



Needle Valves

Catalog 4110-NV

December 2010

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

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

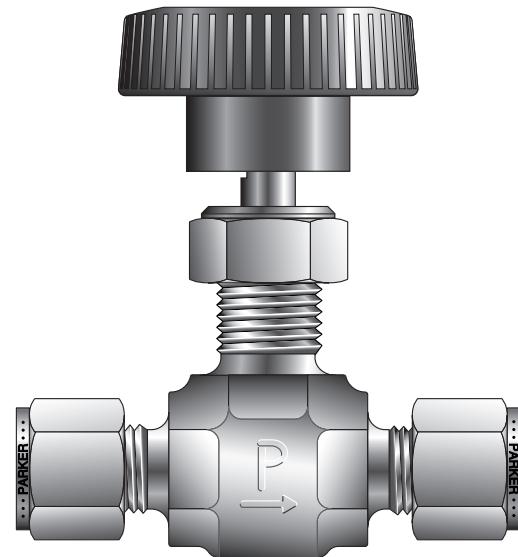
Port size: 1/8" to 3/4" (3mm to 12mm)

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)

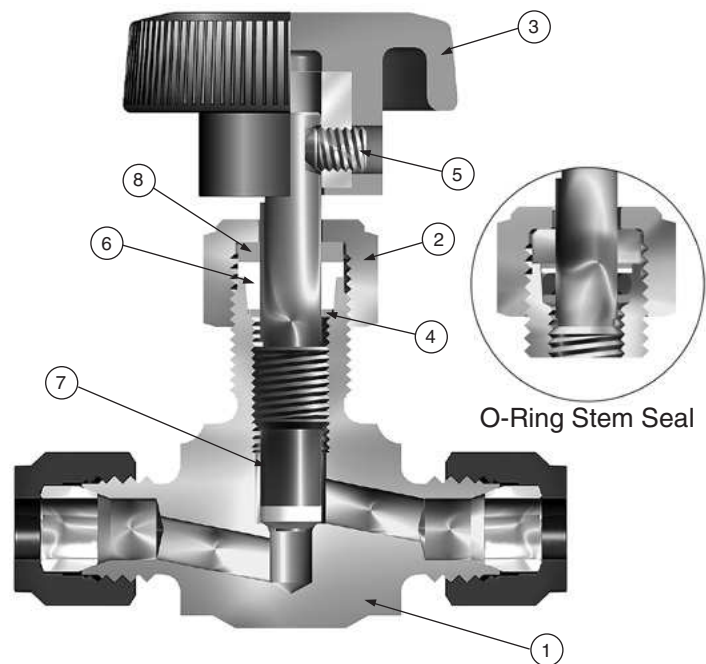
Note: When combining body, seat and seal materials, the most restrictive temperature rating becomes the limiting factor on temperature range.

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



Model Shown: 4Z-V4LK-SS

Materials of Construction (with PTFE Packing)

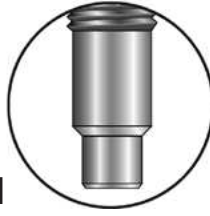


Model Shown: 4Z-V4LK-SS

Stem Types



K
PCTFE tipped



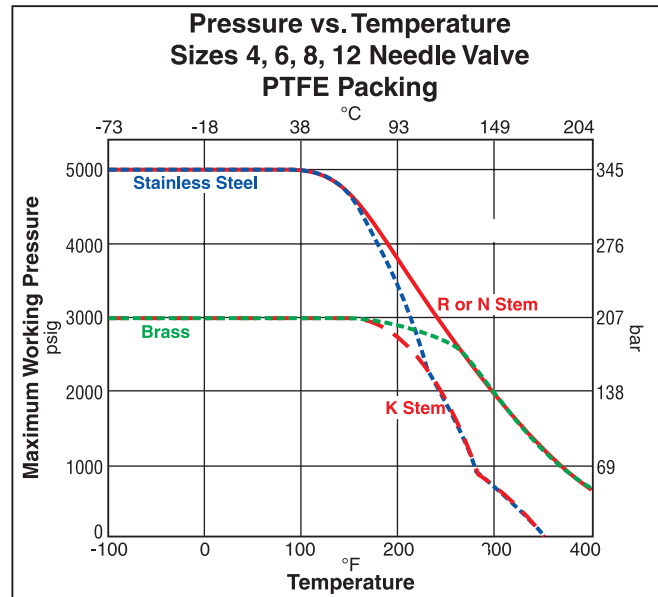
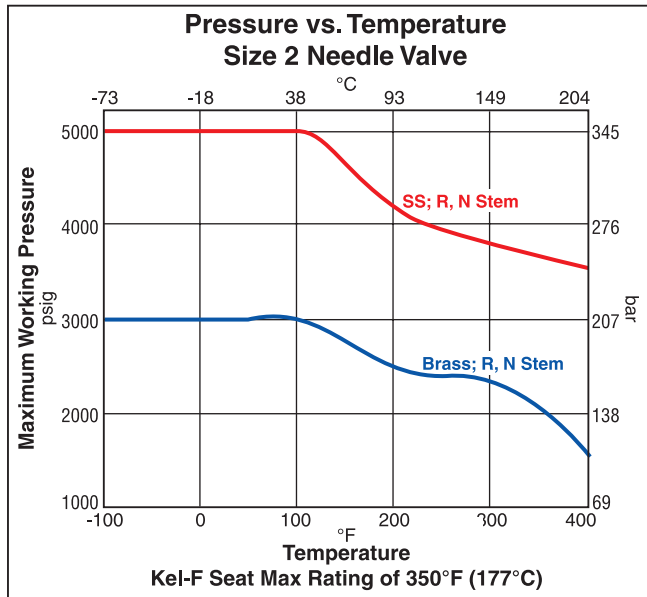
N
Needle (2-1/2°)



R
Blunt (30°)



Pressure vs. Temperature



Note: To determine MPa, multiply bar by 0.1

Materials of Construction (with PTFE Packing)

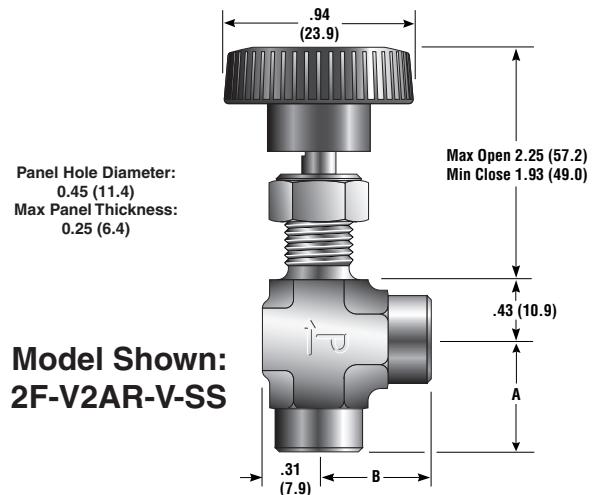
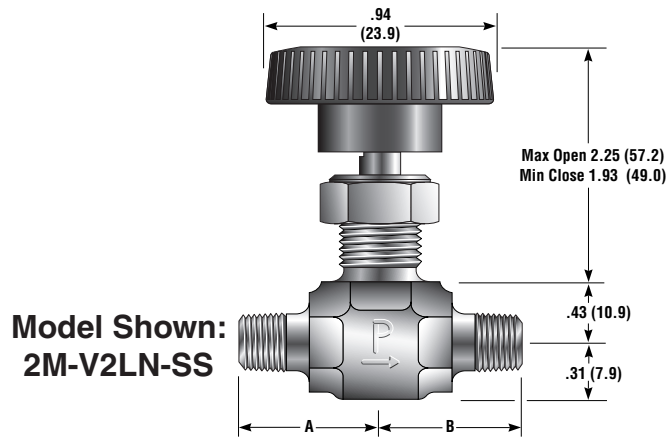
Item #	Part Description	Stainless Steel	Brass	Steel	Monel® Alloy 400
1	Body	ASTM A 182 Type F316	ASTM B 283 Alloy C37700	ASTM A 576 Grade 1214	ASTM B 564 Alloy N04400
2	Packing Nut	ASTM A 479 Type 316	ASTM A 479 Type 316	ASTM A 479 Type 316	ASTM A 479 Type 316
3	Handle*	Nylon 6/6 with SS insert	Nylon 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

V2 Series Dimensions / Flow Data



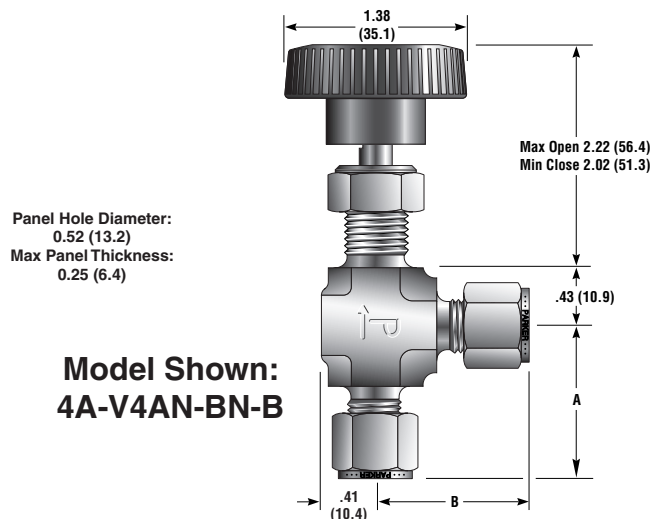
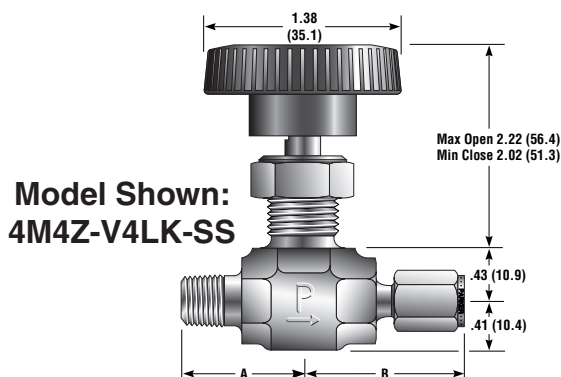
Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
Inline	Angle	Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
					Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm	Inch	mm
2A-V2LR	2A-V2AR	1/8" Compression A-LOK®		Blunt	0.078	2.0	0.12	0.78	0.14	0.67	1.01	25.7	1.01	25.7
2A-V2LN	2A-V2AN			Needle			0.12	0.80	0.14	0.63				
2A-V2LK	2A-V2AK			PCTFE			0.13	0.83	0.14	0.63				
2F-V2LR	2F-V2AR	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
2F-V2LN	2F-V2AN			Needle			0.12	0.66	0.18	0.39				
2F-V2LK	2F-V2AK			PCTFE			0.12	0.73	0.17	0.54				
2M-V2LR	2M-V2AR	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
2M-V2LN	2M-V2AN			Needle			0.12	0.66	0.18	0.39				
2M-V2LK	2M-V2AK			PCTFE			0.12	0.73	0.17	0.54				
2Z-V2LR	2Z-V2AR	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
2Z-V2LN	2Z-V2AN			Needle			0.12	0.80	0.14	0.63				
2Z-V2LK	2Z-V2AK			PCTFE			0.13	0.83	0.14	0.63				
4A-V2LR	4A-V2AR	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
4A-V2LN	4A-V2AN			Needle			0.12	0.80	0.14	0.63				
4A-V2LK	4A-V2AK			PCTFE			0.13	0.83	0.14	0.63				
4Z-V2LR	4Z-V2AR	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
4Z-V2LN	4Z-V2AN			Needle			0.12	0.80	0.14	0.63				
4Z-V2LK	4Z-V2AK			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

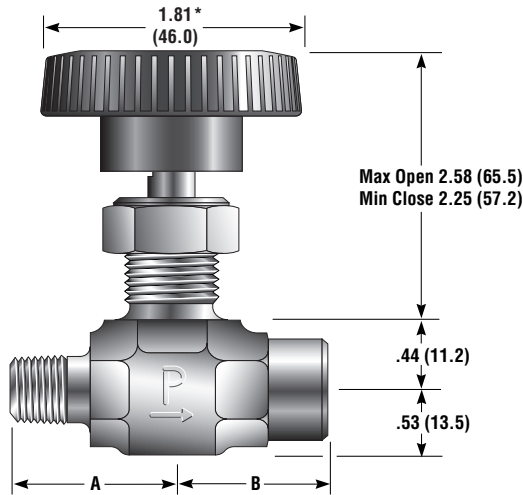
V4 Series Dimensions / Flow Data

Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
		Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
Inline	Angle				Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm	Inch	mm
2A-V4LR	2A-V4AR	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
2A-V4LN	2A-V4AN			Needle			0.12	0.68	0.15	0.59				
2A-V4LK	2A-V4AK			PCTFE			0.14	0.66	0.17	0.49				
2F-V4LR	2F-V4AR	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
2F-V4LN	2F-V4AN			Needle			0.43	0.69	0.55	0.63				
2F-V4LK	2F-V4AK			PCTFE			0.45	0.55	0.58	0.68				
2M-V4LR	2M-V4AR	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
2M-V4LN	2M-V4AN			Needle			0.28	0.63	0.36	0.51				
2M-V4LK	2M-V4AK			PCTFE			0.29	0.51	0.37	0.59				
2Z-V4LR	2Z-V4AR	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
2Z-V4LN	2Z-V4AN			Needle			0.12	0.68	0.15	0.59				
2Z-V4LK	2Z-V4AK			PCTFE			0.14	0.66	0.17	0.49				
4A-V4LR	4A-V4AR	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
4A-V4LN	4A-V4AN			Needle			0.43	0.77	0.55	0.63				
4A-V4LK	4A-V4AK			PCTFE			0.45	0.69	0.58	0.68				
4M-V4LR	4M-V4AR	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
4M-V4LN	4M-V4AN			Needle			0.43	0.77	0.55	0.63				
4M-V4LK	4M-V4AK			PCTFE			0.45	0.69	0.58	0.68				
4W-V4LR	4W-V4AR	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
4W-V4LN	4W-V4AN			Needle			0.43	0.77	0.55	0.63				
4W-V4LK	4W-V4AK			PCTFE			0.45	0.69	0.58	0.68				
4Z-V4LR	4Z-V4AR	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
4Z-V4LN	4Z-V4AN			Needle			0.43	0.77	0.55	0.63				
4Z-V4LK	4Z-V4AK			PCTFE			0.45	0.69	0.58	0.68				
6A-V4LR	6A-V4AR	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
6A-V4LN	6A-V4AN			Needle			0.43	0.77	0.55	0.63				
6A-V4LK	6A-V4AK			PCTFE			0.45	0.69	0.58	0.68				
6Z-V4LR	6Z-V4AR	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
6Z-V4LN	6Z-V4AN			Needle			0.43	0.77	0.55	0.63				
6Z-V4LK	6Z-V4AK			PCTFE			0.45	0.69	0.58	0.68				
M3A-V4LR	M3A-V4AR	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
M3A-V4LN	M3A-V4AN			Needle			0.12	0.68	0.15	0.59				
M3A-V4LK	M3A-V4AK			PCTFE			0.14	0.66	0.17	0.49				
M3Z-V4LR	M3Z-V4AR	3mm Compression CPI™		Blunt	0.078	2.0	0.12	0.52	0.15	0.64	1.10	27.9	1.10	27.9
M3Z-V4LN	M3Z-V4AN			Needle			0.12	0.68	0.15	0.59				
M3Z-V4LK	M3Z-V4AK			PCTFE			0.14	0.66	0.17	0.49				
M6A-V4LR	M6A-V4AR	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
M6A-V4LN	M6A-V4AN			Needle			0.37	0.72	0.48	0.58				
M6A-V4LK	M6A-V4AK			PCTFE			0.39	0.62	0.51	0.64				
M6Z-V4LR	M6Z-V4AR	6mm Compression CPI™		Blunt	0.156	4.0	0.37	0.78	0.48	0.60	1.15	29.2	1.15	29.2
M6Z-V4LN	M6Z-V4AN			Needle			0.37	0.72	0.48	0.58				
M6Z-V4LK	M6Z-V4AK			PCTFE			0.39	0.62	0.51	0.64				
M8A-V4LR	M8A-V4AR	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
M8A-V4LN	M8A-V4AN			Needle			0.43	0.77	0.55	0.63				
M8A-V4LK	M8A-V4AK			PCTFE			0.45	0.69	0.58	0.68				
M8Z-V4LR	M8Z-V4AR	8mm Compression CPI™		Blunt	0.176	4.5	0.43	0.85	0.55	0.63	1.18	30.0	1.18	30.0
M8Z-V4LN	M8Z-V4AN			Needle			0.43	0.77	0.55	0.63				
M8Z-V4LK	M8Z-V4AK			PCTFE			0.45	0.69	0.58	0.68				

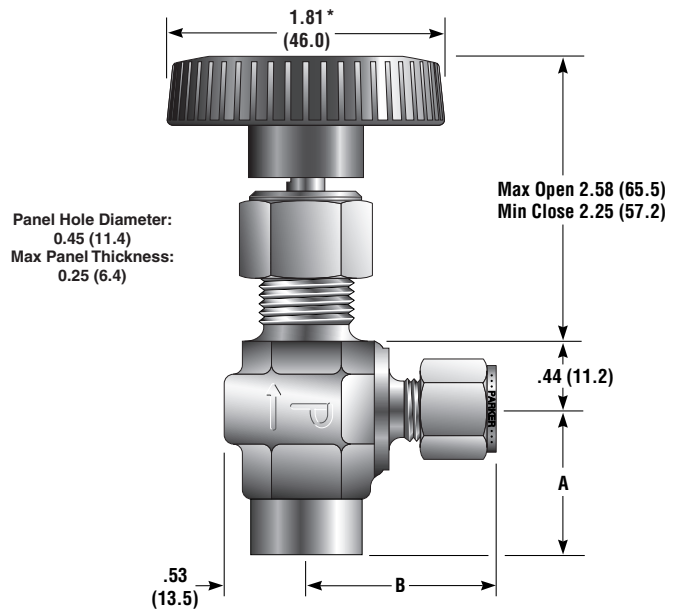
* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.
 † For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

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

V6 Series Dimensions / Flow Data



**Model Shown:
6M4F-V6LR-V-SS**



**Model Shown:
4F6Z-V6AK-SS**

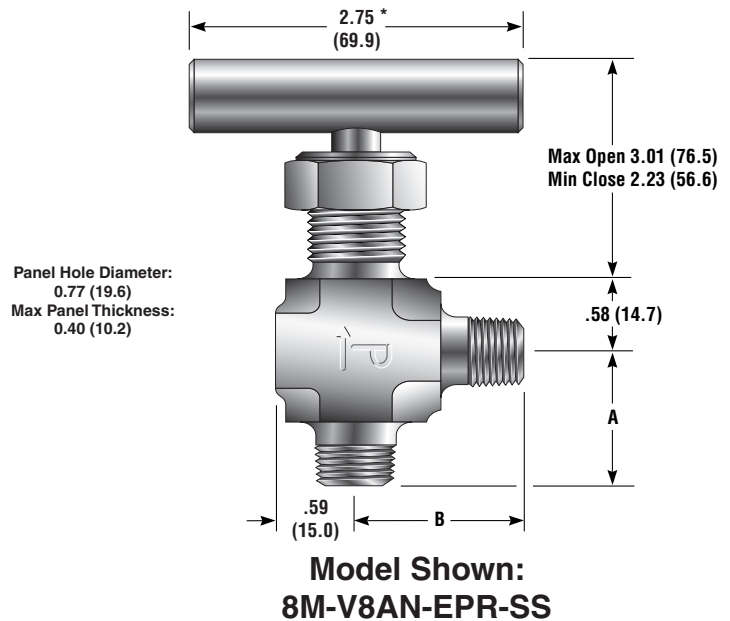
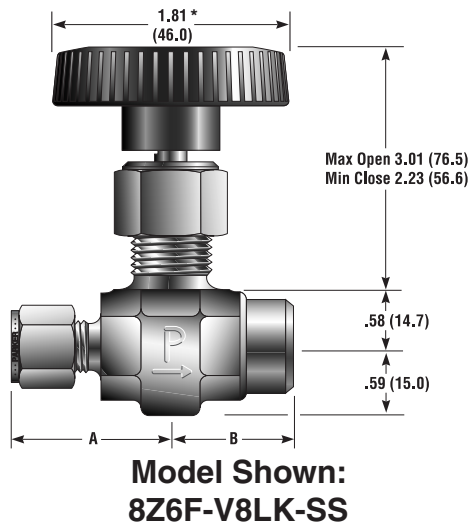
* Note: Handle diameter for K Stem V6 Series Valves is 1.38 (35.4)
() Denotes dimensions in millimeters

Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
					Orifice		Inline		Angle		A†		B†	
Inline	Angle	Inlet (Port 1)	Outlet (Port 2)		Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm	Inch	mm
4F-V6LR	4F-V6AR	1/4" Female NPT		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	0.94	23.9	0.94	23.9
4F-V6LN	4F-V6AN			Needle			0.55	0.61	0.92	0.62				
4F-V6LK	4F-V6AK			PCTFE			0.80	0.87	1.23	0.56				
6A-V6LR	6A-V6AR	3/8" Compression A-LOK®		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.29	32.8	1.29	32.8
6A-V6LN	6A-V6AN			Needle			0.55	0.61	0.92	0.62				
6A-V6LK	6A-V6AK			PCTFE			0.80	0.87	1.23	0.56				
6M-V6LR	6M-V6AR	3/8" Male NPT		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.03	26.2	1.03	26.2
6M-V6LN	6M-V6AN			Needle			0.55	0.61	0.92	0.62				
6M-V6LK	6M-V6AK			PCTFE			0.80	0.87	1.23	0.56				
6Z-V6LR	6Z-V6AR	3/8" Compression CPI™		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.29	32.8	1.29	32.8
6Z-V6LN	6Z-V6AN			Needle			0.55	0.61	0.92	0.62				
6Z-V6LK	6Z-V6AK			PCTFE			0.80	0.87	1.23	0.56				
8A-V6LR	8A-V6AR	1/2" Compression A-LOK®		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.40	35.6	1.40	35.6
8A-V6LN	8A-V6AN			Needle			0.55	0.61	0.92	0.62				
8A-V6LK	8A-V6AK			PCTFE			0.80	0.87	1.23	0.56				
8Z-V6LR	8Z-V6AR	1/2" Compression CPI™		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.40	35.6	1.40	35.6
8Z-V6LN	8Z-V6AN			Needle			0.55	0.61	0.92	0.62				
8Z-V6LK	8Z-V6AK			PCTFE			0.80	0.87	1.23	0.56				
M10A-V6LR	M10A-V6AR	10mm Compression A-LOK®		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.30	33.0	1.30	33.0
M10A-V6LN	M10A-V6AN			Needle			0.55	0.61	0.92	0.62				
M10A-V6LK	M10A-V6AK			PCTFE			0.80	0.87	1.23	0.56				
M10Z-V6LR	M10Z-V6AR	10mm Compression CPI™		Blunt	0.228	5.8	0.73	0.90	1.23	0.50	1.30	33.0	1.30	33.0
M10Z-V6LN	M10Z-V6AN			Needle			0.55	0.61	0.92	0.62				
M10Z-V6LK	M10Z-V6AK			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



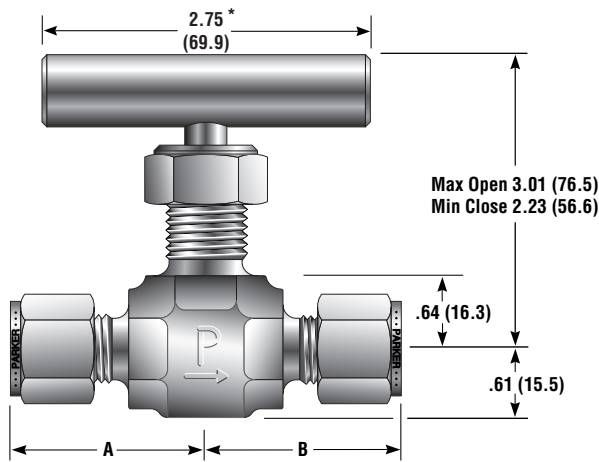
* Note: Handles for N or R Stem V8 Series Valves are a T-bar
() Denotes dimensions in millimeters

Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
Inline	Angle	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
6F-V8LR	6F-V8AR	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
6F-V8LN	6F-V8AN			Needle			1.05	0.83	1.28	0.80				
6F-V8LK	6F-V8AK			PCTFE			1.29	0.91	1.90	0.76				
8A-V8LR	8A-V8AR	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
8A-V8LN	8A-V8AN			Needle			1.05	0.83	1.28	0.80				
8A-V8LK	8A-V8AK			PCTFE			1.29	0.91	1.90	0.76				
8M-V8LR	8M-V8AR	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
8M-V8LN	8M-V8AN			Needle			1.05	0.83	1.28	0.80				
8M-V8LK	8M-V8AK			PCTFE			1.29	0.91	1.90	0.76				
8Z-V8LR	8Z-V8AR	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
8Z-V8LN	8Z-V8AN			Needle			1.05	0.83	1.28	0.80				
8Z-V8LK	8Z-V8AK			PCTFE			1.29	0.91	1.90	0.76				
M10A-V8LR	M10A-V8AR	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
M10A-V8LN	M10A-V8AN			Needle			0.97	0.78	1.18	0.75				
M10A-V8LK	M10A-V8AK			PCTFE			1.18	0.80	1.69	0.66				
M10Z-V8LR	M10Z-V8AR	10mm Compression CPI™		Blunt	0.281	7.1	1.13	0.79	1.52	0.66	1.42	36.1	1.42	36.1
M10Z-V8LN	M10Z-V8AN			Needle			0.97	0.78	1.18	0.75				
M10Z-V8LK	M10Z-V8AK			PCTFE			1.18	0.80	1.69	0.66				
M12A-V8LR	M12A-V8AR	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
M12A-V8LN	M12A-V8AN			Needle			0.97	0.78	1.18	0.75				
M12A-V8LK	M12A-V8AK			PCTFE			1.18	0.80	1.69	0.66				
M12Z-V8LR	M12Z-V8AR	12mm Compression CPI™		Blunt	0.281	7.1	1.13	0.79	1.52	0.66	1.51	38.4	1.51	38.4
M12Z-V8LN	M12Z-V8AN			Needle			0.97	0.78	1.18	0.75				
M12Z-V8LK	M12Z-V8AK			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.

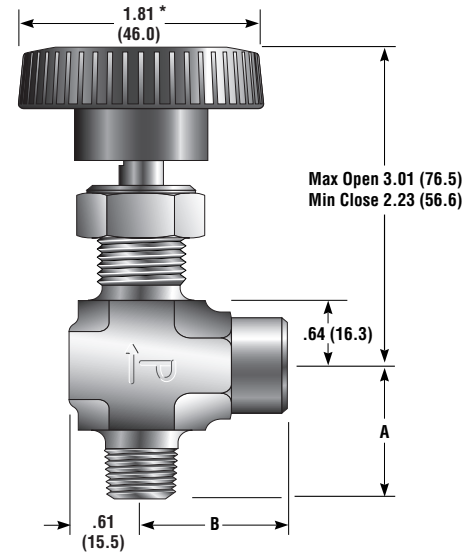
Dimensions in inches/millimeters are for reference only, subject to change.

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**

Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
					Orifice		Inline		Angle		A†		B†	
Inline	Angle	Inlet (Port 1)	Outlet (Port 2)		Inch	mm	C_V	X_T^*	C_V	X_T^*	Inch	mm	Inch	mm
8F-V12LR	8F-V12AR	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
8F-V12LN	8F-V12AN			Needle			1.05	0.83	1.28	0.80				
8F-V12LK	8F-V12AK			PCTFE			1.29	0.91	1.90	0.76				
8W-V12LR	8W-V12AR	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
8W-V12LN	8W-V12AN			Needle			1.05	0.83	1.28	0.80				
8W-V12LK	8W-V12AK			PCTFE			1.29	0.91	1.90	0.76				
10A-V12LR	10A-V12AR	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
10A-V12LN	10A-V12AN			Needle			1.05	0.83	1.28	0.80				
10A-V12LK	10A-V12AK			PCTFE			1.29	0.91	1.90	0.76				
10Z-V12LR	10Z-V12AR	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
10Z-V12LN	10Z-V12AN			Needle			1.05	0.83	1.28	0.80				
10Z-V12LK	10Z-V12AK			PCTFE			1.29	0.91	1.90	0.76				
12A-V12LR	12A-V12AR	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
12A-V12LN	12A-V12AN			Needle			1.05	0.83	1.28	0.80				
12A-V12LK	12A-V12AK			PCTFE			1.29	0.91	1.90	0.76				
12Z-V12LR	12Z-V12AR	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
12Z-V12LN	12Z-V12AN			Needle			1.05	0.83	1.28	0.80				
12Z-V12LK	12Z-V12AK			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.

How to Order

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

The correct part number is easily derived from the following example and ordering chart. The six product characteristics required are coded as shown in the chart.

Example 1, below, describes an angle pattern V4 Series needle valve equipped with 1/4" CPI™ compression inlet and outlet ports, a PCTFE tipped stem, Nitrile seals, and stainless steel construction.

Example 2, below, describes an inline pattern V6 Series needle valve equipped with 1/4" male NPT inlet port, 1/4" female NPT outlet port, a needle stem type, PTFE stem seal, brass construction.

Example 1: 4Z-V4AK-BN-SS (shown in the part number blocks below)

Example 2: 4M4F-V6LN-B

4Z		-		V4		AK		-		BN		-		SS			
Inlet Port*		Outlet Port*		Valve Series		Stem Type		Stem Seal		Body Material							
Inlet Port*		Outlet Port*		Valve Series		Stem Type		Stem Seal		Body Material							
2A	2M	4A		V2	R	Blunt (30°)		Blank	PTFE		SS	Stainless Steel					
2F	2Z	4Z			N	Needle (2-1/2°)			BN	Nitrile Rubber		S	Steel				
2A	4A	6A	M6A	V4	K	PCTFE		EPR	Ethylene		M	Monel® Alloy 400					
2F	4M	6Z	M6Z						Propylene			V	Rubber		B	Brass	
2M	4W	M3A	M8A						Rubber				Fluorocarbon				
2Z	4Z	M3Z	M8Z						Rubber								
4A	6A	8A	M10A	V6													
4F	6M	8Z	M10Z														
4M	6W	M8A	M12A	V8													
4Z	6Z	M8Z	M12Z														
4F	6Z	8Z	M12A	V12													
6A	8A	M10A	M12Z														
6F	8M	M10Z															
8F	10A	12A															
8W	10Z	12Z															

*If the inlet and outlet ports are the same, eliminate the outlet port designator.

How to Order Options

Colored Round Handles – Add the designator corresponding to the correct handle color as a suffix to the part number. Black is standard, **W** - white, **B** - blue, **G** - green, **R** - red, **Y** - yellow. **Example:** M10A-V6LK-SS-**G**

Oxygen Cleaning – Add the suffix **-C3** to the end of the part number to receive valves cleaned and assembled for oxygen service in accordance with Parker Specification ES8003. **Example:** 4A-V4AN-EPR-SS-**C3**

How to Order Components

Colored Round Nylon Handles with Handle Screw – Valve Series-Handle-Color. **Example: V4-HANDLE-BLUE**

Stainless Steel T-Bar Handles with Handle Screw – **Examples:** V2: V2-BAR-HANDLE-SS; V4: V4-BAR-HANDLE-SS; V6: V6-BAR-HANDLE-SS; V8: U12-BAR-HANDLE-SS; V12: U12-BAR-HANDLE-SS

Aluminum T-Bar Handles with Handle Screw – **Examples:** V2: Not available; V4: V4-BAR-HANDLE-AL; V6: V4-BAR-HANDLE-AL; V8: U12-BAR-HANDLE-AL; V12: U12-BAR-HANDLE-AL

Panel Mounting Nuts – **Examples:** V2: 2-Panel-Nut-SS; V4: 4-Panel-Nut-SS; V6: 6-Panel-Nut-SS; V8: 8-Panel-Nut-SS

How to Order Maintenance Kits

PTFE Packing Stem Kits – Consists of One Stem; One PTFE Packing; One Upper Packing Washer; One Lower Packing Washer; One Packing Nut; Maintenance Instructions.

Kit-Valve Series and StemType-Body Material. **Examples: KIT-V4K-SS; KIT-V6N-B**

Fluorocarbon Rubber Packing Stem Kits – Consists of One Stem; One Fluorocarbon Rubber O-ring Seal; One O-ring Back-up Gland; One O-ring Gland; One Lower Packing Washer; One Packing Nut; Maintenance Instructions.

Kit-Valve Series and Stem Type-V-Body Material. **Examples: KIT-V2R-V-B; KIT-V4K-V-SS**

Nitrile Rubber Packing Stem Kits – Consists of One Stem; One Nitrile Rubber O-ring Seal; One O-ring Back-up Gland; One O-ring Gland; One Lower Packing Washer; One Packing Nut; Maintenance Instructions.

Kit-Valve Series and Stem Type-BN-Body Material. **Examples: KIT-V2R-BN-B; KIT-V4K-BN-SS**

Ethylene Propylene Rubber Packing Stem Kits – Consists of One Stem; One Ethylene Propylene Rubber O-ring Seal; One O-ring Back-up Gland; One O-ring Gland; One Lower Packing Washer; One Packing Nut; Maintenance Instructions.

Kit-Valve Series and Stem Type-EPR-Body Material. **Examples: KIT-V2R-EPR-B; KIT-V4K-EPR-SS**