

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.

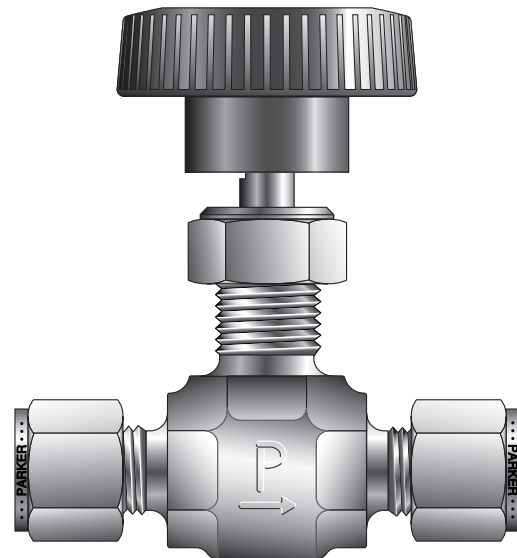
Features

- 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

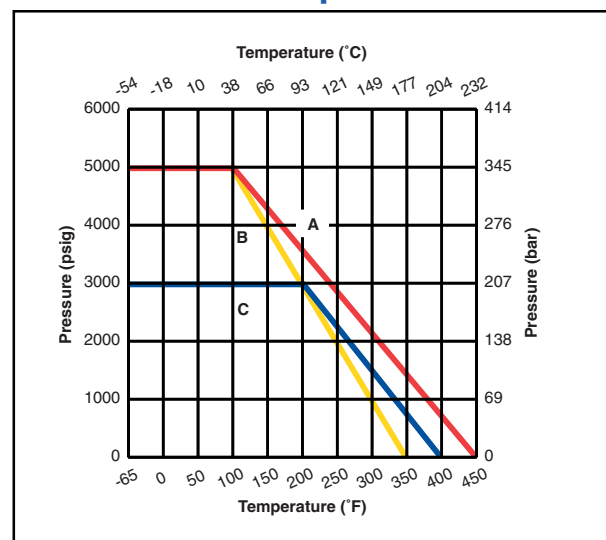
- Pressure Ratings:
 - 316 Stainless Steel:
 - 5000 psig (345 bar) CWP
 - Brass, Steel and Alloy 400:
 - 3000 psig (207 bar) CWP
- Orifice: 0.078" to 0.312" (2.0mm to 7.9mm)
- C_v : 0.12 to 1.90
- Port size: 1/8" to 3/4" (3mm to 12mm)
- Temperature Ratings:
 - Stainless Steel and Alloy 400:
 - -65 °F 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

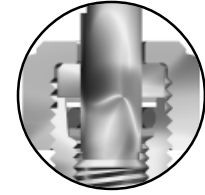
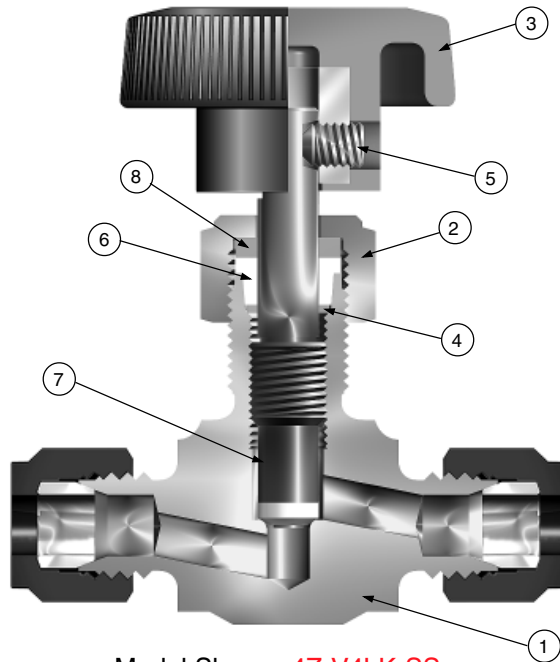
Pressure vs. Temperature



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.

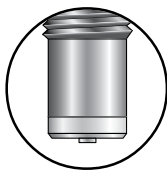
** Optional O-ring elastomeric stem seals are available - [See How to Order](#)

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

Lubrication: Graphite filled hydrocarbon

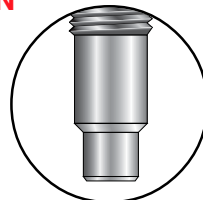
Stem Types

K



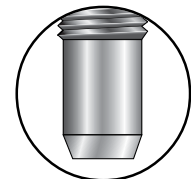
PCTFE tipped

N



Needle (2 1/2°)

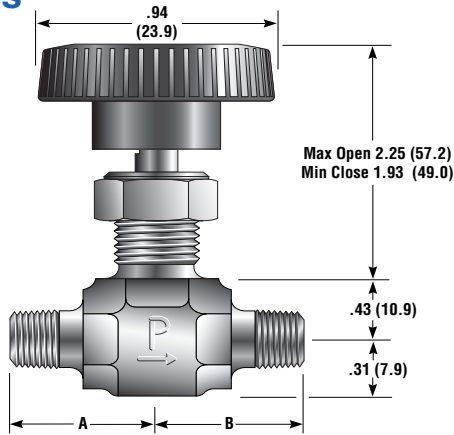
R



Blunt (30°)

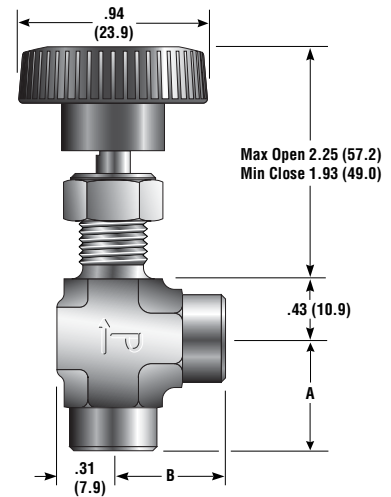
V Series Needle Valves

V2 Series



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

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



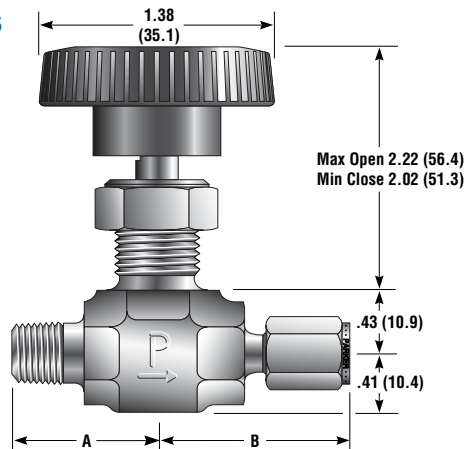
Model Shown: **2F-V2AR-V-SS**

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 |

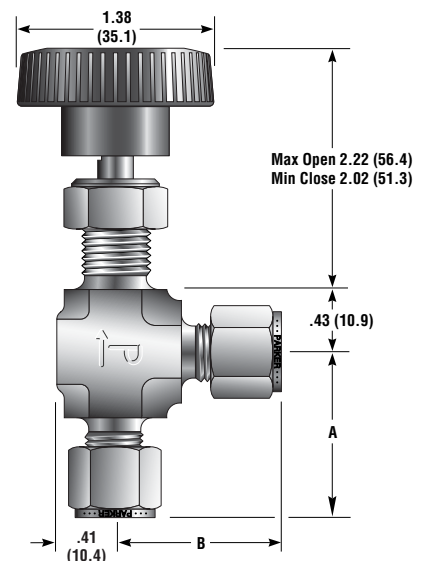
* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

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

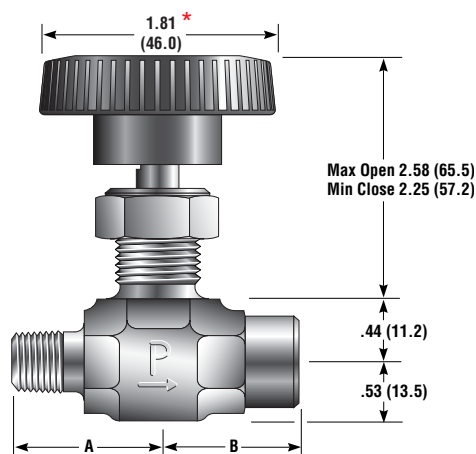
| Basic Part Number | | End Connections | | Stem Type | Flow Data | | | | | | Dimensions | | | |
|----------------------------------|----------------------------------|-------------------------|-----------------|-----------------------|-----------|-----|----------------------|----------------------|----------------------|----------------------|------------|------|------|------|
| Inline | Angle | Inlet (Port 1) | Outlet (Port 2) | | Orifice | | Inline | | Angle | | A† | | B† | |
| | | | | | Inch | mm | C _v | X _T * | C _v | X _T * | Inch | mm | 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 $P_1 - P_2 / P_1 = X_T$.

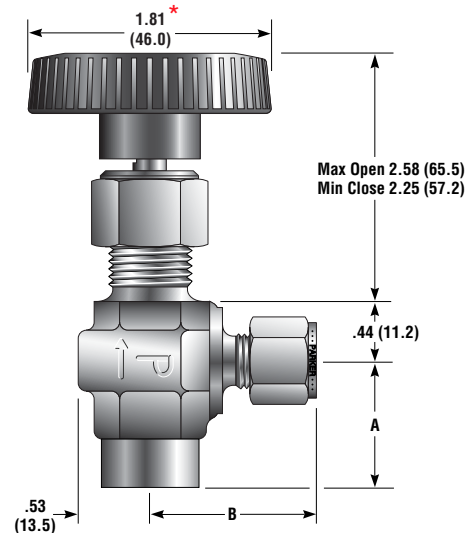
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

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

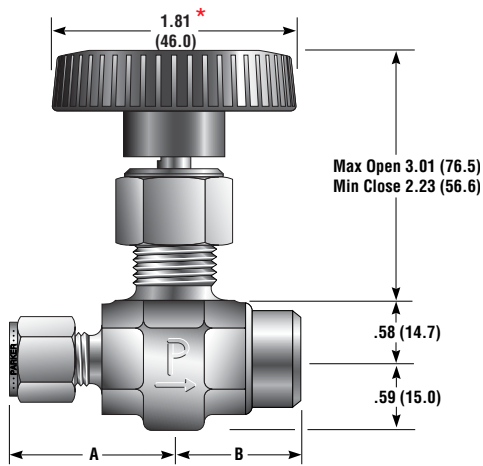
| Basic Part Number | | End Connections | | Stem Type | Flow Data | | | | Dimensions | | | | | |
|-------------------------------------|-------------------------------------|-------------------------|-----------------|-----------------------|-----------|-----|----------------------|----------------------|----------------------|----------------------|------|------|------|------|
| 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 $P_1 - P_2 / P_1 = X_T$.

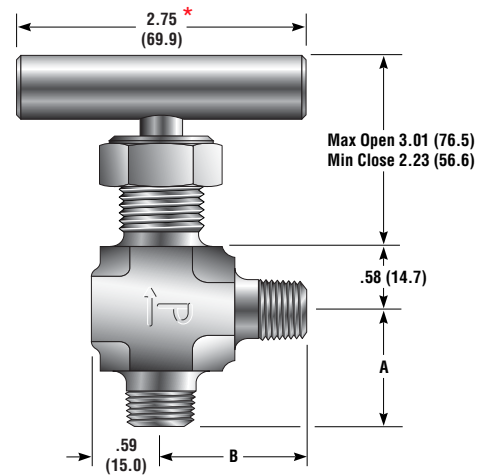
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

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

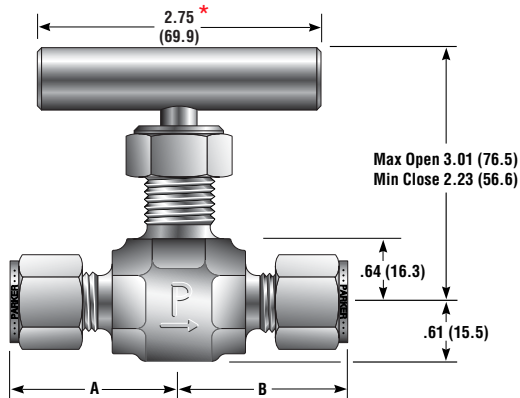
| Basic Part Number | | End Connections | | Stem Type | Flow Data | | | | Dimensions | | | | | |
|-------------------------------------|-------------------------------------|-------------------------|-----------------|-----------------------|-----------|-----|----------------------|----------------------|----------------------|----------------------|-------|---------|------|------|
| Inline | Angle | Inlet (Port 1) | Outlet (Port 2) | | Orifice | | Inline | | Angle | | A† | | B† | |
| | | | | | Inch | mm | C_v | X_T^* | C_v | X_T^* | C_v | X_T^* | 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 $P_1 - P_2 / P_1 = X_T$.

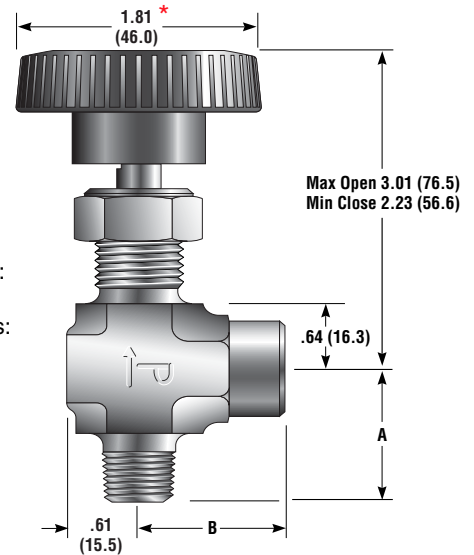
† For CPI™ and A-LOK® dimensions are measured with nuts in the finger tight position.

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

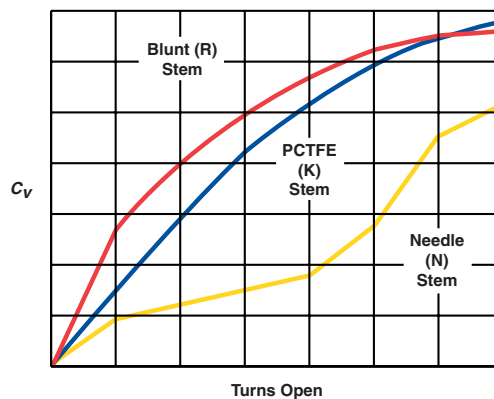
V12 Series Dimensions / Flow Data

| 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 | | | |

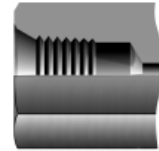
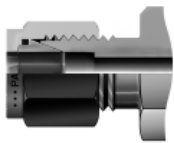
Available End Connections

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

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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3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and not withstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property, Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

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11/98-P

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