

2103 Tube Valve Body

Pneumatically operated 2/2 way Diaphragm Valve ELEMENT



Type 2103 tube valve body On/Off
can be combined with...



Type 8691
Control Head



Type 8695
Control Head



Type 8690
Pneumatic Control
Unit



Type 8697
Pneumatic Control
Unit



Type 8619
MultiCELL Transmitter/
Controller



Type 8110
Level meter

- Light tube valve body
- Hermetical separation of fluids from the operating mechanism
- Optimal design for hygienic environments
- Easy integration of automation units with ELEMENT

The externally piloted diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm and a 2-way tube valve body.

Bürkert's patented hydroforming technology allows the manufacturing of a flow optimized stainless steel valve body with high surface quality. A laser-welded mounting interface ensures robustness and hygienic design.

The ELEMENT design enables the easy integration of automation modules whether they are electrical/optical position feedback, pneumatic control units, an integrated fieldbus interface or even an explosion proof feedback. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67/NEMA4X protection class and superior chemical resistance.

The diaphragm valve with tube body is perfect for hygienic applications in the food and beverage, pharma, and cosmetic industries. It is designed with zero dead leg and a high cleanability certified by EHEDG.



Technical data	
Port connection size	DN08-50 (1/4" - 2")
Diaphragm size	8-50
Port connections Weld ends	ASME BPE / DIN 11866 C DIN EN ISO 1127/ISO 4200/DIN11866 B
Materials Body Diaphragm materials Actuator / Cover	Stainless steel 316L / 1.4435 / BN2 EPDM (AB), PTFE/EPDM (EA) EPDM (AD), advanced PTFE/EPDM (EU), GYLON®/ EPDM laminated (ER) and FKM (FF) on request PPS / Stainless steel 1.4561 (316Ti)
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish Internally electro polished	Ra ≤ 0.38 µm (ASME BPE SF4)
Medium temperature EPDM (AB), PTFE/EPDM (EA) EPDM (AD), advanced PTFE/ EPDM (EU) GYLON®/EPDM laminated (ER) FKM (FF)	-10 to +130 °C (steam sterilisation +140 °C for 60 min) -5 to +143 °C (steam sterilisation +150 °C for 60 min) -5 to +130°C (steam sterilisation +140°C for 60 min) 0 to +130 °C (not recommended for steam)
Ambient temperature	+5 to +60 °C
Control medium	Neutral gases; air
Max. pilot pressure	max. 10 bar, 7 bar with actuator size 130 mm
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

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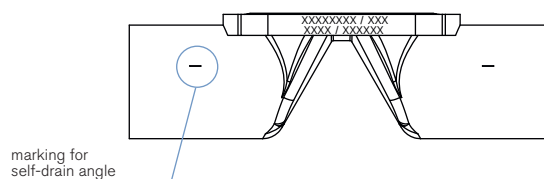
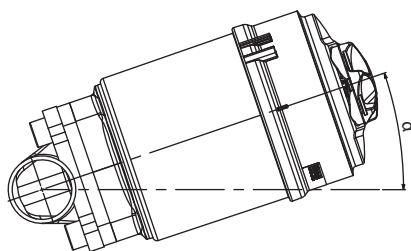
Technical data continued

Port Connection DN		Diaphragm size	Actuator size Ø	Pilot pressure min	Max. operating pressure [bar]		Kv-Value [m³/h]	
[mm]	[inch]				EPDM	PTFE, advanced PTFE, GYLON®	DIN EN ISO 1127 ISO 4200 DIN 11866 B	ASME BPE DIN 11866 C
8	1/4"	8	50	5..10	10	10	2.1	-
15	1/2"	8	50	5..10	10	10	-	2
		15	70	5..10	10	10	6.7	-
20	3/4"	15	70	5..10	10	10	-	6.5
		20	70	5..10	10	10	13	-
25	1"	20	70	5..10	10	10	-	12.5
		25	90	5..10	10	10	17.5	-
32	1 1/4"	32	90	5..10	7	6.5	36	-
40	1 1/2"	32	90	5..10	7	6.5	-	30
		40	90	5..10	5.5	5	47	-
			130	5..7	10	10		
50	2"	40	90	5..10	5.5	5	-	40
			130	5..7	10	10		
		50	130	5..7	10	9	70	-

Flow rate: Kv value water [m³/h]: Measured at +20°C, 1 bar pressure at valve inlet and free outlet.

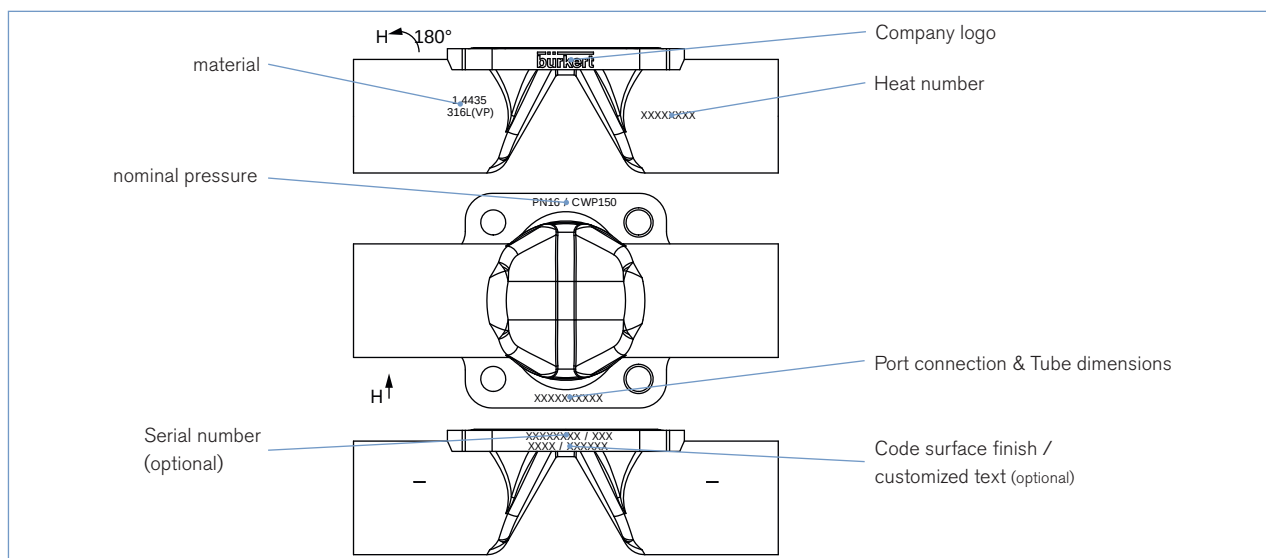
Pressure valves [bar]: Overpressure to the atmospheric pressure

Installation for self-draining operation



$\alpha = 15^\circ$ up to 35° plus 3° to 5° inclination to the pipe axis.
 Drain marks permanently marked on both sides of the valve body
 show the correct mounting position to optimise drainability.

Body label



Approvals

Suitability for foodstuffs / sterile applications



- The composition of the EPDM (AB), EPDM (AD), PTFE/EPDM (EA), PTFE/EPDM (EA), advanced PTFE (EU) and GYLON®/EPDM laminated (ER) diaphragms corresponds to the Code of Federal Regulations, published by the FDA (Food and Drug Administration, USA).



- The composition of the EPDM (AB), EPDM (AD), PTFE/EPDM (EA), PTFE/EPDM (EA), advanced PTFE (EU) and GYLON®/EPDM laminated (ER) diaphragms is suitable for the application with food and beverage (acc. to EC-Regulation 1935/2004/EC)

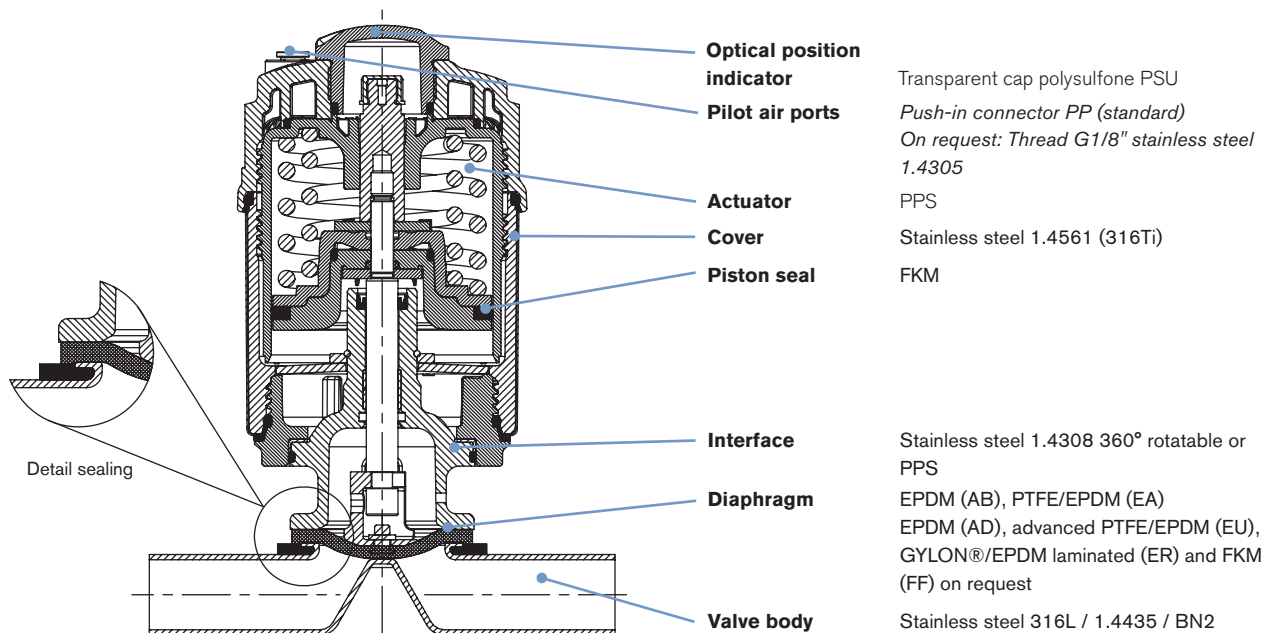


- The composition of the EPDM (AB), EPDM (AD), PTFE/EPDM (EA), PTFE/EPDM (EA), advanced PTFE (EU) and GYLON®/EPDM laminated (ER) diaphragms are approved acc. USP Class VI



- Approval according to TA-air (Port size DN4-50)
- The diaphragm valve with tube valve body and EPDM or PTFE has been evaluated for compliance with the *Hygienic Equipment Design Criteria* of the EHEDG
- The Diaphragm valve according to 3-A approved on request (3-A Sanitary Standards Symbol Administrative Council)

Materials



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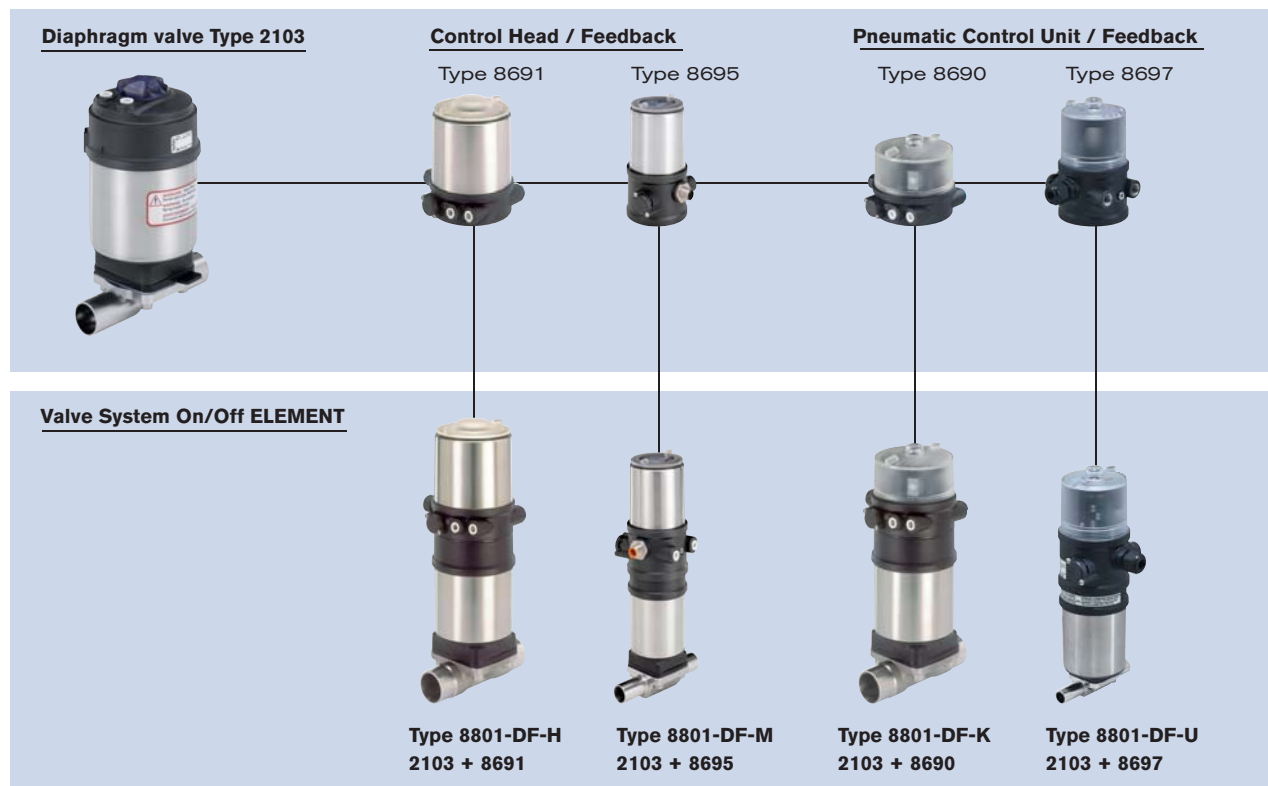
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Ordering information for valve system On/Off ELEMENT Type 8801-DF

A **valve system On/Off ELEMENT Type 8801-DF** consists of a **diaphragm valve Type 2103** and a valve actuation system control head **Type 8691/8695** or a pneumatic control unit **Type 8690/8697** (see separate datasheets).

For the configuration of further valve systems please use the "Request for quotation" on p. 9-10. [go to page](#)

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



A detailed description of the control heads and pneumatic control units is on the next page... →

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Dimensions [mm] - On/Off ELEMENT Type 2103 and valves system On/Off ELEMENT

2103 with plastic interface, PPS

2103 with 360° rotatable interface, stainless steel

2103 with Control Head 8691

2103 with Control Head 8695

2103 with Pneumatic Control Unit 8690

2103 with Pneumatic Control Unit 8697

Diaphragm size	Actuator size ø [mm]	ø A [mm]	H [mm]	HS [mm] with		M for stainless steel interface [mm]
				8691/8695	8690/8697	
8	50	64,5	110	222	194	18
15	70	91	136	245	211	16
20	70	91	141	249	216	10
25	90	120	187	295	262	12
32	90	120	190	298	265	12
40	90	120	195	302	270	14
	130	159	247	355	322	14
50	130	159	272	380	347	14

Dimensions [mm] - Tube Valve Body

Port Connection DN ASME BPE / DIN 11866 C		Diaphragm Size	h	H	L	ØD1	s
[inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]
1/2"	15	8	9.45	15.8	90	12.7	1.65
3/4"	20	15	13.23	22.76	117	19.05	1.65
1"	25	20	16.4	29.1	127	25.4	1.65
1 1/2"	40	32	22.95	42	159	38.1	1.65
2"	50	40	30.6	56	190	50.8	1.65
Port Connection DN DIN EN ISO 1127 / ISO 4200 / DIN 11866 B		Diaphragm Size	h	H	L	ØD1	s
[inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]
1/4"	8	8	9.85	16.6	90	13.5	1.6
1/2"	15	15	14.35	25.0	110	21.3	1.6
3/4"	20	20	17.15	30.5	119	26.6	1.6
1"	25	25	20.55	37.4	129	33.7	2.0
1 1/4"	32	32	25.10	46.3	148	42.4	2.0
1 1/2"	40	40	29.35	53.5	161	48.3	2.0
2"	50	50	35.35	65.5	192	60.3	2.0

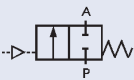
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Ordering chart diaphragm Valve Type 2103

Welded connection ASME BPE/DIN 11866 C

electropolished Ra ≤ 0,38 µm and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)

Control function	Port connection DN [mm] [inch]	Diaphragm size	Actuator size [mm]	Kv-value water [m³/h]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no. interface plastic, PPS	Item no. interface 360° rotat- able, stainless steel	
A 2/2-way valve, normally closed (NC) 	Diaphragm material EPDM (AB)								
	15	1/2"	8	50	2	5 ... 10	10	290 501	290 513
	20	3/4"	15	70	6.5	5 ... 10	10	290 503	290 515
	25	1"	20	70	12.5	5 ... 10	10	290 505	290 517
	40	1 1/2"	32	90	30	5 ... 10	7	290 507	290 519
	50	2"	40	90	40	5 ... 10	5.5	290 509	290 521
				130		5 ... 7	10	290 511	290 524
	Diaphragm material PTFE/EPDM (EA)								
	15	1/2"	8	50	2	5 ... 10	10	290 502	290 514
	20	3/4"	15	70	6.5	5 ... 10	10	290 504	290 516
	25	1"	20	70	12.5	5 ... 10	10	290 506	290 518
	40	1 1/2"	32	90	30	5 ... 10	6.5	290 508	290 520
	50	2"	40	90	40	5 ... 10	5	290 510	290 523
				130		5 ... 7	10	290 512	290 525



Further versions on request



Control function

B (normally open)



Materials

Diaphragms for steam sterilization EPDM (AD), advanced PTFE / EPDM (EU) and GYLON®/EPDM laminated (ER)



Additional

Versions with reduces spring force

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Welded connection acc. DIN EN ISO 1127/ISO 4200/DIN11866 B

electropolished Ra <= 0,38 micrometer and Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)

Control function	Port Connection DN		Diaphragm size	Actuator size	Kv-value	Pilot pressure	Max. operating pressure	Item no. interface plastic, PPS	Item no. interface 360° rotatable, stainless steel
	[mm]	[inch]							
Control function A	Diaphragm material EPDM (AB)								
	8	1/4"	8	50	2.1	5 ... 10	10	290 575	290 594
	15	1/2"	15	70	6.7	5 ... 10	10	290 579	290 598
	20	3/4"	20	70	13	5 ... 10	10	290 582	290 600
	25	1"	25	90	17.5	5 ... 10	10	290 584	290 602
	32	1 1/4"	32	90	36	5 ... 10	6.5	290 586	290 604
	40	1 1/2"	40	90	47	5 ... 10	5	290 588	290 608
				130		5 ... 7	10	290 590	290 610
	50	2"	50	130	70	5 ... 7	10	290 592	290 612
	Diaphragm material PTFE/EPDM (EA)								
	8	1/4"	8	50	2.1	5 ... 10	10	290 576	290 595
	15	1/2"	15	70	6.7	5 ... 10	10	290 580	290 599
	20	3/4"	20	70	13	5 ... 10	10	290 583	290 601
	25	1"	25	90	17.5	5 ... 10	10	290 585	290 603
	32	1 1/4"	32	90	36	5 ... 10	6.5	290 587	290 606
	40	1 1/2"	40	90	47	5 ... 10	5	290 589	290 609
				130		5 ... 7	10	290 591	290 611
	50	2"	50	130	70	5 ... 7	10	290 593	290 613



Further versions on request



Control function
B (normally open)



Materials
Diaphragms for steam sterilization EPDM (AD), advanced PTFE / EPDM (EU) and GYLON®/EPDM laminated (ER)



Additional
Versions with reduces spring force