

## PV Series Rising Stem Plug Valve



### Maximum Allowable Working Pressure and Temperature

Valve Seat Material	Maximum Pressure Rating	Maximum Pressure Rating at Maximum Temperature
Acetal	6000 psig at 100 °F 15.2 MPa at 38 °C	1500 psig at 250° F 10.3 MPa at 121 °C
PCTFE	2200 psig at 100° F 15.2 MPa at 381 °C	100 psig at 200 °F 0.68 MPa at 931 °C
PTFE	750 psig at 100 °F 5.17 MPa at 38 °C	100 psig at 400 °F 0.68 MPa at 204 °C
PEEK	6000 psig at 100 °F 41.4 MPa at 38 °C	1000 psig at 400 °F 6.89 MPa at 204 °C

Always consult your authorized Parker representative if questions arise.

Figure 1: PV Series Needle Valve Cross Sectional View

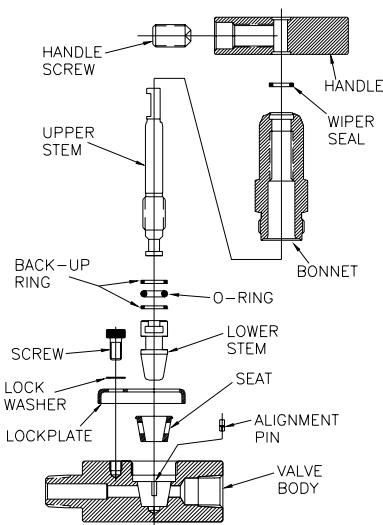
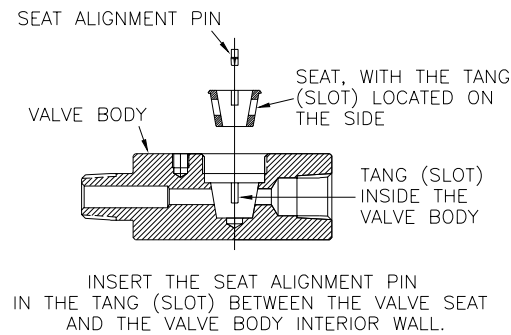


Figure 2: PV Series Needle Valve Exploded View

## DISASSEMBLY

**WARNING:** MAKE CERTAIN THE SYSTEM IN WHICH THE VALVE IS INSTALLED IS DRAINED AND/OR EXHAUSTED OF ALL PRESSURE BEFORE STARTING VALVE REMOVAL OR DISASSEMBLY. FAILURE TO DO SO CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

1. Verify that the Rising Stem Plug Valve Maintenance Kit being used is appropriate for the valve's size, Seat material, Stem packing configuration, and service requirements. Always contact your authorized Parker representative if any questions arise.
2. Remove the Lockplate by turning the Hex Socket Cap Screw counter-clockwise with a 5/32 inch hex-socket wrench.
3. Remove the Bonnet by turning counter-clockwise with a 3/4 inch hex wrench.
4. Gently remove the Stem assembly from the Bonnet by turning the Stem clockwise, while holding the Bonnet stationary.
5. Disengage the Plug from the Stem. Discard the Plug, O-Ring and the Backup Rings.
6. Carefully remove the Seat using a hex allen wrench. Place the tip of the hex allen wrench into the Valve Seat orifice. Use the hex allen wrench to pry the Seat up from the Valve Body, exercising care not to scratch or damage the tapered sealing surface.
7. The following only applies to if an optional Seat is being replaced by an Acetal Seat. Remove the Seat Alignment Pin from the Body.



**Figure 3: Installation of Seat Alignment Pin**  
(This operation applies only if an optional Seat is being replaced by a (standard) Acetal seat.)

## REASSEMBLY

1. Make certain all parts are free of dirt or other contamination before starting reassembly of the Valve.
2. Apply a moderate amount of lubricant to the Plug O-Ring and the two (2) Backup Rings, as consistent with the valve's service requirements. Always consult your authorized Parker representative if questions arise.
3. The Plug supplied with the Maintenance Kit should have the following three (3) packing components, with the first item located directly above the conical end:  
Back-up Ring // O-Ring // Back-up Ring
4. Inspect the replacement Plug to insure the packing components have the proper assembly sequence.
5. Apply a uniform coat of lubricant to both the inside and outside of the Seat, as consistent with the valve's service requirements. Always consult your authorized Parker representative if questions arise.
6. This step applies only if an optional Seat is being installed. Proceed to step 7 for Valves with the (standard) Acetal Seat.  
Place the Seat Alignment Pin in the tang slot located in the Body, as illustrated in Figure 3.
7. Properly install the Seat inside the Body.
8. Apply a moderate amount of lubricant to the below listed areas of the following components, as consistent with the valve's service requirements. Always consult your authorized Parker representative if questions arise.  
Stem threads // Stem attachment joint // Bonnet exterior threads
9. Join the Stem and Plug by "hooking" the Plug into the Stem attachment joint.
10. Insert the Stem assembly inside the Bonnet, such that the Stem slides through the Bonnet's Wiper Seal. A small amount of hand-applied force may be required to accomplish this.
11. Complete the installation of the Stem inside the Bonnet by rotating the Bonnet counter clockwise until finger-tight, while holding the upper portion of the Stem stationary.
12. Lower the combined Bonnet and Stem assembly into the Body.
13. Secure the Bonnet assembly by turning clockwise using a 3/4 inch hex torque wrench and tightening to 45 Ft-lbs.
14. Place the Lockplate over the Bonnet and Body assembly. Position the Lockplate such that the Hex Socket Cap Screw will pass thru the slot in the Lockplate, and be aligned with the tapped hole in the Body. Center the Lockplate on the Body, and try to minimize the amount of overhang of the Lockplate with respect to the Body.
15. Position the Lockwasher over the Hex Socket Cap Screw and install the Lockplate by turning the Hex Socket Cap Screw clockwise to 40 In-lbs. with a 5/32 inch hex-socket torque wrench.

## VALVE CONNECTOR MAKE-UP INSTRUCTIONS

### MALE AND FEMALE PIPE PORTS

Wrench flats are provided on the Valve Body. It is recommended a smooth-jawed wrench or vise be used to grip the Valve Body.

1. On the male threaded part of the connection, apply a high quality pipe joint compound or PTFE tape made for this purpose. When PTFE tape is used, it is recommended two full turns of tape be applied. PTFE tape should not be overhanging or covering the first thread
2. Engage the Valve and the other component part together, until hand-tight.
3. With a proper wrench, holding both the Valve and the component part, continue to tighten to achieve a leak-tight joint.

### ULTRASEAL CONNECTIONS

1. Insert the proper O-Ring into the UltraSeal fitting's O-Ring groove. Position the UltraSeal gland sealing face against the O-Ring, and then advance the Nut to a finger-tight position.
2. A positive seal is obtained by advancing the Nut no less than 1/4 turn from the finger-tight position. Proper UltraSeal make-up is achieved when a sharp rise in required application torque occurs, which indicates proper seal face contact and O-Ring seal compression into the UltraSeal groove.

### VACUSEAL CONNECTIONS

1. A positive seal is obtained by advancing the Nut 1/8 turn from the finger-tight position.
2. A new gasket should be installed upon each fitting re-make to insure system pressure integrity.

### TUBE FITTING CONNECTIONS

1. Insert the tube into the Valve port until the tube bottoms out in the Valve Body. Care should be exercised to insure the tube is properly aligned with the Valve Body and port.
2. Normal make-up for US Customary port sizes 1 thru 3 (1/16 thru 3/16 inch) and SI port sizes 2 thru 4 (2 thru 4 mm) is 3/4 turn from finger tight. Normal make-up for US Customary port sizes 4 thru 16 (1/4 thru 1 inch) and SI port sizes 5 thru 25 (5 thru 25 mm) is 1 1/4 turn from finger tight. For larger port sizes consult Parker Ferrule Presetting Tool Instructions.

**PLEASE FOLLOW THE ABOVE DIRECTIONS FOR COUNTING THE NUMBER OF TURNS FOR PROPER FITTING MAKE-UP. DO NOT MAKE-UP TUBE FITTINGS BY TORQUE OR "FEEL". VARIABLES SUCH AS TUBING AND FITTING TOLERANCES, TUBE WALL THICKNESS, AND THE LUBRICITY OF NUT LUBRICANTS CAN RESULT IN AN IMPROPERLY ASSEMBLED TUBE FITTING CONNECTION.**

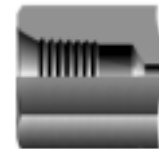
**A** -Two ferrule A-LOK®  
compression port



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



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



**V** -VacuSeal face  
seal port



**Q** -UltraSeal face  
seal port



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



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## WARNING

**FAILURE OR 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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**ALL PARKER VALVES MUST PASS A RIGID OPERATIONAL AND LEAKAGE TEST BEFORE LEAVING THE FACTORY. IT IS RECOMMENDED AFTER ANY REASSEMBLY, THE VALVE SHOULD BE TESTED BY THE USER FOR OPERATION AND LEAKAGE. IF THESE INSTRUCTIONS ARE NOT FULLY COMPLIED WITH, THE REPAIRED PRODUCT MAY FAIL AND CAUSE DAMAGE TO PROPERTY OR INJURY TO PERSONS. PARKER HANNIFIN CANNOT ASSUME RESPONSIBILITY FOR PERFORMANCE OF A CUSTOMER SERVICED VALVE.**

