

# Forged Needle Valves

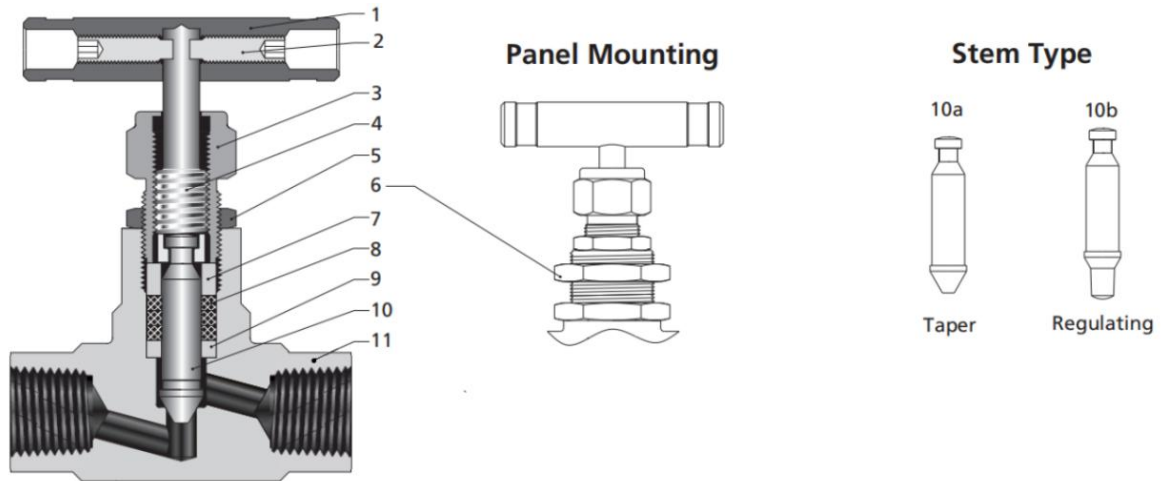
**FNH Series: Maximum working pressure 10000 psig**

## Features

- ⦿ One-piece forged body.
- ⦿ Two-stem design: thread hardened upper stem and smooth surface hardened lower stem.
- ⦿ Linearly instead of helical movement of the nonrotating lower stem, avoiding galling damage to the seat and tip, as well as reducing the total friction area between the packing and the lower stem.
- ⦿ Panel mounting available as an option.
- ⦿ Steady and durable fastening of the handle by double lock-pins.
- ⦿ Handle color options are available.
- ⦿ Leak-tight performance testing for every valve with nitrogen at the maximum working pressure.
- ⦿ Maximum working pressure:  
NFH Series—Stainless steel: 10000 psig (689 bar)
- ⦿ Working temperature:  
PTFE: -65°F to 450°F (-54°C to 232°C)  
PEEK: -65°F to 500°F (-54°C to 260°C)  
Graphite: -65°F to 820°F (-54°C to 454°C)



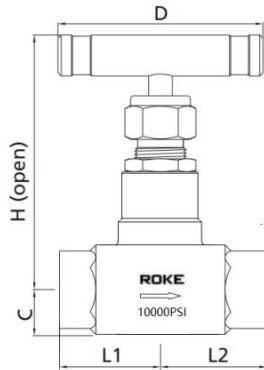
## Standard Materials of Construction



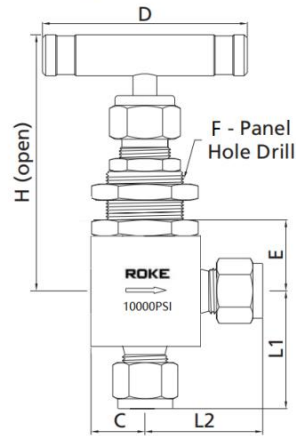
Item	Component	Valve Body Material		
		316 SS	F91	F92
1	Handle	Anodized aluminum or stainless steel or black knob		
2	Set Screw	Stainless steel		
3	Packing Bolt	304 SS/A276		
4	Upper Stem	316 SS/A276	F91/A182	F92/A182
5	Lock Nut	316 SS/B783		
6	Panel Nut	17-4PH		
7	Gland	316 SS/A276	F91/A182	F92/A182
8	Packing	PTFE or PEEK or graphite		
9	Packing Washer	316 SS/A276	F91/A182	F92/A182
10a 10b	Lower Stem	Chrome-plated 316 SS/A276	Chrome-plated F91/A182	Chrome-plated F92/A182
11	Body	316 SS/A182	F91/A182	F92/A182

## Dimensions

**Straight Pattern**



**Angle Pattern**



### Dimensions of FNH Series

Basic Ordering Number	Connection Type and Size		Orifice in(mm)	Cv	Dimension, in.(mm)						
	Inlet	Outlet			L1	L2	C	D	E	F	H
-FNH-FN2-3	1/8 Female NPT	1/8 Female NPT	0.12 (3.0)	0.20	1.00 (25.4)	1.008 (25.4)	0.53 (13.5)	2.17 (55.0)	0.71 (18.0)	0.77 (19.6)	2.85 (72.5)
-FNH-FN4-4	1/4 Female NPT	1/4 Female NPT	0.16 (4.0)	0.35	1.06 (27.0)	1.06 (27.0)	0.53 (13.5)	2.17 (55.0)	0.71 (18.0)	0.77 (19.6)	2.85 (72.5)
-FNH-FN6-5	3/8 Female NPT	3/8 Female NPT	0.20 (5.1)	0.56	1.14 (29.0)	1.14 (29.0)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-FN8-6	1/2 Female NPT	1/2 Female NPT	0.25 (6.4)	0.70	1.26 (32.0)	1.26 (32.0)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-FN8-7			0.29 (7.5)	0.95	1.26 (32.0)	1.26 (32.0)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-FN12-9	3/4 Female NPT	3/4 Female NPT	0.36 (9.1)	1.60	1.58 (40.0)	1.58 (40.0)	0.80 (20.2)	3.50 (88.9)	1.10 (28.3)	1.08 (27.5)	3.78 (96.0)
-FNH-FN16-12	1 Female NPT	1 Female NPT	0.48 (12.2)	2.65	1.97 (50.0)	1.97 (50.0)	1.30 (33.0)	5.00 (127)	1.61 (41.0)	1.45 (36.8)	6.50 (165)
-FNH-MN2-3	1/8 Male NPT	1/8 Male NPT	0.12 (3.0)	0.20	1.00 (25.4)	1.008 (25.4)	0.53 (13.5)	2.17 (55.0)	0.71 (18.0)	0.77 (19.6)	2.85 (72.5)
-FNH-MN4-4	1/4 Male NPT	1/4 Male NPT	0.16 (4.0)	0.35	1.06 (27.0)	1.06 (27.0)	0.53 (13.5)	2.17 (55.0)	0.71 (18.0)	0.77 (19.6)	2.85 (72.5)
-FNH-MN6-5	3/8 Male NPT	3/8 Male NPT	0.20 (5.1)	0.56	1.14 (29.0)	1.14 (29.0)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-MN8-6	1/2 Male NPT	1/2 Male NPT	0.25 (6.4)	0.70	1.50 (38.1)	1.50 (38.1)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-MN12-7	3/4 Male NPT	3/4 Male NPT	0.29 (7.5)	0.95	1.58 (40.0)	1.58 (40.0)	0.80 (20.2)	3.50 (88.9)	1.10 (28.3)	1.08 (27.5)	3.78 (96.0)
-FNH-MN16-9	1 Male NPT	1 Male NPT	0.36 (9.1)	1.60	1.97 (50.0)	1.97 (50.0)	1.30 (33.0)	5.00 (127)	1.61 (41.0)	1.45 (36.8)	6.50 (165)
-FNH-SW2-3	1/8 Soket Weld	1/8 Soket Weld	0.12 (3.0)	0.20	0.94 (23.8)	0.94 (23.8)	0.53 (13.5)	2.17 (55.0)	0.71 (18.0)	0.77 (19.6)	2.85 (72.5)
-FNH-SW4-4	1/4 Soket Weld	1/4 Soket Weld	0.16 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	0.53 (13.5)	2.17 (55.0)	0.71 (18.0)	0.77 (19.6)	2.85 (72.5)
-FNH-SW6-5	3/8 Soket Weld	3/8 Soket Weld	0.20 (5.1)	0.56	1.06 (27.0)	1.06 (27.0)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-SW8-6	1/2 Soket Weld	1/2 Soket Weld	0.25 (6.4)	0.70	1.14 (29.0)	1.14 (29.0)	0.62 (15.8)	2.50 (63.5)	0.87 (22.0)	0.96 (24.4)	3.38 (85.8)
-FNH-SW12-9	3/4 Soket Weld	3/4 Soket Weld	0.36 (9.1)	1.60	1.26 (32.0)	1.26 (32.0)	0.80 (20.2)	3.50 (88.9)	1.10 (28.3)	1.08 (27.5)	3.78 (96.0)
-FNH-SW16-12	1 Soket Weld	1 Soket Weld	0.48 (12.2)	2.65	1.58 (40.0)	1.58 (40.0)	1.30 (33.0)	5.00 (127)	1.61 (41.0)	1.45 (36.8)	6.50 (165)