

## Plug Valves



### P4T and P6T Series

- Working pressures up to 3000 psig (206 bar)
- Swagelok® tube fitting and NPT and ISO tapered pipe end connections
- 1/8 through 1/2 in. and 6 through 12 mm sizes
- Brass and 316 stainless steel materials

## Features

Swagelok plug valves offer low-torque, quarter-turn operation in a simple, compact design that provides positive shutoff of forward flow with up to 3000 psig (206 bar) pressure.

- Straight-through flow path
- Forward-flow throttling
- Simple design, easy to clean and maintain
  - One-piece body
  - Replaceable plug assembly
  - O-ring seal to atmosphere.

## Pressure-Temperature Ratings<sup>①</sup>

Series	P4T, P6T	P4T	P6T
Material	316 SS	Brass	
Temperature, °F (°C)	Working Pressure, psig (bar) <sup>②</sup>		
-10 (-23) to 100 (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)

① Based on PTFE-coated fluorocarbon FKM O-rings.

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

## Materials of Construction



Component	Valve Body Materials	
	316 SS	Brass
Material Grade/ASTM Specification		
1 Handle	Polyetherimide	
2 Pin	316 SS	
3 Plug	<i>PTFE-coated 316 SS/A479</i>	<i>PTFE-coated brass/B453</i>
4 O-rings	<i>PTFE-coated fluorocarbon FKM</i>	
5 Pin	316 SS	
6 Body	<i>316 SS/A479</i>	<i>Brass/B453</i>
7 Snap ring	PH 15-7 Mo <sup>®</sup> SS	
Lubricant	<i>Silicone-based</i>	

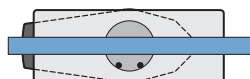
Wetted components listed in *italics*.

## Flow Data at 70°F (20°C)

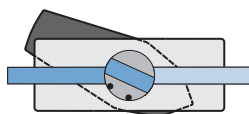
End Connections		C <sub>v</sub>	Series	Pressure Drop to Atmosphere, psi (bar)					
				1 (0.068)	5 (0.34)	10 (0.68)	1 (0.068)	5 (0.34)	10 (0.68)
Inlet/Outlet	Size			Air Flow, std ft <sup>3</sup> /min (std L/min)			Water Flow, U.S. gal/min (L/min)		
Fractional Swagelok tube fittings	1/8 in.	0.10	P4T	0.3 (8.4)	0.8 (22)	1.1 (31)	0.1 (0.37)	0.2 (0.75)	0.3 (1.1)
	1/4 in.	1.6		6.0 (160)	13 (360)	18 (500)	1.6 (6.0)	3.6 (13)	5.1 (19)
	3/8 in.	1.1		4.1 (110)	8.9 (250)	12 (330)	1.1 (4.1)	2.5 (9.4)	3.5 (13)
		6.4	23 (650)	52 (1470)	72 (2030)	6.4 (24)	14 (52)	20 (75)	
Metric Swagelok tube fittings	1/2 in.	4.4	P6T	16 (450)	35 (990)	49 (1380)	4.4 (16)	9.8 (37)	13 (49)
	6 mm	1.6	P4T	6.0 (160)	13 (360)	18 (500)	1.6 (6.0)	3.6 (13)	5.1 (19)
	8 mm	6.4	P6T	23 (650)	52 (1470)	72 (2030)	6.4 (24)	14 (52)	20 (75)
	10 mm			17 (480)	39 (1100)	54 (1520)	4.8 (18)	10 (37)	15 (56)
Female NPT	12 mm	4.8							
	1/8 in.	1.2	P4T	4.4 (120)	9.7 (270)	13 (360)	1.2 (4.5)	2.7 (10)	3.8 (14)
	1/4 in.	0.9		3.3 (93)	7.3 (200)	10 (280)	0.9 (3.4)	2.0 (7.5)	2.8 (10)
4.3		P6T	16 (450)	34 (960)	48 (1350)	4.3 (16)	9.6 (36)	13 (49)	
1/2 in.	2.7		10 (280)	21 (590)	30 (840)	2.7 (10)	6.0 (22)	8.5 (32)	
Male NPT	1/8 in.	1.0	P4T	3.7 (100)	8.1 (220)	11 (310)	1.0 (3.7)	2.2 (8.3)	3.2 (12)
	1/4 in.		9.0 (250)	19 (530)	27 (760)	2.4 (9.0)	5.4 (20)	7.6 (28)	
	1/2 in.	2.4	P6T						
Male NPT/ Swagelok tube fitting	1/4 in.	0.9	P4T	3.3 (93)	7.3 (200)	10 (280)	0.9 (3.4)	2.0 (7.5)	2.8 (10)
Male/female NPT	1/4 in.	1.0		3.7 (100)	8.1 (220)	11 (310)	1.0 (3.7)	2.2 (8.3)	3.2 (12)
Female ISO	1/4 in.	0.9		3.3 (93)	7.3 (200)	10 (280)	0.9 (3.4)	2.0 (7.5)	2.8 (10)
	1/2 in.	2.7	P6T	10 (280)	21 (590)	30 (840)	2.7 (10)	6.0 (22)	8.5 (32)

## Operation

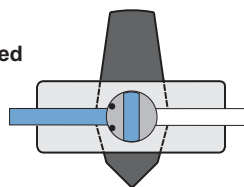
Open



Forward-Flow Throttling



Closed



## Testing

Every Swagelok plug valve is factory tested for shutoff at 600 psig (41.3 bar).

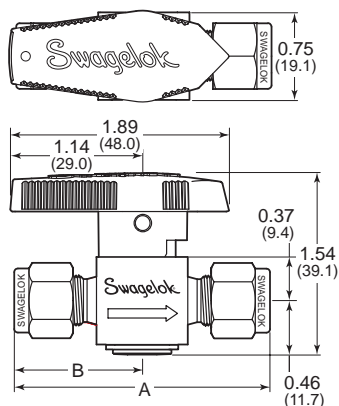
## Cleaning and Packaging

Every Swagelok plug valve is cleaned and packaged in accordance with *Swagelok Specification SC-10*.

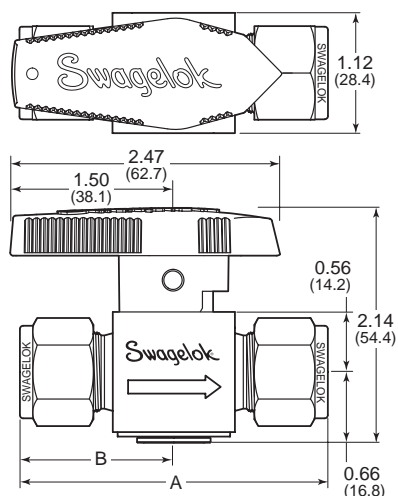
## Ordering Information and Dimensions

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

### P4T Series



### P6T Series



End Connections		Ordering Numbers		Series	Dimensions, in. (mm)		
Inlet/Outlet	Size	Stainless Steel	Brass		Orifice	A	B
Fractional Swagelok tube fittings	1/8 in.	SS-2P4T	B-2P4T	P4T	0.093 (2.3)	1.99 (50.5)	0.98 (24.9)
	1/4 in.	SS-4P4T	B-4P4T			2.17 (55.1)	1.08 (27.4)
	3/8 in.	SS-6P4T	B-6P4T	P6T	0.172 (4.4)	2.29 (58.2)	1.14 (29.0)
		SS-6P6T	B-6P6T			2.66 (67.6)	1.33 (33.8)
1/2 in.	SS-8P6T	B-8P6T		0.283 (7.2)	2.88 (73.2)	1.44 (36.6)	
Metric Swagelok tube fittings	6 mm	SS-6P4T-MM	B-6P4T-MM	P4T	0.172 (4.4)	2.17 (55.1)	1.08 (27.4)
	8 mm	SS-8P6T-MM	B-8P6T-MM	P6T	0.283 (7.2)	2.66 (67.6)	1.30 (33.0)
	10 mm	SS-10P6T-MM	B-10P6T-MM			2.68 (68.1)	1.34 (34.0)
	12 mm	SS-12P6T-MM	B-12P6T-MM			2.96 (75.2)	1.44 (36.6)
Female NPT	1/8 in.	SS-2P4T4	B-2P4T4	P4T	0.172 (4.4)	1.78 (45.2)	0.89 (22.6)
	1/4 in.	SS-4P4T4	B-4P4T4	P6T		0.283 (7.2)	2.09 (53.1)
		SS-4P6T4	B-4P6T4		2.38 (60.5)		1.19 (30.2)
1/2 in.	SS-8P6T4	B-8P6T4		2.88 (73.2)	1.44 (36.6)		
Male NPT	1/8 in.	SS-2P4T2	B-2P4T2	P4T	0.172 (4.4)	1.53 (38.9)	0.76 (19.3)
	1/4 in.	SS-4P4T2	B-4P4T2	P6T		0.283 (7.2)	1.90 (48.3)
	1/2 in.	SS-8P6T2	B-8P6T2		2.64 (67.1)		1.32 (33.5)
Male NPT/ Swagelok tube fitting	1/4 in.	SS-4P4T1	B-4P4T1	P4T	0.172 (4.4)	2.03 (51.2)	0.95 (24.1)
Male/female NPT	1/4 in.	SS-4P4T5	B-4P4T5			2.00 (50.8)	
Female ISO <sup>①</sup>	1/4 in.	SS-4P4T4-RT	B-4P4T4-RT	P6T	0.283 (7.2)	2.21 (56.1)	1.11 (28.2)
	1/2 in.	SS-8P6T4-RT	B-8P6T4-RT			3.14 (79.8)	1.57 (39.9)

Dimensions shown with Swagelok tube fitting nuts finger-tight.

① See specifications ISO 7/1, BS21, DIN-2999, and JIS B0203.

## Options

### Optional Body Materials

Valve bodies and plugs of other alloys are available in some P4T models. Contact your independent Swagelok sales and service representative for more information.

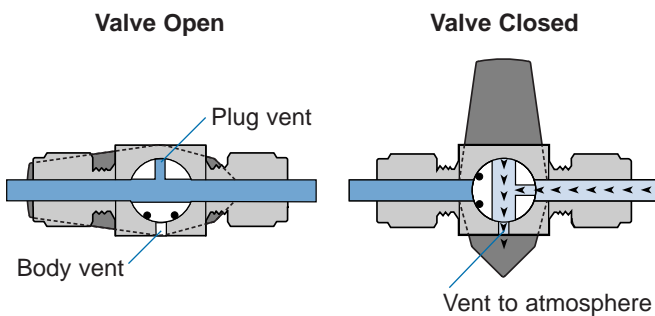
### Optional O-ring Materials

PTFE-coated fluorocarbon FKM is standard. For an optional material, add a designator to the valve ordering number.

O-ring Material	Designator
Kalrez®	-KZ
PTFE-coated Buna N	-TB
PTFE-coated ethylene propylene	-TE
PTFE-coated neoprene	-TN

Example: SS-2P4T-KZ

### Downstream Vent



Vented plug and valve body allow pressure release to atmosphere when valve is closed.

- 150 psig (10.3 bar) maximum operating pressure
- Red polyetherimide handle standard

To order, replace **T** with **V** in the valve ordering number.

Example: SS-2P4V

### Plastic Handle Colors

Dark green is standard. For an optional color, add a handle color designator to the valve ordering number.

Example: SS-2P4T-BL

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

Other colors are available; contact your independent Swagelok representative.

#### Safe Product Selection

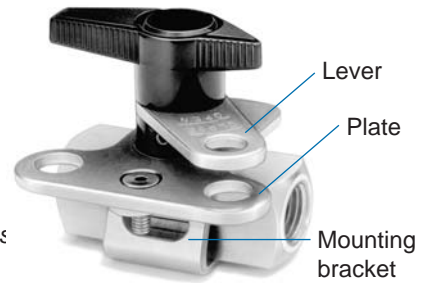
**When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.**

**Caution: Do not mix or interchange parts with those of other manufacturers.**

### Locking Handle

Lever locks to plate to secure valve open or closed.

- Meets OSHA Lockout/Tagout Standard 29 CFR Part 1910.147, *Control of Hazardous Energy*



- Accommodates padlock shackie length of 3/4 in. (19 mm) minimum and diameter of 1/4 to 3/8 in. (6.4 to 9.5 mm)
- Nylon handle with brass insert; 316 SS lever, plate, mounting bracket, and screws

Locking handles are available factory assembled or as a retrofit kit. See the Swagelok *Locking Handles for Plug Valves* catalog for dimensions and ordering information.

### Metal Handle

Removing the roll pin protects against accidental actuation—the valve opens and closes with a wrench.

- 300 series stainless steel or aluminum

To order, add **-M1** for stainless steel or **-M2** for aluminum to the valve ordering number.

Example: SS-2P4T-M1



### Panel Mounting



Bracket mounts to panels 1/16 to 3/8 in. (1.5 to 9.5 mm) thick.

- Includes mounting hole template and label to indicate open and closed positions
- Nylon handle with brass insert; polycarbonate label; 316 SS mounting bracket and screws

Panel mounting capability is available on factory-assembled valves or as a retrofit kit. See the Swagelok *Panel Mounting for Plug Valves* catalog for dimensions and ordering information.