

Rising Stem Plug Valves (PV Series)

*Catalog 4110-PV
Revised, July 2001*



PV Series Rising Stem Plug Valves

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

- Roddable, straight through flow path
- Bonnet lock plate resists accidental bonnet disengagement
- Stem dust seal helps protect stem from external contamination
- 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 -

Buna-N 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):

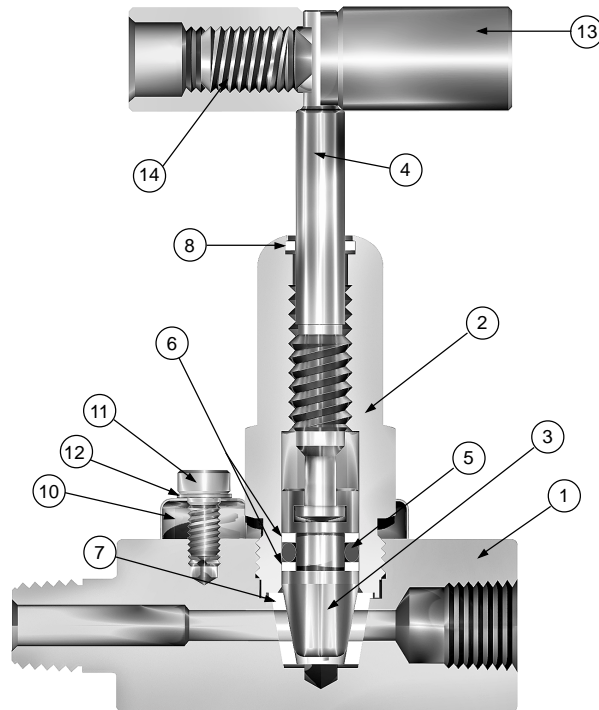
-20 °F to 200 °F (-29 °C to 93 °C)

Flow Data

PV4: $C_v = 0.95$; $x_T = 0.43$; Orifice = 0.188" (4.8 mm)

PV8: $C_v = 2.01$; $x_T = 0.33$; Orifice = 0.250" (6.4 mm)

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



Model Shown: 4M4F-PV4DE-BN-SS

Materials of Construction

| 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: Graphite filled hydrocarbon

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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 * - PV4 K - BN - SS
 ① ② ③ ④ ⑤ ⑥
 Inlet Outlet Valve Seat Stem Body
 Port Port Series Type Seal Material

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

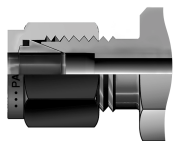
Example: 4M 4F - PVG4 DE - V - SSP
 ① ② ③ ④ ⑤ ⑥
 Inlet Outlet Valve Seat Stem Body
 Port Port Series Type Seal Material

Describes a PVG4 Series rising stem plug valve with 1/4" gauge ports equipped with a 1/4" MNPT inlet port and 1/4" FNPT outlet port, an acetal seat, fluorocarbon stem seals, and stainless steel construction with panel mounting option.

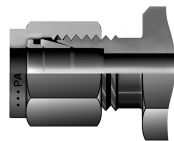
| ① Inlet Port | ② Outlet Port | ③ Valve Series | ④ Seat Material | ⑤ Stem Seal Material | ⑥ Body Material |
|-------------------------------|---------------------|----------------------|--|---|--|
| 4A, 4F, 4M, 4Z, 6A, 6Z, 8M | | PV4 PVG4 | DE - Acetal K - PCTFE PK - PEEK PFA - PFA | V - Fluorocarbon Rubber BN - Buna-N Rubber SI - Silicone Rubber EPR - Ethylene Propylene Rubber KZ - Highly Fluorinated Fluorocarbon Rubber | SS - Stainless Steel SSP - Stainless Steel with Panel Mounting Option |
| 6M, 6F, 8A 8F, 8Z, 12M | | PV8 PVG8 | | | |

Available End Connections

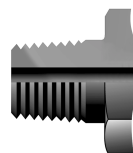
Z - One ferrule CPI™
compression port



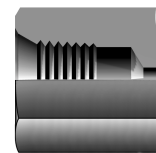
A - Two ferrule A-LOK®
compression port



M - ANSI/ASME B1.20.1
External pipe threads



F - ANSI/ASME B1.20.1
Internal pipe threads



⚠ WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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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.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

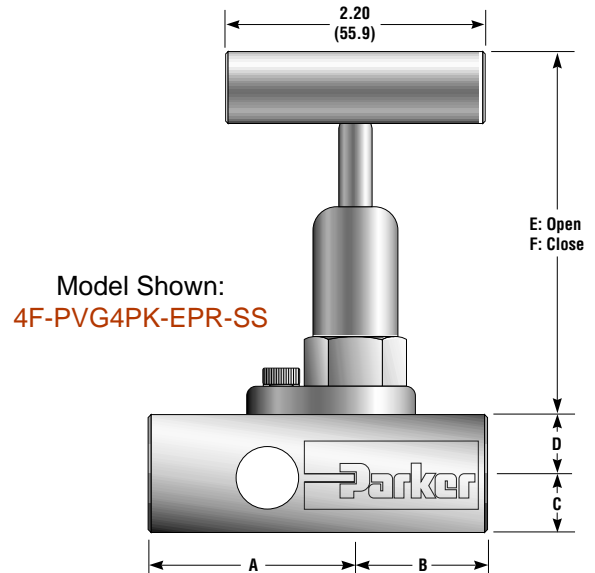
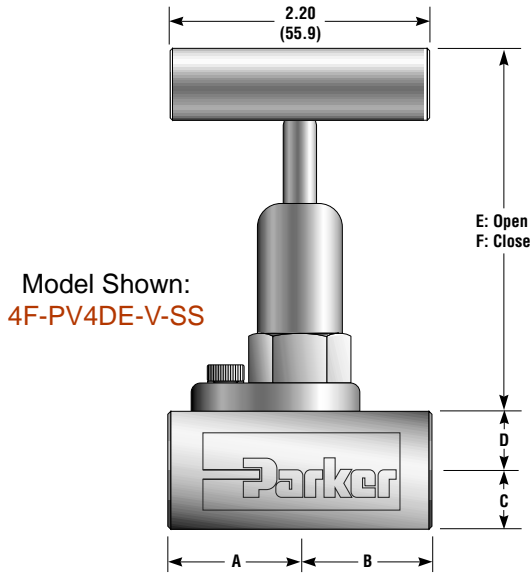
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11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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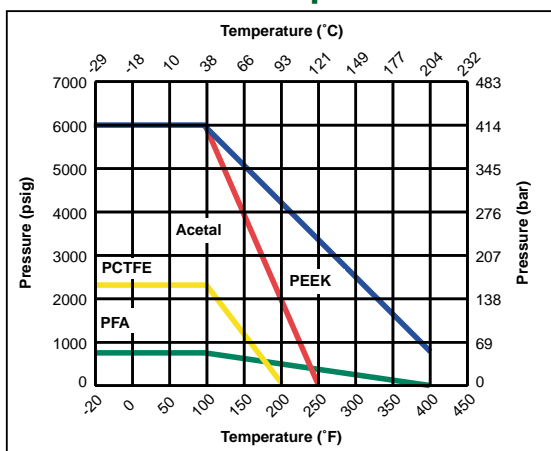
Dimensions

() Denotes dimensions in millimeters

| Basic Part Number | End Connections | | 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 |

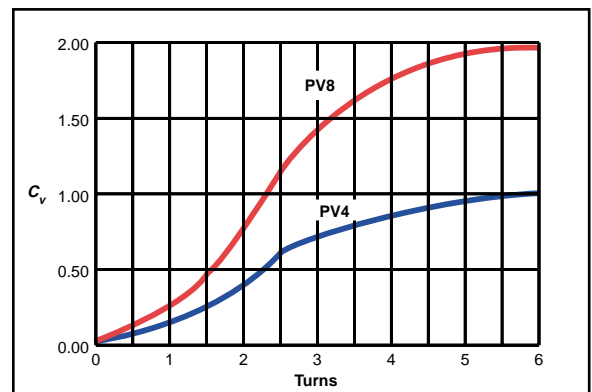
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Pressure vs. Temperature



Note: To determine MPa, multiply bar by 0.1

Flow Characteristics



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



Catalog 4110-PV, 30M, 07/01

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