Diaphragm Valves

DF Series High Pressure/High Flow Diaphragm Valves

Features

◎ Ideal for high flow applications
◎ Metal-to-metal seal
◎ Spring type design
◎ Elgiloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
◎ Indicator switch available assembled on pneumatic valves, transmitting a signal to an electrical device to indicated either the open or closed position of the valves
◎ Normally closed and normally open indicator switches optional

Technical Data

Port Size		3/8" to 1/2" or 8 mm to 12 mm
Flow Coefficient (Cv)		0.80
Orifice Size		0.31 in. (8.0 mm)
Max. Working Pressure	**Handle**	3500 psig (241 bar)
	Pneumatic	3000 psig (206 bar)
Max.Differential Back Pressure		150 psig (10.3 bar)
Pneumatic Actuator Operating Pressure		60 to 90 psig (4.2 to 6.2 bar)
Temperature		PCTFE: -10~150°F (-23~65°C) Vespel: -10~250°F (-23~121°C)
Leak Rate (Helium)	**Internal**	$\leqslant 4x10^{-9}$ mbar l/s
	External	$\leqslant 4x10^{-9}$ mbar l/s

Flow Data

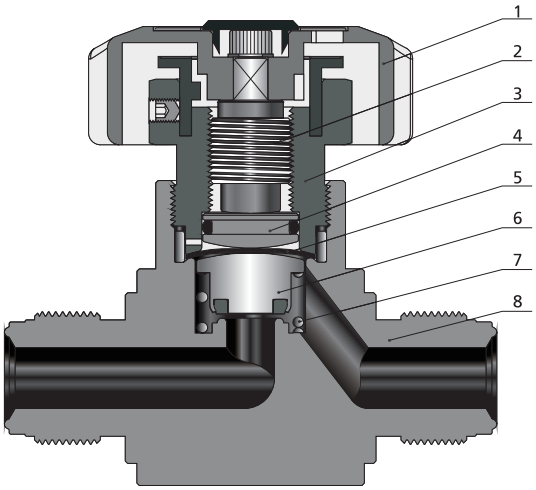
Air @ 70°F (21°C)
Water @ 60°F (16°C)

Pressure Drop to Atmosphere psi (bar)	Air (l/min)	Water (l/min)
10 (0.68)	274	9.5
50 (3.4)	733	21.5
100 (6.8)	1300	30.3

Product Technology Grade

Technology \ Product Grade	General Purpose	Special Cleaning and Packaging (F2)	Ultra High Purity (F3)
Material/Specification	316 SS/ASTM A479 or 316L SS/ASTM A479		316L SS/ASTM A479
Wetted Surface Roughness	Ra 20 μin. (0.51 μm)		Ra 10 μin. (0.25 μm)
Polishing Process	Machine finished		Electropolished
Process Specification	FC-01 Standard Cleaning and Packaging	FC-02 Special Cleaning and Packaging	FC-03 Ultra High Purity Process Specification
Cleaning	Thrice degreasing ultrasonic cleaning	Special cleaning with non-ozone-depleting chemicals	Ultra high purity cleaning in continuously monitored ultrasonic cleaning system with deionized water
Assembly Environment	At atmosphere	In specially cleaned areas	In ISO Class 5/Federal Class 100 cleanroom
Packaging	Individually bagged	Double bagged	Double bagged and vacuum sealed in cleanroom

Major Materials of Construction



Round Handle Model

Item	Component	Material/Specification
1	Handle	Aluminum
2	Actuator	316 SS/ASTM A479
3	Bonnet Nut	S17400/ASTM A564
4	Button	C36000/ASTM B16
5	Diaphragm (5)	Elgiloy (3) /AMS 5876 + C17200 (2) /ASTM B194
6	Stem Subassembly	316L SS/ASTM A479 and PCTFE/ASTM D1430 or 316L SS/ASTM A479 and Vespel
7	Spring	316 SS/ASTM A313
8	Body	316 SS/ASTM A479 or 316L SS/ASTM A479

Actuators

Manual - Round Handle

- One-half turn to operate from fully open to closed
- Handle with window to visually indicate open and closed states

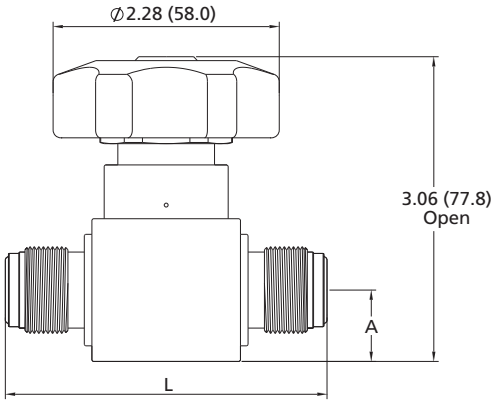
Pneumatic

- Normally open, "N.O." marked on the top of the cylinder
- Normally closed, "N.C." marked on the top of the cylinder

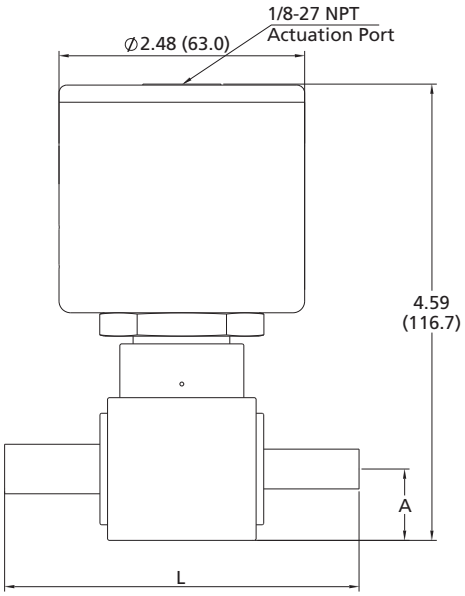
Dimensions

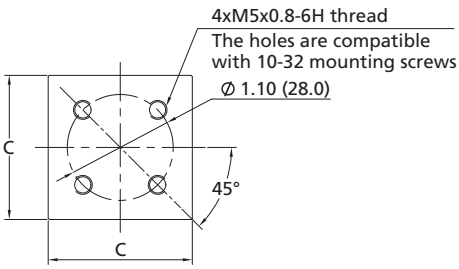
Dimensions, in inches (millimeters), are for reference only.

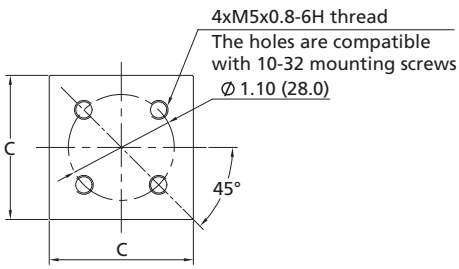
Manual - Round Handle



Pneumatic







Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)		
		A	C	L
DF□□-TB6-	3/8" Tube Butt Weld	0.71 (18.0)	1.50 (38.1)	3.58 (90.9)
DF□□-TB8-	1/2" Tube Butt Weld	0.71 (18.0)	1.50 (38.1)	3.58 (90.9)
DF□□-FR8-	1/2" Integral Male FR	0.71 (18.0)	1.50 (38.1)	3.25 (82.5)
DF□□-FFR8-	1/2" Female FR	0.71 (18.0)	1.50 (38.1)	3.89 (98.8)
DF□□-FL6-	3/8" FITOK Tube Fitting	0.71 (18.0)	1.50 (38.1)	3.27 (83.0)
DF□□-FL8-	1/2" FITOK Tube Fitting	0.71 (18.0)	1.50 (38.1)	3.47 (88.2)
DF□□-FNS8-	1/2" Female NPT	0.71 (18.0)	1.50 (38.1)	3.30 (84.0)

Ordering Number Description

DFSS – FR8 – FL8 – CVF2M

Body Material	
6L	316L SS
SS	316 SS

Inlet Type	
TB	Fractional Tube Butt Weld
MTB	Metric Tube Butt Weld
FR	Integral Male FR Fitting
FFR	Female FR Fitting
FL	Fractional Tube Fitting
ML	Metric Tube Fitting
NS	Male NPT
FNS	Female NPT

Inlet Size	
6	3/8"
8	8 mm or 1/2"
10	10 mm
12	12 mm

Outlet Type / Outlet Size	
	Same as Inlet

Specified in the same way as Inlet type and size

Actuator Type	
R	Handle
C	Pneumatic Normally Closed
O	Pneumatic Normally Open

Seat	
	PCTFE
V	Vespel

Technology Grade	
	General Purpose
F2	Special Cleaning and Packaging
F3	Ultra High Purity

Indicator Switch (only for pneumatic valves)	
	None
M	Normally Open
M2	Normally Closed