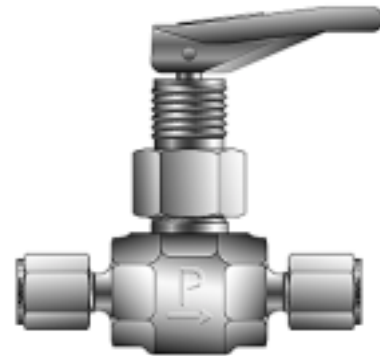


VQ Series Needle Valve



MAXIMUM WORKING PRESSURE AND TEMPERATURE

Valve Size	Max Pressure and Temperature	Max Temperature and Pressure
V4Q	300 Psig at 70 °F 2.1 MPa at 21 °C	300 Psig at 200 °F 2.1 MPa at 93 °C
V6Q	300 Psig at 70 °F 2.1 MPa at 21 °C	300 Psig at 200 °F 2.1 MPa at 93 °C

Always consult your authorized Parker representative if questions arise. The arrow on the Valve Body indicates the normal direction of flow.

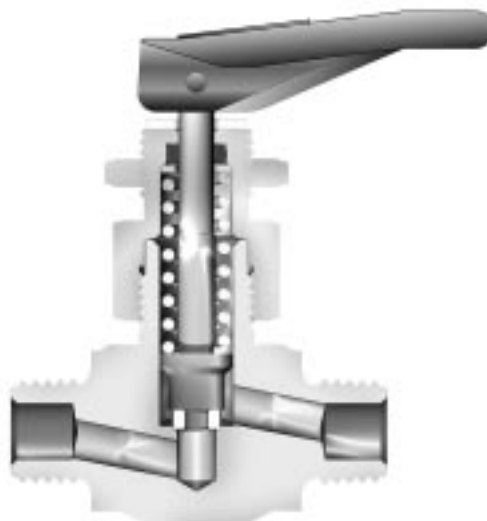


Figure 1: VQ Series Toggle Needle Valve Cross Sectional View

PANEL MOUNTED VALVES

The panel must have a through-hole of the proper diameter as listed below:

V4Q Valves 33/64 inch (13.1 mm)

V6Q Valves 41/64 inch (16.3 mm)

The maximum panel thickness is 1/4 inch (6.4 mm). When the Valve is to be mounted to a thin panel, a spacer (or washer) may be necessary to permit full Panel Nut engagement on the Valve. It is not necessary to disassemble the Valve for panel mounting.

1. Actuate the Handle up to the “open” position, such that it is parallel with the Valve Stem.
2. Insert the Valve through the hole in the panel, and assemble the Panel Nut onto the Cap until the Panel Nut is finger-tight.
3. Tighten the Panel Nut with the correct sized wrench as specified below:
V4Q Valves 11/16 inch hex wrench
V6Q Valves 13/16 inch hex wrench
4. Actuate the Handle back to the “closed” position, such that it is at right-angles with respect to the Valve Stem.

USE OF THE (OPTIONAL) HANDLE POSITIONER

Assemble the positioner in the same manner as the Panel Nut. The positioner intentionally fits tightly on the valve and should be wrench tightened with the proper sized wrench as noted below:

V4Q Valves 5/8 inch hex wrench

V6Q Valves 3/4 inch hex wrench

When using the handle positioner and a panel mounting valve, the maximum panel thickness is 1/8 inch (3.2 mm). Whenever assembling the handle positioner, make certain it is screwed onto the valve far enough to allow the valve to fully close. This is evident by a visible gap between the handle and the slot in the positioner, and the lever handle will feel loose.

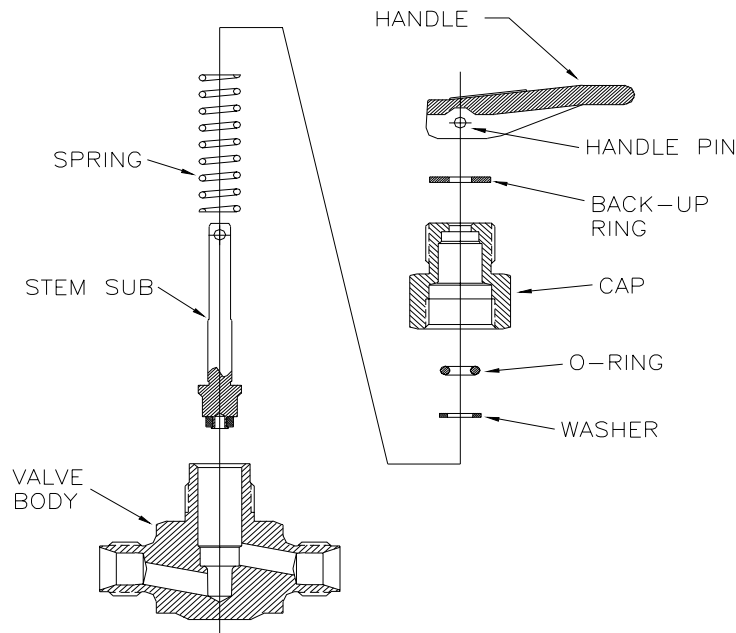


Figure 2: VQ Series Toggle Needle Valve Exploded View

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 Toggle Needle Valve Maintenance Kit being used is appropriate for the Valve's size, Stem Seat, and service requirements. Always contact your authorized Parker representative if any questions arise.
2. Open the Valve by actuating the Handle such that it is parallel to the Valve Stem.
3. Remove the Panel Nut (if applicable) by turning counter-clockwise with the appropriate wrench:
V4Q 11/16 inch hex wrench
V6Q 3/16 inch hex wrench
4. Remove the Valve from its mounting panel (if applicable).
5. Close the valve, then remove and discard the Handle Spring Pin by lightly tapping the Spring Pin with a 3/64 inch diameter punch. Gently remove the Handle by pulling it from the Stem.
6. Refer to Figure 2. Remove the Handle Washer located directly above the Cap. Set this piece aside for later reassembly.
7. Remove the Cap by turning counter-clockwise with the appropriate wrench as noted below:
V4Q 5/8 inch hex wrench
V6Q 3/4 inch hex wrench
8. Gently remove the Stem Sub-Assembly and components from the Cap.
9. Remove the Stem Washer and Spring. Discard the Stem Washer.
10. Remove and discard the Stem O-Ring.
11. Discard the Stem Sub-Assembly.

REASSEMBLY

1. Make certain all parts are free of dirt or other contamination before starting reassembly of the Valve.
 2. Apply a liberal amount of lubricant, as consistent with the valve's service requirements, to the Stem O-Ring. Always contact your authorized Parker representative if questions arise.
 3. Refer to Figure 2. Stack the components listed below on the Stem Sub-Assembly in the following order, with the first item being placed directly above the landing on the Stem.
 - A) Spring
 - B) Stem Washer
 - C) O-Ring, lubricated.
 4. Gently insert the modified Stem Sub-Assembly (from Step 3) through the stem hole in the Cap until the modified Stem Sub-Assembly has bottomed-out in the Cap. **NOTE:** Exercise extreme care not to damage the O-Ring.
 5. Install the Cap on the Body by turning clockwise until two or three threads are engaged, and torque as follows:

Valve Size	Brass Valve Bodies	Stainless Steel Bodies
V4Q	100 in-lbs (11.3 N-m)	175 in-lbs (19.7 N-m)
V6Q	100 in-lbs (11.3 N-m)	300 in-lbs ((33.8 N-m)
 6. Place the Handle Washer over the Stem.
 7. Install the Handle on the Stem at right-angles with respect to the Stem. Align the Handle's pin-attachment hole with the corresponding hole in the Stem.
 8. Gently install the Spring Pin in the Handle's pin-attachment hole.
- NOTE:** A minimum gap of 1/32 inch (0.03125) must exist between the Handle and Handle Washer.
9. Actuate the Toggle Valve Handle through at least one (1) "Open and Close" cycle to verify proper operation of the Handle.
 10. Rebuild the Toggle Valve if it exhibits rough or irregular Handle operation. Always contact your authorized Parker representative if questions arise.
 11. Place the Valve in its mounting panel hole, if applicable, by turning the Panel Nut clockwise with the appropriate wrench.
V4Q 11/16 inch hex wrench
V6Q 13/16 inch hex 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



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.

