

NEW Application For Brine Service



EL Diaphragm Valve

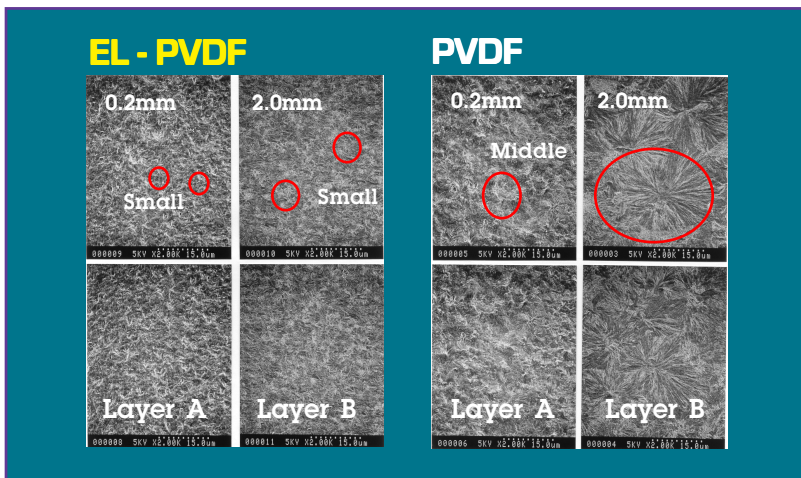
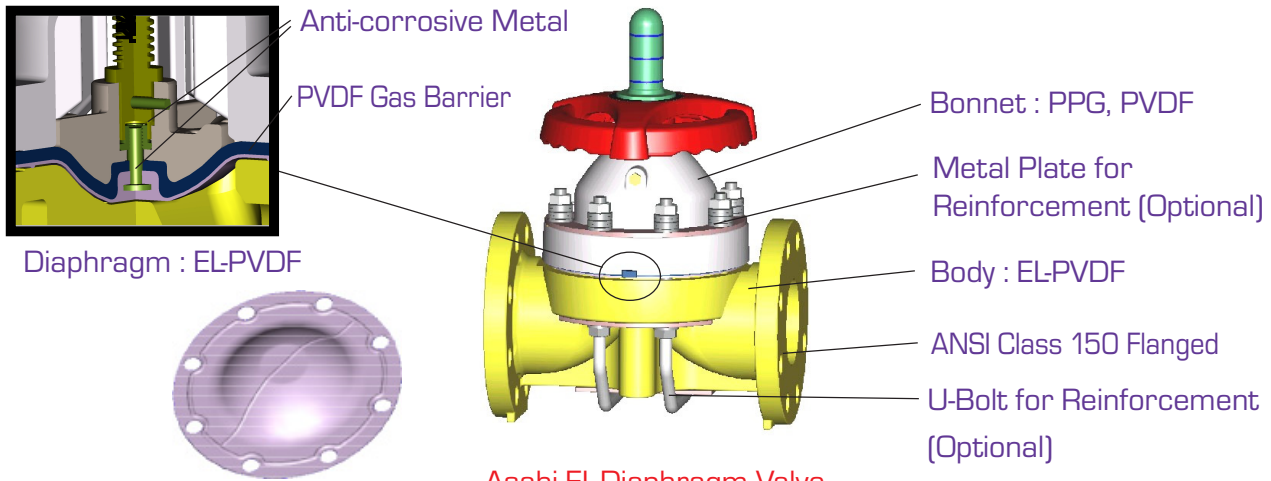
Specifications
Sizes: 1/2" – 4"
Models: Flanged (ANSI) Connection Only
Bodies: EL-PVDF
Bonnets: PVDF, PPG
Diaphragms: EL-PTFE
Hardware: Stainless Steel, Titanium

Material Technology

We have developed a New material EL-PVDF and EL-PTFE for the purpose of preventing the generation of blisters and stress cracks. Their superior performance are proven by excellent laboratory and long term field tests. The EL material design extends the life approx.. twice as long as compared to conventional PVDF.

Design Specification

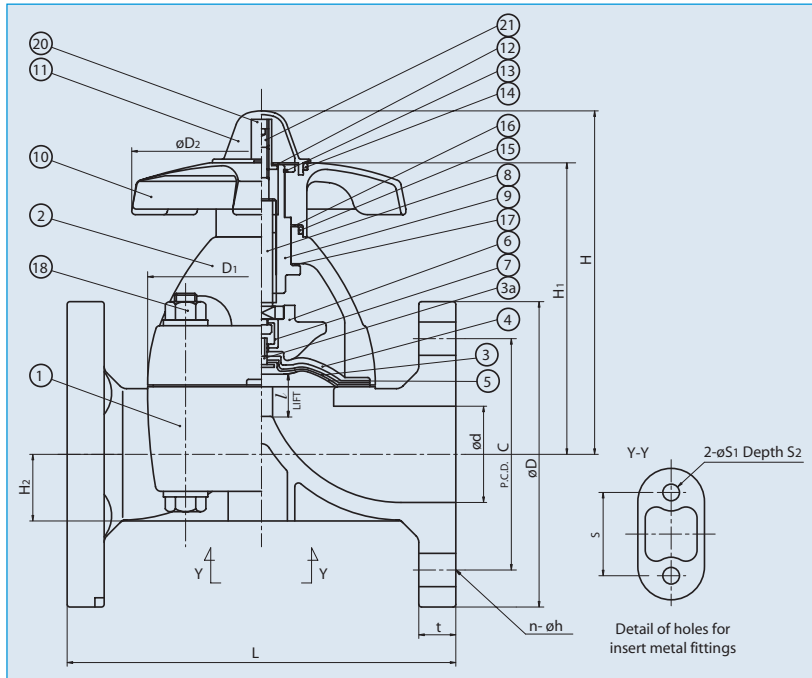
We designed the EL PVDF diaphragm valve specifically for Electrolysis plant applications. The Body and PTFE diaphragm are made from specially developed materials. The PVDF gas barrier prevents permeation of chlorinated gases. The diaphragm and compressor inserts are made of Palladium Titanium to prevent environmental stress cracks.



Design Specification

Here are two electron microscope photographs which show crystallization on the surface of the valve body. The difference of crystallization's size between layer A (depth is 0.2mm) and B (depth is 2.0mm) indicates the ease in which blisters can generate. EL-PVDF makes the blister generation difficult due to the molecular structure. It minimizes blister generation.

EL Diaphragm Valves



Parts (Sizes 1/2" – 2")

PARTS			
NO.	DESCRIPTION	PCS.	MATERIAL
1	Body	1	PVDF (EL Spec.)
2	Bonnet	1	PPG, PVDF
3	Diaphragm	1	PTFE (EL Spec.)
3a	Diaphragm Metal Insert	1	Palladium Titanium
4	Cushion	1	EPDM
5	PVDF Gas Barrier	1	PVDF
6	Compressor	1	PVDF
8	Stem	1	Copper Alloy
8a	Indicating Rod	1	Stainless Steel 304
9	Sleeve	1	Copper Alloy
10	Hand Wheel	1	PP
11	Gauge Cover	1	PC
12	Name Plate	1	PVC
13	Retaining Ring C Type	1	Stainless Steel 304
14	O-Ring (A)	1	EPDM
15	O-Ring (B)	1	EPDM
16	Thrust Ring (A)	1	UHMEPE
17	Thrust Ring (B)	1	UHMEPE
18	Bolt, Nut, Washer	4 Sets	Stainless Steel 304
20	Stopper (A)	1	Copper Alloy
88	Grease Nipple	1	Copper Alloy
89	Compressor Pin	1	Stainless Steel 304
90	Stud Bolt, Nut	4 Sets	Stainless Steel 304, Others
94	Metal of Compressor	1	Stainless Steel 304
1a	Inserted Nut	4	Stainless Steel 304

Dimensions (Sizes 1/2" – 2")

NOMINAL SIZE		ANSI CLASS 150					D1	D2	I	L	t	H	H1	H2	S	S1	S2
INCHES	mm	d	C	D	n	h											
1/2	40	0.63	2.38	3.50	4	0.62	2.13 x 2.60	3.46	0.39	4.25	0.43	4.09	3.39	0.49	0.98	0.28	0.51
3/4	50	0.79	2.75	3.88	4	0.62	2.13 x 2.60	3.46	0.39	5.88	0.51	4.17	3.46	0.57	0.98	0.28	0.51
1	65	0.98	3.12	4.25	4	0.62	2.64 x 3.15	3.46	0.47	5.88	0.59	4.37	3.66	0.73	0.98	0.28	0.51
1 1/4	80	1.26	3.50	4.62	4	0.62	2.64 x 3.15	3.46	0.47	6.38	0.63	4.57	3.82	0.89	0.98	0.28	0.51
1 1/2	100	1.57	3.88	5.00	4	0.62	4.25 x 4.25	6.14	0.83	6.94	0.63	6.97	5.67	1.08	1.77	0.35	0.59
2	125	2.05	4.75	6.00	4	0.75	4.84 x 4.84	6.14	0.98	7.94	0.79	7.52	6.22	1.42	1.77	0.35	0.59

Standard Feature

Flanged (ANSI) face-to-face dimensions are equivalent to most commonly used metallic valves

Rugged body and bonnet are of solid thermo-plastic for maximum corrosion resistance

Uniquely designed body and bonnet together with diaphragms of new sealing designs by computer dynamic analysis for superior sealing

Weir design for excellent throttling

Bubble-tight sealing, even in applications such as slurries or suspended particles

Bonnet seals to protect internals from corrosive environments

Built-in travel stop to prevent over-tightening or compressive strain on diaphragm

Integrally molded bottom stand for simple yet firm panel mounting

Indicator at the top for indication of valve position.

Options

- 2" square nut
- "T"operating nut for remote operation
- Stem extensions (single and two-piece design)
- Locking device for tamper-proofing
- Manual limit switches for remote position indication by lights or for sequencing of other equipment

EL Diaphragm Valves

Pressure Vs. Temperature (1/2" - 4")

(PSI, WATER, NON-SHOCK)

NOMINAL SIZE		EL-PVDF			
		EL-PTFE			
INCHES	mm	-40° F	141° F	176° F	211° F
		140° F	175° F	210° F	250° F
1/2	15	150	120	95	70
3/4	20	150	120	95	70
1	25	150	120	95	70
1 1/4	32	150	120	95	70
1 1/2	40	150	120	95	70
2	50	150	120	95	70
2 1/2	65	150	115	85	70
3	80	150	115	85	70
4	100	150	115	85	70



Excellent Application For Electrolysis Plant

Troubleshooting

What if fluid leaks when valve is fully closed?

1. Travel stop not set correctly. Adjust it per the *Asahi Operation and Maintenance* manual.
2. Solids build up inside valve. Clean inside, including weir and diaphragm.
3. Diaphragm and/or weir are worn or damaged. Change the part(s).

What if valve cannot be fully opened?

1. Diaphragm is not properly engaged with compressor. Check engagement per *Operation and Maintenance* manual.

What if fluid leaks to atmosphere?

1. Bonnet bolts not properly torqued. Retorque according to *Operation and Maintenance* manual.
2. Line pressure exceeds maximum recommended line pressure. Check or reduce system line pressure.
3. Diaphragm has ruptured or has been chemically attacked. Replace diaphragm.

Caution

- After replacing diaphragm, do not tighten bolts for bonnet and body with diaphragm in the closed position. Excessive force could damage bonnet or body.
- Full vacuum rated 1/2" through 2 1/2"
- For vacuum service on 3" and 4", use our "Vacuum-Proof" type.
- Vacuum Rating EL-PTFE Diaphragm
3": -9.84
4": -3.94
- Never remove valve from pipeline under pressure.
- Always wear protective gloves and goggles.