

# Forged-Body Needle Valves

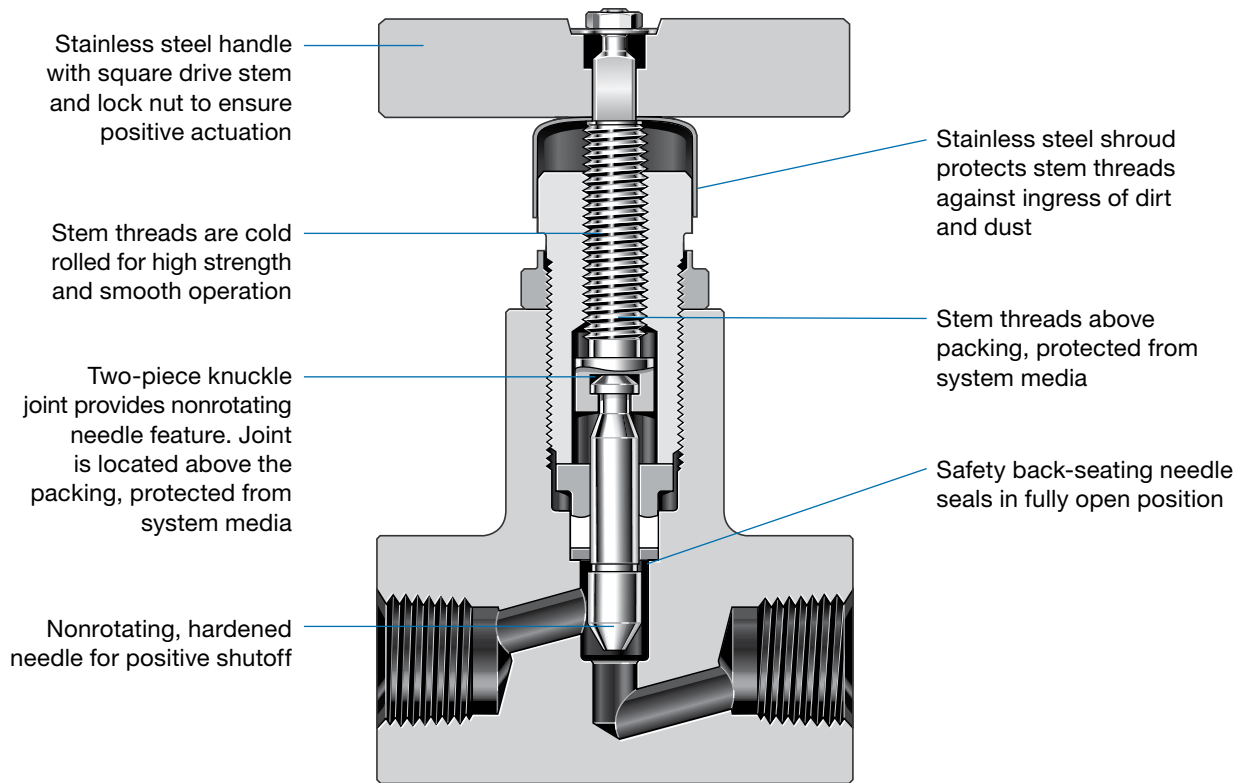
10 000 psig (689 bar)



## F10 Series

- Working pressures up to 10 000 psig (689 bar)
- Straight, angle, and oblique configurations
- Temperatures up to 400°F (204°C) with PTFE packing; up to 850°F (454°C) with graphite packing
- F316/F316L stainless steel forged body

## Features



## Materials of Construction

Component	Grade/ASTM Specification
<i>Body</i>	<i>F316/316L SS/A182</i>
<i>Needle, gland ring</i>	<i>S17400 SS/A564 condition H1150D</i>
<i>Packing</i>	<i>PTFE or graphite</i>
<i>Lubricant</i>	<i>Molybdenum disulfide in hydrocarbon carrier</i>
Gland nut, shroud, stem, gland, handle, handle lock nut, handle washer, gland lock nut	316 SS

Wetted components listed in *italics*.

## Pressure-Temperature Ratings

Temperature, °F (°C)	Packing Material	
	PTFE	Graphite
	Working Pressure, psig (bar)	
0 (-17) to 200 (93)	10 000 (689)	10 000 (689)
300 (148)	8 000 (551)	9 050 (623)
400 (204)	6 000 (413)	8 150 (561)
500 (260)	—	7 380 (509)
600 (315)	—	6 666 (459)
700 (371)	—	6 000 (413)
800 (426)	—	5 333 (367)
850 (454)	—	5 000 (344)

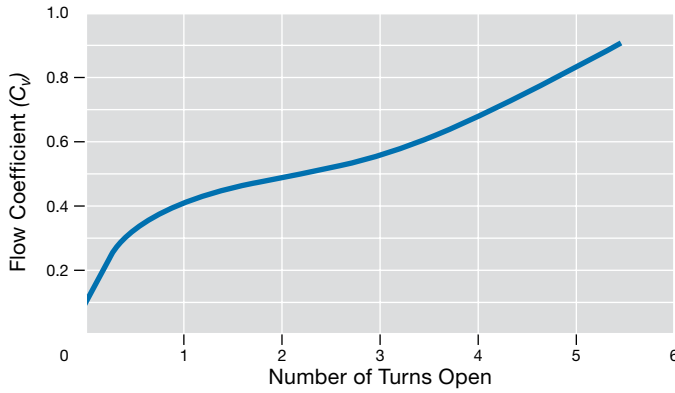
## Testing

Every Swagelok® F10 series valve assembly is factory tested hydrostatically. A shell test is performed at 1.5 times maximum rated working pressure, and a seat test is performed at 1.1 times maximum rated working pressure, in accordance with BS EN 12266-1 (formerly BS 6755 part 1).

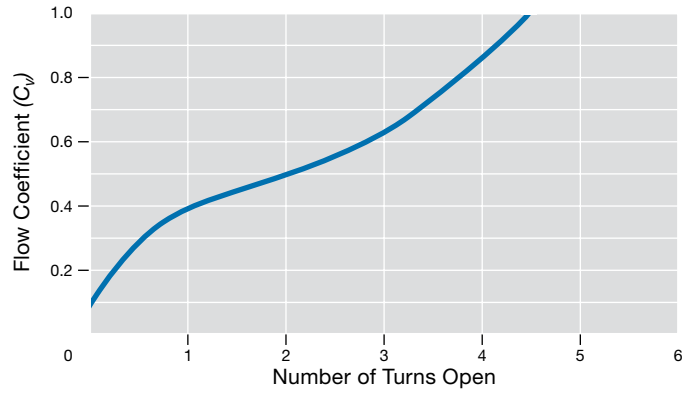
## Flow Data

### Flow Coefficient at Turns Open

#### Straight Pattern



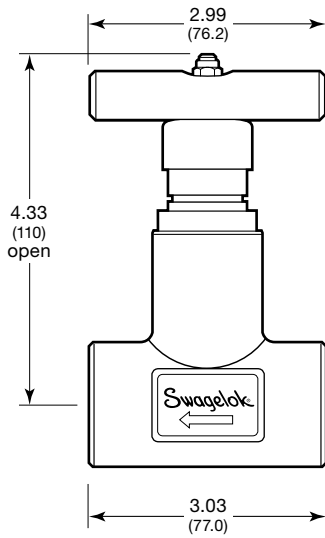
#### Angle and Oblique Pattern



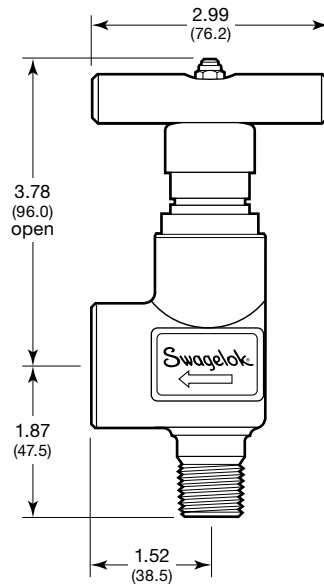
## Ordering Information and Dimensions

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

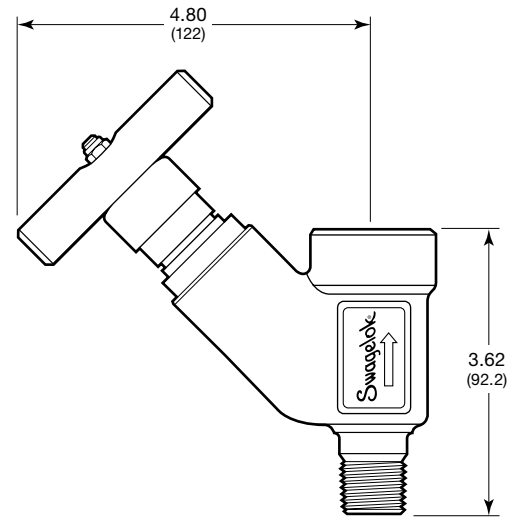
### Orifice (All Patterns)—0.27 (7.0)



**Straight Pattern**  
1/2 in. Female NPT  
Inlet and Outlet



**Angle Pattern**  
1/2 in. Male NPT Inlet  
1/2 in. Female NPT Outlet



**Oblique Pattern**  
1/2 in. Male NPT Inlet  
1/2 in. Female NPT Outlet

Packing Material	Ordering Numbers		
	Straight Pattern	Angle Pattern	Oblique Pattern
PTFE	FS4NAT	FGN44NAT	FYN44NAT
Graphite	FS4NCT	FGN44NCT	FYN44NCT

## Options

### Antitamper Handle

The antitamper handle reduces the risk of human error and deliberate tampering. The valve can be operated with the antitamper key, sold separately.

To order valves with antitamper handles, add **-AT** to the valve ordering number.

Example: FS4NAT-AT



### Stainless Steel Round Lockable Handle

The round handle accommodates shackle diameters 0.25 in. (6.4 mm) or smaller and can lock the valve in any position. It is available only on straight- and angle-pattern valves.

To order valves with stainless steel round lockable handles, add **-SLH** to the valve ordering number.

Example: FS4NAT-SLH



## Accessories

### Antitamper Key

The antitamper key is needed to operate the antitamper handle.

Ordering number: **S007240**



## Additional Valve Body Materials

Other materials, including carbon steel and 25Cr super duplex stainless steel, are available upon request. Contact your authorized Swagelok sales and service representative.

- ⚠ 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.**

## 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.