

HD Series HYBRID Fluoropolymer Lined Diaphragm Valves



PPG PPSG CRN REGISTRATION PENDING

SERIES: HD
SIZES: 1/2" to 6"
ENDS: Flanged
BODY: PPG or PPSG
LINING: PFA or PVDF*
DIAPHRAGM: 3-Piece PTFE/TFM/EPDM
OPERATION: Manual or Pneumatically Actuated



The Chemline HD Series HYBRID diaphragm valve is a composite valve with a steel core fully lined with PFA or PVDF. These valves are used for sanitary and high purity applications as well as aggressive chemicals. Diaphragm valves are designed for throttling. They are perfect for a composite (fibreglass), alloy or lined steel piping. The plastic/metal hybrid construction offers the chemical resistance and toughness of plastic along with the strength of metal.

Features

High Working Temperatures

- PPG valves maximum 266°F (130°C)
- PPSG valves maximum 320°F (160°C)

150 psi Pressure Rated

- See pressure/temperature graph

Corrosion Resistant Inside and Out

- All inside wetted parts are fluoropolymer
- Valve exterior is composite

For Composite Alloy and Lined Steel Piping

- Light enough for composite piping systems
- Strong enough for alloy or lined steel piping

Designed for Longer Leak-Free Cycle Life

- Routine re-torquing of bonnet bolts is not required
- Diaphragms are thinner, designed for long cycling life
- 3-piece PTFE diaphragm with gas barrier prevents gas permeation

Easily Serviceable

- Easy disassembly to replace diaphragm

Technical Standards

Flange Connections

- ASME/ANSI B16.5 Class 150
- DIN and JIS standard valves are available

Face-to-Face Dimensions

- Manufacturer's standard

Liner Thickness

- Minimum 3 mm in compliance with ASTM F1545

Leakage Testing

- To confirm zero leakage before shipment, each valve is factory tested according to API 598

* PVDF lining is available with PPG body only



Features

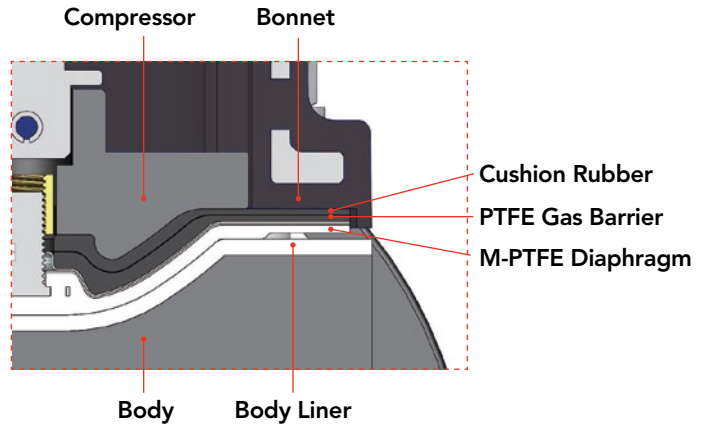


Lockable Hand Wheel

- Available on 1-1/2" size only
- Pull-out locking device accepts padlock or hasp

No Bonnet Leakage

- Thinner diaphragms are designed for longer leak-free cycle life
- Routine re-torquing of bonnet bolts is not required, unlike other diaphragm valves

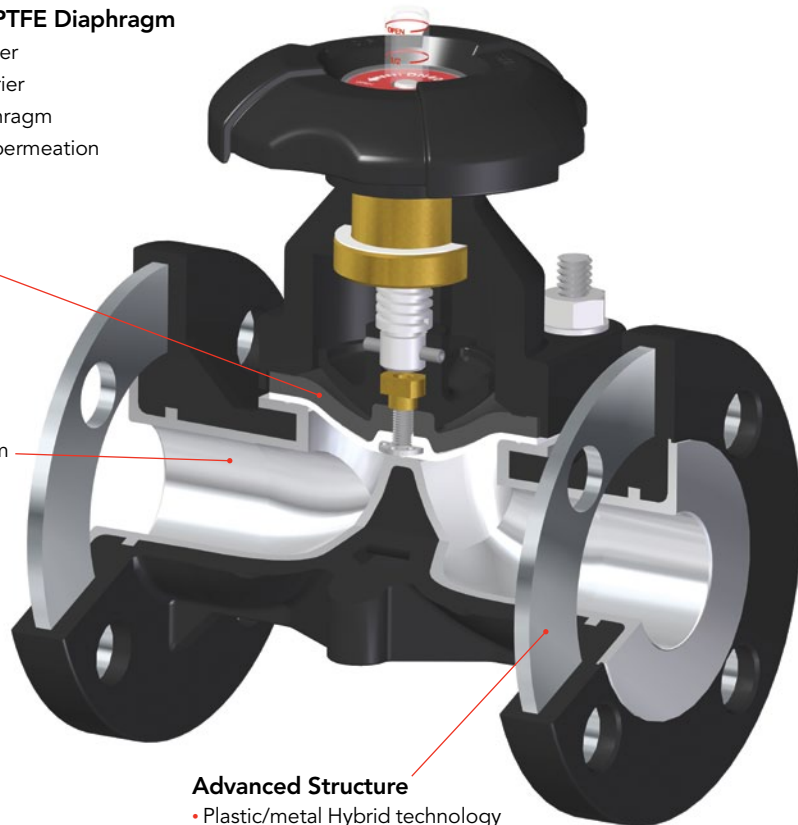


Three-Piece PTFE Diaphragm

- Cushion Rubber
- PTFE Gas Barrier
- M-PTFE Diaphragm
- Prevents gas permeation

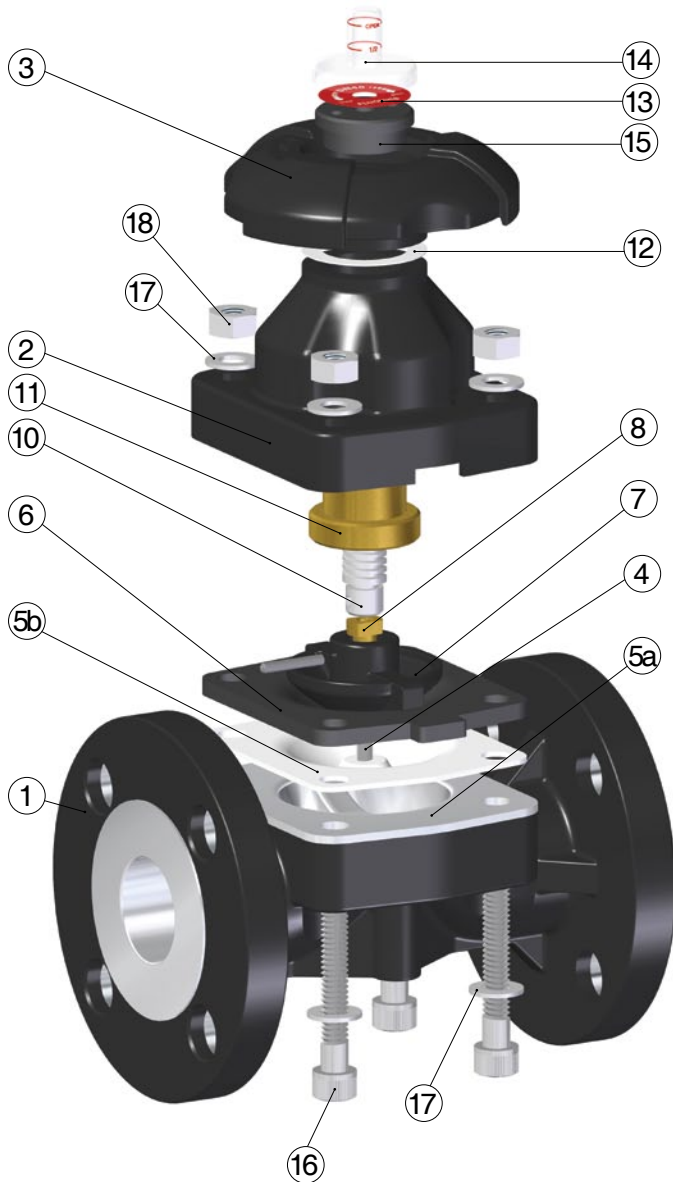
PFA or PVDF Lining

- Lining thickness is minimum 3 mm in compliance with ASTM-F1545.



Advanced Structure

- Plastic/metal Hybrid technology
- Reinforcing steel enhances durability and service life especially in metal piping



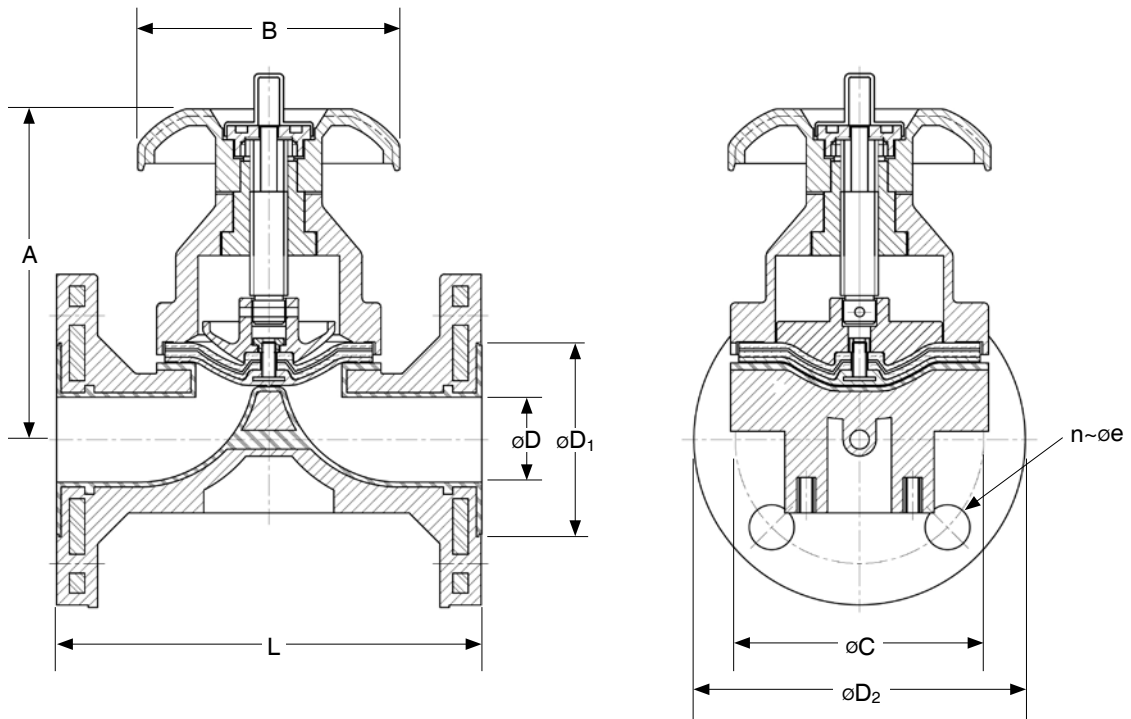
PARTS

No.	Part	Pcs.	Materials
1	Body	1	PPG w/PFA Lining PPG w/PVDF Lining PPSG w/PFA Lining
2	Bonnet	1	PPG, PPSG
3	Handwheel	1	PPG
4	Diaphragm Stud	1	304 SS
5a	Diaphragm	1	M-PTFE
5b	Gas Barrier	1	PTFE
6	Cushion Rubber	1	EPDM, FKM (Viton®)
7	Compressor	1	PAG, PPSG
8	Compressor Pin	1	304 SS
10	Spindle	1	304 SS
11	Spindle Bushing	1	Brass
12	Handwheel Gasket	1	PTFE
13	Name Plate Disc	1	AL
14	Indicator Cap	1	PC
15	Handwheel Cap	1	POM
16	Bolt	4	304 SS
17	Flat Washer	8	304 SS
18	Hex Nut	4	304 SS

OPTIONS

- Pneumatically Actuated
- Handwheel Lockout

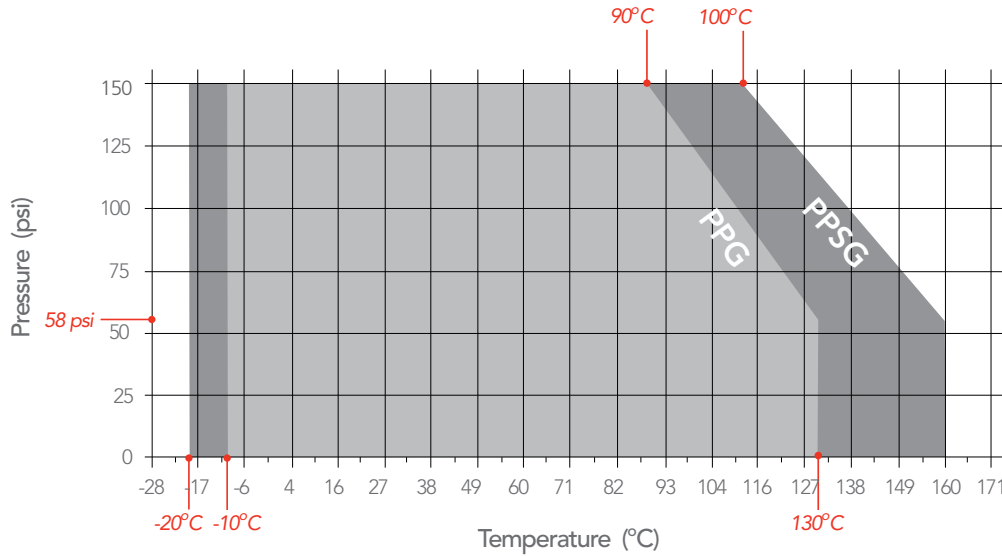
HD Series HYBRID Fluoropolymer Lined Diaphragm Valves



Size	DIMENSIONS INCHES									Cv VALUES	BOLT TORQUES	NET WEIGHTS LBS.
	A	B	C	n	e	D	D ₁	D ₂	L	USGPM@1 psi Pressure Drop	Maximum Flange Bolt Torque ft-lb	PPG Valves
1/2"	3.86	3.35	2.38	4	5/8	0.59	1.62	3.50	4.25	4	18	2.0
3/4"	4.02	3.35	2.76	4	5/8	0.79	1.97	3.88	5.87	8	18	2.4
1"	4.29	3.35	3.12	4	5/8	0.98	2.36	4.25	5.87	10	22	3.1
1-1/2"	5.51	4.37	3.88	4	5/8	1.50	3.15	5.00	7.01	24	26	5.7
2"	6.16	4.92	4.75	4	3/4	1.97	3.74	5.98	7.95	40	26	9.3
3"	8.62	8.27	6.00	4	3/4	3.15	4.92	7.50	10.37	105	33	19.8
4"	10.16	9.84	7.50	8	3/4	3.94	5.79	9.02	12.93	225	33	41.9
6"	13.03	15.75	9.45	8	7/8	5.83	8.19	11.26	18.90	250	52	85.0



WORKING PRESSURES VS. TEMPERATURE



SAMPLE SPECIFICATION

Note: Specification below is for:

- valves with PPG bodies, suitable for temperatures up to 266°F/130°C *, and for
- valves with PPSG bodies, suitable for temperatures up to 320°F/160°C.*

- All composite fluoropolymer lined diaphragm valves 1/2" to 6" will be Chemline HD Series HYBRID diaphragm valves or equal, weir type, pressure rated 150 psi.
- Composite diaphragm valves will have interior steel reinforcement of flanges for durability.
- Composite body material will be (either)
PPG engineering plastic – Polypropylene with 30% glass fiber (OR)
PPSG high performance plastic – glass-filled Polyphenylene Sulfide
- Flange dimensions will be according to ASME/ANSI B16.5 Class 150.
- PFA lining will be minimum 3 mm thickness in compliance with ASTM F1545.
- Diaphragm will be three-piece with M-PTFE diaphragm, PTFE gas barrier and FKM (Viton®) cushion rubber.
- All interior wetted parts will be of PFA or PTFE. The only external metal parts will be 304 stainless steel bolts and nuts.
- All valves will be factory pressure tested according to API 598.

* At maximum temperatures, pressure ratings are lower than the maximum 150 psi. Refer to manufacturer's data.

ORDERING EXAMPLE

Chemline HD Series HYBRID Diaphragm Valves	HD1	G	P	010	P	F
Body	G – PPG S – PPSG					
Liner	P – PFA K – PVDF					
Size	005 – 1/2" 007 – 3/4" 010 – 1" 015 – 1-1/2" 020 – 2" 030 – 3" 040 – 4" 060 – 6"					
Diaphragm	P – PTFE 3-Piece					
Ends	F – Flanged					

Example: Chemline HD Series HYBRID diaphragm valve, PPG body, PFA liner, 1", PTFE 3-piece diaphragm, flanged ends

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