

# SSP

## Plug Valves



# SSP

## PV Series

- ✓ Working Pressure: Up to 3,000 psig (200 bar)
- ✓ End Connections: 1/8 to 1/2 in. (6 to 12mm)
- ✓ Temperature Range: -10 to 400°F (-23 to 204°C)
- ✓ Wide variety of end connection types and sizes
- ✓ Flow Coefficient: Up to 6.4

[www.mySSP.com](http://www.mySSP.com)





At SSP, we are proud to be an American manufacturing success story.

**100% of our products are made in America.** All of our manufacturing is performed in our 165,000 sq. ft. facility located near Cleveland, Ohio. Our facility is the largest vertically integrated, single-site operation in the industry. In addition to manufacturing and assembly, we have closed die forging, tool & die design, product engineering and testing operations under the same roof with customer service and management.

**Made in America is good business.** Not only do we make everything in America, we use American suppliers too. Buying American allows us to have better quality control and a more reliable supply chain. We can work more closely within our walls and with our suppliers to improve quality, reduce costs, and shorten lead times, which means faster service and better products for you.

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**SSP** Industry Standard Products  
*Made Better*

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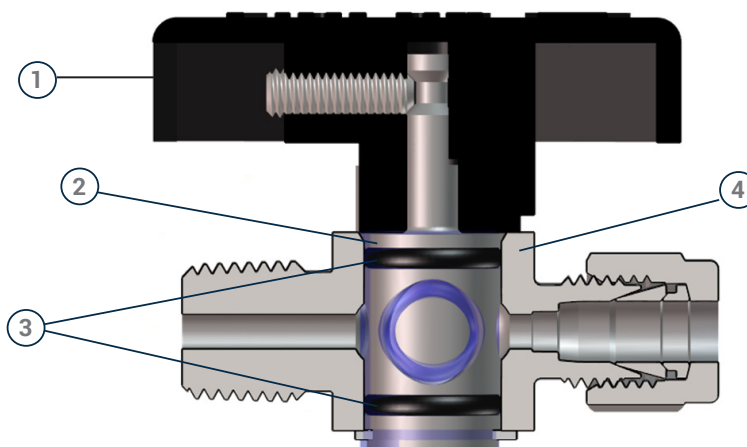
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# PV Series Plug Valves

PV Series quarter-turn plug valves are used for isolation and flow control in a wide range of applications including: air systems, lube system controls, laboratories, instrument gas systems.

## Design

- 1 1/4-TURN ACTUATION**
  - 1/4-turn, low-torque actuation
  - Directional handle indicates the direction of the flow
- 2 PTFE-COATED PLUG**
  - Reduces potential for galling
  - Low maintenance
- 3 O-RING SEAL TO ATMOSPHERE**
  - Choice of O-ring materials
  - Easy maintenance
- ONE-PIECE BODY**
  - 4** • Compact size for tight spaces and close mounting
  - Lightweight
  - Fewer leak points



### STRAIGHT FLOW PATH

- Forward-flow throttling
- High flow

### VARIETY OF END CONNECTIONS

- Fractional Duolok®, Unilok® and Griplok® tube ends
- Metric Duolok® tube ends
- TruFit® NPT and ISO/BSPT pipe ends

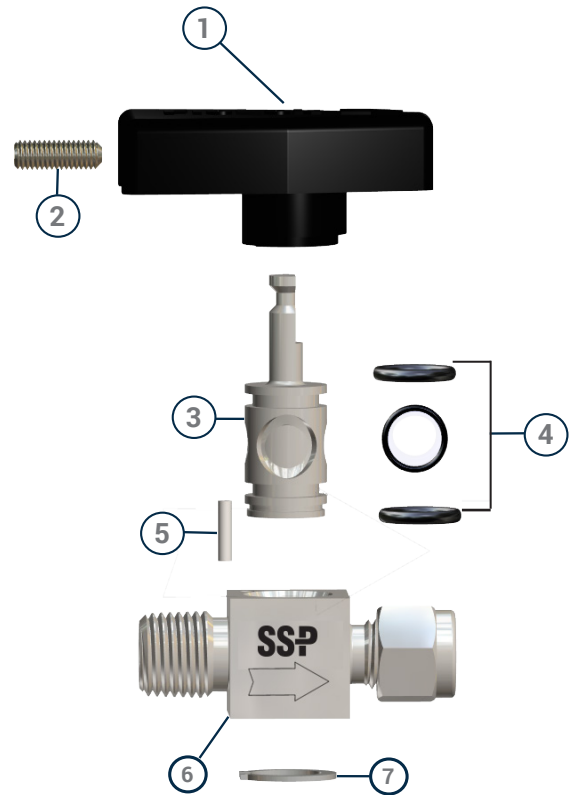
### 100% FACTORY TESTED

# Technical Information

## Materials of Construction

ID	Component	316 SS	Brass
1	Handle	Nylon	
2	Set Screw	316 SS	
3	Plug*	316 SS/A479	Brass/B453
4	O-rings*	PTFE-Coated Fluorocarbon FKM	
5	Pin	420 SS	
6	Body*	316 SS/A479	Brass/B453
7	Snap Ring	PH 15-7 SS	
	Lubricant	Silicone-based	

\*Wetted Components



## Temperature - Pressure

Series	PV4, PV6	PV4	PV6
Material	316 SS	Brass	
Temperature °F (°C)	Working Pressure, psig (bar) <sup>1, 2</sup>		
-10 to 100 (-23 to 37)	3000 (206)	3000 (206)	2000 (137)
150 (65)	3000 (206)	2500 (172)	2000 (137)
200 (93)	3000 (206)	2000 (137)	2000 (137)
250 (121)	2000 (137)	1500 (103)	1500 (103)
300 (148)	1000 (68.9)	1000 (68.9)	1000 (68.9)
350 (176)	1000 (68.9)	1000 (68.9)	1000 (68.9)
400 (204)	1000 (68.9)	400 (27.5)	400 (27.5)

<sup>1</sup>Based on PTFE coated Fluorocarbon FKM O-rings.

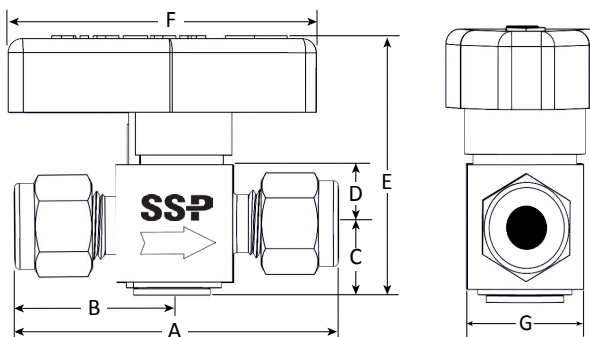
<sup>2</sup>Differential pressure is limited to 150 psig (10.3 bar) maximum if reverse flow occurs. Reverse-flow throttling may damage O-ring.

# Ordering Information

## Ordering Instructions

- ① Select the basic ordering number from the Part Numbers and Dimensions table based on the end connections and orifice size for the valve. *Example: PV4-4PM-D4*  
  
Basic part numbers for valves with tube fitting end connections specify the Duolok two-ferrule design. To order Unilok single ferrule tube ends change the D to a U. *Example: PV4-4PM-U4*  
To order Griplok dual-ferrule tube ends change the D to a G. *Example: PV4-4PM-G4*
- ② If the valve requires downstream venting to atmosphere, add a V to the base part number. *Example: PV4V-4PM-D4*
- ③ Select the body material, then add it to the base part number. *Example: PV4-4PM-D4-316*
- ④ Add Options and Accessories to the end of the part number in alphabetical order. See the Options and Accessories section for more information. *Example: PV4-4PM-D4-316-LDSS*

# Part Numbers and Dimensions



End Connection		Basic Part Number	CV	Dimensions in. (mm) <sup>3,4</sup>							
Inlet/Outlet	Size			Orifice	A	B	C	D	E	F	G
Fractional Tube Fitting <sup>1</sup>	1/8 in.	PV4-D2	0.10	0.093 (2.3)	1.99 (50.5)	0.99 (25.1)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	1/4 in.	PV4-D4	1.6	0.172 (4.4)	2.17 (55.1)	1.08 (27.4)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	3/8 in.	PV4-D6	1.1	0.172 (4.4)	2.29 (58.2)	1.14 (29.0)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	3/8 in.	PV6-D6	6.4	0.283 (7.2)	2.66 (67.6)	1.33 (33.8)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
	1/2 in.	PV6-D8	4.4	0.283 (7.2)	2.88 (73.2)	1.44 (36.6)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
Duolok Metric Tube Fittings <sup>2</sup>	6 mm	PV4-DM6	1.6	0.172 (4.4)	2.17 (55.1)	1.08 (27.4)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	8 mm	PV6-DM8	6.4	0.283 (7.2)	2.60 (66.0)	1.30 (33.0)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
	10 mm	PV6-DM10	6.4	0.283 (7.2)	2.68 (68.1)	1.34 (34.0)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
	12 mm	PV6-DM12	4.8	0.283 (7.2)	2.88 (73.2)	1.44 (36.6)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
Female NPT	1/8 in.	PV4-2PF	1.2	0.172 (4.4)	1.78 (45.2)	0.89 (22.6)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	1/4 in.	PV4-4PF	0.9	0.172 (4.4)	2.09 (53.1)	1.05 (26.7)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	1/4 in.	PV6-4PF	4.3	0.283 (7.2)	2.38 (60.5)	1.19 (30.2)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
	1/2 in.	PV6-8PF	2.7	0.283 (7.2)	2.88 (73.2)	1.44 (36.6)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
Male NPT	1/8 in.	PV4-2PM	1.0	0.172 (4.4)	1.53 (38.9)	0.76 (19.3)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	1/4 in.	PV4-4PM	1.0	0.172 (4.4)	1.90 (48.3)	0.95 (24.1)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	1/2 in.	PV6-8PM	2.4	0.283 (7.2)	2.64 (67.1)	1.32 (33.5)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)
Male NPT to Fractional Tube Fitting	1/4 in.	PV4-4PM-D4	0.9	0.172 (4.4)	2.03 (51.2)	0.95 (24.1)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
Male to Female NPT	1/4 in.	PV4-4PM-4PF	1.0	0.172 (4.4)	2.00 (50.8)	0.95 (24.1)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
Female ISO Tapered	1/4 in.	PV4-4FRT	0.9	0.172 (4.4)	2.21 (56.1)	1.11 (28.2)	0.47 (11.9)	0.38 (9.7)	1.68 (42.7)	2.00 (50.8)	0.75 (19.1)
	1/2 in.	PV6-8FRT	2.7	0.283 (7.2)	3.14 (79.8)	1.57 (39.9)	0.67 (17.0)	0.56 (14.2)	2.20 (55.9)	2.63 (66.8)	1.12 (28.4)

<sup>1</sup> The Basic Ordering Numbers for tube fitting end connections specify Duolok end connections. For Unilok and Griplok end connections, see the Tube Fitting End Connection options on page 6.

<sup>2</sup> Only Duolok tube ends are available in metric sizes.

<sup>3</sup> Dimensions are subject to change.

<sup>4</sup> Dimensions shown with tube fitting nuts finger-tight.

## Options & Accessories

### Tube Fitting End Connections

SSP provides three tube fitting designs for all PV Series valves. Use the designators below to indicate the required design. For more information about SSP tube fitting end connections see our tube fitting catalogs. *Example: PV4-U4-316 for Unilok tube end connections.*

Design	Description	Designator
Duolok	2-Ferrule	D
Unilok	1-Ferrule	U
Griplok	2-Ferrule	G

### Body Material

Select the valve body material required and add the designator to the valve basic part number. *Example: PV4-D4-B*

Body Material	Designator
316 Stainless Steel	-316
Brass	-B

### O-Ring Material

PTFE coated Fluorocarbon FKM is the standard O-ring material for all PV Series valves.

Other O-Ring materials are available. Please contact SSP for additional information.

### Handle Colors

Green nylon handles are standard on non-vented valves. Red handles are standard on vented valves. For standard colored handles do not use a color designator. To select a different color handle, add the designator from the table below.

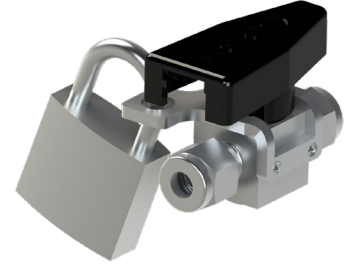
*Example: PV4-D4-316-RD*

Handle color	Designator
Black	-BK
Blue	-BL
Red	-RD

### Locking Hardware

PV Series locking devices:

- Meet OSHA Lockout/Tag Out Standard 29 CFR Part 1910.147
- Use padlock with shackle diameters from 1/4 to 5/16 in. (6.4 to 8mm)
- Available factory installed or for field installation



Factory installed locking hardware can be added to any size valve by adding -LDSS to the part number.

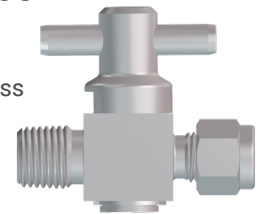
*Example: PV6-8PF-316-LDSS*

To order locking hardware kits for field installation, select the part number from the table below. Kits include locking device plate, spacer, installation instructions and all necessary hardware.

Series	Part Number
<b>316 SS</b>	
PV4	PV4-LDSSK
PV6	PV6-LDSSK

### Stainless Steel Handles

PV Series valves are available with a stainless steel T-bar handle and plug for valves with both brass and stainless steel valve bodies.



To order PV Series Plug Valves with stainless steel handles, add -BH1 to the part number. *Example: PV4-D6-316-BH1*

### Special Cleaning

ASTM G93, Level C and CGA G-4.1 compliant cleaning is available for valves using oxygen compatible lubricant. To specify special cleaning, add -XP98 to the basic ordering number. *Example: PV4-D4-316-XP98*

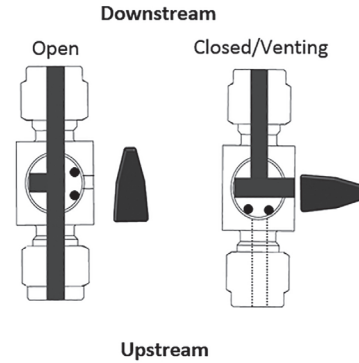
## Vented Valves

PV Series plug valves are available with a vented stem and ported body to allow downstream pressure to vent to the atmosphere when the valve is in the closed position.

- Vented PV Series valves come standard with a red handle.
- The pressure rating for vented plug valves is 150 psig (10.3 bar).

To order PV Series vented plug valves, add a V to the valve size designator in the basic part number.

Examples: PV4V-D4-316



## Special Orders

The Part Numbers and Dimensions table (page 5) contains only the most popular valve configurations; many more are available. If the required valve configuration is not in the Part Numbers and Dimensions tables, use the chart below to build part numbers for quotation purposes.

Basic Part Number

Options



PV4 V -4PM -D4 - 316

- GR- LD

### A Orifice/Valve Size

PV4 0.172  
PV6 0.283

### B Vented Valves

Blank No Vent  
V Downstream Vent

### E Body Material

-316 316 SS  
-B Brass

### C Inlet D Outlet<sup>1</sup>

#### Types

D	Duolok Tube Fitting
U	Unilok Tube Fitting
G	Griplok Tube Fitting
DM	Duolok Metric
PF	Female NPT
PM	Male NPT
FRT	Female ISO Tapered

#### Fractional Sizes

2	1/8 in
4	1/4 in
6	3/8 in
8	1/2 in

#### Metric Sizes

6	6 mm
8	8 mm
10	10 mm
12	12 mm

### F Options<sup>2</sup>

-LDSS Locking Device Stainless Steel  
-XP98 Clean per ASTM G93 Level C and CGA G-4.1

#### Handles

Blank Green<sup>3</sup>  
-BK Black  
-BL Blue  
-RD Red<sup>3</sup>  
-BH1 Stainless Steel

<sup>1</sup>Tube fitting end connection part numbers are formatted Type followed by Size. Example: D6

Pipe ends are formatted Size followed by Type. Example: 6PF. If the inlet and outlet are the same use only one designator

<sup>2</sup>Options are added to the end of the part number in alphabetical order. Example: PV6-D4-316-BL-XP98

<sup>3</sup>Green handles are standard on all non-vented valves. Red handles are standard on vented valves.

## ⚠ Important Information

IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE PERSONAL INJURY AND PROPERTY DAMAGE. It is the sole responsibility of the system designers and users to properly select and use products for their specific applications. This document has been provided to users with technical expertise as a reference for further investigation to determine specific product needs relative to their design requirements.

### Testing

All PV Series valves are factory tested with Nitrogen to 1000 psig (69 bar) at 70°F (20°C).

### Warranty

SSP valves are backed by the SSP Limited Life Time Warranty. This warranty is available from your local distributor or at [www.mySSP.com](http://www.mySSP.com).

# SSP

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PVPC-22A