

# Plug Valves

## PV Series

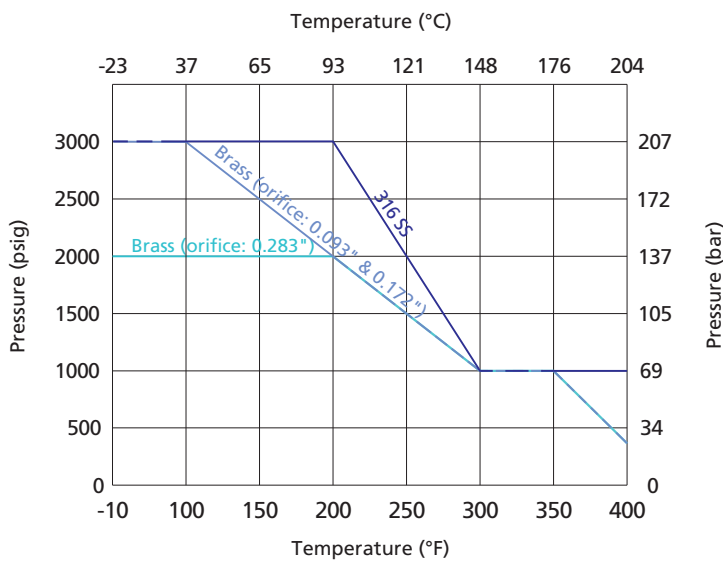
Ball Valves  
Plug Valves



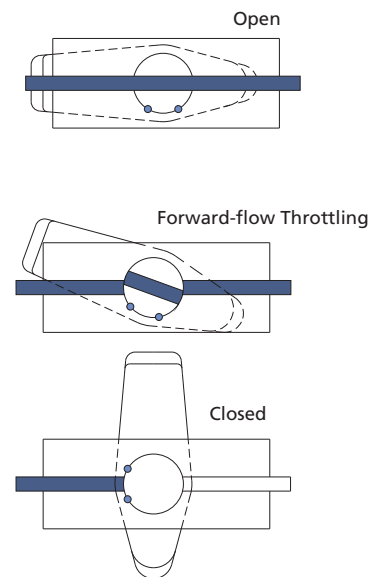
## Features

- ⦿ Working pressure up to : 3000 psig (207 bar)
- ⦿ Working temperature: -10 °F to 400°F (-23°C to 204°C)
- ⦿ Sizes from 1/8" to 3/4" and 6 to 12 mm
- ⦿ Easy to maintain and clean
- ⦿ Low operating torque
- ⦿ Replaceable plug assembly
- ⦿ Handle as indicator of flow direction
- ⦿ Options for handle color
- ⦿ Positive handle shutoff
- ⦿ Every valve leak tested with Nitrogen or air at working pressure
- ⦿ The inlet port for 3-way valves can only be the bottom port

## Pressure vs. Temperature



## Operation (2-way)



1. Differential pressure is limited to 150 psig (10.3 bar) maximum if reverse flow occurs.
2. Reverse flow throttling may damage O-ring.
3. The graphs are based on FKM O-ring.

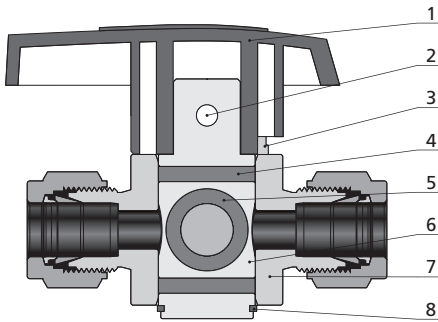
## Downstream Vents (2-way)

Plug and valve body allow pressure to be released to atmosphere when closed.  
Maximum working pressure: 150 psig (10.3 bar).



## Standard Materials of Construction

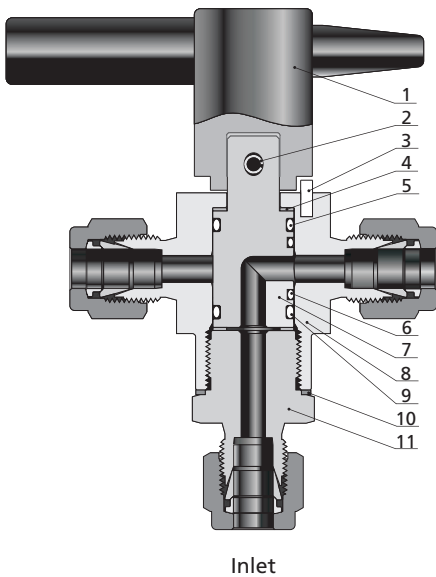
### 2-way



Item	Component	Material Grade/ASTM Specification	
		Valve Body Material	
		316 SS	Brass
1	Handle	Nylon or Aluminium	
2	Handle Pin	Stainless steel	
3	Body Pin	Stainless steel	
4	O-ring	<i>Fluorocarbon FKM or Neoprene or EPDM or Buna N or FFKM</i>	
5	O-ring	<i>Fluorocarbon FKM or Neoprene or EPDM or Buna N or FFKM</i>	
6	Plug	<i>PTFE-coated 316 SS/A479</i>	<i>PTFE-coated brass/B453</i>
7	Body	<i>316 SS/A479</i>	<i>Brass/B453</i>
8	Retaining Ring	Stainless steel	
<i>Lubricant</i>		<i>Silicone-based</i>	

Note: Wetted components are italics.

### 3-way



Item	Component	Material Grade/ASTM Specifications	
		Valve Body Material	
		316 SS	Brass
1	Handle	Aluminium	
2	Handle Pin	Stainless steel	
3	Body Pin	Stainless steel	
4	Gasket	<i>PTFE</i>	
5	O-ring	<i>Fluorocarbon FKM or Neoprene or EPDM or Buna N or FFKM</i>	
6	O-ring	<i>Fluorocarbon FKM or Neoprene or EPDM or Buna N or FFKM</i>	
7	Plug	<i>PTFE-coated 316 SS/A479</i>	<i>PTFE-coated brass/B453</i>
8	Body	<i>316 SS/A479</i>	<i>Brass/B453</i>
9	O-ring	<i>Fluorocarbon FKM or Neoprene or EPDM or Buna N or FFKM</i>	
10	Gasket	<i>Silver-plated 316 SS/A479</i>	<i>Aluminum/B209</i>
11	Fitting	<i>316 SS/A479</i>	<i>Brass/B453</i>
<i>Lubricant</i>		<i>Silicone-based</i>	

Note: The 3-way plug valve is in working state when the handle is in limit positions. There will be a short moment of interconnection for the three ports when rotating the handle.

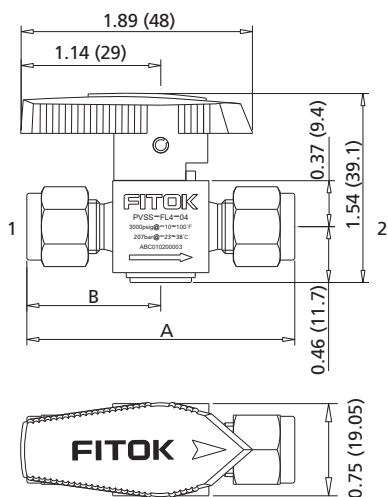
Note: Wetted components are italics.

## Dimensions

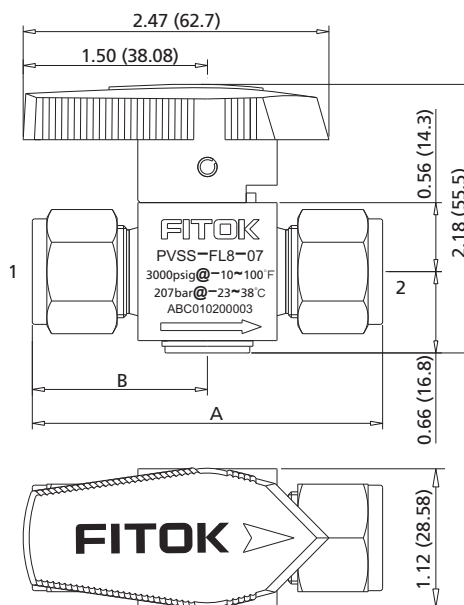
Dimensions, in inches (millimeters), are for reference only and are subject to change.

### 2-way Valves

Orifice code: 02 and 04



Orifice code: 07

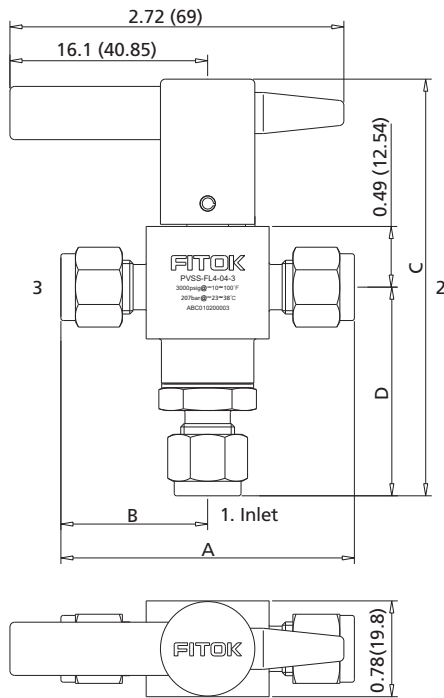


Basic Ordering Information	Connection Type and Size		Orifice in. (mm)	Cv	Dimensions, in. (mm)	
	Inlet 1	Inlet 2			A	B
PV□□-FL2-02	1/8" FITOK		0.09 (2.4)	0.1	1.99 (50.5)	0.98 (24.9)
PV □□-FL4-04	1/4" FITOK		0.17 (4.4)	1.6	2.17 (55.1)	1.08 (27.4)
PV□□ -FL6-04	3/8" FITOK			1.1	2.29 (58.2)	1.14 (29.0)
PV□□-FL6-07	3/8" FITOK		0.28 (7.2)	6.4	2.66 (67.6)	1.33 (33.8)
PV□□-FL8-07	1/2" FITOK			4.4	2.88 (73.2)	1.44 (36.6)
PV□□-ML6-04	6 mm FITOK		0.17 (4.4)	1.6	2.17 (55.1)	1.08 (27.4)
PV□□-ML8-04	8 mm FITOK			1.5	2.25 (57.1)	1.12 (28.6)
PV□□-ML10-07	10 mm FITOK		0.28 (7.2)	6.4	2.68 (68.1)	1.34 (34.0)
PV□□-ML12-07	12 mm FITOK			4.8	2.86 (72.6)	1.43 (36.3)
PV□□-FNS2-04	1/8 Female NPT		0.17 (4.4)	1.2	1.78 (45.2)	0.89 (22.6)
PV□□-FNS4-04	1/4 Female NPT			0.9	2.09 (53.1)	1.11 (28.2)
PV□□-FNS4-07	1/4 Female NPT		0.28 (7.2)	4.3	2.38 (60.5)	1.19 (30.2)
PV□□-FNS8-07	1/2 Female NPT			2.7	2.77 (70.3)	1.38 (35.2)
PV□□-NS2-04	1/8 Male NPT		0.17 (4.4)	1.0	1.53 (38.9)	0.76 (19.3)
PV□□-NS4-04	1/4 Male NPT			1.0	1.90 (48.3)	0.95 (24.1)
PV□□-NS8-07	1/2 Male NPT		0.28 (7.2)	2.4	2.64 (67.0)	1.32 (33.5)
PV□□-FRT2-04	1/8 Female BSPT		0.17 (4.4)	1.2	1.78 (45.2)	0.89 (22.6)
PV□□-FRT4-04	1/4 Female BSPT			0.9	2.09 (53.1)	1.11 (28.2)
PV□□-FRT4-07	1/4 Female BSPT		0.28 (7.2)	4.3	2.38 (60.5)	1.19 (30.2)
PV□□-FRT8-07	1/2 Female BSPT			2.7	2.77 (70.3)	1.38 (35.2)

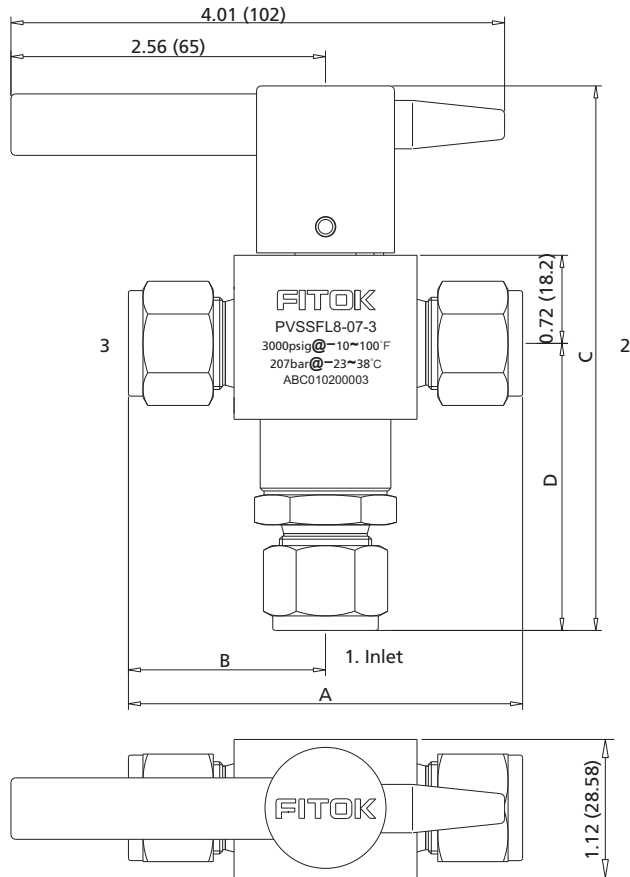
# B-70 Plug Valves

## 3-way Valves

Orifice code: 02 and 04



Orifice code: 07



Basic Ordering Information	Connection Type and Size		Orifice in. (mm)	Dimensions, in. (mm)			
	Inlet 1	Inlet 2/3		A	B	C	D
PV□□-FL2-02-3	1/8" FITOK		0.09 (2.4)	2.19 (55.7)	1.09 (27.8)	3.29 (83.6)	1.60 (40.6)
PV□□-FL4-04-3	1/4" FITOK		0.17 (4.4)	2.40 (60.6)	1.20 (30.3)	3.39 (86.1)	1.69 (43.1)
PV□□-FL6-04-3	3/8" FITOK			2.25 (64.0)	1.26 (32.0)	3.46 (87.8)	1.76 (44.8)
PV□□-FL6-07-3	3/8" FITOK		0.28 (7.2)	3.01 (76.4)	1.51 (38.4)	4.33 (110)	2.24 (56.8)
PV□□-FL8-07-3	1/2" FITOK			3.21 (81.6)	1.61 (40.8)	4.43 (112.6)	2.24 (59.4)
PV□□-ML6-04-3	6 mm FITOK		0.17 (4.4)	2.41 (61.3)	1.21 (30.7)	3.40 (86.4)	1.71 (43.5)
PV□□-ML8-04-3	8 mm FITOK			2.48 (62.9)	1.24 (31.4)	3.43 (87.2)	1.74 (44.2)
PV□□-ML10-07-3	10 mm FITOK		0.28 (7.2)	3.02 (76.8)	1.51 (38.4)	4.34 (110.2)	2.24 (57.0)
PV□□-ML12-07-3	12 mm FITOK			3.21 (81.6)	1.61 (40.8)	4.44 (112.8)	2.35 (59.6)
PV□□-FNS2-04-3	1/8 Female NPT		0.17 (4.4)	2.06 (52.3)	1.03(26.2)	3.01 (76.4)	1.11 (33.4)
PV□□-FNS4-04-3	1/4 Female NPT					0.32(81.0)	1.50 (38.0)
PV□□-FNS4-07-3	1/4 Female NPT		0.28 (7.2)	2.38 (60.5)	1.19 (30.3)	3.98 (101.2)	1.89 (48.0)
PV□□-FNS6-07-3	3/8 Female NPT						
PV□□-NS2-04-3	1/8 Male NPT		0.17 (4.4)	1.76 (44.8)	0.88 (22.4)	3.08 (78.2)	1.39 (35.2)
PV□□-NS4-04-3	1/4 Male NPT			2.04 (51.9)	1.02 (26.0)	3.26 (82.7)	1.56 (39.7)
PV□□-NS4-07-3	1/4 Male NPT		0.28 (7.2)	2.46 (62.5)	1.23 (31.3)	4.13 (104.9)	2.04 (51.7)
PV□□-NS6-07-3	3/8 Male NPT						

## Locking Device

- ⦿ Lock PV series plug valves, locking hole diameter is 0.39 in (9.9 mm).
- ⦿ To order a plug valve with locking device, add -L to the valve ordering number.  
Example: PVSS-FL4-04-L
- ⦿ Aluminum handle is standard for PV series plug valves with locking device while stainless steel handle is optional.

Handle Color	Handle Material	Designator	Part No. Example
Black	Aluminum	-	PVSS-FL4-04-L
Red		R	PVSS-FL4-04R-L
Green		G	PVSS-FL4-04G-L
Yellow		Y	PVSS-FL4-04Y-L
Blue		B	PVSS-FL4-04B-L
Stainless Steel	304 SS	SD	PVSS-FL4-04SD-L

## Construction Materials

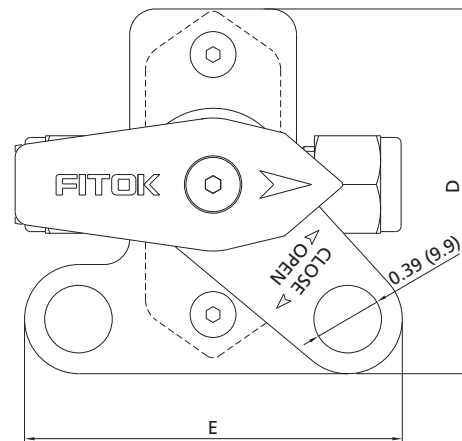
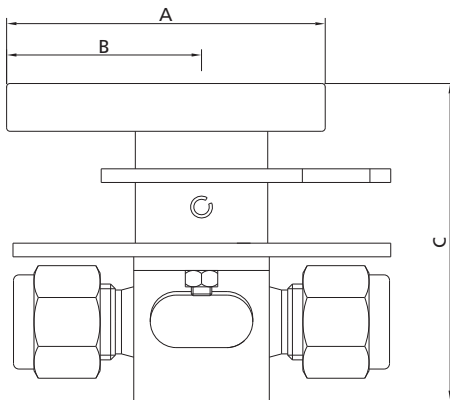
Item	Component	Material
1	Screw	SS
2	Handle	Aluminum or 304 SS
3	Lock Plate	304 SS/A240
4	Bracket	304 SS/A240

Note: Other components not listed are consistent with standard construction materials.



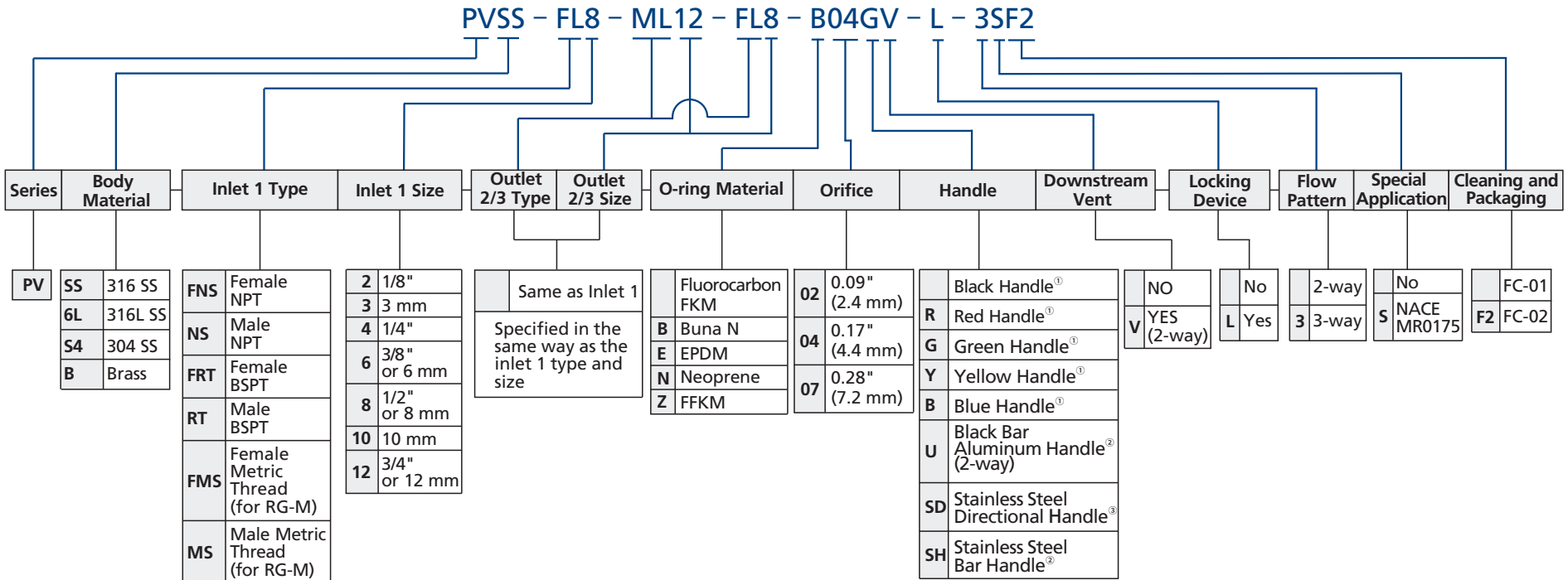
## Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.



Orifice	Dimensions, in. (mm)				
	A	B	C	D	E
02/04	1.84 (46.9)	1.13 (28.6)	1.83 (46.5)	2.11 (53.5)	2.18 (55.5)
07	2.48 (63.0)	1.50 (38.1)	2.52 (64.1)	2.70 (68.6)	2.70 (68.6)

# Ordering Number Description



1. Standard thread pitch for metric threads are as follows:  
 M10 and below: 1 mm  
 M12 to M24: 1.5 mm  
 Standard thread pitch should be omitted in the ordering number, others should be specified.
2. For oxygen-enriched environment or hazardous media service, please contact FITOK Group or our authorized distributors.
3. Cleaning and Packaging:  
 FC-01: Standard cleaning and packaging for general industrial procedures.  
 FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement of ASTM G93 Level C.

- ① The handle material of 2-way valves is nylon, while that of 3-way valves is aluminum.
  - ② Please refer to the handles of 3-way valves for the appearance of bar handles.
  - ③ Please refer to the handles of locking devices for the appearance of directional handles.
- Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

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