

Diaphragm Valves

ALD, DQ, DP, DH, DM, DS, DR, DV, DL, DF, DE
and DK Series



Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Contents

Fittings

Atomic Layer Deposition Diaphragm Valves
ALD Series V-03

Low Pressure Manual Diaphragm Valves
DQ Series V-11

Valves

Low Pressure Pneumatic Diaphragm Valves
DP Series V-20

High Pressure Springless Diaphragm Valves
DH Series V-29

High Pressure Spring Diaphragm Valves
DM Series V-34

Pressure Gauges

High Pressure Compact Diaphragm Valves
DS Series V-41

Low Pressure/Medium Flow Diaphragm Valves
DR Series V-47

Integrated Systems and Others

Low Pressure/High Flow Diaphragm Valves
DV Series V-52

Low Pressure/Ultra High Flow Diaphragm Valves
DL Series V-60

High Pressure/High Flow Diaphragm Valves
DF Series V-65

Process Specification

Economic Diaphragm Valves
DE Series V-69

High Temperature Diaphragm Valves
DK Series V-73

Diaphragm Valves

Atomic Layer Deposition Diaphragm Valves

ALD Series

Features

- ⦿ Long cycle life under high-speed actuation
- ⦿ Quick response capable of valve opening or closing time of less than 5 ms
- ⦿ Cv consistency from valve to valve: $\pm 3\%$
- ⦿ Thermal model extends actuator life for thermal application
- ⦿ Contained seat to provide excellent resistance to swelling and contamination
- ⦿ Cobalt alloy diaphragm to provide high strength and corrosion resistance to ensure long cycle life
- ⦿ High-purity grade PFA seat with broad range of chemical compatibility
- ⦿ Minimum particle generation and dead space facilitate purging
- ⦿ Suitable for ultra high purity applications

Technical Data

Orifice Size	0.16 in. (4.1 mm)		0.23 in. (5.9 mm)
Port Size	1/4" to 3/8", 6 mm to 8 mm or 1.125" to 1.5"		3/8" to 1/2", 10 mm to 12 mm or 1.5"
Flow Coefficient (Cv)	0.27		0.62
Working Pressure	Vacuum to 145 psig (10 bar)		
Actuator Operating Pressure	50 ~ 90 psig (3.4 ~ 6.2 bar)		
Temperature	Standard model: 32 ~ 248 °F (0 ~ 120 °C) Thermal model: 32 ~ 392 °F (0 ~ 200 °C)		
Leak Rate (Helium)	Internal	$\leq 1 \times 10^{-9}$ std cm ³ /s	$\leq 1 \times 10^{-8}$ std cm ³ /s
	External	$\leq 1 \times 10^{-9}$ std cm ³ /s	$\leq 1 \times 10^{-9}$ std cm ³ /s

Flow Data

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

Orifice Size in. (mm)	Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
0.16 (4.1)	10 (0.68)	86	3.2
	50 (3.4)	230	7.2
	100 (6.8)	410	10.2
0.23 (5.9)	10 (0.68)	199	7.4
	50 (3.4)	530	16.6
	100 (6.8)	945	23.6

Fittings

Valves

Pressure Gauges

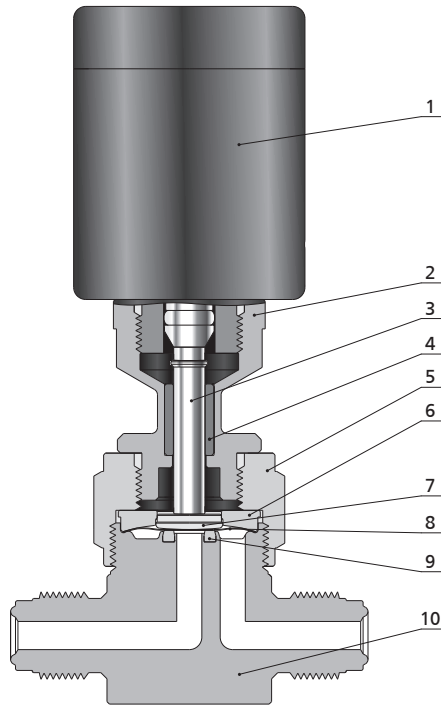
Integrated Systems and Others

Process Specification

Product Technology Grade

Technology	Product Grade	Ultra High Purity (F3)
Material/Specification		316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR /SEMI F20
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		In ISO 4/Federal 10 cleanroom
Packaging		Double bagged in cleanroom

Standard Materials of Construction



Normally Closed Thermal Actuator

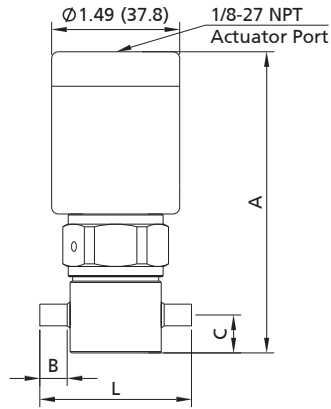
Item	Component	Material/Specification
1	Actuator	Aluminum
2	Thermal Isolation Coupling Housing (Thermal Model Only)	316 SS/ASTM A479
3	Thermal Isolation Coupling Stem (Thermal Model Only)	S17400/ASTM A564
4	Guide (Thermal Model Only)	PTFE/ASTM D1710
5	Bonnet Nut	316 SS/ASTM A479
6	Bonnet	S17400/ASTM A564
7	Button	316 SS/ASTM A479
8	Diaphragm	Cobalt Alloy/AMS 5876
9	Seat	PFA/ASTM D3307
10	Body	316L SS/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Dimensions and Ordering Information

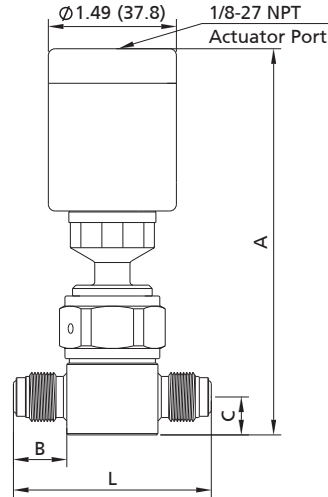
Dimensions, in inches (millimeters), are for reference only.

2-Port Valves

Standard Model

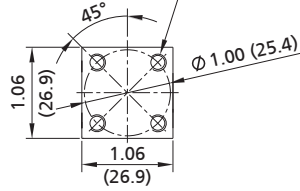


Thermal Model



4xM5x0.8-6H thread

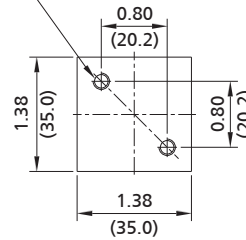
The holes are compatible with 10-32 mounting screws



Orifice 0.16 in. (4.1 mm) Bottom

2xM5x0.8-6H thread

The holes are compatible with 10-32 mounting screws



Orifice 0.23 in. (5.9 mm) Bottom

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

V-06 Diaphragm Valves

Orifice Size in. (mm)	Cv	Valve Type	Basic Ordering Number	Connection Type and Size	Dimensions, in. (mm)			
					A	B	C	L
0.16 (4.1)	0.27	Standard	ALD□□-TB4-4-	1/4"x0.035" Tube Butt Weld	3.50 (88.9)	0.30 (7.6)	0.44 (11.2)	1.74 (44.2)
			ALD□□-TB6-4-	3/8"x0.035" Tube Butt Weld		0.26 (6.6)		
			ALD□□-FFR4-4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting		0.86 (21.8)		2.78 (70.6)
			ALD□□-RFR4-4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting		0.62 (15.7)		
			ALD□□-FR4-4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting				
		Thermal	ALD□□-TB4-4-HT-	1/4"x0.035" Tube Butt Weld	4.50 (114.0)	0.30 (7.6)	0.44 (11.2)	1.74 (44.2)
			ALD□□-TB6-4-HT-	3/8"x0.035" Tube Butt Weld		0.26 (6.6)		
			ALD□□-FFR4-4-HT-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting		0.86 (21.8)		2.78 (70.6)
			ALD□□-RFR4-4-HT-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting		0.62 (15.7)		
			ALD□□-FR4-4-HT-	1/4" Integral Male FR Metal Gasket Face Seal Fitting				
0.23 (5.9)	0.62	Standard	ALD□□-TB6-6-	3/8"x0.035" Tube Butt Weld	3.55 (90.1)	0.67 (17.0)	0.50 (12.7)	2.72 (69.0)
			ALD□□-TB8-6-	1/2"x0.049" Tube Butt Weld		0.94 (24.0)		
			ALD□□-FFR8-6-	1/2" Rotatable Female FR Metal Gasket Face Seal Fitting				
			ALD□□-RFR8-6-	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting				0.81 (20.6)
			ALD□□-FR8-6-	1/2" Integral Male FR Metal Gasket Face Seal Fitting				
		Thermal	ALD□□-TB6-6-HT-	3/8"x0.035" Tube Butt Weld	4.65 (118.1)	0.67 (17.0)	0.50 (12.7)	2.72 (69.0)
			ALD□□-TB8-6-HT-	1/2"x0.049" Tube Butt Weld		0.94 (24.0)		
			ALD□□-FFR8-6-HT-	1/2" Rotatable Female FR Metal Gasket Face Seal Fitting				
			ALD□□-RFR8-6-HT-	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting				0.81 (20.6)
			ALD□□-FR8-6-HT-	1/2" Integral Male FR Metal Gasket Face Seal Fitting				

Fittings

Valves

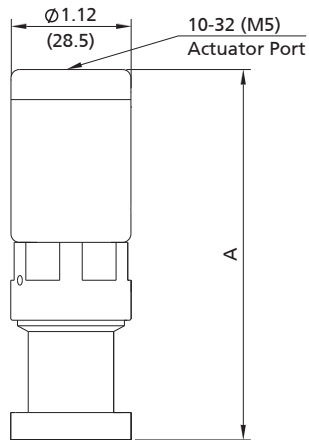
Pressure Gauges

Integrated Systems and Others

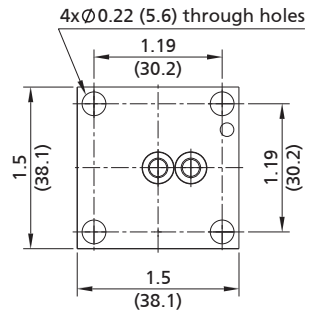
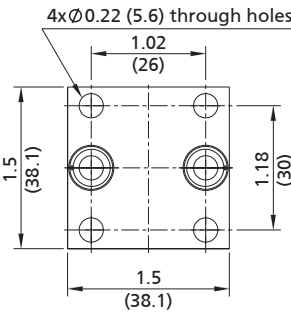
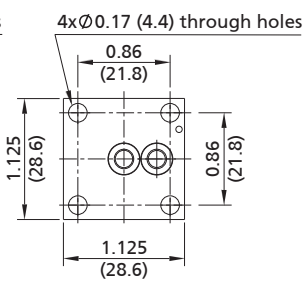
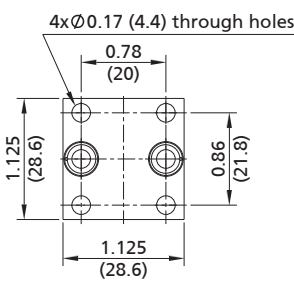
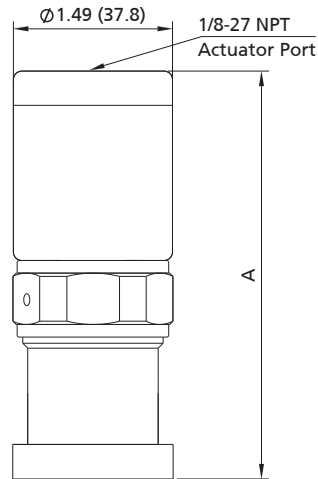
Process Specification

Modular Surface-Mount Valves

1.125" Surface-Mount



1.5" Surface-Mount



1.125" W-Seal Bottom

1.125" C-Seal Bottom

1.5" W-Seal Bottom

1.5" C-Seal Bottom

Orifice Size in. (mm)	Cv	Valve Type	Basic Ordering Number	Connection Type and Size	Dimension, in. (mm)
					A
0.16 (4.1)	0.27	Standard	ALD□□-WS11-4-	1.125" W-Seal	3.40 (86.4)
			ALD□□-CS11-4-	1.125" C-Seal	
			ALD□□-WS15-4-	1.5" W-Seal	3.70 (94.0)
			ALD□□-CS15-4-	1.5" C-Seal	
		Thermal	ALD□□-WS11-4-HT-	1.125" W-Seal	4.39 (111.5)
			ALD□□-CS11-4-HT-	1.125" C-Seal	
			ALD□□-WS15-4-HT-	1.5" W-Seal	4.69 (119.1)
			ALD□□-CS15-4-HT-	1.5" C-Seal	
0.23 (5.9)	0.62	Standard	ALD□□-CS15-6-	1.5" C-Seal	3.81 (96.9)
		Thermal	ALD□□-CS15-6-HT-	1.5" C-Seal	4.80 (122.0)

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Options and Accessories

Valves with position sensors, solenoid valve assemblies, heater cartridge and thermocouple holes are available.

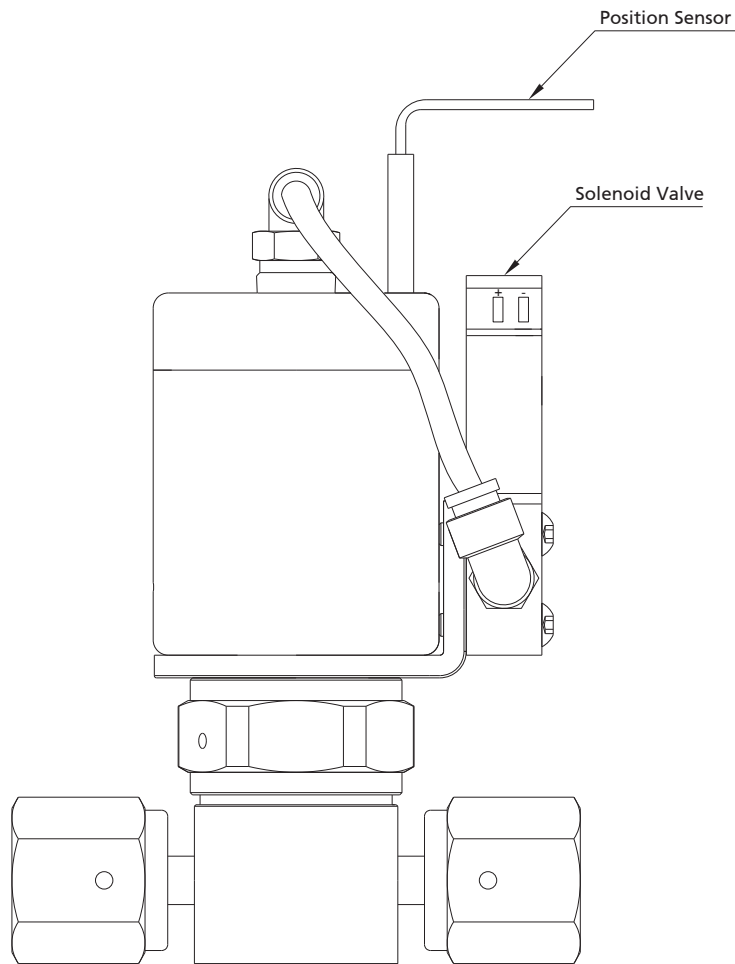
Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification



Normally Closed Standard Actuator

Position Sensors

Transmit a signal to an electrical device indicating the on-off position of pneumatically actuated valves.

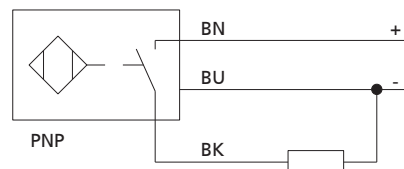
Sensor Technical Information

Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Operating Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

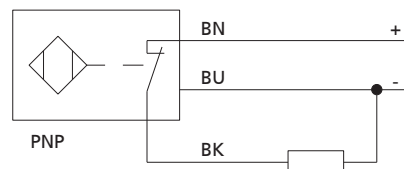
Note: Not applicable to modular surface-mount valves in 1.125".

Wiring Diagram

Normally Open Position Sensor



Normally Closed Position Sensor



Solenoid Valve Assemblies

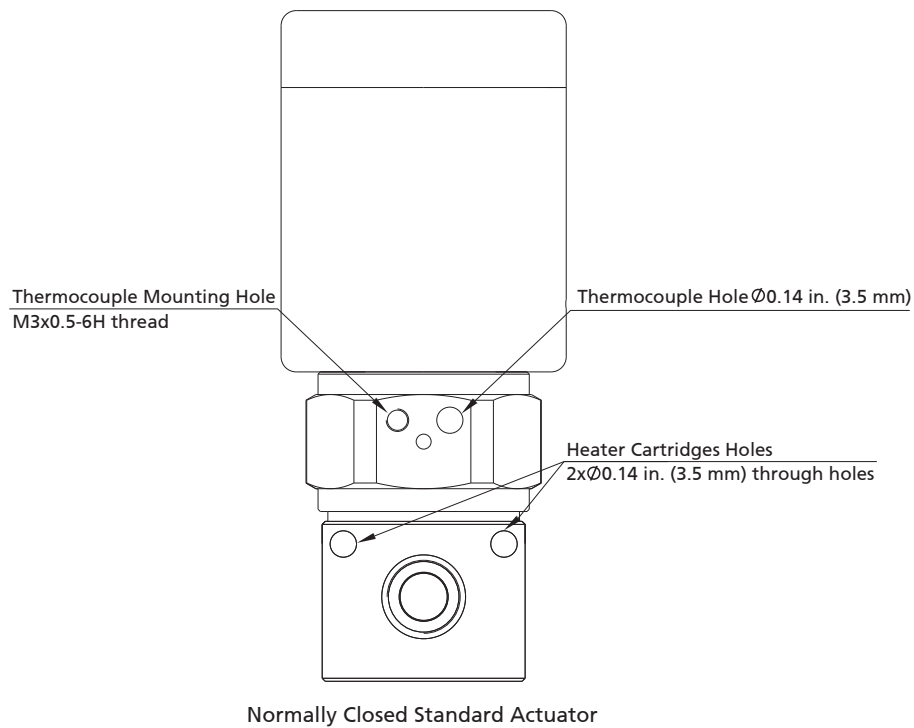
Fast-acting, high-flow solenoid valve enhances ALD series valve response time. Includes tubing, fittings and rotatable mounting bracket for installation versatility.

Solenoid Valve Technical Information

Solenoid Valve	Voltage/Power	24 V (dc)/4.0 W
	Temperature Range	-0.4 ~ 122 °F (-18 ~ 50 °C)
	Port	M5×0.8-6H thread, compatible with 10-32 screws
Fitting	Material	316 SS
Tubing		Polyurethane
Bracket		304 SS
O-Ring		Fluorocarbon FKM

Heater Cartridge and Thermocouple Holes

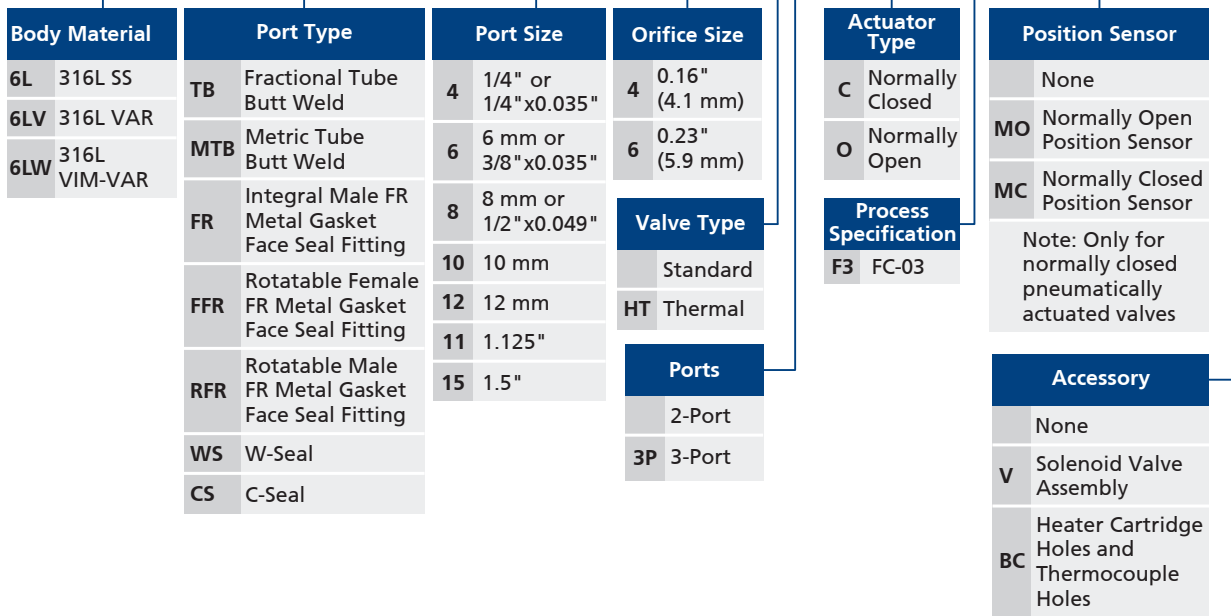
Valves are available with holes in the body to accommodate heater cartridges and thermocouple.



Note: Not applicable to modular surface-mount valves.

Part Number Description

ALD6LW - FR4 - 4 - HT - 3P - CF3MOVBC



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

Low Pressure Manual Diaphragm Valves

DQ Series

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	≤ 1x10 ⁻⁹ std cm ³ /s
	External	≤ 1x10 ⁻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

Process Specification	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Technology			
Material/Specification	316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR/SEMI F20		
Wetted Surface Roughness	Ra 10 μin. (0.25 μm) ^①		Ra 5 μin. (0.13 μm)
Polishing Process	Machine finished ^①		Electropolished

① For valves with 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 μin. (0.13 μm).

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

Fittings

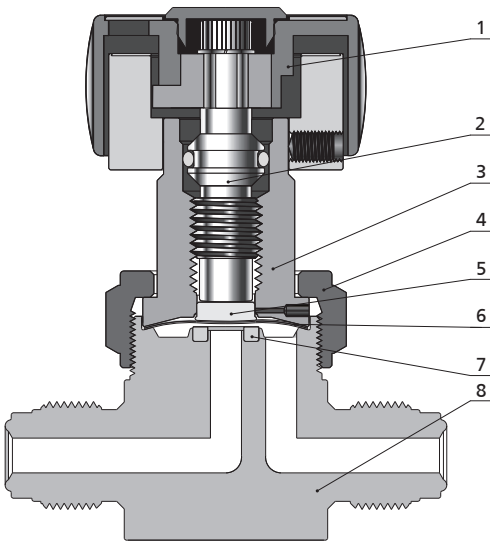
Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Major Materials of Construction



Round Handle Model

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/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Actuators

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



OPEN

CLOSED



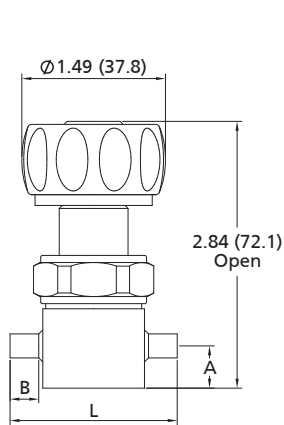
Dimensions and Ordering Information

Straight Type

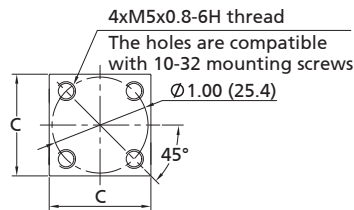
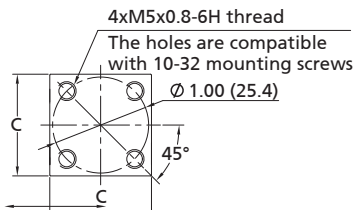
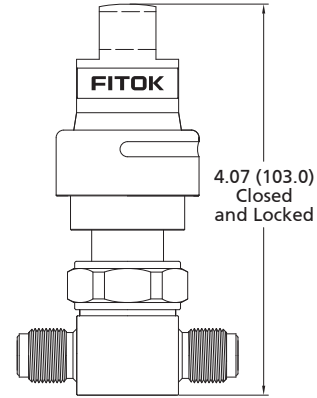
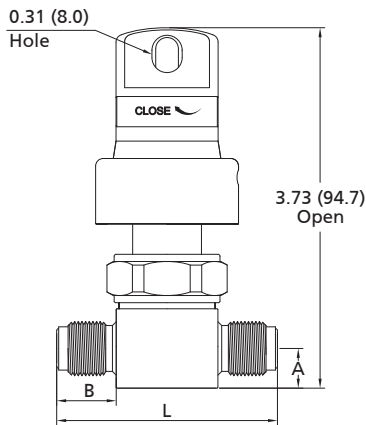
Dimensions

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"x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	1.74 (44.2)
DQ□□-TB6-	3/8"x0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	1.74 (44.2)
DQ□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DQ□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DQ□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	2.30 (58.4)

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Ordering Number Description

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

DQ6L - TB4 - FR4 - RAF2

Body Material		Inlet Type		Inlet Size		Outlet Type	Outlet Size	Actuator Type		Process Specification	
6L	316L SS	TB	Fractional Tube Butt Weld	4	1/4" or 1/4"x0.035"	Same as Inlet	Specified in the same way as Inlet	R	Manual-Round Handle	FC-01	
6LV	316L VAR	MTB	Metric Tube Butt Weld	6	6 mm or 3/8"x0.035"			U	Manual-Integral Lockout Handle	F2	FC-02
6LW	316L VIM-VAR	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 combination rules of FITOK product part number. Not all combinations are available.

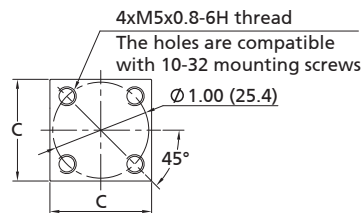
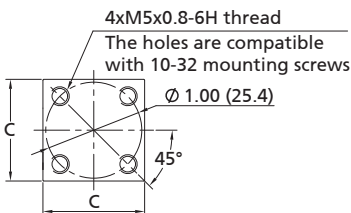
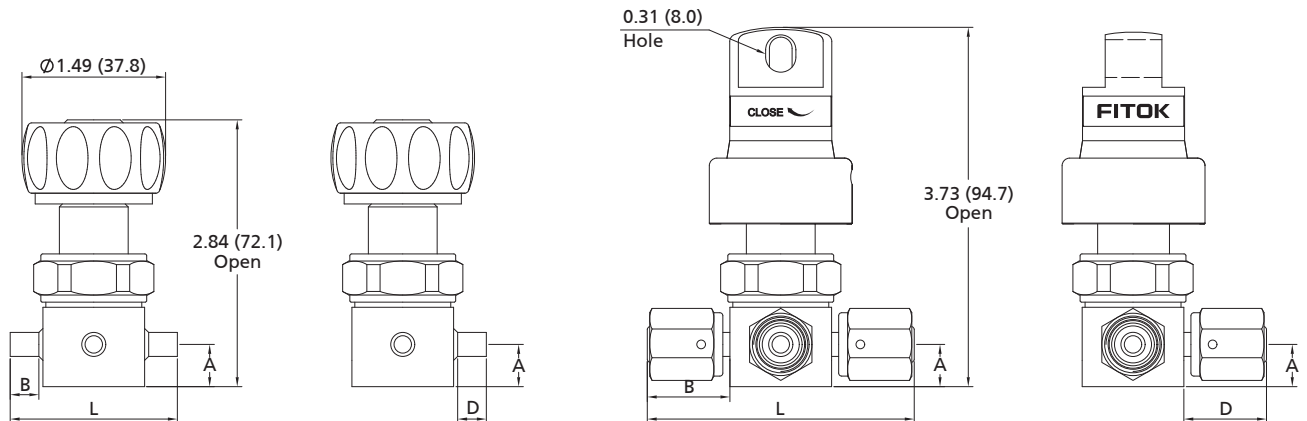
Branch Type

Dimensions

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

Round Handle

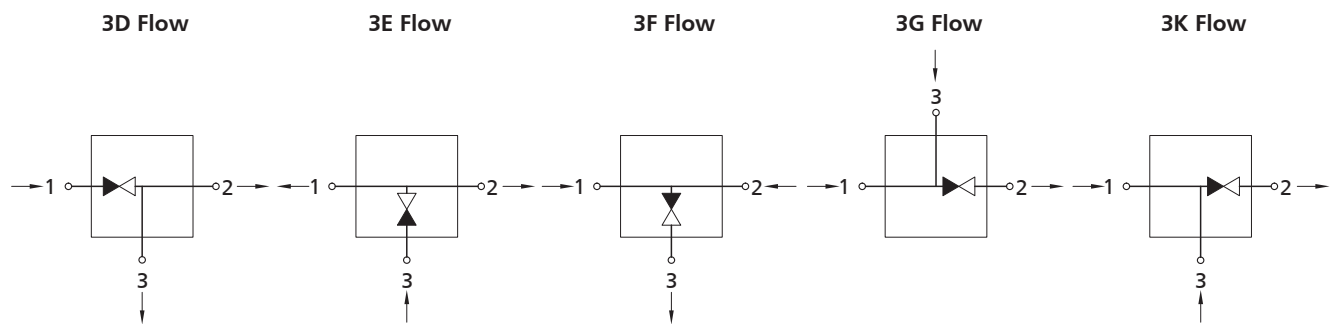
Integral Lockout Handle



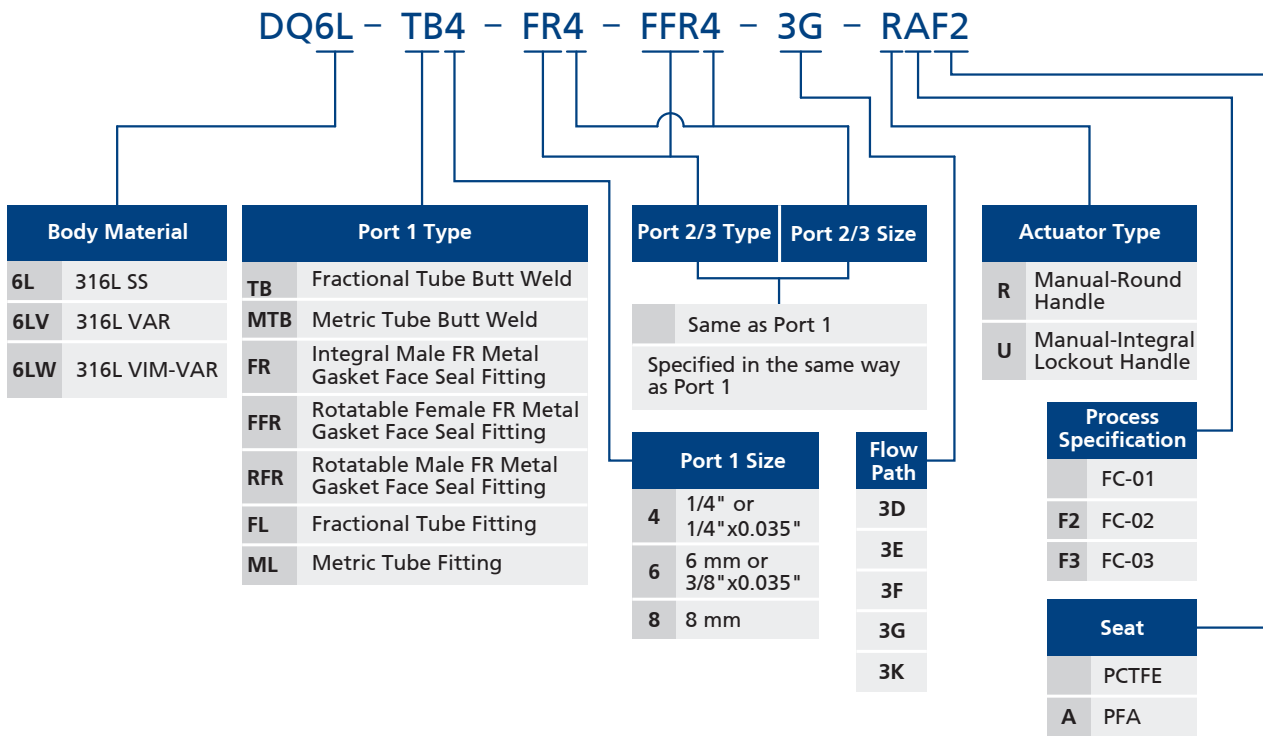
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DQ□□-TB4-	1/4"x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	0.30 (7.6)	1.74 (44.2)
DQ□□-TB6-	3/8"x0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	0.26 (6.6)	1.74 (44.2)
DQ□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	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 Metal Gasket Face Seal Fitting	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 Metal Gasket Face Seal Fitting	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

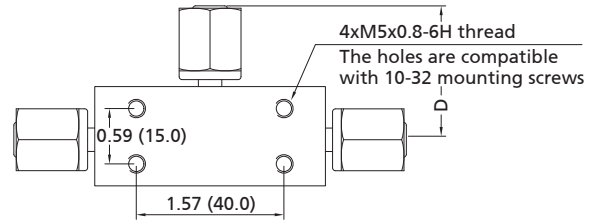
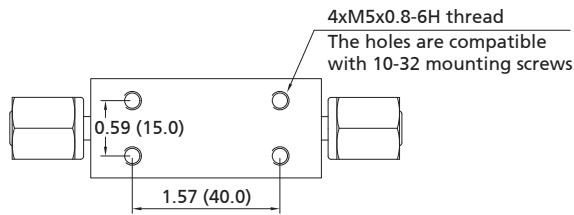
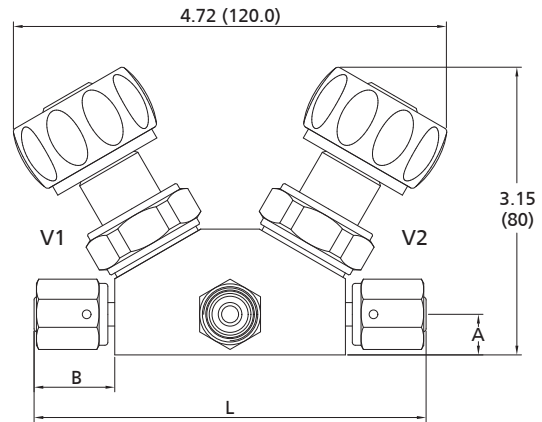
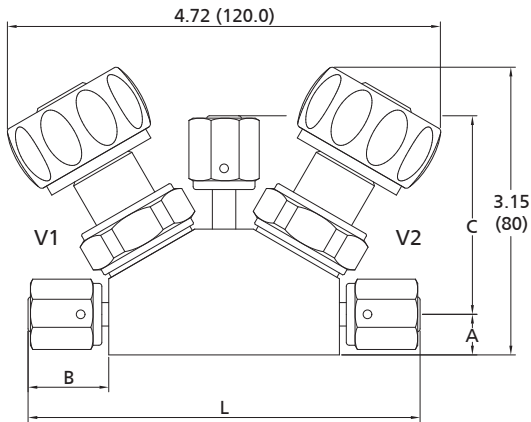


Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

2-Valve 3-Way Block Type

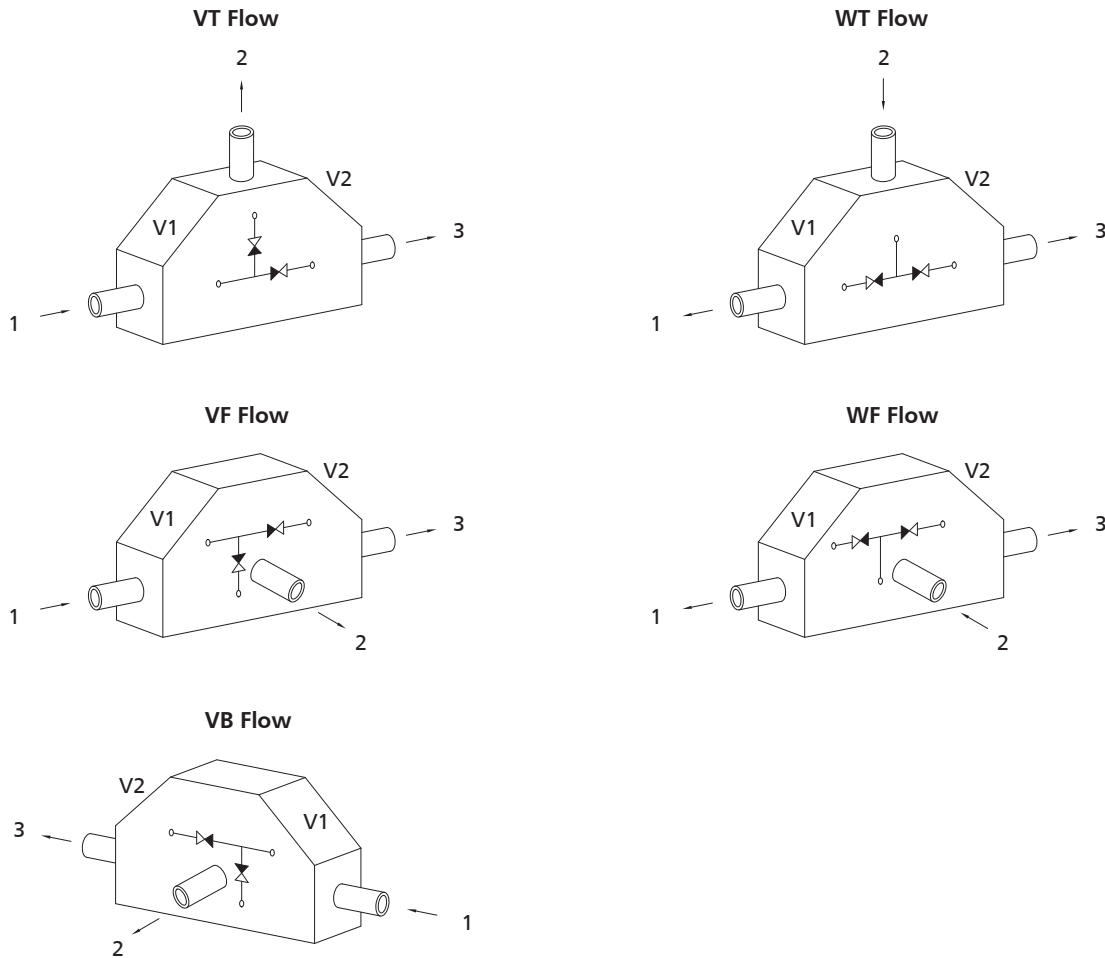
Dimensions

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

Flow Paths



Fittings

Valves

Pressure Gauges

Ordering Number Description

DQ236L - FFR4 - RFR4 - FFR4 - VF - RAF2

Type	Body Material	Port 1 Type	Port 2/3 Type	Port 2/3 Size	Flow Path	Actuator Type	Process Specification			
23 2 Valves and 3 Ports	6L 316L SS	FFR Rotatable Female FR Metal Gasket Face Seal Fitting	FFR4	4	VF	R Manual-Round Handle	FC-01			
	6LV 316L VAR						F2 FC-02			
	6LW 316L VIM-VAR	RFR Rotatable Male FR Metal Gasket Face Seal Fitting	RFR4	1/4"	VF	U Manual-Integral Lockout Handle	F3 FC-03			
						<table border="1"> <thead> <tr> <th>Seat</th> </tr> </thead> <tbody> <tr> <td>PCTFE</td> </tr> <tr> <td>A PFA</td> </tr> </tbody> </table>		Seat	PCTFE	A PFA
Seat										
PCTFE										
A PFA										

Integrated Systems and Others

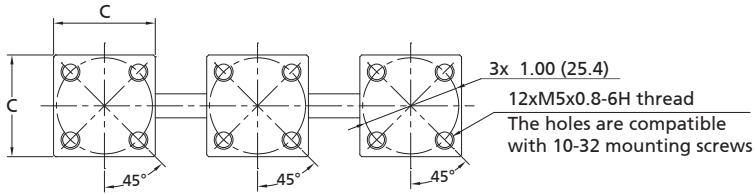
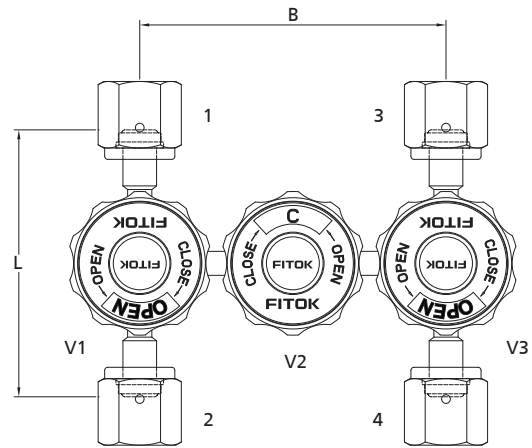
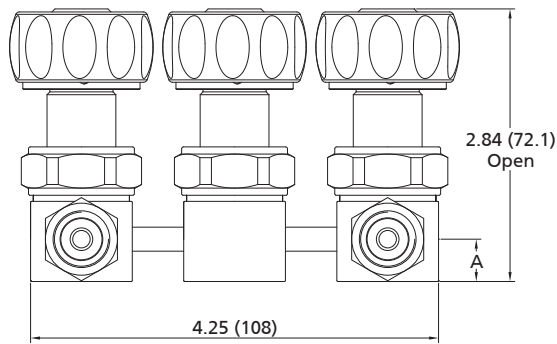
Process Specification

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

3-Valve 4-Way Block Type

Dimensions

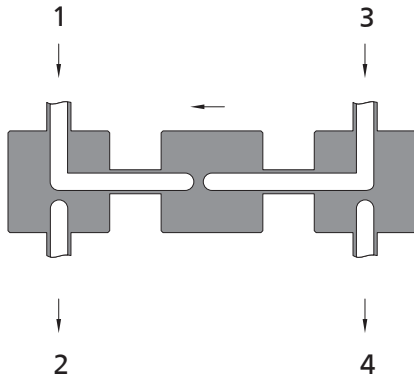
Dimensions, in inches (millimeters), are for reference only.



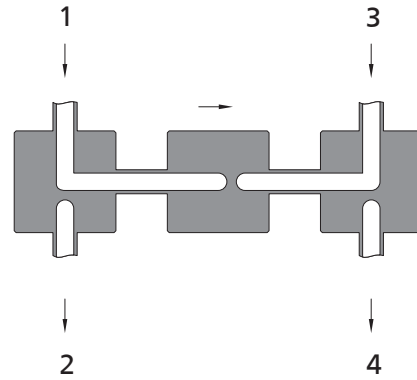
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DQ34□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	3.19 (81.0)	1.06 (26.9)	2.78 (70.6)
DQ34□□-RFR4-	Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	3.19 (81.0)	1.06 (26.9)	2.78 (70.6)

Flow Paths

© Flow paths as viewed from the top



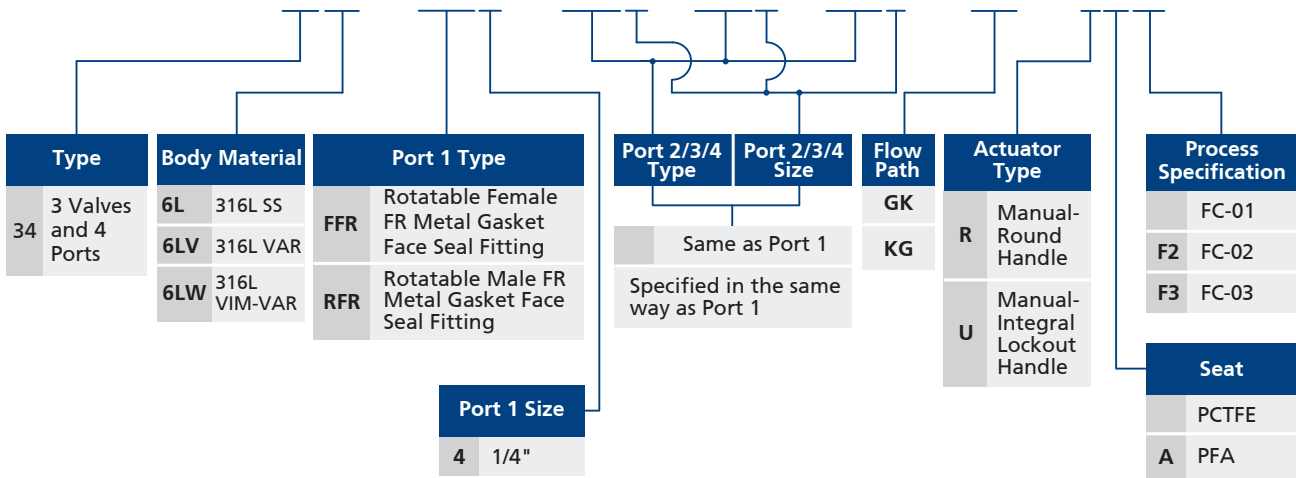
GK Flow



KG Flow

Ordering Number Description

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



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

Low Pressure Pneumatic Diaphragm Valves DP Series

Features

- ⊙ Minimum particle generation and dead space
- ⊙ Fully contained seat to provide excellent resistance to swelling and contamination
- ⊙ Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- ⊙ Long cycle life with high speed actuation
- ⊙ Internally threadless and springless
- ⊙ Fully functional under vacuum conditions
- ⊙ Position sensors available assembled on normally closed pneumatically actuated valves



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)	
Pneumatic Actuator Operating Pressure	60 to 90 psig (4.2 to 6.2 bar)	
Temperature	PCTFE: -10 ~ 176 °F (-23 ~ 80 °C) PFA: -10 ~ 302 °F (-23 ~ 150 °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

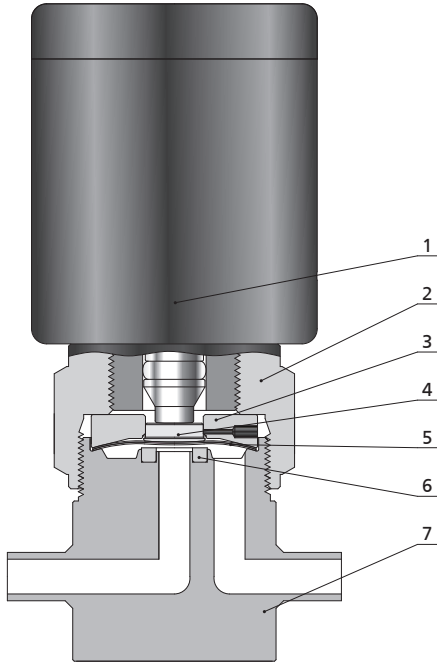
Process Specification

Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR /SEMI F20		
Wetted Surface Roughness	Ra 10 μin. (0.25 μm) ^①		Ra 5 μin. (0.13 μm)
Polishing Process	Machine finished ^①		Electropolished

① For valves with 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 μin. (0.13 μm)

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

Major Materials of Construction



Normally Closed Pneumatic Model

Item	Component	Material/Specification
1	Actuator	Aluminum
2	Bonnet Nut	316 SS/ASTM A479
3	Bonnet	S17400/ASTM A564
4	Button	316 SS/ASTM A479
5	Diaphragm (2)	Cobalt Alloy/AMS 5876
6	Seat	PCTFE/ASTM D1430 or PFA/ASTM D3307
7	Body	316L SS/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Pneumatic Actuators

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

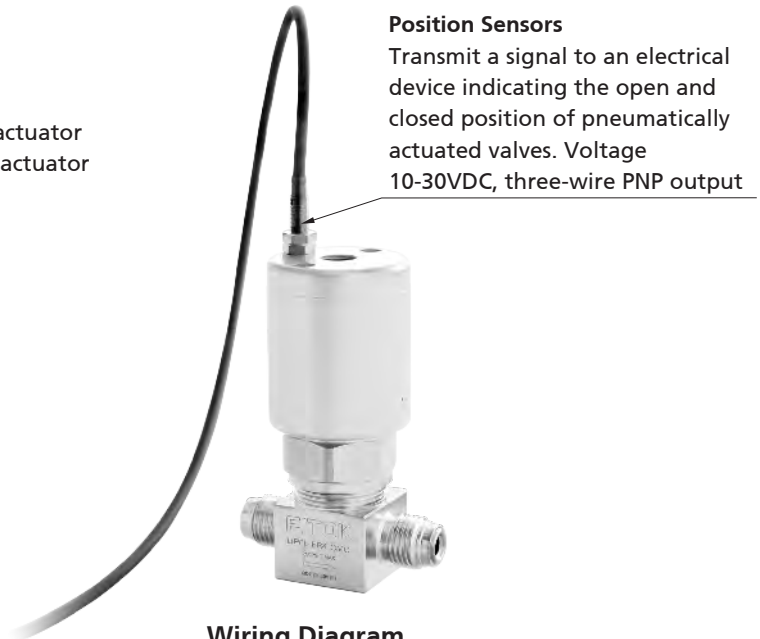


Position Sensors

Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

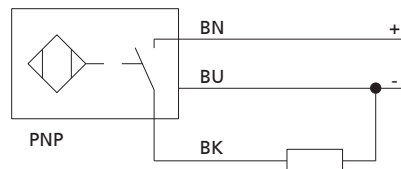
Sensor Technical Data

Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

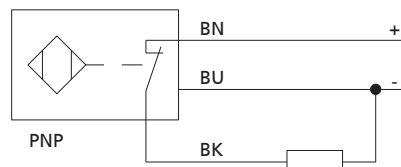


Wiring Diagram

Normally open position sensors



Normally closed position sensors

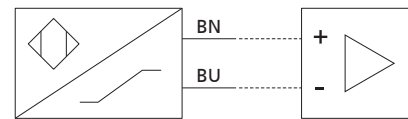


Explosion-proof Position Sensors

Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Wiring Diagram



Technical Information

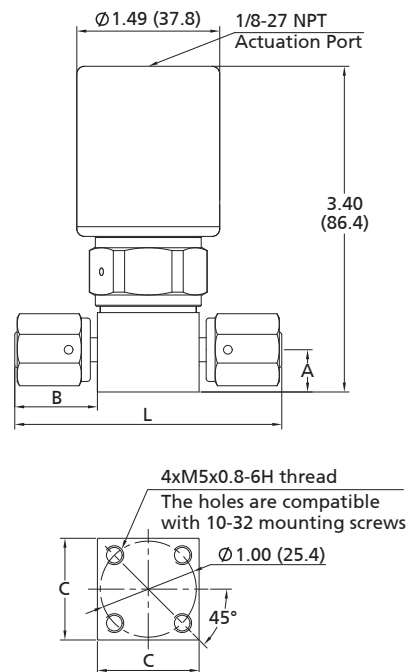
Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Dimensions and Ordering Information

Straight Type

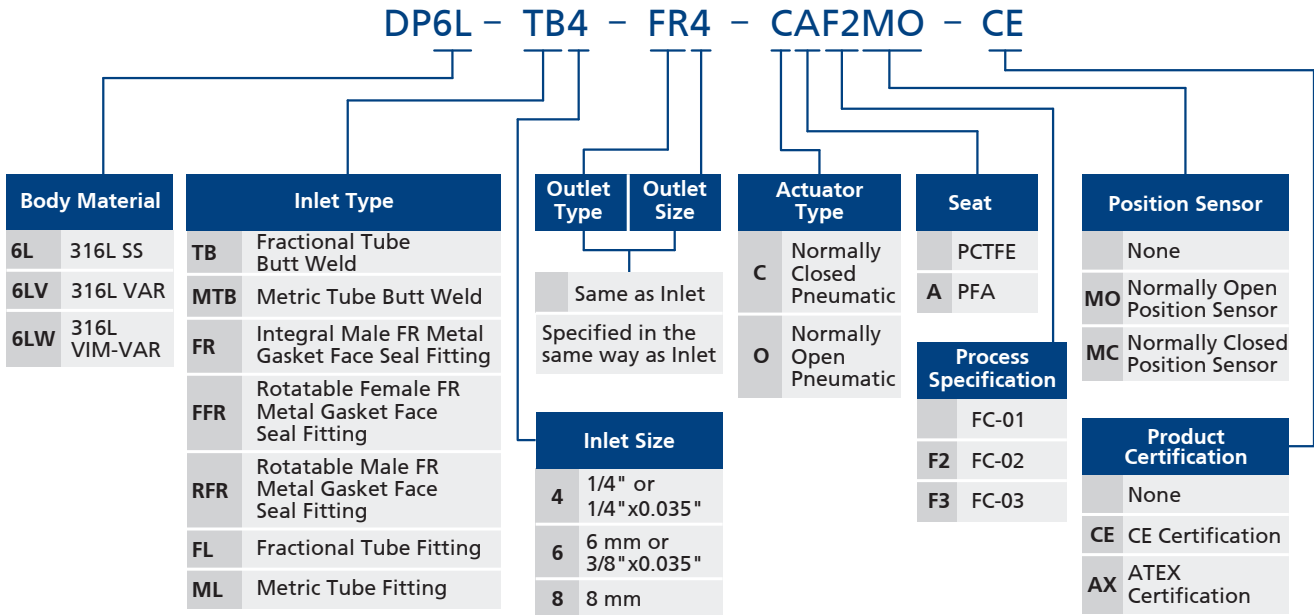
Dimensions

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



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DP□□-TB4-	1/4"x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	1.74 (44.2)
DP□□-TB6-	3/8"x0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	1.74 (44.2)
DP□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DP□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DP□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	2.30 (58.4)

Ordering Number Description



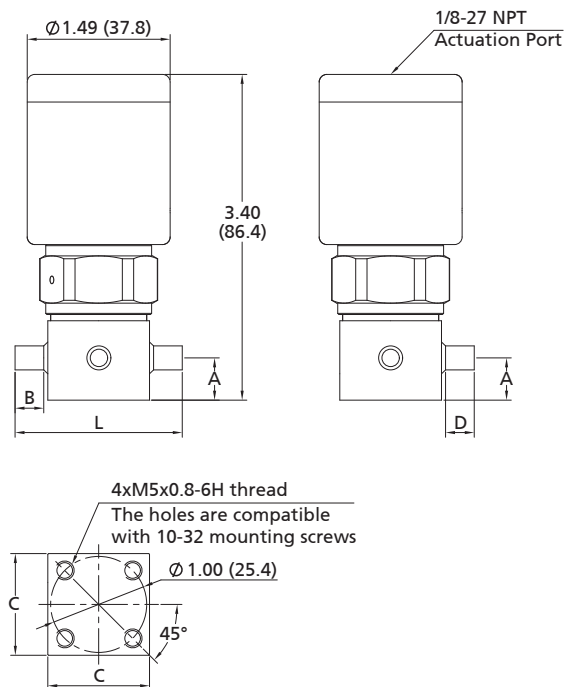
Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Branch Type

Dimensions

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



V-24 Diaphragm Valves

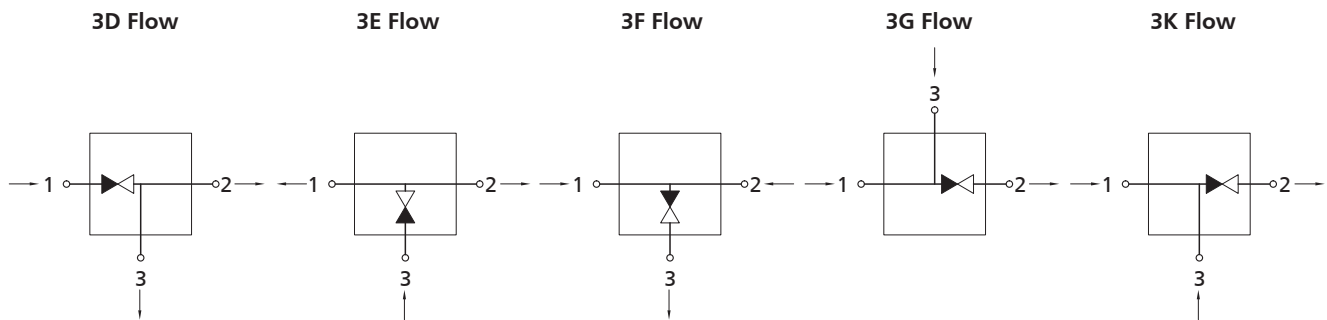
Fittings

Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DP□□-TB4-	1/4"x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	0.30 (7.6)	1.74 (44.2)
DP□□-TB6-	3/8"x0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	0.26 (6.6)	1.74 (44.2)
DP□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DP□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DP□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	0.62 (15.7)	2.30 (58.4)

Valves

Flow Paths

☉ Flow paths as viewed from the top



Pressure Gauges

Ordering Number Description

DP6L - TB4 - FR4 - FFR4 - 3G - CAF2MO - CE

Body Material		Port 1 Type		Port 2/3 Type	Port 2/3 Size	Actuator Type	Process Specification	Position Sensor	Product Certification
6L	316L SS	TB	Fractional Tube Butt Weld	Same as Port 1	Specified in the same way as Port 1	C	FC-01	None	None
6LV	316L VAR	MTB	Metric Tube Butt Weld			O	F2 FC-02	MO	Normally Open Position Sensor
6LW	316L VIM-VAR	FR	Integral Male FR Metal Gasket Face Seal Fitting				F3 FC-03	MC	AX ATEX Certification
		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						
				Port 1 Size	Flow Path	Seat			
				4	3D	PCTFE			
				6	3E	A PFA			
				8	3F				
					3G				
					3K				

Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

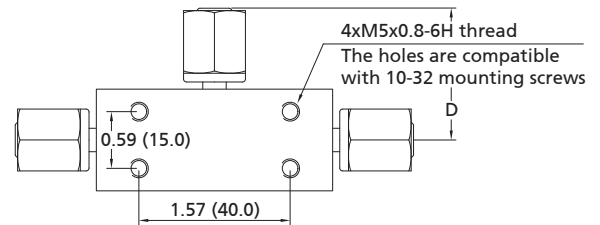
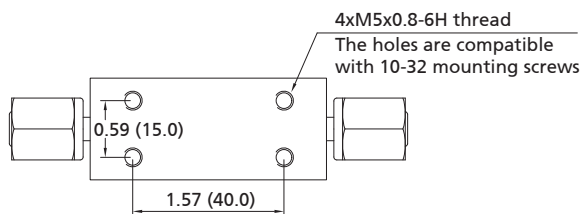
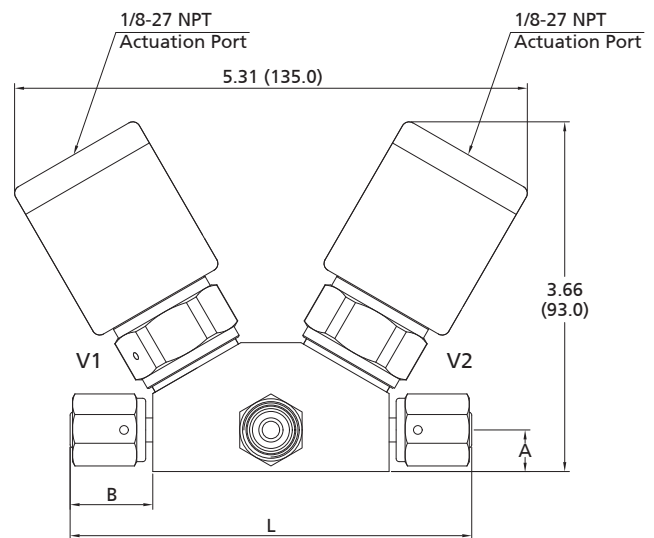
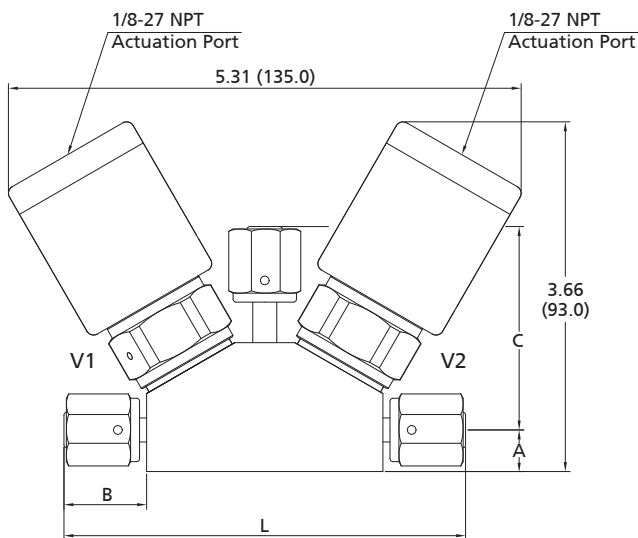
Integrated Systems and Others

Process Specification

2-Valve 3-Way Block Type

Dimensions

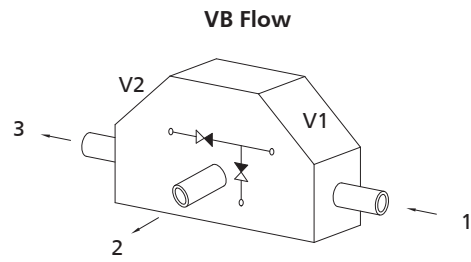
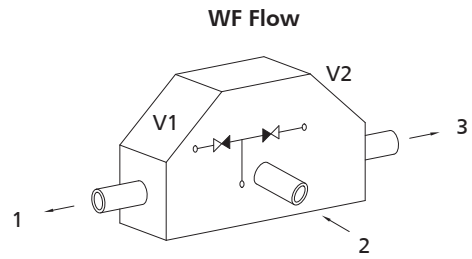
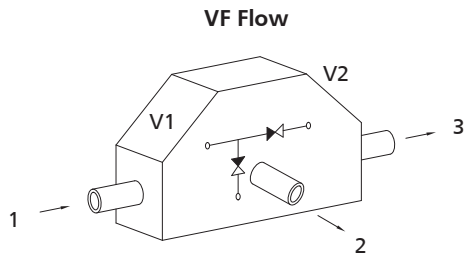
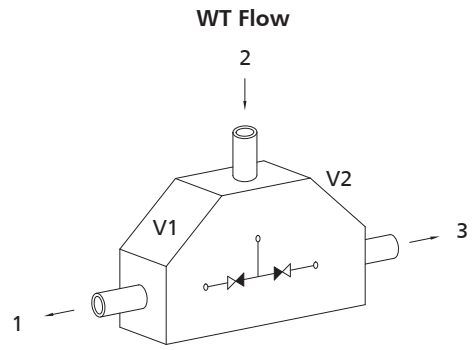
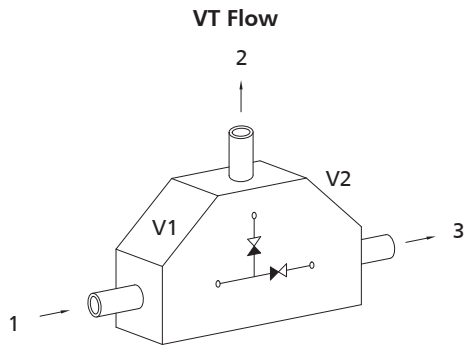
Dimensions, in inches (millimeters), are for reference only.



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DP23□□-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)
DP23□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	—	1.37 (34.8)	4.24 (107.6)
DP23□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	2.12 (53.8)	—	4.24 (107.6)
DP23□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	—	1.37 (34.8)	4.24 (107.6)

V-26 Diaphragm Valves

Flow Paths



Fittings

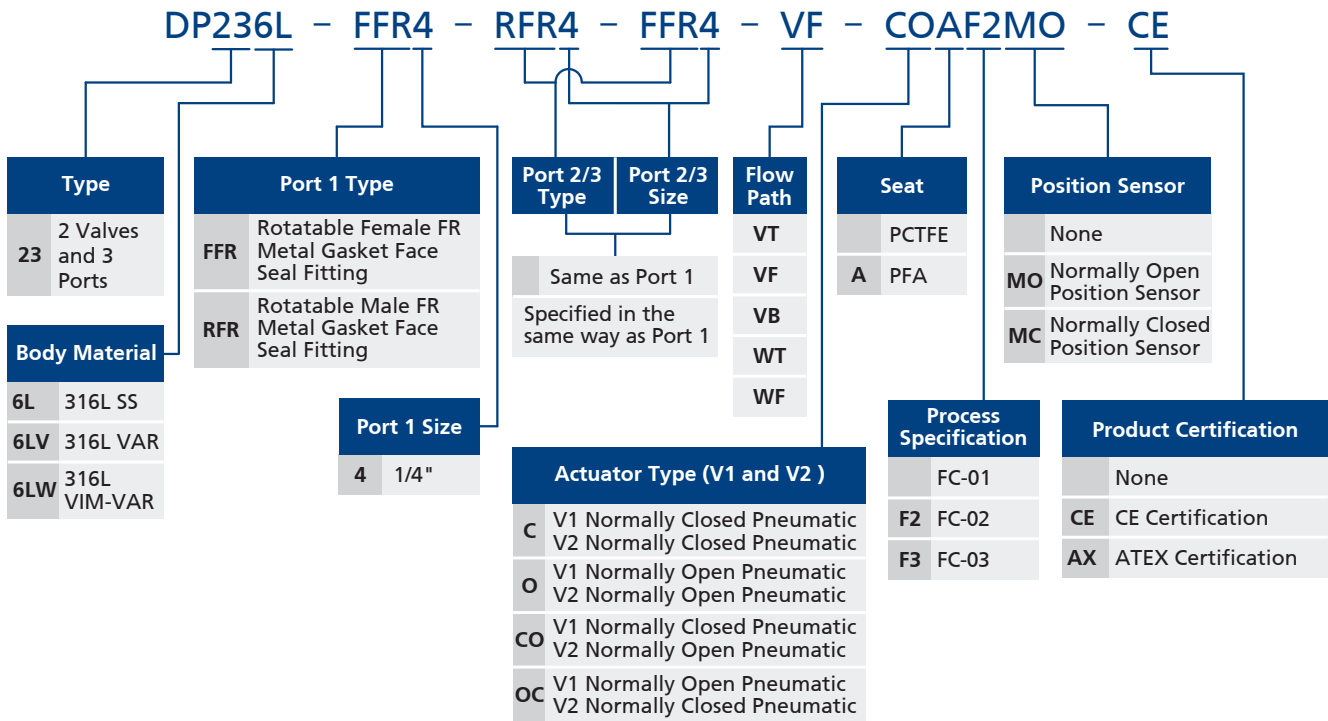
Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

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.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Fittings

Valves

Pressure Gauges

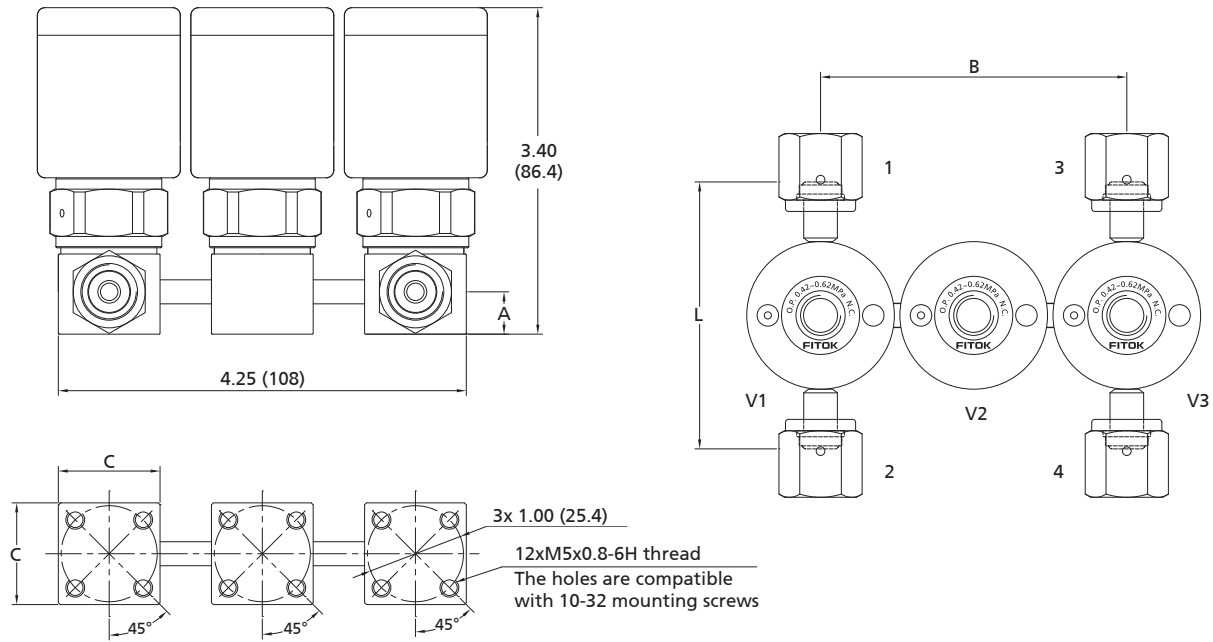
Integrated Systems and Others

Process Specification

3-Valve 4-Way Block Type

Dimensions

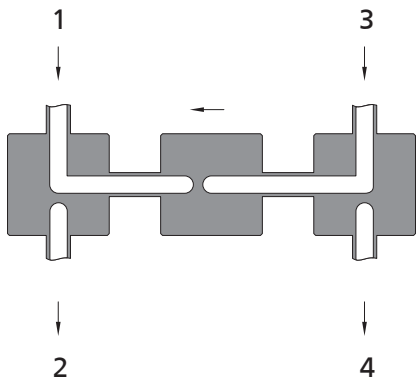
Dimensions, in inches (millimeters), are for reference only.



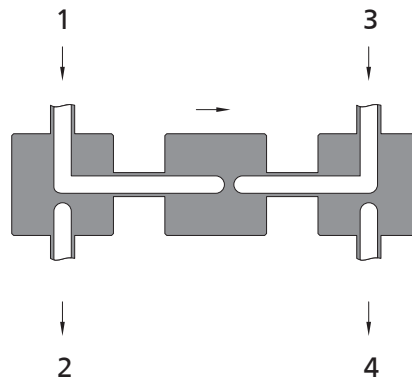
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DP34□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	3.19 (81.0)	1.06 (26.9)	2.78 (70.6)
DP34□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	3.19 (81.0)	1.06 (26.9)	2.78 (70.6)

Flow Paths

☉ Flow paths as viewed from the top



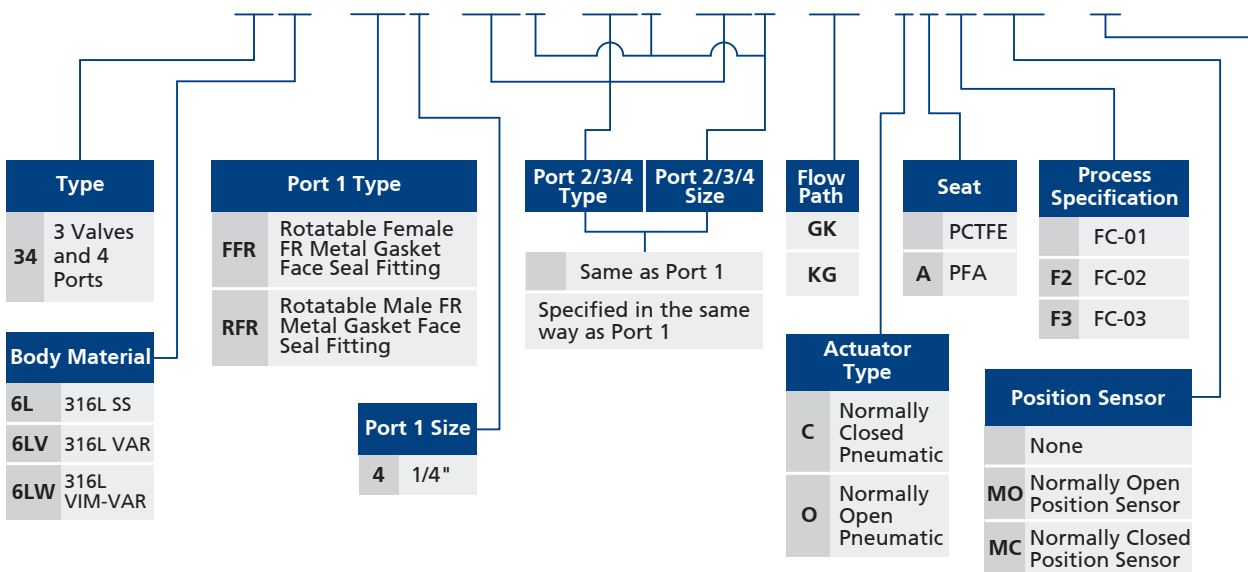
GK Flow



KG Flow

Ordering Number Description

DP346L - FFR4 - RFR4 - FFR4 - FFR4 - GK - CAF3MO - CE



Note:

1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
3. For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Product Certification	
	None
CE	CE Certification
AX	ATEX Certification

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

High Pressure Springless Diaphragm Valves DH Series

Features

- ⦿ Metal-to-metal diaphragm seal
- ⦿ Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- ⦿ Long cycle life in high pressure applications
- ⦿ Manual and pneumatic actuators available
- ⦿ Position sensors available assembled on pneumatically actuated valves
- ⦿ Normally open and normally closed position sensors optional



Technical Data

Port Size	1/4" to 3/8" or 6 mm to 8 mm	
Flow Coefficient (Cv)	0.20	
Orifice Size	0.16 in. (4.1 mm)	
Max. Working Pressure	3000 psig (206 bar)	
Pneumatic Actuator Operating Pressure	60 to 90 psig (4.2 to 6.2 bar)	
Temperature	PCTFE: -10 ~ 150 °F (-23 ~ 65 °C) VESPEL: 50 ~ 300 °F (10 ~ 150 °C)	
Leak Rate (Helium)	Internal	≤ 1x10 ⁻⁹ std cm ³ /s
	External	≤ 1x10 ⁻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)	64	2.4
50 (3.4)	170	5.4
100 (6.8)	300	7.6

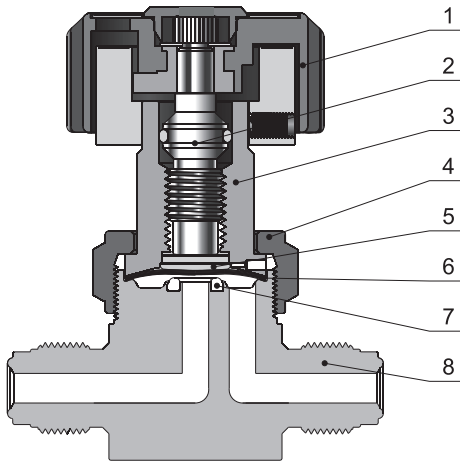
Process Specification

Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR /SEMI F20		
Wetted Surface Roughness	Ra 10 µin. (0.25 µm) ^①		Ra 5 µin. (0.13 µm)
Polishing Process	Machine finished ^①		Electropolished

① For valves with 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 µin. (0.13 µm).

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

Major Materials of Construction



Manual Model

Item	Component	Material/Specification
1	Handle	ABS
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 (5)	Cobalt Alloy (3)/AMS 5876 + C17200 (2)/ASTM B194
7	Seat	PCTFE/ASTM D1430 or Vespel
8	Body	316L SS/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Actuators

Manual - Round Handle

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



Pneumatic

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



Position Sensors

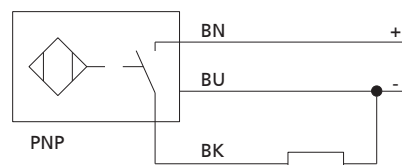
Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Sensor Technical Data

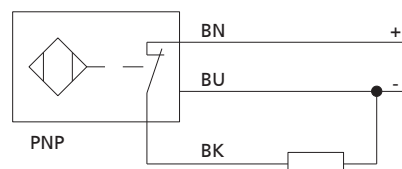
Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

Normally open position sensors



Normally closed position sensors

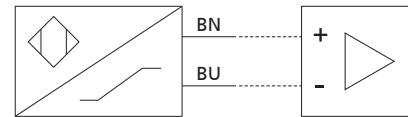


Explosion-proof Position Sensors

Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Wiring Diagram



Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

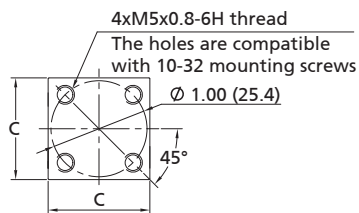
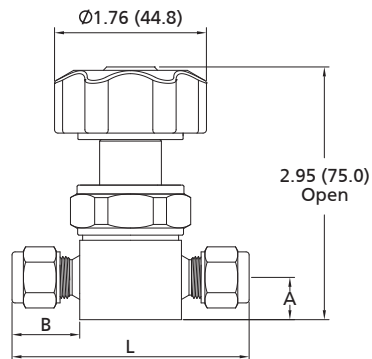
Dimensions and Ordering Information

Straight Type

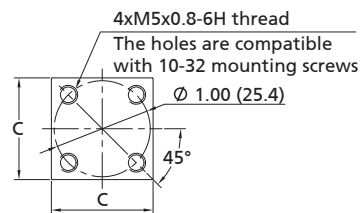
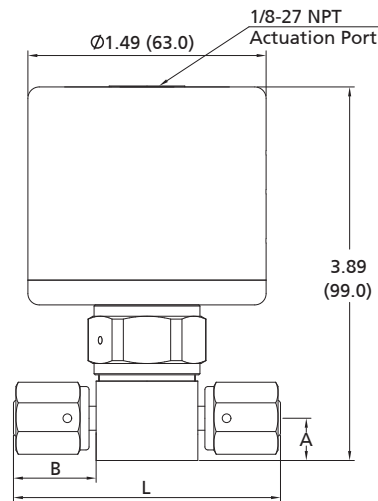
Dimensions

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

Manual - Round Handle



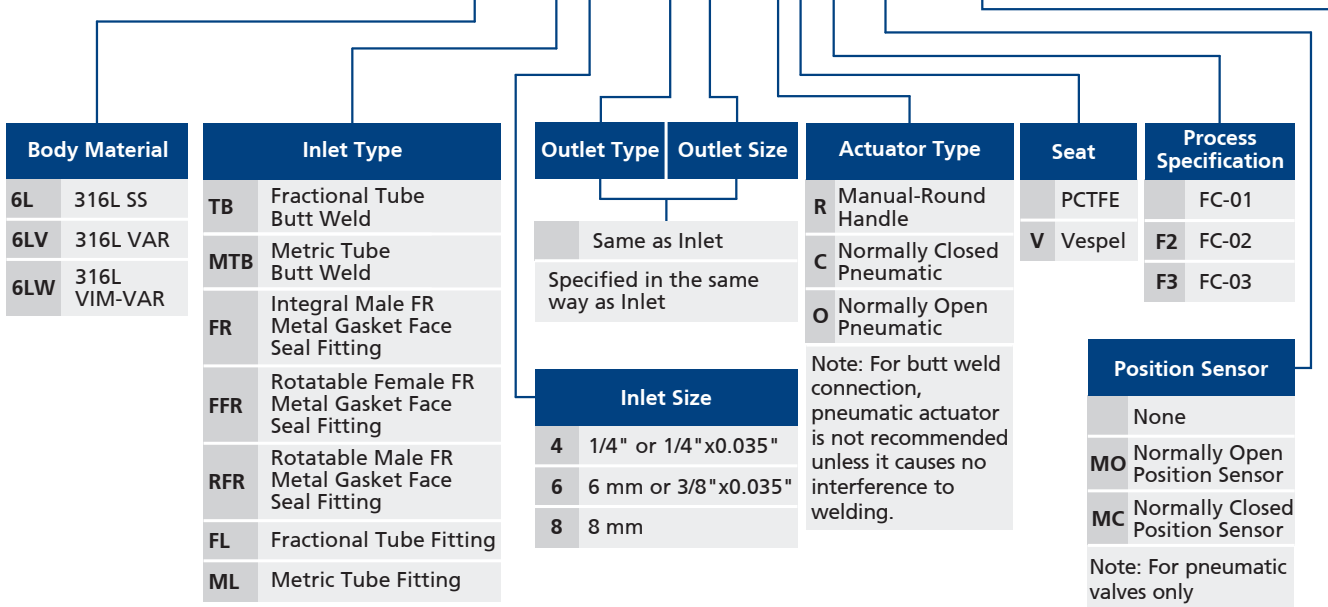
Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DH□□-TB4-	1/4"x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	1.74 (44.2)
DH□□-TB6-	3/8"x0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	1.74 (44.2)
DH□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DH□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	2.78 (70.6)
DH□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	2.30 (58.4)
DH□□-ML6-	6 mm FITOK Tube Fitting	0.44 (11.2)	0.70 (17.9)	1.06 (26.9)	2.47 (62.7)

Ordering Number Description

DH6L - FL4 - ML6 - C VF2MO - CE



Note:

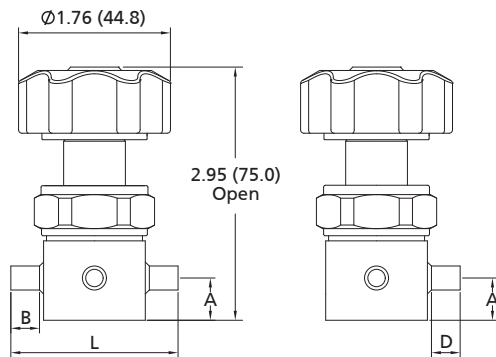
- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Branch Type

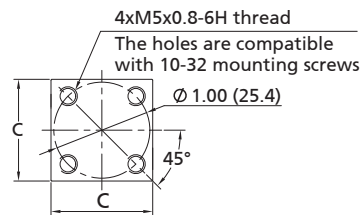
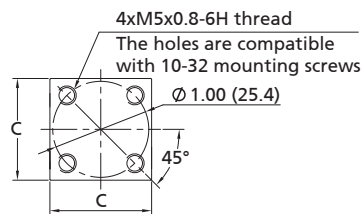
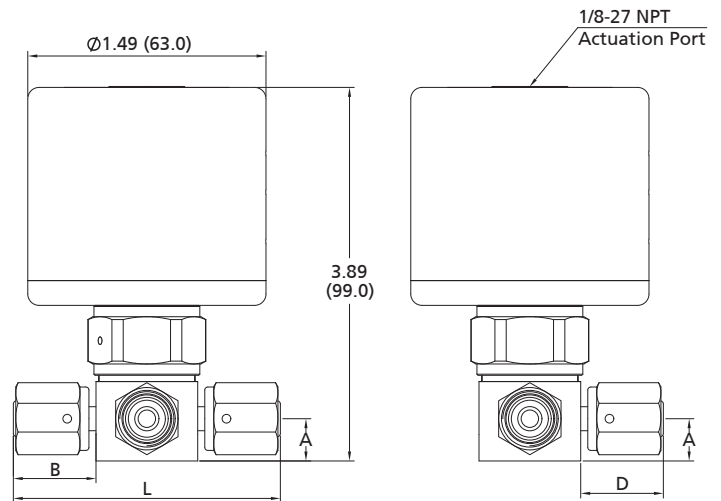
Dimensions

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

Manual - Round Handle



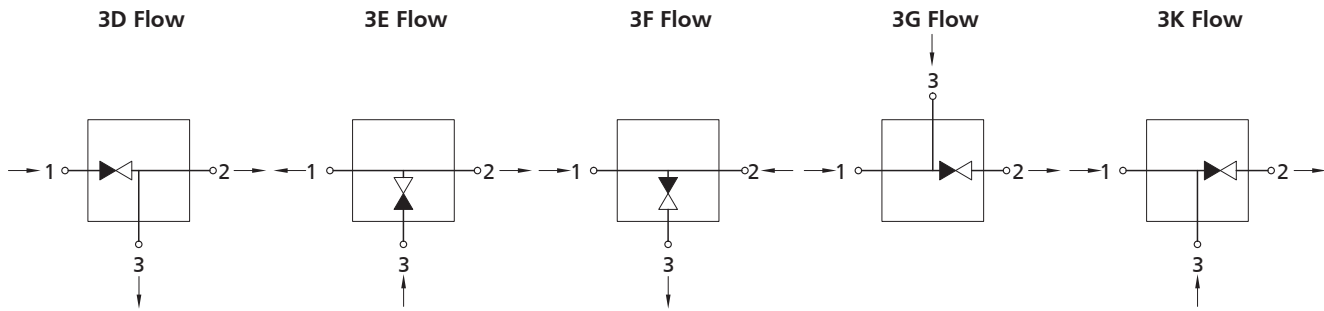
Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DH□□-TB4-	1/4" x 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)
DH□□-TB6-	3/8" x 0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	0.26 (6.6)	1.74 (44.2)
DH□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DH□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.06 (26.9)	0.86 (21.8)	2.78 (70.6)
DH□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	0.62 (15.7)	2.30 (58.4)
DH□□-FL4-	1/4" FITOK Tube Fitting	0.44 (11.2)	0.70 (17.9)	1.06 (26.9)	0.70 (17.9)	2.47 (62.7)

Flow Paths

© Flow paths as viewed from the top



Ordering Number Description

DH6L - TB4 - TB4 - FR4 - 3F - CVF2MO - CE

Body Material		Port 1 Size		Port 2/3 Type	Port 2/3 Size	Actuator Type	Seat	Position Sensor
6L	316L SS	4	1/4" or 1/4"x0.035"	Same as Port 1	Specified in the same way as Port 1	R	PCTFE	None
6LV	316L VAR	6	6 mm or 3/8"x0.035"			C		V Vespel
6LW	316L VIM-VAR	8	8 mm			O	Process Specification FC-01 F2 FC-02 F3 FC-03	
						Note: For butt weld connection, pneumatic actuator is not recommended unless it causes no interference to welding.		Note: For pneumatic valves only
Port 1 Type								Product Certification
TB	Fractional Tube Butt Weld							None
MTB	Metric Tube Butt Weld							CE Certification (For Pneumatic only)
FR	Integral Male FR Metal Gasket Face Seal Fitting							AX ATEX Certification (For Pneumatic only)
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							

Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Diaphragm Valves

High Pressure Spring Diaphragm Valves DM Series

Features

- ⊙ All-metal containment, packless
- ⊙ Repetitive shutoff with fully contained soft-seat stem tip
- ⊙ Position indicator ring for lever handle indicates open and closed states
- ⊙ Reduced seat volume
- ⊙ Fully functional under vacuum conditions
- ⊙ Different manual and pneumatic actuators available
- ⊙ Position sensors available assembled on pneumatically actuated valves
- ⊙ Normally open and normally closed position sensors optional



Technical Data

Port Size		1/4" to 3/8" or 6 mm to 8 mm
Flow Coefficient (Cv)	Lever Handle	0.14
	Round Handle	0.30
	Pneumatic Actuator	0.20
Orifice Size		0.16 in. (4.1 mm)
Max. Working Pressure		3500 psig (241 bar)
Max. Differential Back Pressure^①		1500 psig (103 bar)
Pneumatic Actuator Operating Pressure		60 to 90 psig (4.2 to 6.2 bar)
Temperature		PCTFE: -100 ~ 250 °F (-73 ~ 121 °C) Vespel: -100 ~ 320 °F (-73 ~ 160 °C)
Leak Rate (Helium)	Internal	≤4x10 ⁻⁹ std cm ³ /s
	External	≤4x10 ⁻⁹ std cm ³ /s

- ① Differential back pressure is equal to the outlet pressure minus the inlet pressure. When the differential back pressure is greater than 1500 psig (103 bar), the valve will not open even being loosen after tightening the handle. As the force of the differential back pressure acting on the valve stem is downward when closing and is greater than the spring force, the valve stem cannot be lifted. A17-7 SS spring can be used to increase the max. differential back pressure to 2500 psig (172 bar). To order, please contact FITOK Group or our authorized distributors.

Flow Data

Air @ 70 °F (21 °C)

Water @ 60 °F (16 °C)

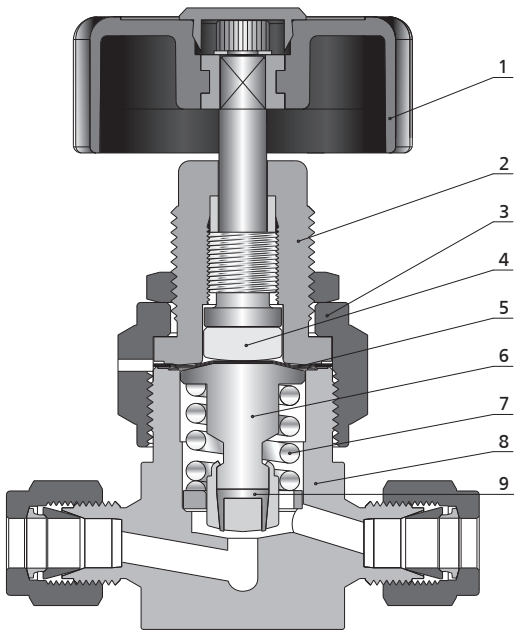
Pressure Drop to Atmosphere psig (bar)	Lever Handle		Round Handle		Pneumatic Actuator	
	Air (l/min)	Water (l/min)	Air (l/min)	Water (l/min)	Air (l/min)	Water (l/min)
10 (0.68)	49	1.6	100	3.5	64	2.4
50 (3.4)	130	3.9	270	8.0	170	5.4
100 (6.8)	240	5.4	490	11.4	300	7.6

Process Specification

Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316 SS/ASTM A479 or 316L SS/SEMI F20		316L SS/SEMI F20
Wetted Surface Roughness	Ra 20 µin. (0.51 µm)		Ra 10 µin. (0.25 µm)
Polishing Process	Machine finished		Electropolished

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

Major Materials of Construction



Round Handle Model

Item	Component	Material/Specification
1	Handle	Aluminum
2	Bonnet	316 SS/ASTM A479
3	Bonnet Nut	316 SS/ASTM A479
4	Button	C36000/ASTM B16
5	Diaphragm (3)	Cobalt Alloy/AMS 5876
6	Stem	316L SS/SEMI F20
7	Spring	316 SS/ASTM A313
8	Body	316 SS/ASTM A479 or 316L SS/SEMI F20
9	Seat	PCTFE/ASTM D1430 or Vespel

Actuators

Manual - Lever Handle

- Quick, quarter-turn actuation
- Position indicator ring to visually indicate open and closed states



Manual - Round Handle

- One and a half turns to operate from fully open to closed



Pneumatic

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



Position Sensors

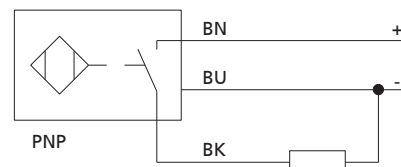
Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Sensor Technical Data

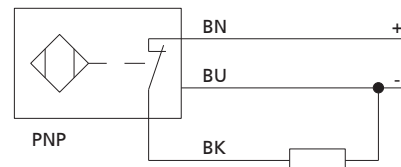
Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

Normally open position sensors



Normally closed position sensors



Fittings

Valves

Pressure Gauges

Integrated Systems and Others

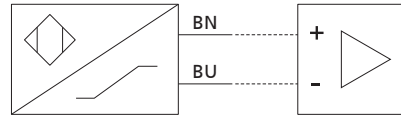
Process Specification

Explosion-proof Position Sensors

Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Wiring Diagram



Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

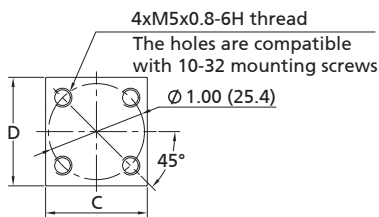
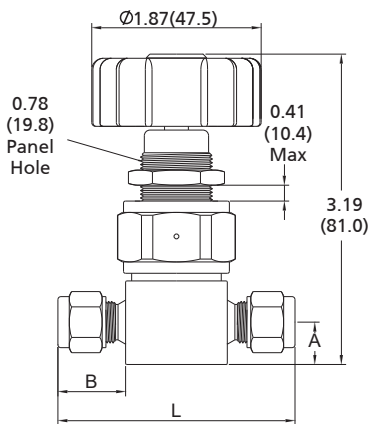
Dimensions and Ordering Information

Straight Type

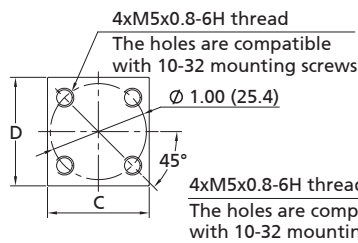
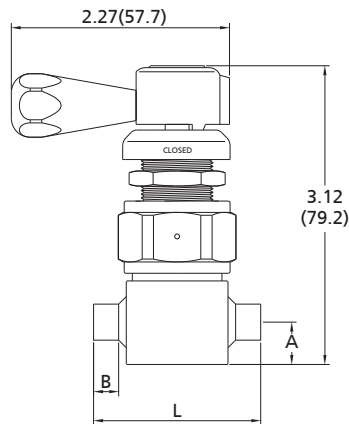
Dimensions

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

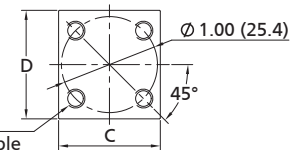
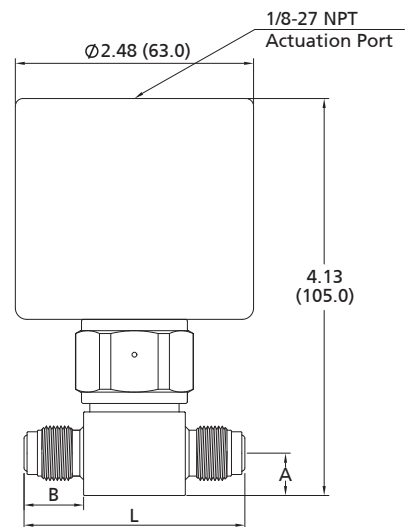
Manual - Round Handle



Manual - Lever Handle



Pneumatic



V-40 Diaphragm Valves

Fittings

Valves

Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DM□□-FL4-	1/4" FITOK Tube Fitting	0.44 (11.2)	0.69 (17.6)	1.06 (26.9)	1.13 (28.7)	2.47 (62.1)
DM□□-FL6-	3/8" FITOK Tube Fitting	0.44 (11.2)	0.76 (19.3)	1.06 (26.9)	1.13 (28.7)	2.58 (65.5)
DM□□-ML6-	6 mm FITOK Tube Fitting	0.44 (11.2)	0.70 (17.9)	1.06 (26.9)	1.13 (28.7)	2.47 (62.8)
DM□□-ML8-	8 mm FITOK Tube Fitting	0.44 (11.2)	0.74 (18.7)	1.06 (26.9)	1.13 (28.7)	2.53 (64.3)
DM□□-TB4-	1/4"x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.06 (26.9)	1.13 (28.7)	1.74 (44.2)
DM□□-TB6-	3/8"x0.035" Tube Butt Weld	0.44 (11.2)	0.26 (6.6)	1.06 (26.9)	1.13 (28.7)	1.74 (44.2)
DM□□-NS4-	1/4" Integral Male FR	0.44 (11.2)	—	1.06 (26.9)	1.13 (28.7)	2.46 (62.5)
DM□□-FNS4-	1/4" Female NPT	0.44 (11.2)	—	1.06 (26.9)	1.13 (28.7)	2.46 (62.5)
DM□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.62 (15.7)	1.06 (26.9)	1.13 (28.7)	2.30 (58.4)
DM□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.85 (21.6)	1.06 (26.9)	1.13 (28.7)	2.76 (70.1)
DM□□-FO4-	1/4" Male FO	0.44 (11.2)	0.47 (11.9)	1.06 (26.9)	1.13 (28.7)	2.00 (50.8)

Angle Type

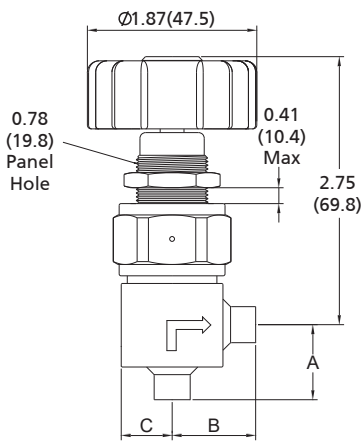
Dimensions

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

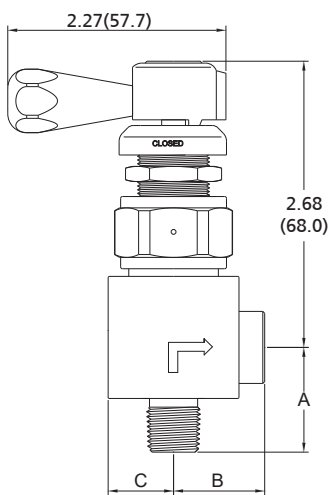
Pressure Gauges

Integrated Systems and Others

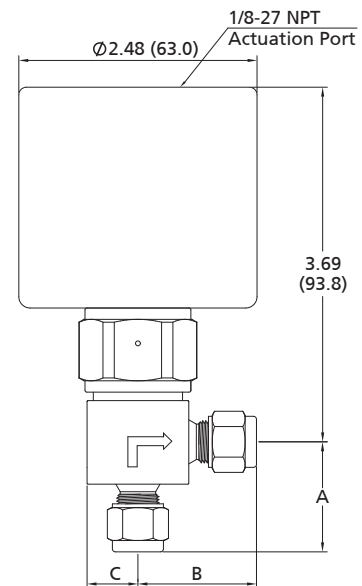
Manual - Round Handlee



Manual - Lever Handle



Pneumatic

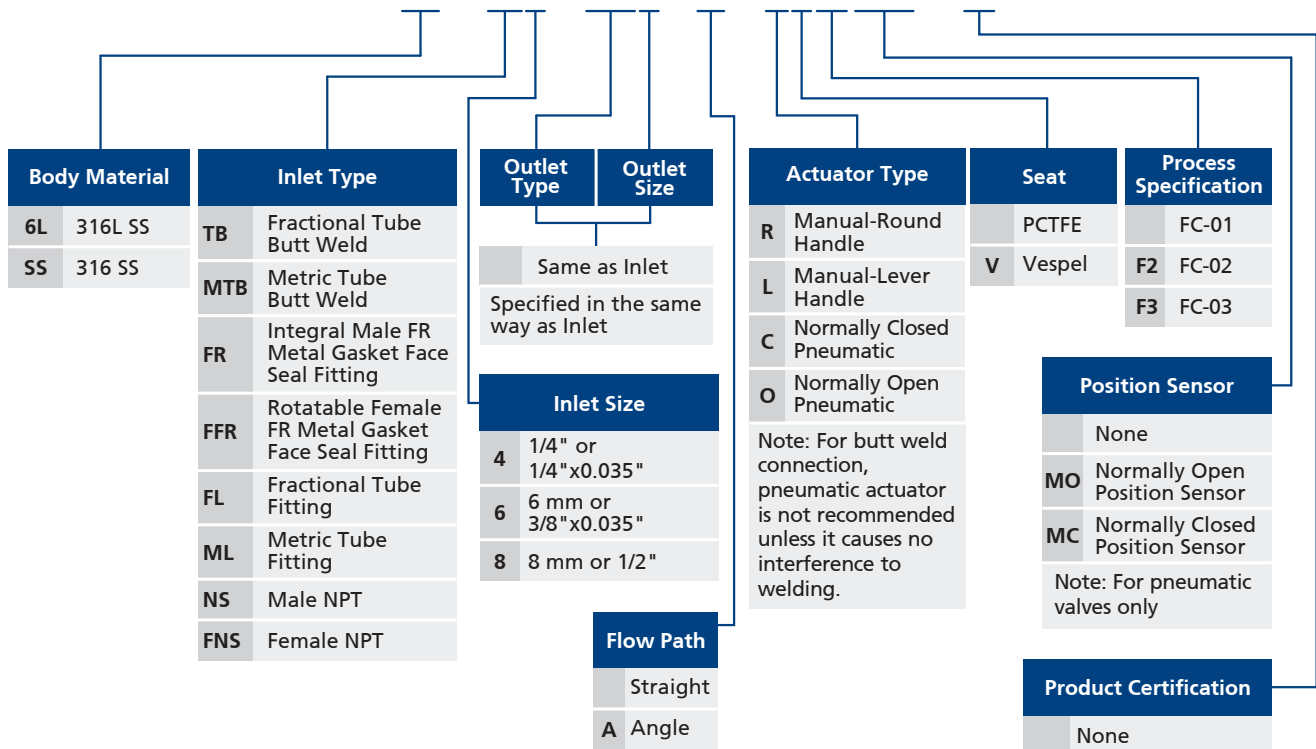


Process Specification

Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)		
		A	B	C
DM□□-FL4-	1/4" FITOK Tube Fitting	1.14 (29.1)	1.23 (31.3)	0.53 (13.4)
DM□□-ML6-	6 mm FITOK Tube Fitting	1.14 (29.1)	1.23 (31.3)	0.53 (13.4)
DM□□-TB6-	3/8"x0.035" Tube Butt Weld	0.78 (19.8)	0.87 (22.0)	0.53 (13.4)
DM□□-NS4-FNS4	Inlet 1/4" Male NPT	1.09 (27.7)	0.95 (24.1)	0.68 (17.3)
	Outlet 1/4" Female NPT			

Ordering Number Description

DMSS - FL4 - ML6 - A - CVF2MO - CE



Note:

1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
3. For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

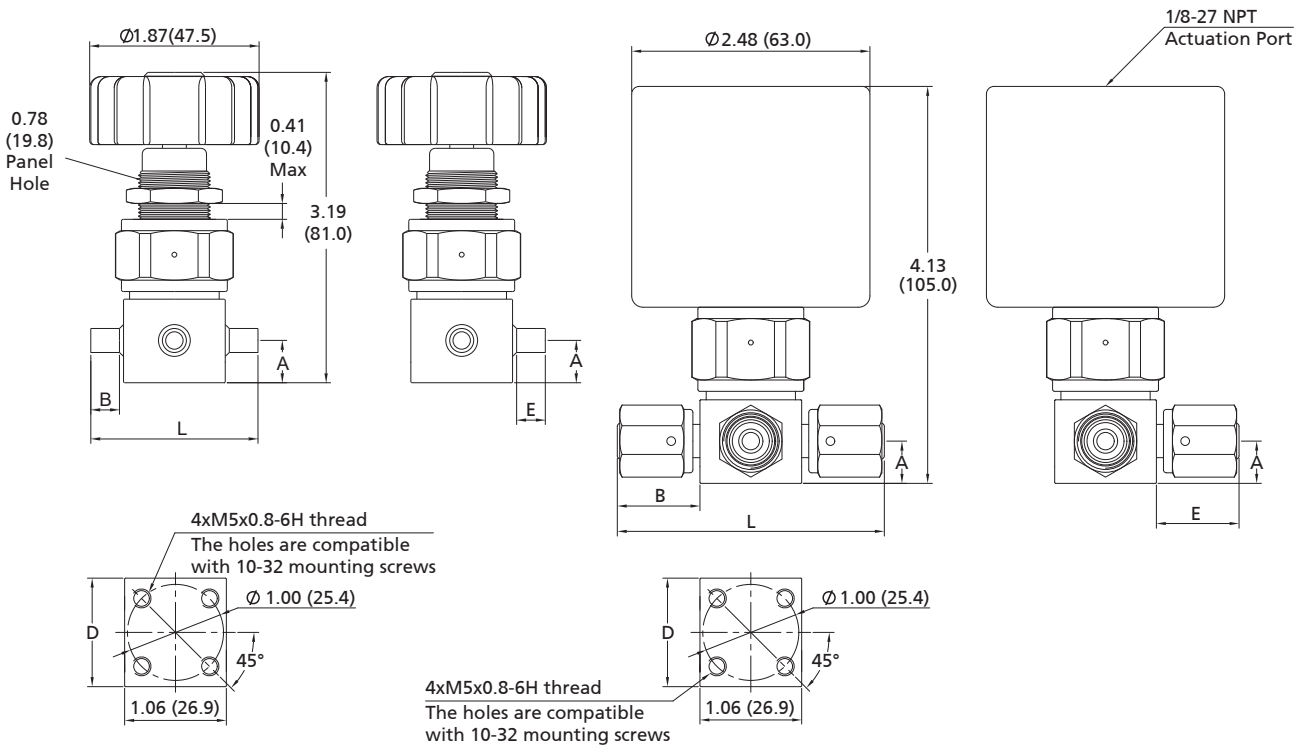
Branch Type

Dimensions

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

Manual - Round Handle

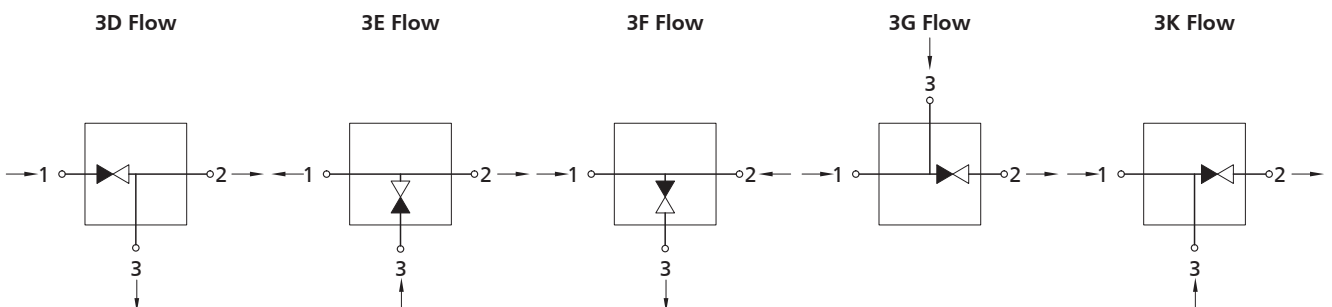
Pneumatic



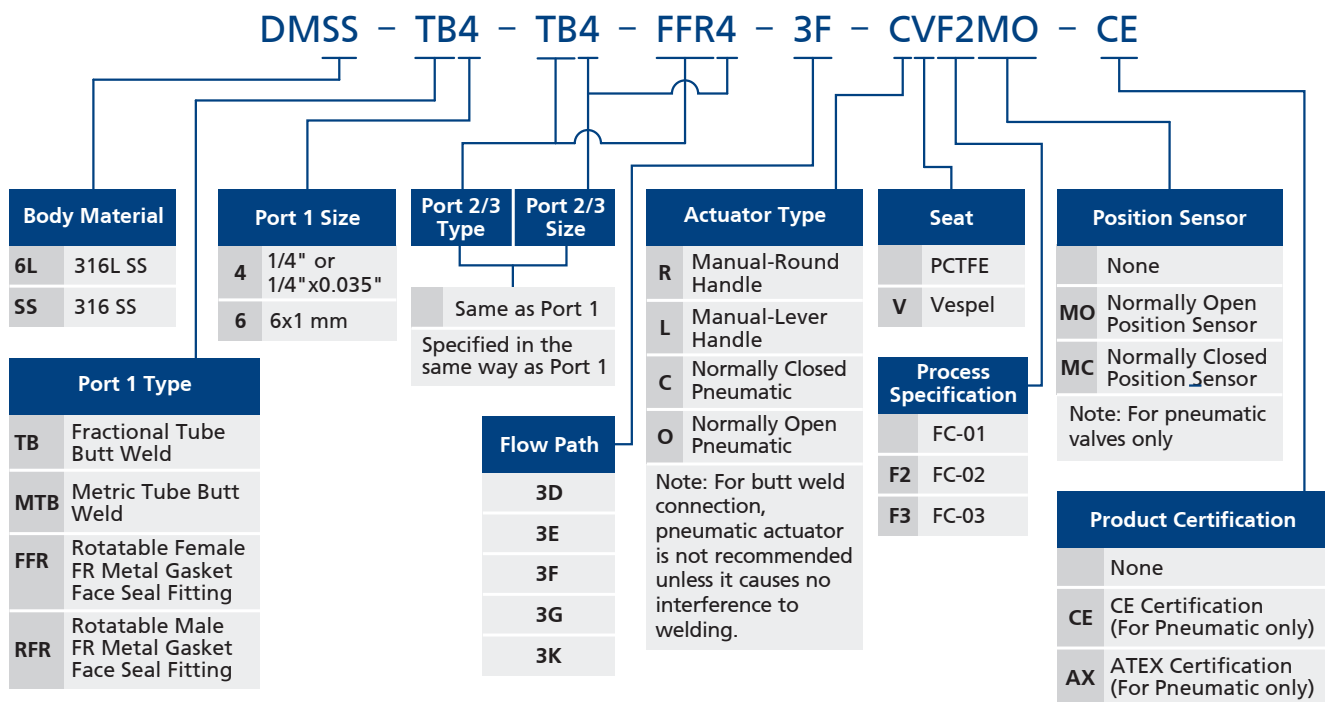
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	D	E	L
DM□□-TB4-	1/4" x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.13 (28.7)	0.30 (7.6)	1.74 (44.2)
DM□□-MTB6-	3/8" x0.035" Tube Butt Weld	0.44 (11.2)	0.30 (7.6)	1.13 (28.7)	0.30 (7.6)	1.74 (44.2)
DM□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.85 (21.6)	1.13 (28.7)	0.85 (21.6)	2.76 (70.1)
DM□□-RFR4-	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	1.21 (30.7)	1.13 (28.7)	1.21 (30.7)	3.48 (88.4)

Flow Paths

☉ Flow paths as viewed from the top



Ordering Number Description



Note:

1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
3. For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

High Pressure Compact Diaphragm Valves DS Series

Features

- ⦿ Reduced inner volume
- ⦿ Packless diaphragm seal to ensure high purity
- ⦿ Minimized number of components
- ⦿ Manual and pneumatic actuators available
- ⦿ Aluminum piston to increase operation speed



Technical Data

Port Size	1/4" to 3/8" or 6 mm to 8 mm	
Flow Coefficient (Cv)	0.17	
Orifice Size	0.12 in. (3.0 mm)	
Max. Working Pressure	Manual	4500 psig (310 bar)
	Pneumatic	3000 psig (206 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	$\leq 1 \times 10^{-9}$ 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)

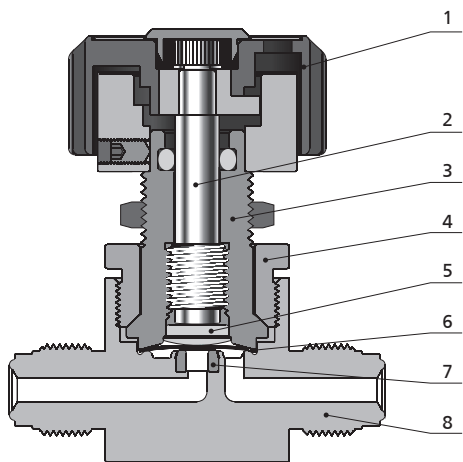
Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
10 (0.68)	55	1.9
50 (3.4)	150	4.5
100 (6.8)	260	6.4

Process Specification

Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316 SS/ASTM A479 316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR/SEMI F20		316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR /SEMI F20
Wetted Surface Roughness	Ra 20 µin. (0.51 µm)		Ra 10 µin. (0.25 µm)
Polishing Process	Machine finished		Electropolished

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

Major Materials of Construction



Manual Model

Item	Component	Material/Specification
1	Handle	ABS
2	Stem	316 SS/ASTM A479
3	Bonnet	S17400/ASTM A564
4	Bonnet Nut	316 SS/ASTM A479
5	Button	C36000/B16
6	Diaphragm (5)	Cobalt Alloy (3) /AMS 5876 + C17200 (2) /ASTM B194
7	Seat	PCTFE/ASTM D1430 or Vespel
8	Body	316 SS/ASTM A479 or 316L SS/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Actuators

Manual - Round Handle

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

Pneumatic

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



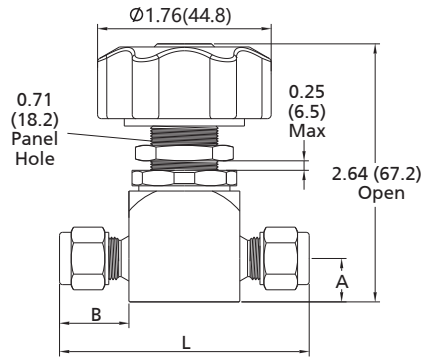
Dimensions and Ordering Information

Straight Type

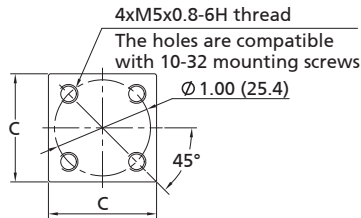
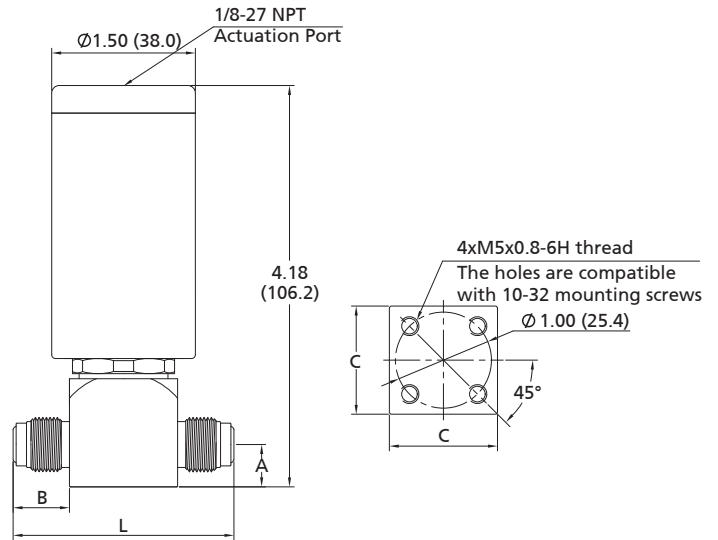
Dimensions

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

Manual - Round Handle

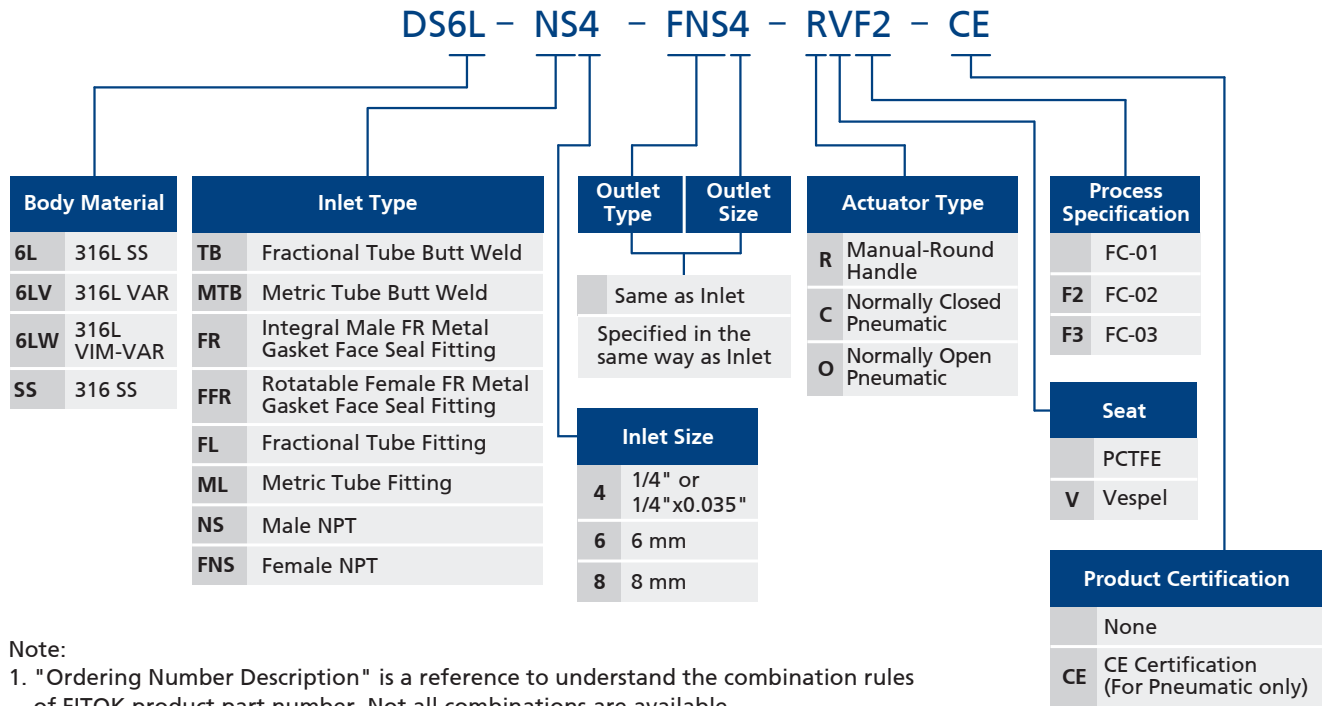


Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DS□□-TB4-	1/4" x 0.035" Tube Butt Weld	0.44 (11.2)	0.34 (8.6)	1.12 (28.6)	1.81 (45.9)
DS□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	1.12 (28.6)	2.85 (72.3)
DS□□-FR4-	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.58 (14.9)	1.12 (28.6)	2.30 (58.4)
DS□□-FL4-	1/4" FITOK Tube Fitting	0.44 (11.2)	0.70 (17.9)	1.12 (28.6)	2.54 (64.4)
DS□□-NS4-	1/4" Male NPT	0.44 (11.2)	0.56 (14.2)	1.12 (28.6)	2.24 (57.0)
DS□□-FNS4-	1/4" Female NPT	0.44 (11.2)	—	1.12 (28.6)	2.36 (60.0)

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.
- For -CE selections, products have "CE" lettering.

2-Valve 3-Way Block Type

Dimensions

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



Fittings

Valves

Pressure Gauges

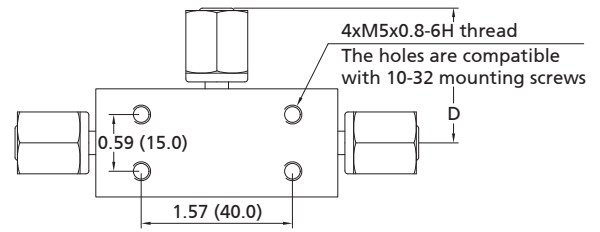
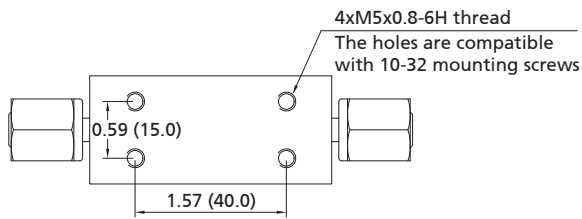
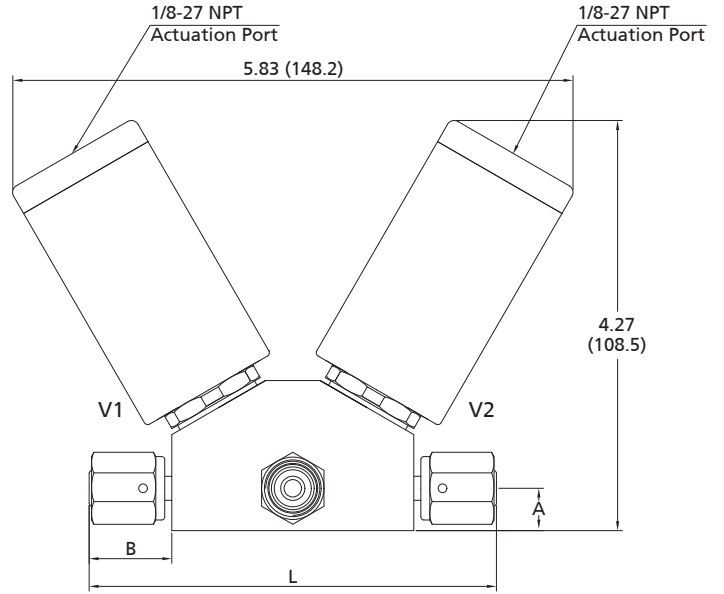
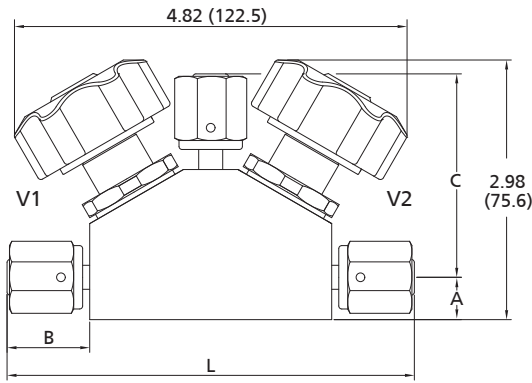
Integrated Systems and Others

Process Specification

V-48 Diaphragm Valves

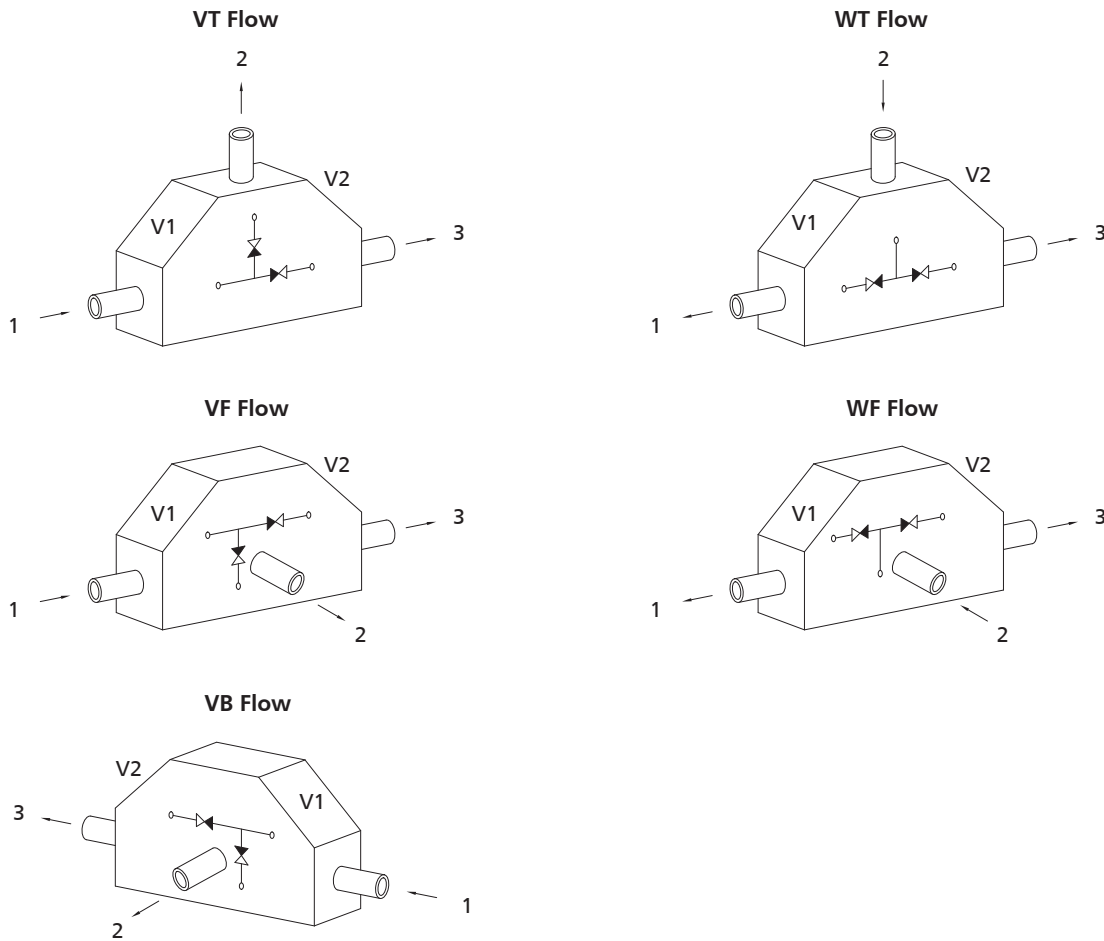
Manual - Round Handle

Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DS23□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	2.59 (65.7)	—	4.24 (107.6)
DS23□□-FFR4-	1/4" Rotatable Female FR Metal Gasket Face Seal Fitting	0.44 (11.2)	0.86 (21.8)	—	1.54 (39.1)	4.24 (107.6)
DS23□□-FNS4-	1/4" Female NPT	0.44 (11.2)	—	—	0.68 (17.3)	3.07 (78.0)

Flow Paths



Ordering Number Description

DS236L - FFR4 - RFR4 - FFR4 - VF - COVF2 - CE

Type	23 2 Valves and 3 Ports	Port 1 Type	FFR Rotatable Female FR Metal Gasket Face Seal Fitting RFR Rotatable Male FR Metal Gasket Face Seal Fitting FNS Female NPT	Port 2/3 Type	Same as Port 1	Actuator Type (V1 and V2)	R Handle C Normally Closed Pneumatic O Normally Open Pneumatic RC V1 Handle V2 Normally Closed Pneumatic RO V1 Handle V2 Normally Open Pneumatic CR V1 Normally Closed Pneumatic V2 Handle OR V1 Normally Open Pneumatic V2 Handle CO V1 Normally Closed Pneumatic V2 Normally Open Pneumatic OC V1 Normally Open Pneumatic V2 Normally Closed Pneumatic	Seat	PCTFE V Vespel
Body Material	6L 316L SS 6LV 316L VAR 6LW 316L VIM-VAR SS 316 SS	Port 1 Size	4 1/4"	Port 2/3 Size	Specified in the same way as Port 1	Flow Path	VT VF VB WT WF	Process Specification	FC-01 F2 FC-02 F3 FC-03
								Product Certification	None CE CE Certification (For Pneumatic only)

Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering.

Diaphragm Valves

Low Pressure/Medium Flow Diaphragm Valves

DR Series

Features

- ⦿ For medium flow applications
- ⦿ Minimum particle generation and dead space
- ⦿ Fully contained seat to provide excellent resistance to swelling and contamination
- ⦿ Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- ⦿ Manual and pneumatic actuators available
- ⦿ Position sensors available assembled on normally closed pneumatically actuated valves



Technical Data

Port Size	3/8" to 1/2" or 10 mm to 12 mm	
Flow Coefficient (Cv)	0.70	
Orifice Size	0.31 in. (7.9 mm)	
Max. Working Pressure	145 psig (10 bar)	
Pneumatic Actuator Operating Pressure	60 to 90 psig (4.2 to 6.2 bar)	
Temperature	PCTFE: -10 ~ 176 °F (-23 ~ 80 °C) PFA: -10 ~ 302 °F (-23 ~ 150 °C)	
Leak Rate (Helium)	Internal	≤ 1x10 ⁻⁹ std cm ³ /s
	External	≤ 1x10 ⁻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)	240	8.4
50 (3.4)	630	18.6
100 (6.8)	1120	26.6

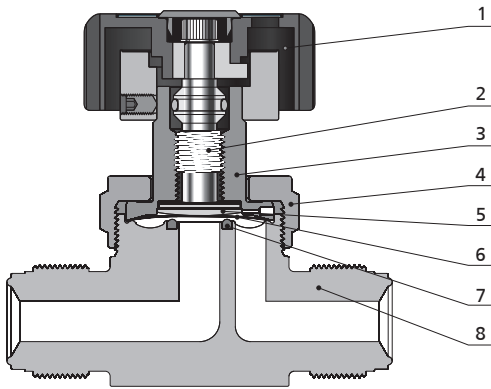
Process Specification

Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR /SEMI F20		
Wetted Surface Roughness	Ra 10 μin. (0.25 μm) ^①		Ra 5 μin. (0.13 μm)
Polishing Process	Machine finished ^①		Electropolished

① For valves with 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 μin. (0.13 μm).

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

Major Materials of Construction



Manual

Item	Component	Material/Specification
1	Handle	ABS
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/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Actuators

Manual - Round Handle

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



Position Sensors

Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Sensor Technical Data

Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

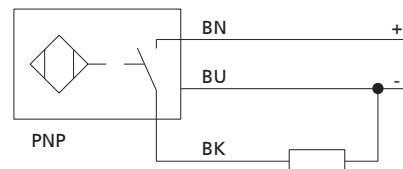
Pneumatic

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

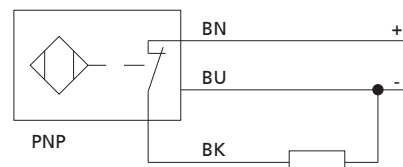


Wiring Diagram

Normally open position sensors



Normally closed position sensors

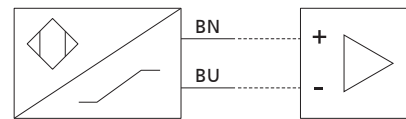


Explosion-proof Position Sensors

Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Wiring Diagram



Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

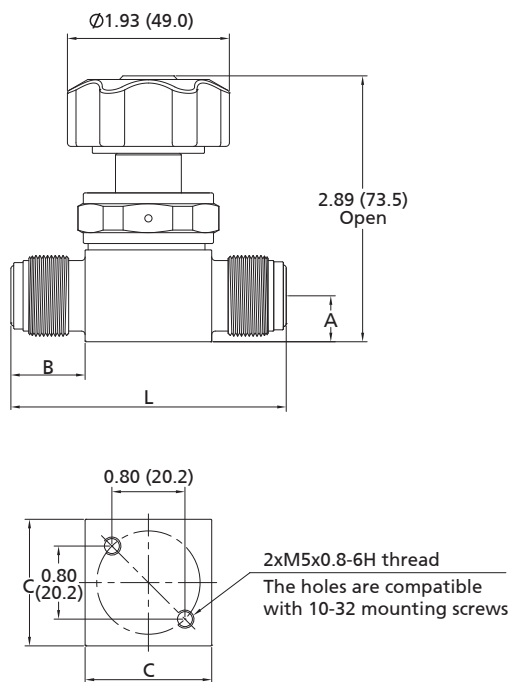
Dimensions and Ordering Information

Straight Type

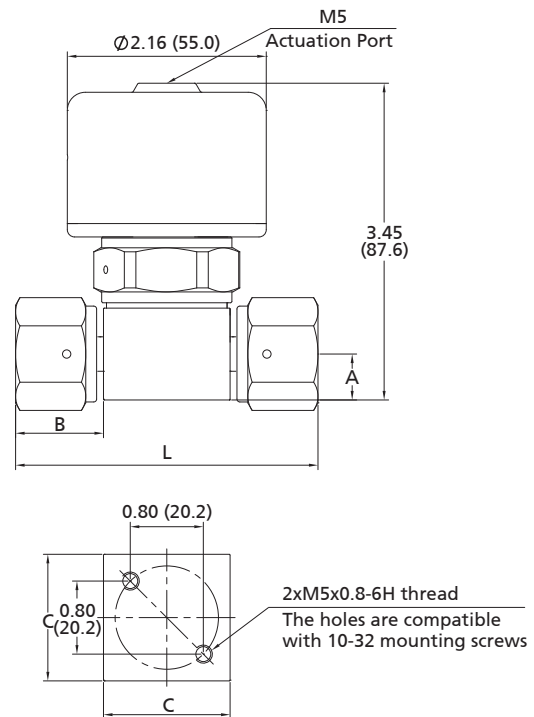
Dimensions

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

Manual - Round Handle



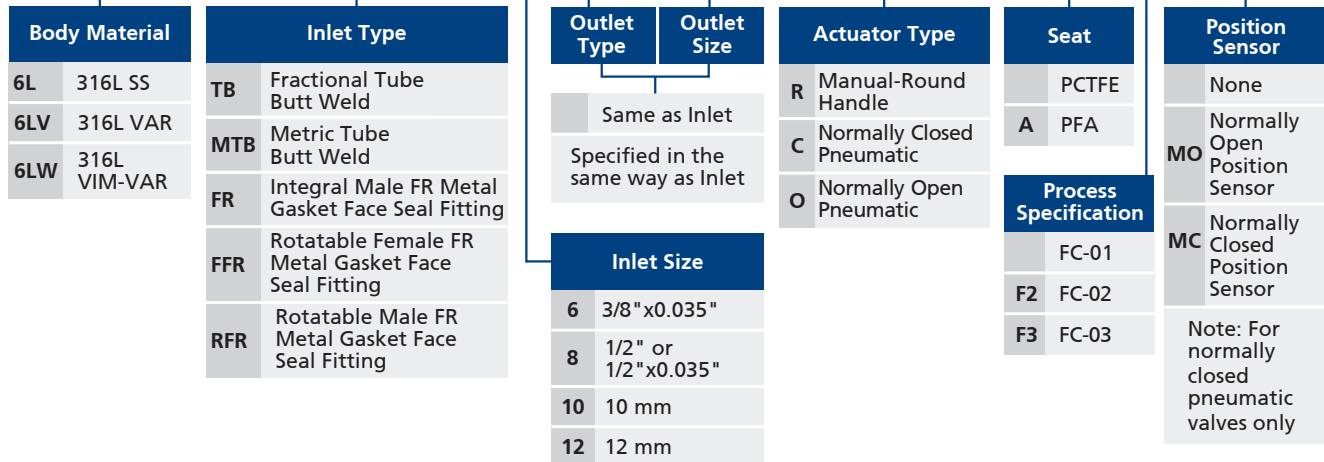
Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
DR□□-TB6-	3/8"x0.035" Tube Butt Weld	0.50 (12.7)	0.67 (17.0)	1.38 (35.0)	2.72 (69.0)
DR□□-TB8-	1/2"x0.049" Tube Butt Weld	0.50 (12.7)	0.67 (17.0)	1.38 (35.0)	2.72 (69.0)
DR□□-FFR8-	1/2" Rotatable Female FR Metal Gasket Face Seal Fitting	0.50 (12.7)	0.94 (24.0)	1.38 (35.0)	3.27 (83.0)
DR□□-FR8-	1/2" Integral Male FR Metal Gasket Face Seal Fitting	0.50 (12.7)	0.81 (20.6)	1.38 (35.0)	3.00 (76.2)

Ordering Number Description

DR6L - FFR8 - RFR8 - CAF3MO - CE



Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Product Certification	
	None
CE	CE Certification (For Pneumatic only)
AX	ATEX Certification (For Pneumatic only)

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

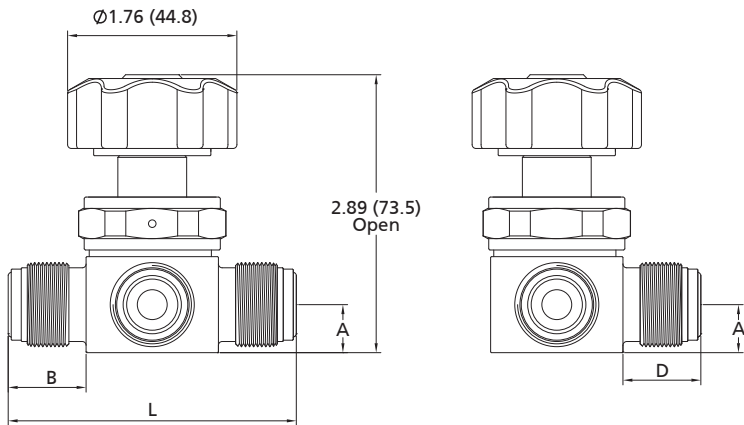
Process Specification

Branch Type

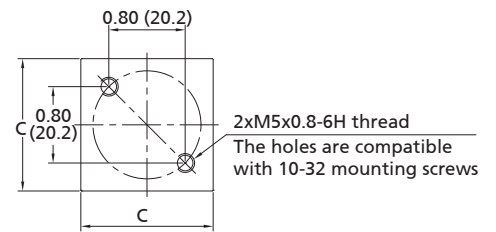
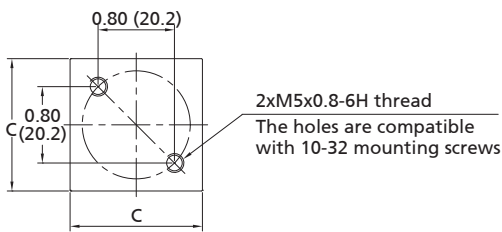
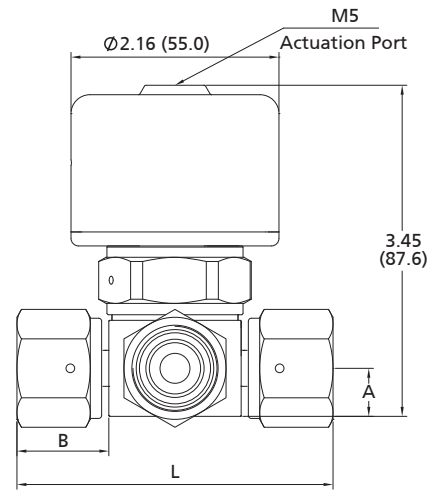
Dimensions

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

Manual - Round Handle



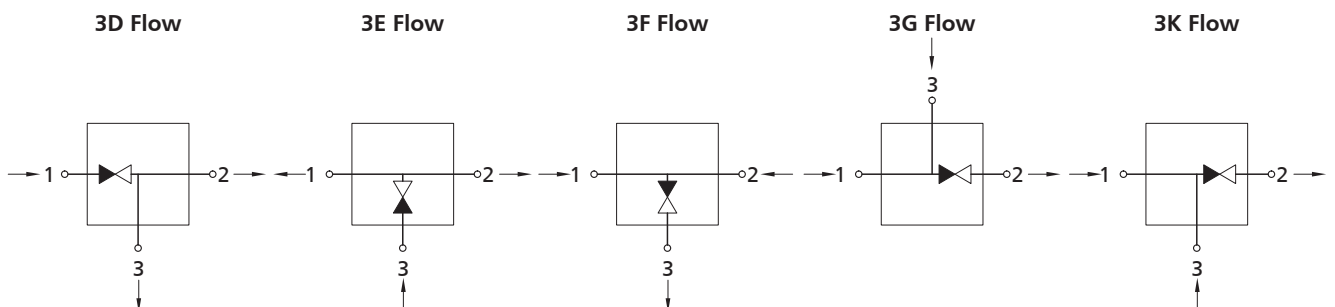
Pneumatic



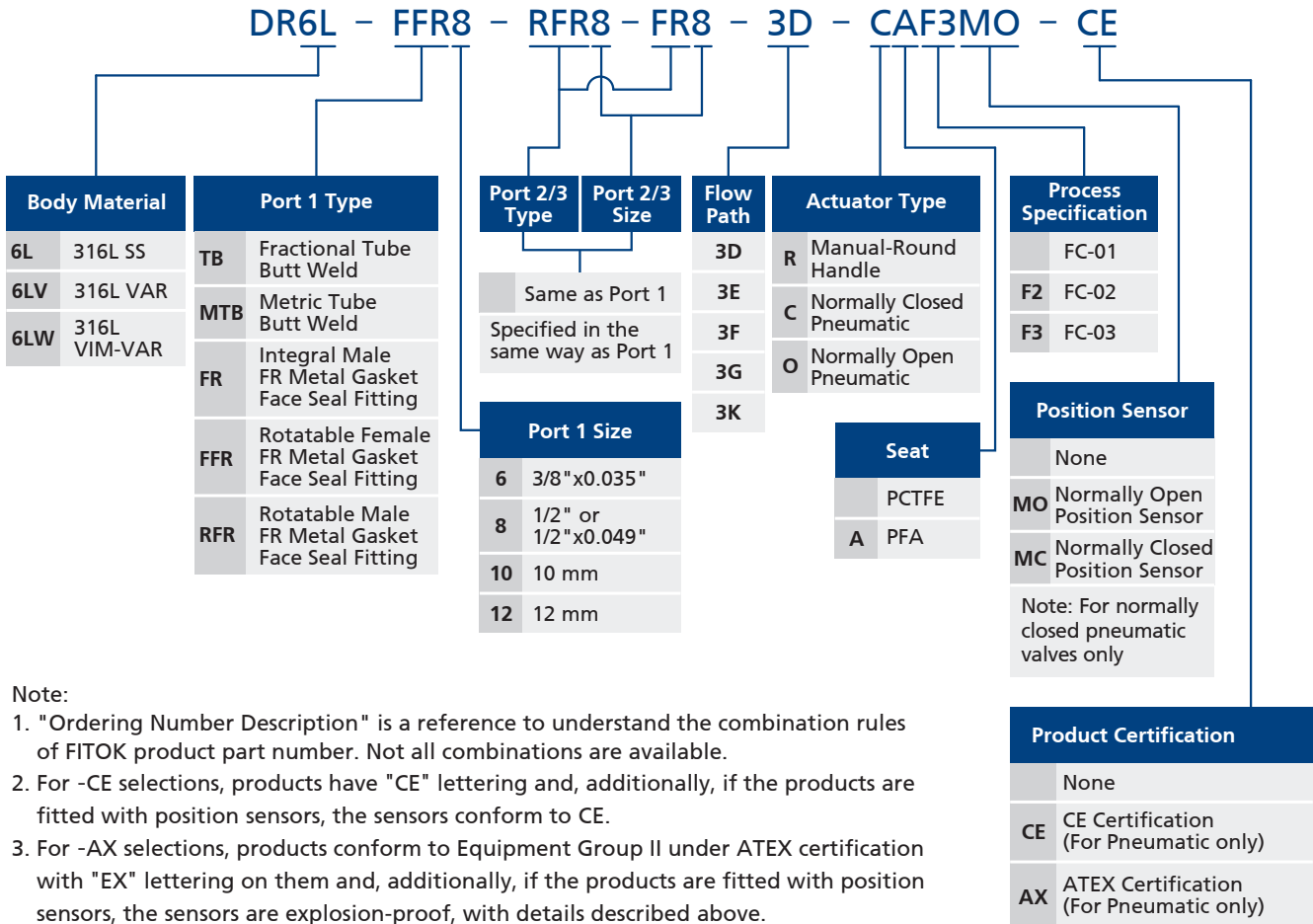
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)				
		A	B	C	D	L
DR□□-TB6-	3/8"x0.035" Tube Butt Weld	0.50 (12.7)	0.67 (17.0)	1.38 (35.0)	0.67 (17.0)	2.72 (69.0)
DR□□-TB8-	1/2"x0.049" Tube Butt Weld	0.50 (12.7)	0.67 (17.0)	1.38 (35.0)	0.67 (17.0)	2.72 (69.0)
DR□□-FFR8-	1/2" Rotatable Female FR Metal Gasket Face Seal Fitting	0.50 (12.7)	0.94 (24.0)	1.38 (35.0)	0.94 (24.0)	3.27 (83.0)
DR□□-RFR8-	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.50 (12.7)	1.34 (34.0)	1.38 (35.0)	1.34 (34.0)	4.06 (103.0)
DR□□-FR8-	1/2" Integral Male FR Metal Gasket Face Seal Fitting	0.50 (12.7)	0.81 (20.6)	1.38 (35.0)	0.81 (20.6)	3.00 (76.2)

Flow Paths

☉ Flow paths as viewed from the top



Ordering Number Description



Note:

1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
3. For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

Low Pressure/High Flow Diaphragm Valves

DV Series

Features

- ⦿ Ideal for high flow applications
- ⦿ Metal-to-metal seal
- ⦿ Tied-diaphragm design to provide positive stem retraction
- ⦿ No springs or threads in wetted areas to ensure clean operation
- ⦿ Manual and pneumatic actuators available
- ⦿ Position sensors available assembled on normally closed valves



Technical Data

Port Size		1/2" to 1" or 12 mm to 18 mm
Flow Coefficient (Cv)	Manual	2.8
	Pneumatic	2.4
Orifice Size		0.5 in. (12.7 mm)
Max. Working Pressure	Manual	300 psig (20.6 bar)
	Pneumatic	145 psig (10 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	≤ 1x10 ⁻⁹ std cm ³ /s
	External	≤ 1x10 ⁻⁹ std cm ³ /s

Flow Data

Air @ 70 °F (21 °C)

Water @ 60 °F (16 °C)

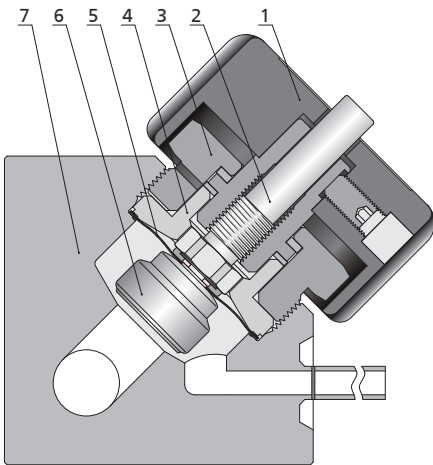
Pressure Drop to Atmosphere psig (bar)	Manual		Pneumatic	
	Air (l/min)	Water (l/min)	Air (l/min)	Water (l/min)
10 (0.68)	870	34	780	29
50 (3.4)	2300	75	2050	64
100 (6.8)	4100	100	3650	91

Process Specification

Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316 SS/ASTM A479 316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR/SEMI F20 F316L/ASTM A182		316L SS/SEMI F20 316L VAR/SEMI F20 316L VIM-VAR/SEMI F20 F316L/ASTM A182
Wetted Surface Roughness	Ra 10 μin. (0.25 μm)		Ra 5 μin. (0.13 μm)
Polishing Process	Machine finished		Electropolished

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

Major Materials of Construction



Item	Component	Material/Specification
1	Handle	Aluminum
2	Upper Stem	S17400/ASTM A564
3	Bonnet Nut	316 SS/ASTM A479
4	Bonnet	S17400/ASTM A564
5	Diaphragm (3)	Cobalt Alloy/AMS 5876
6	Stem Subassembly	316L SS/SEMI F20 and PCTFE/ASTM D1430 or Vespel
7	Body	316 SS/ASTM A479 or 316L SS/SEMI F20 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20 or F316L/ASTM A182

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

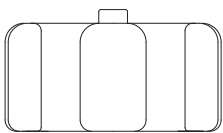
Process Specification

Manual Actuation - Branch Type

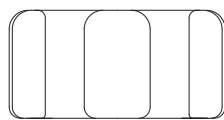
Actuators

Manual - Round Handle

- 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.

Pneumatic

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



Position Sensors

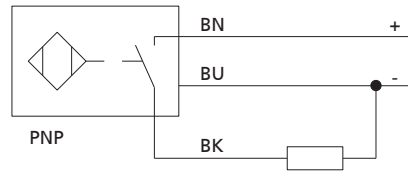
Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Sensor Technical Data

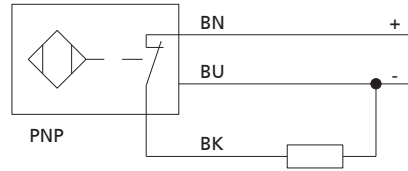
Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

Normally open position sensors



Normally closed position sensors



Explosion-proof Position Sensors

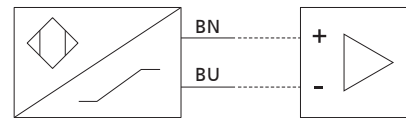
Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram



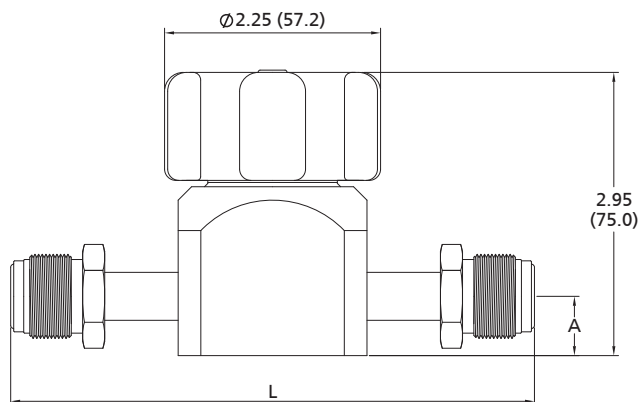
Dimensions and Ordering Information

Straight Type

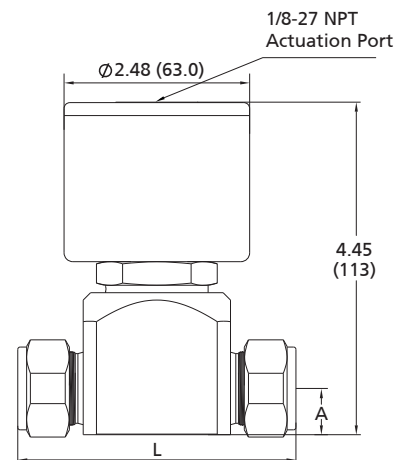
Dimensions

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

Manual - Round Handle



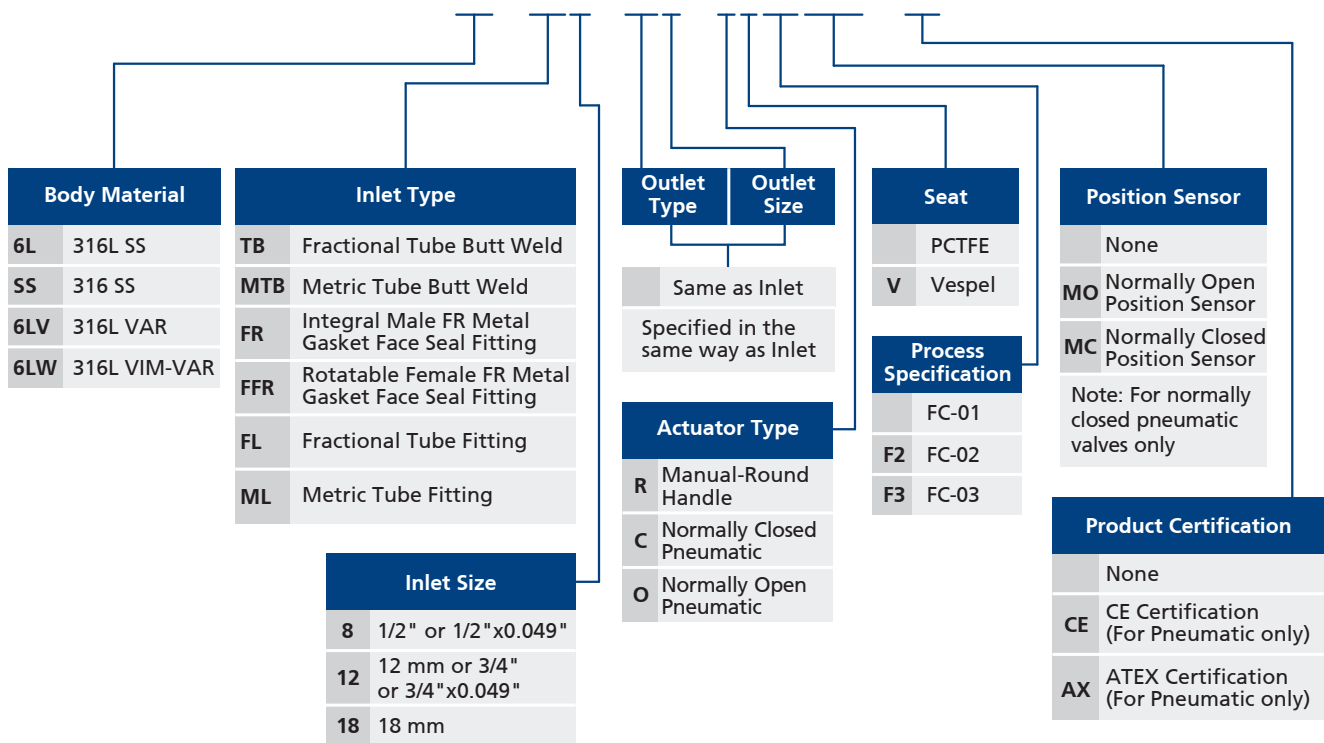
Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)	
		A	L
DV□□-TB8-	1/2"x0.049" Tube Butt Weld	0.62 (15.7)	5.91 (150.0)
DV□□-TB12-	3/4"x0.049" Tube Butt Weld	0.62 (15.7)	5.91 (150.0)
DV□□-FR8-	1/2" Integral Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	5.47 (138.9)
DV□□-FFR8-	1/2" Rotatable Female FR Metal Gasket Face Seal Fitting	0.62 (15.7)	5.47 (138.9)
DV□□-FL8-	1/2" FITOK Tube Fitting	0.62 (15.7)	3.71 (94.2)
DV□□-FL12-	3/4" FITOK Tube Fitting	0.62 (15.7)	3.72 (94.4)

Ordering Number Description

DV6L - FR8 - FL8 - CVF2MO - CE



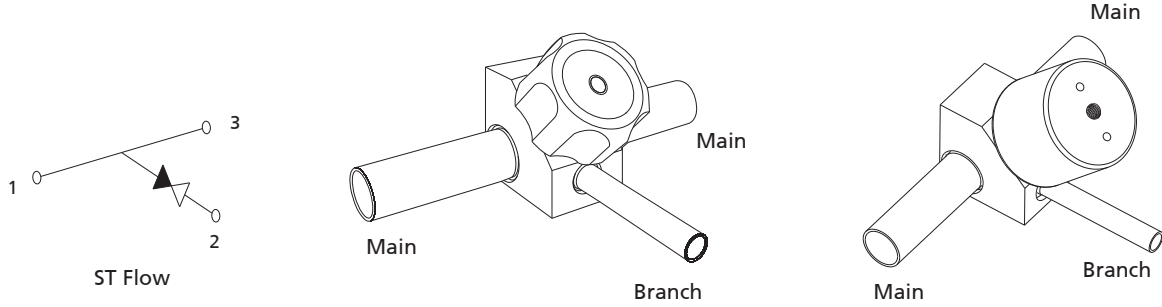
Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

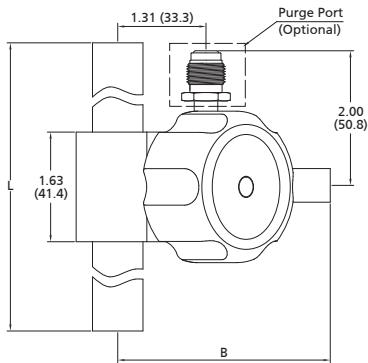
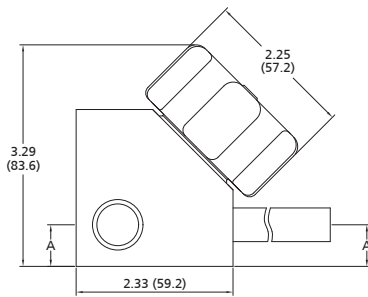
Branch Type

Dimensions

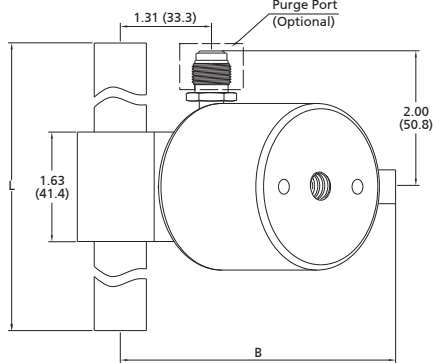
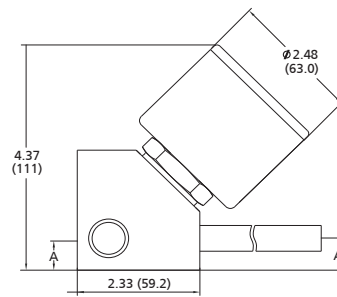
Dimensions, in inches (millimeters), are for reference only.



Manual-Round Handle



Pneumatic

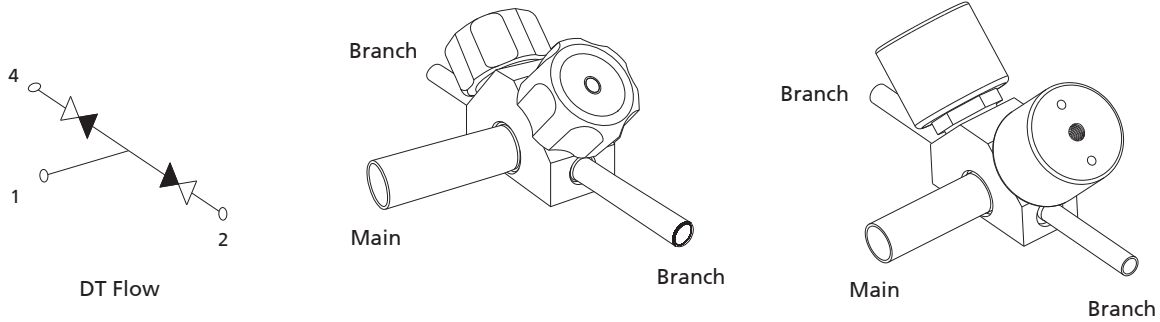


Basic Ordering Number	Connection Type and Size		Dimensions in. (mm)		
	Main	Branch	A	B	L
DV□□-TB8-TB4-	1/2" x 0.049" Tube Butt Weld	1/4" x 0.035" Tube Butt Weld	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB8-TB8-	1/2" x 0.049" Tube Butt Weld	1/2" x 0.049" Tube Butt Weld	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB8-RFR4-	1/2" x 0.049" Tube Butt Weld	1/4" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB8-RFR8-	1/2" x 0.049" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB12-TB8-	3/4" x 0.049" Tube Butt Weld	1/2" x 0.049" Tube Butt Weld	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB12-RFR8-	3/4" x 0.049" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB16-TB8-	1" x 0.065" Tube Butt Weld	1/2" x 0.049" Tube Butt Weld	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)
DV□□-TB16-RFR8-	1" x 0.065" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	4.69 (119.0)	7.58 (193.0)

Branch Type

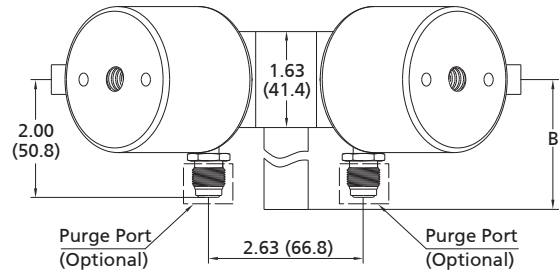
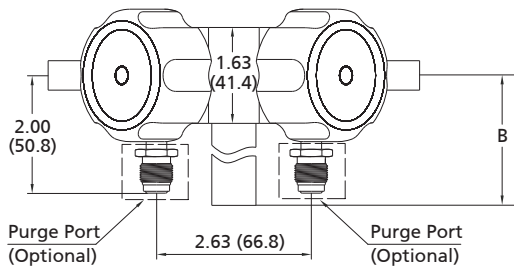
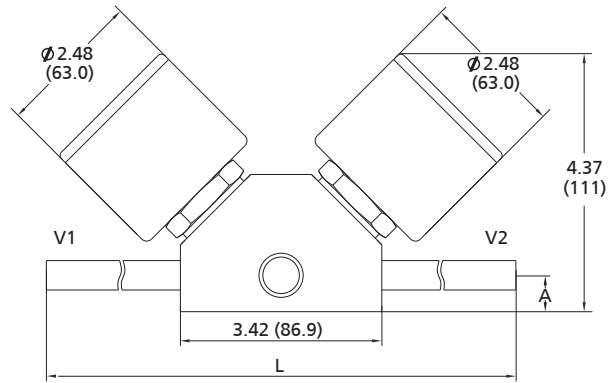
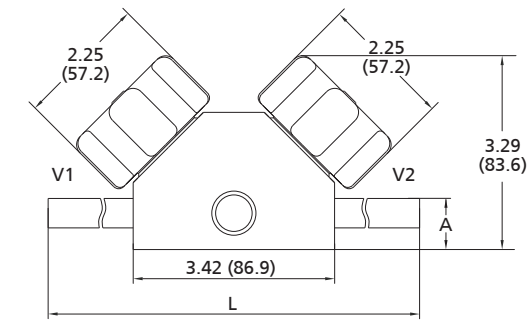
Dimensions

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



Manual-Round Handle

Pneumatic

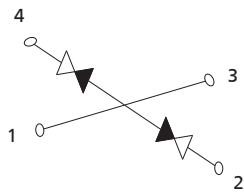


Basic Ordering Number	Connection Type and Size		Dimensions in. (mm)		
	Main	Branch	A	B	L
DV□□-TB12-TB8-	3/4"×0.049" Tube Butt Weld	1/2"×0.049" Tube Butt Weld	0.62 (15.7)	3.79 (96.3)	9.38 (238.0)
DV□□-TB12-RFR8-	3/4"×0.049" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	3.79 (96.3)	9.38 (238.0)
DV□□-TB16-TB8-	1"×0.065" Tube Butt Weld	1/2" × 0.049" Tube Butt Weld	0.62 (15.7)	3.79 (96.3)	9.38 (238.0)
DV□□-TB16-RFR8-	1" × 0.065" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	3.79 (96.3)	9.38 (238.0)

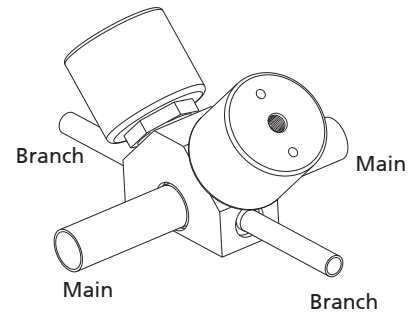
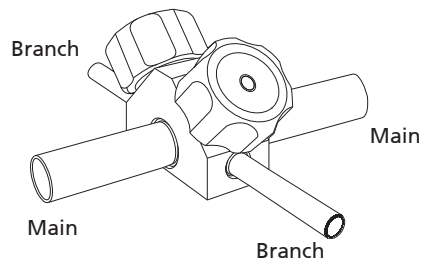
Branch Type

Dimensions

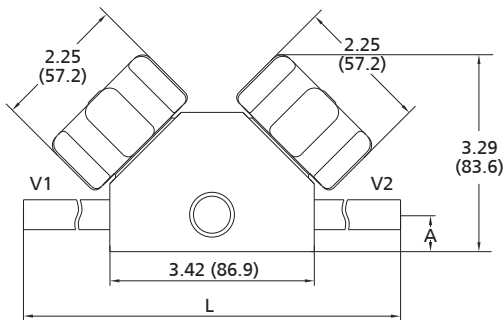
Dimensions, in inches (millimeters), are for reference only.



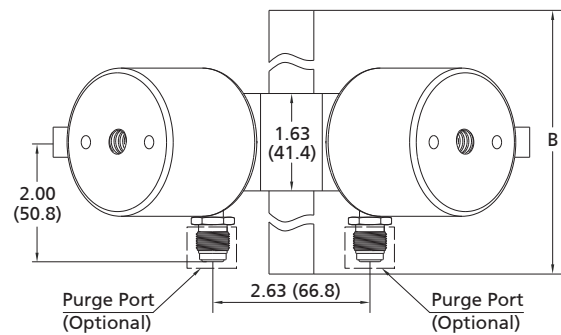
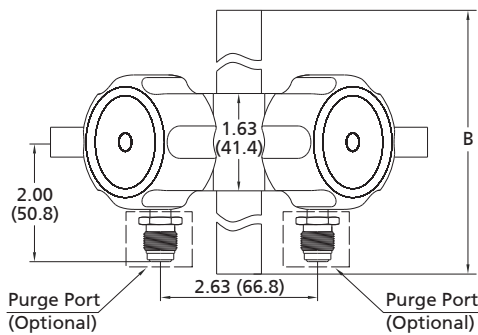
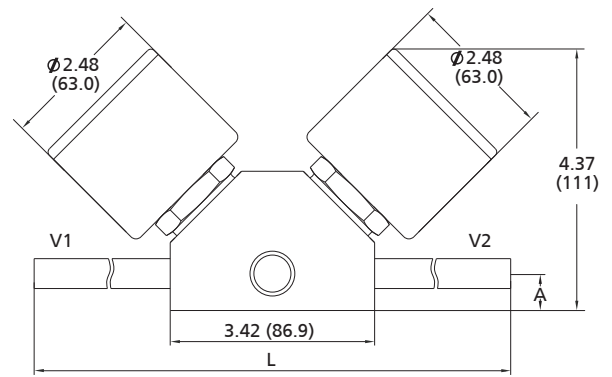
DC Flow



Manual-Round Handle



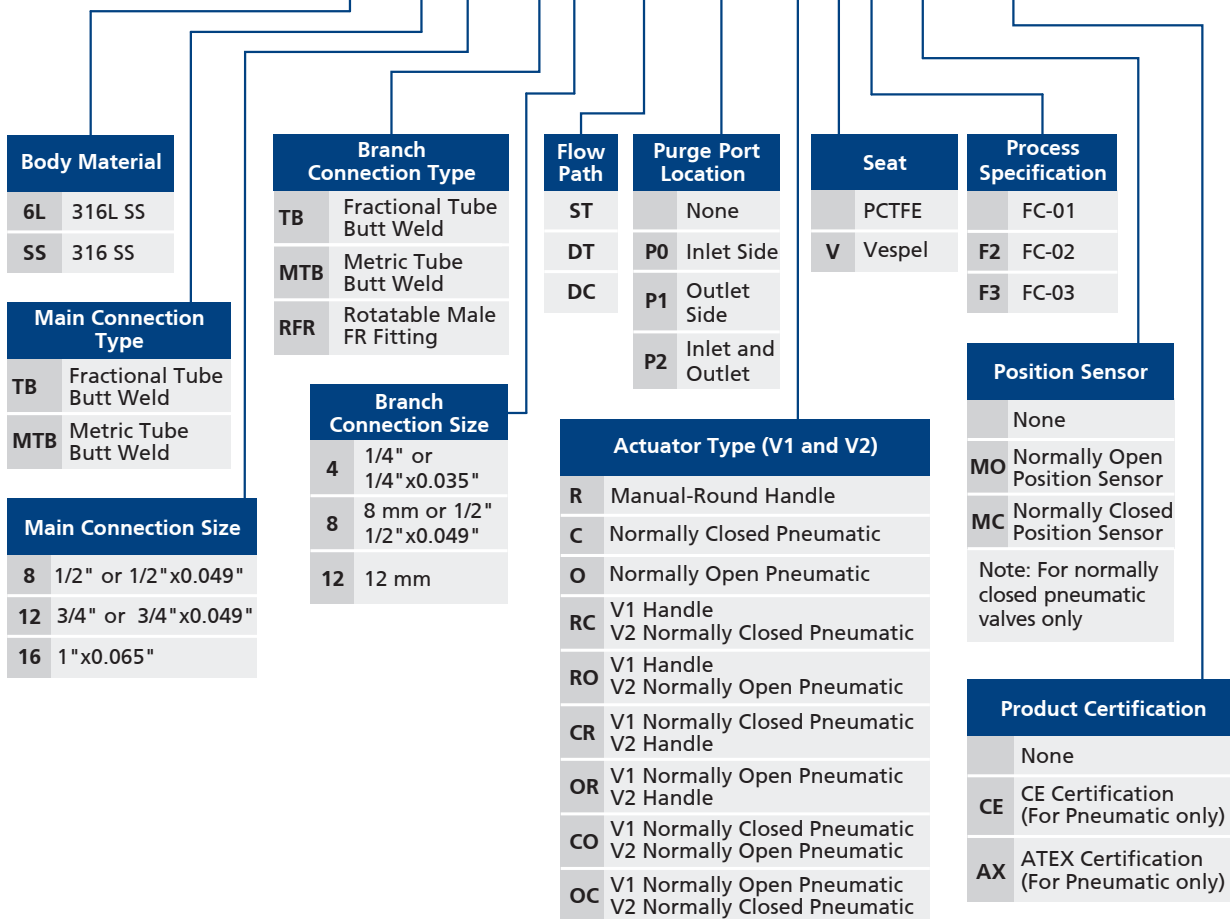
Pneumatic



Basic Ordering Number	Connection Type and Size		Dimensions in. (mm)		
	Main	Branch	A	B	L
DV□□-TB8-TB8-	1/2" x 0.049" Tube Butt Weld	1/2" x 0.049" Tube Butt Weld	0.62 (15.7)	7.58 (193.0)	9.38 (238.0)
DV□□-TB8-RFR8-	1/2" x 0.049" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	7.58 (193.0)	9.38 (238.0)
DV□□-TB12-TB8-	3/4" x 0.049" Tube Butt Weld	1/2" x 0.049" Tube Butt Weld	0.62 (15.7)	7.58 (193.0)	9.38 (238.0)
DV□□-TB12-RFR8-	3/4" x 0.049" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	7.58 (193.0)	9.38 (238.0)
DV□□-TB16-TB8-	1" x 0.065" Tube Butt Weld	1/2" x 0.049" Tube Butt Weld	0.62 (15.7)	7.58 (193.0)	9.38 (238.0)
DV□□-TB16-RFR8-	1" x 0.065" Tube Butt Weld	1/2" Rotatable Male FR Metal Gasket Face Seal Fitting	0.62 (15.7)	7.58 (193.0)	9.38 (238.0)

Ordering Number Description

DV6L - TB12 - TB8 - DC - P2 - COVF2MO - CE



Note:

1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
2. For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
3. For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

Low Pressure/Ultra High Flow Diaphragm Valves DL Series

Features

- ⊙ Ideal for ultra high flow applications
- ⊙ Internally threadless and springless
- ⊙ PCTFE stem tip insert for leak-tight shutoff



Technical Data

Port Size		
Port Size		3/4" to 1" or 23 mm to 25 mm
Flow Coefficient (Cv)	Manual	13
	Pneumatic	6.5
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	$\leq 1 \times 10^{-9}$ 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)

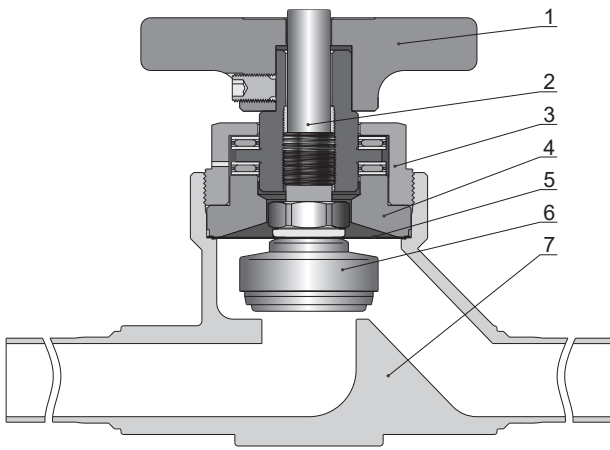
Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
10(0.68)	3900	150
50(3.4)	11000	340
100(6.8)	19500	490

Process Specification

Process Specification Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	CF8M/ASTM A351 CF3M/ASTM A351 F316L/ASTM A182		CF3M/ASTM A351 F316L/ASTM A182
Wetted Surface Roughness	Ra 20 μin. (0.51 μm)		Ra 5 μin. (0.13 μm) (Bar stock) Ra 10 μin. (0.25 μm) (Cast body)
Polishing Process	Machine finished		Electropolished

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

Major Materials of Construction



Item	Component	Material/Specification
1	Handle	Aluminum
2	Upper Stem	316 SS/ASTM A479
3	Bonnet Nut	316 SS/ASTM A479
4	Bonnet	316 SS/ASTM A479
5	Diaphragm (3)	Cobalt Alloy/AMS 5876
6	Stem Subassembly	316L SS/FSD 130 and PCTFE/ASTM D1430 or Vespel
7	Body	CF8M/ASTM A351 or CF3M/ASTM A351 or F316L/ASTM A182

Fittings

Valves

Actuators

Handle

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

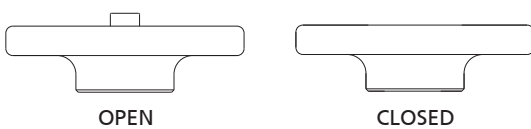
Pneumatic

- ⦿ Normally closed, "N.C." marked on the side of the actuator
- ⦿ Actuator port 1/8-27 NPT

Pressure Gauges

Integrated Systems and Others

Process Specification



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

Position Sensors

Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Sensor Technical Data

Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Explosion-proof Position Sensors

Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

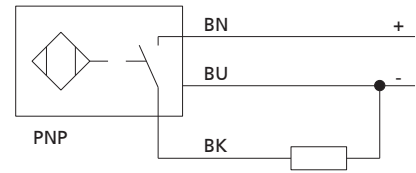
Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Technical Information

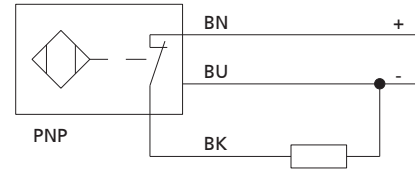
Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

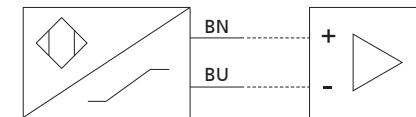
Normally open position sensors



Normally closed position sensors



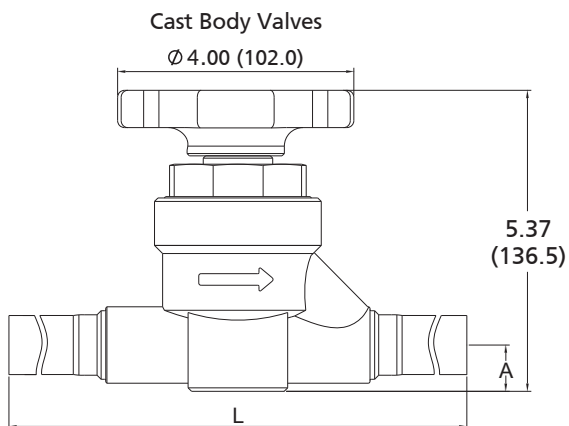
Wiring Diagram



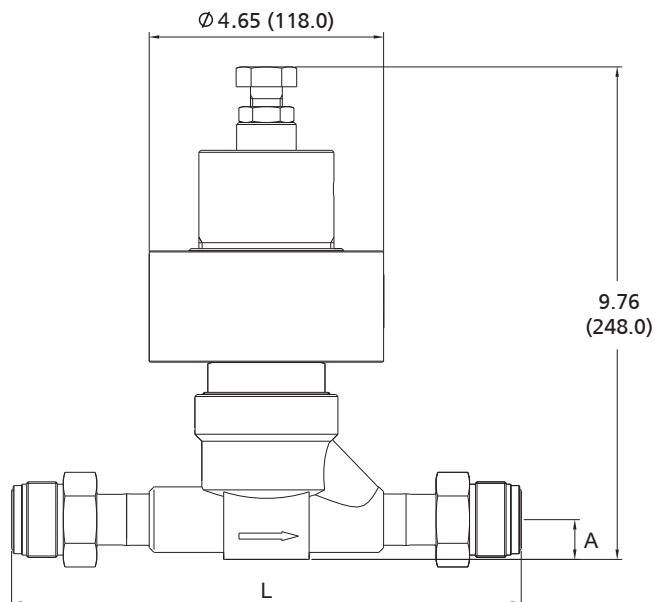
Dimensions

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

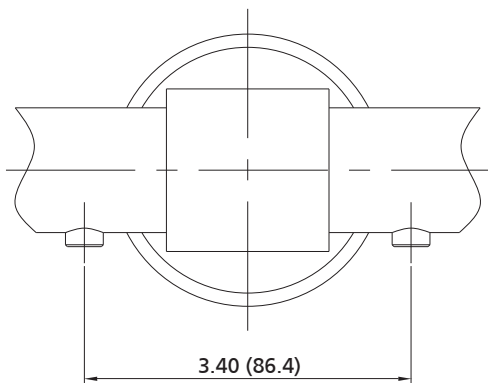
Manual - Round Handle



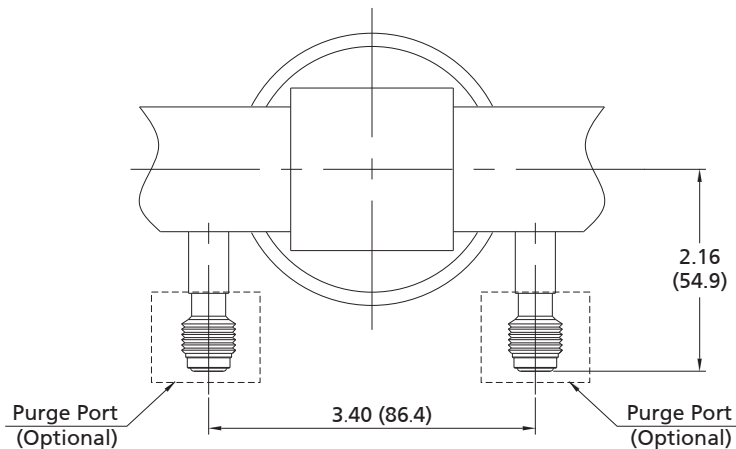
Pneumatic



No Purge Ports



1/4" Integral Male FR Metal Gasket Face Seal Fitting



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 other Series	1" x 0.065"		10.90 (277.0)
DL□□-MTB23-		23 x 1.5 mm		
DL□□-MTB25-		25 x 1.5 mm		
DL□□-FR16-	Integral Male FR Metal Gasket Face Seal Fitting	1"	10.04 (255.0)	

Fittings

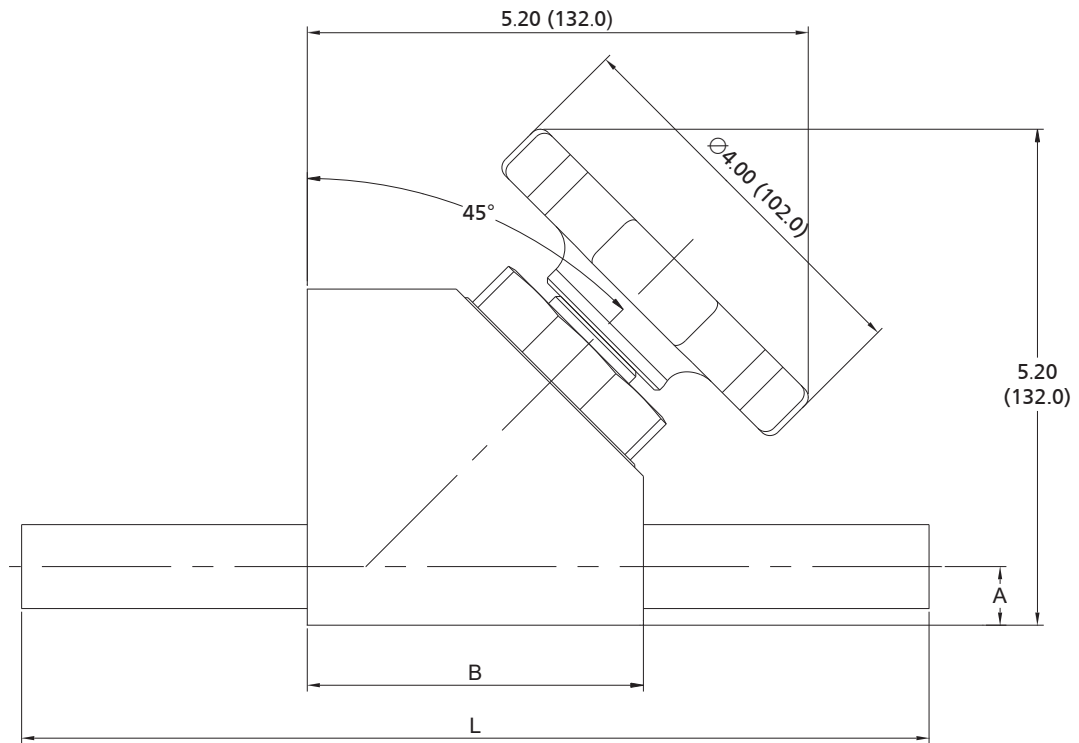
Valves

Pressure Gauges

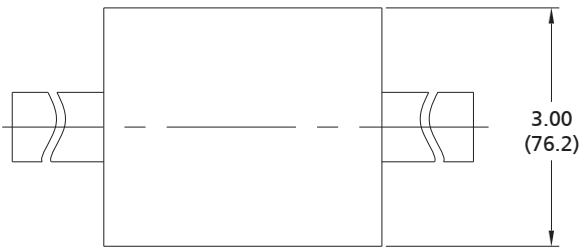
Integrated Systems and Others

Process Specification

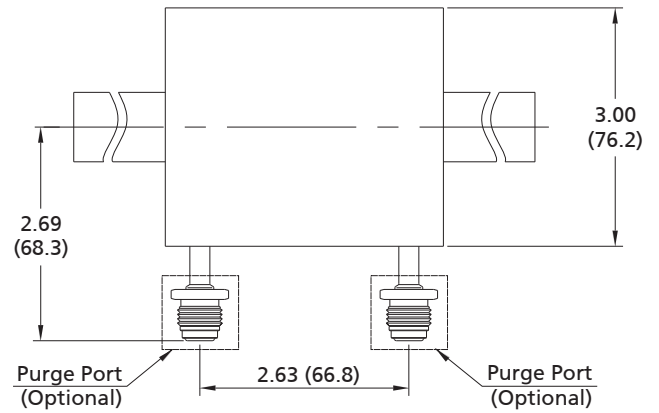
Bar Stock Valves



No purge ports

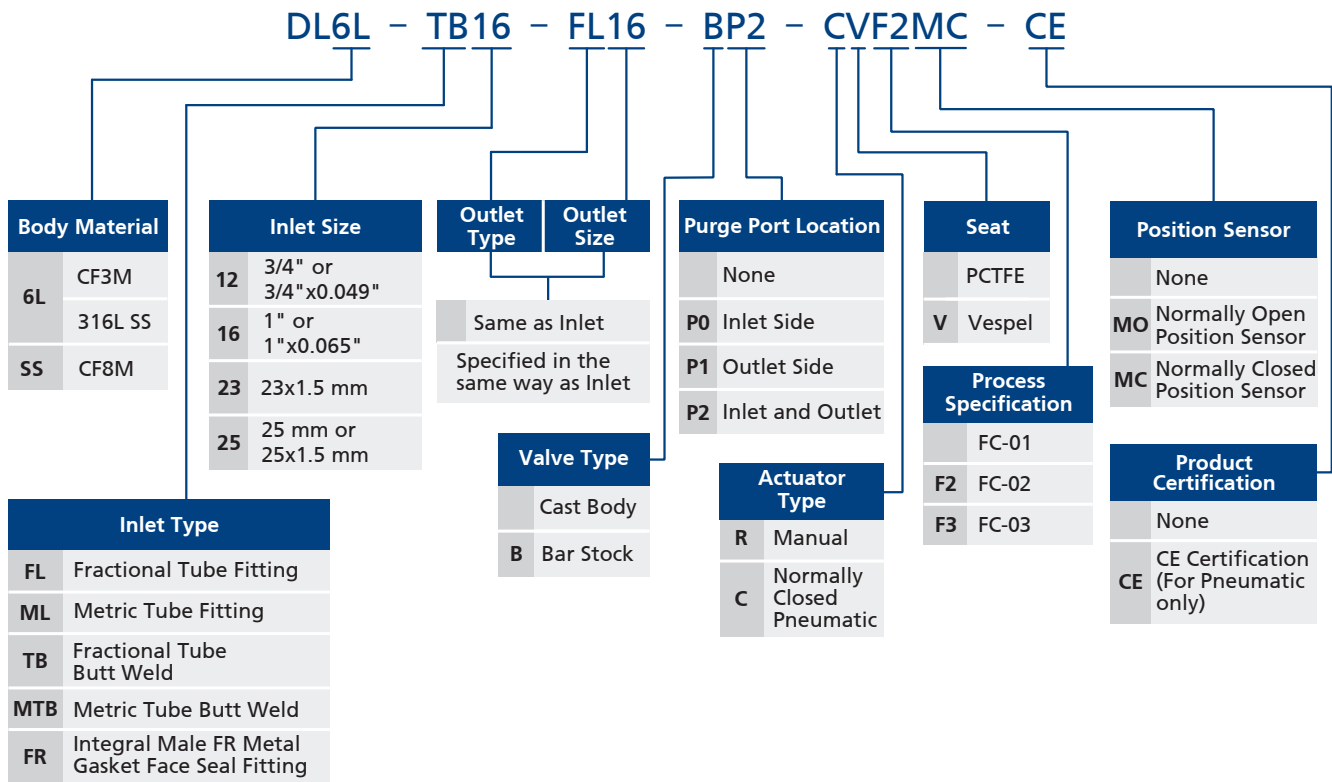


1/4" Rotatable Male FR Metal Gasket Face Seal Fitting



Basic Ordering Number	End Connections		Dimensions, in. (mm)		
	Type	Size	A	B	L
DL□□-TB12-B-	Tube Butt Weld	3/4" x 0.049"	0.61 (15.5)	3.50 (88.9)	9.46 (240.0)
DL□□-TB16-B-		1" x 0.065"			

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.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

High Pressure/High Flow Diaphragm Valves

DF Series

Features

- ⦿ Ideal for high flow applications
- ⦿ Metal-to-metal seal
- ⦿ Spring type design
- ⦿ Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- ⦿ Position sensors available assembled on pneumatically actuated valves
- ⦿ Normally closed and normally open position sensors 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 ^①		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	≤4x10 ⁻⁹ std cm ³ /s
	External	≤4x10 ⁻⁹ std cm ³ /s

① Differential back pressure is equal to the outlet pressure minus the inlet pressure. When the differential back pressure is greater than 150 psig (10.3 bar), the valve will not open even being loosened after tightening the handle. As the force of the differential back pressure acting on the valve stem is downward when closing and is greater than the spring force, the valve stem cannot be lifted.

Process Specification

Technology	Process Specification	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification		316 SS/ASTM A479 316L SS/SEMI F20		316L SS/SEMI F20
Wetted Surface Roughness		Ra 20 μin. (0.51 μm)		Ra 10 μin. (0.25 μm)
Polishing Process		Machine finished		Electropolished

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

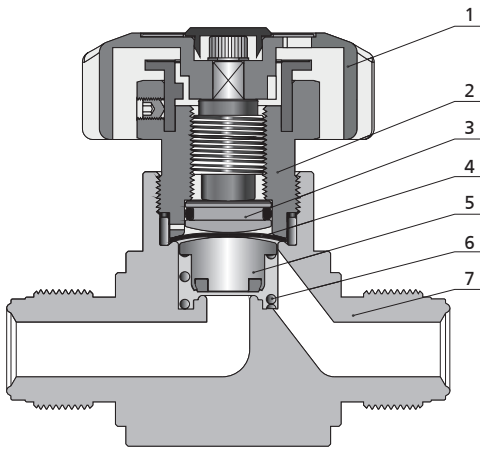
Flow Data

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)	274	9.5
50 (3.4)	733	21.5
100 (6.8)	1300	30.3

Major Materials of Construction



Manual Model

Item	Component	Material/Specification
1	Handle	Aluminum
2	Bonnet Nut	S17400/ASTM A564
3	Button	316 SS/ASTM A479
4	Diaphragm (5)	Cobalt Alloy (3) /AMS 5876 + C17200 (2) /ASTM B194
5	Stem Subassembly	316L SS/SEMI F20 and PCTFE/ASTM D1430 or Vespel
6	Spring	316 SS/ASTM A313
7	Body	316 SS/ASTM A479 or 316L SS/SEMI F20

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



Position Sensors

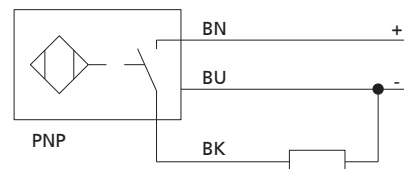
Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Sensor Technical Data

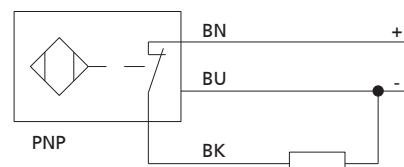
Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

Normally open position sensors



Normally closed position sensors



V-72 Diaphragm Valves

Explosion-proof Position Sensors

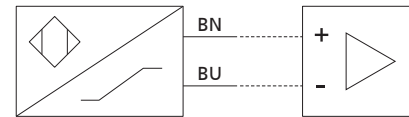
Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

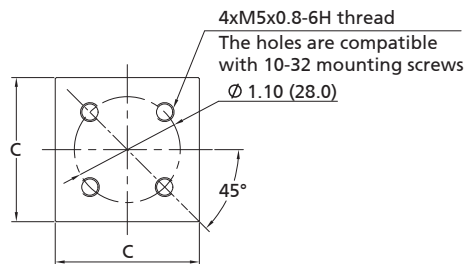
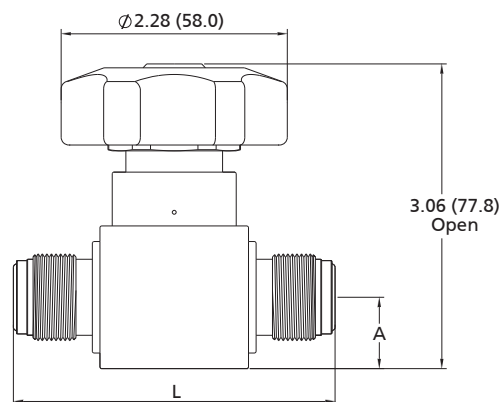
Wiring Diagram



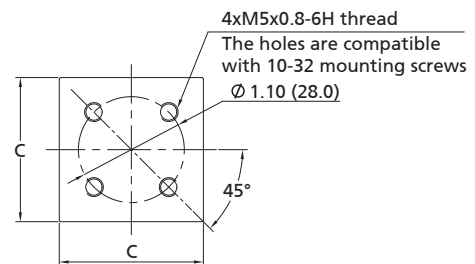
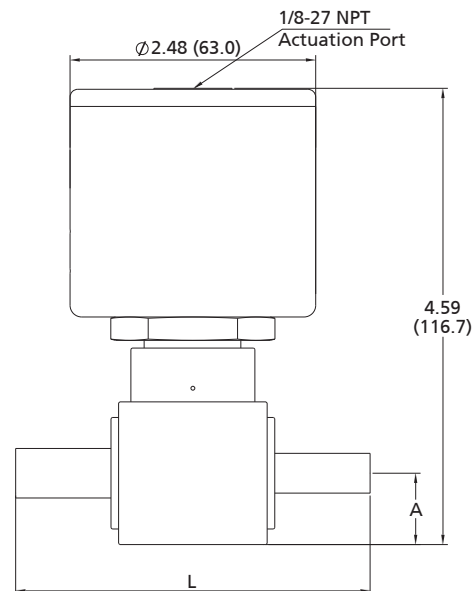
Dimensions

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

Manual - Round Handle

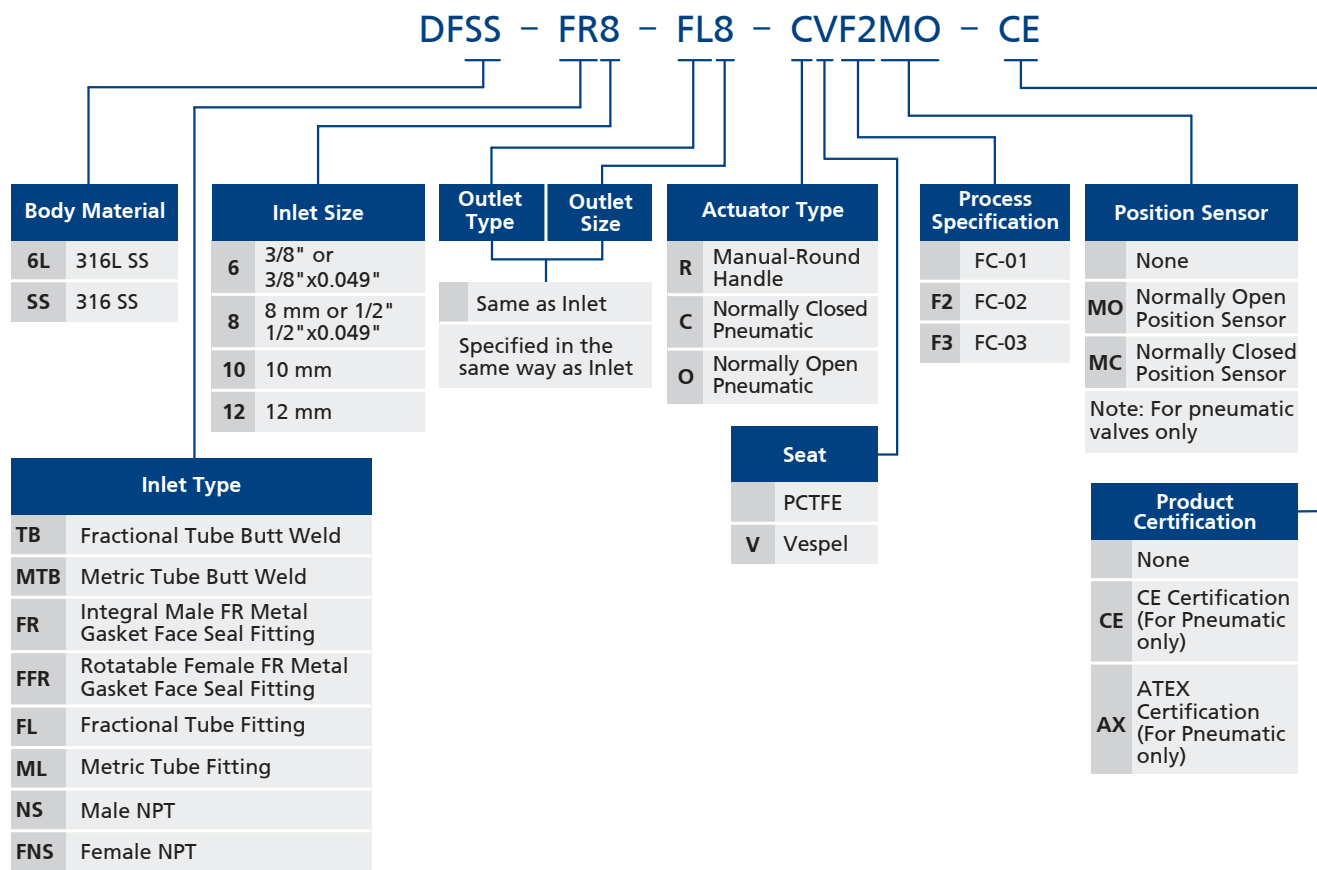


Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)		
		A	C	L
DF□□-TB6-	3/8"x0.049" Tube Butt Weld	0.71 (18.0)	1.50 (38.1)	3.58 (90.9)
DF□□-TB8-	1/2"x0.049" Tube Butt Weld	0.71 (18.0)	1.50 (38.1)	3.58 (90.9)
DF□□-FR8-	1/2" Integral Male FR Metal Gasket Face Seal Fitting	0.71 (18.0)	1.50 (38.1)	3.25 (82.5)
DF□□-FFR8-	1/2" Rotatable Female FR Metal Gasket Face Seal Fitting	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



Note:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- For -CE selections, products have "CE" lettering and, additionally, if the products are fitted with position sensors, the sensors conform to CE.
- For -AX selections, products conform to Equipment Group II under ATEX certification with "EX" lettering on them and, additionally, if the products are fitted with position sensors, the sensors are explosion-proof, with details described above.

Diaphragm Valves

Economic Diaphragm Valves

DE Series

Introduction

DE series economic diaphragm valves are typical products for ultra high purity gas fluid systems. Reliability and economy are achieved by reducing the number of components, optimizing machining methods and mass production, 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

- ⦿ Minimum particle generation and 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 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)

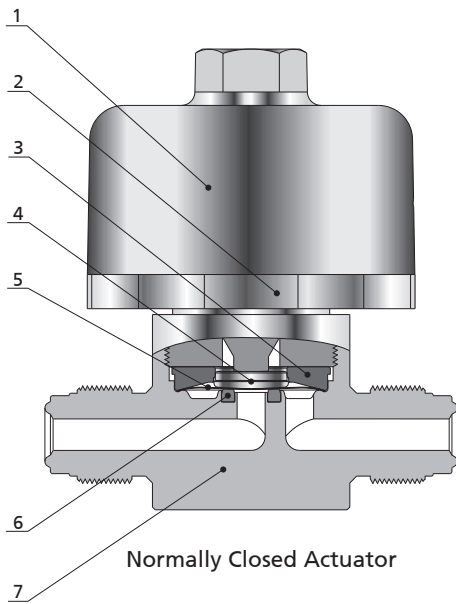
Water @ 60 °F (16 °C)

Orifice in. (mm)	Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
0.16 (4.1)	10 (0.68)	86	3.2
	50 (3.4)	230	7.2
	100 (6.8)	410	10.2

Process Specification

Technology	Process Specification	Ultra High Purity (F3)
Material/Specification		316L SS/SEMI F20
Wetted Surface Roughness		Ra 5 µin. (0.13 µm)
Polishing Process		Electropolished
Assembly Environment		In ISO 4/Federal 10 cleanroom
Packaging		Double bagged in cleanroom

Major Materials of Construction



Item	Component	Material / Specification
1	Actuator	Aluminum
2	Actuator Nut	304 SS/ASTM A479
3	Bonnet	S17400/ASTM A564
4	Button	316 SS/ASTM A479
5	Diaphragm	Cobalt Alloy/AMS 5876
6	Seat	PCTFE/ASTM D1430
7	Body	316L SS/SEMI F20

Actuator

Manual - Round Handle

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



OPEN



CLOSED

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

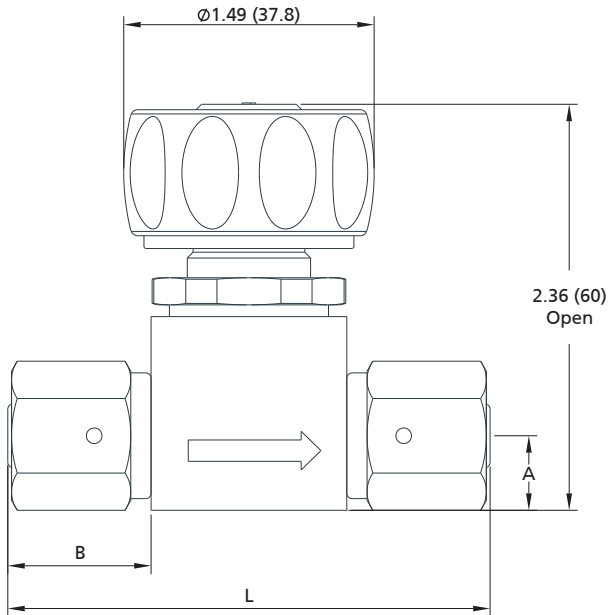
Valves

Pressure Gauges

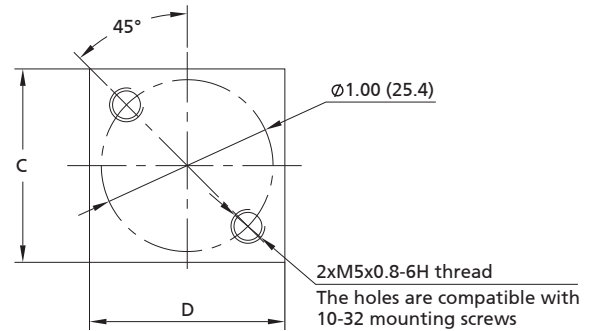
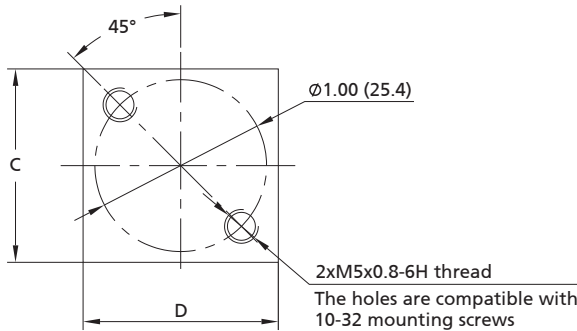
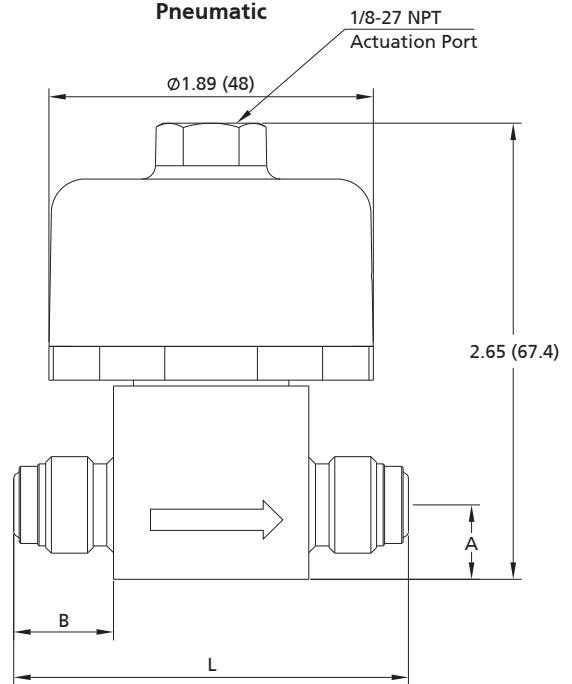
Integrated Systems and Others

Process Specification

Manual - Round Handle

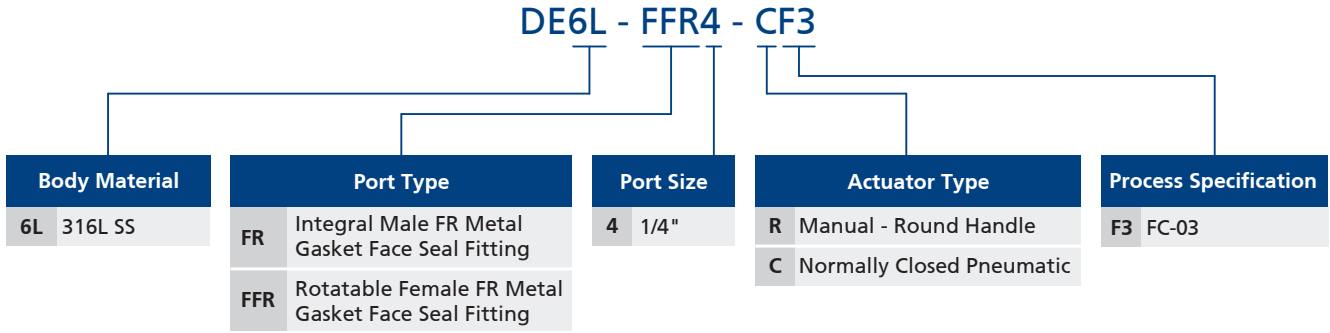


Pneumatic



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						2.30 (58.4)
DE6L-FR4-RF3	1/4" Integral Male FR Metal Gasket Face Seal Fitting	0.58 (14.7)				
DE6L-FR4-CF3						

Part Number Description



Note: Part Number Description is only for designator meaning explanation, please refer to the Ordering Number for the optional part numbers.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification

Diaphragm Valves

High Temperature Diaphragm Valves

DK Series

Features

- ⦿ Thermal immersion design for use in high temperature up to 482 °F (250 °C)
- ⦿ Metal seat to provide excellent resistance to swelling and contamination
- ⦿ Cobalt alloy diaphragm with high strength and corrosion resistance to ensure long cycle life
- ⦿ All-Metal wetted parts with broad chemical compatibility
- ⦿ Minimum particle generation and dead space, easy to purge



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	145 psig (10 bar)	
Pneumatic Actuator Operating Pressure	72 ~ 101 psig (5 ~ 7 bar)	
Temperature	14 ~ 482 °F (-10 ~ 250 °C)	
Leak Rate (helium)	Internal	$\leq 3 \times 10^{-9}$ std cm ³ /s
	External	$\leq 3 \times 10^{-9}$ 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

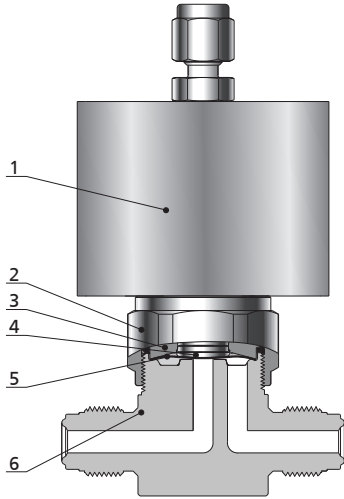
Technology	Standard Cleaning and Packaging (FC-01)	Special Cleaning and Packaging (FC-02)	Ultra High Purity (FC-03)
Material/Specification	316L SS/ASTM A479		316L VAR/SEMI F20 316L VIM-VAR /SEMI F20
Wetted Surface Roughness	Ra 10 μin. (0.25 μm) ^①		Ra 5 μin. (0.13 μm)
Polishing Process	Machine finished ^①		Electropolished

① For valves with 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 μin. (0.13 μm).

Note: Please see Process Specification on page P-01 for details.

FITOK

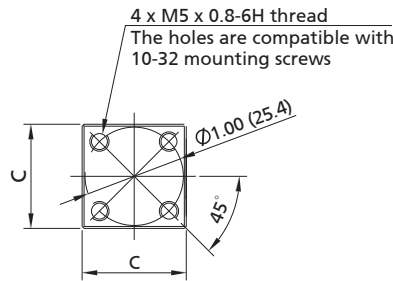
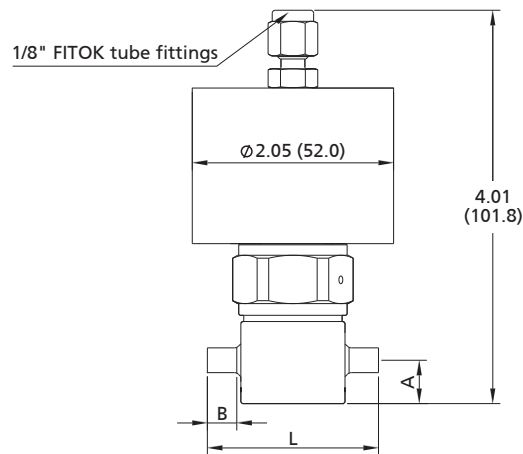
Major Materials of Construction



Item	Component	Material/Specification
1	Actuator	316 SS/ASTM A479
2	Bonnet Nut	316 SS/ASTM A479
3	Bonnet	S17400/ASTM A564
4	Button	316 SS/ASTM A479
5	Diaphragm (2)	Cobalt Alloy/AMS 5876
6	Body	316L SS/ASTM A479 or 316L VAR/SEMI F20 or 316L VIM-VAR/SEMI F20

Dimensions and Ordering Information

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



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

Ordering Number Description

DK6L - TB4 - FR4 - 4 - CF3



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings

Valves

Pressure Gauges

Integrated Systems and Others

Process Specification