

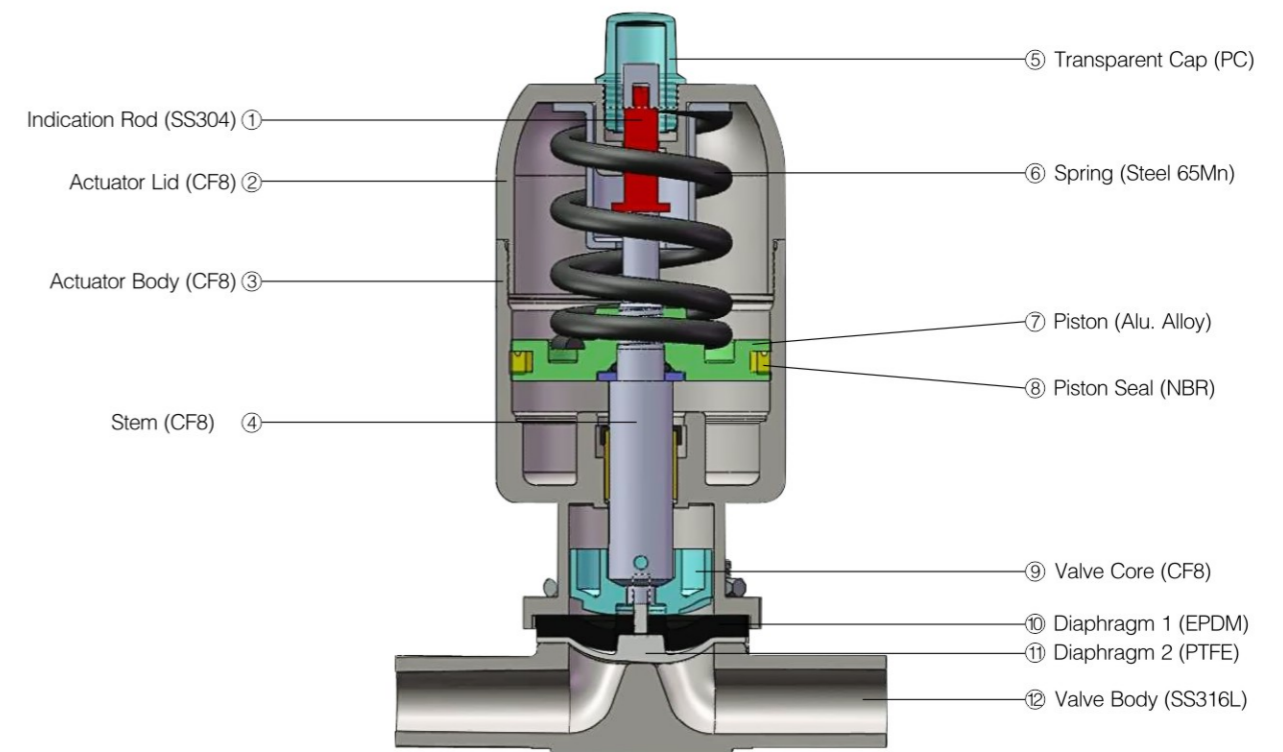
Diaphragm Valve



Diaphragm valves are widely used in pharmaceutical, beverage, food, and chemical industry, due to its large flux and low residue, ensuring safety and reliability. The diaphragm meets safety standards set by FDA and USP for pharmaceutical and food industries, and satisfies various requirements and demands of end users. ESG never ceases to adapt to the ever-changing market demand with high-quality products.

Application Industry

Pharmaceutical, food and beverages, cosmetics, brewing, chemicals, etc.



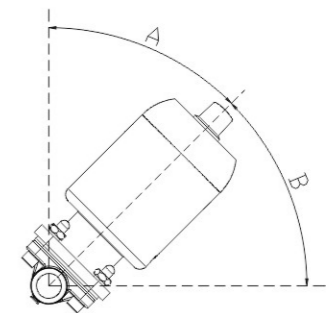
Technical Specification

- Material: (Body) SS316L Investment casting CF3M, Forge SS316L (Pneumatic) Actuator + Valve seat CF8; (Manual) Valve seat CF8
- Internal surface: $Ra \leq 0.4 \mu m$, mechanically polished
- Diaphragm material: EPDM + PTFE (double-layer diaphragm), EPDM (Single-layer diaphragm)
- Operating pressure: 0–10bar (0–145psi)
- Fluid temperature: $-10^{\circ}C$ — $+150^{\circ}C$
- Control pressure(pneumatic): 4.5–7bar (65–102psi)



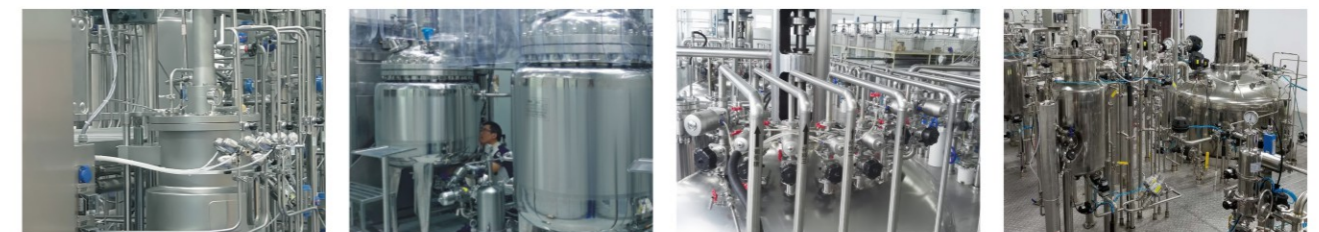
Installation Angle

Size	Installation angle	
	A	B
DN08	38.2°	51.8°
DN10	33.6°	56.4°
DN15	22.2°	67.8°
DN20	26.5°	63.5°
DN25	29.9°	60.1°
DN40	27.2°	62.8°
DN50	30.1°	59.9°
DN65	78.0°	12.0°



Typical Applications

Fermentation tank, Preparation vessel, Filling machine, Sterilizing equipment, Aseptic fluid transfer, CIP/SIP, etc.



Diaphragm Valve



Advantages

Double Layer

PTFE (+EPDM support layer) split diaphragm is the highest standard used in the industry, PTFE diaphragms are developed and manufactured by ESG group. High quality raw materials sourced globally to allow our diaphragm product achieves high density, high smoothness, high bending degree. And due to good resistance to high temperature, our diaphragm meets the technological requirement of the SIP sterilization. Diaphragms are widely used in biological, pharmaceutical, vaccines, injection and aseptic production, fermentation, injection of water supply and distribution class field.

The EPDM support piece on the split diaphragm protects the PTFE diaphragm in contact with the product, also strengthen the sealing effect of PTFE diaphragm. PTFE diaphragm with EPDM support piece can be used together to achieve reliability and prolong the service life.

PTFE is suitable for high chemical properties, corrosive chemicals storage and pipeline transportation with excellent chemical impedance and thermal resistance, alkaline solution and concentrated acid compatibility.

Single Layer

EPDM single diaphragm is suitable for hot/cold water, alkaline and weak acid medium and vacuum condition, especially for polar material and steam medium. Ideal for sterilizing application.

EPDM diaphragms are not recommended for use in media such as mineral and vegetable oils, vegetable and animal fats, aliphatic or aromatic hydrocarbons, halogenated solvents or concentrated acids that will cause diaphragm damage like leakage problem.

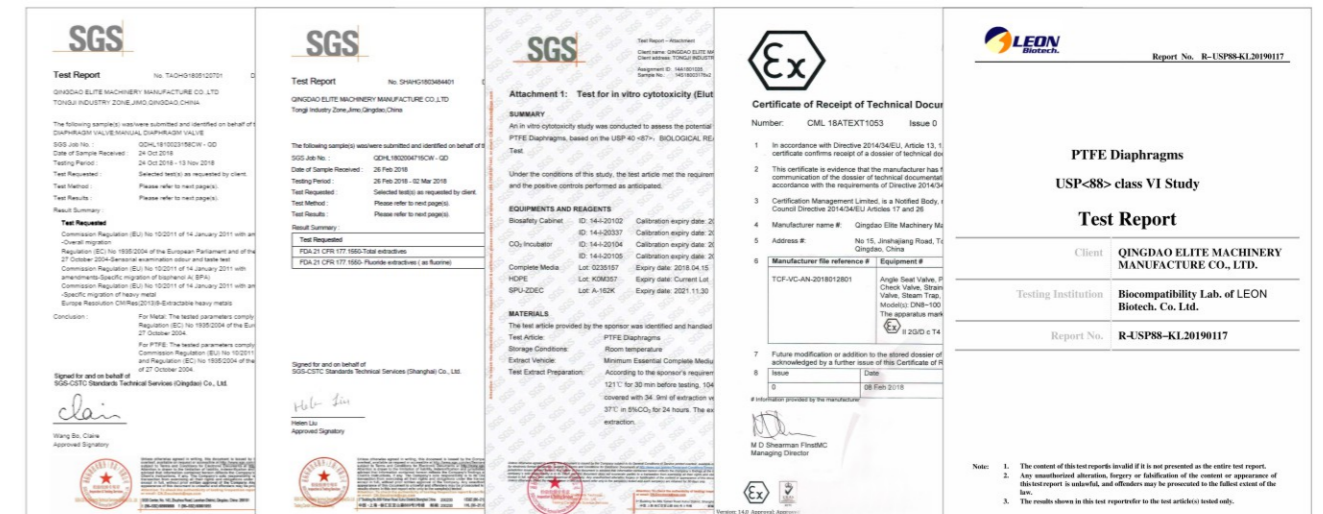
Diaphragm Introduction



* Diaphragms can be ordered separately.

	Working temperature
Single layer <EPDM>	-10°C—150°C
Double layer <EPDM+PTFE>	

Diaphragm certificate



● EC 1935 / FDA(Food and Drug Administration) Certificate / USP(US Pharmacopeia) Certificate / ATEX anti-explosion certificate

Quality Control

1. Valve assembly inspection:
100% inspection according to the shipping inspection form.
2. Diaphragm valve seal test:
100% valve assembly seal test, tested according to DIN EN 12266-1.
3. Inner surface finish:
100% IPQC (in-process control), roughness sampling test according to GB2828.
4. Contact surface inspection:
Material testing – Spectrum analyzer; Dimension inspection – Three Coordinate Measuring Machine.
5. Qualification:
Quality Management System ISO9001, Food Contact Raw Materials and Products Directive EC1935-2004, Explosion-proof Safety ATEX Directive 2014/34/EU.



Roughness tester



Spectromax meter



Three-coordinate measurement machine

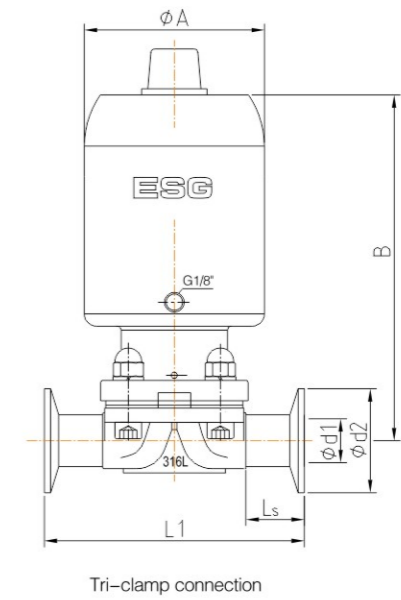
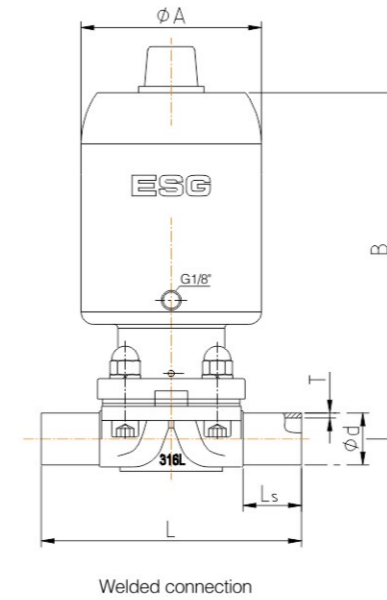


Diaphragm Valve

**A00 Series
Welded Pneumatic
Diaphragm Valve**



**A00 Series
Tri-Clamp Pneumatic
Diaphragm Valve**



Main Dimension

Pneumatic diaphragm valve -Welded connection						ASME-BPE	SMS3008	JIS-G3447	ISO-1127	DIN-11850				DIN-11866		
Size	Diaphragm	Actuator	ϕA	B	Ls	L	$\phi d \times T$	$\phi d \times T$	$\phi d \times T$	$\phi d \times T$	-0	-1	-2	-3	A	B
DN8	8	42	47	85	20	72	6.35 × 0.89	-	-	-	-	-	-	-	-	-
DN10	8	42	47	85	20	72	9.53 × 0.89	-	-	-	-	-	-	-	-	-
DN15	8	50	57	106	17	72	12.70 × 1.65	-	-	-	-	-	-	-	-	-
	10	57	65	134	29.5	108	-	-	-	21.3 × 1.6	18 × 1.5	18 × 1.0	19 × 1.5	20 × 2	19 × 1.5	21.3 × 1.6
DN20	10	57	65	134	29.5	108	19.05 × 1.65	-	-	-	-	-	-	-	-	-
	25	80	88	170	26.5	120	-	-	-	26.9 × 1.6	22 × 1.5	22 × 1.0	23 × 1.5	24 × 2	23 × 1.5	26.9 × 1.6
DN25	25	80	88	170	26.5	120	25.4 × 1.65	25.0 × 1.2	25.4 × 1.2	33.7 × 2	28 × 1.5	28 × 1.0	29 × 1.5	30 × 2	29 × 1.5	33.7 × 2
DN40	40	105	109	196	30	153	38.1 × 1.65	38.0 × 1.2	38.1 × 1.2	48.3 × 2	40 × 1.5	40 × 1.0	41 × 1.5	42 × 2	41 × 1.5	48.3 × 2
DN50	50	125	129	226	30.5	173	50.8 × 1.65	51.0 × 1.2	50.8 × 1.5	60.3 × 2	52 × 1.5	52 × 1.0	53 × 1.5	54 × 2	53 × 1.5	60.3 × 2
DN65	50	125	129	232	30.5	173	63.5 × 1.65	-	-	-	-	-	-	-	-	-

Pneumatic diaphragm valve -Tri-clamp connection						ASME-BPE		ASME-BPE EN558-1 Series 7				SMS3008				JIS-G3447				ISO-1127				DIN-11850								
Size	Diaphragm	Actuator	ϕA	B	ϕd_1	ϕd_2	Ls	L1	ϕd_1	ϕd_2	Ls	L1	ϕd_1	ϕd_2	Ls	L1	ϕd_1	ϕd_2	Ls	L1	ϕd_1	ϕd_2	Ls	L1	ϕd_1	ϕd_2	Ls	L1				
DN8	8	42	47	85	4.57	25	15.5	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
DN10	8	42	47	85	7.75	25	15.5	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
DN15	8	50	57	106	9.4	25	15.5	63.5	9.4	25	35	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	10	57	65	134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.1	50.5	29.5	108	16.0	34	29.5	108
DN20	10	57	65	134	15.75	25	26.3	101.6	15.75	25	34	117	15.75	25	34	117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	25	80	88	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.7	50.5	25	117	20.0	34	25	117
DN25	25	80	88	170	22.1	50.5	23.5	114.3	22.1	50.5	30	127	22.6	50.5	30	127	23	50.5	30	127	29.7	50.5	30	127	26.0	50.5	30	127	26.0	50.5	30	127
DN40	40	105	109	196	34.8	50.5	23	139.7	34.8	50.5	33	159	35.6	50.5	33	159	35.7	50.5	33	159	44.3	64	33.5	159	38.0	50.5	33.5	159	38.0	50.5	33.5	159
DN50	50	125	129	226	47.5	64	23	158.8	47.5	64	39	190	48.6	64	39	190	47.8	64	39	190	56.3	77.5	39	190	50.0	64	39	190	50.0	64	39	190
DN65	50	125	129	232	60.2	77.5	39	190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Other specifications available for customization.

Order Instruction

