

Pneumatically Operated 2/2-way Diaphragm Valve ELEMENT for Decentralized Automation

- Industry leading flow rate (CV)
- Diaphragm hermetically separates the fluids from the operating mechanism
- Easy integration of ELEMENT automation units: on/off or modulating
- SS body with clamp or weld ends
- Internationally certified for pharmaceutical, aseptic, sterile and sanitary food applications



CLICK ME



FOR DATA SHEET

The externally piloted diaphragm valve Type 2103 consists of a pneumatically operated piston actuator, a diaphragm and a 2-way valve housing made of forged stainless steel. The high quality actuator with a stainless steel cover is designed for usage in hygienic or aggressive environments. The flow optimized and zero dead volume valve body makes high flow rates possible and a variety of applications to be realized.

The design enables the easy integration of automation modules whether they are electrical/optical position feedback, pneumatic control units or an integrated fieldbus interface. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67, NEMA Type 4X protection class and superior chemical resistance.

Technical Data

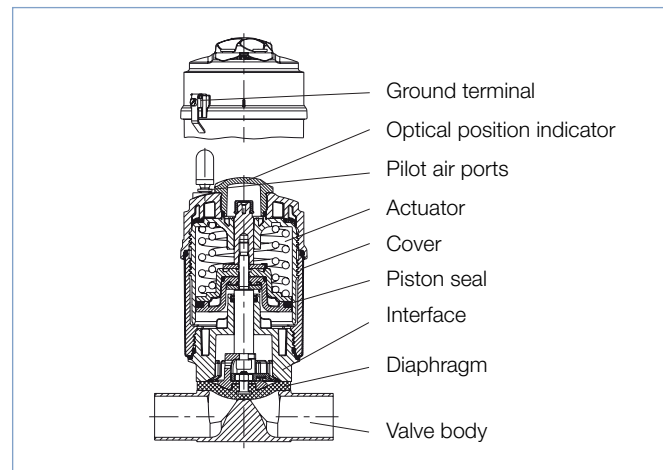
Port connection	1/4" to 2 1/2" available (port connection only)
Diaphragm size	3/8" to 2" (DN15 to DN50; DN08 available on request)
Port connections	
Weld ends	ASME BPE
Clamps	ASME BPE (other piping standards available on request)
Materials	
Body	Stainless Steel 316L / 1.4435 / BN2
Diaphragm materials	PTFE/EPDM (EA), EPDM (AD), Advanced PTFE/EPDM (EU) on request: FKM (FF)
Actuator / Cover	PPS / Stainless Steel 1.4561 (316Ti)
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Surface finish	As listed, alternative internal/external surface finishes available upon request
Medium temperature	
PTFE/EPDM (EA)	14 to 266°F (steam sterilization 284°F for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	23 to 289°F (steam sterilization 302°F for 60 min)
EPDM laminated (ER)	23 to 266°F (steam sterilization 140°C for 60 min)
FKM (FF)	32 to 266°F (not recommended for steam)
Ambient temperature	+41°F to +140°F
Control medium	Neutral gases; air
Max. pilot pressure	max. 145 PSI (101 PSI with actuator size 130mm)

Dimensions [inch]

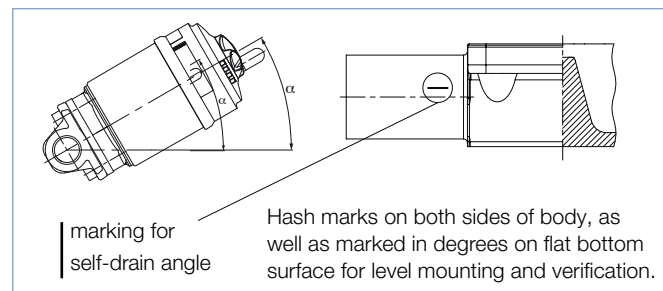
Diaphragm size	Actuator size Ø [mm]	ØA	H
3/8"	50	2.56	4.69
1/2"	70	3.58	6.26
3/4"	70	3.58	6.26
1"	90	4.72	7.78
1-1/2"	130	6.26	10.51
2"	130	6.26	10.81

2103 with 360° rotatable interface, SS

Materials



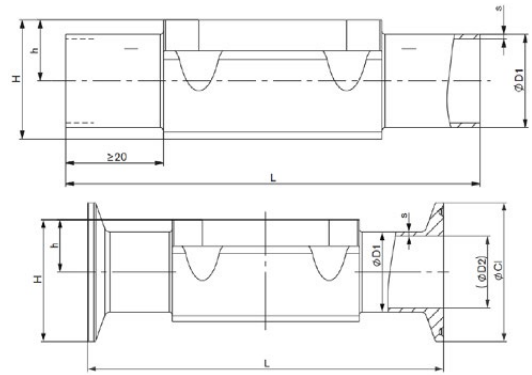
Installation for self-draining operation



Technical data (continued)

Port connection DN		Diaphragm size	Actuator size Ø	Pilot pressure	Max. media pressure [PSI]		Cv [gpm]
[mm]	[inch]				[mm]	[PSI]	
15	1/2"	1/2"	70	73-147	145	145	3.59
20	3/4"	3/4"	70	73-147	145	145	9.83
25	1"	1"	90	73-147	145	116	16.77
40	1-1/2"	1-1/2"	130	73-103	145	102	42.79
50	2"	2"	130	73-103	145	102	76.34

Flow rate: Cv value [gpm] for elastomer diaphragms measured at +68°F and 1 PSI pressure drop at mean operating pressure | Pressure valves: Overpressure to the atmospheric pressure, valve closes dynamical against max. operating pressure



Forged body - weld end

Port connection DN		DIAPH size	ØD1	s	h	H	L	Self-drain angle [°]
[mm]	[inch]							
ASME BPE								
15	1/2"	1/2"	0.5	0.065	0.315	0.787	4.252	41
20	3/4"	3/4"	0.75	0.065	0.63	1.181	4.606	29
25	1"	1"	1	0.065	0.748	1.157	5.0	27
40	1-1/2"	1-1/2"	1.5	0.065	1.102	2.047	6.26	24
50	2"	2"	2	0.065	1.417	2.677	7.48	20

Forged body - clamp

Port connection DN		DIAPH size	ØD1	s	CI	ØD2	h	H	L	Self-drain angle [°]
[mm]	[inch]									
ASME BPE										
15	1/2"	1/2"	0.5	0.065	0.984	0.37	0.315	0.827	3.504	41
20	3/4"	3/4"	0.75	0.065	0.984	0.62	0.63	1.142	4.016	29
25	1"	1"	1	0.065	1.988	0.87	0.748	1.732	4.488	27
40	1-1/2"	1-1/2"	1.5	0.065	1.988	1.37	1.102	2.087	5.512	24
50	2"	2"	2	0.065	2.52	1.87	1.417	2.677	6.26	20

Ordering Chart

DIA.	Connection (in.)	Seat [mm]	Internal Surface Finish	Actuator Size (O, mm)	Cv (usgpm)	Max. Process Pressure (PSI _g)	Item no. Welded	Item no. Triclamp
Actuator Function Normally Closed (air to open)								
EPDM	1/4"	8	20 Ra Mechanical (BPE SF1)	50	0.81	147	380396	20055429
	3/8"	8		50	1.85	147	20055412	20059617
	1/2"	8		50	1.73	147	282848	282771
	1/2"	15		70	3.58	147	20022475	20065114
	3/4"	20		70	9.83	147	20005594	20055687
	1"	25		90	17.92	147	20022483	20055694
	1-1/2"	40		130	42.77	147	20022484	20065115
	2"	50		130	76.30	116	363842	20065116
	2-1/2"	50		130	76.30	116	20022485	20059723
PTFE/EPDM	1/4"	8	20 Ra Mechanical (BPE SF1)	50	0.81	147	20055442	299605
	3/8"	8		50	2.08	147	20055483	20059680
	1/2"	8		50	2.20	147	20055485	20055588
	1/2"	15		70	3.58	147	20055597	266710
	3/4"	20		70	9.83	147	20055688	20055689
	1"	25		90	16.76	116	361060	287995
	1-1/2"	40		130	43.35	147	20055701	266741
	2"	50		130	76.30	103	20055707	266722
	2-1/2"	50		130	76.30	103	20059807	20059815
EPDM	1/4"	8	15 Ra Electropolished (BPE SF4)	50	0.81	147	379689	321041
	3/8"	8		50	1.85	147	20055423	20059666
	1/2"	8		50	1.73	147	20055427	20055432
	1/2"	15		70	3.58	147	20055595	20025981
	3/4"	20		70	9.83	147	20055680	357758
	1"	25		90	17.92	147	20055692	20055696
	1-1/2"	40		130	42.77	147	20055698	357759
	2"	50		130	76.30	116	20055705	357761
	2-1/2"	50		130	76.30	116	20059719	20059732
PTFE / EPDM	1/4"	8	15 Ra Electropolished (BPE SF4)	50	0.81	147	20055481	299544
	3/8"	8		50	2.08	147	20055484	20059715
	1/2"	8		50	2.20	147	20022553	20055594
	1/2"	15		70	3.58	147	298874	20055599
	3/4"	20		70	9.83	147	294145	20055690
	1"	25		90	16.76	116	361060	20055697
	1-1/2"	40		130	43.35	147	361061	356810
	2"	50		130	76.30	103	20055708	20055709
	2-1/2"	50		130	76.30	103	20059812	20059945

Ordering Chart

DIA.	Connection (in.)	Seat [mm]	Internal Surface Finish	Actuator Size (O, mm)	Cv (usgpm)	Max. Process Pressure (PSig)	Item no. Welded	Item no. Triclamp
Actuator Function Normally Open (air to close)								
EPDM	1/4"	8	20 Ra Mechanical (BPE SF1)	50	0.81	147	20059981	20059998
	3/8"	8		50	1.85	147	20059989	20060002
	1/2"	8		50	1.73	147	20059993	20060036
	1/2"	15		70	3.58	147	20060637	20005592
	3/4"	20		70	9.83	147	20005593	20060790
	1"	25		90	17.92	147	20060994	20061002
	1-1/2"	40		130	42.77	147	20061023	20061053
	2"	50		130	76.30	147	20061089	20061129
	2-1/2"	50		130	76.30	147	20061133	20061143
PTFE/EPDM	1/4"	8	20 Ra Mechanical (BPE SF1)	50	0.81	147	20060100	20060561
	3/8"	8		50	2.08	147	20060104	20060588
	1/2"	8		50	2.20	147	20060111	20060620
	1/2"	15		70	3.58	147	20060640	266733
	3/4"	20		70	9.83	147	20060815	20060827
	1"	25		90	16.76	147	20061013	287996
	1-1/2"	40		130	43.35	147	20061055	266742
	2"	50		130	76.30	147	20061149	266730
	2-1/2"	50		130	76.30	147	20061162	20061165
EPDM	1/4"	8	15 Ra Electropolished (BPE SF4)	50	0.81	147	20059985	20059999
	3/8"	8		50	1.85	147	20059992	20060021
	1/2"	8		50	1.73	147	20059996	20060038
	1/2"	15		70	3.58	147	20060638	20025700
	3/4"	20		70	9.83	147	20060789	20060791
	1"	25		90	17.92	147	20061001	20061008
	1-1/2"	40		130	42.77	147	20061046	20061054
	2"	50		130	76.30	147	20061092	20061130
	2-1/2"	50		130	76.30	147	20061139	20061146
PTFE / EPDM	1/4"	8	15 Ra Electropolished (BPE SF4)	50	0.81	147	20060101	20060576
	3/8"	8		50	2.08	147	20060106	20060606
	1/2"	8		50	2.20	147	20060112	20060627
	1/2"	15		70	3.58	147	20060641	20060785
	3/4"	20		70	9.83	147	20060818	20060992
	1"	25		90	16.76	147	20061014	20061016
	1-1/2"	40		130	43.35	147	20061086	20061087
	2"	50		130	76.30	147	20061154	20061159
	2-1/2"	50		130	76.30	147	20061163	20061205