# Tankless Water Heater Valve Service Kit

**Tools Required:**

- Adjustable wrenches/pliers
- For threaded connections: thread tape or sealant
- For sweat connections: pipe cutter, deburring tool, flux, solder, and a torch
- For F1807 PEX connections: stainless steel clamps or copper crimp rings and the appropriate tool to compress the connection
- For press connections: pipe cutter, deburing tool, and a press tool

## ISOLATION VALVE INSTALLATION

Install in accordance with local plumbing code. If these instructions conflict with code requirements, local code shall take precedence.

1. Remove the COLD water isolation inlet valve (identified by the blue handles) from the box. Disassemble the union connection by loosening the union nut and removing the tailpiece with gasket.

   **NOTE**: the union nut is permanently mounted to the valve body. **See Photo A**

2. Apply the thread sealant recommended by the water heater manufacturer to the water heater's COLD water inlet, then thread and tighten the FNPT tailpiece to the inlet.

3. Reconnect the union nut to the now-installed tailpiece. Confirm the gasket is still in place. Brace the tailpiece with one wrench and tighten the union nut with another wrench.

4. Connect the cold water isolation valve's inlet to the cold water supply line.

   Make sure to position the valve in a way that the handles are accessible for operation without any obstruction. This will typically result in the drain valve's capped hose threads facing outward toward the user. **See Photo B.**

   **Threaded:** Apply the manufacturer's recommended tape or thread sealant to the pipe nipple's external threads.

   **Sweat:** Square-cut and carefully deburr the connecting copper tube. Use the appropriate flux and solder and verify that the isolation valves are in the open position before sweating onto the copper tubing.

   **F1807 PEX:** Select the correct stainless steel clamp or copper crimp ring and use the appropriate tool to compress the connection. Follow the tool manufacturer's instructions for making the connection.

   **Press:** Square-cut and carefully deburr the connecting copper tube. Check that the fitting o-ring is present and properly seated. Measure and mark the correct insertion depth on the copper tube (7/8" insertion depth for 3/4" and 1" pipe). Insert the fitting onto the tube up to the insertion mark and make the press connection according to the tool manufacturer's instructions.

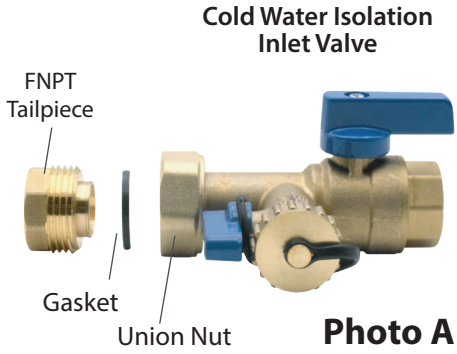



**Photo A**

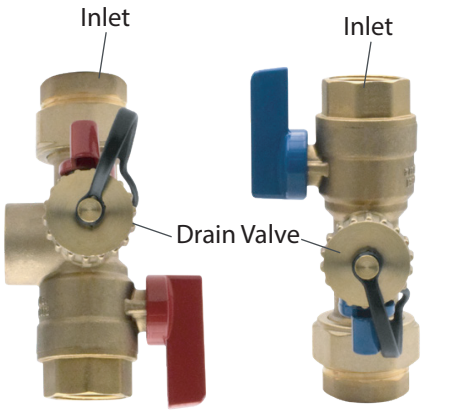



**Photo B**

5. Remove the HOT water isolation outlet valve assembly (identified by the red handles) and the pressure relief valve (PRV).

   Only some kits come with a pressure relief valve.

   **NOTE**: Check local code requirements for adding a relief valve.

   **See Photo C.**

6. To install the PRV into the hot water isolation outlet valve, apply thread sealant to the male threads on the PRV in accordance with the water heater manufacturer's or local code requirements. Install and tighten the PRV into the 3/4" FNPT connection located next to the drain valve. Make sure to position the wrench's jaws on the PRV's wrench flats or irreparable damage could occur. **IMPORTANT**: Be careful not to overtighten the relief valve. Do not tighten more than two turns past hand tightened.

   Position the outlet of the PRV in a downward position. Attach a vertical discharge pipe to the PRV outlet to drain the PRV water.

7. Repeat steps 1 through 4 to install the HOT water isolation outlet valve.

   *__IMPORTANT__: there should NOT be a shut off valve located between the tankless water heater and the pressure relief valve.

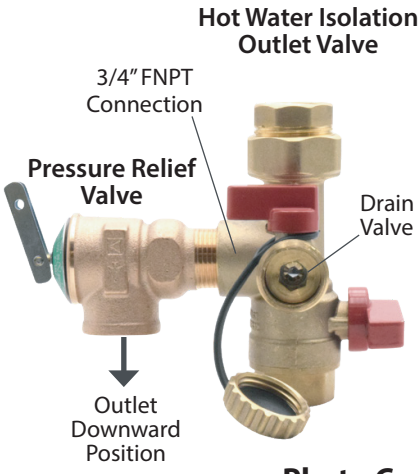



**Photo C**

## RECIRCULATION VALVE INSTALLATION*

*Furnished in select Jones Stephens installation kits

1. Remove the recirculation valve (identified by the orange handles) from the box. Disassemble the union connection by loosening the union nut and removing the tailpiece with gasket.

   **NOTE**: the union nut is permanently mounted to the valve body.

2. Apply the thread sealant recommended by the water heater manufacturer to the recirculation valve inlet, then thread and tighten the FNPT tailpiece to the inlet.

3. Reconnect the union nut to the now-installed tailpiece. Confirm the gasket is still in place. Brace the tailpiece with one wrench and tighten the union nut with another wrench.

4. Connect the recirculation valve's inlet to the recirculation line.

   Make sure to position the valve in a way that the handles are accessible for operation without any obstruction. This will typically result in the drain valve's capped hose threads facing outward toward the user.

   **Threaded:** Apply the manufacturer's recommended tape or thread sealant to the pipe nipple's external threads.

## GAS CONNECTOR, GAS BALL VALVE, AND SEDIMENT TRAP INSTALLATION*

*Furnished in select Jones Stephens installation kits

Jones Stephens highly recommends contacting a gas fitting specialist to install the gas connection.

**WARNING: Gases can be ignited by a spark or flame which may result in property damage, personal injury and/or death. Do NOT reuse connectors or join connectors together. Turn off the gas supply at a gas ball valve near the appliance. If a shut off valve is not near the appliance, then the gas must be shut off at a main valve.**

1. Clean all male and female pipe threads with a wire brush. Ensure that connections are free of any dirt or debris. Apply the appropriate thread sealant or gas-approved yellow thread tape to the male pipe threads.

2. If installing a sediment trap: (If not, proceed to step 3).
   - First attach a gas ball valve to the gas supply line. See drawing below.
   - Position the sediment trap in a vertical position, with the arrow near the capped end pointing down. Attach the top of the sediment trap to the gas ball valve.
   - Last, attach the branch tee of the sediment trap to the gas connector. (Proceed to step 4).

3. If just installing the gas connector to the gas supply line, thread the adapter fitting onto the gas supply valve. Tighten with a wrench.

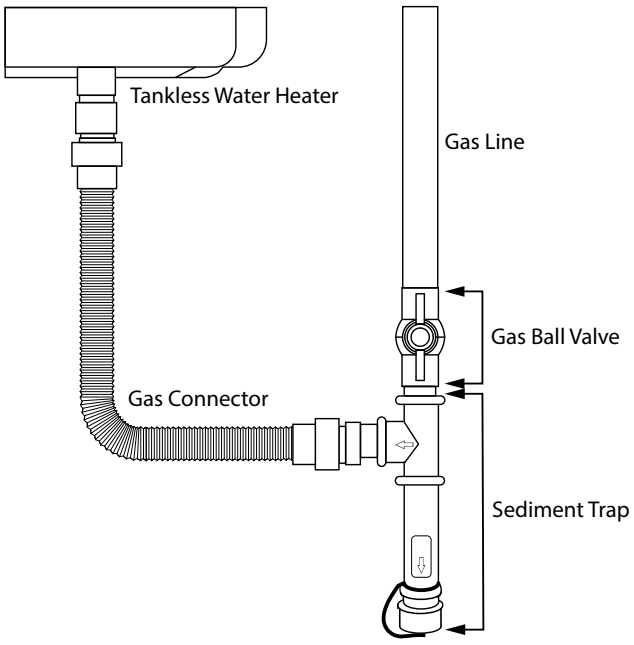
4. Thread the other end of the gas supply line to the water heater. If the connection is flared, do not use thread sealant or tape on the flared ends of the adapter. Hand tighten the flared connection until it feels snug. Then, using two wrenches, tighten the connection a quarter turn. Be careful not to overtighten the connection as it can damage the flare or fitting. If the connection is not flared, use sealant. Do not stretch or kink the gas connector.

5. Do not turn on the heater until all of the connections have been leak tested. Do not use matches or flames to test for leaks. Use a clear water and soap solution or a liquid designed specifically for leak detection to test for leaks.

6. To purge the air from the gas supply line, turn on the gas supply and then turn on another gas appliance such as a stove. This will purge any air from the gas supply lines.

   **WARNING:** Do not turn on the tankless water heater until the water and gas supply lines have been bled and all of the connections have been leak tested. If any gas leaks are detected, retighten and retest for leaks. Wait at least 10 minutes for any gas vapors to dissipate before turning on the tankless water heater.

   **WARNING: Please install in accordance with all local code requirements.**



## START-UP AND NORMAL OPERATION

1. **CAUTION!** Before pressurizing the system for service, make sure that the drain valves on both the HOT and COLD service valves are put into the fully CLOSED position.

   These are closed by turning the smaller red and blue lever handles clockwise. The drain valves' lever handles should be positioned perpendicular to the body of the drain valves.

   Remove the hose caps and visually inspect the drain valve outlets to verify that the balls are in the closed positions. You should be able to see the chrome plated face of the closed ball assembly.
   **See Photo D**.

2. Replace the hose caps and hand tighten only.
3. To purge the air from the water line, turn on a faucet (at the furthest point from the appliance) and then turn on the water supply. The valve should be in the fully open position to ensure proper operation. When the water flows freely (without any air in the line) then the system has been purged and you can turn off the water.
   **See Photo E.**
4. **CAUTION!** After the valves have been placed in service and before unthreading the hose caps, make sure that the drain valves are in the CLOSED position (see step 1). Unthread slowly to allow any possible built-up pressure to disperse. After removing the cap, inspect the cap gasket for any damage. Replace if necessary.

   Both drain valves must remain in the FULLY CLOSED position under normal operating conditions. NEVER rely on the hose cap gasket to safely keep the primary seal when the valves are in service.
5. Isolation valve handles should be in the FULLY OPEN position under normal operating conditions. Both red and blue handles should be parallel to the valve body and piping.

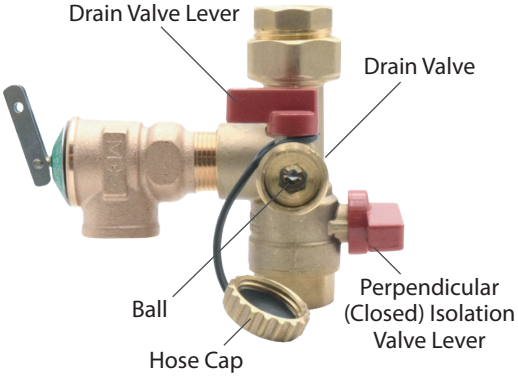



**Photo D**

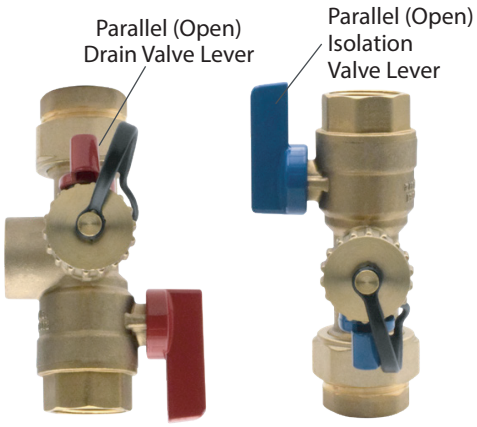



**Photo E**

## DRAIN/FLUSH OPERATION

**CAUTION! Hot water may be present in the system. Use extreme caution when servicing the tankless water heater.**

1. Please refer to the water heater owner's manual for specific use instructions.
2. Disconnect the power supply to the tankless water heater.
3. Close the valve handles on the cold and hot water valves. This will isolate the incoming water to the heater and the hot water from the piping going to the home.
4. The purge valve on the COLD side will be used as the flushing inlet and the purge valve on the HOT be the flushing outlet. Ensure that the valves are off, before removing the purge valve caps.
5. Slowly open the drain caps, ensuring that the rubber gaskets stay in place.
6. Follow the manufacturer's guide for attachment of the drain lines and specifics for flushing the water heater.
7. To open the valves, rotate the handles until they are parallel with the valve body.
8. When the flushing process is complete and before the drain lines are removed, close the valves.
9. Remove the drain lines and reinstall the purge caps. Hand tighten only.