#### CM Series Compact Diaphragm Valves Submittal Data Sheet



# introduction

< STANDARDS >



ASTM D1784 ASTM D4101-86 ASTM D3222 ASTM D2466 ASTM D2467 ASTM F439



IPEX CM Series Compact Diaphragm Valves have an efficient design and are ideal for OEMs. A variety of body and diaphragm materials plus the option of pneumatic actuation combine to make this valve the perfect choice in a wide range of applications. A standard position indicator and integrated mounting bushings complete the long list of features. CM Series Compact Diaphragm Valves are part of our complete systems of pipe, valves, and fittings, engineered and manufactured to our strict quality, performance, and dimensional standards.

Valve Availability	
Body Material:	PVC, CPVC, PP, PVDF
Size Range:	1/2", Metric 16mm & 20mm
Pressure:	90 psi
Diaphragm:	EPDM, Viton <sup>®</sup> (FPM), or PTFE (EPDM backed)
Control Style:	Manual Handwheel or Pneumatically Actuated
End Connections:	True Union (Socket) Socket (Metric) Spigot (Metric)



#### Valve Selection

Value Size	Dody	Dianhragm	IPEX Part Number		Pressure
(inches)	Material	Material	Manual True Union	Pneumatic True Union	Rating @ 73°F
		EPDM	054127	054151	
	PVC	Viton®	054129	054152	
1.0		PTFE	054131	054153	90 psi
1/2	CPVC	EPDM	054128	054154	
		Viton®	054130	054155	
		PTFE	054132	054156	
			IDEV Dor	t Numbor	2
Valve Size	Body	Diaphragm	IFEX Fart Number		Pressure
(mm)	Material	Material	Manual Socket	Pneumatic Socket	@ 73ºF
		EPDM	054133	054157	
	PP	Viton®	054136	054160	
10		PTFE	054139	054163	90 psi
10	PVDF	EPDM	054142	054166	
		Viton®	054145	054169	
		PTFE	054148	054172	
Valve Size	Body	Diaphragm	IPEX Part Number		Pressure
(mm)	Material	Material	Manual Spigot	Pneumatic Spigot	Rating @ 73°F
		EPDM	054134	054158	
	PP	Viton®	054137	054161	
00		PTFE	054140	054164	00
20		EPDM	054143	054167	90 psi
	PVDF	Viton®	054146	054170	
		PTFE	054149	054173	
Valve Size (mm)	Body	Diaphragm	IPEX Part Number		Pressure
	Material	Material	Manual True Union	Pneumatic True Union	@ 73°F
		EPDM	054135	054159	
	PP	Viton®	054138	054162	
00		PTFE	054141	054165	
20		EPDM	054144	054168	90 psi

**PVDF** 

**Body Material:** □ PVC PP CPVC PVDF Size: **□** 1/2" □ 16mm □ 20mm **Diaphragm:** EPDM □ Viton<sup>®</sup> (FPM) □ PTFE **Control Style:** Manual Handwheel □ Pneumatic (Normally Closed) **End Connections:** □ True Union (Socket) □ Socket Spigot **IPEX Part Number:** 



054147

054150

Viton<sup>®</sup> PTFE 054171

054174

Components





#	Component	Material	Qty
1*	valve body	PVC / CPVC / PP / PVDF	1
2	diaphragm	EPDM / Viton <sup>®</sup> / PTFE	1
3	compressor	polyamide	1
4	washer	zinc plated steel	1
11	washer	SS	4
12	bolt	zinc plated steel	4
16	cover	polyamide	1
17	guide	polyamide	1
18	indicator - stem	brass	1
19	bushing	zinc plated steel	1
20	bonnet	brass	1
21	handwheel	GRPP	1

#	Component	Material	Qty
1*	valve body	PVC / CPVC / PP / PVDF	1
2	diaphragm	EPDM / Viton® / PTFE	1
5	bolt	SS	4
6	washer	SS	4
7	compressor	GRPP	1
8	nut	SS	1
9	stem	SS	1
10	bonnet	GRPP	1
13	nut	SS	4
14	protective cap	POM	4
15	position indicator	PVDF	1
22	o-ring	NBR	1
23	handwheel	GRPP	1
24	o-ring	NBR	1
25	handwheel plate	GRPP	1
26	bolt	SS	1

\* Spare parts available. Contact IPEX for availability of spare components for True Union style valves.



#### Components (cont'd)

#### pneumatic control



#	Component	Material	Qty
1	protective cap	PVC	1
2	o-ring	NBR	1
3	cover	polyamide	1
4	spring <sup>1</sup>	steel	1
5	stem - piston	SS - polyamide	1
6	gasket <sup>2</sup>	NBR	1
7	o-ring	NBR	1
8	guide	polyamide	1
9	bolt	zinc plated steel	2
10	gasket	NBR	1
11	washer	zinc plated steel	1
12	washer	zinc plated steel	1
13	compressor	polyamide	1
14	diaphragm	EPDM / Viton <sup>®</sup> / PTFE	1
15*	valve body	PVC / CPVC / PP / PVDF	1
16	washer	zinc plate steel	4
17	bolt	SS	4

\* Spare parts available. Contact IPEX for availability of spare components for True Union style valves.

<sup>1</sup> for NC and NO versions only.

<sup>2</sup> o-ring for DA version.



### CM Series Compact Diaphragm Valves Installation Procedures



- 1. The valve may be installed in any position or direction.
- 2. Please refer to the appropriate connection style sub-section:
  - a. For true union style, remove the union nuts and slide them onto the pipe.
    - For socket style, solvent cement the end connectors onto the pipe ends. For correct joining procedure, please refer to the section entitled, *"Joining Methods – Solvent Cementing"* in the IPEX Industrial Technical Manual Series, *"Volume I: Vinyl Process Piping Systems"*. Ensure that excess solvent does not run into the body of the valve. Be sure to allow sufficient cure time before continuing with the valve installation.
    - ii. For threaded style, thread the end connectors onto the pipe ends. For correct joining procedure, please refer to the section entitled, "Joining Methods – Threading" in the IPEX Industrial Technical Manual Series, "Volume 1: Vinyl Process Piping Systems".
    - iii. Ensure that the socket o-rings are properly fitted in their grooves then carefully place the valve in the system between the two end connections.
    - iv. Tighten both union nuts. Hand tightening is typically sufficient to maintain a seal for the maximum working pressure. **Over-tightening may** damage the threads on the valve body and/or the union nut, and may even cause the union nut to crack.
  - b. For socket style, solvent cement the pipe into the end connections of the valve. For correct joining procedure, please refer to the section entitled, *"Joining Methods Solvent Cementing"* in the IPEX Industrial Technical Manual Series, *"Volume I: Vinyl Process Piping Systems"*. Ensure that excess solvent does not run into the body of the valve. Be sure to allow sufficient cure time before continuing with the valve installation.
  - c. For spigot style, solvent cement each pipe onto the ends of the valve body. **Ensure that excess solvent does not run into the body of the valve.**
- 3. If anchoring is required, fix the valve to the supporting structure using the mounting holes on the bottom of the valve body.



### CM Series Compact Diaphragm Valves Testing and Operating



The purpose of system testing is to assess the quality of all joints and fittings to ensure that they will withstand the design working pressure, plus a safety margin, without loss of pressure or fluid. Typically, the system will be tested and assessed in sub-sections as this allows for improved isolation and remediation of potential problems. With this in mind, the testing of a specific installed valve is achieved while carrying out a test of the overall system.

An onsite pressure test procedure is outlined in the IPEX Industrial Technical Manual Series, *"Volume I: Vinyl Process Piping Systems"* under the section entitled, *"Testing"*. The use of this procedure should be sufficient to assess the quality of a valve installation. In any test or operating condition, it is important to never exceed the pressure rating of the lowest rated appurtenance in the system.

#### Important points:

- Never test thermoplastic piping systems with compressed air or other gases including air-over-water boosters.
- When testing, do not exceed the rated maximum operating pressure of the valve.
- Avoid the rapid closure of valves to eliminate the possibility of water hammer which may cause damage to the pipeline or the valve.

Please contact IPEX customer service and technical support with regard to any concern not addressed in this data sheet or the technical manual.



Notes





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