

Economic Diaphragm Valves

DE Series

Introduction

DE series economic diaphragm valves are typical products for ultra high purity gas fluid systems. While maintaining the same basic performance by using the same materials, cleaning and packaging processes as the other series of FITOK diaphragm valves. FITOK's advance manufacturing processes and stringent quality control ensure the products meet the application needs of ultra high purity gas fluid systems for the semiconductor industry.



Features

- Minimal particle generation and minimal dead space
- Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- No springs or threads in wetted areas improves cleanliness

Technical Data

Port Size	1/4"	
Flow Coefficient (Cv)	0.27	
Orifice Size	0.16 in. (4.1 mm)	
Working Pressure	Vacuum to 150 psig (10.3 bar)	
Pneumatic Actuator Operating Pressure	60 ~ 90 psig (4.2 ~ 6.2 bar)	
Temperature	-10 ~ 176 °F (-23 ~ 80 °C)	
Leak Rate (Helium)	Internal	$\leq 1 \times 10^{-9}$ std cm ³ /s
	External	$\leq 1 \times 10^{-9}$ std cm ³ /s

Flow Data

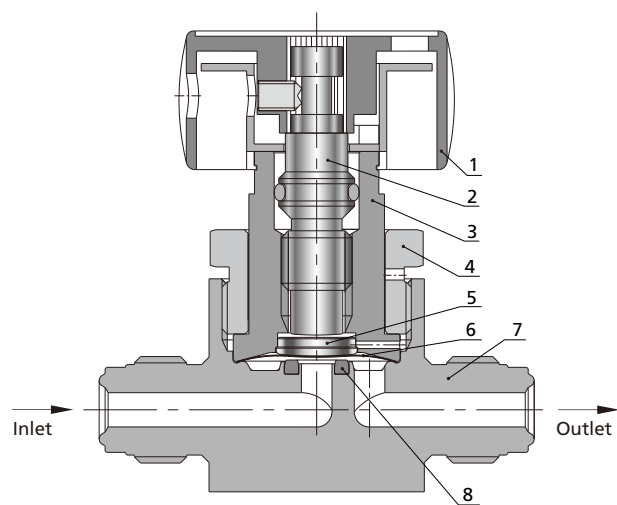
Air @ 70 °F (21 °C)
Water @ 60 °F (16 °C)

Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
10 (0.68)	86	3.2
50 (3.4)	230	7.2
100 (6.8)	410	10.2

Process Specification

Item	Process Specification	Ultra High Purity Process (FC-03)
Material		316L SS
Wetted Surface Roughness		Ra 5 μin. (0.13 μm)
Polishing Process		Electropolished
Cleaning		Ultra high purity cleaning in continuously monitored ultrasonic cleaning system with deionized water
Assembly Environment		ISO Class 4 (FS 209E Class 10 equivalent) cleanroom
Packaging		Double bagged in cleanroom

Major Materials of Construction



Item	Component	Material / Specification
1	Handle	Aluminum
2	Stem	316 SS/ASTM A479
3	Bonnet	S17400/ASTM A564
4	Bonnet Nut	316 SS/ASTM A479
5	Button	316 SS/ASTM A479
6	Diaphragm	Cobalt Alloy/AMS 5876
7	Body	316L SS
8	Seat	PCTFE/ASTM D1430

Handles and Actuators

Manual - Round Handle

- Quick, half-turn actuation
- Handle with window to visually indicate open and closed states



Normally Closed Pneumatic

- Normally Closed, "N.C." marked on the top of the actuator



Dimensions and Ordering Information

Dimensions, in inches (millimeters), are for reference only.

Fittings

Valves

Regulators

Filters

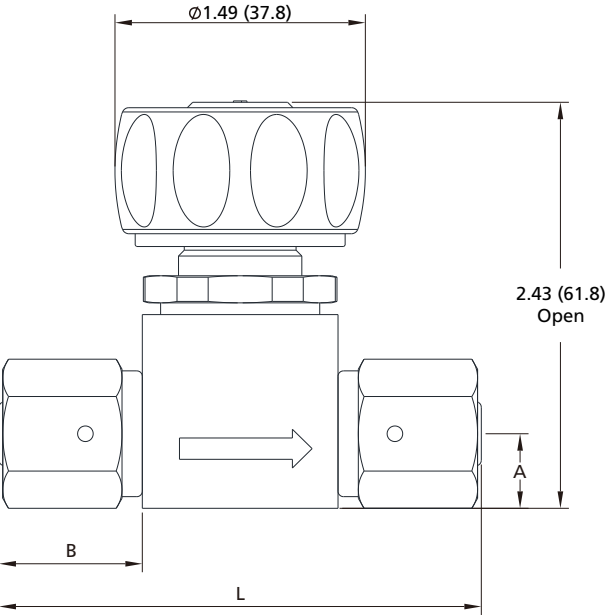
Tubing

Integrated Systems

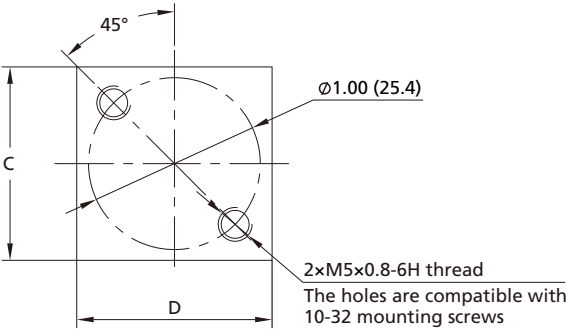
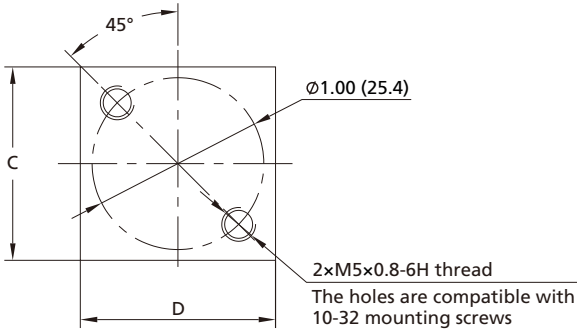
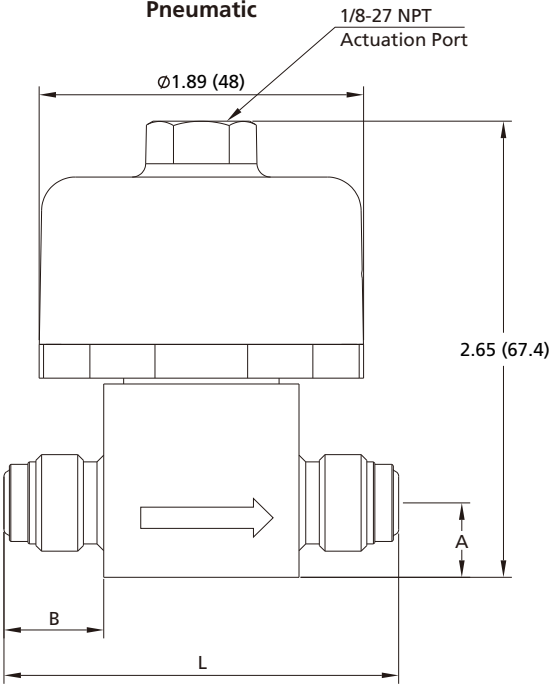
Other Products

Technical Information

Manual - Round Handle

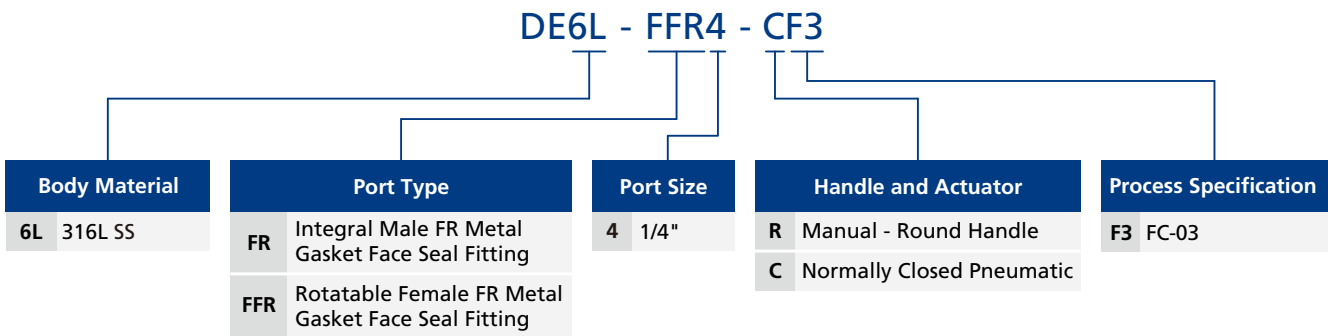


Pneumatic



Ordering Number	Connection Type and Size	Dimensions, in. (mm)				
		A	B	C	D	L
DE6L-FFR4-RF3	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.43 (11)	0.82 (20.9)	1.13 (28.6)	1.14 (28.9)	2.78 (70.6)
DE6L-FFR4-CF3						
DE6L-FR4-RF3	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.43 (11)	0.58 (14.7)	1.13 (28.6)	1.14 (28.9)	2.30 (58.4)
DE6L-FR4-CF3						

Part Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available; Should you have any questions, please contact FITOK Group or our authorized distributors.