



FLOW CONTROL

VALVE



V Series Needle Valves

Catalog 4110-NV

Introduction

Parker V Series Needle Valves are designed for positive leak tight shut-off and regulation of fluids in process, power, and instrumentation applications. With a wide variety of port sizes and styles, temperature capabilities ranging from -65°F to 450°F (-54°C to 232°C) and pressures to 5000 psig (345 bar), V Series Needle Valves provide the user with the utmost in flexibility when designing miniaturized tubing or piping systems.

Features

- ▶ Choice of three stem types:
 - R-Stem – All metal, blunt stem tip
 - N-Stem – All metal, tapered needle stem tip
 - K-Stem – PCTFE stem tip
- ▶ Differential hardness between the strain hardened stem and cold formed body threads provides improved cycle life
- ▶ Choice of PTFE packing or elastomeric O-ring stem seals
- ▶ 316 Stainless Steel, Steel, Brass and Monel® Alloy 400 construction
- ▶ Inline and angle patterns
- ▶ Wide variety of US Customary and SI ports
- ▶ Panel mountable
- ▶ 100% factory tested
- ▶ Optional color coded handles

Specifications

Pressure Ratings:

316 Stainless Steel: 5000 psig (345 bar) CWP
Brass, Steel and Monel® Alloy 400:
3000 psig (207 bar) CWP

Orifice: 0.078" to 0.312" (2.0mm to 7.9mm)

C_v: 0.12 to 1.90

Port size: 1/8" to 3/4" (3mm to 12mm)

Temperature Ratings:

Stainless Steel and Monel® Alloy 400:

-65°F to 450°F (-54°C to 232°C)

Brass: -65°F to 400°F (-54°C to 204°C)

Steel: -20°F to 350°F (-29°C to 177°C)

PTFE Packing:

-65°F to 450°F (-54°C to 232°C)

PCTFE Stem Tip:

-65°F to 350°F (-54°C to 177°C)

Nitrile Rubber Stem Seal:

-30°F to 250°F (-34°C to 121°C)

Fluorocarbon Rubber Stem Seal:

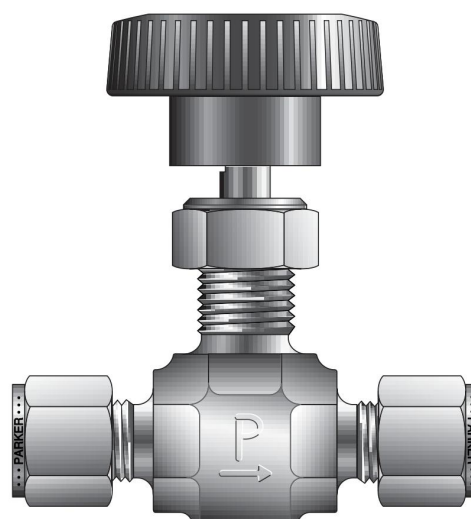
-15°F to 400°F (-26°C to 204°C)

Ethylene Propylene Rubber Stem Seal:

-70°F to 275°F (-57°C to 135°C)

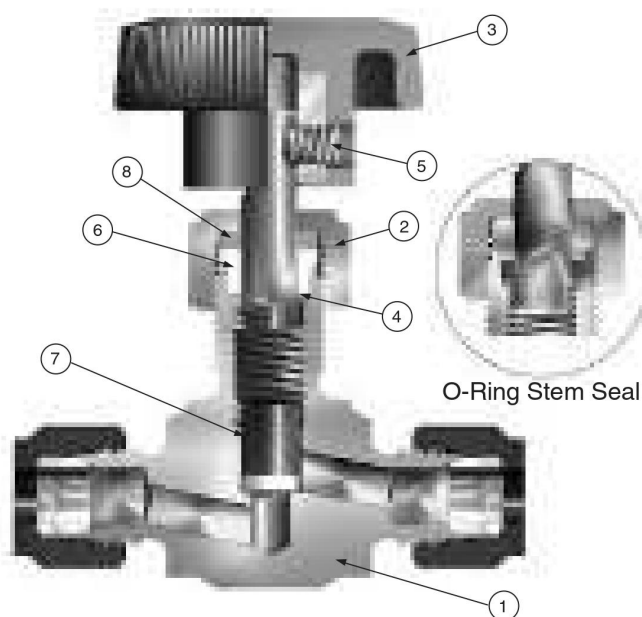
Note: When combining body, seat and seal materials, the most restrictive temperature rating becomes the limiting factor on temperature range.

Monel® Alloy 400 is the registered trademark of Special Metals Corporation.



Model Shown: 4Z-V4LK-SS

Materials of Construction (with PTFE Packing)



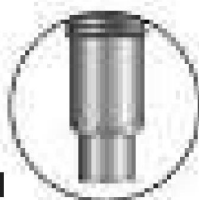
Model Shown: 4Z-V4LK-SS

V Series Needle Valves

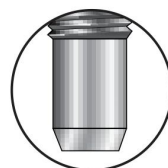
Stem Types



K
PCTFE tipped



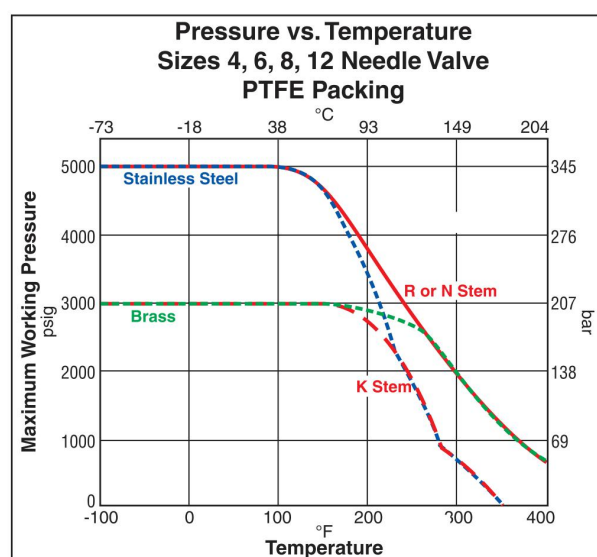
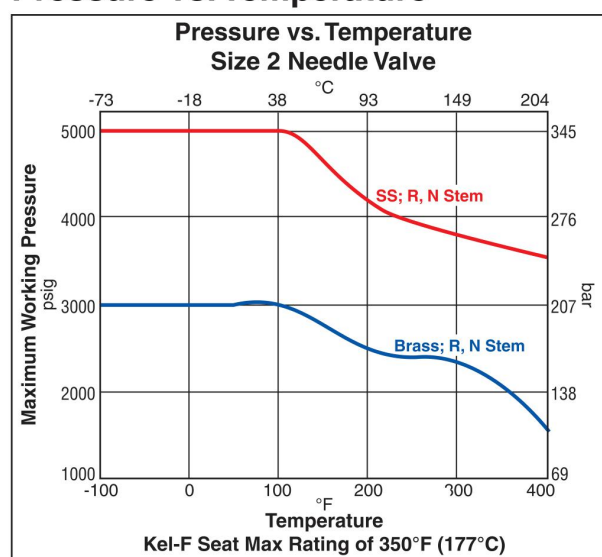
N
Needle (2-1/2°)



R
Blunt (30°)

V

Pressure vs. Temperature



Note: To determine MPa, multiply bar by 0.1

Materials of Construction (with PTFE Packing)

Item #	Part Description	Stainless Steel	Brass	Steel	Monel® Alloy 400
1	Body	ASTM A 182 Type F316	ASTM B 283 Alloy C37700	ASTM A 576 Grade 1214	ASTM B 564 Alloy N04400
2	Packing Nut	ASTM A 479 Type 316	ASTM A 479 Type 316	ASTM A 479 Type 316	ASTM A 479 Type 316
3	Handle*	Nylon 6/6 with SS insert	Nylon 6/6 with SS insert	Nylon 6/6 with SS insert	Nylon 6/6 with SS insert
4	Lower Packing Washer	ASTM A 479 Type 316	ASTM A 479 Type 316	ASTM A 479 Type 316	ASTM B 164 Alloy N04400
5	Handle Screw	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
6	Packing**	PTFE	PTFE	PTFE	PTFE
7	Stem (R and N Stem)	ASTM A 276 Type 316	ASTM A 276 Type 316	ASTM A 276 Type 316	ASTM B 164 Alloy N04400
7A	Stem (K Stem)	ASTM A 276 Type 316, with PCTFE	ASTM A 276 Type 316, with PCTFE	ASTM A 276 Type 316, with PCTFE	ASTM B 164 with PCTFE
8	Upper Packing Washer	Brass	Brass	Brass	Brass
9	Panel Nut***	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel

* Handles for V8 and V12 Series Valves with R and N Stems are aluminum T-bars.

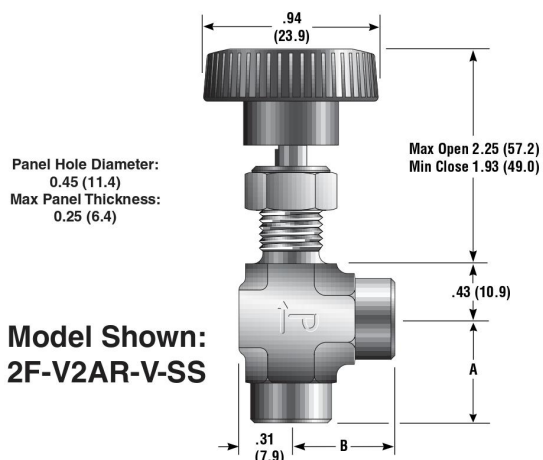
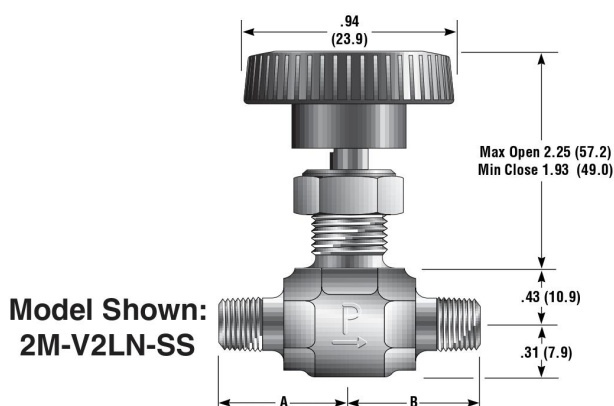
** Optional O-ring elastomeric stem seals are available – See How to Order.

*** Panel Nut is nickel plated brass on V2 Series Valves. Panel Nuts must be ordered separately – see page 10.
Lubrication: Perfluorinated Polyether

V Series Needle Valves

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V2 Series Dimensions / Flow Data



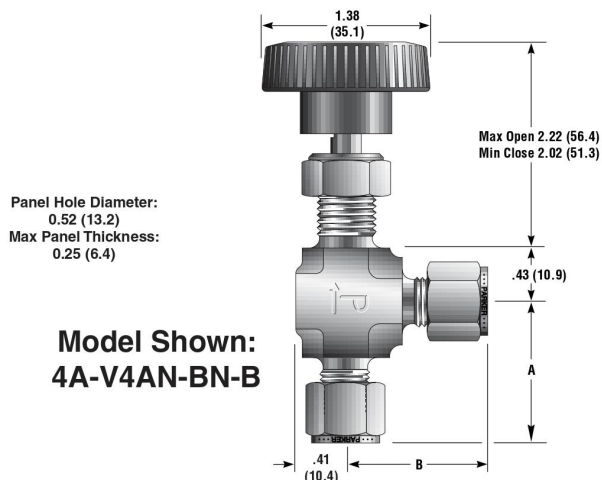
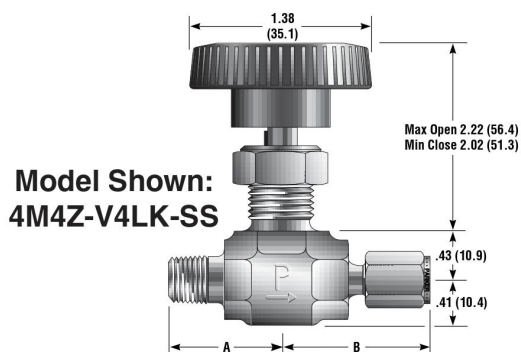
End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C _V	X _T [*]	C _V	X _T [*]	Inch	mm	Inch	mm
1/8" Compression A-LOK®		Blunt	0.078	2.0	0.12	0.78	0.14	0.67	1.01	25.7	1.01	25.7
		Needle			0.12	0.80	0.14	0.63				
		PCTFE			0.13	0.83	0.14	0.63				
1/8" Female NPT		Blunt	0.093	2.4	0.13	0.61	0.16	0.49	0.94	23.9	0.94	23.9
		Needle			0.12	0.66	0.18	0.39				
		PCTFE			0.12	0.73	0.17	0.54				
1/8" Male NPT		Blunt	0.093	2.4	0.13	0.61	0.16	0.49	0.75	19.1	0.75	19.1
		Needle			0.12	0.66	0.18	0.39				
		PCTFE			0.12	0.73	0.17	0.54				
1/8" Compression CPI™		Blunt	0.078	2.0	0.12	0.78	0.14	0.67	1.01	25.7	1.01	25.7
		Needle			0.12	0.80	0.14	0.63				
		PCTFE			0.13	0.83	0.14	0.63				
1/4" Compression A-LOK®		Blunt	0.078	2.0	0.12	0.78	0.14	0.67	1.09	27.7	1.09	27.7
		Needle			0.12	0.80	0.14	0.63				
		PCTFE			0.13	0.83	0.14	0.63				
1/4" Compression CPI™		Blunt	0.078	2.0	0.12	0.78	0.14	0.67	1.09	27.7	1.09	27.7
		Needle			0.12	0.80	0.14	0.63				
		PCTFE			0.13	0.83	0.14	0.63				

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

V4 Series



() Denotes dimensions in millimeters

V4 Series Dimensions / Flow Data

End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm	Inch	mm
1/8" Compression A-LOK®		Blunt	0.078	2.0	0.12	0.52	0.15	0.64	1.10	27.9	1.10	27.9
		Needle			0.12	0.68	0.15	0.59				
		PCTFE			0.14	0.66	0.17	0.49				
1/8" Female NPT		Blunt	0.176	4.5	0.43	0.77	0.55	0.63	0.81	20.6	0.81	20.6
		Needle			0.43	0.69	0.55	0.63				
		PCTFE			0.45	0.55	0.58	0.68				
1/8" Male NPT		Blunt	0.125	3.2	0.28	0.67	0.36	0.55	0.81	20.6	0.81	20.6
		Needle			0.28	0.63	0.36	0.51				
		PCTFE			0.29	0.51	0.37	0.59				
1/8" Compression CPI™		Blunt	0.078	2.0	0.12	0.52	0.15	0.64	1.10	27.9	1.10	27.9
		Needle			0.12	0.68	0.15	0.59				
		PCTFE			0.14	0.66	0.17	0.49				
1/4" Compression A-LOK®		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.15	29.2	1.15	29.2
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
1/4" Male NPT		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	0.94	23.9	0.94	23.9
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
1/4" Tube Socket Weld		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	0.80	20.3	0.80	20.3
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
1/4" Compression CPI™		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.15	29.2	1.15	29.2
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
3/8" Compression A-LOK®		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.17	29.7	1.17	29.7
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
3/8" Compression CPI™		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.17	29.7	1.17	29.7
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
3mm Compression A-LOK®		Blunt	0.078	2.0	0.12	0.52	0.15	0.64	1.10	27.9	1.10	27.9
		Needle			0.12	0.68	0.15	0.59				
		PCTFE			0.14	0.66	0.17	0.49				
3mm Compression CPI™		Blunt	0.078	2.0	0.12	0.52	0.15	0.64	1.10	27.9	1.10	27.9
		Needle			0.12	0.68	0.15	0.59				
		PCTFE			0.14	0.66	0.17	0.49				
6mm Compression A-LOK®		Blunt	0.156	4.0	0.37	0.78	0.48	0.60	1.15	29.2	1.15	29.2
		Needle			0.37	0.72	0.48	0.58				
		PCTFE			0.39	0.62	0.51	0.64				
6mm Compression CPI™		Blunt	0.156	4.0	0.37	0.78	0.48	0.60	1.15	29.2	1.15	29.2
		Needle			0.37	0.72	0.48	0.58				
		PCTFE			0.39	0.62	0.51	0.64				
8mm Compression A-LOK®		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.18	30.0	1.18	30.0
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				
8mm Compression CPI™		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.18	30.0	1.18	30.0
		Needle			0.43	0.77	0.55	0.63				
		PCTFE			0.45	0.69	0.58	0.68				

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.

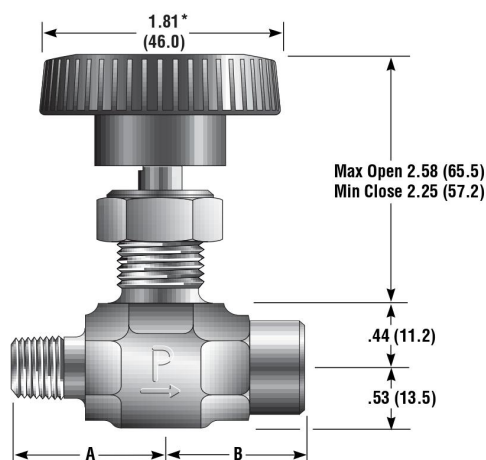
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

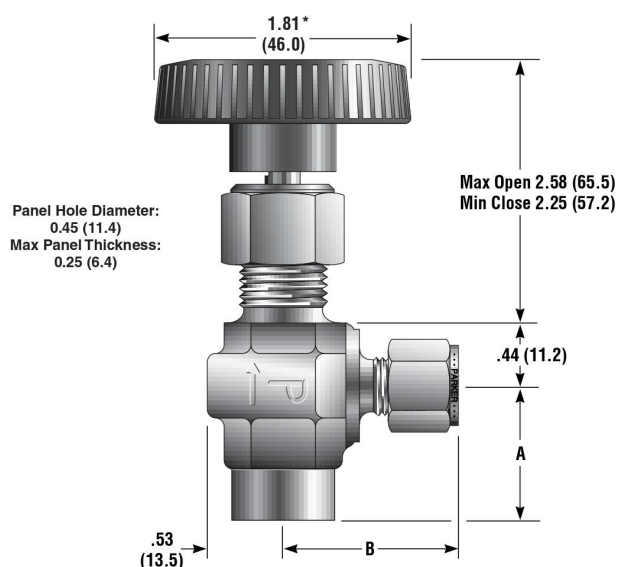
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V6 Series Dimensions / Flow Data



Model Shown:
6M4F-V6LR-V-SS



Model Shown:
4F6Z-V6AK-SS

* Note: Handle diameter for K Stem V6 Series Valves is 1.38 (35.4)
() Denotes dimensions in millimeters

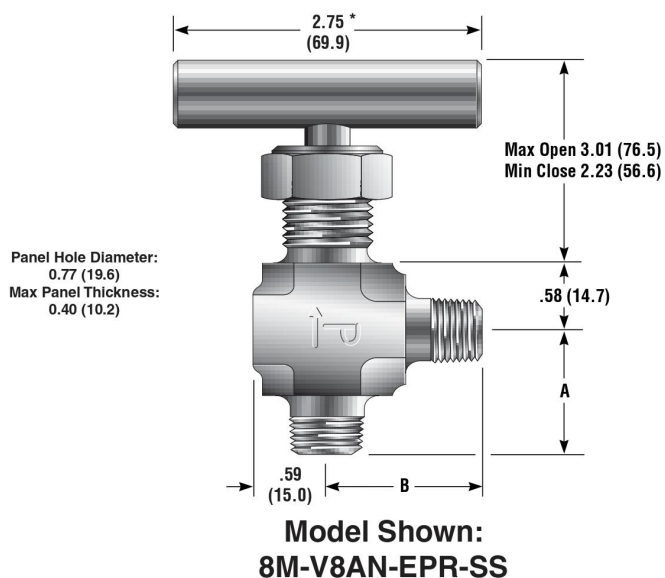
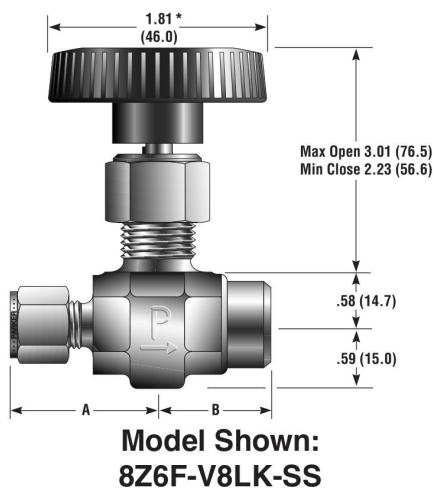
End Connections		Stem Type	Flow Data				Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†	
			Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm
1/4" Female NPT	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	0.94	23.9
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
3/8" Compression A-LOK®	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.29	32.8
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
3/8" Male NPT	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.03	26.2
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
3/8" Compression CPI™	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.29	32.8
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
1/2" Compression A-LOK®	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.40	35.6
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
1/2" Compression CPI™	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.40	35.6
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
10mm Compression A-LOK®	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.30	33.0
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		
10mm Compression CPI™	Blunt	Needle	0.228	5.8	0.73	0.90	1.23	0.50	1.30	33.0
	Needle				0.55	0.61	0.92	0.62		
	PCTFE				0.80	0.87	1.23	0.56		

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

V8 Series Dimensions / Flow Data



* Note: Handles for N or R Stem V8 Series Valves are a T-bar
() Denotes dimensions in millimeters

End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C _V	X _T *	C _V	X _T *	Inch	mm	Inch	mm
3/8" Female NPT		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.34	34.0	1.34	34.0
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
1/2" Compression A-LOK®		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.53	38.9	1.53	38.9
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
1/2" Male NPT		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.34	34.0	1.34	34.0
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
1/2" Compression CPI™		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.53	38.9	1.53	38.9
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
10mm Compression A-LOK®		Blunt	0.281	7.1	1.13	0.79	1.52	0.66	1.42	36.1	1.42	36.1
		Needle			0.97	0.78	1.18	0.75				
		PCTFE			1.18	0.80	1.69	0.66				
10mm Compression CPI™		Blunt	0.281	7.1	1.13	0.79	1.52	0.66	1.42	36.1	1.42	36.1
		Needle			0.97	0.78	1.18	0.75				
		PCTFE			1.18	0.80	1.69	0.66				
12mm Compression A-LOK®		Blunt	0.281	7.1	1.13	0.79	1.52	0.66	1.51	38.4	1.51	38.4
		Needle			0.97	0.78	1.18	0.75				
		PCTFE			1.18	0.80	1.69	0.66				
12mm Compression CPI™		Blunt	0.281	7.1	1.13	0.79	1.52	0.66	1.51	38.4	1.51	38.4
		Needle			0.97	0.78	1.18	0.75				
		PCTFE			1.18	0.80	1.69	0.66				

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

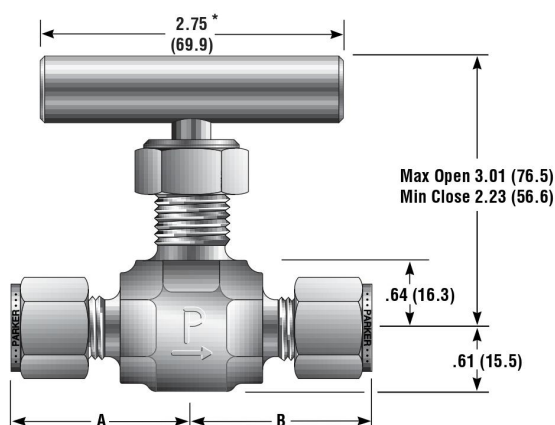
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

V Series Needle Valves

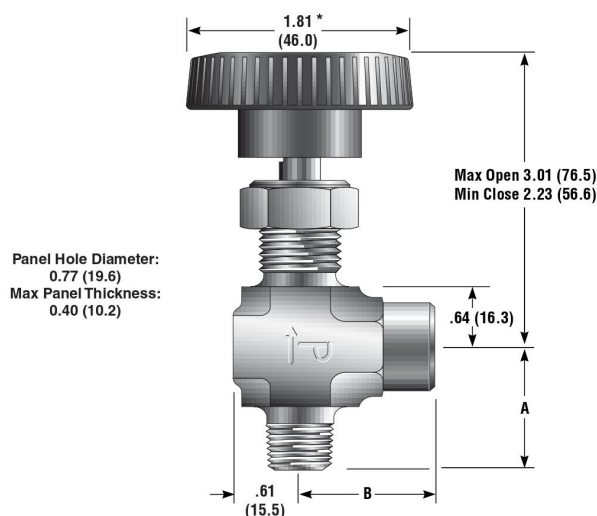
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V12 Series Dimensions / Flow Data



Model Shown: 10Z-V12LN-B

* Note: Handles for N or R Stem V12 Series Valves are a T-bar
() Denotes dimensions in millimeters



**Model Shown:
8M8F-V12AK-BN-SS**

End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm	Inch	mm
1/2" Female NPT		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.38	35.1	1.38	35.1
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
1/2" Tube Socket Weld		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.12	28.4	1.12	28.4
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
5/8" Compression A-LOK®		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.52	38.6	1.52	38.6
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
5/8" Compression CPI™		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.52	38.6	1.52	38.6
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
3/4" Compression A-LOK®		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.52	38.6	1.52	38.6
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				
3/4" Compression CPI™		Blunt	0.312	7.9	1.23	0.87	1.66	0.72	1.52	38.6	1.52	38.6
		Needle			1.05	0.83	1.28	0.80				
		PCTFE			1.29	0.91	1.90	0.76				

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

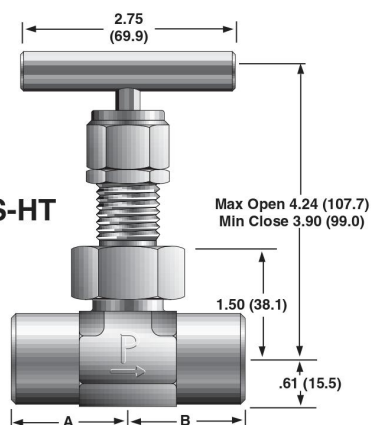
Dimensions in inches/millimeters are for reference only, subject to change.

U Series Needle Valves

Catalog 4110-NV

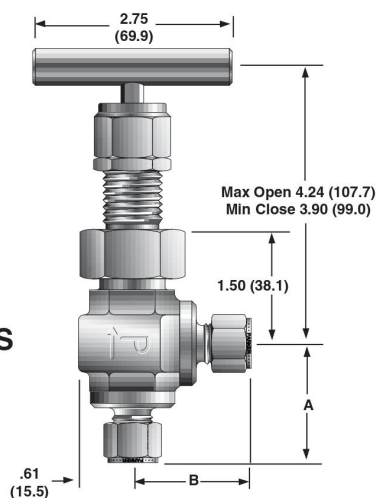
U12 Series Dimensions / Flow Data

Model Shown:
6F-U12LB-G-SS-HT



Panel Hole Diameter:
0.83 (21.1)
Max Panel Thickness:
0.61 (15.5)

Model Shown:
8A-U12AB-T-SS



() Denotes dimensions in millimeters

End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C _V	X _T *	C _V	X _T *	Inch	mm	Inch	mm
1/4" Compression A-LOK®		Regulating	0.125	3.2	0.44	0.57	0.60	0.49	1.39	35.3	1.39	35.3
		Blunt			0.51	0.40	0.68	0.33				
1/4" Female NPT		Regulating	0.250	6.4	0.94	0.65	1.25	0.55	1.13	28.7	1.13	28.7
		Blunt			1.03	0.60	1.37	0.51				
1/4" Compression CPI™		Regulating	0.125	3.2	0.44	0.57	0.60	0.49	1.39	35.3	1.39	35.3
		Blunt			0.51	0.40	0.68	0.33				
3/8" Compression A-LOK®		Regulating	0.187	4.7	0.69	0.61	0.92	0.52	1.60	40.6	1.60	40.6
		Blunt			0.77	0.50	1.02	0.42				
3/8" Female NPT		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.30	33.0	1.30	33.0
		Blunt			1.31	0.80	1.74	0.68				
3/8" Tube Socket Weld		Regulating	0.228	5.8	0.85	0.64	1.13	0.54	1.13	28.7	1.13	28.7
		Blunt			0.94	0.57	1.25	0.48				
3/8" Compression CPI™		Regulating	0.187	4.7	0.69	0.61	0.92	0.52	1.60	40.6	1.60	40.6
		Blunt			0.77	0.50	1.02	0.42				
1/2" Compression A-LOK®		Regulating	0.250	6.4	0.94	0.65	1.25	0.55	1.49	37.8	1.49	37.8
		Blunt			1.03	0.60	1.37	0.51				
1/2" Female NPT		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.50	38.1	1.50	38.1
		Blunt			1.31	0.80	1.74	0.68				
1/2" Tube Socket Weld		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.25	31.8	1.25	31.8
		Blunt			1.31	0.80	1.74	0.68				
1/2" Compression CPI™		Regulating	0.250	6.4	0.94	0.65	1.25	0.55	1.49	37.8	1.49	37.8
		Blunt			1.03	0.60	1.37	0.51				
10mm Compression A-LOK®		Regulating	0.250	6.4	0.94	0.65	1.25	0.55	1.53	38.9	1.53	38.9
		Blunt			1.03	0.60	1.37	0.51				
10mm Compression CPI™		Regulating	0.250	6.4	0.94	0.65	1.25	0.55	1.53	38.9	1.53	38.9
		Blunt			1.03	0.60	1.37	0.51				
12mm Compression A-LOK®		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.70	43.2	1.70	43.2
		Blunt			1.31	0.80	1.74	0.68				
12mm Compression CPI™		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.70	43.2	1.70	43.2
		Blunt			1.31	0.80	1.74	0.68				
14mm Compression A-LOK®		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.70	43.2	1.70	43.2
		Blunt			1.31	0.80	1.74	0.68				
14mm Compression CPI™		Regulating	0.312	7.9	1.19	0.78	1.58	0.66	1.70	43.2	1.70	43.2
		Blunt			1.31	0.80	1.74	0.68				

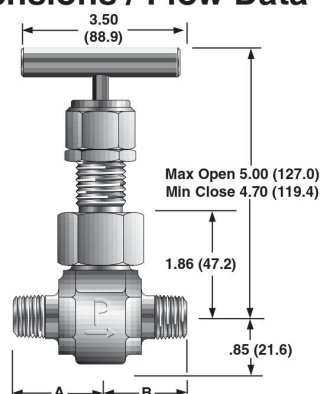
* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

U16 Series Dimensions / Flow Data

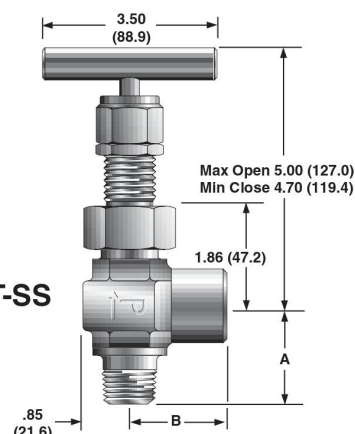
Model Shown: 16M-U16LR-G-SS

() Denotes dimensions
in millimeters



Panel Hole Diameter:
1.02 (25.9)
Max Panel Thickness:
0.62 (15.7)

Model Shown: 16M16F-U16AB-T-SS



End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C _v	X _T *	C _v	X _T *	Inch	mm	Inch	mm
1/2" Compression A-LOK®	Regulating Blunt	0.394	10.0	1.59	0.73	2.11	0.62	1.97	50.0	1.97	50.0	
				1.90	0.95	2.53	0.81					
1/2" Female NPT	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.56	39.6	1.56	39.6	
				2.67	0.80	3.55	0.68					
1/2" Male NPT	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.92	48.8	1.92	48.8	
				2.67	0.80	3.55	0.68					
1/2" Pipe Socket Weld	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.56	39.6	1.56	39.6	
				2.67	0.80	3.55	0.68					
1/2" Tube Socket Weld	Regulating Blunt	0.394	10.0	1.59	0.73	2.11	0.62	1.69	42.9	1.69	42.9	
				1.90	0.95	2.53	0.81					
1/2" Compression CPI™	Regulating Blunt	0.394	10.0	1.59	0.73	2.11	0.62	1.97	50.0	1.97	50.0	
				1.90	0.95	2.53	0.81					
3/4" Compression A-LOK®	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
3/4" Female NPT	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.63	41.4	1.63	41.4	
				2.67	0.80	3.55	0.68					
3/4" Male NPT	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.63	41.4	1.63	41.4	
				2.67	0.80	3.55	0.68					
3/4" Pipe Socket Weld	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.56	39.6	1.56	39.6	
				2.67	0.80	3.55	0.68					
3/4" Tube Socket Weld	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.56	39.6	1.56	39.6	
				2.67	0.80	3.55	0.68					
3/4" Compression CPI™	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
1" Compression A-LOK®	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
1" Female NPT	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.81	46.0	1.81	46.0	
				2.67	0.80	3.55	0.68					
1" Male NPT	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.81	46.0	1.81	46.0	
				2.67	0.80	3.55	0.68					
1" Compression CPI™	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
12mm Compression A-LOK®	Regulating Blunt	0.394	10.0	1.59	0.73	2.11	0.62	1.97	50.0	1.97	50.0	
				1.90	0.95	2.53	0.81					
12mm Compression CPI™	Regulating Blunt	0.394	10.0	1.59	0.73	2.11	0.62	1.97	50.0	1.97	50.0	
				1.90	0.95	2.53	0.81					
20mm Compression A-LOK®	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
20mm Compression CPI™	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
25mm Compression A-LOK®	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					
25mm Compression CPI™	Regulating Blunt	0.437	11.1	1.82	0.72	2.42	0.61	1.97	50.0	1.97	50.0	
				2.67	0.80	3.55	0.68					

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

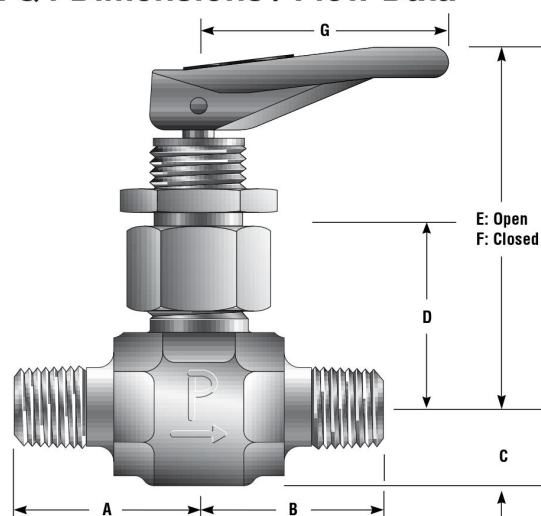
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

VQ Series Toggle Valves

Catalog 4110-NV

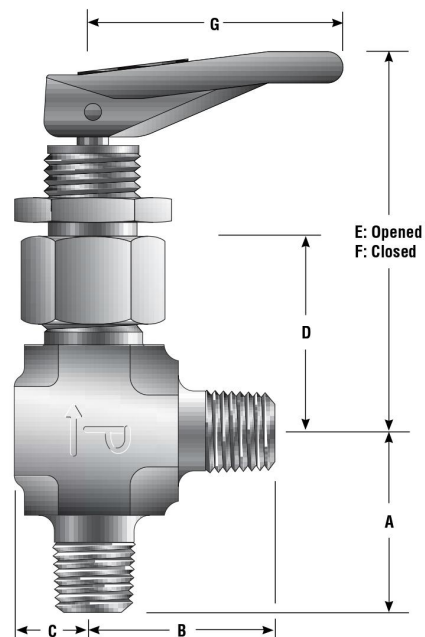
VQ4 Dimensions / Flow Data



Model Shown: 4M-V4LQ-SSP

() Denotes dimensions in millimeters

Panel Hole Diameter:
VQ4: 0.52 (13.2)
VQ6: 0.65 (16.5)
Max. Panel Thickness:
VQ4: 0.25 (6.4)
VQ6: 0.35 (8.9)



Model Shown: 4M-V4AQ-EPR-SSP

VQ4 Dimensions / Flow Data

End Connections		Flow Data				Dimensions													
Inlet (Port 1)	Outlet (Port 2)	Orifice		C_v	X_T^*	A†		B†		C		D		E		F		G	
		Inch	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
1/8" Compression A-LOK®		0.078	2.0	0.14	0.52	1.10	27.9	1.10	27.9	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.15	0.50														
1/8" Female NPT		0.176	4.5	0.36	0.71	0.81	20.6	0.81	20.6	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
1/8" Male NPT		0.125	3.2	0.30	0.50	0.81	20.6	0.81	20.6	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.35	0.55														
1/8" Compression CPI™		0.078	2.0	0.14	0.52	1.10	27.9	1.10	27.9	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.15	0.50														
1/4" Compression A-LOK®		0.176	4.5	0.36	0.71	1.15	29.2	1.15	29.2	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
1/4" Male NPT		0.176	4.5	0.36	0.71	0.94	23.9	0.94	23.9	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
1/4" Compression CPI™		0.176	4.5	0.36	0.71	1.15	29.2	1.15	29.2	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
3/8" Compression A-LOK®		0.176	4.5	0.36	0.71	1.17	29.7	1.17	29.7	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
3/8" Compression CPI™		0.176	4.5	0.36	0.71	1.17	29.7	1.17	29.7	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
6mm Compres- sion A-LOK®		0.176	4.5	0.36	0.71	1.13	28.7	1.13	28.7	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
6mm Compres- sion CPI™		0.176	4.5	0.36	0.71	1.13	28.7	1.13	28.7	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
8mm Compres- sion A-LOK®		0.176	4.5	0.36	0.71	1.13	28.7	1.13	28.7	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														
8mm Compres- sion CPI™		0.176	4.5	0.36	0.71	1.13	28.7	1.13	28.7	0.41	10.4	0.93	23.6	2.88	73.2	1.84	46.7	1.25	31.8
				0.49	0.64														

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

VQ6 Dimensions / Flow Data

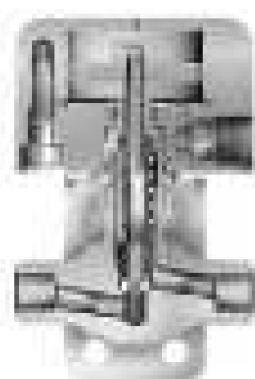
End Connections		Flow Data				Dimensions													
Inlet (Port 1)	Outlet (Port 2)	Orifice		C_V	X_T^*	A†		B†		C		D		E		F		G	
		Inch	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
1/4" Female NPT		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.00	25.4	1.00	25.4	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6
3/8" Compression A-LOK®		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.29	32.8	1.29	32.8	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6
3/8" Compression CPI™		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.29	32.8	1.29	32.8	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6
1/2" Compression A-LOK®		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.37	34.8	1.37	34.8	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6
1/2" Compression CPI™		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.37	34.8	1.37	34.8	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6
10mm Compression A-LOK®		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.30	33.0	1.30	33.0	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6
10mm Compression CPI™		0.250	6.4	$\frac{0.83}{0.92}$	$\frac{0.70}{0.68}$	1.30	33.0	1.30	33.0	0.53	13.5	1.07	27.2	3.45	87.6	2.13	54.1	1.60	40.6

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

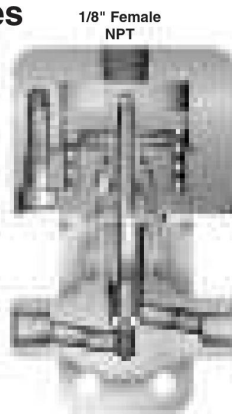
Dimensions in inches/millimeters are for reference only, subject to change.

VQ

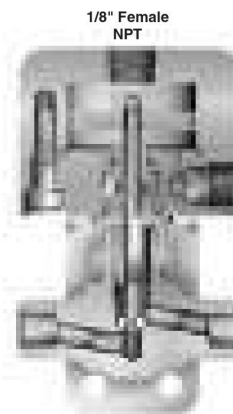
Pneumatically Actuated Valves



Normally Closed (11AC)

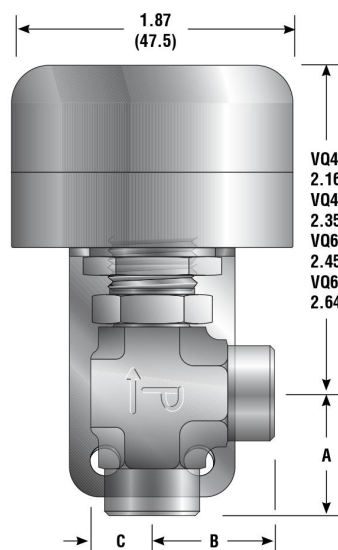
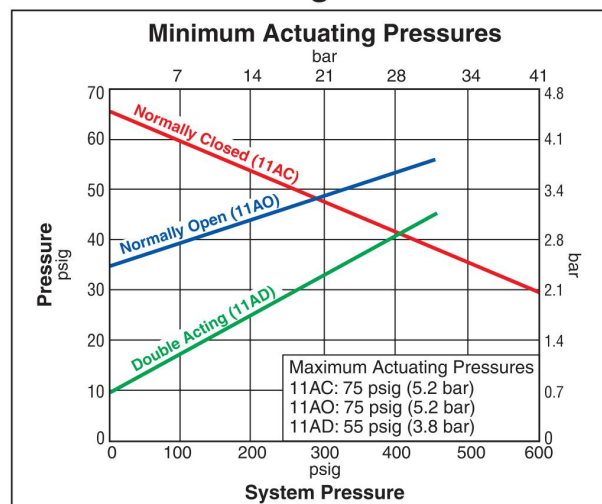


Normally Open (11AO)



Double Acting (11AD)

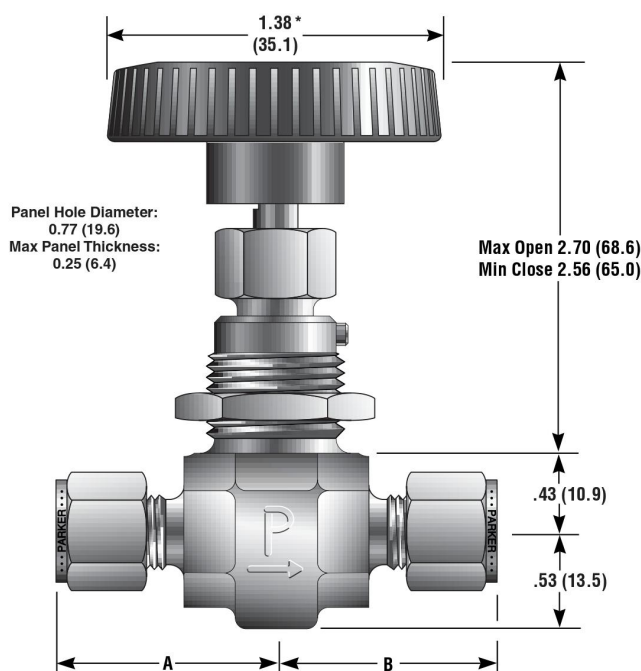
Minimum Actuating Pressures



VQ4 11AC:
2.16 (54.9)
VQ4 11AO/AD:
2.35 (59.7)
VQ6 11AC:
2.45 (62.2)
VQ6 11AO/AD:
2.64 (67.1)

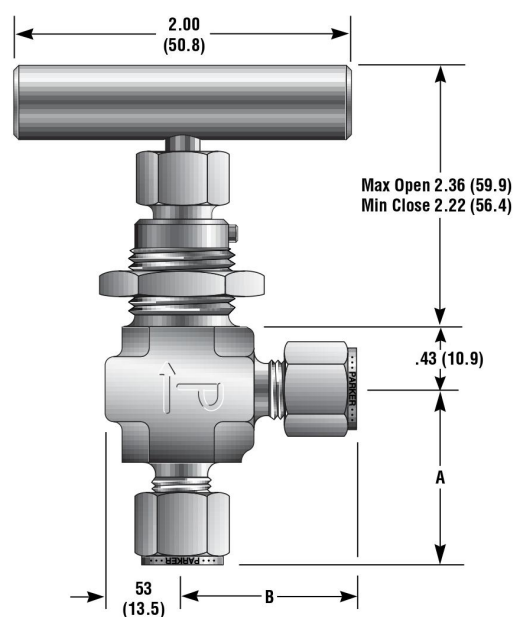
Model Shown:
4F-V6AQ-11AO-B

Dimensions / Flow Data



Model Shown: 4Z-NP6LK-SSP

* Note: Handle diameter for R Stem NP6 Series Valves is 1.81 (46.0)



Model Shown: 4Z-NP6AR-G-SSP

() Denotes dimensions in millimeters

End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C _V	X _T *	C _V	X _T *	Inch	mm	Inch	mm
1/4" Compression A-LOK®		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.20	30.5	1.20	30.5
		PCTFE			0.51	0.55	0.65	0.52				
1/4" Female NPT		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.00	25.4	1.00	25.4
		PCTFE			0.51	0.55	0.65	0.52				
1/4" Male NPT		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.03	26.2	1.03	26.2
		PCTFE			0.51	0.55	0.65	0.52				
1/4" Compression CPI™		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.20	30.5	1.20	30.5
		PCTFE			0.51	0.55	0.65	0.52				
3/8" Compression A-LOK®		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.23	31.2	1.23	31.2
		PCTFE			0.51	0.55	0.65	0.52				
3/8" Compression CPI™		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.23	31.2	1.23	31.2
		PCTFE			0.51	0.55	0.65	0.52				
6mm Compression A-LOK®		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.16	29.5	1.16	29.5
		PCTFE			0.51	0.55	0.65	0.52				
6mm Compression CPI™		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.16	29.5	1.16	29.5
		PCTFE			0.51	0.55	0.65	0.52				
8mm Compression A-LOK®		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.24	31.5	1.24	31.5
		PCTFE			0.51	0.55	0.65	0.52				
8mm Compression CPI™		Blunt	0.177	4.5	0.60	0.50	0.67	0.39	1.24	31.5	1.24	31.5
		PCTFE			0.51	0.55	0.65	0.52				

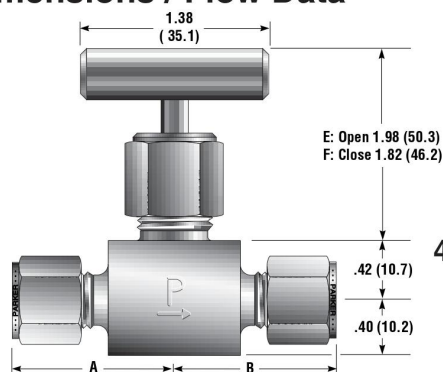
* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

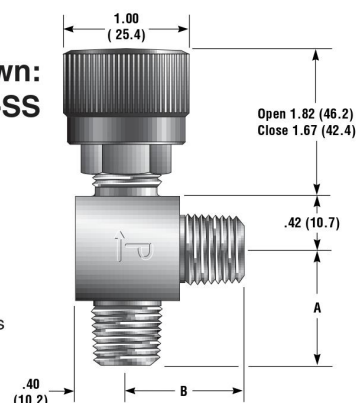
Dimensions in inches/millimeters are for reference only, subject to change.

SN6 Series Needle Valves

Dimensions / Flow Data



**Model Shown:
4M-SN6AK-SS**



**Model Shown:
4Z-SN6LR-G-SS**

() Denotes dimensions in millimeters

End Connections		Stem Type	Flow Data						Dimensions			
Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
			Inch	mm	C _V	X _T *	C _V	X _T *	Inch	mm	Inch	mm
1/4" Compression A-LOK®		Blunt	0.125	3.2	0.29	0.56	0.34	0.55	1.17	29.7	1.17	29.7
		PCTFE			0.23	0.63	0.27	0.58				
1/4" Female NPT		Blunt	0.125	3.2	0.29	0.56	0.34	0.55	0.94	23.9	0.94	23.9
		PCTFE			0.23	0.63	0.27	0.58				
1/4" Male NPT		Blunt	0.125	3.2	0.29	0.56	0.34	0.55	0.99	25.1	0.99	25.1
		PCTFE			0.23	0.63	0.27	0.58				
1/4" Compression CPI™		Blunt	0.125	3.2	0.29	0.56	0.34	0.55	1.17	29.7	1.17	29.7
		PCTFE			0.23	0.63	0.27	0.58				
1/4" Male NPT	1/4" A-LOK®	Blunt	0.125	3.2	0.29	0.56	0.34	0.55	0.99	25.1	1.17	29.7
		PCTFE			0.23	0.63	0.27	0.58				
1/4" Male NPT	1/4" Female NPT	Blunt	0.125	3.2	0.29	0.56	0.34	0.55	0.99	25.1	0.94	23.9
		PCTFE			0.23	0.63	0.27	0.58				
1/4" Male NPT	1/4" CPI™	Blunt	0.125	3.2	0.29	0.56	0.34	0.55	0.99	25.1	1.17	29.7
		PCTFE			0.23	0.63	0.27	0.58				

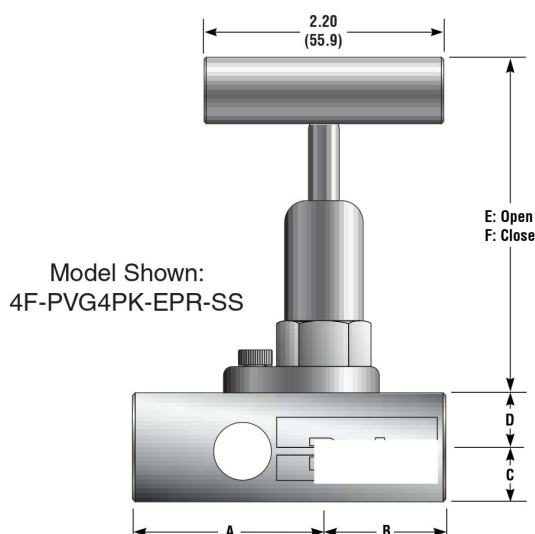
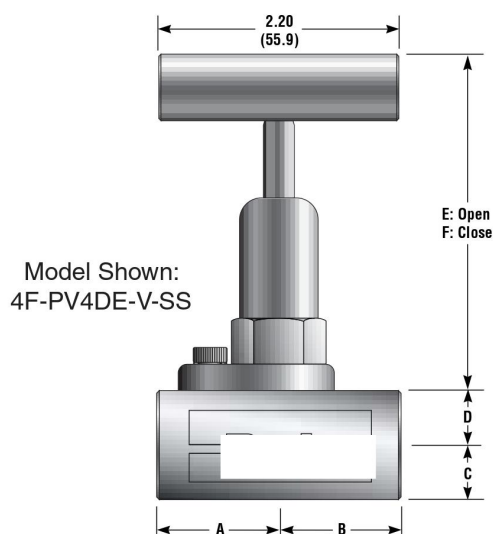
* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

SN6

PV Series Rising Stem Plug Valves



Dimensions

() Denotes dimensions in millimeters

End Connection		Dimensions											
Inlet (Port 1)	Outlet (Port 2)	A†		B†		C		D		E		F	
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
1/4" Compression A-LOK®	1/4" Compression A-LOK®	1.73	43.9	1.73	43.9	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
1/4" Female NPT	1/4" Female NPT	1.13	28.7	1.13	28.7	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
1/4" Female NPT	1/4" Female NPT	1.75	44.5	1.13	28.7	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
1/4" Male NPT	1/4" Female NPT	1.78	45.2	1.13	28.7	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
1/4" Compression CPI™	1/4" Compression CPI™	1.73	43.9	1.73	43.9	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
3/8" Compression A-LOK®	3/8" Compression A-LOK®	1.79	45.5	1.79	45.5	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
3/8" Compression CPI™	3/8" Compression CPI™	1.79	45.5	1.79	45.5	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
1/2" Male NPT	1/4" Female NPT	1.90	48.3	1.13	28.7	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
1/2" Male NPT	1/4" Female NPT	3.13	79.5	1.75	44.5	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
3/8" Male NPT	3/8" Female NPT	3.33	84.6	2.25	57.2	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4
1/2" Compression A-LOK®	1/2" Compression A-LOK®	1.91	48.5	1.91	48.5	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4
1/2" Female NPT	1/2" Female NPT	1.33	33.8	1.33	33.8	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4
1/2" Male NPT	1/2" Female NPT	2.17	55.1	1.33	33.8	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4
1/2" Male NPT	1/2" Female NPT	3.33	84.6	2.25	57.2	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4
1/2" Compression CPI™	1/2" Compression CPI™	1.91	48.5	1.91	48.5	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4
3/4" Male NPT	1/2" Female NPT	2.17	55.1	1.33	25.4	0.56	14.2	0.56	14.2	3.04	77.2	2.93	74.4

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

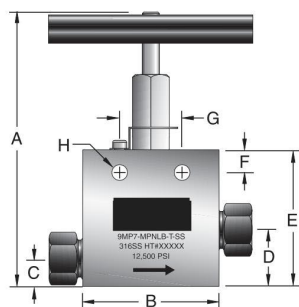
Dimensions in inches/millimeters are for reference only, subject to change.

PV

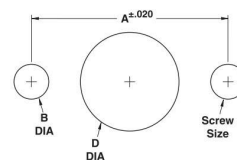
MPN Series Needle Valves

Catalog 4110-NV

Two Way Inline Valves



Panel Hole Sizes
Medium Pressure Needle Valve Panel Mount



Valve Size	A	B	Screw Size	D
4 & 6	1.25	.219	10 - 32	.75
8 & 9	1.375	.219	10 - 32	1.00
12	1.75	.219	10 - 32	1.19
16	2.50	.219	10 - 32	1.63

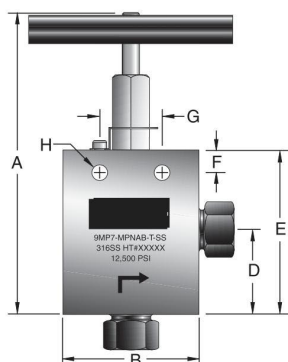
Tubing Size	PSI	Connection	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	15,000	1/4" MPI	0.125	4.50	2.50	0.50	0.94	2.13	0.38	1.25	0.22	1.00
3/8" O.D.	15,000	3/8" MPI	0.203	4.50	2.50	0.50	0.94	2.13	0.38	1.25	0.22	1.00
1/2" O.D.	15,000	1/2" MPI	0.313	6.26	3.00	0.63	1.25	3.00	0.50	1.38	0.34	1.38
9/16" O.D.	15,000	9/16" MPI	0.313	6.26	3.00	0.63	1.25	3.00	0.50	1.38	0.34	1.38
3/4" O.D.	15,000	3/4" MPI	0.438	7.00	4.13	0.75	1.50	3.75	0.63	1.75	0.44	1.75
3/4" O.D.	10,000	3/4" MPI	0.516	7.00	4.13	0.75	1.50	3.75	0.63	1.75	0.44	1.75
1" O.D.	12,500	1" MPI	0.563	8.42	4.13	0.88	1.81	4.63	1.13	2.50	0.56	1.75
Pipe Size	PSI	Connection Female NPT	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/8" NPT	15,000	1/8"	0.203	4.38	2.00	0.38	0.81	2.00	0.38	1.25	0.22	0.75
1/4" NPT	15,000	1/4"	0.203	4.38	2.00	0.38	0.81	2.00	0.38	1.25	0.22	0.75
3/8" NPT	15,000	3/8"	0.312	6.13	2.50	0.50	1.13	2.88	0.50	1.38	0.34	1.00
1/2" NPT	15,000	1/2"	0.312	6.38	2.63	0.75	1.38	3.13	0.50	1.38	0.34	1.50
3/4" NPT	10,000	3/4"	0.687	8.50	4.13	0.88	1.81	4.63	1.13	2.50	0.56	1.75
1" NPT	10,000	1"	0.687	8.50	4.13	0.88	1.81	4.63	1.13	2.50	0.56	1.75

Dimensions in inches/millimeters are for reference only, subject to change.

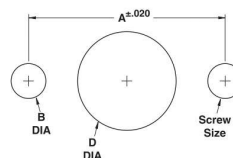
MPN

MPN Series Needle Valves

Two Way Angle Valves



Panel Hole Sizes
Medium Pressure Needle Valve Panel Mount



Valve Size	A	B	Screw Size	D
4 & 6	1.25	.219	10 - 32	.75
8 & 9	1.375	.219	10 - 32	1.00
12	1.75	.219	10 - 32	1.19
16	2.50	.219	10 - 32	1.63

Tubing	PSI	Connection	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	15,000	1/4" MPI	0.125	5.02	2.50	-	1.38	2.57	0.38	1.25	0.22	1.00
3/8" O.D.	15,000	3/8" MPI	0.203	5.02	2.50	-	1.38	2.57	0.38	1.25	0.22	1.00
1/2" O.D.	15,000	1/2" MPI	0.313	6.84	3.00	-	1.83	3.58	0.50	1.38	0.34	1.38
9/16" O.D.	15,000	9/16" MPI	0.313	6.84	3.00	-	1.83	3.58	0.50	1.38	0.34	1.38
3/4" O.D.	15,000	3/4" MPI	0.438	7.50	3.00	-	2.00	4.25	0.63	1.75	0.44	1.38
3/4" O.D.	10,000	3/4" MPI	0.516	7.50	3.00	-	2.00	4.25	0.63	1.75	0.44	1.38
1" O.D.	12,500	1" MPI	0.563	9.38	4.13	-	2.56	5.44	1.13	2.50	0.56	1.75
1" O.D.	10,000	1" MPI	0.688	9.38	4.13	-	2.56	5.44	1.13	2.50	0.56	1.75
Pipe Size	PSI	Connection Female NPT	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/8" NPT	15,000	1/8" NPTF	0.203	4.81	2.00	-	1.25	2.44	0.38	1.25	0.22	0.75
1/4" NPT	15,000	1/4" NPTF	0.203	4.81	2.00	-	1.25	2.44	0.38	1.25	0.22	0.75
3/8" NPT	15,000	3/8" NPTF	0.312	6.50	2.50	-	1.50	3.25	0.50	1.38	0.34	1.00
1/2" NPT	15,000	1/2" NPTF	0.312	6.50	2.63	-	1.50	3.25	0.50	1.38	0.34	1.50
3/4" NPT	10,000	3/4" NPTF	0.687	9.00	4.13	-	2.31	5.13	1.13	2.50	0.56	1.75
1" NPT	10,000	1" NPTF	0.687	9.00	4.13	-	2.31	5.13	1.13	2.50	0.56	1.75

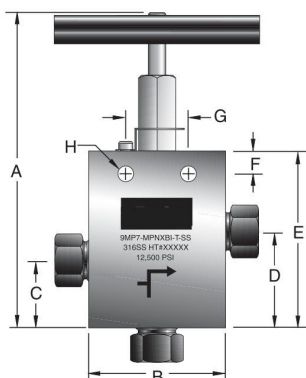
Dimensions in inches/millimeters are for reference only, subject to change.

MPN

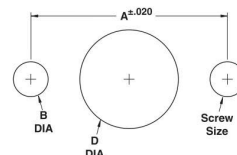
MPN Series Needle Valves

Catalog 4110-NV

Three Way/Two Pressure Connections



Panel Hole Sizes
Medium Pressure Needle Valve Panel Mount



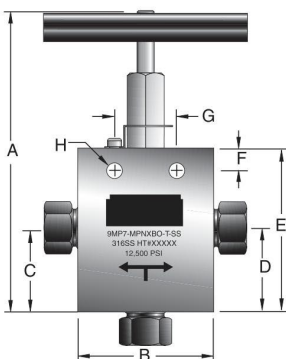
Valve Size	A	B	Screw Size	D
4 & 6	1.25	.219	10 - 32	.75
8 & 9	1.375	.219	10 - 32	1.00
12	1.75	.219	10 - 32	1.19
16	2.50	.219	10 - 32	1.63

Tubing	PSI	Connection	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	15,000	1/4" MPI	0.125	5.21	2.50	1.21	1.65	2.84	0.38	1.25	0.22	1.00
3/8" O.D.	15,000	3/8" MPI	0.203	5.21	2.50	1.21	1.65	2.84	0.38	1.25	0.22	1.00
1/2" O.D.	12,500	1/2" MPI	0.313	7.09	3.00	1.50	2.12	3.88	0.50	1.38	0.34	1.38
9/16" O.D.	12,500	9/16" MPI	0.313	7.09	3.00	1.50	2.12	3.88	0.50	1.38	0.34	1.38
3/4" O.D.	15,000	3/4" MPI	0.438	7.88	3.00	2.63	2.38	4.63	0.63	1.75	0.44	1.38
3/4" O.D.	10,000	3/4" MPI	0.516	7.88	3.00	2.63	2.38	4.63	0.63	1.75	0.44	1.38
1" O.D.	12,500	1" MPI	0.563	9.75	4.13	2.13	3.06	5.88	1.13	2.50	0.56	1.75
1" O.D.	10,000	1" MPI	0.688	9.75	4.13	2.13	3.06	5.88	1.13	2.50	0.56	1.75

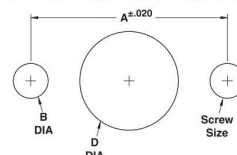
Dimensions in inches/millimeters are for reference only, subject to change.

MPN

Three Way/One Pressure Connection



Panel Hole Sizes
Medium Pressure Needle Valve Panel Mount



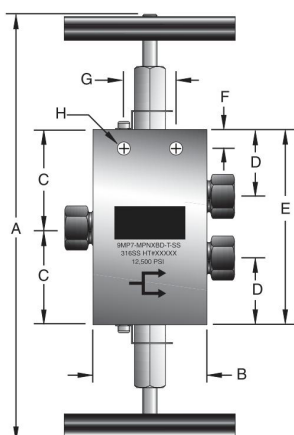
Valve Size	A	B	Screw Size	D
4 & 6	1.25	.219	10 - 32	.75
8 & 9	1.375	.219	10 - 32	1.00
12	1.75	.219	10 - 32	1.19
16	2.50	.219	10 - 32	1.63

Tubing	PSI	Connection	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	15,000	1/4" MPI	0.125	5.02	2.50	1.38	1.38	2.57	0.38	1.25	0.22	1.00
3/8" O.D.	15,000	3/8" MPI	0.203	5.02	2.50	1.38	1.38	2.57	0.38	1.25	0.22	1.00
1/2" O.D.	15,000	1/2" MPI	0.313	6.84	3.00	1.88	1.88	3.63	0.50	1.38	0.34	1.38
9/16" O.D.	15,000	9/16" MPI	0.313	6.84	3.00	1.88	1.88	3.63	0.50	1.38	0.34	1.38
3/4" O.D.	15,000	3/4" MPI	0.438	7.50	3.00	2.00	2.00	4.25	0.63	1.75	0.44	1.38
3/4" O.D.	10,000	3/4" MPI	0.516	7.50	3.00	2.00	2.00	4.25	0.63	1.75	0.44	1.38
1" O.D.	12,500	1" MPI	0.563	9.38	4.13	2.63	2.63	5.44	1.13	2.50	0.56	1.75
1" O.D.	10,000	1" MPI	0.688	9.38	4.13	2.63	2.63	5.44	1.13	2.50	0.56	1.75

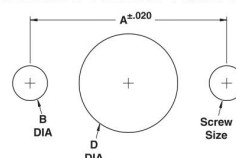
Dimensions in inches/millimeters are for reference only, subject to change.

MPN Series Needle Valves

Three Way/Two Stem Connection



Panel Hole Sizes
Medium Pressure Needle Valve Panel Mount

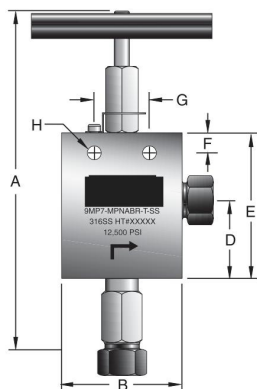


Valve Size	A	B	Screw Size	D
4 & 6	1.25	.219	10 - 32	.75
8 & 9	1.375	.219	10 - 32	1.00
12	1.75	.219	10 - 32	1.19
16	2.50	.219	10 - 32	1.63

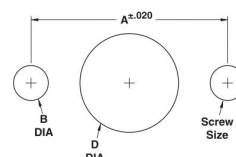
Tubing	PSI	Connection	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	15,000	1/4" MPI	0.125	5.75	2.50	1.70	1.19	3.38	0.38	1.25	0.22	1.00
3/8" O.D.	15,000	3/8" MPI	0.203	5.75	2.50	1.70	1.19	3.38	0.38	1.25	0.22	1.00
1/2" O.D.	15,000	1/2" MPI	0.313	8.38	3.00	2.56	1.75	5.13	0.50	1.38	0.34	1.38
9/16" O.D.	15,000	9/16" MPI	0.313	8.38	3.00	2.56	1.75	5.13	0.50	1.38	0.34	1.38
3/4" O.D.	15,000	3/4" MPI	0.438	9.75	3.00	3.25	2.25	6.50	0.63	1.75	0.44	1.38
3/4" O.D.	10,000	3/4" MPI	0.516	9.75	3.00	3.25	2.25	6.50	0.63	1.75	0.44	1.38
1" O.D.	12,500	1" MPI	0.563	12.19	4.13	4.13	2.81	8.25	1.13	2.50	0.56	1.75
1" O.D.	10,000	1" MPI	0.688	12.19	4.13	4.13	2.81	8.25	1.13	2.50	0.56	1.75

Dimensions in inches/millimeters are for reference only, subject to change.

Two Way Angle Valves (Replaceable Seat)



Panel Hole Sizes
Medium Pressure Needle Valve Panel Mount



Valve Size	A	B	Screw Size	D
4 & 6	1.25	.219	10 - 32	.75
8 & 9	1.375	.219	10 - 32	1.00
12	1.75	.219	10 - 32	1.19
16	2.50	.219	10 - 32	1.63

Tubing	PSI	Connection	Inches									
			Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	15,000	1/4" MPI	0.125	5.87	2.50	-	1.38	2.57	0.38	1.25	0.22	1.00
3/8" O.D.	15,000	3/8" MPI	0.203	5.87	2.50	-	1.38	2.57	0.38	1.25	0.22	1.00
1/2" O.D.	15,000	1/2" MPI	0.313	8.25	3.00	-	2.00	3.63	0.50	1.38	0.34	1.38
9/16" O.D.	15,000	9/16" MPI	0.313	8.25	3.00	-	2.00	3.63	0.50	1.38	0.34	1.38
3/4" O.D.	15,000	3/4" MPI	0.438	8.88	3.00	-	2.00	4.25	0.63	1.75	0.44	1.38
3/4" O.D.	10,000	3/4" MPI	0.516	8.88	3.00	-	2.00	4.25	0.63	1.75	0.44	1.38
1" O.D.	12,500	1" MPI	0.563	11.13	4.13	-	2.56	5.44	1.13	2.50	0.56	1.75
1" O.D.	10,000	1" MPI	0.688	11.13	4.13	-	2.56	5.44	1.13	2.50	0.56	1.75

Dimensions in inches/millimeters are for reference only, subject to change.

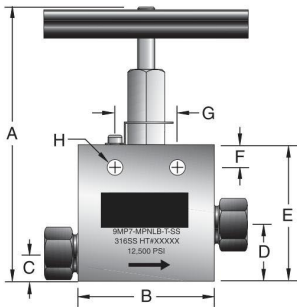
MPN

MPN Series Needle Valves

Catalog 4110-NV

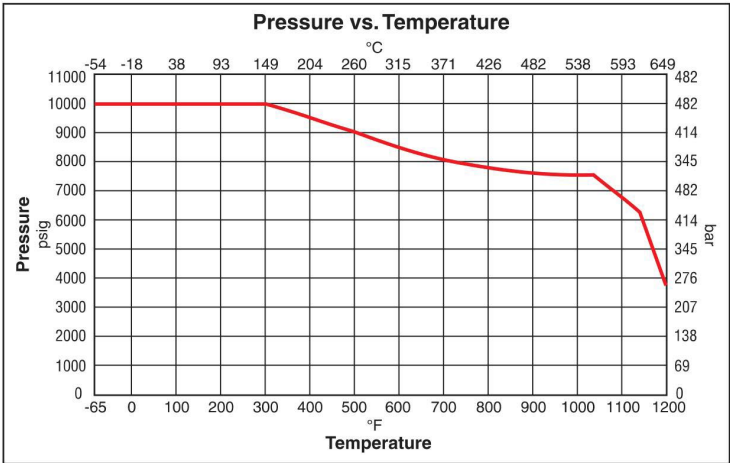
Over Critical Valves

Dimensions in inches/millimeters are for reference only, subject to change.

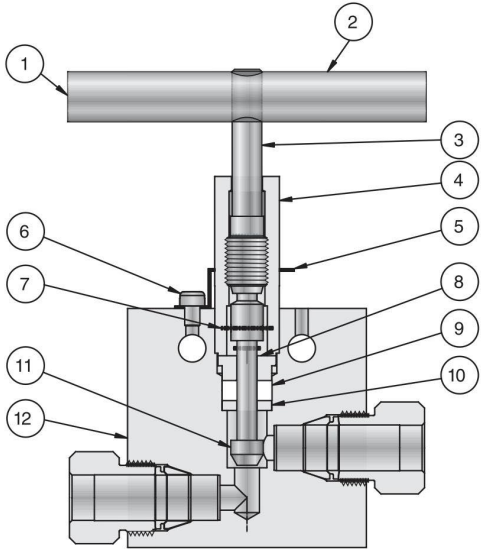


Size	PSI	Connection	Orifice	A	B	C	D	E	F	G	H	Th'k
1/4" O.D.	10,000	4MP7	0.125	4.50	2.50	0.50	0.94	2.13	0.38	1.25	0.22	0.75
3/8" O.D.	10,000	6MP7	0.203	4.50	2.50	0.50	0.94	2.13	0.38	1.25	0.22	0.75
1/2" O.D.	10,000	8MP7	0.313	6.26	3.00	0.63	1.25	3.00	0.50	1.38	0.34	1.00
9/16" O.D.	10,000	9MP7	0.313	6.26	3.00	0.63	1.25	3.00	0.50	1.38	0.34	1.00
3/4" O.D.	10,000	12MP7	0.438	7.00	3.00	0.75	1.50	3.75	0.63	1.75	0.44	1.38
1" O.D.	10,000	16MP7	0.563	8.42	4.13	0.88	1.81	4.63	1.13	2.5	0.56	1.75
1/8" NPT	10,000	1/8" NPTF	0.203	4.38	2.00	0.38	0.81	2.00	0.38	1.25	0.22	0.75
1/4" NPT	10,000	1/4" NPTF	0.203	4.38	2.00	0.38	0.81	2.00	0.38	1.25	0.22	0.75
3/8" NPT	10,000	3/8" NPTF	0.312	6.13	2.5	0.50	1.13	2.88	0.50	1.38	0.34	1.00
1/2" NPT	10,000	1/2" NPTF	0.312	6.38	2.63	0.75	1.38	3.13	0.50	1.38	0.34	1.50
3/4" NPT	10,000	3/4" NPTF	0.687	8.50	4.13	0.88	1.81	4.63	1.13	2.5	0.56	1.75
1" NPT	10,000	1" NPTF	0.687	8.50	4.13	0.88	1.81	4.63	1.13	2.5	0.56	1.75

Pressure vs. Temperature Chart



Materials of Construction



Item #	Description	Material
1	Set Screw	316SS
2	Handle	303SS
3	Upper Stem Assembly	416SS
4	Packing Gland	316SS
5	Locking Device	304SS
6	Lock Screw	304SS
7	Stem Pin	304SS
8	Top Packing Washer	416SS
9	Packing	Grafoil®
10	Bottom Pack Washer	316SS
11	Lower Stem	316SS
12	Body	316SS

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