

# Needle Valves (V Series)

*Catalog 4110-V  
Revised, July 2001*



# V Series Needle Valves

## 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.

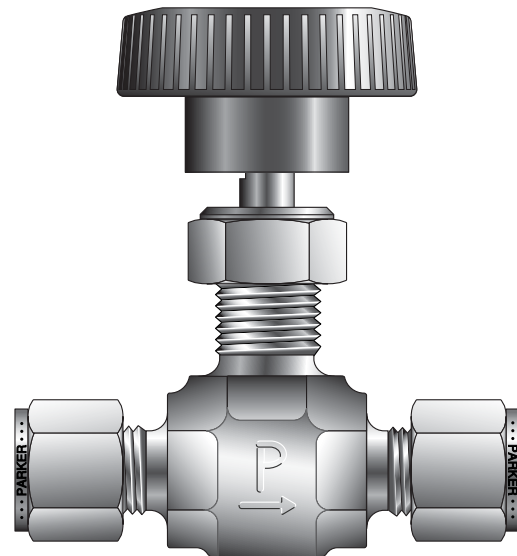
## Features

- 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 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

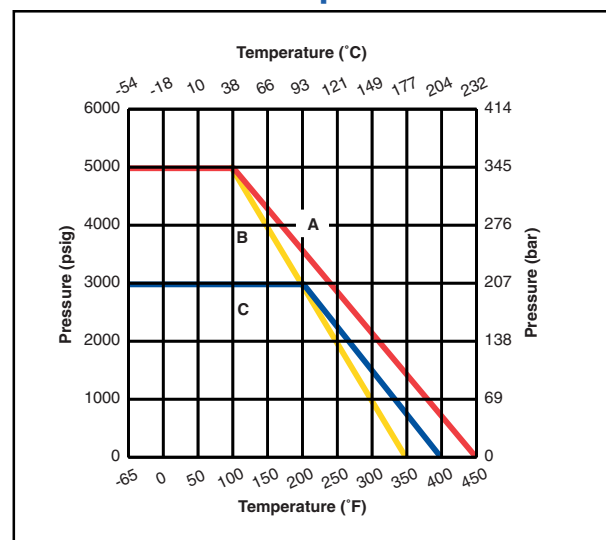
- Pressure Ratings:
  - 316 Stainless Steel:
    - 5000 psig (345 bar) CWP
  - Brass, Steel and Alloy 400:
    - 3000 psig (207 bar) CWP
- Orifice: 0.078" to 0.312" (2.0mm to 7.9mm)
- $C_v$ : 0.12 to 1.90
- Port size: 1/8" to 3/4" (3mm to 12mm)
- Temperature Ratings:
  - Stainless Steel and Alloy 400:
    - 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)
  - Buna-N 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.



Model Shown: 4Z-V4LK-SS

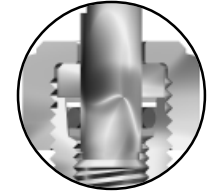
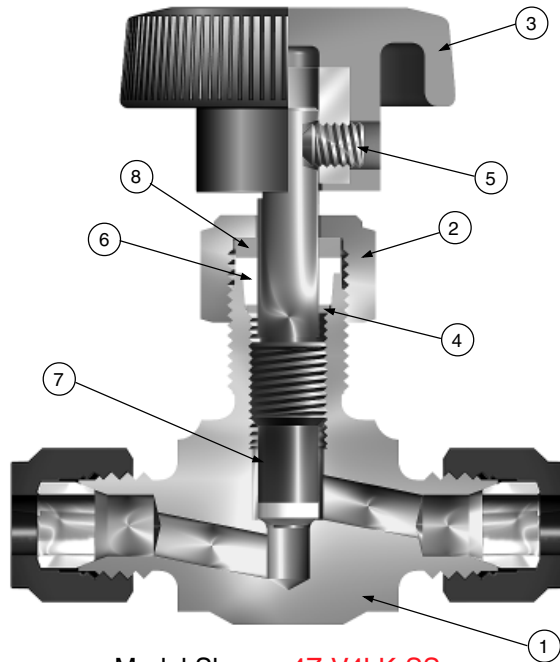
## Pressure vs. Temperature



**Legend:** A - Stainless Steel with N or R stems; B - Stainless Steel with K stem; C - Brass, Steel, and Alloy 400 with N or R stems. Maximum temperature for Steel is 350 °F (177 °C)

**Note:** To determine MPa, multiply bar by 0.1

# V Series Needle Valves



O-Ring Stem Seal

Model Shown: 4Z-V4LK-SS

## Materials of Construction (with PTFE Packing)

Item #	Part Description	Stainless Steel	Brass	Steel	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.

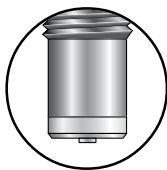
\*\* Optional O-ring elastomeric stem seals are available - [See How to Order](#)

\*\*\* Panel Nut is nickel plated brass on V2 Series Valves. Panel Nuts must be ordered separately - [see page 10](#).

Lubrication: Graphite filled hydrocarbon

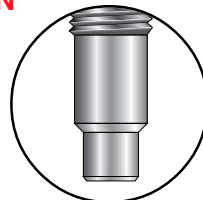
## Stem Types

**K**



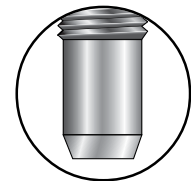
PCTFE tipped

**N**



Needle (2 1/2°)

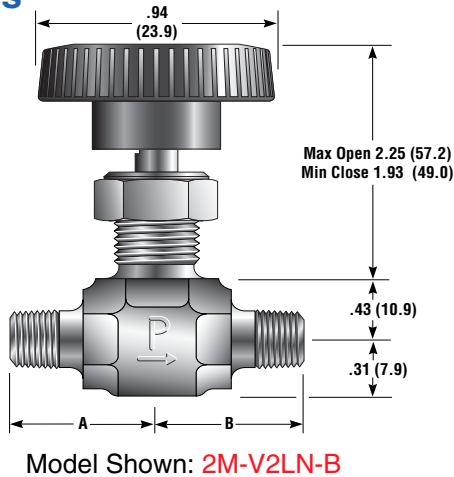
**R**



Blunt (30°)

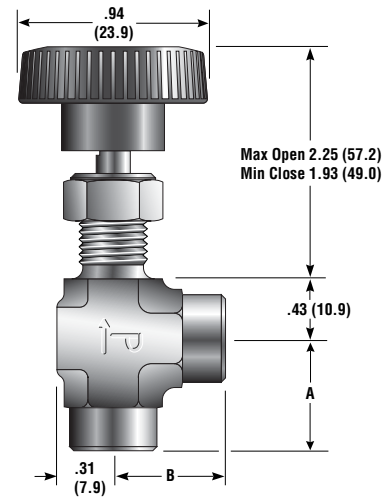
# V Series Needle Valves

## V2 Series



Model Shown: **2M-V2LN-B**

Panel Hole Diameter:  
0.45 (11.4)  
Max Panel Thickness:  
0.25 (6.4)



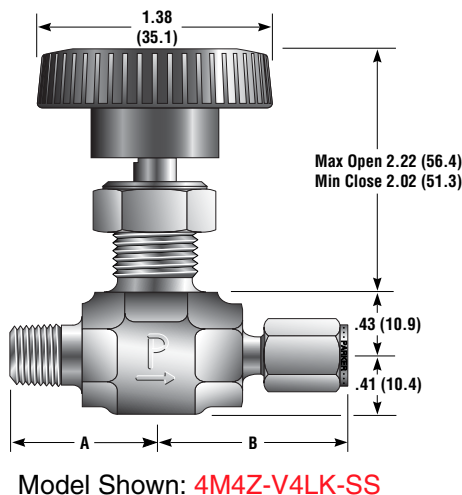
Model Shown: **2F-V2AR-V-SS**

## 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	$C_v$	$X_T^*$	$C_v$	$X_T^*$	$C_v$	$X_T^*$	Inch	mm
2A-V2LR 2A-V2LN 2A-V2LK	2A-V2AR 2A-V2AN 2A-V2AK	1/8" Compression A-LOK®		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.13	0.78 0.80 0.83	0.14 0.14 0.14	0.67 0.63 0.63	1.01	25.7	1.01	25.7
2F-V2LR 2F-V2LN 2F-V2LK	2F-V2AR 2F-V2AN 2F-V2AK	1/8" Female NPT		Blunt Needle PCTFE	0.093	2.4	0.13 0.12 0.12	0.61 0.66 0.73	0.16 0.18 0.17	0.49 0.39 0.54	0.94	23.9	0.94	23.9
2M-V2LR 2M-V2LN 2M-V2LK	2M-V2AR 2M-V2AN 2M-V2AK	1/8" Male NPT		Blunt Needle PCTFE	0.093	2.4	0.13 0.12 0.12	0.61 0.66 0.73	0.16 0.18 0.17	0.49 0.39 0.54	0.75	19.1	0.75	19.1
2Z-V2LR 2Z-V2LN 2Z-V2LK	2Z-V2AR 2Z-V2AN 2Z-V2AK	1/8" Compression CPI™		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.13	0.78 0.80 0.83	0.14 0.14 0.14	0.67 0.63 0.63	1.01	25.7	1.01	25.7
4A-V2LR 4A-V2LN 4A-V2LK	4A-V2AR 4A-V2AN 4A-V2AK	1/4" Compression A-LOK®		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.13	0.78 0.80 0.83	0.14 0.14 0.14	0.67 0.63 0.63	1.09	27.7	1.09	27.7
4Z-V2LR 4Z-V2LN 4Z-V2LK	4Z-V2AR 4Z-V2AN 4Z-V2AK	1/4" Compression CPI™		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.13	0.78 0.80 0.83	0.14 0.14 0.14	0.67 0.63 0.63	1.09	27.7	1.09	27.7

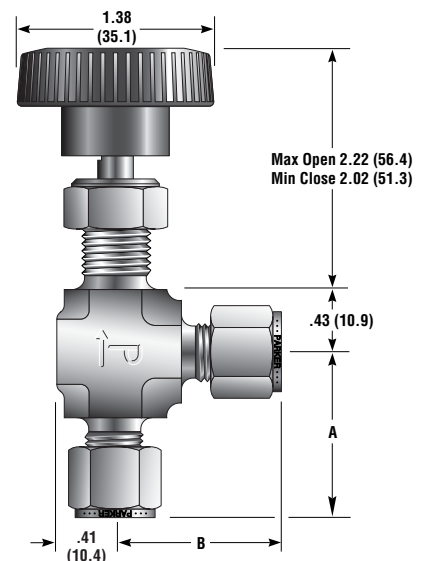
\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = X_T$ .  
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

## V4 Series



Model Shown: **4M4Z-V4LK-SS**

Panel Hole Diameter:  
0.52 (13.2)  
Max Panel Thickness:  
0.25 (6.4)



Model Shown: **M6A-V4AN-BN-B**

( ) Denotes dimensions in millimeters

# V Series Needle Valves

## V4 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 <sub>v</sub>	X <sub>T</sub> *	C <sub>v</sub>	X <sub>T</sub> *	C <sub>v</sub>	X <sub>T</sub> *	Inch	mm
2A-V4LR 2A-V4LN 2A-V4LK	2A-V4AR 2A-V4AN 2A-V4AK	1/8" Compression A-LOK®		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.14	0.52 0.68 0.66	0.15 0.15 0.17	0.64 0.59 0.49	1.10	27.9	1.10	27.9
2F-V4LR 2F-V4LN 2F-V4LK	2F-V4AR 2F-V4AN 2F-V4AK	1/8" Female NPT		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.77 0.69 0.55	0.55 0.55 0.58	0.63 0.63 0.68	0.81	20.6	0.81	20.6
2M-V4LR 2M-V4LN 2M-V4LK	2M-V4AR 2M-V4AN 2M-V4AK	1/8" Male NPT		Blunt Needle PCTFE	0.125	3.2	0.28 0.28 0.29	0.67 0.63 0.51	0.36 0.36 0.37	0.55 0.51 0.59	0.81	20.6	0.81	20.6
2Z-V4LR 2Z-V4LN 2Z-V4LK	2Z-V4AR 2Z-V4AN 2Z-V4AK	1/8" Compression CPI™		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.14	0.52 0.68 0.66	0.15 0.15 0.17	0.64 0.59 0.49	1.10	27.9	1.10	27.9
4A-V4LR 4A-V4LN 4A-V4LK	4A-V4AR 4A-V4AN 4A-V4AK	1/4" Compression A-LOK®		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	1.15	29.2	1.15	29.2
4M-V4LR 4M-V4LN 4M-V4LK	4M-V4AR 4M-V4AN 4M-V4AK	1/4" Male NPT		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	0.94	23.9	0.94	23.9
4W-V4LR 4W-V4LN 4W-V4LK	4W-V4AR 4W-V4AN 4W-V4AK	1/4" Tube Socket Weld		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	0.80	20.3	0.80	20.3
4Z-V4LR 4Z-V4LN 4Z-V4LK	4Z-V4AR 4Z-V4AN 4Z-V4AK	1/4" Compression CPI™		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	1.15	29.2	1.15	29.2
6A-V4LR 6A-V4LN 6A-V4LK	6A-V4AR 6A-V4AN 6A-V4AK	3/8" Compression A-LOK®		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	1.17	29.7	1.17	29.7
6Z-V4LR 6Z-V4LN 6Z-V4LK	6Z-V4AR 6Z-V4AN 6Z-V4AK	3/8" Compression CPI™		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	1.17	29.7	1.17	29.7
M3A-V4LR M3A-V4LN M3A-V4LK	M3A-V4AR M3A-V4AN M3A-V4AK	3mm Compression A-LOK®		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.14	0.52 0.68 0.66	0.15 0.15 0.17	0.64 0.59 0.49	1.10	27.9	1.10	27.9
M3Z-V4LR M3Z-V4LN M3Z-V4LK	M3Z-V4AR M3Z-V4AN M3Z-V4AK	3mm Compression CPI™		Blunt Needle PCTFE	0.078	2.0	0.12 0.12 0.14	0.52 0.68 0.66	0.15 0.15 0.17	0.64 0.59 0.49	1.10	27.9	1.10	27.9
M6A-V4LR M6A-V4LN M6A-V4LK	M6A-V4AR M6A-V4AN M6A-V4AK	6mm Compression A-LOK®		Blunt Needle PCTFE	0.156	4.0	0.37 0.37 0.39	0.78 0.72 0.62	0.48 0.48 0.51	0.60 0.58 0.64	1.15	29.2	1.15	29.2
M6Z-V4LR M6Z-V4LN M6Z-V4LK	M6Z-V4AR M6Z-V4AN M6Z-V4AK	6mm Compression CPI™		Blunt Needle PCTFE	0.156	4.0	0.37 0.37 0.39	0.78 0.72 0.62	0.48 0.48 0.51	0.60 0.58 0.64	1.15	29.2	1.15	29.2
M8A-V4LR M8A-V4LN M8A-V4LK	M8A-V4AR M8A-V4AN M8A-V4AK	8mm Compression A-LOK®		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	1.18	30.0	1.18	30.0
M8Z-V4LR M8Z-V4LN M8Z-V4LK	M8Z-V4AR M8Z-V4AN M8Z-V4AK	8mm Compression CPI™		Blunt Needle PCTFE	0.176	4.5	0.43 0.43 0.45	0.85 0.77 0.69	0.55 0.55 0.58	0.63 0.63 0.68	1.18	30.0	1.18	30.0

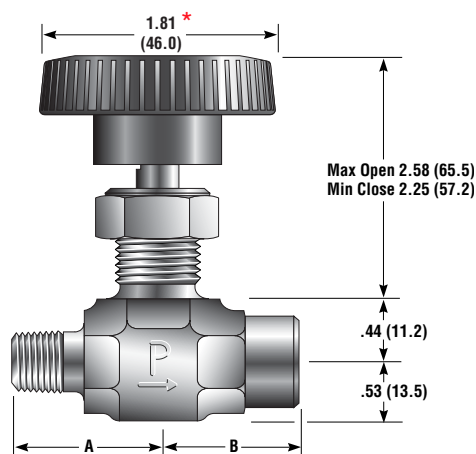
\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = X_T$ .

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

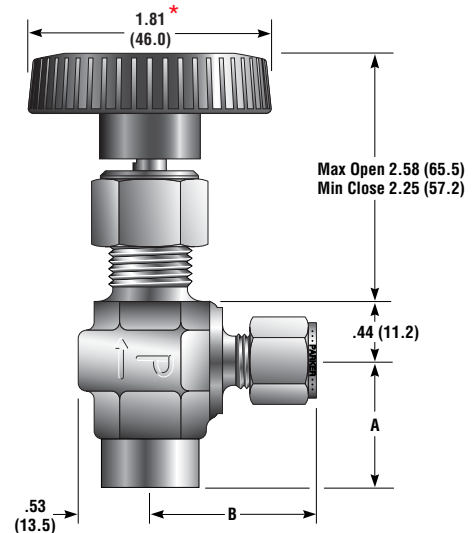


# V Series Needle Valves

## V6 Series



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

## V6 Series Dimensions / Flow Data

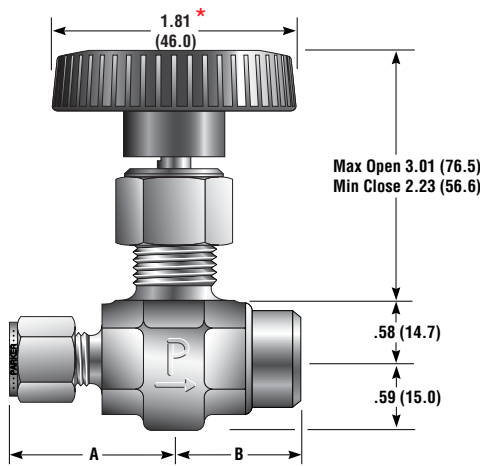
Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
Inline	Angle	Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
					Inch	mm	$C_v$	$X_T^*$	$C_v$	$X_T^*$	Inch	mm	Inch	mm
4F-V6LR 4F-V6LN 4F-V6LK	4F-V6AR 4F-V6AN 4F-V6AK	1/4" Female NPT		Blunt Needle PCTFE	0.228	5.8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

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

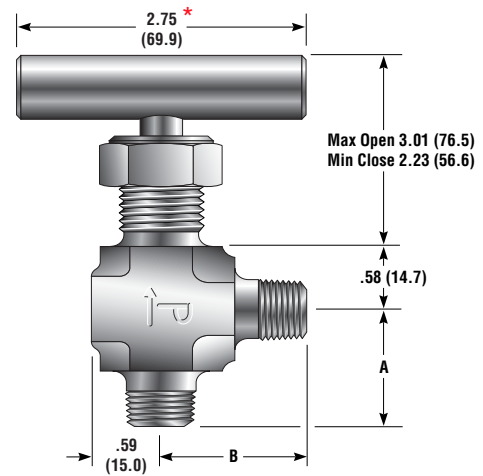
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

# V Series Needle Valves

## V8 Series



Model Shown: **8Z6F-V8LK-SS**



Model Shown: **8M-V8AN-EPR-SS**

Panel Hole Diameter:  
0.77 (19.6)  
Max Panel Thickness:  
0.40 (10.2)

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

## V8 Series Dimensions / Flow Data

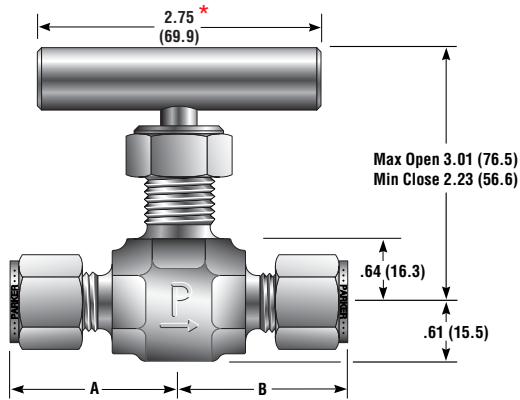
Basic Part Number		End Connections		Stem Type	Flow Data				Dimensions					
Inline	Angle	Inlet (Port 1)	Outlet (Port 2)		Orifice		Inline		Angle		A†		B†	
					Inch	mm	$C_v$	$X_T^*$	$C_v$	$X_T^*$	Inch	mm	Inch	mm
6F-V8LR 6F-V8LN 6F-V8LK	6F-V8AR 6F-V8AN 6F-V8AK	3/8" Female NPT		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.34	34.0	1.34	34.0
8A-V8LR 8A-V8LN 8A-V8LK	8A-V8AR 8A-V8AN 8A-V8AK	1/2" Compression A-LOK®		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.53	38.9	1.53	38.9
8M-V8LR 8M-V8LN 8M-V8LK	8M-V8AR 8M-V8AN 8M-V8AK	1/2" Male NPT		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.34	34.0	1.34	34.0
8Z-V8LR 8Z-V8LN 8Z-V8LK	8Z-V8AR 8Z-V8AN 8Z-V8AK	1/2" Compression CPI™		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.53	38.9	1.53	38.9
M10A-V8LR M10A-V8LN M10A-V8LK	M10A-V8AR M10A-V8AN M10A-V8AK	10mm Compression A-LOK®		Blunt Needle PCTFE	0.281	7.1	1.13 0.97 1.18	0.79 0.78 0.80	1.52 1.18 1.69	0.66 0.75 0.66	1.42	36.1	1.42	36.1
M10Z-V8LR M10Z-V8LN M10Z-V8LK	M10Z-V8AR M10Z-V8AN M10Z-V8AK	10mm Compression CPI™		Blunt Needle PCTFE	0.281	7.1	1.13 0.97 1.18	0.79 0.78 0.80	1.52 1.18 1.69	0.66 0.75 0.66	1.42	36.1	1.42	36.1
M12A-V8LR M12A-V8LN M12A-V8LK	M12A-V8AR M12A-V8AN M12A-V8AK	12mm Compression A-LOK®		Blunt Needle PCTFE	0.281	7.1	1.13 0.97 1.18	0.79 0.78 0.80	1.52 1.18 1.69	0.66 0.75 0.66	1.51	38.4	1.51	38.4
M12Z-V8LR M12Z-V8LN M12Z-V8LK	M12Z-V8AR M12Z-V8AN M12Z-V8AK	12mm Compression CPI™		Blunt Needle PCTFE	0.281	7.1	1.13 0.97 1.18	0.79 0.78 0.80	1.52 1.18 1.69	0.66 0.75 0.66	1.51	38.4	1.51	38.4

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

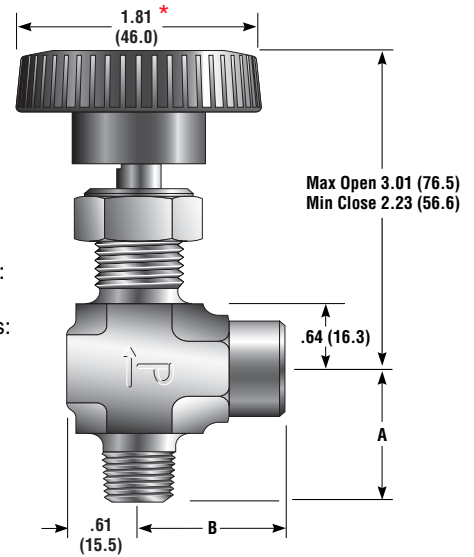
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

# V Series Needle Valves

## V12 Series



Model Shown: **10Z-V12LN-B**



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

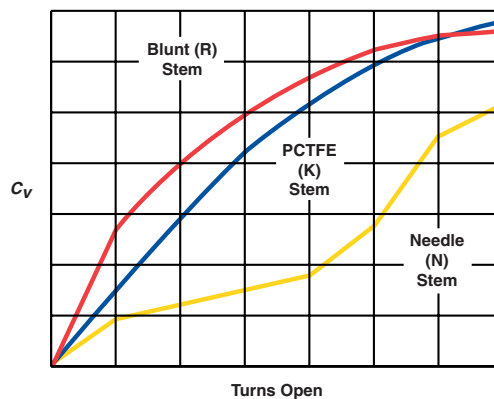
\* Note: Handles for N or R Stem V12 Series Valves are a T-bar  
( ) Denotes dimensions in millimeters

## V12 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	$C_v$	$X_T^*$	$C_v$	$X_T^*$	$C_v$	$X_T^*$	Inch	mm
8F-V12LR 8F-V12LN 8F-V12LK	8F-V12AR 8F-V12AN 8F-V12AK	1/2" Female NPT		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.38	35.1	1.38	35.1
8W-V12LR 8W-V12LN 8W-V12LK	8W-V12AR 8W-V12AN 8W-V12AK	1/2" Tube Socket Weld		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.12	28.4	1.12	28.4
10A-V12LR 10A-V12LN 10A-V12LK	10A-V12AR 10A-V12AN 10A-V12AK	5/8" Compression A-LOK®		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.52	38.6	1.52	38.6
10Z-V12LR 10Z-V12LN 10Z-V12LK	10Z-V12AR 10Z-V12AN 10Z-V12AK	5/8" Compression CPI™		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.52	38.6	1.52	38.6
12A-V12LR 12A-V12LN 12A-V12LK	12A-V12AR 12A-V12AN 12A-V12AK	3/4" Compression A-LOK®		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.52	38.6	1.52	38.6
12Z-V12LR 12Z-V12LN 12Z-V12LK	12Z-V12AR 12Z-V12AN 12Z-V12AK	3/4" Compression CPI™		Blunt Needle PCTFE	0.312	7.9	1.23 1.05 1.29	0.87 0.83 0.91	1.66 1.28 1.90	0.72 0.80 0.76	1.52	38.6	1.52	38.6

\* 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.

## V Series Flow Characteristics





# V Series Needle Valves

## How to Order

The correct part number is easily derived from the following number sequence. The six product characteristics required are coded as shown below. \*Note: If the inlet and outlet ports are the same, eliminate the outlet port designator.

**Example:** 4Z - \* - V4A - K - BN - SS

①      ②      ③      ④      ⑤      ⑥

Inlet    Outlet    Valve    Stem    Stem    Body

Port    Port    Series    Type    Seal    Material

Describes a angle pattern V4 Series needle valve equipped with 1/4" CPI™ compression inlet and outlet ports, a PCTFE tipped stem, Buna-N seals, and stainless steel construction.

**Example:** 4M - 4F - V6L - N - - B

①      ②      ③      ④      ⑤      ⑥

Inlet    Outlet    Valve    Stem    Stem    Body

Port    Port    Series    Type    Seal    Material

Describes a 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.

① Inlet Port	② Outlet Port	③ Valve Series	④ Stem Type	⑤ Stem Seal	⑥ Body Material
2A, 2F, 2M, 2Z, 4A, 4Z		V2	R - Blunt (30°)  N - Needle (2 1/2°)  K - PCTFE	Blank - PTFE BN- Buna-N Rubber EPR- Ethylene Propylene Rubber V- Fluorocarbon Rubber	SS- Stainless Steel S - Steel M - Alloy 400 B - Brass
2A, 2F, 2M, 2Z, 4A, 4M, 4W, 4Z, 6A, 6Z, M3A, M3Z, M6A, M6Z, M8A, M8Z		V4			
4A, 4F, 4M, 4Z, 6A, 6M, 6W, 6Z, 8A, 8Z, M8A, M8Z, M10A, M10Z, M12A, M12Z		V6			
4F, 6A, 6F, 6Z, 8A, 8M, 8Z, M10A, M10Z, M12A, M12Z		V8			
8F, 8W, 10A, 10Z, 12A, 12Z		V12			

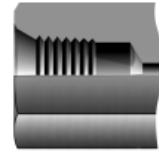
## Available End Connections

**Z** - One ferrule CPI™  
compression port

**A** - Two ferrule A-LOK®  
compression port

**M** - ANSI/ASME B1.20.1  
External pipe threads

**F** - ANSI/ASME B1.20.1  
Internal pipe threads



## 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**

**Sour Gas** – To obtain valves suitable for sour gas service in accordance with NACE Standard MR0175, add the suffix **NACE** to the end of the part number. **Example:** 8F-V12LR-SS-**NACE**

# V Series Needle Valves

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## 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** - 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** - 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** - V2: 2 Panel Nut; 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](#)

**Buna-N Rubber Packing Stem Kits** - Consists of One Stem; One Buna-N 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](#)

### **WARNING**

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11/98-P



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