



Needle Valves

Catalog 4110-NV

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

Introduction

Parker Rising Plug and Gauge/Root Valves are available with a variety of seat and seal materials. They are screwed bonnet designs featuring bonnet lock plates. The PV and PVG Series of valves provide a straight-through flow path in two orifice sizes. The valves utilize a non-wetted upper stem and a non-rotating lower stem in conjunction with a tapered seat for positive shut-off and long seat life, even in particulated media.

Features

- ▶ Bi-directional flow
- ▶ Roddable, straight through flow path
- ▶ Bonnet lock plate resists accidental bonnet disengagement
- ▶ Stem dust seal helps protect stem from external contamination
- ▶ Inlet side optional outlet – PVG 1/4" Female NPT – PVG 1/2" Female NPT
- ▶ Rugged 316 stainless steel barstock construction
- ▶ Panel mounting option
- ▶ Gauge port option
- ▶ 100% factory tested

Specifications

Pressure Rating:

Acetal Seat (DE): 6000 psig (414 bar) CWP
 PEEK Seat (PK): 6000 psig (414 bar) CWP
 PCTFE Seat (K): 2200 psig (152 bar) CWP
 PFA Seat (PFA): 750 psig (52 bar) CWP

Temperature Rating:

Seats –

Acetal:
 -20°F to 250°F (-29°C to 121°C)
 PEEK and PFA:
 -20°F to 400°F (-29°C to 204°C)
 PCTFE:
 -20°F to 200°F (-29°C to 93°C)

Stem Seals –

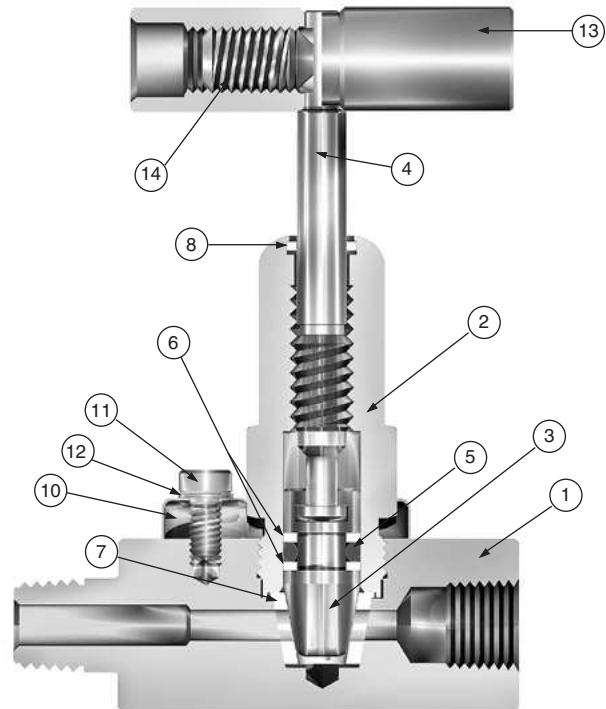
Nitrile Rubber (BN), Silicone Rubber (SI), and Ethylene Propylene Rubber (EPR):
 -20°F to 250°F (-29°C to 121°C)
 Fluorocarbon Rubber (V):
 -20°F to 400°F (-29°C to 204°C)
 Highly Fluorinated Fluorocarbon Rubber (KZ):
 -20°F to 200°F (-29°C to 93°C)

Flow Data

PV4: $C_V = 0.95$; $x_T = 0.43$; Orifice = 0.188" (4.8mm)
 PV8: $C_V = 2.01$; $x_T = 0.33$; Orifice = 0.250" (6.4mm)

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

Materials of Construction

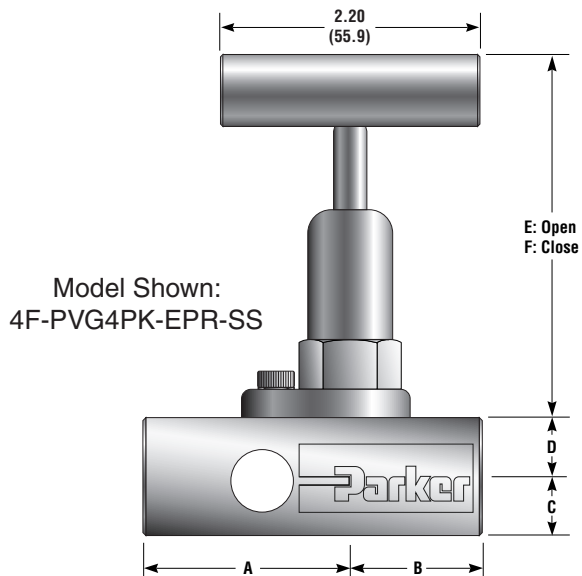
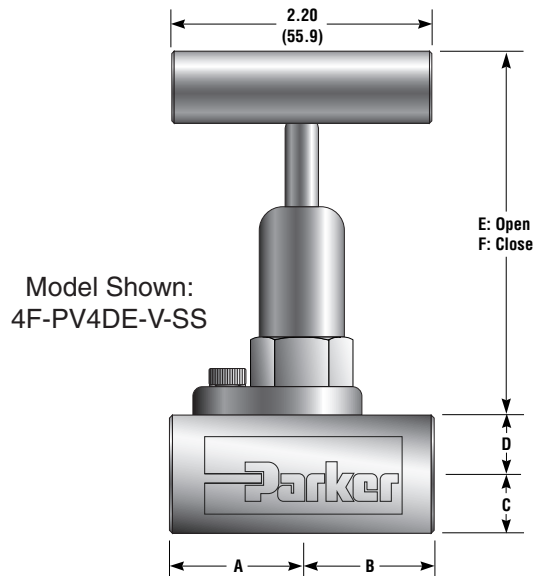


**Model Shown:
4M4F-PV4DE-BN-SS**

Item #	Description	Material
1	Body	ASTM A 479 Type 316
2	Bonnet	ASTM A 479 Type 316
3	Lower Stem	ASTM A 276 Type 316
4	Upper Stem	ASTM A 564 Type 316
5	Stem Seal*	Fluorocarbon Rubber
6	Back-up Rings	PTFE
7	Seat*	Acetal
8	Dust Seal	PTFE
9	Seat Pin (not shown)	Stainless Steel
10	Lock Plate	Stainless Steel
11	Lock Plate Screw	Stainless Steel
12	Lock Washer	Stainless Steel
13	Handle	Stainless Steel
14	Handle Screw	Stainless Steel

* Optional elastomeric O-ring stem seals and polymer seat materials are available - See How to Order.
 Lubrication: Perfluorinated polyether

PV Series Rising Stem Plug Valves



Dimensions

() Denotes dimensions in millimeters

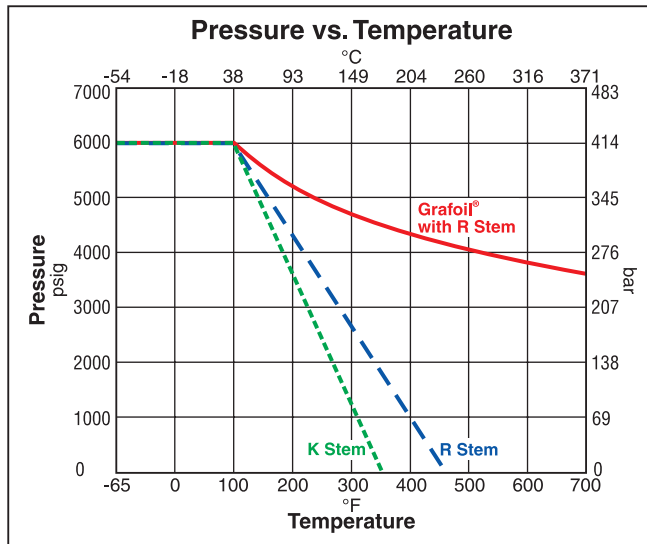
Basic Part Number	End Connection		Dimensions											
	Inlet (Port 1)	Outlet (Port 2)	A†		B†		C		D		E		F	
			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
4A-PV4	1/4" Compression A-LOK®	1/4" Compression A-LOK®	1.73	43.9	1.73	43.9	0.50	12.7	0.50	12.7	3.04	77.2	2.93	74.4
4F-PV4	1/4" Female NPT	1/4" 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
4F-PVG4	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
4M4F-PV4	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
4Z-PV4	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
6A-PV4	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
6Z-PV4	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
8M4F-PV4	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
8M4F-PVG4	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
6M6F-PVG8	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
8A-PV8	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
8F-PV8	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
8M8F-PV8	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
8M8F-PVG8	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
8Z-PV8	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
12M8F-PV8	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.

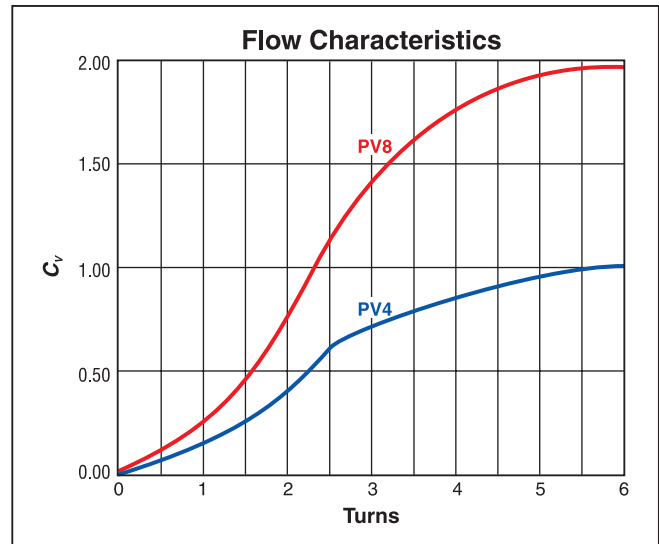
Dimensions in inches/millimeters are for reference only, subject to change.

PV

Pressure vs. Temperature



Flow Characteristics



How to Order

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

PV

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 a PV4 Series rising stem plug valve equipped with 1/4" CPI™ compression inlet and outlet ports, a PCTFE seat, Nitrile stem seals, and stainless steel construction.

Example 2, below, describes a PVG4 Series rising stem plug valve with 1/4" gauge ports equipped with a 1/4" Male NPT inlet port and 1/4" Female NPT outlet port, an acetal seat, fluorocarbon stem seals, and stainless steel construction with panel mounting option.

Example 1: 4Z-PV4K-BN-SS (shown in the part number blocks below)

Example 2: 4M-PVG4DE-V-SSP

4Z		PV4		K		BN		SS			
Inlet Port*		Outlet Port*		Valve Series		Seat Type		Stem Seal Material		Body Material	
Inlet Port*		Outlet Port*		Valve Series		Seat Type		Stem Seal		Body Material	
4A	4M	6A	8M	PV4	DE	Acetal	V	Fluorocarbon	SS	Stainless Steel	
4F	4Z	6Z		PVG4	K	PCTFE		Rubber	SSP	Stainless Steel with Panel Mounting Option	
6M	8A	8Z		PV8	PK	PEEK	BN	Nitrile Rubber			
6F	8F	12M		PVG8	PFA	PFA	SI	Silicone Rubber			
							EPR	Ethylene Propylene Rubber			
							KZ	Highly Fluorinated Fluorocarbon Rubber			

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