



Pneumatically operated 2/2-way angle seat valve ELEMENT for decentralized automation

- High flow rates
- Long service life
- Easy integration of automation units with ELEMENT
- Flow-optimised stainless steel valve body with sleeve, clamp or weld connection
- Suitable for steam



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

Can be combined with

	Type 8690 Pneumatic control unit for decentralised automation of process valves ELEMENT	▶
	Type 8691 Control head for decentralised automation of ELEMENT process valves	▶
	Type 8695 Control head for decentralised automation of ELEMENT process valves	▶
	Type 8697 Pneumatic control unit for decentralised automation of process valves ELEMENT	▶
	Type 8801 ELEMENT On/Off valve systems with decentralised automation – overview	▶
	Type 8840 Modular process valve cluster – distributor and collector	▶

Type description

The Type 2100 angle seat valve is specially optimised for decentralized process automation and fulfils the tough criteria in process environments. Its unique design allows easy the integration of automation units in all expansion stages, from electrical/optical position feedback to pneumatic control and integrated fieldbus interface. Maximum service life and tightness are achieved by the proven self-adjusting v-seal packing gland. The highly integrated system of valve and automation unit is characterised by its compact and smooth design, integrated pilot air ducts, protection classes IP65/67, NEMA Type 4X and high resistance to chemicals.



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1. General technical data

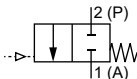
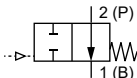
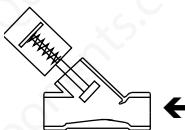
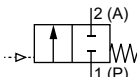
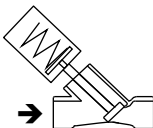
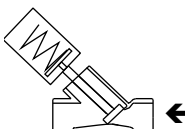
Product properties	
Dimensions	Further information can be found in chapter "5. Dimensions" on page 9.
Material	Further information can be found in chapter "4. Materials" on page 8.
Design	Angle seat valve
Nominal diameter (port connection)	DN 10...DN 80, NPS 3/8...NPS 3
Safety setting in case of power failure	Normally closed (control function A), normally open (control function B)
Flow direction	Flow to open (below seat), Flow to close (above seat)
Performance data	
Operating pressure	0 bar(g)...25 bar(g), vacuum up to -0.9 bar(g) (option) (see "6.1. Fluidic data" on page 14)
Nominal pressure	PN 25 (DIN EN 1333), Class 150 (DIN EN 1759)
Pilot pressure	2.5 bar(g)...10 bar(g) (see "6.1. Fluidic data" on page 14)
Seat leakage	Leakage rate A (DIN EN 12266 - 1), seat seal PTFE and PEEK, test medium air
K _v value	4.8 m³/h...+ 140 m³/h (see "6.1. Fluidic data" on page 14)
Medium data	
Operating medium	Steam, water, neutral gases, alcohols, oils, fuels, hydraulic fluids, salt solutions, alkalis, organic solvents, oxygen and fuel gases of families I, II and III in accordance with the Gas Appliances Regulation (EU) 2016/426
Medium temperature	-40 °C...+230 °C (see "6.2. Operating limits" on page 18)
Viscosity	Max. 600 mm²/s
Control medium	Air, neutral gases
Process/Port connection & communication	
Port connection	
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
Pilot air port	Push-in connector (external Ø 6 mm or 1/4") or thread G 1/8" (on request)
Approvals and conformities	
Further information can be found in chapter "3. Approvals and conformities" on page 6.	
Material certificate	2.2, 3.1
Environment and installation	
Ambient temperature	-10 °C...+100 °C (see "6.2. Operating limits" on page 18)
Degree of protection	IP65/67
Installation position	As required, preferably with actuator in upright position

2. Control functions

⚠ WARNING

**Risk of damage due to bursting pipes and bursting equipment when the flow is above the seat.
In the case of liquid mediums, water hammer can occur causing pipes and the device to burst.**

Do not use valves with flow above the seat for liquid mediums..

Symbol	Description	
Flow direction below seat for liquids and gases		
	Control function A (CF A) Pneumatically operated 2/2-way on/off valve Flow direction below seat Normally closed by spring force	
	Control function B (CF B) Pneumatically operated 2/2-way on/off valve Flow direction below seat Normally opened by spring force	
Flow direction above seat for steam and gases		
	Control function A (CF A) Pneumatically operated 2/2-way on/off valve Flow direction above seat Normally closed by spring force	
3-position actuator		
Flow direction below seat		
For valves with 3-position actuator an adjustable middle position is possible (option)		
	Control function A (CF A) Pneumatically operated 2/3-way position valve Flow direction below seat Normally closed by spring force	

3. Approvals and conformities

3.1. 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.

3.2. 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

3.3. 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.

3.4. Explosion protection

Approval	Description																
 	Optional: Explosion protection (valid for the variable code PX51) As a category 2 device suitable for zone 1/21 and zone 2/22. 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 18.0007X Ex h IIC T4...T2 Gb Ex h IIIC T135 °C...T300 °C Db <table><tr><td>Temperature class</td><td>T2</td><td>T3</td><td>T4</td></tr><tr><td>Maximum surface temperature</td><td>+ 300 °C</td><td>+ 200 °C</td><td>+ 135 °C</td></tr><tr><td>Ambient temperature</td><td>- 40...+ 130 °C</td><td>- 40...+ 130 °C</td><td>- 40...+ 100 °C</td></tr><tr><td>Maximum medium temperature</td><td>+ 285 °C</td><td>+ 185 °C</td><td>+ 125 °C</td></tr></table> Note: The ambient and medium temperature range may be limited by non-ex-relevant specifications. Observe the Operating Instructions.	Temperature class	T2	T3	T4	Maximum surface temperature	+ 300 °C	+ 200 °C	+ 135 °C	Ambient temperature	- 40...+ 130 °C	- 40...+ 130 °C	- 40...+ 100 °C	Maximum medium temperature	+ 285 °C	+ 185 °C	+ 125 °C
Temperature class	T2	T3	T4														
Maximum surface temperature	+ 300 °C	+ 200 °C	+ 135 °C														
Ambient temperature	- 40...+ 130 °C	- 40...+ 130 °C	- 40...+ 100 °C														
Maximum medium temperature	+ 285 °C	+ 185 °C	+ 125 °C														

3.5. 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)

3.6. 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.
	China food GB Standards of the People's Republic of China (valid for the variable code PL10) All wetted materials are compliant with the requirement of China food GB Standards according to the manufacturer's declaration.

3.7. Others

Oxygen

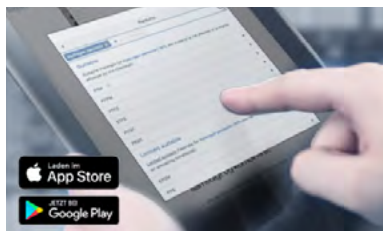
Conformity	Description
	Optional: Suitability for oxygen (valid for the variable code NL02) The products are suitable for use with gaseous oxygen, according to the manufacturer's declaration.

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)

4. Materials

4.1. Bürkert resistApp



Bürkert resistApp – Chemical resistance chart

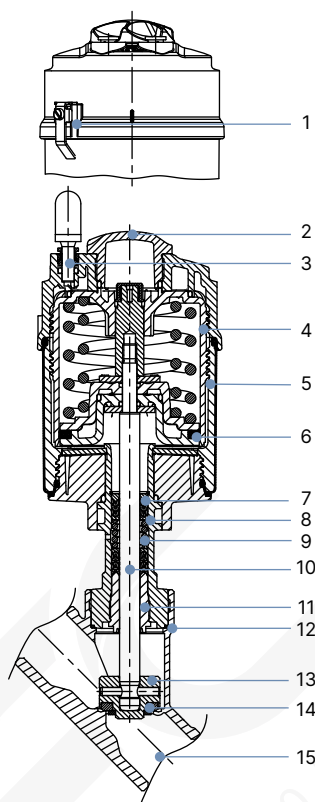
You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start chemical resistance check](#)

4.2. Material specifications

Note:

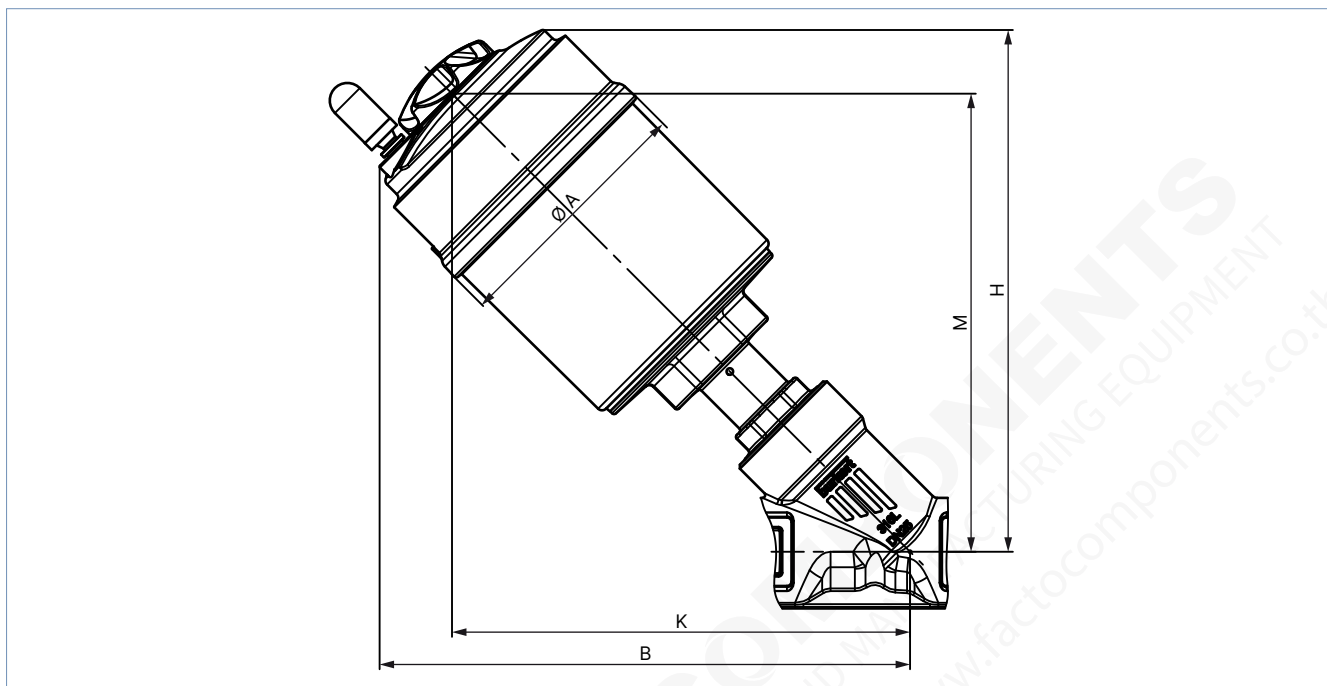
The lubricants for packing gland and actuator are classified according to NSF H1.



No.	Element	Material
1	Ground terminal	Stainless steel 1.4301/1.4305 only for ATEX version
2	Optical position indicator	Optical position indicator Polysulfone PSU
3	Pilot air ports	Push-in connector PP (Standard) On request: Thread G 1/8" Stainless steel 1.4305
4	Actuator	PPS
5	Cover	Stainless steel 1.4561 (316Ti)
6	Piston seal	FKM
7	Spring	Stainless steel 1.4310
8	Pipe	Stainless steel 1.4401 (316)/1.4404 (316L)
9	Spindle seal	PTFE V-Rings (filled), with spring compensation
10	Spindle	Stainless steel 1.4401 (316)/1.4404 (316L)
11	Spindle guide	PEEK
12	Body seal	Graphite, PTFE (Option)
13	Swivel plate	Stainless steel 1.4401 (316)/1.4404 (316L)
14	Seat seal	PTFE, PEEK (Option)
15	Valve body	Stainless steel CF3M

5. Dimensions

5.1. Actuator



Nominal diameter (port connection)		Actuator size	Ø A	B ^{1.)}	H ^{1.)}	K/M ^{1.)}
DN	NPS	[mm]				
10	3/8	50 (D)	64.5	166	163	147
		70 (M)	91	182	178	156
15	1/2	50 (D)	64.5	166	163	147
		70 (M)	91	182	178	156
20	3/4	50 (D)	64.5	174	171	155
		70 (M)	91	189	186	163
25	1	50 (D)	64.5	175	173	156
		70 (M)	91	191	188	165
		90 (N)	120	229	228	203
32	1 1/4	70 (M)	91	201	197	174
		90 (N)	120	243	242	217
		130 (P)	159	293	293	254
40	1 1/2	70 (M)	91	204	201	178
		90 (N)	120	246	245	220
		130 (P)	159	296	296	257
50	2	70 (M)	91	223	219	196
		90 (N)	120	262	261	236
		130 (P)	159	312	312	273
65	2 1/2	90 (N)	120	274	273	248
		130 (P)	159	324	324	285
80	3	130 (P)	159	344	344	305

1.) The dimensions for B, H, K and M are maximum dimensions and may be up to 6 mm less, depending on the connection orifice size and standard.



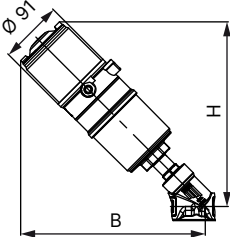
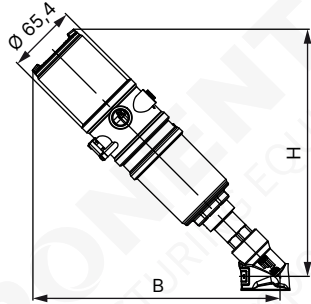
Valve system On/Off ELEMENT

Actuator with control head and pneumatic controls/position feedback

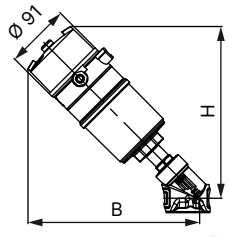
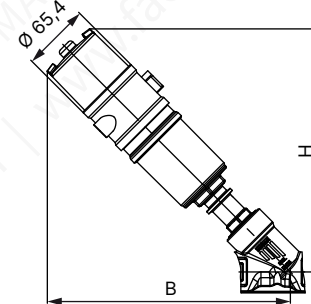
Note:

- Further information can be found in chapter **"7. Product accessories"** on page 20.
- Dimensions in mm

Control head

Type 8691	Type 8695
	

Pneumatic control unit/Position feedback

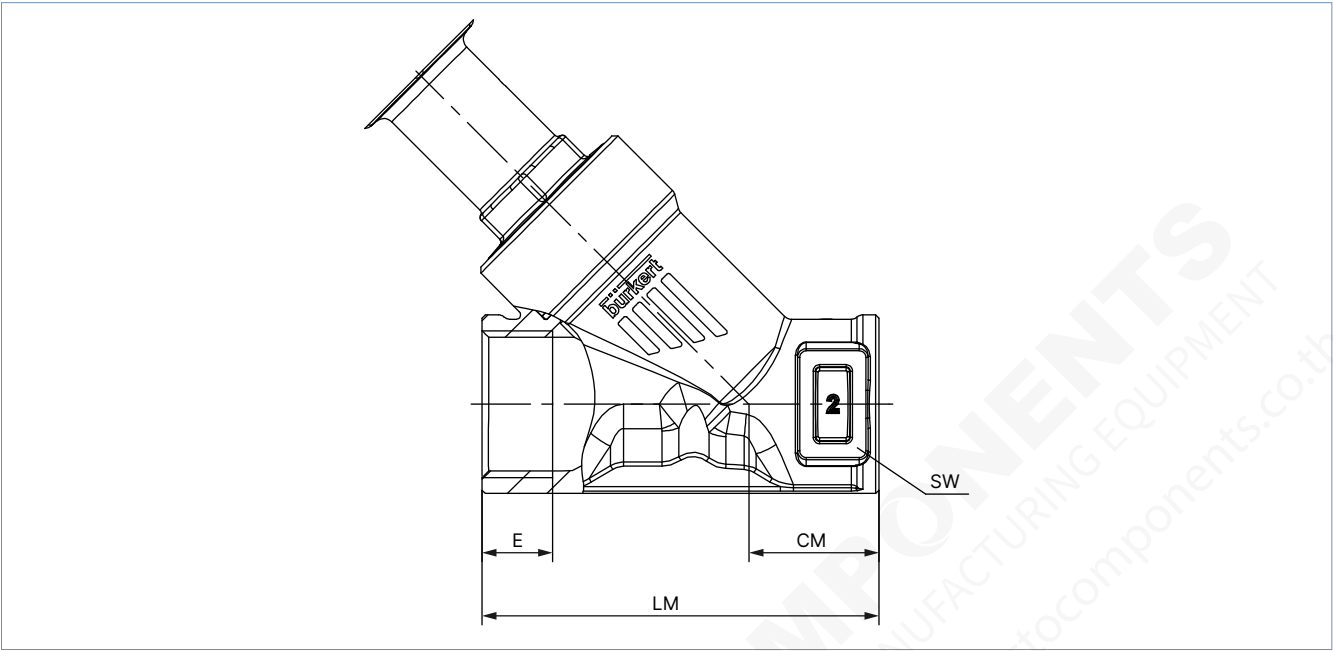
Type 8690	Type 8697
	

Nominal diameter (port connection)		Actuator size [mm]	B/H ^{1.)} with	
DN	NPS		Type 8690 or Type 8697	Type 8691 or Type 8695
10	3/8	50 (D)	226	239
		70 (M)	232	256
15	1/2	50 (D)	226	239
		70 (M)	232	256
20	3/4	50 (D)	234	247
		70 (M)	240	264
25	1	50 (D)	236	249
		70 (M)	242	266
		90 (N)	276	303
32	1 1/4	70 (M)	252	275
		90 (N)	294	318
		130 (P)	328	353
40	1 1/2	70 (M)	255	279
		90 (N)	297	321
		130 (P)	334	358
50	2	70 (M)	274	297
		90 (N)	313	337
		130 (P)	351	374
65	2 1/2	90 (N)	325	349
		130 (P)	362	386
80	3	130 (P)	382	406

1.) The dimensions for B, H, K and M are maximum dimensions and may be up to 6 mm less, depending on the connection orifice size and standard.



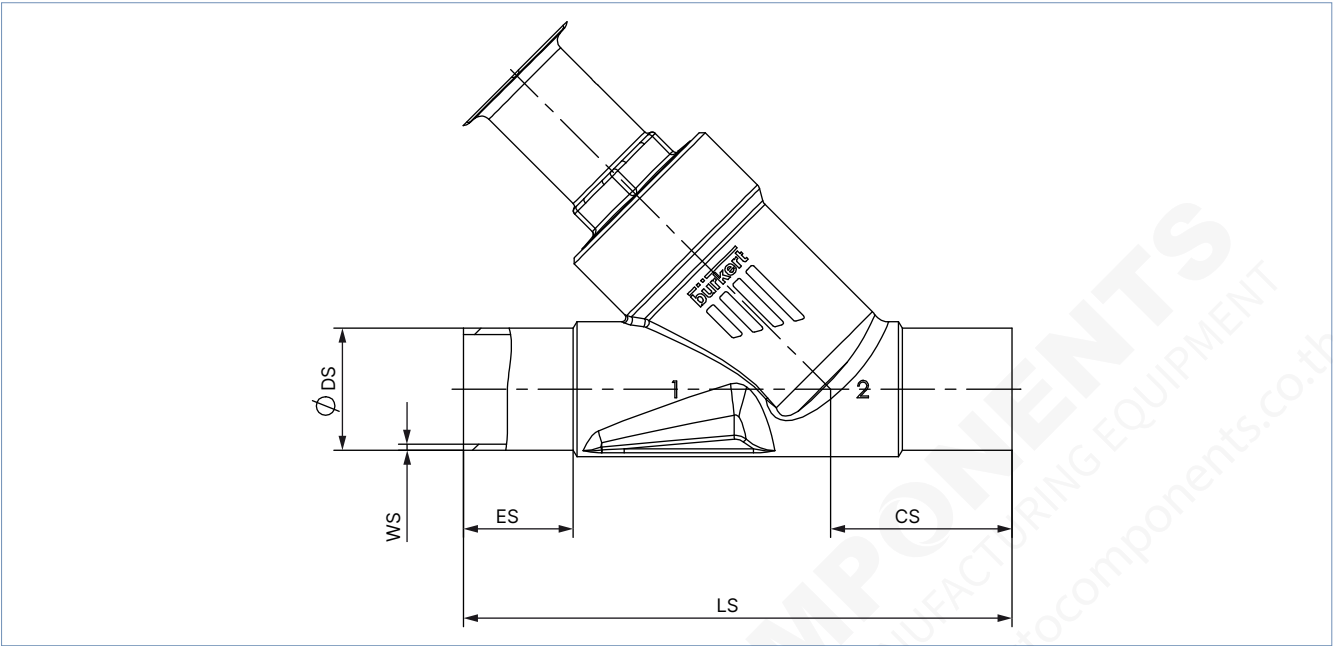
5.2. Body with threaded connection



Nominal diameter (port connection)		G (DIN ISO 228 - 1) NPT (ASME B1.20.1) RC (ISO 7 - 1)					
		E			CM	LM	SW
DN	NPS	G	NPT	RC			
15	½	14	13.7	13.2	24	65	27
20	¾	16	14.0	14.5	27	75	34
25	1	18	16.8	16.8	29.5	90	41
32	1¼	16	17.3	19.1	36	110	50
40	1½	18	17.3	19.1	35	120	55
50	2	24	17.6	23.4	45	150	70
65	2½	26	23.7	26.7	57	185	85
80	3	28	–	–	71	220	100

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5.3. Body with welded connection

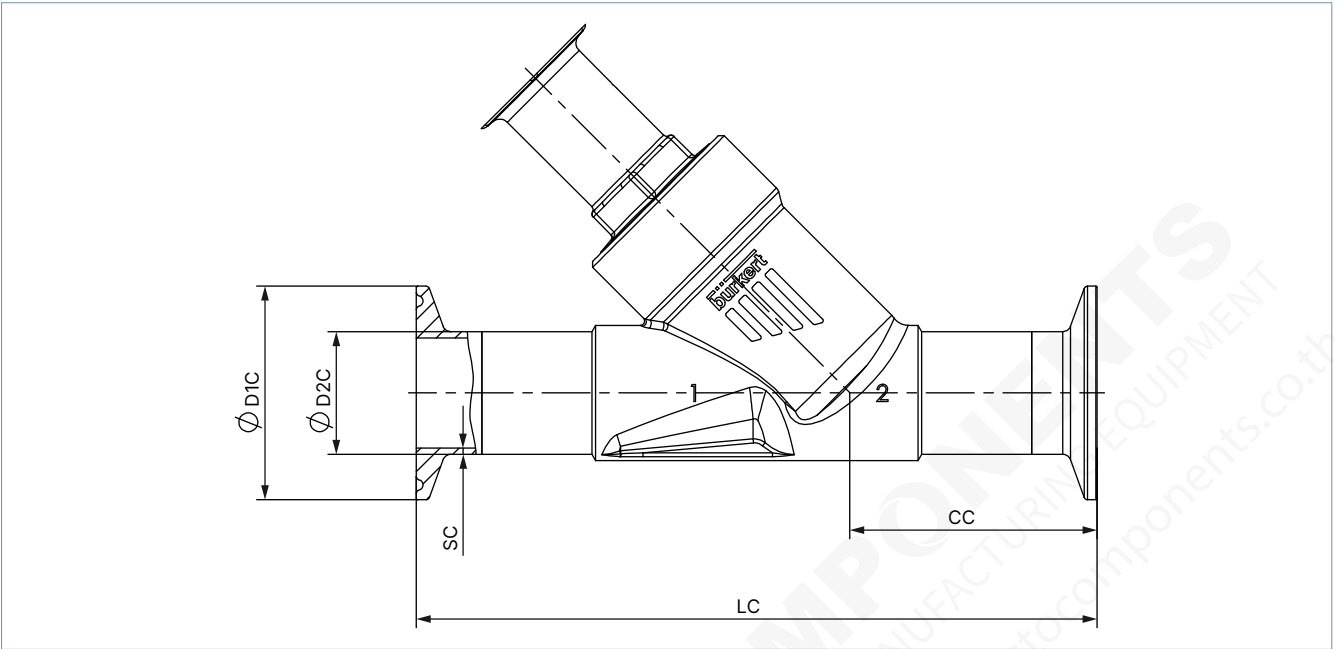


Nominal diameter (port connection)	DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B					DIN 11850 - 2 / DIN 11866 series A				
	ES	CS	LS	Ø DS	WS	ES	CS	LS	Ø DS	WS
15	19	34	100	21.3	1.6	19	34	100	19	1.5
20	20	39	115	26.9	1.6	20	39	115	23	1.5
25	26	43	130	33.7	2.0	26	43	130	29	1.5
32	26	45	145	42.4	2.0	26	45	145	35	1.5
40	26	49	160	48.3	2.0	26	49	160	41	1.5
50	26	50	175	60.3	2.0	26	50	175	53	1.5
65	26	50	210	76.1	2.3	26	50	210	70	2
80	26	88.5	266	88.9	2.3	26	88.5	266	85	2

Nominal diameter (port connection)	ASME BPE / DIN 11866 series C				
	ES	CS	LS	Ø DS	WS
½	30	46	135	12.7	1.65
¾	30	52	145	19.05	1.65
1	30	51	152	25.4	1.65
1½	30	60	182	38.1	1.65
2	30	64	210	50.8	1.65
2½	26	56	230	63.5	1.65
3	26	88.5	266	76.2	1.65

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5.4. Body with clamp connection



Nominal diameter (port connection)	Clamp: DIN 32676 series B Pipe: DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B					Clamp: DIN 32676 series A (DN 15 similar DIN 32676 B) Pipe: DIN 11850 - 2 / DIN 11866 series A				
	LC	CC	Ø D1 C	Ø D2 C	SC	LC	CC	Ø D1 C	Ø D2 C	SC
15	156	49.0	50.5	21.3	1.6	130	49.5	34.0	19	1.5
20	150	56.5	50.5	26.9	1.6	150	57.0	34.0	23	1.5
25	160	58.0	50.5	33.7	2.0	160	58.5	50.5	29	1.5
32	200	57.5	50.5	42.4	2.0	180	58.0	50.5	35	1.5
40	200	69.0	64.0	48.3	2.0	200	69.5	50.5	41	1.5
50	230	77.5	77.5	60.3	2.6	230	78.0	64.0	53	1.5

Nominal diameter (port connection)	Clamp: ASME BPE Pipe: ASME BPE / DIN 11866 series C				
	LC	CC	Ø D1 C	Ø D2 C	SC
½	130	49.0	25.0	12.7	1.65
¾	150	56.5	25.0	19.05	1.65
1	160	58.0	50.5	25.4	1.65
1½	200	69.0	50.5	38.1	1.65
2	230	77.5	64.0	50.8	1.65



6. Performance specifications

6.1. Fluidic data

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

Note:

- K_v value [m^3/h]: Measured with water at + 20 °C, 1 bar(g) pressure at valve inlet and free outlet
- Pressure data [bar(g)]: Overpressure to atmospheric pressure

Nominal diameter (port connection)		Actuator size Ø	K _v value water	Pilot pressure min. CF A	Operating pressure max.		
					CF A	CF B	
					Seat seal		
					PTFE	PEEK	PTFE
DN	NPS	[mm]	[m³/h]	[bar(g)]	[bar(g)]	[bar(g)]	[bar(g)]
10	¾	50 (D)	4.8 ^{2.)}	5.2	25	25	25
		70 (M)	4.8 ^{2.)}	5	25	25	25
15	½	50 (D)	5 ^{2.)}	5.2	25	25	25
		70 (M)	5 ^{2.)}	5	25	25	25
20	¾	50 (D)	10	5.2	16	13.5	25
		70 (M)	11	5	25	25	25
25	1	50 (D)	14	5.2	9	–	25
		70 (M)	18	5	16	13.5	25
		90 (N)	18	5	25	25	25
32	1¼	70 (M)	27	5	8.5	–	25
		90 (N)	28	5	25	19.5	25
		130 (P)	28	5	–	25	–
40	1½	70 (M)	38	5	6	–	25
		90 (N)	40	5	16	13.5	25
		130 (P)	42	4.9	25	25	25
50	2	70 (M)	52	–	–	–	16
		90 (N)	55	5	10	8	25
		130 (P)	62	5	25 (20 ^{1.)})	23 (20 ^{1.)})	25 (20 ^{1.)})
65	2½	90 (N)	85	5	5	–	14
		130 (P)	95	5.6	16 (15 ^{1.)})	12.5	16 (15 ^{1.)})
80	3	130 (P)	140	5.6	10	8	11

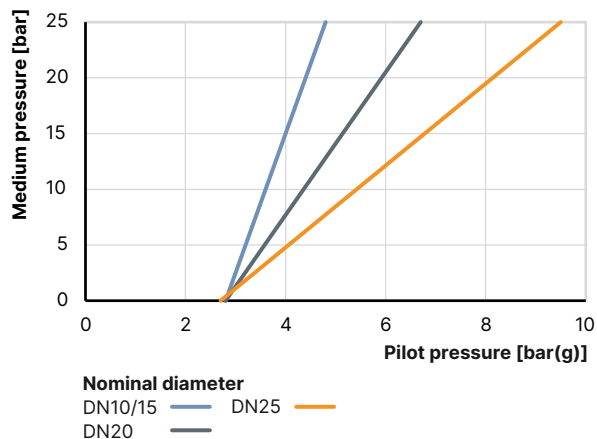
1.) According to pressure equipment directive 2014/68/EU for compressible fluids of group 1 (dangerous gases and vapours according to Article 4, paragraph (1), c), i), first indent)

3.) The K_v value of versions with pipe connection in accordance with ASME BPE is 1.6 m^3/h .

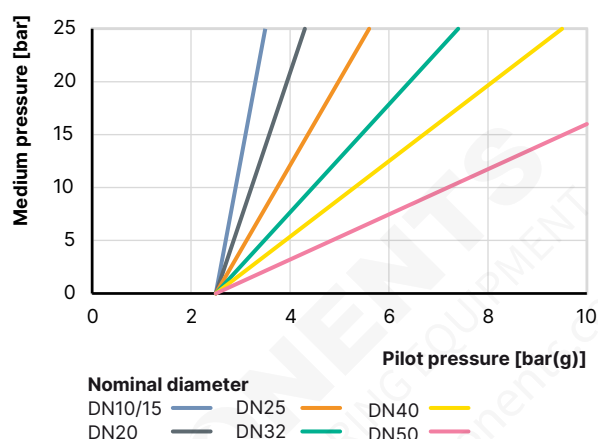


Pilot pressure diagram with flow direction below seat (Control function B)
Actuator size Ø 50 mm

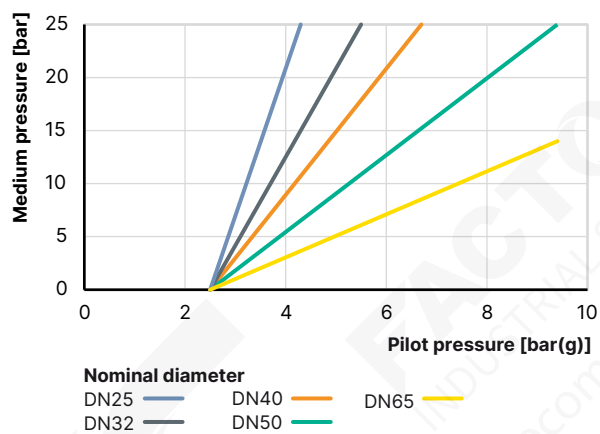
Maximum control pressure 10 bar(g)


Actuator size Ø 70 mm

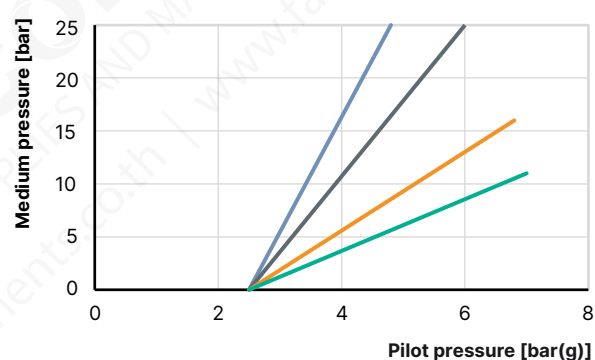
Maximum control pressure 10 bar(g)


Actuator size Ø 90 mm

Maximum control pressure 10 bar(g)


Actuator size Ø 130 mm

Maximum control pressure 7 bar(g)



Overview of fluidic data with flow above seat (for gases and steam)
Note:

- K_v value [m^3/h]: Measured with water at + 20 °C, 1 bar(g) pressure at valve inlet and free outlet
- Pressure data [bar(g)]: Overpressure to atmospheric pressure

⚠ WARNING

Risk of damage due to bursting pipes and bursting equipment when the flow is above the seat.

In the case of liquid mediums, water hammer can occur, causing pipes and the device to burst.

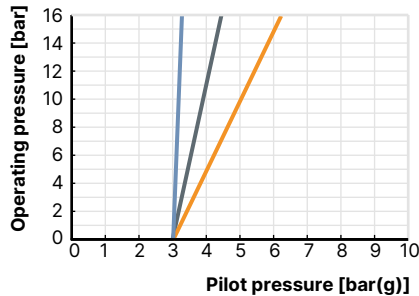
Do not use valves with flow above the seat for liquid mediums.

Nominal diameter (port connection)	Actuator size Ø	K_v value water	Operating pressure max. + 185 °C
DN	[mm]	[m^3/h]	CF A PTFE [bar(g)]
15	50 (D)	5	16
	70 (M)	5.1	16
20	50 (D)	10	16
	70 (M)	12	16
25	50 (D)	15	16
	70 (M)	19	16
32	70 (M)	28	16
40	70 (M)	38	16
	90 (N)	40	16
50	70 (M)	50	12
	90 (N)	55	16

Pilot pressure diagram with flow direction above seat (control function A)

Actuator size Ø 50 mm

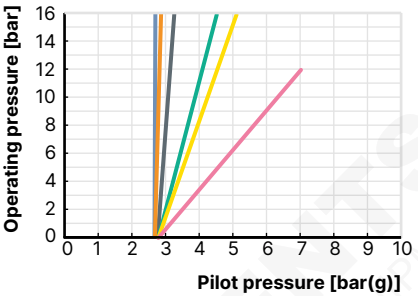
Maximum control pressure 10 bar(g)



Nominal diameter
DN15 — DN25
DN20 —

Actuator size Ø 70 mm

Maximum control pressure 10 bar(g)



Nominal diameter
DN15 — DN32
DN20 — DN40
DN25 — DN50

Actuator size Ø 90 mm

Maximum control pressure 10 bar(g)

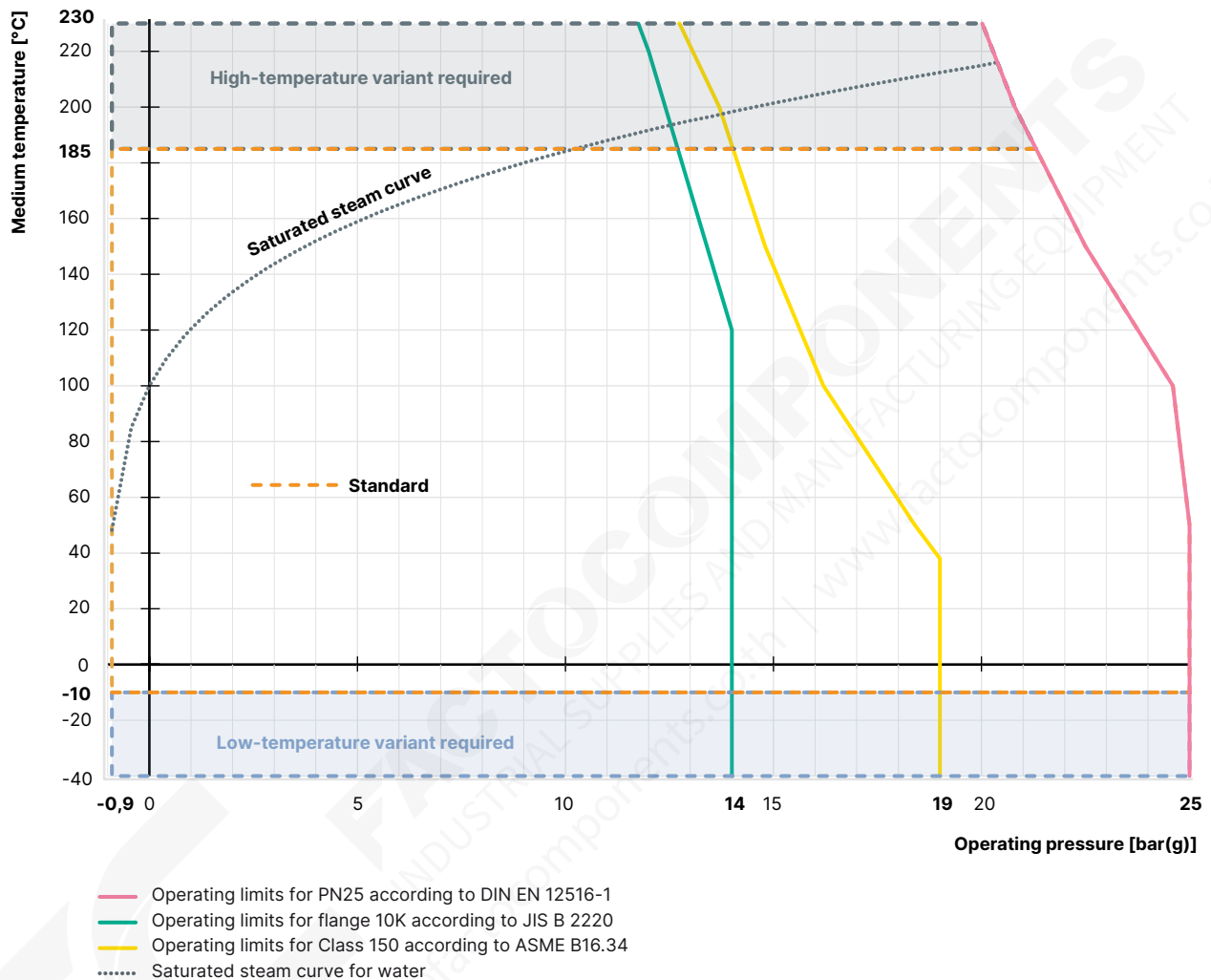


Nominal diameter
DN40 —
DN50 —

6.2. Operating limits

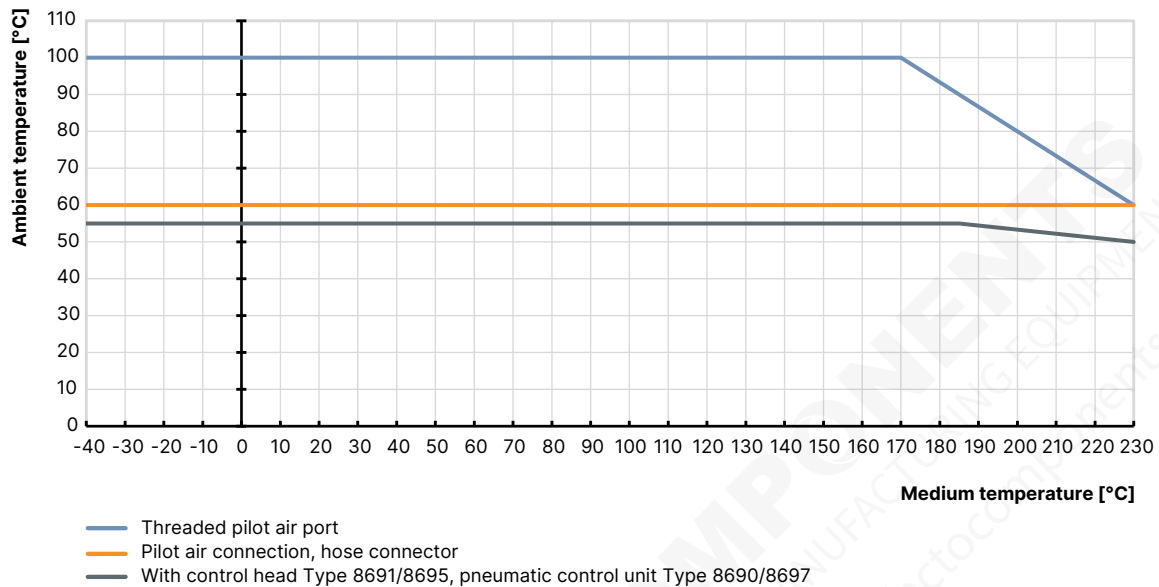
Operating limits for medium temperature and operating pressure

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

ELEMENT On/Off valve



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

Version for oxygen

Non-metallic wetted materials are tested for suitability with oxygen and are suitable for operating pressures up to 25 bar(g) and medium temperatures up to + 60 °C.

7. Product accessories

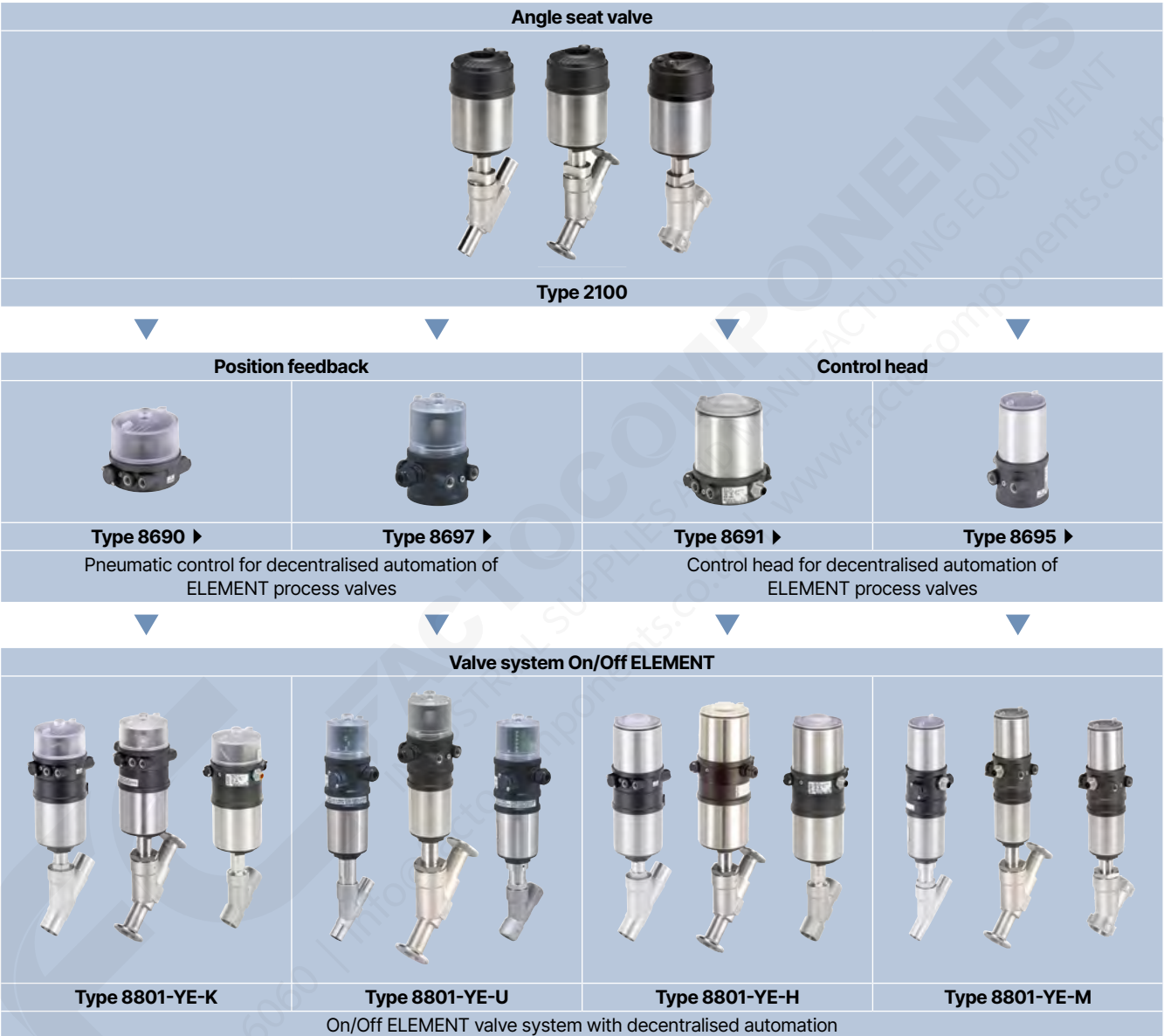
Electrical position indicator	
Control head	
Type 8691 ▶ Actuator size 70 mm	
	The control heads Type 8691 and Type 8695 are optimised for integrated mounting on process valves of the 21XX series. The valve position is detected without contact via an analogue sensor element. The sensor element automatically detects and stores the valve end positions during commissioning using the teach function. The integrated pilot valve controls single-acting or double-acting actuators. The valve switching status is indicated by coloured high-performance LEDs. Features • Status indication via coloured high-performance LEDs • Wear-free inductive position sensor • Pilot valve with manual override • Teach function for automatic recognition of valve end positions • Hygienic stainless steel design • Easy-to-clean, chemically resistant housing according to IP65/67, 4X rating • AS-Interface, IO-Link, Bürkert system bus (bÜS) Customer benefits • Simple and safe commissioning using the teach function • Easy process monitoring and fault detection through visible coloured high-performance LEDs • High degree of system availability due to increased actuator service life by means of spring chamber ventilation • Minimal space requirement in plant piping for more flexibility in plant design
Type 8695 ▶ Actuator size Ø 50 mm	
	
Pneumatic control unit/position feedback	
Type 8690 ▶ Actuator size 70 mm	
	The pneumatic control units Type 8690 and 8697 are optimised for integrated mounting on process valves of the 21XX series. Mechanical or inductive limit switches detect the valve position. The integrated pilot valve controls single-acting or double-acting (Type 8690) actuators. Features • Optical position indicator • Mechanical or inductive proximity switches for end position detection • Pilot valve with manual override • Compact design • Easy-to-clean, chemically resistant housing according to IP65/67, 4X rating • Optionally intrinsically safe design according to ATEX/IECEx Customer benefits • Simple and safe commissioning using the teach function (Type 8697) • Signal reliability due to the automatic adjustment of the limit switches • Minimal space requirement in plant piping for more flexibility in plant design
Type 8697 ▶ Actuator size Ø 50 mm	
	

8. Networking and combination with other Bürkert products

The **angle seat valve Type 2100** can be combined with the **position feedback Type 8690/8697** and the **control head Type 8691/8695** to **valve system On/Off ELEMENT Type 8801-YE**.

Note:

- For the configuration of further valve systems use the **Product Enquiry Form** (see **“9.3. Bürkert Product Enquiry Form” on page 22**).
- You order two components and receive a completely assembled and tested valve.



9. Ordering information

9.1. Bürkert eShop



Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

[Order online now](#)

9.2. Bürkert product filter



Bürkert product filter – Get quickly to the right product

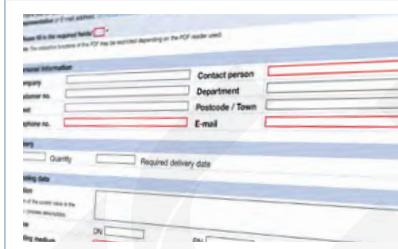
You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

[Try out our product filter](#)

9.3. Bürkert Product Enquiry Form

Note:

Please see our Product Enquiry Form for a full explanation of our specification key.



Bürkert Product Enquiry Form – Your enquiry quickly and compactly

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

[Fill out the form now](#)

9.4. Ordering chart threaded connection

Valves with flow direction below seat

Control function	Nominal diameter (port connection)	Threaded port connection	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.	Article no. ATEX II 2GD certified (mechanical)
	DN	[inch]	[mm]	[bar(g)]	[bar(g)]		
A (CF A) see control functions ^{1.)}	15	G ½"	50 (D)	5.2	25	213619	259510
		G ½"	70 (M)	5.0	25	213620	259511
	20	G ¾"	50 (D)	5.2	16	227616	259513
		G ¾"	70 (M)	5.0	25	213621	259515
	25	G 1"	50 (D)	5.2	9	227617	259516
		G 1"	70 (M)	5.0	16	213622	259517
	32	G 1¼"	70 (M)	5.0	8.5	213623	259519
		G 1¼"	90 (N)	5.0	25	213624	259521
	40	G 1½"	70 (M)	5.0	6	213625	259523
		G 1½"	90 (N)	5.0	16	213627	259524
	50	G 2"	90 (N)	5.0	10	175108	259525
		G 2"	130 (P)	5.0	25 (20 ^{3.)})	188610	259526
A (CF B) see control functions ^{1.)}	15	G ½"	50 (D)	See diagram ^{2.)}	5	239456	259527
		G ½"	130 (P)		16 (15 ^{3.)})	239472	259530
	20	G ¾"	50 (D)		25	213637	259531
		G ¾"	70 (M)		25	213638	259532
	25	G 1"	50 (D)		25	213639	259533
		G 1"	70 (M)		25	213640	259535
	32	G 1¼"	70 (M)		25	213641	259537
		G 1¼"	90 (N)		25	213642	259538
	40	G 1½"	70 (M)		25	213643	259539
		G 1½"	90 (N)		16	175123	259540
	50	G 2"	70 (M)		14	239464	259565
		G 2"	130 (P)		16 (15 ^{3.)})	239479	259566

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

3.) According to pressure equipment directive 2014/68/EU for compressible fluids of group 1 (dangerous gases and vapours according to article 4, paragraph (1), c), i), first indent)



Control function	Nominal diameter (port connection)	Threaded port connection	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[inch]	[mm]	[bar(g)]	[bar(g)]	
A (CF A) see control functions ¹⁾	15	NPT ½"	50 (D)	5.2	25	213644 ☒
		NPT ½"	70 (M)	5.0	25	213645 ☒
	20	NPT ¾"	50 (D)	5.2	16	227618 ☒
		NPT ¾"	70 (M)	5.0	25	213646 ☒
	25	NPT 1"	50 (D)	5.2	9	227619 ☒
		NPT 1"	70 (M)	5.0	16	213647 ☒
	32	NPT 1¼"	70 (M)	5.0	8.5	213648 ☒
		NPT 1¼"	90 (N)	5.0	25	213649 ☒
	40	NPT 1½"	70 (M)	5.0	6	213650 ☒
		NPT 1½"	90 (N)	5.0	16	213651 ☒
	50	NPT 2"	90 (N)	5.0	10	188641 ☒
		NPT 2"	130 (P)	5.0	25 (20 ^{3.)})	188642 ☒
	65	NPT 2½"	90 (N)	5.0	5	239457 ☒
		NPT 2½"	130 (P)	5.6	16 (15 ^{3.)})	239473 ☒
A (CF B) see control functions ¹⁾	15	NPT ½"	50 (D)	See diagram ^{2.)}	25	213661 ☒
		NPT ½"	70 (M)		25	213662 ☒
	20	NPT ¾"	50 (D)		25	213663 ☒
		NPT ¾"	70 (M)		25	213664 ☒
	25	NPT 1"	70 (M)		25	213665 ☒
		NPT 1"	70 (M)		25	213666 ☒
	32	NPT 1¼"	70 (M)		25	213666 ☒
		NPT 1¼"	70 (M)		25	213667 ☒
	40	NPT 1½"	70 (M)		25	213667 ☒
		NPT 1½"	70 (M)		16	188656 ☒
	50	NPT 2"	70 (M)		16	188656 ☒
		NPT 2"	70 (M)		14	239465 ☒
	65	NPT 2½"	90 (N)		16 (15 ^{3.)})	239480 ☒
		NPT 2½"	130 (P)		16 (15 ^{3.)})	239480 ☒

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

3.) According to pressure equipment directive 2014/68/EU for compressible fluids of group 1 (dangerous gases and vapours according to article 4, paragraph (1), c), i), first indent)



Control function	Nominal diameter (port connection)	Threaded port connection	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[inch]	[mm]	[bar(g)]	[bar(g)]	
A (CF A) see control functions ¹⁾	15	RC 1/2"	50 (D)	5.2	25	213668 
		RC 1/2"	70 (M)	5.0	25	213669 
	20	RC 3/4"	50 (D)	5.2	16	227621 
		RC 3/4"	70 (M)	5.0	25	213670 
	25	RC 1"	50 (D)	5.2	9	227622 
		RC 1"	70 (M)	5.0	16	213671 
	32	RC 1 1/4"	70 (M)	5.0	8.5	213672 
		RC 1 1/4"	90 (N)	5.0	25	213673 
	40	RC 1 1/2"	70 (M)	5.0	6	213674 
		RC 1 1/2"	90 (N)	5.0	16	213675 
	50	RC 2"	90 (N)	5.0	10	188664 
		RC 2"	130 (P)	5.0	25 (20 ^{3.)})	188665 
A (CF B) see control functions ¹⁾	15	RC 1/2"	50 (D)	See diagram ^{2.)}	5	239458 
		RC 1/2"	70 (M)		16 (15 ^{3.)})	239474 
	20	RC 3/4"	50 (D)		25	213685 
		RC 3/4"	70 (M)		25	213686 
	25	RC 1"	50 (D)		25	213687 
		RC 1"	70 (M)		25	213688 
	32	RC 1 1/4"	50 (D)		25	213689 
		RC 1 1/4"	70 (M)		25	213690 
	40	RC 1 1/2"	50 (D)		25	213691 
		RC 1 1/2"	70 (M)		16	188679 
	50	RC 2"	50 (D)		14	239466 
		RC 2"	90 (N)		16 (15 ^{3.)})	239481 

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

3.) According to pressure equipment directive 2014/68/EU for compressible fluids of group 1 (dangerous gases and vapours according to article 4, paragraph (1), c), i), first indent)

Further versions on request

 Approval Food processing, drinking water, oxygen, fuel gases, explosion protection	 Pressure Other versions for operating pressures up to 25 bar(g) Vacuum version down to - 0.9 bar(g)
	 Temperature High temperature version up to + 230 °C Hot water version up to + 200 °C Low temperature version down to - 40 °C
 Process connection Clamp connection, welded connection	

Valves with flow direction above seat

Control function	Nominal diameter (port connection)	Threaded port connection	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.	Article no. ATEX II 2GD certified (mechanical)
	DN	[inch]	[mm]	[bar(g)]	[bar(g)]		
A (CF A) see control functions ¹⁾	15	G 1/2"	50 (D)	See diagram ²⁾	16	213628	259567
		G 1/2"	70 (M)		16	213629	259568
	20	G 3/4"	50 (D)		16	213630	259569
		G 3/4"	70 (M)		16	213631	259571
	25	G 1"	50 (D)		16	213632	259573
		G 1"	70 (M)		16	213633	259575
	32	G 1 1/4"	70 (M)		16	213634	259576
		G 1 1/2"	70 (M)		16	213635	259577
	50	G 1 1/2"	90 (N)		16	213636	259578
		G 2"	70 (M)		12	175115	259579
		G 2"	90 (N)		16	175116	259580

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

Control function	Nominal diameter (port connection)	Threaded port connection	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[inch]	[mm]	[bar(g)]	[bar(g)]	
A (CF A) see control functions ¹⁾	15	NPT 1/2"	50 (D)	See diagram ²⁾	16	213652
		NPT 1/2"	70 (M)		16	213653
	20	NPT 3/4"	50 (D)		16	213654
		NPT 3/4"	70 (M)		16	213655
	25	NPT 1"	50 (D)		16	213656
		NPT 1"	70 (M)		16	213657
	32	NPT 1 1/4"	70 (M)		16	213658
		NPT 1 1/2"	70 (M)		16	213659
	50	NPT 2"	70 (M)		12	188649

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

Control function	Nominal diameter (port connection)	Threaded port connection	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[inch]	[mm]	[bar(g)]	[bar(g)]	
A (CF A) see control functions ¹⁾	15	RC 1/2"	50 (D)	See diagram ²⁾	16	213676
		RC 1/2"	70 (M)		16	213677
	20	RC 3/4"	50 (D)		16	213678
		RC 3/4"	70 (M)		16	213679
	25	RC 1"	50 (D)		16	213680
		RC 1"	70 (M)		16	213681
	32	RC 1 1/4"	70 (M)		16	213682
		RC 1 1/2"	70 (M)		16	213683
	50	RC 2"	70 (M)		12	188672

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15



9.5. Ordering chart welded connection

Valves with flow direction below seat

Control function	Nominal diameter (port connection)	Port connection pipe Ø	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[mm]	[mm]	[bar(g)]	[bar(g)]	
ASME BPE						
A (CF A) see control functions ¹⁾	15	12.7 × 1.65	50 (D)	5.2	25	187077 
		12.7 × 1.65	70 (M)	5.0	25	188726 
	20	19.05 × 1.65	50 (D)	5.2	16	227607 
		19.05 × 1.65	70 (M)	5.0	25	188727 
	25	25.4 × 1.65	50 (D)	5.2	9	227608 
		25.4 × 1.65	70 (M)	5.0	16	188728 
	40	38.1 × 1.65	70 (M)	5.0	6	188729 
		38.1 × 1.65	90 (N)	5.0	16	188730 
	50	50.8 × 1.65	90 (N)	5.0	10	188731 
		50.8 × 1.65	130 (P)	5.0	25 (20 ^{3.)})	188732 
	65	63.5 × 1.65	90 (N)	5.0	5	239461 
		63.5 × 1.65	130 (P)	5.6	16 (15 ^{3.)})	239478 
A (CF B) see control functions ¹⁾	15	12.7 × 1.65	50 (D)	See diagram ^{2.)}	25	187082 
		12.7 × 1.65	70 (M)		25	188740 
	20	19.05 × 1.65	50 (D)		25	187083 
		19.05 × 1.65	70 (M)		25	188741 
	25	25.4 × 1.65	70 (M)		25	188742 
		25.4 × 1.65	70 (M)		25	188741 
	40	38.1 × 1.65	70 (M)		25	188781 
		38.1 × 1.65	70 (M)		16	188744 
	50	50.8 × 1.65	70 (M)		16	188744 
		50.8 × 1.65	90 (N)		14	239469 
	65	63.5 × 1.65	90 (N)		16 (15 ^{3.)})	239469 
		63.5 × 1.65	130 (P)		16 (15 ^{3.)})	239484 
SMS 3008						
A (CF A) see control functions ¹⁾	15	12 × 1.0	50 (D)	5.2	25	187084 
		12 × 1.0	70 (M)	5.0	25	188745 
	20	18 × 1.0	50 (D)	5.2	16	227609 
		18 × 1.0	70 (M)	5.0	25	188746 
	25	25 × 1.2	50 (D)	5.2	9	227610 
		25 × 1.2	70 (M)	5.0	16	188747 
	40	38 × 1.2	70 (M)	5.0	6	188748 
		38 × 1.2	90 (N)	5.0	16	188749 
	50	51 × 1.2	90 (N)	5.0	10	188750 
		51 × 1.2	130 (P)	5.0	25 (20 ^{3.)})	188751 
	65	63.5 × 1.65	90 (N)	5.0	5	239462 
		63.5 × 1.65	130 (P)	5.6	16 (15 ^{3.)})	239477 
A (CF B) see control functions ¹⁾	15	12 × 1.0	50 (D)	See diagram ^{2.)}	25	187089 
		12 × 1.0	70 (M)		25	188759 
	20	18 × 1.0	50 (D)		25	187090 
		18 × 1.0	70 (M)		25	188760 
	25	25 × 1.2	70 (M)		25	188761 
		25 × 1.2	70 (M)		25	188762
	40	38 × 1.2	70 (M)		25	188762
		38 × 1.2	70 (M)		16	188763
	50	51 × 1.2	70 (M)		16	188763
		51 × 1.2	90 (N)		14	239470
	65	63.5 × 1.65	90 (N)		16 (15 ^{3.)})	239470
		63.5 × 1.65	130 (P)		16 (15 ^{3.)})	239485

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

3.) According to pressure equipment directive 2014/68/EU for compressible fluids of group 1 (dangerous gases and vapours according to article 4, paragraph (1), c), i), first indent)



Valves with flow direction above seat

Control function	Nominal diameter (port connection)	Port connection pipe Ø	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[mm]	[mm]	[bar(g)]	[bar(g)]	
DIN EN ISO 1127 / ISO 4200						
A (CF A) see control functions ¹⁾	15	21.3 × 1.6	50 (D)	See diagram ²⁾	16	187066 
	20	26.9 × 1.6	50 (D)		16	187067 
	25	33.7 × 2	50 (D)		16	187068 
	32	42.4 × 2	70 (M)		16	188692 
	40	48.3 × 2	70 (M)		16	188693 
	50	60.3 × 2.0	70 (M)		12	274663 
DIN 11850 R2						
A (CF A) see control functions ¹⁾	15	19 × 1.5	50 (D)	See diagram ²⁾	16	187072 
	20	23 × 1.5	50 (D)		16	187073 
	25	29 × 1.5	50 (D)		16	187074 
	32	35 × 1.5	70 (M)		16	188715 
	40	41 × 1.5	70 (M)		16	188716 
	50	53 × 1.5	70 (M)		12	188718 
ASME BPE						
A (CF A) see control functions ¹⁾	15	12.7 × 1.65	50 (D)	See diagram ²⁾	16	187078 
	20	19.05 × 1.65	50 (D)		16	187079 
	25	25.4 × 1.65	50 (D)		16	187080 
	40	38.1 × 1.65	70 (M)		16	188736 
	50	50.8 × 1.65	70 (M)		12	188738 
SMS 3008						
A (CF A) see control functions ¹⁾	15	12 × 1.0	50 (D)	See diagram ²⁾	16	187085 
	20	18 × 1.0	50 (D)		16	187086 
	25	25 × 1.2	50 (D)		16	187087 
	40	38 × 1.2	70 (M)		16	188755 
	50	51 × 1.2	70 (M)		12	188757 

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15



9.6. Ordering chart clamp connection

Valves with flow direction below seat

Control function	Nominal diameter (port connection)	Port connection external clamp Ø	Actuator size Ø	Pilot pressure min.	Operating pressure max.	Article no.
	DN	[mm]	[mm]	[bar(g)]	[bar(g)]	
DIN 32676 series B (pipe: ISO 4200)						
A (CF A) see control functions ¹⁾	15	34.0	50 (D)	5.2	25	187097 
		34.0	70 (M)	5.0	25	188783 
	20	50.5	50 (D)	5.2	16	209437 
		50.5	70 (M)	5.0	25	188784 
	25	50.0	50 (D)	5.2	9	227613 
		50.5	70 (M)	5.0	16	188785 
	32	50.5	70 (M)	5.0	8.5	188786 
		50.5	90 (N)	5.0	25	188787 
	40	64.0	70 (M)	5.0	6	188788 
		64.0	90 (N)	5.0	16	188789 
50	77.5	90 (N)	5.0	10	188790 	
	77.5	130 (P)	5.0	25 (20 ³⁾)	188791 	
A (CF B) see control functions ¹⁾	15	34.0	50 (D)	See diagram ²⁾	25	187101 
		34.0	70 (M)		25	188800 
	20	50.5	50 (D)		25	187102 
		50.5	70 (M)		25	188801 
	25	50.5	70 (M)		25	188802 
		50.5	70 (M)		25	188803 
	40	64.0	70 (M)		25	188804 
		77.5	70 (M)		16	188805 
ASME BPE						
A (CF A) see control functions ¹⁾	15	25.0	50 (D)	5.2	25	187103 
		25.0	70 (M)	5.0	25	188806 
	20	25.5	50 (D)	5.2	16	227614 
		25.5	70 (M)	5.0	25	188807 
	25	50.5	50 (D)	5.2	9	227615 
		50.5	70 (M)	5.0	16	188808 
	40	50.5	70 (M)	5.0	6	188809 
		50.5	90 (N)	5.0	16	188810 
50	64.0	90 (N)	5.0	10	188811 	
	64.0	130 (P)	5.0	25 (20 ³⁾)	188812 	
A (CF B) see control functions ¹⁾	15	25.0	50 (D)	See diagram ²⁾	25	187107 
		25.0	70 (M)		25	188820 
	20	25.0	50 (D)		25	187108 
		50.5	70 (M)		25	188821 
	25	50.5	70 (M)		25	188822 
		50.5	70 (M)		25	188823 
	50	64.0	70 (M)		16	188824 

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15



Further versions on request

	Approval Food processing, drinking water, oxygen, fuel gases, explosion protection		Pressure Other versions for operating pressures up to 25 bar(g) Vacuum version down to - 0.9 bar(g)
	Material Seal: NBR, FKM, EPDM		Temperature High temperature version up to + 230 °C Hot water version up to + 200 °C Low temperature version down to - 40 °C
	Process connection Clamp connection, welded connection		

Valves with flow direction above seat

Control function	Nominal diameter	Port connection external clamp Ø	Actuator size Ø	Pilot pressure min.	Operating pressure	Article no.
	DN	[mm]	[mm]	[bar(g)]	[bar(g)]	
DIN 32676 series B (pipe: ISO 4200)						
A (CF A) see control functions ^{1.)}	15	34.0	50 (D)	See diagram ^{2.)}	16	187098 
	20	50.5	50 (D)		16	187099 
	25	50.5	50 (D)		16	187100 
	32	50.5	70 (M)		16	188795 
	40	64.0	70 (M)		16	188796 
	50	77.5	70 (M)		12	188798 
ASME BPE						
A (CF A) see control functions ^{1.)}	15	25.0	50 (D)	See diagram ^{2.)}	16	187104 
	20	25.0	50 (D)		16	187105 
	25	50.5	50 (D)		16	187106 
	40	50.5	70 (M)		16	188816 
	50	64.0	70 (M)		12	188818 

1.) Further information can be found in chapter "2. Control functions" on page 5.

2.) See diagram in chapter "Pilot pressure diagram with flow direction below seat (Control function B)" on page 15

