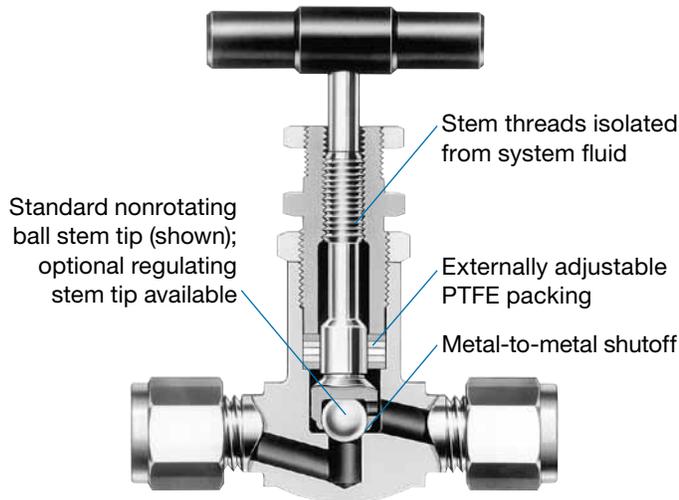


# Screwed-Bonnet Needle Valves

## JB Series

### Features



- Working pressures up to 3000 psig (206 bar)
- Temperatures up to 400°F (204°C) with standard PTFE packing; up to 600°F (315°C) with optional Grafoil® packing
- Straight and angle-pattern valves

### Materials of Construction



Component	Material Grade/ ASTM Specification
1 Handle	Anodized aluminum 2024-T4/B211
Set screw	Alloy steel/ ANSI B18.3
2 Panel mount nut	316 SS/A479
3 Bonnet	
4 Lock nut	316 SS
5 Glands (2)	316 SS/A240
6 Outer packing (2)	Reinforced PTFE
7 Inner packing	Virgin PTFE
8 Stem	316 SS/A479
9 Disc	S17400/A564
Ball insert	316 SS/AMS 5648
10 Body	316 SS/A182
Nonwetted lubricant	Molybdenum disulfide-based
Wetted lubricant	Silicone-based

Wetted components listed in *italics*.



### Pressure-Temperature Ratings

Ratings are based on PTFE packing. Optional packing materials will affect the temperature rating. See **Grafoil Stem Packing**, page 2.

ASME Class	1250
Material Group	2.2
Material Name	316 SS
Temperature °F (°C)	Working Pressure psig (bar)
-40 (-40) to 100 (37)	3000 (206)
200 (93)	2580 (177)
300 (148)	2330 (160)
400 (204)	2140 (147)

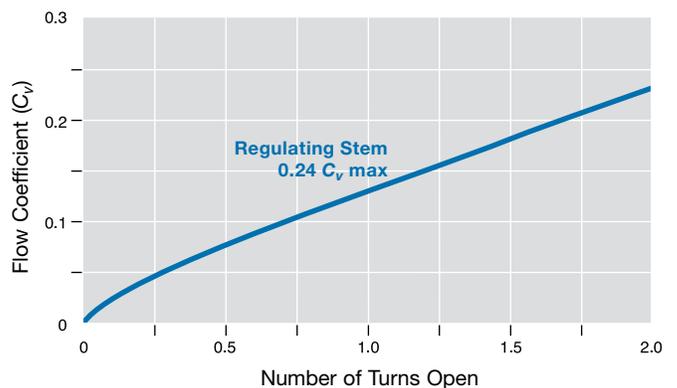
### Flow Data at 70°F (20°C)

#### Standard Ball Stem Tip

The JB series ball stem is designed to be used in a fully open or fully closed position. See **Dimensions** for flow coefficients.

#### Optional Regulating Stem Tip

##### Flow Coefficient at Turns Open

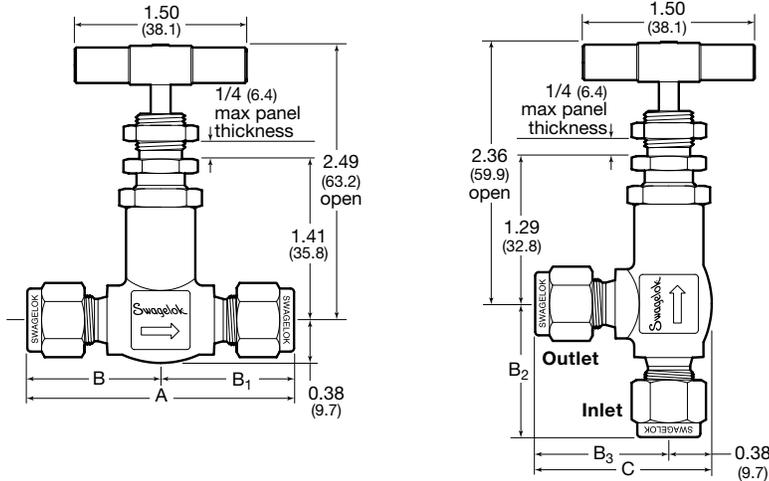


### Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit [swagelok.com](http://swagelok.com) or contact your authorized Swagelok representative.

## Ordering Information and Dimensions

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



End Connections		Ordering Number	C <sub>v</sub>	Dimensions, in. (mm)						
Inlet/Outlet	Size			Orifice	A	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	C
Swagelok tube fitting	1/8 in.	SS-2JB	0.09	0.082 (2.1) <sup>①</sup>	2.26 (57.4)	1.13 (28.7)	1.06 (26.9)	1.07 (27.2)	1.44 (36.6)	
	1/4 in.	SS-4JB	0.39 (straight pattern)	0.166 (4.2)	2.33 (59.2)	1.17 (29.7)			1.54 (39.1)	
	3/8 in.	SS-6JB			2.46 (62.5)	1.23 (31.2)			1.60 (40.6)	
	6 mm	SS-6JB-MM			2.33 (59.2)	1.17 (29.7)			1.54 (39.1)	
	8 mm	SS-8JB-MM			2.47 (62.7)	1.24 (31.5)	—			
Male NPT	1/8 in.	SS-2JB2			0.156 (4.0)	1.75 (44.4)	0.88 (22.4)	—		
Male NPT	1/4 in.	SS-4JB2	0.58 (angle pattern)	0.166 (4.2)	2.00 (50.8)	1.00 (25.4)			1.37 (34.8)	
Male ISO <sup>®</sup>	1/4 in.	SS-4JB2-RT				—				
Male NPT/ Swagelok tube fitting	1/4 in.	SS-4JB1			0.166 (4.2)	2.16 (54.9)	1.00 (25.4)	1.16 (29.5)	—	
Female NPT	1/8 in.	SS-2JB4	0.166 (4.2)	2.00 (50.8)	1.00 (25.4)	0.88 (22.4)		1.25 (31.8)		

Dimensions shown with Swagelok nuts finger-tight.

<sup>①</sup> Angle-pattern valve orifice is 0.094 in. (2.4 mm).

<sup>②</sup> See specifications ISO 7/1, BS EN 10226-1, DIN-2999, and JIS B0203.

- ⚠ **A packing adjustment may be required periodically to increase service life and to prevent leakage.**
- ⚠ **Valves that have not been cycled for a period of time may have a higher initial actuation torque.**
- ⚠ **To increase service life, ensure proper valve performance, and prevent leakage, apply only as much torque as is required to achieve positive shutoff.**

### 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.**

## Testing

Every JB series needle valve is factory tested for bubble-tight shutoff at 100 psi (6.8 bar) differential pressure.

Shell testing is performed to a requirement of no detectable leakage at 1000 psig (69 bar) for valves with PTFE packing or 3000 psig (206 bar) for valves with Grafoil packing.

## Cleaning and Packaging

All JB series needle valves are cleaned and packaged in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)*, MS-06-62.

## Options and Accessories

### Angle-Pattern Valves

Insert **A** after **JB** in an ordering number with B<sub>2</sub>, B<sub>3</sub>, and C dimensions listed.

Example: SS-2JB**A**

### Ball Stem Tip Material

Add **-CC** for 440C SS or **-ST** for cobalt-based alloy to the ordering number.

Example: SS-2JB-**CC**

### Regulating Stems

Valves with 316 SS regulating stems have a maximum flow coefficient (C<sub>v</sub>) of 0.24 (0.09 with 1/8 in. tube fitting end connections). Insert **R** in the ordering number.

Examples: SS-2JB**R**; SS-2JB**AR**2

### Grafoil Stem Packing

One-piece Grafoil packing extends temperature ratings to 600°F (315°C) at 1880 psig (129 bar). Add **-HT** to the ordering number.

Example: SS-2JB-**HT**

### Stem Packing Kits

Stem Packing	Ordering Number
Three-piece PTFE	T-4JB-K1
One-piece Grafoil	G-4JB-K1

### Stainless Steel Bar Handles

Add **-BG** to the ordering number.

Example: SS-2JB-**BG**

### Handle Kits

Handle	Ordering Number
Standard green anodized aluminum bar	A-4JB-K7-GR
316 SS bar	SS-4JB-K7