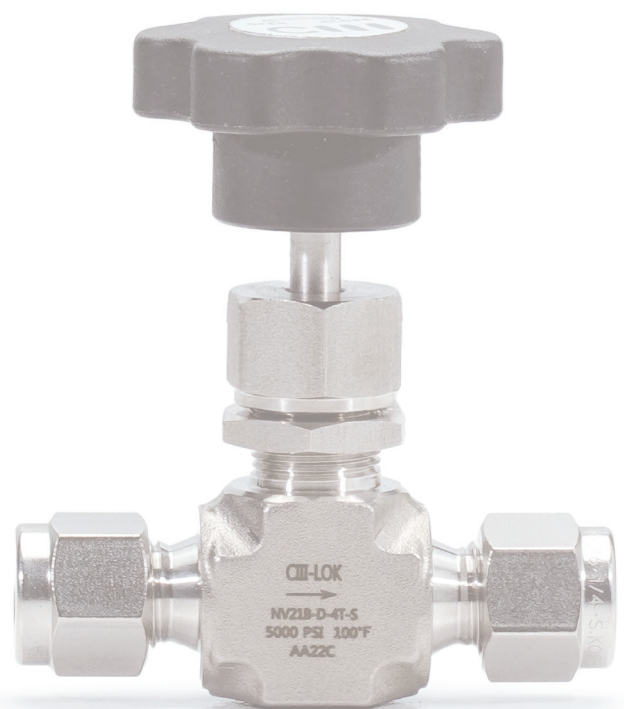


# VN SERIES NEEDLE VALVES



# VN SERIES NEEDLE VALVE

## Design Specification

- ▶ Working Pressure : Up to 5,000 psig@100°F (345 bar@38°C)
- ▶ Temperature Range : Up to 450°F (232°C) with PTFE packing  
Up to 600°F (315°C) with PEEK packing  
Up to 200°F (93°C) with PCTFE packing

## Feature

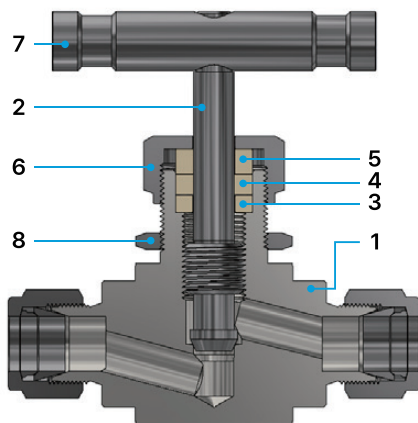
- ▶ Body/Flow pattern - Forged straight and angle pattern
- ▶ Stem - "V" type for shut-off, "R" type for regulating, "S" type for soft tip
- ▶ Packing - PTFE is standard, PCTFE and PEEK available
- ▶ Packing Nut - Internal thread molybdenum coating prevents galling
- ▶ Handle - Nylon round handle is standard, stainless steel bar handle available



## Stem Design



## Materials of Construction

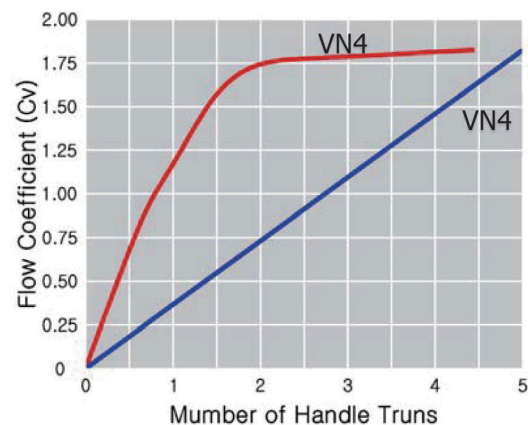
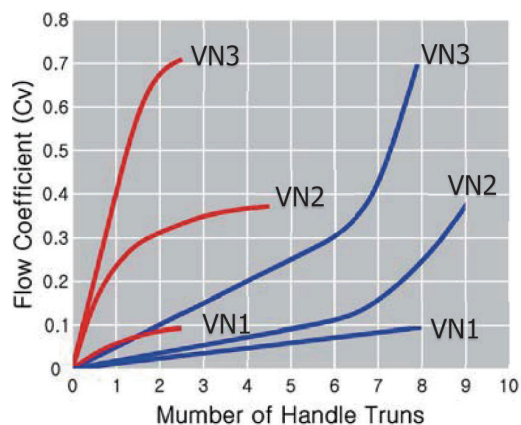


No.	Description	Based on body material, ASTM Std.		
		SS316	Brass	Alloy 400
1	Body*	A182 Type316	B16 Brass360	B564Alloy400
2	Stem*	A276 Type316	A276 Type316	B164 Alloy400
3	Lower Gland*	A276 Type316	A276 Type316	A276 Type316
4	Packing*	PTFE	PTFE	PTFE
5	Upper Gland	A276 Type316	A276 Type316	A276 Type316
6	PackingNut	A276 Type316	B16 Brass360	B164 Alloy400
7	Round Handle	Nylon 6/6	Nylon 6/6	Nylon 6/6
	Bar Handle	Stainless Steel	Stainless Steel	Stainless Steel
8	Panel Nut	Stainless Steel	Brass	Stainless Steel

**Note :**

- Wetted part is marked with "\*" in the description list.
- The threads of the stem and packing nut are coated with molybdenum.

## Flow Curve for Number of Handle Turns

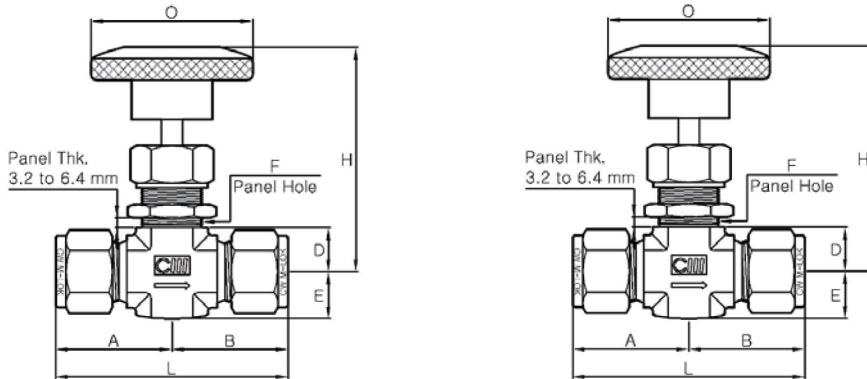


— "V" type & "S" type Stem      — "R" type Stem

# Design Pressure & Temperature

Temperature °F (°C)	Design Pressure, psig (bar)		
	SS316	Brass	Alloy 400
-65(-53) to 100 (37)	5,000 (344)	3,000 (206)	3,000 (206)
200 (93)	4,200 (289)	2,300 (158)	2,600 (179)
250 (121)	4,000 (275)	2,200 (151)	2,500 (172)
300 (148)	3,800 (262)	2,000 (137)	2,400 (165)
400 (204)	3,500 (241)	390 (26)	2,300 (158)
500 (260)	3,300 (227)		2,300 (158)
600 (315)	3,100 (213)		

# Product Code & Dimensions



Product Code	End Connections	End Connections	Orifice	Cv	Dimension								
					L	A	B	C	D	E	F	H	O
VN1	ML2T	M-LOK 1/8"	2.0	0.09	52.0	26.0	26.0	26.0	11.0	9.5	13.5	51.2	38.0
	ML3M	M-LOK 3mm	2.0	0.09	52.0	26.0	26.0	26.0	11.0	9.5	13.5	51.2	38.0
	M2N	Male NPT 1/8"	2.0	0.09	42.0	21.0	21.0	21.0	11.0	9.5	13.5	51.2	38.0
VN2	F2N	Female NPT 1/8"	2.0	0.09	42.0	21.0	21.0	21.0	11.0	9.5	13.5	51.2	38.0
	ML4T	M-LOK 1/4"	4.3	0.37	57.6	28.8	28.8	28.8	11.0	9.5	13.5	51.2	38.0
	ML6M	M-LOK 6mm	4.3	0.37	57.6	28.8	28.8	28.8	11.0	9.5	13.5	51.2	38.0
VN3	M4N	Male NPT 1/4"	4.3	0.37	50.0	28.8	28.8	28.8	11.0	9.5	13.5	51.2	38.0
	ML6T	M-LOK 3/8"	6.5	0.73	66.4	33.2	33.2	33.2	13.5	13.0	20.0	63.6	50.0
	ML8T	M-LOK 1/2"	6.5	0.73	72.0	36.0	36.0	36.0	13.5	13.0	20.0	63.6	50.0
VN4	ML10M	M-LOK 10mm	6.5	0.73	66.4	33.2	33.2	33.2	13.5	13.0	20.0	63.6	50.0
	ML12M	M-LOK 12mm	6.5	0.73	72.0	36.0	36.0	36.0	13.5	13.0	20.0	63.6	50.0
	M6N	Male NPT 3/8"	6.5	0.73	58.0	29.0	29.0	29.0	13.5	13.0	20.0	63.6	50.0
VN4	F4N	Female NPT 1/4"	6.5	0.73	56.0	28.0	28.0	28.0	13.5	13.0	20.0	63.6	50.0
	ML8T	M-LOK 1/2"	9.5	1.8	97.0	48.5	48.5	48.5	19.0	19.0	22.5	91.7	63.5
	ML12T	M-LOK 3/4"	9.5	1.8	97.0	48.5	48.5	48.5	19.0	19.0	22.5	91.7	63.5
	M8N	Male NPT 1/2"	9.5	1.8	76.0	38.0	38.0	38.0	19.0	19.0	22.5	91.7	63.5
	F6N	Female NPT 3/8"	9.5	1.8	76.0	38.0	38.0	38.0	19.0	19.0	22.5	91.7	63.5

**Note :**

- All dimensions are in millimeters and may be changed for reference only.
- In the case of M-LOK tube fittings, these are dimensions in a finger-tight.
- End connections and sizes not listed in the table above can be made to order

# Testing & Packing Nut Adjustment

All valves are leak-tested and only passed products are supplied. The test pressure is 1,000 psig (70 bar) and the test medium is nitrogen. Allowable leak rate is 0.1 std cm<sup>3</sup>/min.

Packing tightening is adjusted to 1,000 psig pressure. Adjustment of the packing nut is required according to the working pressure.

# Ordering Information

VN3	ML8T	PK	A	SS
Body Size VN1 VN2 VN3 VN4	End Connection	Packing Material Nil: PTFE PC: PCTFE PK: PEEK	Flow Pattern Nil: Straight A: Angle	Body Material SS: SS316 B: Brass A4: Alloy 400