

FINE FLOW



Lined Composite Plastic

Diaphragm Valve



Lined Composite Plastic Diaphragm Valve

Material Properties



● Materials

PP+GF
PA+GF

PPS+GF

PFA

PTFE

PVDF

Engineering Plastic

Engineering plastics have unique combinations of properties including heat resistance, mechanical strength, rigidity, chemical stability, self-lubrication and fire safety. They have numerous industrial applications particularly such as in manufacturing gears and skids, in chemical plants and in car industry.

Super Engineering Plastic

Super engineering plastics have higher resistance to heat, chemicals and wear than engineering plastics. They have advantageous applications particularly in aerospace structures, semiconductor manufacturing equipment, and food and beverage processing machinery.

Perfluoroalkoxy

PFA (Perfluoroalkoxy) has similar advantageous processing properties to FEP (Fluorinated ethylene propylene), but it has ten times greater capability to withstand repeated bending without fracture and has better resistance to heat (up to 260°C) than FEP.

Polytetrafluoroethylene

PTFE (Polytetrafluoroethylene) is a synthetic fluoropolymer of tetrafluoroethylene. Teflon by Chemours is a well-known brand name of PTFE-based formulas. PTFE has useful properties including slippery surface, high melting point, and high resistance to attacks by various chemicals.

Polyvinylidene Fluoride

PVDF (Polyvinylidene fluoride or polyvinylidene difluoride) has been used in special applications which require highest purity as well as high resistance to solvents, acids and hydrocarbons.

Series CDI1 / CDI2

Diaphragm valve

● Features

- Lined diaphragm valve for chemically corrosive media
- Plastic-metal hybrid structure
- Optimized flow
- Easy to clean valve interior and to be maintained and replaced without disassembly
- Handwheel locking device
- Option: 4-layered diaphragm

● Applications

- Chemical process
- Desalination
- Water and waste water technology
- Shipbuilding
- Semiconductor manufacturing
- Hazardous services (Acetic Acid, Sulfuric Acid etc.)



Series CDI1/CDI2 diaphragm valve have advanced structure (Plastic – Metal Hybrid Technology)

FINE FLOW's valves with innovative Plastic-metal hybrid structure have not only provided longer durability and service life, but also been suitable to more aggressive environment than ordinary plastic valves.

● Technical specifications

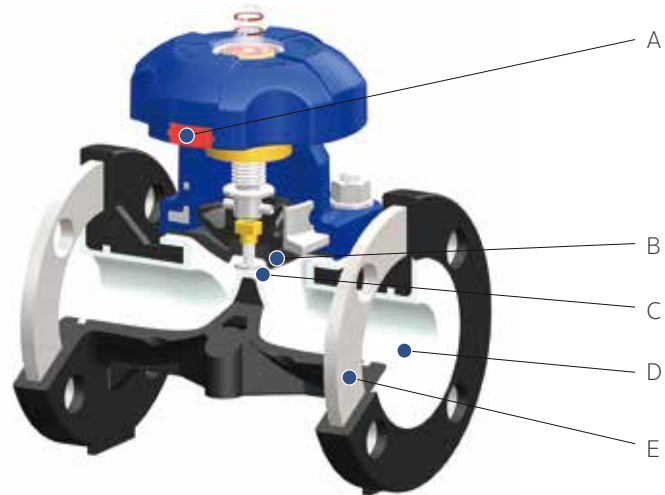
Construction	Weir type
Body type	One piece
Available size	DN15 – DN150
Face to face	DIN 3202 FINEFLOW STANDARD
End connection	DIN 2501, PN16 ANSI B16.5, Class 150 JIS B 2220, 10K
Control type	Manual, pneumatic actuator
Tightness check	API 598
Valve material	Body : PPG or PPSG with PFA Bonnet : PPG or PPSG Handwheel : PPG or PPSG
Seal material	PTFE Diaphragm

| Series **CDI1**

● FINEFLOW Diaphragm

● Flange Bolt Torques

Size (DN)	Max. Recommended Flange Torque(N·m)
15	25
20	25
25	30
40	35
50	35
80	45
100	45
150	70



● Features & Benefits



A Lockable Handwheel

Non-rising handwheel is locked by padlock in any position.



B PTFE-layered Rubber Diaphragm

PTFE layer protects cushion rubber from gas permeation.



C PTFE-layered M-PTFE Diaphragm

PTFE-layered gas barrier protects cushion rubber from gas permeation.



D PFA / PVDF Liner

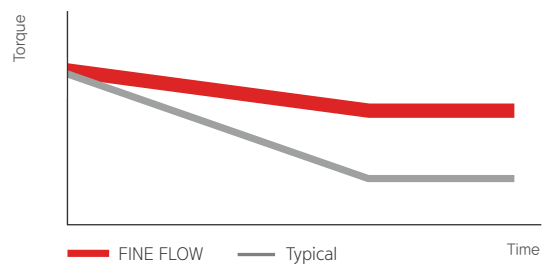
- Liner thickness: minimum 3mm in compliance with ASTM F1545
- Both PFA and PVDF liners available



E Advanced Structure

(Plastic - Metal Hybrid Technology)
The structure enhances durability and service life even in more aggressive environment.

● Bonnet Bolting Torque

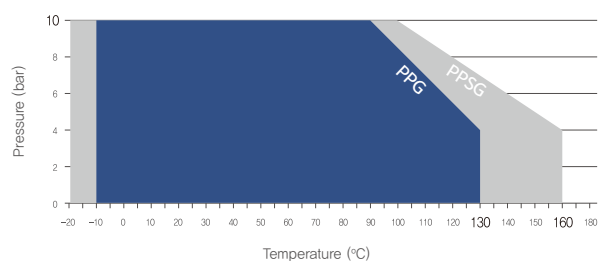


— FINE FLOW — Typical

- Thinner cushion rubber at bonnet sealing area ensures consistent contact pressure to the body and the bonnet.
- Retightening against leaks from bonnet will not be required on normal condition.

● Pressure-Temperature Chart

| Series CDI1



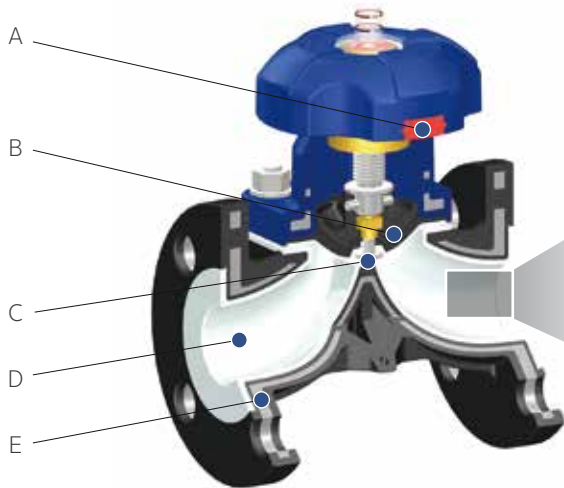
Series **CDI2**

► **Heavy duty service**

● **FINEFLOW Optimized Flow Diaphragm**

Series **CDI2** is suitable to severe service conditions

The Cv value of CDI2 model improves by 70% compared to that of CDI1 model.



● **Cv-Values**

DN	Cv	
	CDI1	CDI2
15	4	
20	8	
25	10	18
40	24	42
50	40	70
65	65	
80	105	
100	225	
150	250	

● **Features & Benefits**



A Lockable Handwheel

Non-rising handwheel is locked by padlock in any position.



B PTFE-layered Rubber Diaphragm

PTFE layer protects cushion rubber from gas permeation.



C PTFE-layered M-PTFE Diaphragm

PTFE-layered gas barrier protects cushion rubber from gas permeation.



D PFA / PVDF Liner

- Liner thickness: minimum 3mm in compliance with ASTM F1545
- Both PFA and PVDF liners available

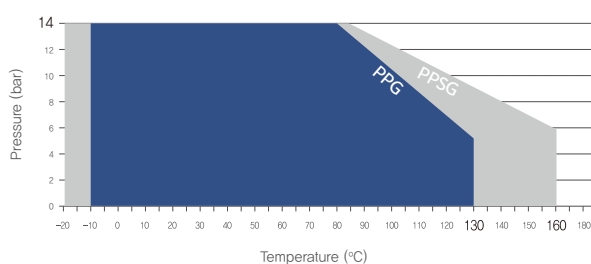


E Advanced Structure

(Plastic - Metal Hybrid Technology)
The structure enhances durability and service life even in more aggressive environment.

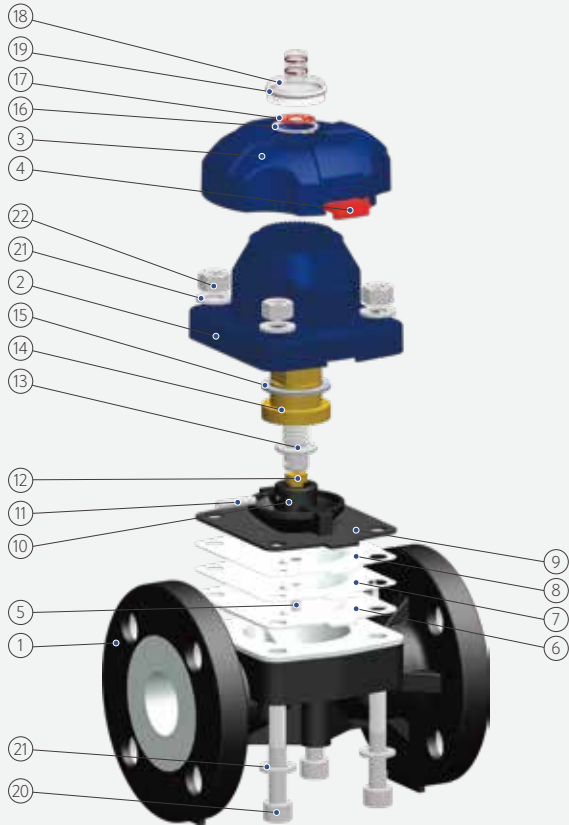
● **Pressure-Temperature Chart**

| Series **CDI2**

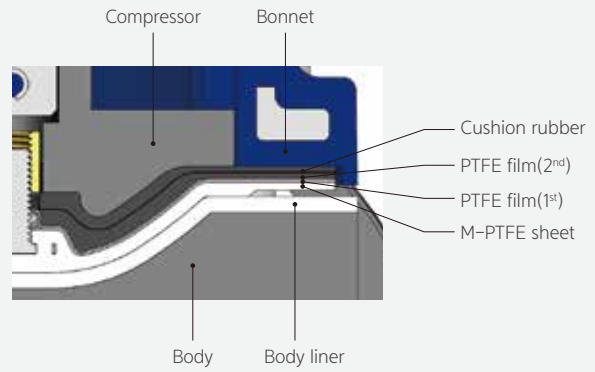


Structure & Specification

Series CDI1/CDI2



Diaphragm options



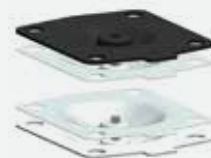
Standard (2-layered diaphragm)

- M-PTFE sheet
- Cushion rubber



Option-1 (3-layered diaphragm)

- M-PTFE sheet
- PTFE film(1st)
- Cushion rubber



Option-2 (4-layered diaphragm)

- M-PTFE sheet
- PTFE film(1st)
- PTFE film(2nd)
- Cushion rubber

Lined Composite Plastic Diaphragm Valve Series CDI1 / CDI2

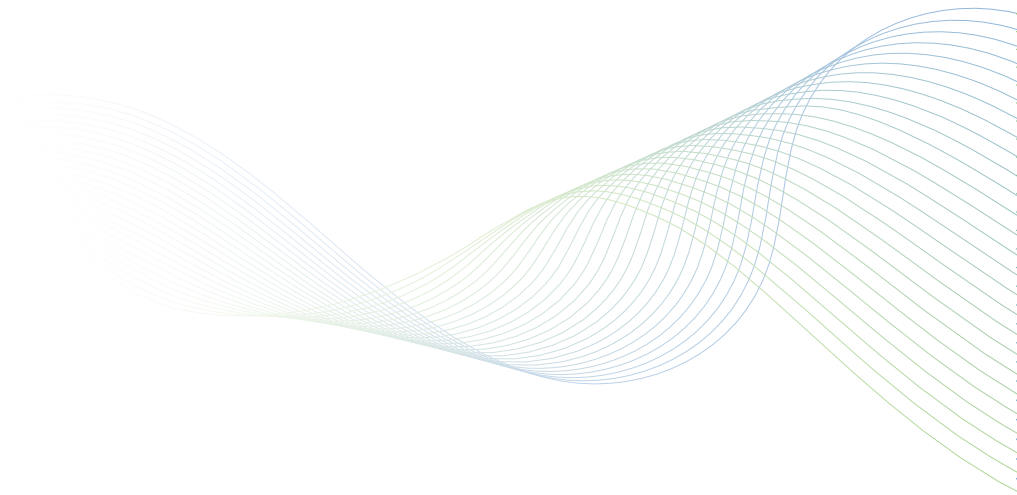
No.	Description	Material
1	Body	PPG / PPSG WITH PFA
2	Bonnet	PPG / PPSG
3	Handwheel	PPG
4	Locking plate	PAG
5	Sheet bolt	Stainless Steel/Ti-Pd
6	PTFE diaphragm	M-PTFE
7	Film diaphragm	PTFE
8	Film diaphragm	PTFE
9	Rubber diaphragm	EPDM/FKM
10	Compressor	PAG/PPSG
11	Compressor pin	Stainless Steel

No.	Description	Material
12	Floating connection	BRASS
13	Spindle	Stainless Steel
14	Spindle bushing	BRASS
15	Bushing bearing	POM
16	Snap ring	Stainless Steel
17	Nameplate sticker	AL
18	Indicator cap	PC
19	O-ring	FKM
20	Bolt	Stainless Steel
21	Flat washer	Stainless Steel
22	Nut	Stainless Steel



High Performance and Creative Technology Company

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본사 | T. 033-731-3550 F. 033-731-3559 강원 원주시 호저면 광학로 163-2
판교영업소 | T. 031-8018-6789 F. 031-8018-6787 경기 성남시 판교로 253(판교 이노밸리) B동 604-4호
울산영업소 | T. 052-258-3550 F. 052-258-3559 울산시 울주군 청량읍 상남리 801-2

E-mail sales@fluonics.com