

Low Pressure Manual Diaphragm Valves

DQ Series

Introduction

DQ Series Low Pressure Manual Diaphragm Valves are suitable for high purity and ultra high purity applications. These valves offer enhanced reliability, a wide temperature range, and excellent medium compatibility, making them applicable to a vast majority of working conditions.

Features

- Low internal volume, fully swept flow path
- Contained seat to provide excellent resistance to swelling and contamination
- Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- Different handle types available



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 ~ 176 °F (-23 ~ 80 °C) PFA: -10 ~ 302 °F (-23 ~ 150 °C)	
Leak Rate (Helium)	Internal	≤ 1×10 ⁻⁹ std·cm ³ /s
	External	≤ 1×10 ⁻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

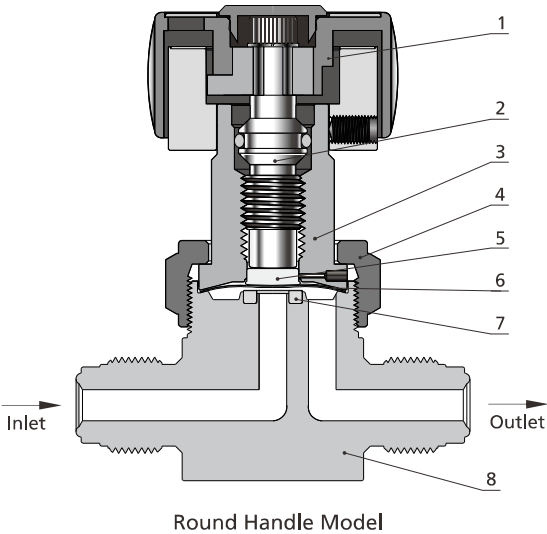
Process Specification

Item	Process Specification	Standard Cleaning and Packaging Process (FC-01) Special Cleaning and Packaging Process (FC-02)		Ultra High Purity Process (FC-03)
Material		316L SS		316L SS, 316L SS VAR
Wetted Surface Roughness		Ra 10 μin. (0.25 μm)	Ra 5 μin. (0.13 μm) ^①	Ra 5 μin. (0.13 μm)
Polishing Process		Machine finished	Electropolished	Electropolished

Notes: Refer to page P-01 for a detailed description of Process Specification.

① Wetted surface roughness of valves with FR Series metal gasket face seal connections and tube butt weld connections.

Major Materials of Construction



Item	Component		Material/Specification
1	Handle	Round	ABS
		Integral Lockout	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 (2)		Cobalt Alloy/AMS 5876
7	Seat		PCTFE/ASTM D1430 or PFA/ASTM D3307
8	Body		316L SS or 316L SS VAR

Handles

Manual-Round Handle

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



Manual-Integral Lockout Handle

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

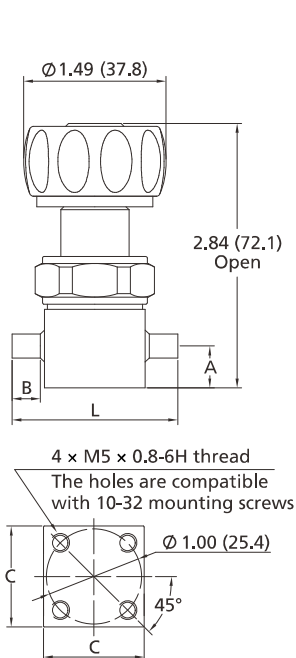


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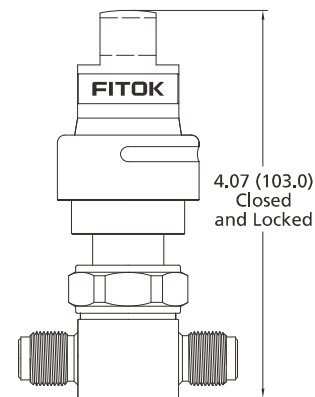
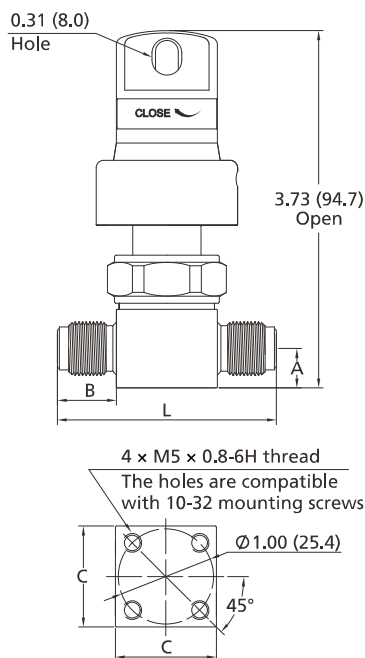
Straight Type

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

Round Handle



Integral Lockout Handle



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DQ□□-TB4-	1/4"× 0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	1.74 (44.2)
DQ□□-TB6-	3/8"× 0.035" Tube Butt Weld		0.26 (6.6)		
DQ□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting		0.86 (21.8)		2.78 (70.6)
DQ□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting				
DQ□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting				

Ordering Number Description

DQ6L - TB4 - FR4 - RAF2

Body Material		Inlet Type		Inlet Size		Outlet Type	Outlet Size	Handle Type		Process Specification	
6L	316L SS	TB	Fractional Tube Butt Weld	4	1/4" or 1/4" x 0.035"	Same as Inlet Specified in the same way as Inlet		R	Manual-Round Handle		FC-01
6LV	316L SS VAR	MTB	Metric Tube Butt Weld	6	6 mm or 3/8" x 0.035"			U	Manual-Integral Lockout Handle	F2	FC-02
		FR	Integral Male FR Metal Gasket Face Seal Fitting	8	8 mm					F3	FC-03
		FFR	Rotatable Female FR Metal Gasket Face Seal Fitting								
		RFR	Rotatable Male FR Metal Gasket Face Seal Fitting								
		FL	Fractional Tube Fitting								
		ML	Metric Tube Fitting								
								Seat			
									PCTFE		
								A	PFA		

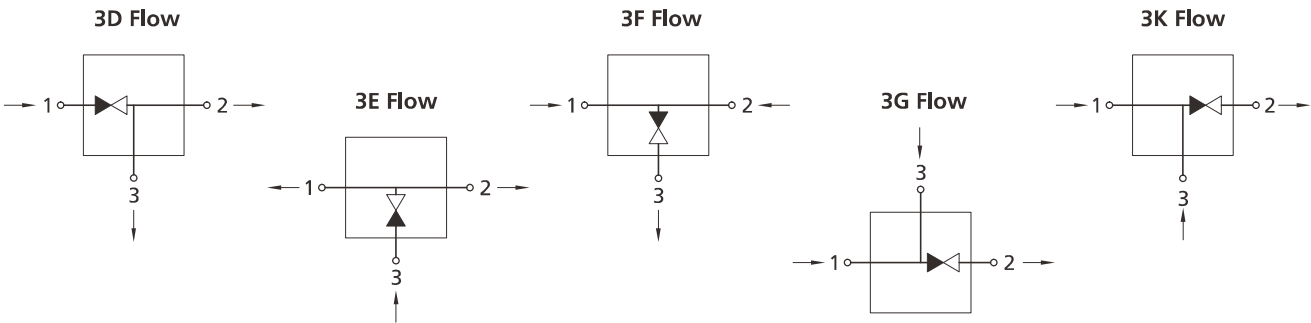
Note: "Ordering Number Description" is a reference to understand the configuration of FITOK products.

FITOK

Branch Type

Flow Paths

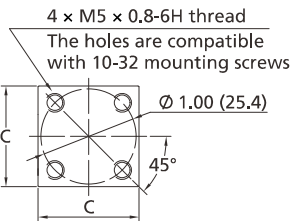
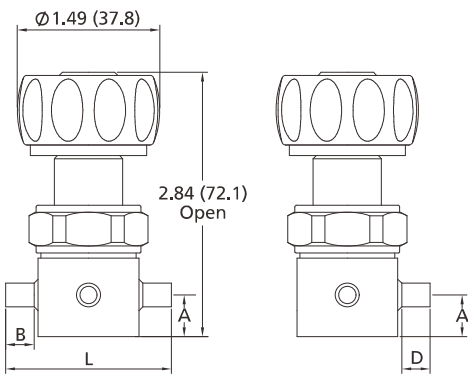
⦿ Flow paths as viewed from the top



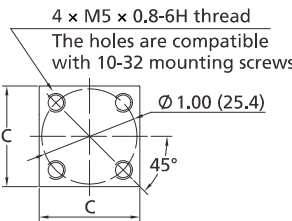
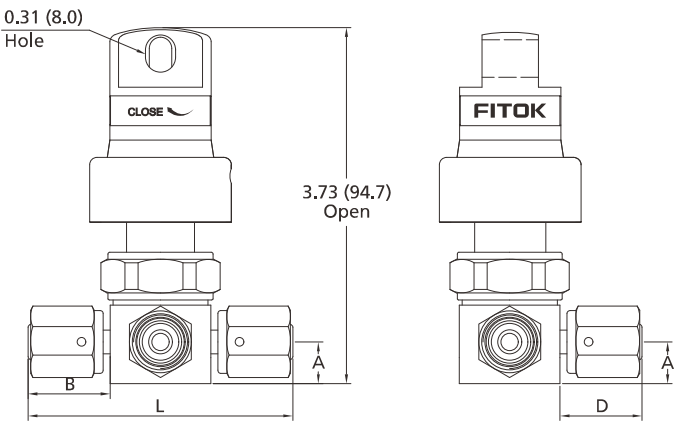
Dimensions

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Round Handle



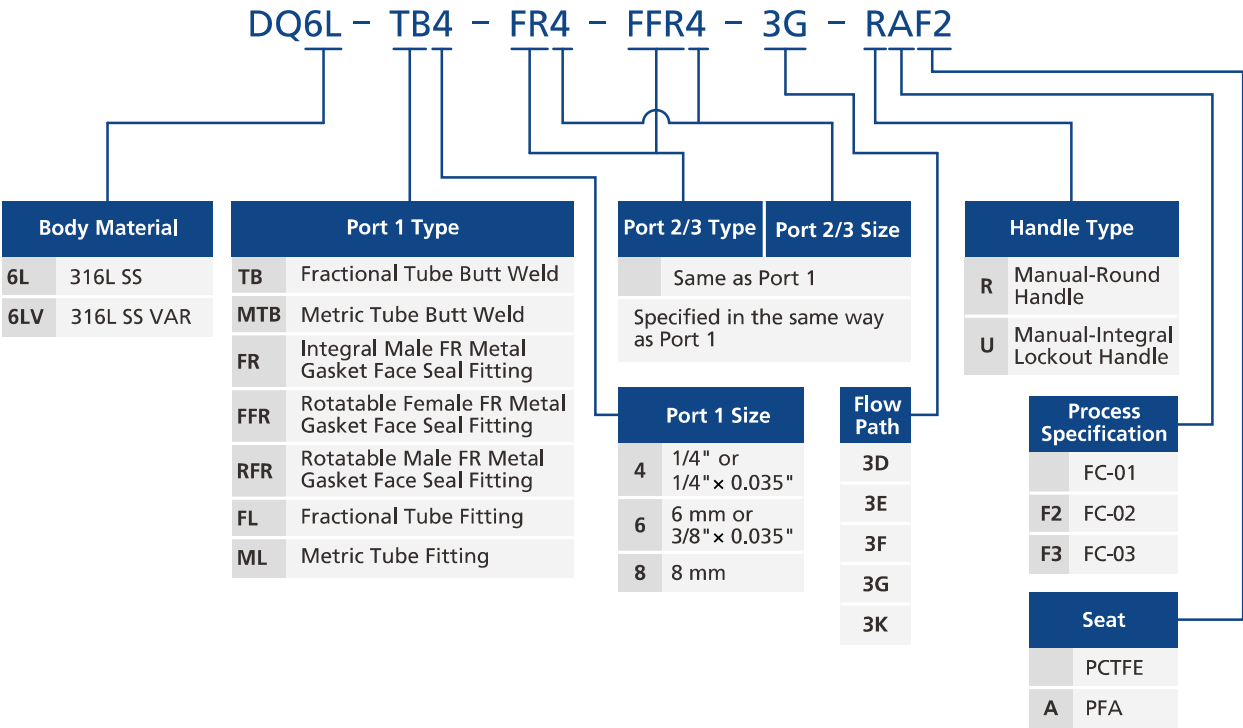
Integral Lockout Handle



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Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DQ□□-TB4-	1/4"×0.035" 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"×0.035" Tube Butt Weld		0.26 (6.6)		0.26 (6.6)	
DQ□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting		0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DQ□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting					
DQ□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting		0.62 (15.7)	1.06 (26.9)	0.62 (15.7)	2.30 (58.4)

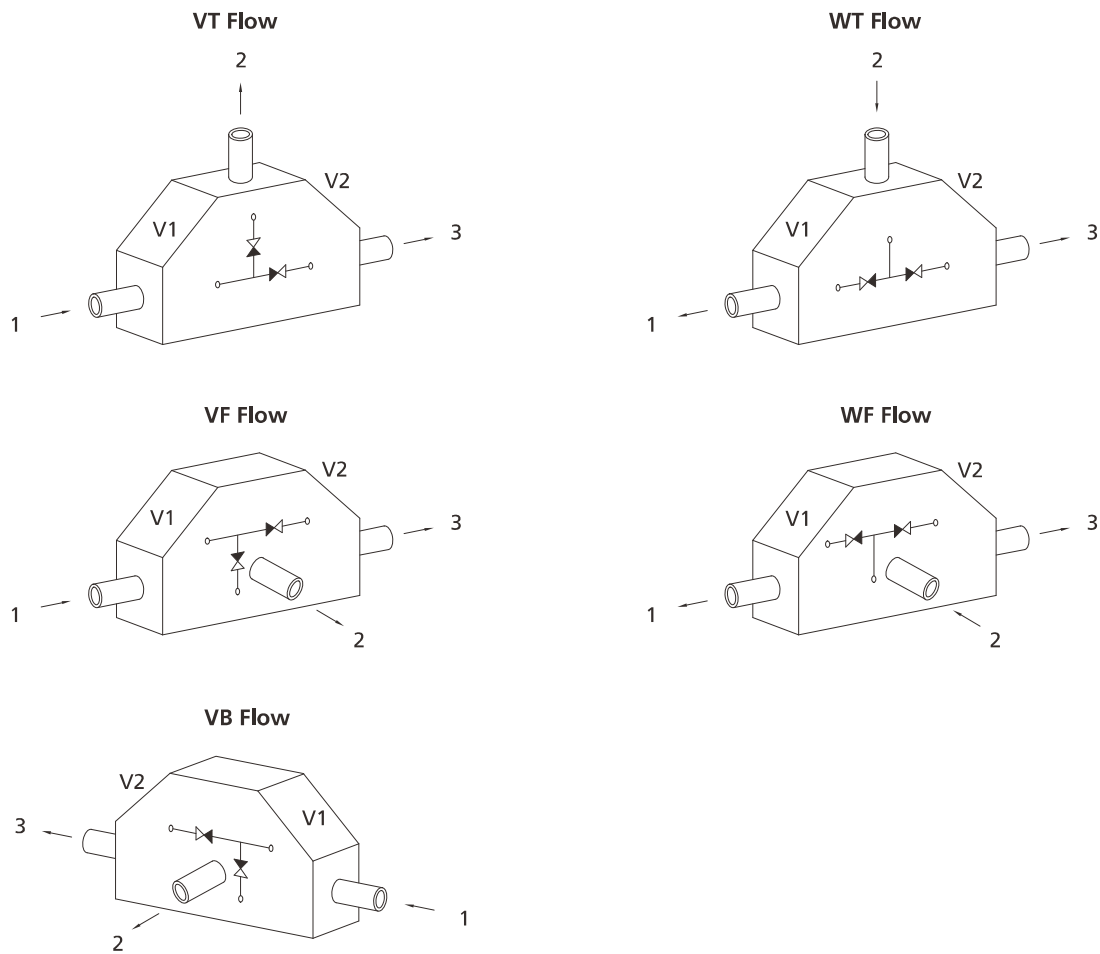
Ordering Number Description



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 or our authorized distributors.

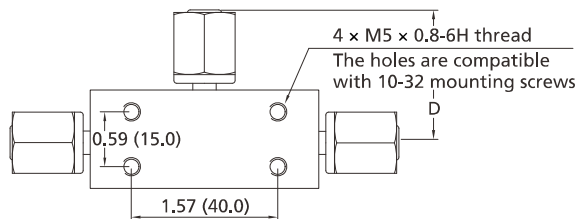
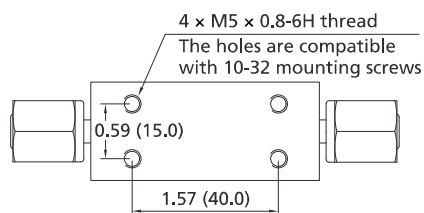
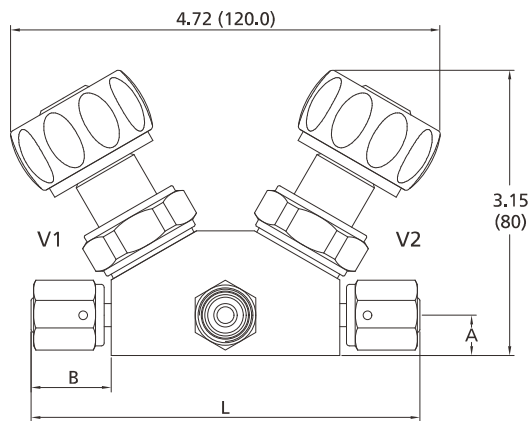
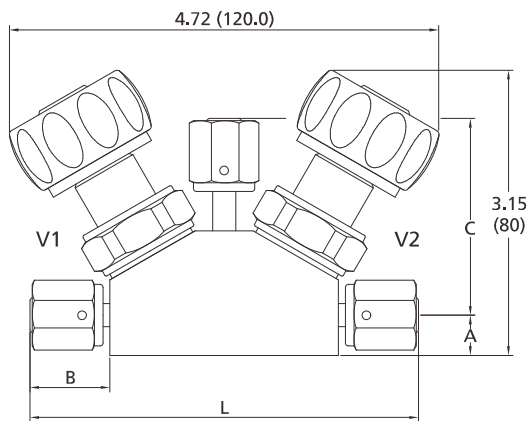
2-Valve 3-Way Block Type

Flow Paths



Dimensions

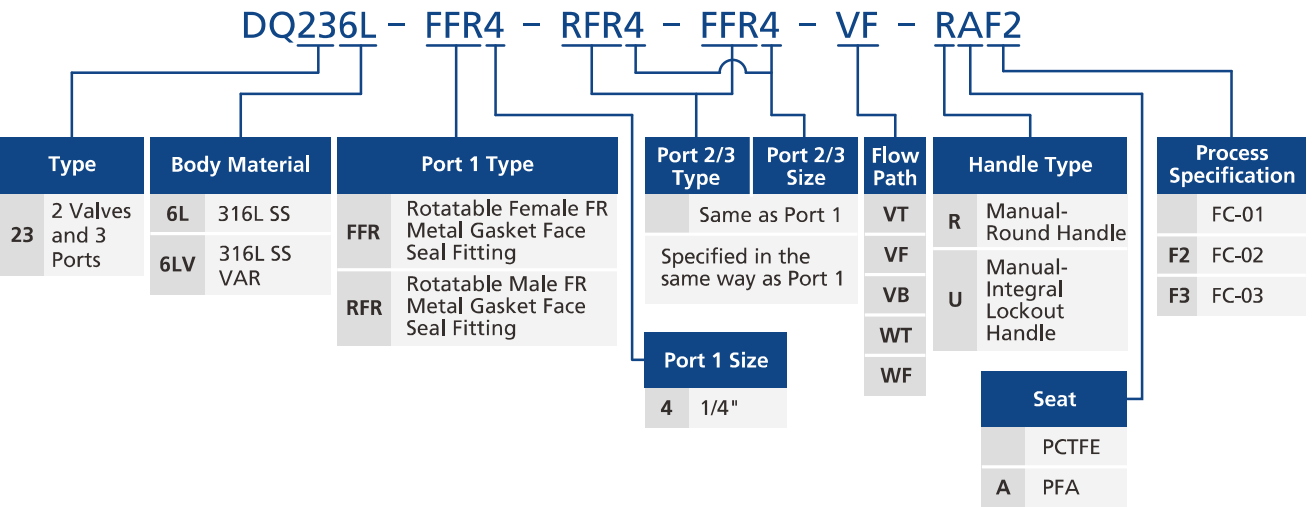
Dimensions, in inches (millimeters), are for reference only.



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		A	B	C	D	L
DQ23□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	2.12 (53.8)	—	4.24 (107.6)
DQ23□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting			—	1.37 (34.8)	
DQ23□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting			2.12 (53.8)	—	
DQ23□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting			—	1.37 (34.8)	

Ordering Number Description

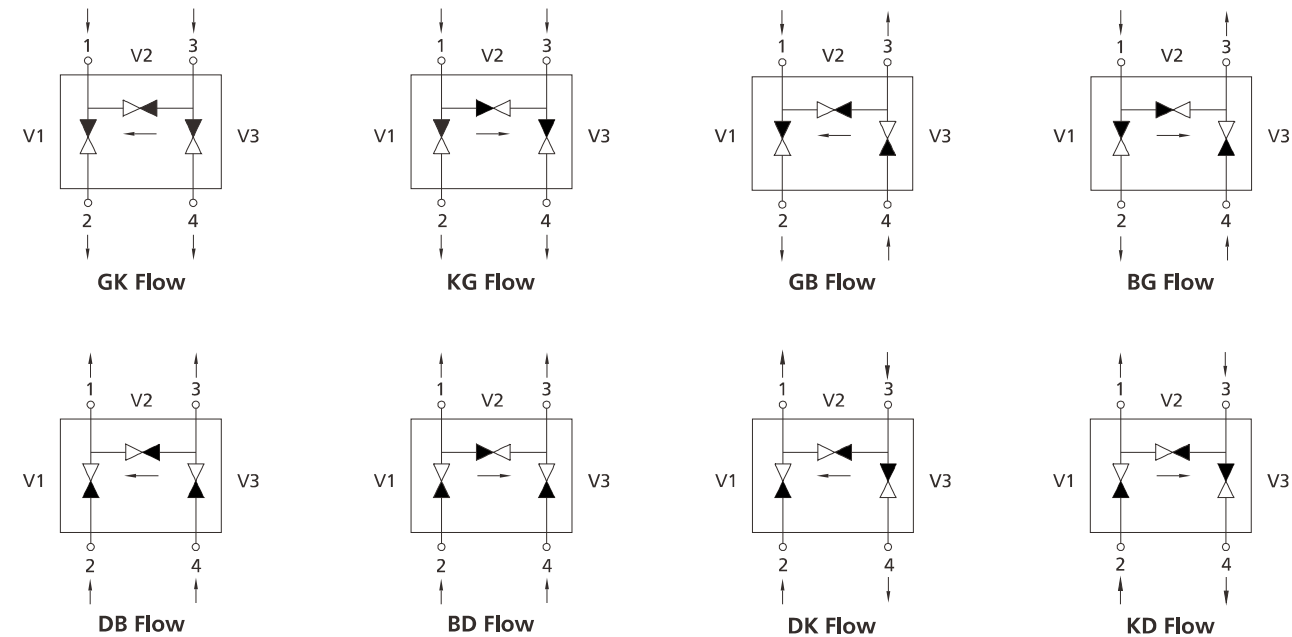


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3-Valve 4-Way Block Type

Flow Paths

⦿ Flow paths as viewed from the top



Dimensions

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



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V-21 Diaphragm Valves

Fittings

Valves

Regulators

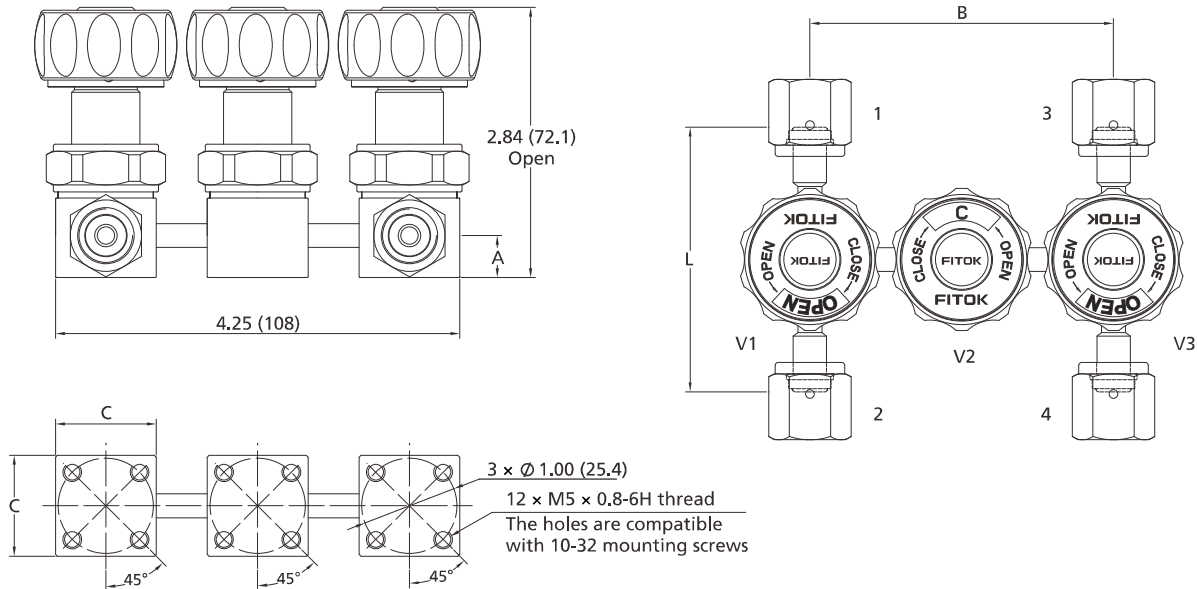
Filters

Tubing

Integrated Systems

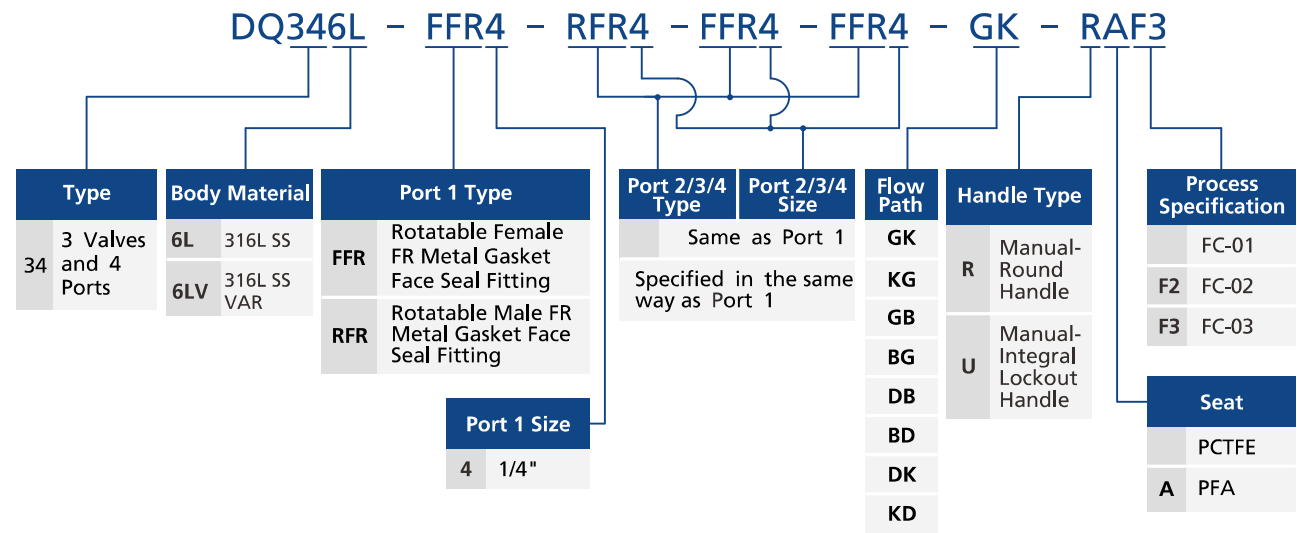
Other Products

Technical Information



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

Ordering Number Description



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