

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:

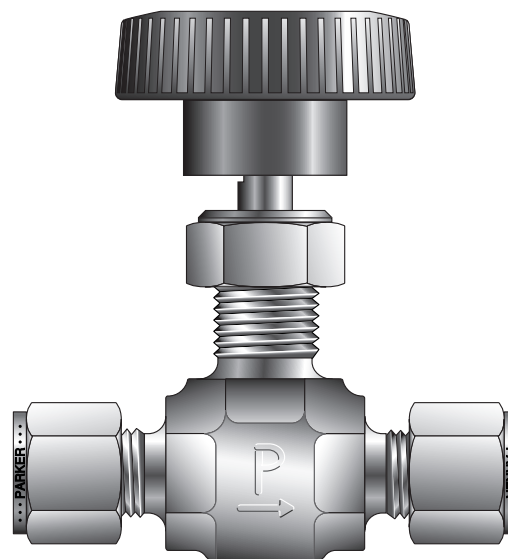
-15°F to 400°F (-26°C to 204°C)

Ethylene Propylene Rubber Stem Seal:

-70°F to 275°F (-57°C to 135°C)

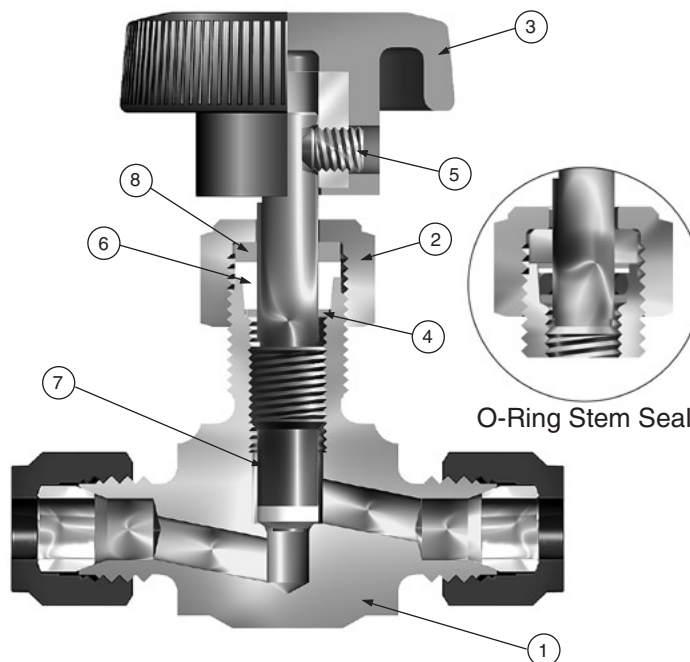
Note: When combining body, seat and seal materials, the most restrictive temperature rating becomes the limiting factor on temperature range.

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



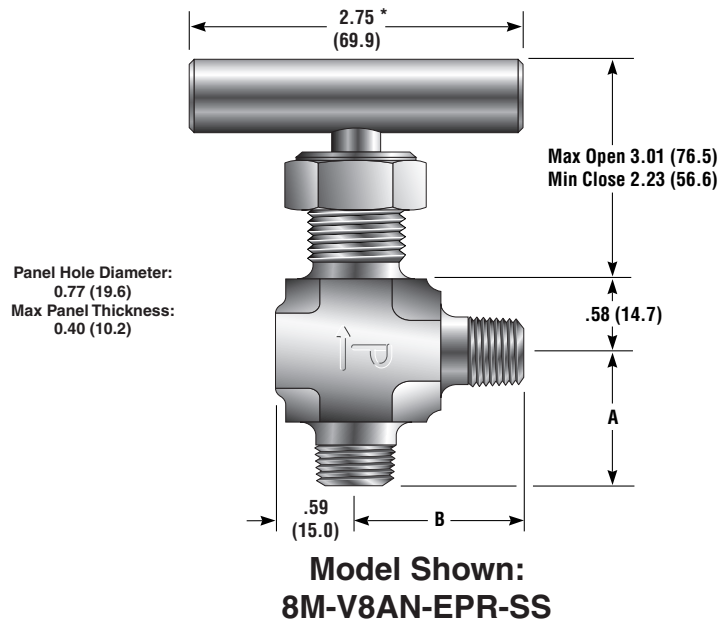
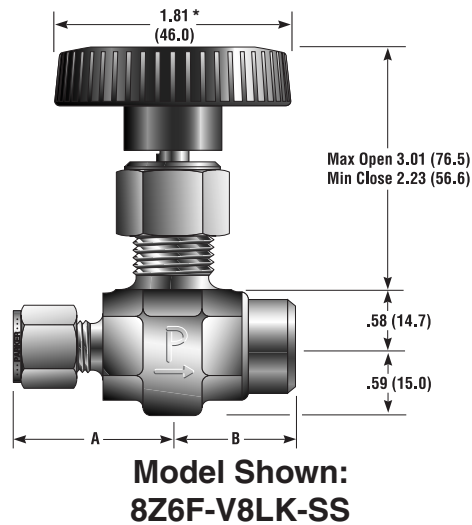
Model Shown: 4Z-V4LK-SS

Materials of Construction (with PTFE Packing)



Model Shown: 4Z-V4LK-SS

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			
		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	
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.

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 Propylene Rubber		M		Monel® Alloy 400			
2F	4M	6Z	M6Z									B		Brass			
2M	4W	M3A	M8A														
2Z	4Z	M3Z	M8Z														
4A	6A	8A	M10A	V6													
4F	6M	8Z	M10Z														
4M	6W	M8A	M12A														
4Z	6Z	M8Z	M12Z														
4F	6Z	8Z	M12A	V8													
6A	8A	M10A	M12Z														
6F	8M	M10Z															
8F	10A	12A		V12													
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 Stem Type-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**