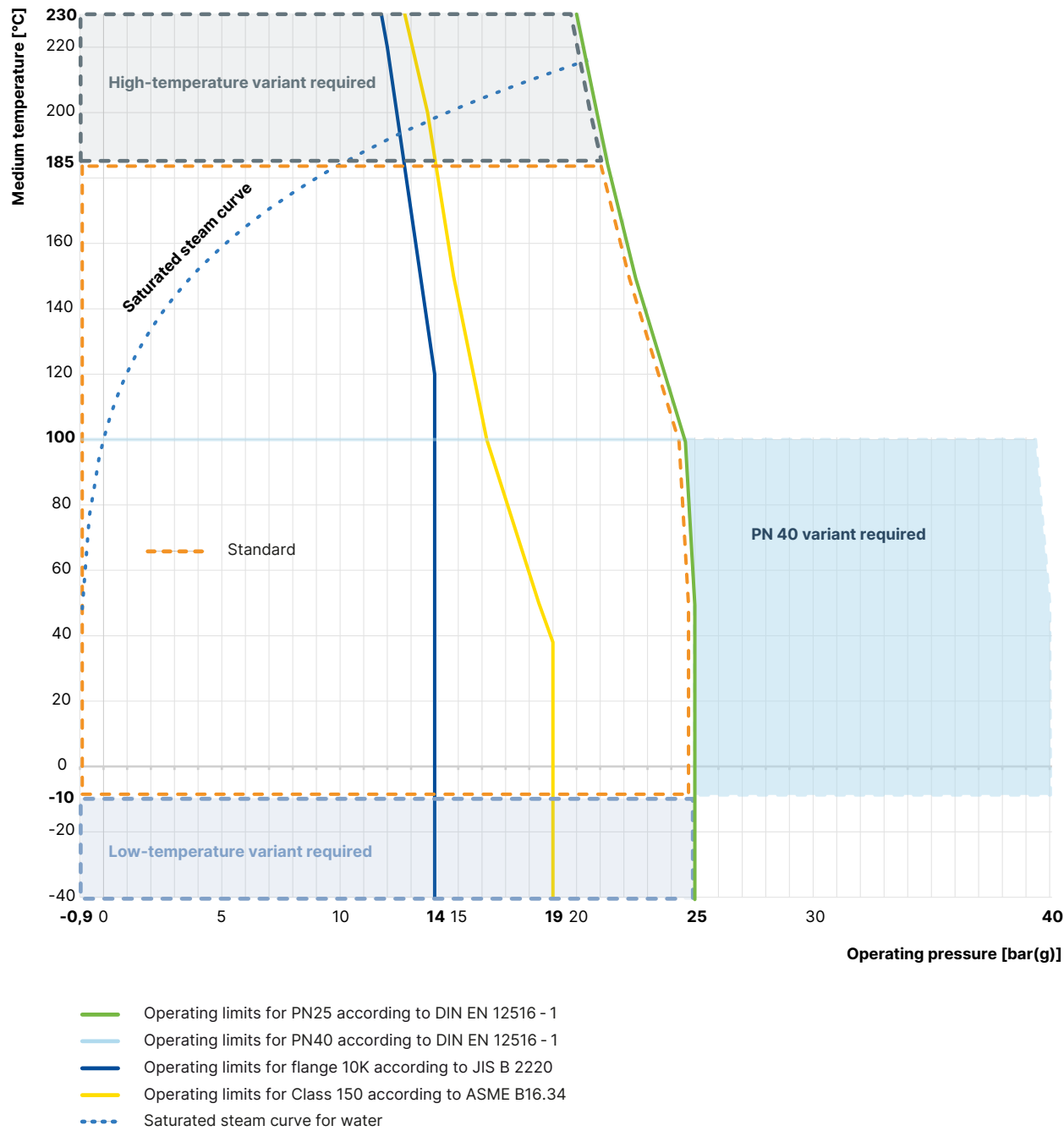
Actuator size Ø 225 mm
Maximum control pressure 5 bar(g)



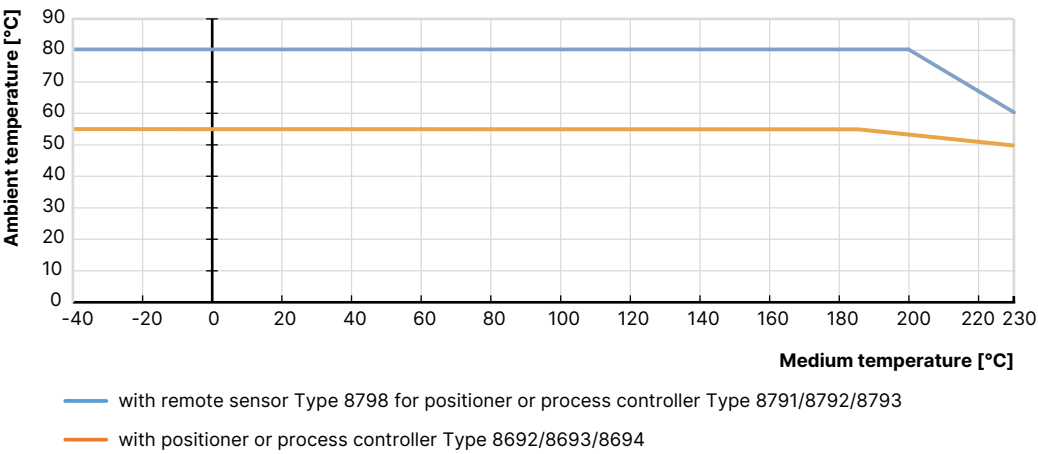
7.2. Operating limits

Operating limits for medium temperature and operating pressure

The operating range of Bürkert process valves is in addition to the maximum operating pressures limited by the nominal pressure according to the relevant standard.



Operating limits for ambient and medium temperature



Operating limits for seat seal

Tight sealing required	Leakage class (DIN EN 60534 - 4)	Medium temperature	Seat seal
No An additional shut-off valve is recommended	III/IV (metal seals) Metal-sealed valves have larger leakages (0.1 % or 0.01 % of the nominal flow rate are permissible). Metallic seals are impervious even under demanding process conditions.	- 40...+ 230 °C	Stainless steel
	For particularly demanding process conditions such as cavitation, erosion by wet steam or abrasive media, hardened cones and seats can be used to significantly increase the service life.		Hardened stainless steel
Yes An additional shut-off valve is often unnecessary.	VI (soft seals) By using plastics as sealing material, the control valves can close tightly. Their use is not recommended in cases of increased erosion due to demanding process conditions.	- 40...+ 130 °C (recommended for ≤ + 130 °C)	PTFE
		- 10...+ 230 °C (recommended for > + 130 °C)	PEEK

Operating limits for optional versions

High-temperature version

Thanks to an adaption of the spindle seal, this version is suitable for applications with steam, neutral gases and other heat transfer mediums up to + 230 °C.

Water version

For applications with water up to + 200 °C, a special configuration of the spindle seal increases service life significantly. It is recommended for water temperatures starting at + 85 °C.

Drinking water version

Wetted materials are tested in contact with the medium are tested for suitability with drinking water up to + 85 °C.

Vacuum version

Without leakage bore, this design is suitable for pressures down to - 0.9 bar(g).

Low-temperature version

Suitable for minimum medium temperatures down to - 40 °C

Oxygen variant

Non-metallic wetted materials are tested for suitability with oxygen and are suitable for operating pressures up to 25 bar(g) and media temperatures up to + 60 °C. Optional variant for operating pressures up to 40 bar(g) and media temperatures up to + 100 °C on request.

Hydrogen variant

Wetted materials are tested for suitability with hydrogen and are suitable for operating pressures up to 40 bar(g) and medium temperatures up to + 100 °C.

The hydrogen variant of Type 2301 is tested for an external tightness (stem seal and body seal) totalling 10^{-6} mbar*l/s at 40 bar, + 20 °C helium and 2.78×10^{-3} mbar*l/s at 40 bar, - 10 °C/+ 100 °C hydrogen. An external leak-tightness of 10^{-4} mbar*l/s is ensured when delivered.

8. Product accessories

Process controller TopControl

Type 8693 ▶ Actuator size Ø 70/90/130/225 mm



The intelligent process controller Type 8693 is designed for integrated mounting on pneumatic actuators from the process control valve series Type 23xx/2103 and especially for the requirements of hygienic process conditions. Using the TUNE functions, the positioner and process controller can be initialised automatically. Easy operation and selection of additional software functions as well as parameterisation are carried out via the large graphic display and a touch keypad. Device configuration and parameterisation can also be conveniently carried out by the Bürkert Communicator software via a PC interface.

Features

- Contactless position sensor
- Universal control system for single and double acting actuators
- Highly dynamic actuating system without internal control air consumption in the balanced state
- Integrated diagnostic functions for valve monitoring
- Automatic initialisation of the positioner and process controller using the TUNE function
- Safeguarding in the event of failure of the electrical or pneumatic auxiliary power
- PROFIBUS DPV1, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)
- Compact and robust hygienic stainless steel design

Customer benefits

- Quick and easy commissioning
- Intuitive and simple operation via a graphic display with backlight and touch keypad
- High system availability due to increased drive service life by means of spring chamber ventilation
- Guaranteed reliability and predictable maintenance through valve monitoring and diagnostics
- Easy maintenance and process monitoring

Positioner TopControl
Type 8692 ▶ Actuator size Ø 70/90/130/225 mm


The intelligent electropneumatic positioner Type 8692 is designed for integrated attachment to pneumatic actuators of the process control valve series Type 23xx/2103 and especially for the requirements of hygienic process conditions. The positioner can be initialised automatically using the TUNE function. Easy operation and the selection of the extensive additional software functions as well as parameterisation are carried out via the large graphic display and the touch keypad. The device configuration and parameterisation can also be conveniently carried out using the Bürkert Communicator software via a PC interface.

Features

- Contactless position sensor
- Universal positioning system for single and double-acting actuators in the balanced state
- Highly dynamic positioning system without internal control air consumption
- Integrated diagnostic functions for valve monitoring
- Automatic initialisation of the positioner by using the TUNE function
- Safeguard in the event of failure of the electrical or pneumatic auxiliary power
- PROFIBUS DPV1, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)
- Compact and robust hygienic stainless steel design

Customer benefits

- Quick and easy commissioning
- Intuitive and simple operation via graphic display with backlight and touch keypad
- High system availability due to increased drive service life by means of spring chamber ventilation
- Guaranteed reliability and predictable maintenance through valve monitoring and diagnostics

Positioner TopControl BASIC
Type 8694 ▶ Actuator size Ø 70/90/130/225 mm


The compact positioner Type 8694/8696 is designed for integrated attachment to pneumatic actuators of the Type 23xx/2103 process control valve series and especially for the requirements of hygienic process conditions. Operation and parameterisation are performed via push buttons and DIP switches. The device configuration and parameterisation can also be conveniently carried out using the Bürkert Communicator software via a PC interface.

Features

- Contactless position sensor
- Universal positioning system for single and double-acting actuators
- Ultra dynamic positioning system without internal control air consumption
- AS-Interface, IO-Link, Bürkert system bus (bÜS) (only 8694)
- Compact and robust hygienic stainless steel design

**Type 8696 ▶
Actuator size Ø 50 mm**

Customer benefits

- Simple and safe commissioning using the teach function
- Minimum space requirement in the plant pipework for more flexibility in plant design
- High system availability due to increased drive service life by means of spring chamber ventilation

Process controller SideControl Remote
Type 8793 ▶ with remote sensor 8798 ▶ Actuator size Ø 70/90/130/225 mm


The intelligent digital positioner and process controller Type 8793 is designed for mounting on lift or swivel drives with standardisation in accordance with IEC 534 - 6 or VDI/VDE 3845 for demanding control tasks. The variant with remote position sensor Type 8798 is used to control Bürkert process control valves. It is operated via a graphic display with backlight. The initialisation of the positioner and process controller can be done automatically using the TUNE function. The type of controlled system is automatically recognised and the appropriate controller structure with the corresponding optimum parameter set is determined.

Features

- Universal control system for single and double acting actuators
- Integrated diagnostic functions for valve monitoring
- Automatic initialisation of the position and process controller using the TUNE function
- Ultra-dynamic actuating system without internal control air consumption
- Illuminated graphic display with backlight and touch keypad
- PROFIBUS DPV1, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)
- Compact and robust design
- Adaptation according to IEC 534 - 6 or VDI/VDE 3845 for lift and swivel drives or as remote variant on Bürkert process valves

Customer benefits

- Quick and easy commissioning
- Intuitive and simple operation via graphic display with backlight and touch keypad
- Guaranteed reliability and scheduled maintenance thanks to valve monitoring and diagnostics
- Easy maintenance and process monitoring
- Long service life

Positioner SideControl Remote
Positioner Type 8792 ▶ with remote sensor Type 8798 ▶ Actuator size Ø 70/90/130/225 mm


The intelligent digital positioner and process controller Type 8792 is designed for attachment to lift and swivel drives with standardisation according to IEC 534 - 6 or VDI/VDE 3845 for demanding control tasks. The Type 8798 version with remote position sensor is used to control Bürkert process control valves. It is operated via a graphic display with backlight. The initialisation of the positioner and process controller can be done automatically by using the TUNE function.

Features

- Illuminated graphic display with backlight and touch keypad
- Universal control system for single and double acting actuators
- Ultra-dynamic actuating system without internal control air consumption
- Integrated diagnostic functions for valve monitoring
- PROFIBUS DPV1, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)
- Compact and robust design
- Adaptation according to IEC 534 - 6 or VDI/VDE 3845 for lift and swivel drives or as remote variant on Bürkert process valves

Customer benefits

- Quick and easy commissioning
- Intuitive and simple operation via a graphic display with backlight and touch keypad
- Guaranteed reliability and scheduled maintenance thanks to valve monitoring and diagnostics
- Long service life

Positioner SideControl BASIC Remote
Positioner Type 8791 ▶ with remote sensor Type 8798 ▶ Actuator size Ø 70/90/130/225 mm


The intelligent digital positioner and process controller Type 8791/8798 is designed for mounting on linear and rotary actuators with standardisation in accordance with IEC 534 - 6 or VDI/VDE 3845 for demanding control tasks. The variant with remote position sensor Type 8798 is used for controlling Bürkert process control valves. It is operated via a graphic display with backlight. The positioner and process controller can be initialised automatically using the TUNE functions.

Features

- Simple design
- Universal control system for single and double acting actuators
- Highly dynamic actuating system without internal control air consumption in the balanced state
- Adaptation according to IEC 534 - 6 or VDI/VDE 3845 for lift and swivel drives or as remote variant on Bürkert process valves
- AS-Interface, IO-Link, Bürkert system bus (bÜS) (only for positioner Type 8791 BASIC Remote)

**Positioner IP20 Type 8791 ▶
with remote sensor
Type 8798 ▶ Actuator size
Ø 70/90/130/225 mm**

Customer benefits

- Simple commissioning
- Simple device for simple control tasks
- Low energy consumption

9. Networking and combination with other Bürkert products

The **Type 2301 Globe Control Valve** can be combined with our extensive range of positioners and process controllers to form the **Continuous ELEMENT valve system, Type 8802-GD**.

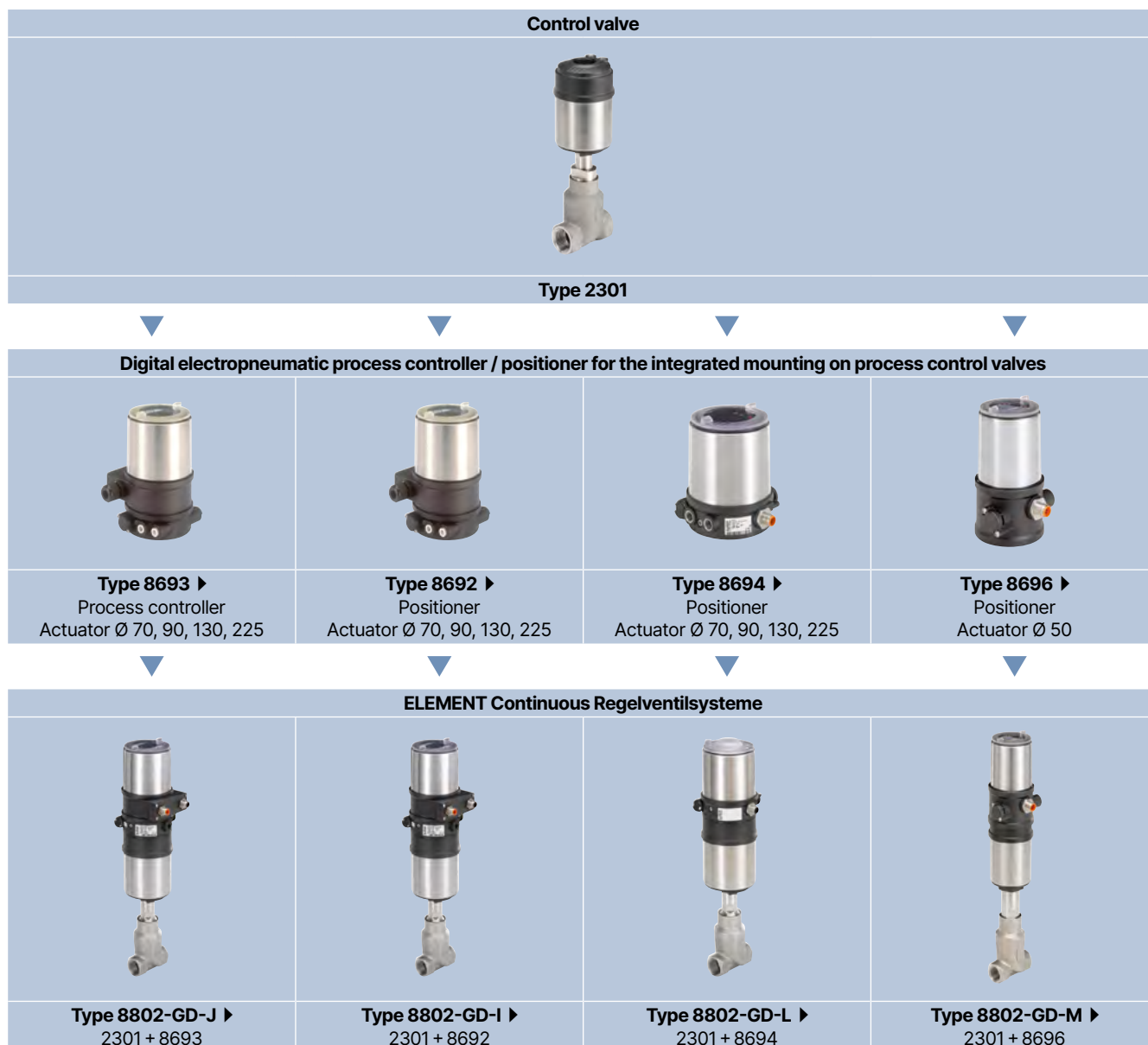
The range of the control unit consists of;

- A digital electropneumatic positioner/process controller **Type 8692/8693** (for valve actuator sizes Ø 70/90/130/225 mm)
- A digital electropneumatic positioner, basic **Type 8694** (for valve actuator size Ø 70/90/130/225 mm)
- A digital electropneumatic positioner, basic **Type 8696** (for valve actuator size Ø 50 mm)
- An electropneumatic positioner, SideControl **Type 8792** or an electropneumatic process controller, **Type 8793** (for valve actuator size Ø 70/90/130/225 mm) and a remote sensor, **Type 8798**
- An electropneumatic positioner, SideControl Basic **Type 8791** (for valve actuator size Ø 70/90/130/225 mm) and a remote sensor, **Type 8798**

Note:

- For the configuration of further valve systems please use the **Product Enquiry Form** (see **"10.3. Bürkert Product Enquiry Form" on page 30**).
- You order two components and receive a completely assembled and tested valve.

Example with threaded connection



Control valve



Type 2301

Digital electropneumatic process controller / positioner SideControl

		 oder	
Type 8793 ▶ Process controller + Type 8798 ▶ Remote sensor Actuator Ø 70, 90, 130, 225	Type 8792 ▶ Positioner + Type 8798 ▶ Remote sensor Actuator Ø 70, 90, 130, 225	Type 8791 ▶ Positioner + Type 8798 ▶ Remote sensor Actuator Ø 70, 90, 130, 225	SideControl Basic IP20 Positioner Actuator Ø 50

ELEMENT Continuous control valve system

		
Type 8802-GD-Q ▶ 2301 + 8793 + 8798	Type 8802-GD-P ▶ 2301 + 8792 + 8798	Type 8802-GD-O ▶ 2301 + 8791 + 8798

10.4. Ordering chart flange connection

Valve with flow direction below seat

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Article no.	
DN	NPS				Seat seal	
			[mm]	[m³/h]	PTFE	Stainless steel
DIN EN 1092 - 1						
10	3/8	3	70 (M)	0.1	–	o. r.
		3	70 (M)	0.2	–	o. r.
		4	70 (M)	0.5	–	o. r.
		6	70 (M)	1.25	370257 ₪	350725 ₪
		8	70 (M)	2	213985 ₪	215212 ₪
		10	70 (M)	2.7	213989 ₪	215215 ₪
15	1/2	3	70 (M)	0.1	–	o. r.
		3	70 (M)	0.2	–	o. r.
		4	70 (M)	0.5	–	o. r.
		6	70 (M)	1.25	234255 ₪	378904 ₪
		8	70 (M)	2.1	213987 ₪	215214 ₪
		10	70 (M)	3.1	213991 ₪	215217 ₪
		15	70 (M)	4.3	204932 ₪	205010 ₪
20	3/4	10	70 (M)	3.2	210530 ₪	215218 ₪
		15	70 (M)	5.2	213993 ₪	214030 ₪
		20	70 (M)	7.1	204935 ₪	205012 ₪
25	1	15	70 (M)	5.3	213994 ₪	214031 ₪
		20	70 (M)	7.2	213995 ₪	214032 ₪
		25	70 (M)	12	204937 ₪	205014 ₪
		90 (N)	70 (M)	12	242054 ₪	229421 ₪
32	1 1/4	25	90 (N)	8.9	213997 ₪	210446 ₪
		130 (P)	90 (N)	13	222634 ₪	222655 ₪
		32	90 (N)	13.4	204939 ₪	205016 ₪
		130 (P)	90 (N)	17.8	223597 ₪	223598 ₪
40	1 1/2	32	90 (N)	14.4	213999 ₪	214035 ₪
		130 (P)	90 (N)	20.2	222636 ₪	222657 ₪
		40	90 (N)	17.5	204941 ₪	205018 ₪
		130 (P)	90 (N)	23.8	219791 ₪	222659 ₪
50	2	40	90 (N)	18	214001 ₪	214037 ₪
		130 (P)	90 (N)	24.6	222638 ₪	222660 ₪
		50	90 (N)	28	204942 ₪	205019 ₪
		130 (P)	90 (N)	37	214003 ₪	214039 ₪
65	2 1/2	50	130 (P)	45	214005 ₪	214040 ₪
		225 (L)	130 (P)	39.5	20060552 ₪	20060584 ₪
		65	130 (P)	65	217772 ₪	219618 ₪
		225 (L)	130 (P)	62	20060553 ₪	20060585 ₪
80	3	65	130 (P)	73	239545 ₪	239581 ₪
		225 (L)	130 (P)	70	20060554 ₪	20060587 ₪
		80	130 (P)	100	239540 ₪	239576 ₪
		225 (L)	130 (P)	100	20060555 ₪	20060589 ₪
100	4	80	130 (P)	110	239561 ₪	239597 ₪
		225 (L)	130 (P)	115	20060556 ₪	20060590 ₪
		100	130 (P)	140	239556 ₪	331125 ₪
		225 (L)	130 (P)	140	20060557 ₪	20060591 ₪

Nominal diameter (port connection)		Seat size	Actuator size Ø		K _{vs} value	Article no.	
DN	NPS		[mm]			Seat seal	
					[m³/h]	PTFE	Stainless steel
JIS 10K							
15	½	3	70 (M)	0.1		–	o. r.
		3	70 (M)	0.2		–	o. r.
		4	70 (M)	0.5		–	o. r.
		6	70 (M)	1.25		367023 ㉞	o. r.
		8	70 (M)	2.1		215203 ㉞	215228 ㉞
		10	70 (M)	3.1		213913 ㉞	213911 ㉞
		15	70 (M)	4.3		204953 ㉞	205030 ㉞
20	¾	10	70 (M)	3.2		215204 ㉞	215229 ㉞
		15	70 (M)	5.2		213936 ㉞	213933 ㉞
		20	70 (M)	7.1		204955 ㉞	205032 ㉞
25	1	15	70 (M)	5.3		214020 ㉞	214059 ㉞
		20	70 (M)	7.2		213930 ㉞	213914 ㉞
		25	70 (M)	12		204957 ㉞	205034 ㉞
			90 (N)	12		242165 ㉞	242199 ㉞
32	1¼	25	90 (N)	8.9		213939 ㉞	213937 ㉞
			130 (P)	13		222643 ㉞	222665 ㉞
		32	90 (N)	13.4		213177 ㉞	213178 ㉞
			130 (P)	17.8		222645 ㉞	222667 ㉞
40	1½	32	90 (N)	14.4		213932 ㉞	213931 ㉞
			130 (P)	20.2		222647 ㉞	222668 ㉞
		40	90 (N)	17.5		204959 ㉞	205037 ㉞
			130 (P)	23.8		222649 ㉞	222670 ㉞
50	2	40	90 (N)	18		213941 ㉞	213940 ㉞
			130 (P)	24.6		222650 ㉞	222671 ㉞
		50	90 (N)	28		204960 ㉞	205038 ㉞
			130 (P)	37		214023 ㉞	214062 ㉞
65	2½	50	130 (P)	45		214024 ㉞	214063 ㉞
			225 (L)	39.5		20060565 ㉞	20060599 ㉞
		65	130 (P)	65		219617 ㉞	219620 ㉞
			225 (L)	62		20060568 ㉞	20060600 ㉞
80	3	65	130 (P)	73		239547 ㉞	239584 ㉞
			225 (L)	70		20060569 ㉞	20060601 ㉞
		80	130 (P)	100		239542 ㉞	239578 ㉞
			225 (L)	100		20060570 ㉞	20060602 ㉞
100	4	80	130 (P)	110		239563 ㉞	239599 ㉞
			225 (L)	115		20060571 ㉞	20060604 ㉞
		100	130 (P)	140		239558 ㉞	239594 ㉞
			225 (L)	140		20060572 ㉞	20060605 ㉞

o. r. = on request

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Article no.	
					Seat seal	
DN	NPS		[mm]	[m³/h]	PTFE	Stainless steel
ANSI B 16.5						
15	½	3	70 (M)	0.1	–	o. r.
			70 (M)	0.2	–	o. r.
		4	70 (M)	0.5	–	o. r.
		6	70 (M)	1.25	367211 	380948 
		8	70 (M)	2.1	215198 	215221 
		10	70 (M)	3.1	215199 	215222 
		15	70 (M)	4.3	204944 	205021 
20	¾	10	70 (M)	3.2	215200 	215223 
		15	70 (M)	5.2	214009 	214046 
		20	70 (M)	7.1	204946 	205023 
25	1	15	70 (M)	5.3	214010 	214047 
		20	70 (M)	7.2	214011 	214048 
		25	70 (M)	12	204948 	205025 
			90 (N)	12	464851 	464367 
40	1½	32	90 (N)	14.4	215201 	215224 
			130 (P)	20.2	463905 	463913 
		40	90 (N)	17.5	204950 	205027 
			130 (P)	23.8	463907 	463915 
50	2	40	90 (N)	18	214013 	214050 
			130 (P)	24.6	463908 	463916 
		50	90 (N)	28	204951 	205028 
			130 (P)	37	214015 	214052 
65	2½	50	130 (P)	45	239537 	239573 
			225 (L)	39.5	20060558 	20060592 
		65	130 (P)	65	239535 	239572 
			225 (L)	62	20060559 	20060594 
80	3	65	130 (P)	73	239546 	239582 
			225 (L)	70	20060560 	20060595 
		80	130 (P)	100	239541 	239577 
			225 (L)	100	20060562 	20060596 
100	4	80	130 (P)	110	239562 	239598 
			225 (L)	115	20060563 	20060597 
		100	130 (P)	140	239557 	239593 
			225 (L)	140	20060564 	20060598 

o. r. = on request

Further versions on request			
	Approval FDA, ATEX, (EG Gas Appliances Directive 2009/142/EG)		Control function/Circuit function B (normally open: NO)
	Process connection Further housing connections		

10.5. Ordering chart threaded connection

Valve with flow direction below seat

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Article no.	
					Seat seal	
DN	NPS		[mm]	[m³/h]	PTFE	Stainless steel
DIN EN ISO 228 - 1						
10	⅜	3	70 (M)	0.1	—	o. r.
		3	70 (M)	0.2	—	o. r.
		4	70 (M)	0.5	—	o. r.
		6	70 (M)	1.25	322059 ₺	350407 ₺
		8	70 (M)	2	215233 ₺	215242 ₺
		10	70 (M)	2.7	215235 ₺	215245 ₺
15	½	3	70 (M)	0.1	—	o. r.
		3	70 (M)	0.2	—	o. r.
		4	70 (M)	0.5	—	o. r.
		6	70 (M)	1.25	236138 ₺	354643 ₺
		8	70 (M)	2.1	212964 ₺	215243 ₺
		10	70 (M)	3.1	215236 ₺	215246 ₺
20	¾	15	70 (M)	4.3	206432 ₺	213955 ₺
		10	70 (M)	3.2	215237 ₺	215247 ₺
		15	70 (M)	5.2	214067 ₺	215248 ₺
		20	70 (M)	7.1	206584 ₺	211239 ₺
25	1	15	70 (M)	5.3	206588 ₺	210460 ₺
		20	70 (M)	7.2	206586 ₺	210721 ₺
		25	70 (M)	12	189145 ₺	210485 ₺
		90 (N)	12	242203 ₺	242207 ₺	
32	1¼	25	90 (N)	8.9	214070 ₺	210407 ₺
			130 (P)	13	222677 ₺	222687 ₺
		32	90 (N)	13.4	210097 ₺	210458 ₺
			130 (P)	17.8	223599 ₺	223600 ₺
40	1½	32	90 (N)	14.4	214072 ₺	214084 ₺
			130 (P)	20.2	222679 ₺	222689 ₺
		40	90 (N)	17.5	210098 ₺	207800 ₺
			130 (P)	23.8	222681 ₺	222691 ₺
50	2	40	90 (N)	18	214074 ₺	214086 ₺
			130 (P)	24.6	222682 ₺	222692 ₺
		50	90 (N)	28	210099 ₺	203693 ₺
			130 (P)	37	214076 ₺	214088 ₺
65	2½	50	130 (P)	45	214077 ₺	214089 ₺
		65	130 (P)	65	219621 ₺	219622 ₺

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Article no.	
					Seat seal	
DN	NPS		[mm]	[m³/h]	PTFE	Stainless steel
ISO 7/1 / DIN EN 10226 - 2						
10	⅜	3	70 (M)	0.1	—	o. r.
		3	70 (M)	0.2	—	o. r.
		4	70 (M)	0.5	—	o. r.
		6	70 (M)	1.25	o. r.	o. r.
		8	70 (M)	2	220418 	220453 
		10	70 (M)	2.7	220421 	220457 
15	½	3	70 (M)	0.1	—	o. r.
		3	70 (M)	0.2	—	o. r.
		4	70 (M)	0.5	—	o. r.
		6	70 (M)	1.25	o. r.	o. r.
		8	70 (M)	2.1	220881 	220455 
		10	70 (M)	3.1	220423 	220459 
20	¾	15	70 (M)	4.3	220882 	220886 
		10	70 (M)	3.2	220425 	220461 
		15	70 (M)	5.2	220427 	220463 
25	1	20	70 (M)	7.1	220430 	220466 
		15	70 (M)	5.3	220428 	220464 
		20	70 (M)	7.2	220431 	220467 
		25	70 (M)	12	220434 	220470 
32	1¼	25	90 (N)	12	464864 	464867 
			130 (N)	12	464864 	464867 
		32	90 (N)	8.9	220435 	220471 
			130 (P)	13	463921 	463931 
40	1½	32	90 (N)	13.4	220437 	220473 
			130 (P)	17.8	463956 	463957 
		40	90 (N)	14.4	220438 	463803 
			130 (P)	20.2	463923 	463933 
50	2	40	90 (N)	17.5	220440 	220476 
			130 (P)	23.8	463925 	463935 
		50	90 (N)	18	220441 	220477 
			130 (P)	24.6	463926 	463936 
65	2½	50	90 (N)	28	220443 	220479 
			130 (P)	37	220444 	220480 
		65	130 (P)	45	239536 	239620 
		65	130 (P)	65	239534 	239571 

o. r. = on request

Nominal diameter (port connection)		Seat size	Actuator size Ø		K _{vs} value	Article no. RC (ASME B 1.20.1)	
DN	NPS		[mm]			Seat seal	
						PTFE	Stainless steel
ASME B 1.20.1							
10	3/8	3	70 (M)	0.1		–	o. r.
		3	70 (M)	0.2		–	o. r.
		4	70 (M)	0.5		–	o. r.
		6	70 (M)	1.25		o. r.	o. r.
		8	70 (M)	2		220484 ☒	220519 ☒
		10	70 (M)	2.7		220487 ☒	220523 ☒
15	1/2	3	70 (M)	0.1		–	o. r.
		3	70 (M)	0.2		–	o. r.
		4	70 (M)	0.5		–	o. r.
		6	70 (M)	1.25		359073 ☒	388407 ☒
		8	70 (M)	2.1		220888 ☒	220521 ☒
		10	70 (M)	3.1		220489 ☒	220525 ☒
20	3/4	15	70 (M)	4.3		220889 ☒	220894 ☒
		10	70 (M)	3.2		220491 ☒	220527 ☒
		15	70 (M)	5.2		220493 ☒	220529 ☒
25	1	20	70 (M)	7.1		220496 ☒	220532 ☒
		15	70 (M)	5.3		220494 ☒	220530 ☒
		20	70 (M)	7.2		220497 ☒	220533 ☒
		25	70 (M)	12		220500 ☒	220536 ☒
32	1 1/4	90 (N)	12			242377 ☒	242380 ☒
		25	90 (N)	8.9		220501 ☒	220537 ☒
		130 (P)	13			222740 ☒	222777 ☒
		32	90 (N)	13.4		220503 ☒	220539 ☒
40	1 1/2	130 (P)	17.8			223605 ☒	223606 ☒
		32	90 (N)	14.4		220504 ☒	220540 ☒
		130 (P)	20.2			222742 ☒	222763 ☒
		40	90 (N)	17.5		220506 ☒	220542 ☒
50	2	130 (P)	23.8			222765 ☒	222767 ☒
		40	90 (N)	18		220507 ☒	220543 ☒
		130 (P)	24.6			222768 ☒	222766 ☒
		50	90 (N)	28		220509 ☒	220545 ☒
65	2 1/2	130 (P)	37			220510 ☒	220546 ☒
		50	130 (P)	45		220511 ☒	220547 ☒
		65	130 (P)	65		220512 ☒	220548 ☒

o. r. = on request

Further versions on request			
	Approval FDA, ATEX, (EG Gas Appliances Directive 2009/142/EG)		Control function/Circuit function B (normally open: NO)
	Process connection Further housing connections		

10.6. Ordering chart welded connection

Valve with flow direction below seat

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Connection MW x TW	Article no.	
DN	NPS					Seat seal	
			[mm]	[m ³ /h]		PTFE	Stainless steel
DIN EN ISO 1127 - 1 / ISO 4200 / DIN 11866 Reihe B							
10	3/8	3	70 (M)	0.1	17.2 × 1.6	–	o. r.
		3	70 (M)	0.2	17.2 × 1.6	–	o. r.
		4	70 (M)	0.5	17.2 × 1.6	–	o. r.
		6	70 (M)	1.25	17.2 × 1.6	232888 	378908 
		8	70 (M)	2	17.2 × 1.6	232891 	315915 
		10	70 (M)	2.7	17.2 × 1.6	o. r.	337061 
15	1/2	3	70 (M)	0.1	21.3 × 1.6	–	o. r.
		3	70 (M)	0.2	21.3 × 1.6	–	o. r.
		4	70 (M)	0.5	21.3 × 1.6	–	o. r.
		6	70 (M)	1.25	21.3 × 1.6	288140 	360750 
		8	70 (M)	2.1	21.3 × 1.6	212392 	216407 
		10	70 (M)	3.1	21.3 × 1.6	212393 	215873 
		15	70 (M)	4.3	21.3 × 1.6	209571 	216409 
20	3/4	15	70 (M)	5.2	26.9 × 1.6	214094 	214132 
		20	70 (M)	7.1	26.9 × 1.6	214096 	210696 
25	1	20	70 (M)	7.2	33.7 × 2.0	214097 	214135 
		25	70 (M)	12	33.7 × 2.0	209572 	214138 
32	1 1/4	25	90 (N)	8.9	42.4 × 2.0	214101 	214139 
		32	90 (N)	13.4	42.4 × 2.0	214103 	214141 
40	1 1/2	32	90 (N)	14.4	48.3 × 2.0	214104 	214142 
			130 (P)	20.2	48.3 × 2.0	222700 	222721 
		40	90 (N)	17.5	48.3 × 2.0	209440 	214144 
			130 (P)	23.8	48.3 × 2.0	222702 	222723 
50	2	40	90 (N)	18	60.3 × 2.0	210756 	213561 
			130 (P)	24.6	60.3 × 2.0	222703 	222724 
		50	90 (N)	28	60.3 × 2.0	214107 	214146 
			130 (P)	37	60.3 × 2.0	214108 	214147 
65	2 1/2	65	130 (P)	65	76.1 × 2.3	219623 	219626 
			225 (L)	62	76.1 × 2.3	20060573 	20060607 
80	3	80	130 (P)	100	88.9 × 2.3	239543 	239579 
			225 (L)	100	88.9 × 2.3	20060574 	20060608 
100	4	100	130 (P)	140	114.3 × 2.6	239559 	239595 
			225 (L)	140	114.3 × 2.6	20060575 	20060609 

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Connection MW x TW	Article no.	
						Seat seal	
DN	NPS		[mm]	[m³/h]		PTFE	Stainless steel
DIN 11850 - 2 / DIN 11866 Reihe A / DIN EN 10357 Reihe A							
10	⅜	3	70 (M)	0.1	13.0 × 1.5	–	o. r.
		3	70 (M)	0.2	13.0 × 1.5	–	o. r.
		4	70 (M)	0.5	13.0 × 1.5	–	o. r.
		6	70 (M)	1.25	13.0 × 1.5	260632 	357231 
		8	70 (M)	2	13.0 × 1.5	300236 	284179 
		10	70 (M)	2.7	13.0 × 1.5	257412 	208553 
15	½	3	70 (M)	0.1	19.0 × 1.5	–	o. r.
		3	70 (M)	0.2	19.0 × 1.5	–	o. r.
		4	70 (M)	0.5	19.0 × 1.5	–	o. r.
		6	70 (M)	1.25	19.0 × 1.5	248881 	367704 
		8	70 (M)	2.1	19.0 × 1.5	215250 	215911 
		10	70 (M)	3.1	19.0 × 1.5	215251 	215913 
20	¾	15	70 (M)	4.3	19.0 × 1.5	215253 	209173 
		20	70 (M)	5.2	23.0 × 1.5	214113 	208555 
25	1	25	70 (M)	7.1	23.0 × 1.5	211937 	211953 
		20	70 (M)	7.2	29.0 × 1.5	214116 	214154 
32	1¼	25	70 (M)	12	29.0 × 1.5	209384 	209089 
		25	90 (N)	8.9	35.0 × 1.5	214119 	214156 
40	1½	32	90 (N)	13.4	35.0 × 1.5	211965 	209181 
		32	90 (N)	14.4	41.0 × 1.5	214121 	213487 
			130 (P)	20.2	41.0 × 1.5	222711 	222732 
		40	90 (N)	17.5	41.0 × 1.5	211967 	209110 
50	2		130 (P)	23.8	41.0 × 1.5	222713 	222734 
		40	90 (N)	18	53.0 × 1.5	214123 	213411 
			130 (P)	24.6	53.0 × 1.5	222714 	222735 
		50	90 (N)	28	53.0 × 1.5	211968 	209185 
65	2½		130 (P)	37	53.0 × 1.5	214125 	214159 
		65	130 (P)	65	70.0 × 2.0	219625 	219628 
80	3		225 (L)	62	70.0 × 2.0	20060577 	20060610 
		80	130 (P)	100	85.0 × 2.0	239544 	239580 
100	4		225 (L)	100	85.0 × 2.0	20060578 	20060612 
		100	130 (P)	140	104.0 × 2.0	239560 	239596 
			225 (L)	140	104.0 × 2.0	20060580 	20060613 

o. r. = on request

Nominal diameter (port connection)	Seat size	Actuator size Ø	K _{vs} value	Connection Ø DS x WS	Operating pressure	Article no.	
						Seat seal	
NPS		[mm]	[m³/h]			PTFE (VI)	Stainless steel (IV)
ASME BPE / DIN 11866 Reihe C							
½	3	70 (M)	0.1	12.7 × 1.65	25 (IV)	–	o. r.
	3	70 (M)	0.2	12.7 × 1.65	–	–	o. r.
	4	70 (M)	0.5	12.7 × 1.65	25 (IV)	–	o. r.
	6	70 (M)	1.25	12.7 × 1.65	25 (IV)	226651 ⅞	20001538 ⅞
	8	70 (M)	2	12.7 × 1.65	25 (IV)	379940 ⅞	216879 ⅞
	10	70 (M)	2.7	12.7 × 1.65	25 (IV)	225463 ⅞	313806 ⅞
¾	10	70 (M)	3.1	19.05 × 1.65	25 (IV)	241143 ⅞	o. r.
	15	70 (M)	4.3	19.05 × 1.65	25 (IV)	335739 ⅞	335741 ⅞
1	10	70 (M)	3.2	25.4 × 1.65	25 (IV)	241633 ⅞	242576 ⅞
	15	70 (M)	5.2	25.4 × 1.65	25 (IV)	226329 ⅞	242579 ⅞
	20	70 (M)	7.1	25.4 × 1.65	16 (IV)	230405 ⅞	216902 ⅞
1½	32	90 (N)	13.4	38.1 × 1.65	16 (IV)	230409 ⅞	242587 ⅞
		130 (P)	17.8	38.1 × 1.65	25 (IV)	242557 ⅞	242589 ⅞
2	40	90 (N)	17.5	50.8 × 1.65	12 (IV)	211655 ⅞	242592 ⅞
		130 (P)	23.8	50.8 × 1.65	25 (IV)	242561 ⅞	242593 ⅞
2½	50	130 (P)	37	63.5 × 1.65	25 (20 ¹⁾) (IV)	335735 ⅞	335737 ⅞
3	65	130 (P)	65	76.2 × 1.65	16 (15 ¹⁾) (IV)	268682 ⅞	350667 ⅞
		225 (L)	62	76.2 × 1.65	–	20060581 ⅞	20060615 ⅞
4	80	130 (P)	110	101.6 × 2.11	10 (IV)	298386 ⅞	o. r.
		225 (L)	115	101.6 × 2.11	–	20060582 ⅞	20060616 ⅞
	100	130 (P)	140	101.6 × 2.11	6 (IV)	275103 ⅞	289251 ⅞
		225 (L)	140	101.6 × 2.11	–	20060583 ⅞	20060617 ⅞

o. r. = on request

1.) According to the Pressure Equipment Directive 97/23/EC for compressible fluids of Group 1 (hazardous gases and vapours according to Article 3 No. 1.3 letter a first dash)

Further versions on request

**Approval**

FDA, ATEX, (EG Gas Appliances Directive 2009/142/EG)

**Control function/Circuit function**

B (normally open: NO)

**Process connection**

Further housing connections

10.7. Ordering chart clamp connection

Valve with flow direction below seat

Nominal diameter (port connection)		Seat size	Actuator size Ø	K _{vs} value	Connection MC x TC, CC	Article no.	
DN	NPS					Seat seal	
			[mm]	[m³/h]		PTFE	Stainless steel
DIN 32676 Reihe A							
15	½	15	70 (M)	4.3	19 x 1.5. 34	222593 	282208 
20	¾	20	70 (M)	7.1	23 x 1.5. 34	225647 	282209 
25	1	25	90 (N)	12.0	29 x 1.5. 50.5	222594 	282210 
32	1¼	32	90 (N)	13.4	35 x 1.5. 50.5	240415 	282211 
40	1½	40	130 (P)	23.8	41 x 1.5. 50.5	240351 	282212 
50	2	50	130 (P)	37.0	53 x 1.5. 64	282258 	282259 
DIN 32676 Reihe B							
15	½	15	70 (M)	4.3	21.3 x 1.6. 50.5	273974 	282213 
20	¾	20	70 (M)	7.1	26.9 x 1.6. 50.5	209438 	282214 
25	1	25	90 (N)	12.0	33.7 x 2.0. 50.5	241115 	282215 
40	1½	40	130 (P)	23.8	48.3 x 2.0. 64.0	209880 	284181 
50	2	50	130 (P)	37.0	60.3 x 2.0. 77.5	282261 	282263 

Further versions on request	
 Approval FDA, ATEX, (EG Gas Appliances Directive 2009/142/EG)	 Control function/Circuit function B (normally open: NO)
 Process connection Further housing connections	