

Diaphragm Valves

DL Series Low Pressure/Ultra High Flow Diaphragm Valves

Features

- ⦿ Ideal for ultra high flow applications
- ⦿ Metal to metal sealed diaphragm to ensure excellent leak integrity
- ⦿ Internally threadless and springless
- ⦿ PCTFE stem tip insert for leak-tight shutoff
- ⦿ Upper stem position to indicate open and closed states

Technical Data

Port Size	3/4" to 1" or 23 mm to 25 mm	
Flow Coefficient (Cv)	13	
Orifice Size	1.125 in. (28.6 mm)	
Max. Working Pressure	300 psig (20.6 bar)	
Temperature	PCTFE: -10~150°F (-23~65°C) Vespel: -10~250°F (-23~121°C)	
Leak Rate (Helium)	Internal	≤1x10 ⁻⁹ mbar l/s
	External	≤1x10 ⁻⁹ mbar l/s

Flow Data

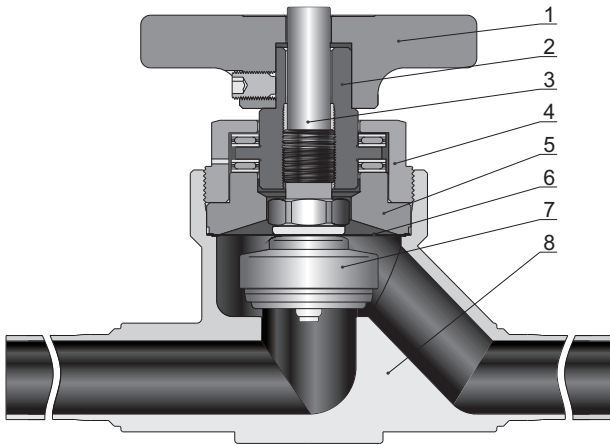
Air @ 70°F (21°C)
Water @ 60°F (16°C)

Pressure Drop to Atmosphere psi (bar)	Air (l/min)	Water (l/min)
10(0.68)	3900	150
50(3.4)	11000	340
100(6.8)	19500	490

Product Technology Grade

Product Grade Technology	General Purpose	Special Cleaning and Packaging (F2)	Ultra High Purity (F3)
Material/Specification	CF8M/ASTM A351, CF3M/ASTM A351, 316 SS/ASTM A479		316L SS/ASTM A479
Wetted Surface Roughness	Ra 20 μin. (0.51 μm)		Ra 5 μin. (0.13 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

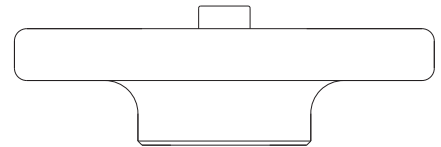


Item	Component	Material/Specification
1	Handle	Aluminum
2	Actuator	416 SS/ASTM A582
3	Upper stem	316 SS/ASTM A479
4	Bonnet nut	316 SS/ASTM A479
5	Bonnet	316 SS/ASTM A479
6	Diaphragm (3)	Elgiloy/AMS 5876
7	Stem subassembly	316L SS/ASTM A479 and PCTFE/ASTM D1430 or 316L SS/ASTM A479 and Vespel
8	Body	CF8M/ASTM A351, CF3M/ASTM A351 316 SS/ASTM A479 316L SS/ASTM A479

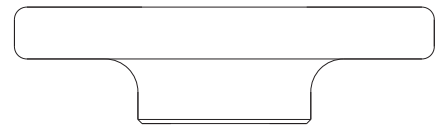
Actuators

Handle

- ⦿ Five turns and a half to operate from fully open to closed
- ⦿ Upper stem position to indicate open and closed states



OPEN

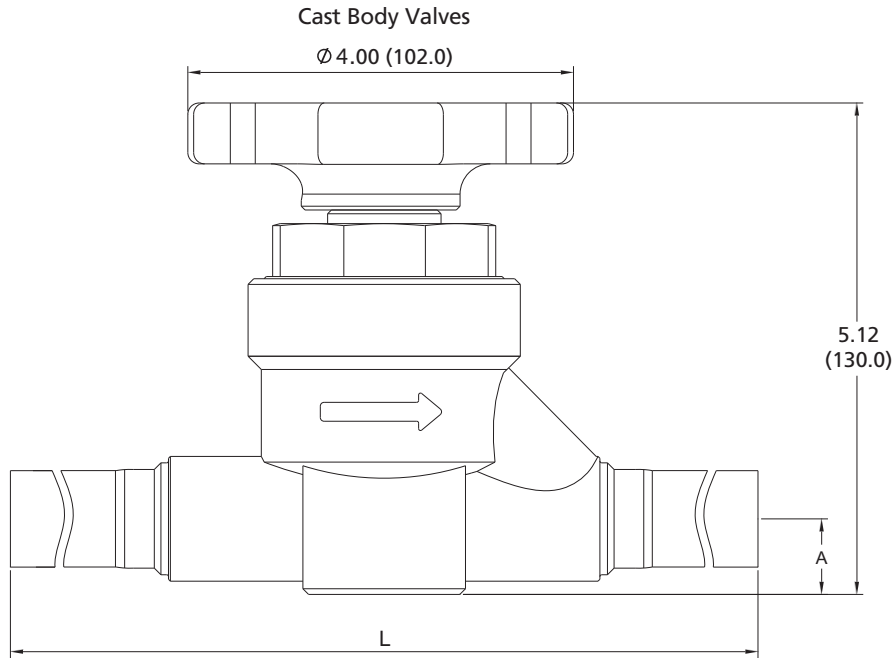


CLOSED

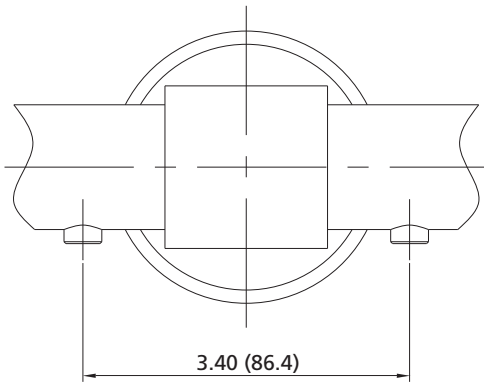
Notes: The upper stem protruding from the handle indicates open state.
The upper stem paralleling to or sinking into the handle indicates closed state.

Dimensions

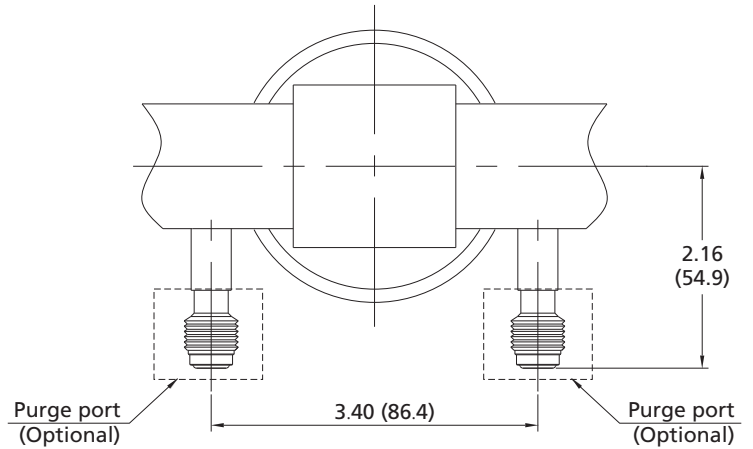
Dimensions, in inches (millimeters), are for reference only.



No purge ports



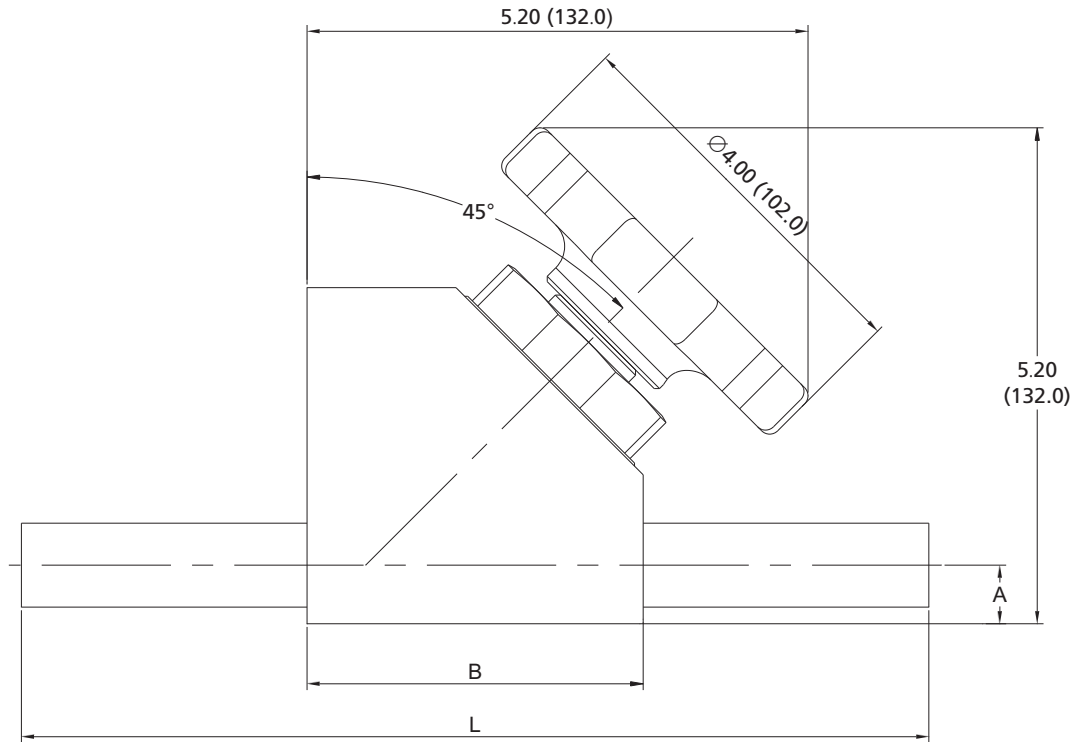
Integral 1/4" Male FR Fittings



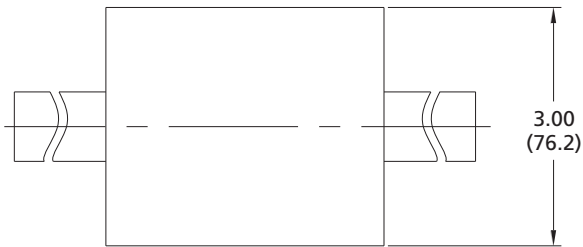
Basic Ordering Number	End Connections		Dimensions, in. (mm)	
	Type	Size	A	L
DL□□-FL12-	FITOK Tube Fitting	3/4"	0.79 (20.0)	8.27 (210.0)
DL□□-FL16-		1"		8.46 (215.0)
DL□□-ML25-		25 mm		8.63 (219.0)
DL□□-TB16-	Tube extension, 2.75 in. (69.8 mm) long	1" x 0.065"		10.90 (277.0)
DL□□-MTB23-		23 x 1.5 mm		
DL□□-MTB25-		25 x 1.5 mm		

V-51 Diaphragm Valves

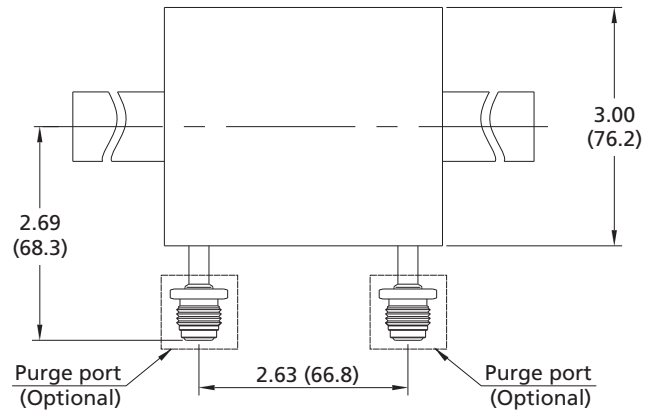
Bar Stock Valves



No purge ports



1/4" Rotatable Male FR Fittings



Basic Ordering Number	End Connections		Dimensions, in. (mm)		
	Type	Size	A	B	L
DL□□-TB12-B-	Tube Butt Weld	3/4" x 0.065"	0.61 (15.5)	3.50 (88.9)	9.46 (240.0)
DL□□-TB16-B-		1" x 0.065"			

Ordering Number Description

DL6L - TB16 - FL16 - BP2 - VF2

Body Material		Inlet Type		Inlet Size		Outlet Type	Outlet Size	Purge Port Location		Seat		Technology Grade	
6L	CF3M	FL	Fractional Tube Fitting	12	3/4"	Same as Inlet		None		PCTFE		General purpose	
	316L SS	ML	Metric Tube Fitting	16	1"			P0	Inlet Side	V	Vespel	F2	Special cleaning and Packaging
SS	CF8M	TB	Fractional Tube Butt Weld	23	23 mm	Specified in the same way as Inlet type and size		P1	Outlet Side			F3	Ultra High Purity
	316 SS	MTB	Metric Tube Butt Weld	25	25 mm			P2	Inlet and Outlet				
								Valve Type					
								Cast Body					
								B		Bar Stock			