bürkert
FLUID CONTROL SYSTEMS

Pneumatically operated 3 way seat valve ELEMENT

- For mixing or distributing mediums
- Decentralized automation with control head
- Flow optimized body in stainless steel
- Long service life and maintenance-free operation
- Control Head is connected without external tubing

Type 2106 can be combined with...

Type 8690
Pneum. control unit with feedback

Type 8691
Control head

Type 8695
Control head

The Bürkert 3 way seat valve, Type 2106, consists of a pneumatically operated ELEMENT actuator and a 3 way stainless steel valve body. Interchanging of pressure and service ports enables different fluidic circuit functions, such as the mixing or distributing of mediums. The flow-optimized valve body of Type 2106 allows excellent flow rates. The tried and tested self-adjusting gland secures a high level of tightness and thus ensures reliable operation over years. The design of the 3 way valve, Type 2106, offers all the advantages of a modern, decentralized automation: The directly connected control head and actuator provide a compact and smooth design, integrated pneumatic lines, protection class IP65/67/NEMA4X, and a high chemical resistance. An optionally integrated fieldbus interface through to an explosion-proof control head are further advantages of the 3 way shut-off valve. For the user, the compact Type 2106 is thus often an economical alternative to two single valves.

Technical data	
Orifice	DN15 to DN50
Port connections	G thread acc. to EN ISO 228-1 NPT acc. to ANSI B 1.20.1 (RC thread on request)
Body material	Cast stainless steel 316L
Nominal pressure	PN16 (Body)
Actuator material Actuator / Cover	 PPS / Stainless steel 1.4561 (316Ti)
Sealing material	PTFE
Medium	Water, alcohol, oils, fuels, hydraulic fluids, salt solution, alkali solutions, organic solvents, steam
Viscosity	max. 600 mm^2/s
Spindle packing	PTFE V-rings with spring compensation
Medium temperature	-10 to +185°C
Ambient temperature	0 to +55°C (integrated control head) 0 to +60°C (push-in air ports)
Control medium	Neutral gases, air
Max. pilot pressure	max. 10 bar; actuator size 130 mm, 7 bar
Pilot air ports	Push-in connector for external ø 6 mm or 1/4" tube, thread G1/8 (on request)
Installation	As required, preferably with actuator in upright position

Content

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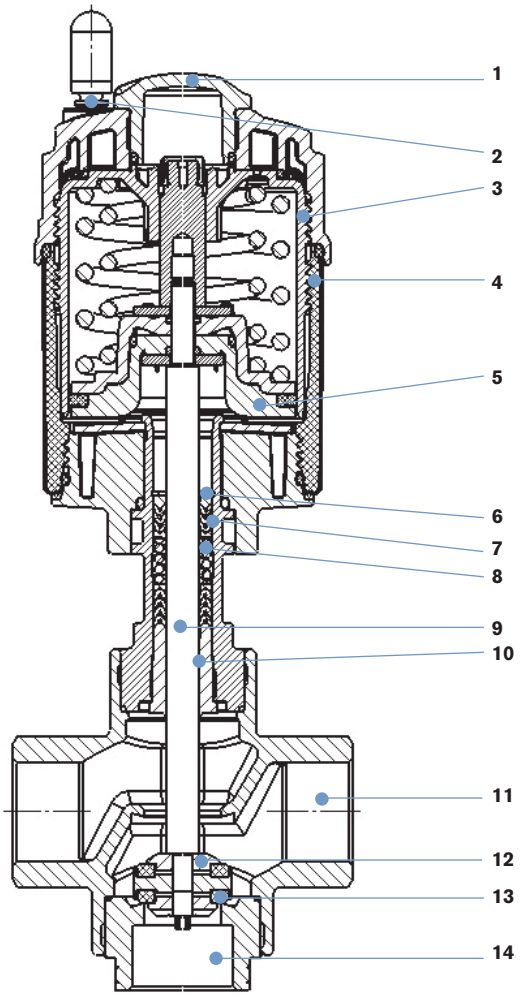
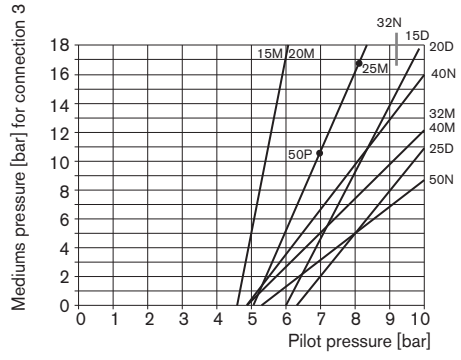
Materials



1	**Transparent cap**	Polysulfone PSU
2	**Pilot air ports**	Hose connectors PP (standard) *On request:* *G1/8" thread, stainless steel 1.4305*
3	**Actuator**	PPS
4	**Case**	Stainless steel 1.4561 (316Ti)
5	**Piston seal**	FKM
6	**Spring**	Stainless steel 1.4310
7	**Tube**	Stainless steel 1.4401 (316)/1.4404 (316L)
8	**Spindle seal**	PTFE
9	**Spindle**	Stainless steel 1.4401 (316)/1.4404 (316L)
10	**Spindle guide**	PEEK
11	**Valve body**	Stainless steel 1.4404 (316L)
12	**Body closer**	Stainless steel 1.4404 (316L)
13	**Seal**	PTFE
14	**Seat nipple**	Stainless steel 1.4404 (316L)

The lubricants for stem packing and driving are classified according to NSF H1

Pilot pressure chart



Key to actuator size D, M, N, P, see first column of table on page 4

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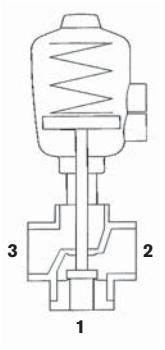
Connections for fluidic circuit functions C, D, E and F

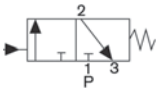
Actuator with control function A
When de-energised port connection 1 is closed with spring

Fluidic circuit function	Connection - port		
	1	2	3
C	P	A	R
D	R	A	P
E	P1	A	P2
F	A	P	B

A, B service ports
P, P1, P2 pressure ports
R exhaust port

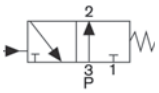


C



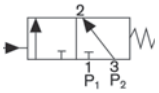
When de-energised, pressure port 1 closed, service port 2 exhausted

D



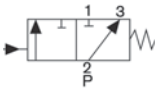
When de-energised, pressure port 3 connected to service port 2, exhaust port 1 closed

E



Mixer valve
When de-energised, pressure port 3 connected to service port 2, pressure port 1 closed

F



Distributor valve
When de-energised, pressure port 2 connected to service port 3 service port 1 closed

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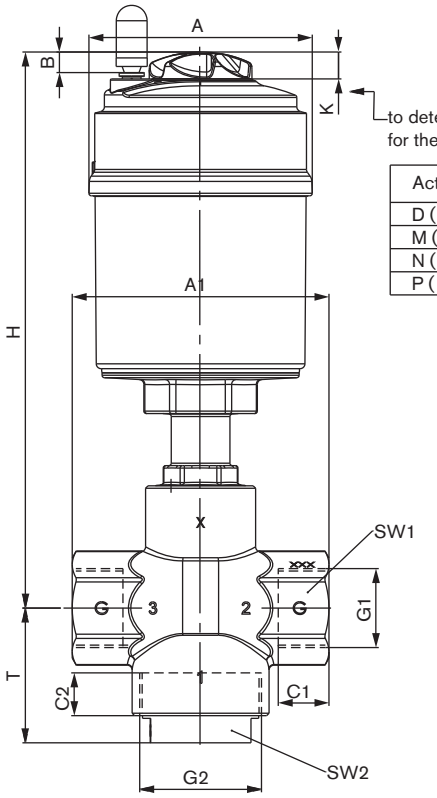
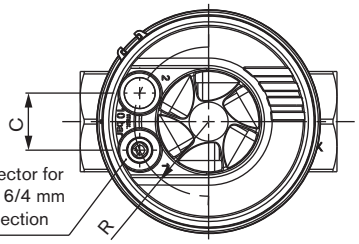
Dimensions [mm]



to determine the basic dimensions
for the versions with mounting options

Actuator size	K
D (50)	9.7
M (70)	11
N (90)	
P (130)	



Push-in connector for
plastic tubing 6/4 mm
or G1/8 connection

DN	Actuator size Ø	Ø A	B	C	R	H	All threaded bodies					G			NPT			RC		
							A1	T	G2	SW1	SW2	G1	C1/C2	LTA	G1	C1/C2	LTA	G1	C1/C2	LTA
15	D(50)	64.5	6.0	19.8	19.8	202.4	85	58.3	M40x1.5	32	30	G 1/2	14	GM84	NPT 1/2	13.7	NM84	RC 1/2	13.2	RC84
	M(70)	91	8.5	23.3	30.5	202.4	85	58.3	M40x1.5	32	30	G 1/2	14	GM84	NPT 1/2	13.7	NM84	RC 1/2	13.2	RC84
20	D(50)	64.5	6.0	19.8	19.8	202.4	85	58.3	M40x1.5	32	30	G 3/4	16	GM85	NPT 3/4	14.0	NM85	RC 3/4	14.5	RC85
	M(70)	91	8.5	23.3	30.5	202.4	85	58.3	M40x1.5	32	30	G 3/4	16	GM85	NPT 3/4	14.0	NM85	RC 3/4	14.5	RC85
25	D(50)	64.5	6.0	19.8	19.8	227.4	105	54.9	M50x2	41	41	G 1	18	GM86	NPT 1	16.8	NM86	RC 1	16.8	RC86
	M(70)	90	8.5	23.3	30.5	227.4	105	54.9	M50x2	41	41	G 1	18	GM86	NPT 1	16.8	NM86	RC 1	16.8	RC86
32	M(70)	91	8.5	23.3	30.5	234.7	130	67.8	M70x2	55	55	G 1 1/4	20	GM87	NPT 1 1/4	17.3	NM87	RC 1 1/4	19.1	RC87
	N(90)	120				294.4	130	78.1	M70x2	55	55	G 1 1/4	20	GM87	NPT 1 1/4	17.3	NM87	RC 1 1/4	19.1	RC87
	P(130)	159				346.7	130	68.0	M70x2	55	55	G 1 1/4	20	GM87	NPT 1 1/4	17.3	NM87	RC 1 1/4	19.1	RC87
40	M(70)	91	8.5	23.3	30.5	234.7	130	68.0	M70x2	55	55	G 1 1/2	22	GM88	NPT 1 1/2	17.3	NM88	RC 1 1/2	19.1	RC88
	N(90)	120				294.4	130	68.3	M70x2	55	55	G 1 1/2	22	GM88	NPT 1 1/2	17.3	NM88	RC 1 1/2	19.1	RC88
	P(130)	159				346.7	130	68.0	M70x2	55	55	G 1 1/2	22	GM88	NPT 1 1/2	17.3	NM88	RC 1 1/2	19.1	RC88
50	M(70)	91	8.5	23.3	30.5	245.5	150	72.0	M84x2	70	70	G 2	24	GM89	NPT 2	17.6	NM89	RC 2	23.4	RC89
	N(90)	120				310.7	150	72.0	M84x2	70	70	G 2	24	GM89	NPT 2	17.6	NM89	RC 2	23.4	RC89
	P(130)	159				353.7	150	72.0	M84x2	70	70	G 2	24	GM89	NPT 2	17.6	NM89	RC 2	23.4	RC89

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Ordering chart Type 2106, flow direction below the seat (for gases and liquids)

G thread acc. to EN ISO 228-1

Control function	Port connection	Orifice [mm]	Actuator size Ø [mm]	Kv value water [m³/h] 1 → 2	Kv value water [m³/h] 2 → 3	Min. pilot pressure [bar]	Max. operating pressure to 180°C [bar] 1 → 2	Max. operating pressure to 180°C [bar] 2 → 3 2 → 1	Weight [kg]	Item no. PA actuator
A 3/2 way, normally closed (NC) (port 1)	G 1/2	15	50	7	4.5	5.5	16	16	1.5	282 698
			70	7	4.5	4.5	16	16	2.2	282 701
	G 3/4	20	50	9	6.2	5.5	16	16	1.4	282 702
			70	9	6.2	4.5	16	16	2.1	282 704
	G 1	25	50	17	11	5.5	9	11	1.9	282 705
			70	17	11	4.5	16	16	2.6	282 706
	G 1 1/4	32	70	32	21	4.5	8	11	3.9	282 707
			90	32	21	5.1	11	16	5.4	282 709
	G 1 1/2	40	70	35	24	4.5	7	11	3.7	282 711
			90	35	24	5.1	12	16	5.2	282 712
	G 2	50	90	51	35	5.1	9	8	7.3	282 715
			130	51	35	4.9	16	16	10.4	282 716

NPT thread acc. to ANSI B 1.20.1

Control function	Port connection	Orifice [mm]	Actuator size Ø [mm]	Kv value water [m³/h] 1 → 2	Kv value water [m³/h] 2 → 3	Min. pilot pressure [bar]	Max. operating pressure to 180°C [bar] 1 → 2	Max. operating pressure to 180°C [bar] 2 → 3 2 → 1	Weight [kg]	Item no. PA actuator
A 3/2 way, normally closed (NC) (port 1)	NPT 1/2	15	50	7	4.5	5.5	16	16	1.5	292 478
			70	7	4.5	4.5	16	16	2.2	292 531
	NPT 3/4	20	50	9	6.2	5.5	16	16	1.4	292 532
			70	9	6.2	4.5	16	16	2.1	292 533
	NPT 1	25	50	17	11	5.5	9	11	1.9	292 534
			70	17	11	4.5	16	16	2.6	292 535
	NPT 1 1/4	32	70	32	21	4.5	8	11	3.9	292 536
			90	32	21	5.1	11	16	5.4	292 537
	NPT 1 1/2	40	70	35	24	4.5	7	11	3.7	292 538
			90	35	24	5.1	12	16	5.2	292 539
	NPT 2	50	90	51	35	5.1	9	8	7.3	292 540
			130	51	35	4.9	16	16	10.4	292 541

Further versions on request

Port connection
NPT thread, RC thread

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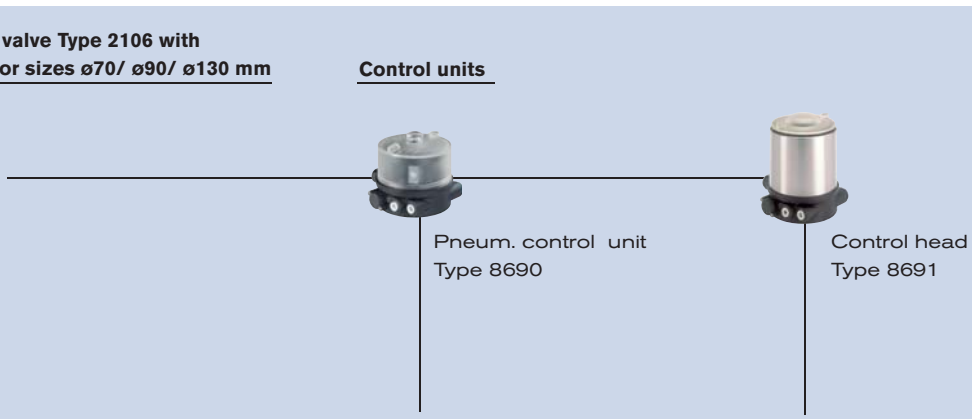
Ordering information for valve system On/Off ELEMENT Type 8801

A **valve system On/Off ELEMENT Type 8801-GC** consists of an **Globe valve Type 2106** and a pneumatic control unit **Type 8690**, control head **Type 8691** (for valve actuator sizes ø70/ø90 /ø130mm) or control head **Type 8695** (for valve actuator size ø50 mm) (see separate data sheets).
For the configuration of further valve systems please use the "Request for quotation" on p. 7 go to page

You order two components and receive a complete assembled and certified valve.

Ordering the valve system On/Off ELEMENT Type 8801 with valve actuator sizes ø70/ ø90/ ø130mm



Click on the orange box "More info." below... you will come to our website for the resp. product where you can download the data sheet.

Pneumatic control unit Type 8690

More info.

The new generation of integrated controllers for combination with actuators from the process valve series Type 21xx is specially designed for the requirements of hygienic process environments.
The pneumatic control unit Type 8690 combines electrical position feedback and pneumatic control for single or double-acting actuators, and is also optionally available as an intrinsically safe model to ATEX.

Main customer benefits:
- Compact design of the valve system with integrated controller meets the demands for plant washdown environments through the selection of materials, external seals and integrated control air supply to the actuator.
- Integrated pilot valve with manual actuation
- Air intake filter enhances the process valve system availability
- Simple and reliable actuator adaptations allowing additional actuators of the process valve series, Type 20xx or actuators from other manufacturers to be used

Control head Type 8691

More info.

The new generation of integrated control heads for combination with actuators from the process valve series Type 21xx is specially designed for the requirements of hygienic process environments.
The intelligent control head, Type 8691, detects the valve position by means of a contact-free analog position sensor circumventing excessive wear of mechanical parts. Single or double-acting actuators are controlled via the integral pilot valve. Communication interfaces AS-Interface and DeviceNet are available as options.

Main customer benefits:
- Compact, hygienic design of the valve system with integrated controller meets the demands of plant washdown environments through the selection of materials, external seals and integrated control air supply to the actuator.
- Automatic setting of the control head at the push of a button
- Even under dirty or dark environments, a clearly visible status display due to powerful LEDs
- Monitoring and diagnosis: Process valve systems with field bus interface used in modern plant processes
- Integrated pilot valve with manual actuation
- Air intake filter enhances the process valve system availability
- Simple and reliable actuator adaptations allowing additional actuators of the process valve series, Type 20xx or actuators from other manufacturers to be used

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Note
You can fill out the fields directly in the PDF file before printing out the form.

Valve system On/Off ELEMENT Type 8801-GE – request for quotation

Please fill out and send to your nearest Bürkert facility* with your inquiry or order

Company	Contact person
Customer no.	Department
Address	Tel./Fax
Postcode/town	E-Mail

■ = mandatory fields to fill out Quantity Required delivery date

Operating data

Pipe line DN PN

■ **Process medium**

■ **Type of media** ☐ Liquid ☐ Steam ☐ Gas

Valve features

Seal material ☐ PTFE ☐ Other

Nominal pressure PN

Orifice DN

Thread version ☐ ISO 228 ☐ NPT ☐ RC

Pilot pressure min. max.

Atex II 2GD Mechanical ☐

Please specify item no. (if known):

Control unit features

Click on the orange box „More info.“ below... you will come to our website for the resp. product where you can download the data sheet.

For actuator sizes ø70/ø90/ø130 mm

☐ **Pneumatic Control Unit Type 8690** More info.

Pneumatic function
☐ Single-acting ☐ Double-acting
☐ Without pilot valve

Position feedback
☐ 1x inductive ☐ 2x inductive
☐ 1x inductive (NAMUR) ☐ 2x inductive (NAMUR)
☐ 1x mechanical ☐ 2x mechanical

Supply voltage
☐ 24V DC (ATEX Zone 2/22)
☐ Ex ia IIC T6 (ATEX Zone 1)

Pilot air ports
☐ Push-in connector external ø 6 mm or 1/4"
☐ Thread G 1/8"

Please specify item no. (if known):

☐ **Control Head Type 8691** More info.

Pneumatic function
☐ Single-acting ☐ Double-acting

Pilot air ports
☐ Push-in connector external ø 6 mm or 1/4"
☐ Thread G 1/8"

Communication
☐ ASI
☐ Multipol M12
☐ Flat cable clip, 1 m cable
☐ DeviceNet

Please specify item no. (if known):

For actuator sizes ø50 mm

☐ **Control Head Type 8695** More info.

Pneumatic function
☐ Single-acting ☐ Double-acting

Pilot air ports
☐ Push-in connector external ø 6 mm or 1/4"
☐ Thread G 1/8"

Communication
☐ ASI

Please specify item no. (if known):

Comment

Reset

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

Subject to alteration.

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