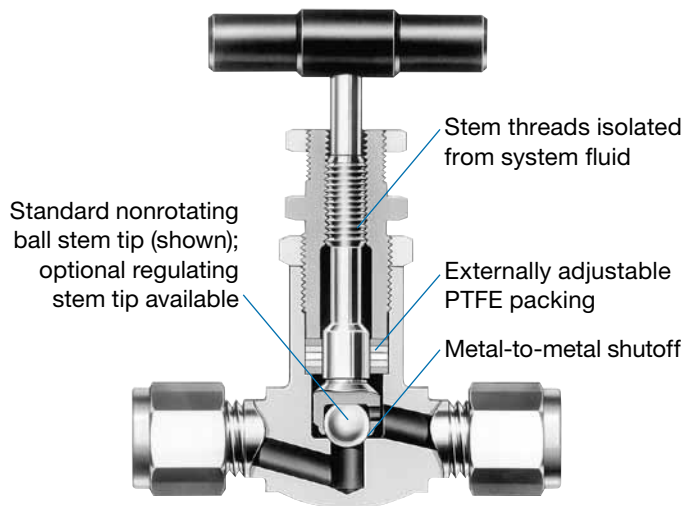


Screwed-Bonnet Needle Valves

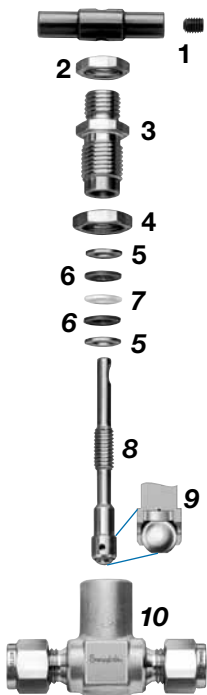
JB Series

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)

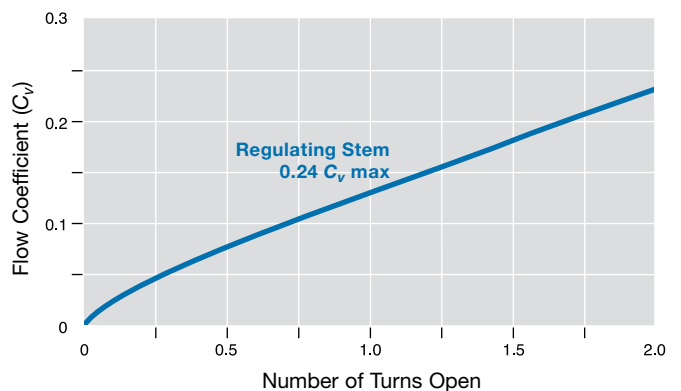
Flow Data at 70°F (20°C)

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

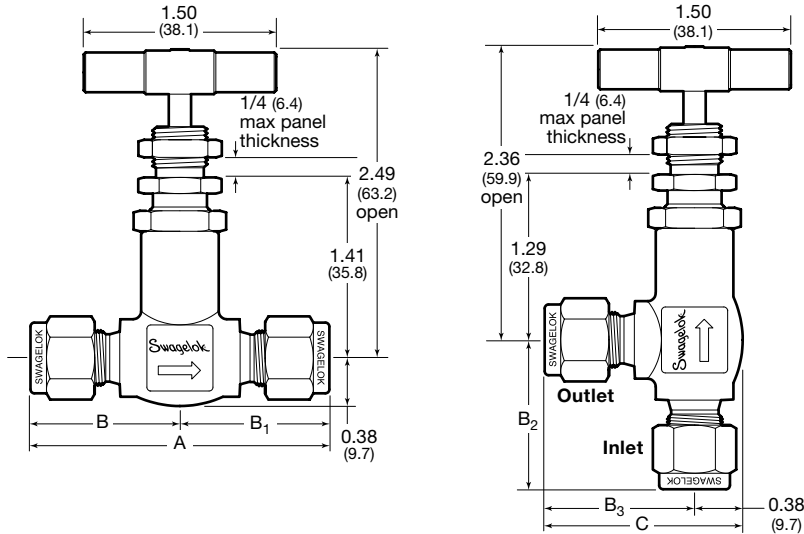


Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com 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 _v	Dimensions, in. (mm)						
Inlet/Outlet	Size			Orifice	A	B	B ₁	B ₂	B ₃	C
Swagelok tube fitting	1/8 in.	SS-2JB	0.09	0.082 (2.1) ^①	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 ^②	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.

^① Angle-pattern valve orifice is 0.094 in. (2.4 mm).

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

⚠ Packing adjustment may be required during the valve's service life.

⚠ Valves that have not been cycled for a period of time may have a higher initial actuation torque.

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 B₂, B₃, and C dimensions listed.

Example: SS-2JBA

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_v) of 0.24 (0.09 with 1/8 in. tube fitting end connections). Insert **R** in the ordering number.

Examples: SS-2JBR; SS-2JBAR2

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