

Diaphragm Valves

DQ Series Low Pressure Manual Diaphragm Valves

Features

- ⦿ Low internal volume, fully swept flow path
- ⦿ Contained seat to provide excellent resistance to swelling and contamination
- ⦿ Elgiloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
- ⦿ Different handle types available
- ⦿ Suitable for ultra high purity applications

Technical Data

Port Size	1/4" to 3/8" or 6 mm to 8 mm	
Flow Coefficient (Cv)	0.27	
Orifice Size	0.16 in. (4.1 mm)	
Max. Working Pressure	250 psig (17.2 bar)	
Temperature	PCTFE: -10~150°F (-23~65°C) PFA: -10~302°F (-23~150°C)	
Leak Rate (Helium)	Internal	$\leq 1 \times 10^{-9}$ mbar l/s
	External	$\leq 1 \times 10^{-9}$ mbar l/s

Flow Data

Air @ 70°F (21°C)
Water @ 60°F (16°C)

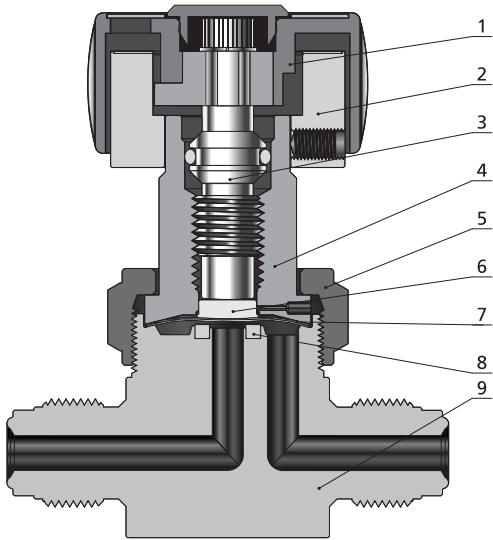
Pressure Drop to Atmosphere psi (bar)	Air (l/min)	Water (l/min)
10 (0.68)	86	3.2
50 (3.4)	230	7.2
100 (6.8)	410	10.2

Product Technology Grade

Product Grade Technology	Standard Cleaning and Packaging	Special Cleaning and Packaging (F2)	Ultra High Purity (F3)
Material/Specification	316L SS/ASTM A479		316L VAR/SEMI F20 316L VIM-VAR /SEMI F20
Wetted Surface Roughness	Ra 10 μ m. (0.25 μ m) ^①		Ra 5 μ m. (0.13 μ m)
Polishing Process	Machine finished ^①		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

① For FR connections and tube butt connections, the standard polishing process is electropolishing and the internal surface roughness is finished to an average of Ra 5 μ m. (0.13 μ m).

Major Materials of Construction



Item	Component		Material/Specification
1	Handle	Round	ABS
		Integral Lockout	Aluminum
2	Actuator		Aluminum
3	Stem		316 SS/ASTM A479
4	Bonnet		S17400/ASTM A564
5	Bonnet Nut		316 SS/ASTM A479
6	Button		316 SS/ASTM A479
7	Diaphragm (2)		Elgiloy/AMS 5876
8	Seat		PCTFE/ASTM D1430 or PFA/ASTM D3307
9	Body		316L SS/ASTM A479 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Round Handle Model

Manual Actuators

Round Handle

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

Integral Lockout Handle

- ⦿ Quick, quarter-turn actuation
- ⦿ Lockable in the closed position for safety



OPEN

CLOSED

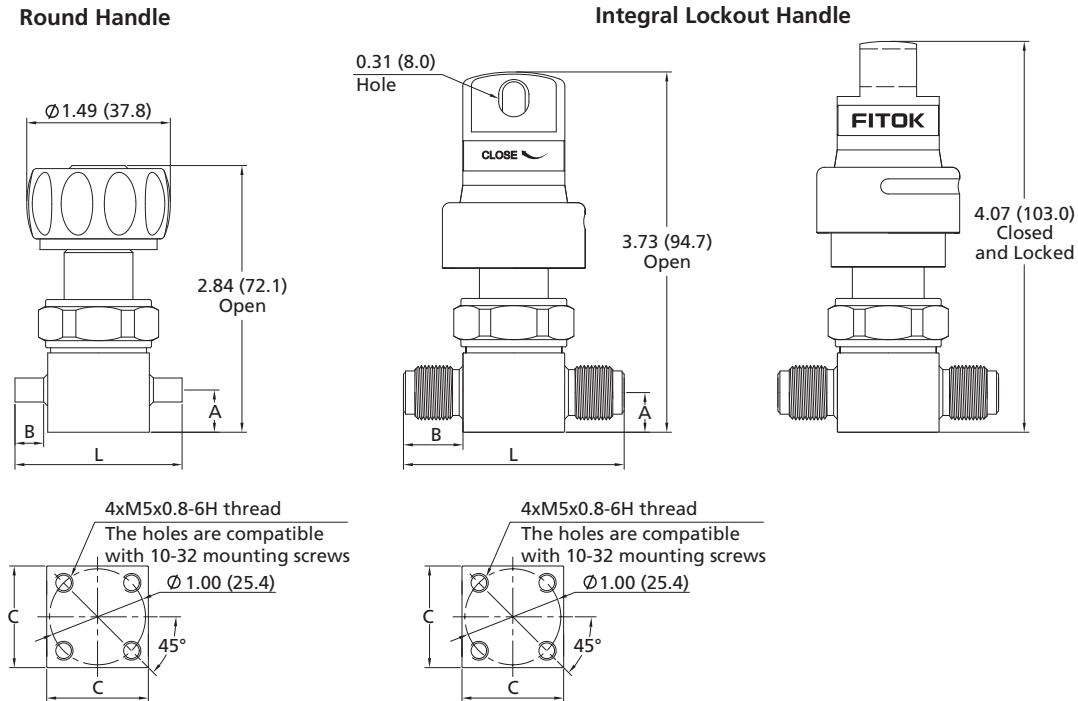


Dimensions and Ordering Information

Straight Type

Dimensions

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



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DQ□□-TB4-	1/4" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	1.74 (44.2)
DQ□□-TB6-	3/8" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	1.74 (44.2)
DQ□□-FFR4-	1/4" Female FR	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DQ□□-RFR4-	1/4" Rotatable Male FR	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DQ□□-FR4-	1/4" Integral Male FR	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	2.30 (58.4)

Ordering Number Description

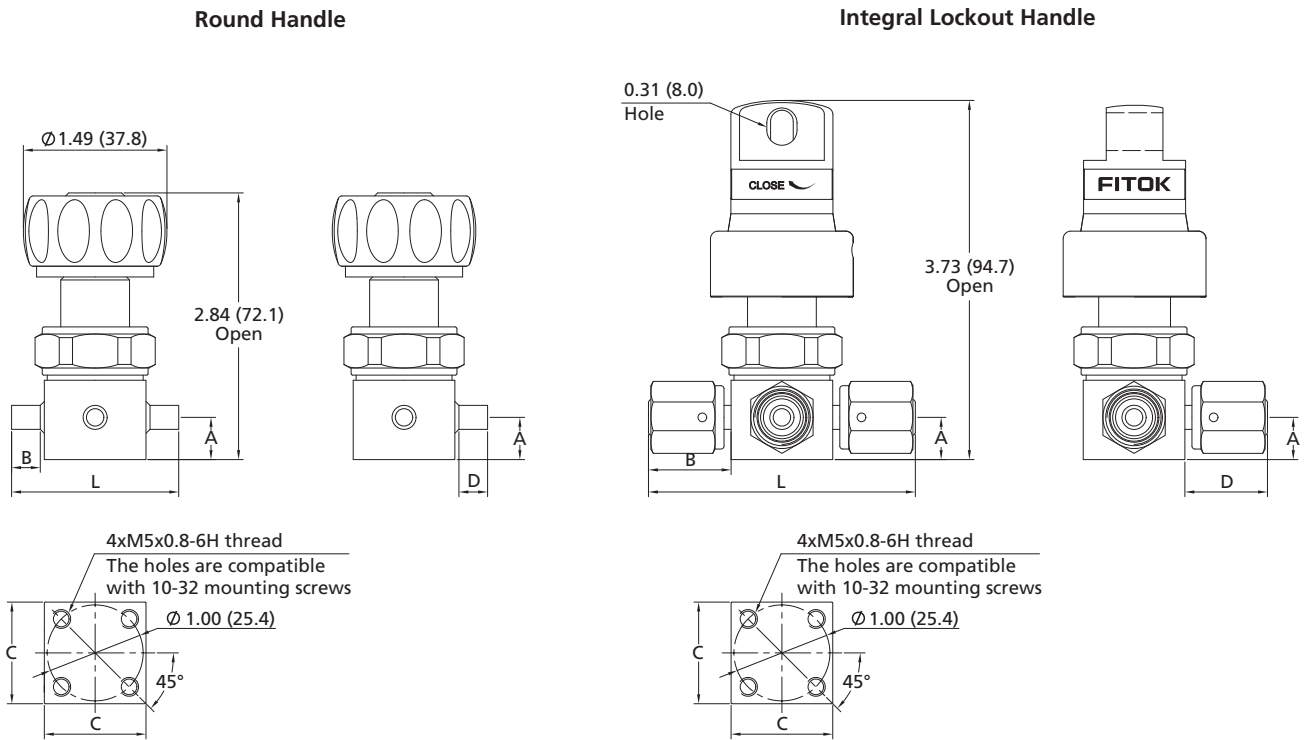
DQ6L - TB4 - FR4 - RAF2

Body Material		Inlet Type		Inlet Size		Outlet Type	Outlet Size	Handle Type		Seat		Product Grade	
6L	316L SS	TB	Fractional Tube Butt Weld	4	1/4"	Same as Inlet Specified in the same way as Inlet type and size		R	Round	PCTFE		Standard Cleaning and Packaging	
6LV	316L VAR	MTB	Metric Tube Butt Weld	6	6 mm or 3/8"			A	Integral Lockout	PFA		F2 Special Cleaning and Packaging	
6LW	316L VIM-VAR	FR	Integral Male FR Fitting	8	8 mm							F3 Ultra High Purity	
		FFR	Female FR Fitting										
		RFR	Rotatable Male FR Fitting										
		FL	Fractional Tube Fitting										
		ML	Metric Tube Fitting										

Branch Type

Dimensions

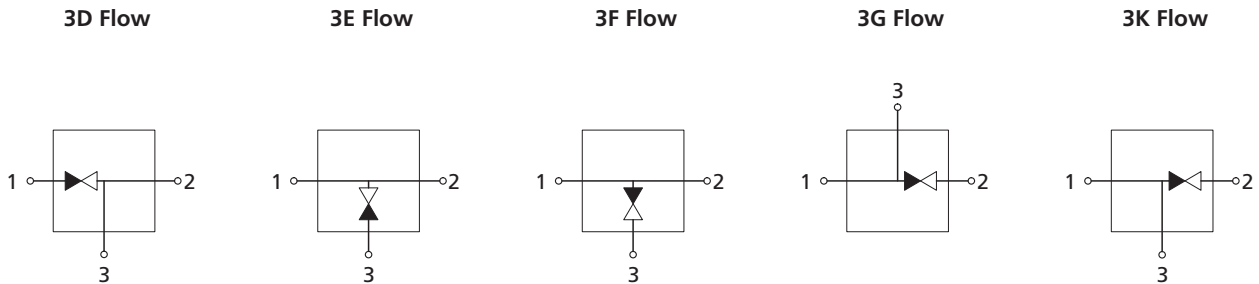
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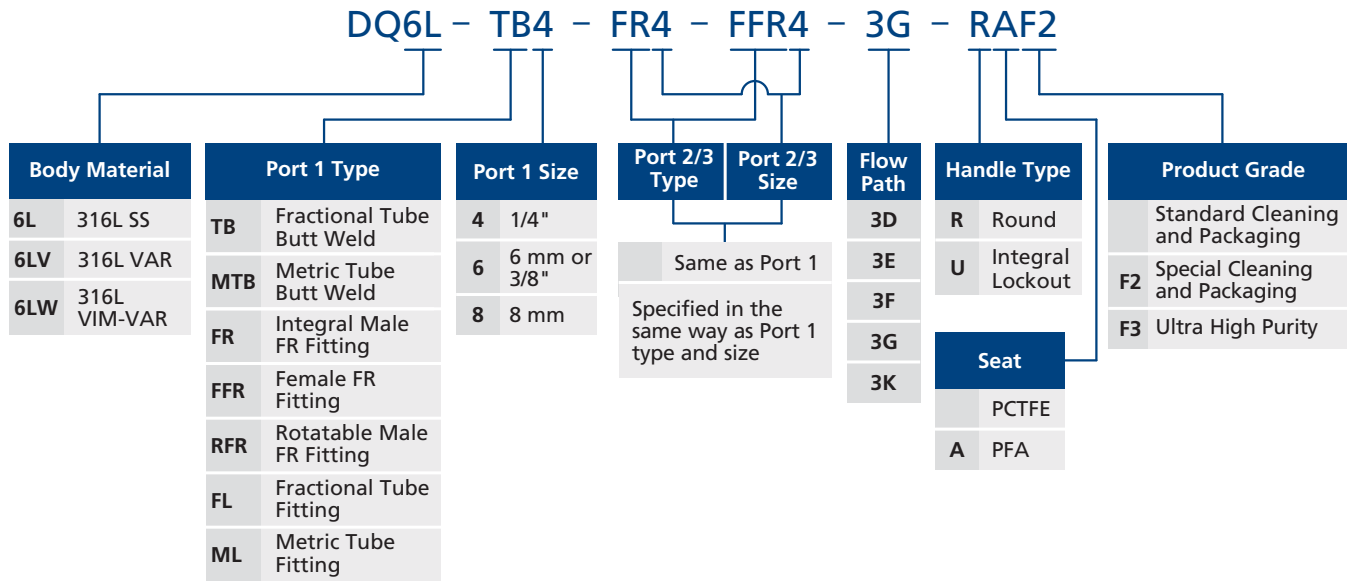
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DQ□□-TB4-	1/4" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	0.30 (7.6)	1.74 (44.2)
DQ□□-TB6-	3/8" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	0.26 (6.6)	1.74 (44.2)
DQ□□-FFR4-	1/4" Female FR	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DQ□□-RFR4-	1/4" Rotatable Male FR	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DQ□□-FR4-	1/4" Integral Male FR	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	0.62 (15.7)	2.30 (58.4)

Flow Paths

☉ Flow paths as viewed from the top



Ordering Number Description

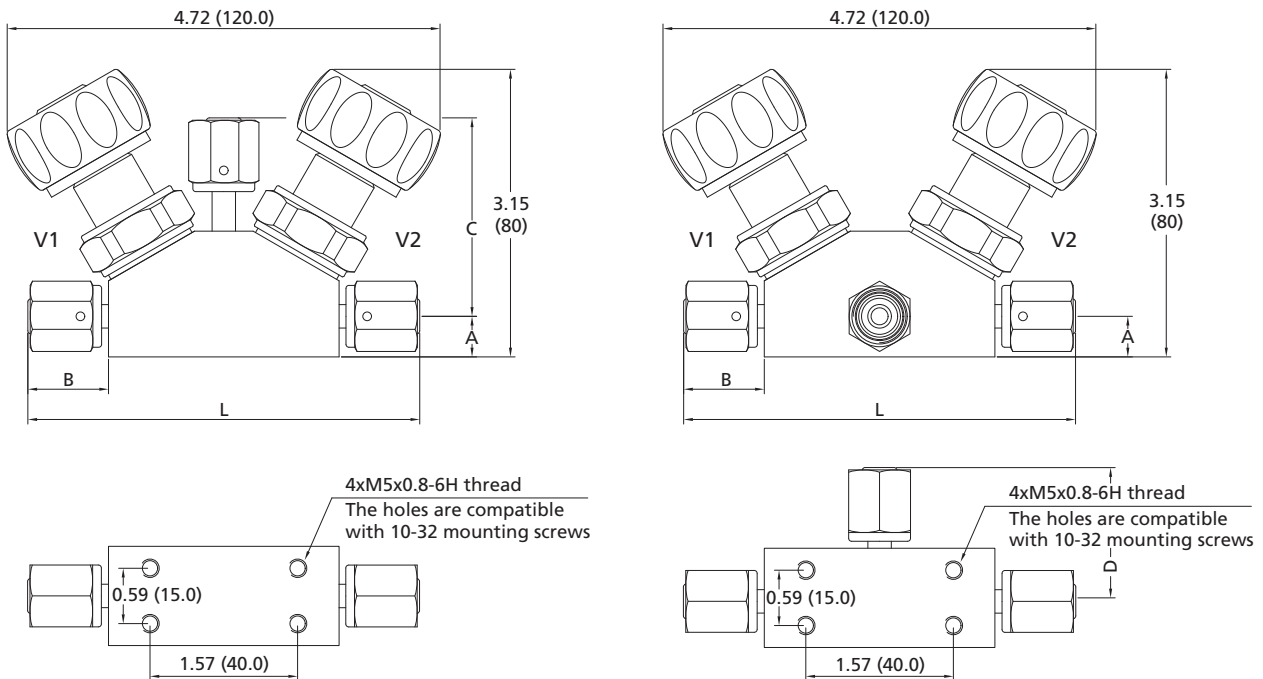


Fittings
Valves & Regulators

2-Valve 3-Way Block Type

Dimensions

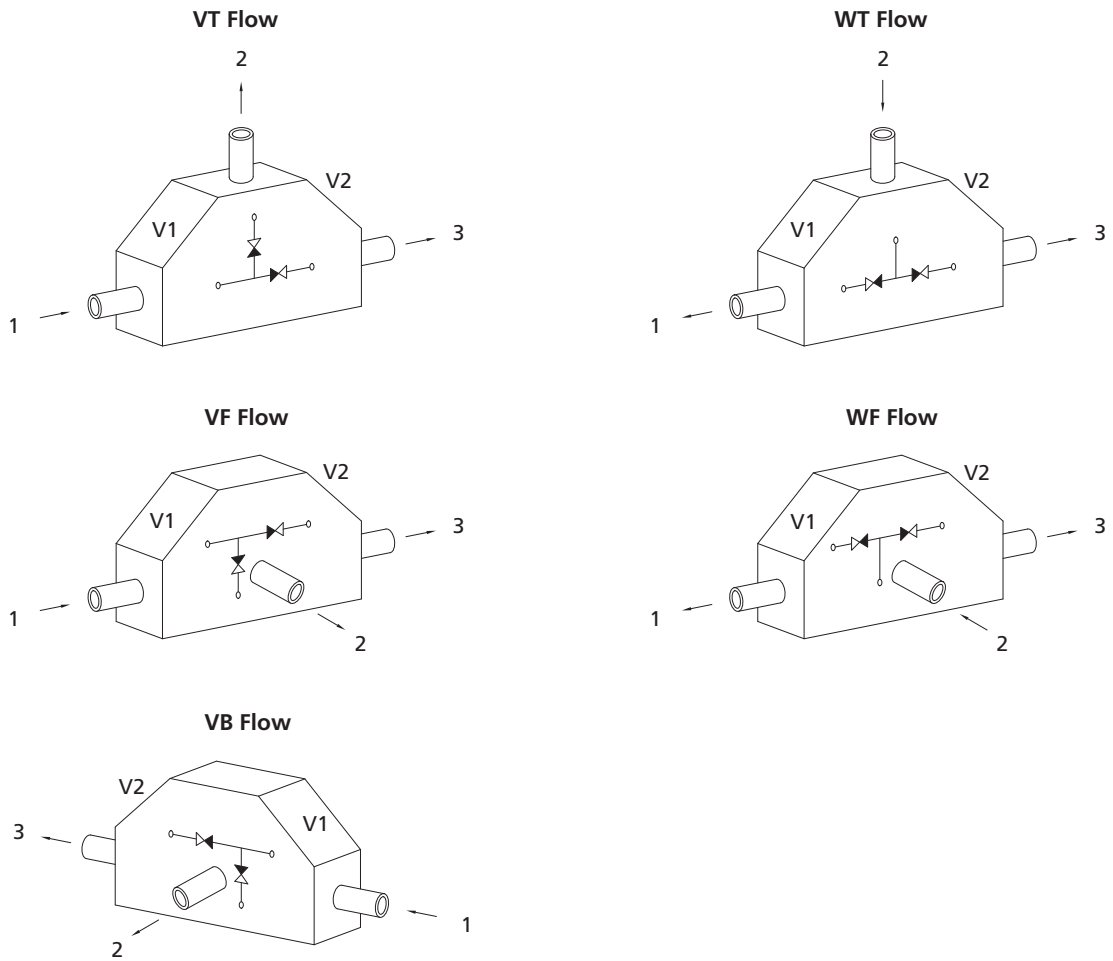
Dimensions, in inches (millimeters), are for reference only.



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DQ23□□-FFR4-	1/4" Female FR	0.44 (11.2)	0.86 (21.8)	2.12 (53.8)	—	4.24 (107.6)
DQ23□□-FFR4-	1/4" Female FR	0.44 (11.2)	0.86 (21.8)	—	1.37 (34.8)	4.24 (107.6)
DQ23□□-RFR4-	1/4" Rotatable Male FR	0.44 (11.2)	0.86 (21.8)	2.12 (53.8)	—	4.24 (107.6)
DQ23□□-RFR4-	1/4" Rotatable Male FR	0.44 (11.2)	0.86 (21.8)	—	1.37 (34.8)	4.24 (107.6)

V-07 Diaphragm Valves

Flow Paths



Ordering Number Description

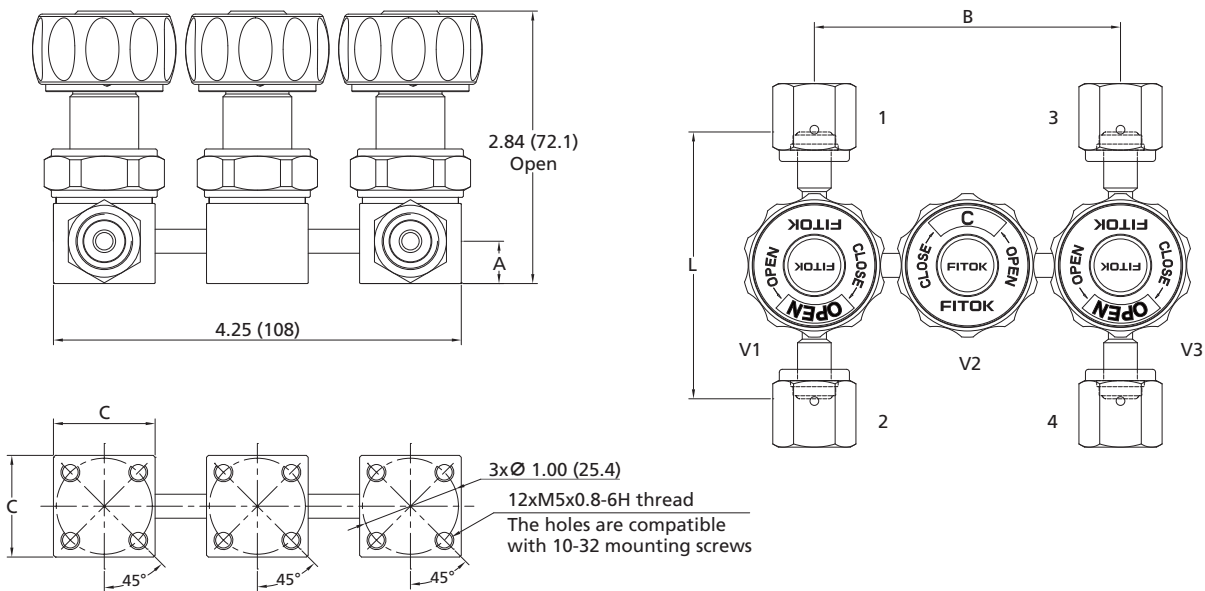
DQ236L - FFR4 - RFR4 - FFR4 - VF - RAF2

Type	Body Material		Port 1 Type		Port 1 Size	Port 2/3 Type	Port 2/3 Size	Flow Path	Seat		Product Grade
23 2 Valves and 3 Ports	6L	316L SS	FFR	Female FR Fitting	4 1/4"	Same as Port 1	Specified in the same way as Port 1 type and size	VT	PCTFE	Standard Cleaning and Packaging	
	6LV	316L VAR	RFR	Rotatable Male FR Fitting				VF	A PFA		F2 Special Cleaning and Packaging
	6LW	316L VIM-VAR						VB	Handle Type		F3 Ultra High Purity
								WT			
								WF	R Round		
									U Integral Lockout		

3-Valve 4-Way Block Type

Dimensions

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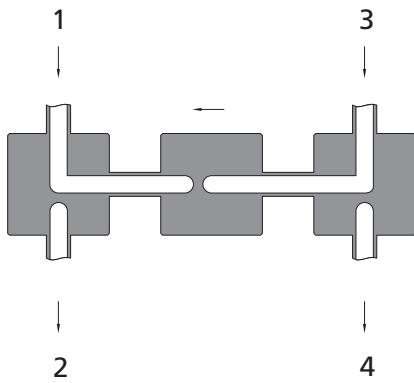


Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DQ34□□-FFR4-	1/4" Female FR	0.44 (11.2)	3.19 (81.0)	1.06 (26.9)	2.78 (70.6)
DQ34□□-RFR4-	1/4" Rotatable Male FR	0.44 (11.2)	3.19 (81.0)	1.06 (26.9)	2.78 (70.6)

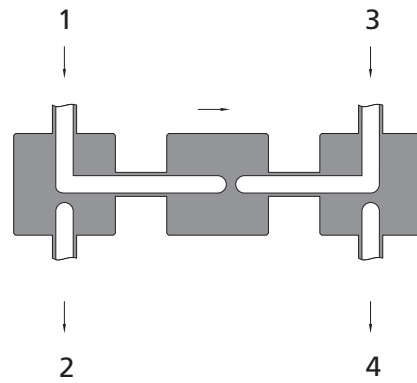
V-09 Diaphragm Valves

Flow Paths

☉ Flow paths as viewed from the top



GK Flow



KG Flow

Ordering Number Description

DQ346L - FFR4 - RFR4 - FFR4 - FFR4 - GK - RAF3

Type	Body Material	Port 1 Type	Port 1 Size	Port 2/3/4 Type	Port 2/3/4 Size	Flow Path	Handle Type	Product Grade
3 Valves and 4 Ports 34	6L 316L SS	FFR Female FR Fitting	4 1/4"	Same as Port 1	Specified in the same way as Port 1 type and size	GK	R Round	Standard Cleaning and Packaging
	6LV 316L VAR	RFR Rotatable Male FR Fitting					U Integral Lockout	F2 Special Cleaning and Packaging
	6LW 316L VIM-VAR						Seat	F3 Ultra High Purity
							PCTFE	
							A PFA	