

Tankless Water Heater Installation Kit

INSTALLATION INSTRUCTIONS

As a world leader in gas and water products, BrassCraft's tankless water heater installation kits simplify the appliance installation with fewer connections and a clean, professional finish. Featuring independent 1/4 turn water control, BrassCraft service valves make it simple to service and test the appliance. When it comes to mastering a professional installation with high quality components, BrassCraft is a brand you can trust.

⚠ CAUTION! DO NOT INSTALL THIS PRODUCT UNTIL YOU READ AND UNDERSTAND ALL INSTRUCTIONS. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY, PROPERTY DAMAGE OR PRODUCT FAILURE. MANUFACTURER ASSUMES NO RESPONSIBILITY FOR FAILURE DUE TO IMPROPER INSTALLATION.

⚠ WARNING! Follow all installation instructions of the tankless water heater manufacturer when installing or servicing the water heater and its connections.

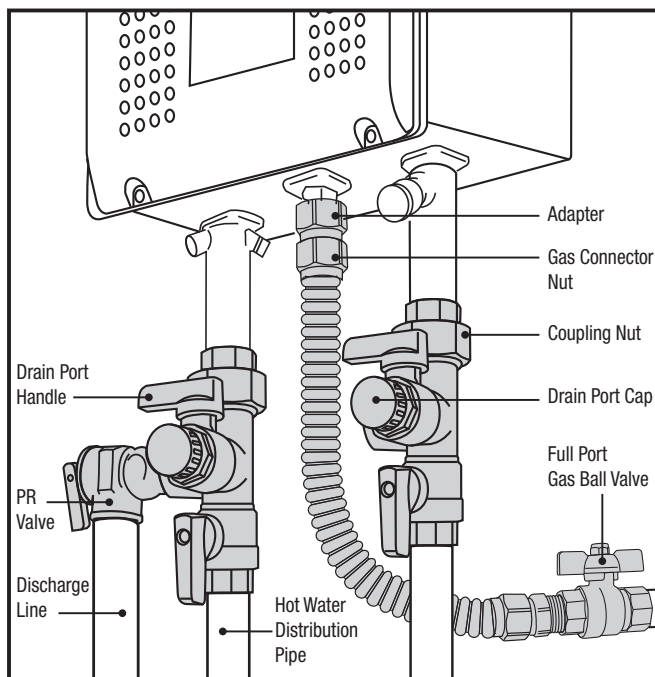
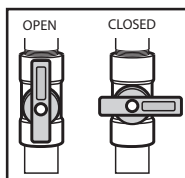
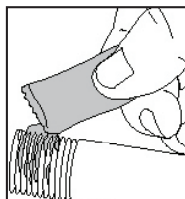
⚠ WARNING! Expansion tank is required if a backflow preventer is installed upstream of the tankless water heater.

Check with your local and state inspection office for applicable code requirements.

Installation may require a permit and inspection.

Installing the Hot/Cold Service Valves and Pressure Relief Valve (PR Valve):

- Turn off water supply at shut-off valve near appliance location. In absence of valve near appliance, water MUST be shut off at the main valve near the meter.
 - Remove the coupling nut from the hot service valve body (red handles).
 - Clean all male and female pipe threads with a wire brush and rag to ensure connections are free of any debris such as metal shavings, rust, dirt, oil or water.
 - Apply pipe thread tape or sealant (as shown) to all male pipe threads of connection.
 - Thread the coupling nut onto the outlet of the tankless water heater, wrench tighten.
 - Thread the outlet of the hot service valve body onto the hot water distribution pipe, wrench tighten.
 - Thread the body of the hot water service valve into the coupling nut, wrench tighten.
 - Verify that the drain port cap is tight and that the drain port handle is in the closed position (pointing 90 degrees from the outlet as shown).
 - Thread the PR valve into the open port provided on the side of the hot service valve. Be sure that the outlet of the PR valve points down.
- ⚠ WARNING!** Do not install a manually operated shut-off valve before or after the PR valve; doing so may cause the system to over-pressurize and fail which may result in property damage, personal injury and/or death.
- Thread a 3/4 in. discharge line (drain line) to the outlet of PR valve. The line must discharge within 6 in. of an approved location or drain. A discharge line may NOT be directly connected to a sewer line. In addition, a reducing coupling or other restriction is NOT permitted. End of line must be plain, not threaded.
- ⚠ WARNING!** Discharge line must be allowed to drain dry to ensure that no water can pool and freeze; frozen water near valve outlet will interfere with valve operation which may result in property damage, personal injury and/or death.
- ⚠ WARNING!** Discharge line must be directed so hot water cannot splash on equipment or persons in vicinity if valve discharges, which may result in property damage, personal injury and/or death.
- Repeat installation for the cold service valve and recirculation service valve (blue and orange handles) as needed, in the same manner as above (with exception that no PR valve is required).



Installing the Gas Connector (and Gas Ball Valve):

- ⚠ CAUTION!** Connector is for use in accessible locations only. DO NOT conceal connector or run connector through enclosed outdoor BBQ pits, walls, partitions, floors, or appliance panels.
- ⚠ WARNING!** Gases can be ignited by a flame or spark causing a fire or explosion, which may result in property damage, personal injury and/or death. Remove all sources of ignition (matches, candles, open flames, etc.) before beginning installation. Follow installation instructions carefully.
- ⚠ WARNING!** IF YOU SMELL GAS, LEAVE THE HOUSE IMMEDIATELY AND CALL 911 FROM A SAFE LOCATION.
- ⚠ WARNING!** DO NOT use connector if it has been in a fire. Fire can cause damage to the connector and it may crack if moved or touched.
- ⚠ WARNING!** ANY HOLE, CRACK OR OTHER DAMAGE TO CONNECTOR OR ITS IMPROPER INSTALLATION COULD LEAD TO A POTENTIALLY EXPLOSIVE RELEASE OF GAS!
- ⚠ WARNING!** DO NOT USE THIS CONNECTOR ON APPLIANCES EQUIPPED WITH ROLLERS OR CASTERS. This connector is designed for limited movement after installation. Repeated bending, flexing or extreme vibration can cause metal fatigue. (Normal operation and movement of a clothes dryer or similar appliance is okay).
- DO NOT** use this connector in direct connection to an LP Gas container.
- DO NOT** use this connector on appliances in moving vehicles (such as RVs, trailers, etc.) This does not include Manufactured Housing (Permanent Residence Mobile Homes).
- DO NOT** use this connector with infrared (radiant tube) heaters. Infrared heaters expand and contract (cycle) during use which may cause connector to fail.
- DO NOT** use the connector in locations where temperatures can exceed 150°F/66°C.
- ⚠ WARNING!** DO NOT attach connector nuts directly to pipe threads. Failure to use gas flare fittings will result in an improper seal. Attach adapter (or valve) to pipe and appliance first. Gas-rated sealing compounds (tape, pipe dope, etc.) are required for pipe threads. Apply to male pipe threads only.
- NOTICE:** Gas codes requires use of shut-off valves within 6 feet upstream of all appliances. The gas shut off valve must be in the same room as the connector and within easy reach. Connector must be located between the valve and appliance.
- ⚠ WARNING!** THE USE AND LENGTH OF FLEXIBLE GAS CONNECTORS MAY BE RESTRICTED FOR SOME APPLICATIONS IN YOUR LOCAL JURISDICTION. INSTALL IN ACCORDANCE WITH ALL APPLICABLE CODES. IF YOU HAVE ANY QUESTIONS, PLEASE CONSULT WITH A LICENSED GAS PROFESSIONAL.

The appliance must be installed according to ANSI Z223.1 | NFPA54 "National Fuel Gas Code", and/or CSA B149.1 - Natural gas and propane installation code as applicable per your location. Do not use this connector on applications where the fuel gas pressure exceeds 1/2 psig.

⚠ **WARNING!** Turn off gas supply at gas ball valve near appliance location. In absence of a valve near appliance, gas **MUST** be shut off at main valve near the meter.

1. Clean all male and female pipe threads with a wire brush and rag to ensure connections are free of any debris such as metal shavings, rust, dirt, oil or water.
2. Apply pipe thread sealant or yellow gas thread tape to the male pipe threads of connection.

⚠ **WARNING!** DO NOT use pipe dope, thread seal tape, grease or plumber's putty on the flare fitting when installing this connector. These products can prevent flare joint from sealing properly.

3. If necessary, thread new gas ball valve onto gas supply pipe, wrench tighten.
4. Thread adapter fitting into gas ball valve and other adapter fitting onto appliance gas inlet.
5. Thread gas connector nuts onto adapter fittings. Wrench tighten all connections.

DO NOT join this connector to another connector. Use this connector only if it is long enough to allow the appliance to be positioned at its farthest anticipated connected distance from the gas supply without stretching, twisting or bending smaller than a 1-1/2 inch internal diameter (the diameter of a golf ball). Be careful when installing to avoid scratching, cutting, pinching or kinking the connector. Do not allow connector to make contact with or to become trapped against sharp edges, corners, hard contacts, etc.

Gas and Water Leak Testing:

The final assembly must be checked for leakage.

⚠ **WARNING!** DO NOT USE MATCHES, CANDLES, FLAMES OR OTHER SOURCES OF IGNITION FOR LEAK TESTING CONNECTORS OR FITTINGS.

⚠ **WARNING!** Gases can be ignited by a flame or spark may result in property damage, personal injury and/or death. To reduce the risk of a fire or explosion:

- DO NOT TURN ON THE TANKLESS WATER HEATER until all connections have been leak tested.
 - DO NOT USE motorized equipment or other sources of combustion to dissipate gas vapors. If needed, open windows or doors to allow area to ventilate.
1. To purge the air (bleed) from the water lines, turn on a first and second floor faucet (highest point), then turn on water supply. Valve should be in full open position to ensure that the water heater operates properly. When water flows smoothly without sputtering, system is purged and faucets may be shut off.
 2. Purge the air from the gas lines by turning the gas supply on first, then turn on a gas appliance, such as a stove or dryer. Gas appliance operation will purge air from system. **IMPORTANT: DO NOT TURN ON THE TANKLESS WATER HEATER** until you have bled the water and gas lines and leak tested the connections.
 3. Test all gas connections with leak test solution, or with clear soap and water solution; bubbles will indicate a leak. If a leak is detected, turn off gas supply before further tightening connections then retest. Water rinse and towel dry connector once test is complete.
 4. Wait at least 10 minutes to allow time for any vapors to dissipate. If leak test confirms connections do not leak gas, and you do not smell any gas, then light pilot(s) and turn on water heater.
- ⚠ **WARNING!** Liquefied petroleum (L.P.) gases are heavier than air and dissipate slower than natural or manufactured gases. Wait an additional 10 minutes to allow time for any vapors to dissipate.

Maintenance:

⚠ **WARNING!** Replace connector if damaged or deteriorated. A damaged connector could result in a hazardous gas leak.

⚠ **WARNING!** DO NOT RE-USE THIS CONNECTOR. The connector and fittings are designed for use on the original installation only and are not to be reused. Replace the connector if the house or connector has been energized by lightning, arcing or otherwise.

⚠ **WARNING!** Electrical arcing from live wire contact or lightning near installation can damage connector, resulting in a gas leak. Reduce risk of arc damage to connector by ensuring appliance it services is grounded. For additional protection, use an NFPA 780 or CAN/CSA-B72-M87 lightning protection system.

⚠ **WARNING!** The protective coating provides resistance against most common household cleaning solutions. Replace connector if the protective coating is damaged (for example, from metal-to-metal contact or through excessive flexing or bending of connector). Avoid having the following materials in contact with the connector:

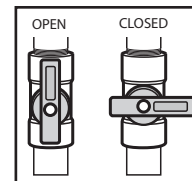
- Caustic chemical (e.g. ammonia, acids)
- Cleaning solutions (dish soap, cleanser, bleach)
- Solder flux and other chemicals used to etch metals
- Household chemicals (fungicides, insecticides)

Direct contact with these chemicals can cause pin hole leaks, cracks or the other failures in the connector. Do not store these chemicals near the connector. Do not use a connector on any appliance located near a swimming pool or hot tub. Replace connector if connector comes in direct contact with any of these chemicals.

Diagnostic Testing and Repairs:

Diagnostic testing on the tankless water heater can be performed using the drain valve featured on the service valves. Please refer to the water heater owner's manual for manufacturer's specific testing instructions and recommendations.

⚠ **WARNING!** Before removing test cap from the side-port drain valve and make sure that the handle is in the closed position (pointing 90 degrees from the outlet as shown). Failure to close valve may result in severe burns and/or other personal injury.



Parts Listing and Ratings:

Tankless Water Heater Service Valves (TWV30, TWV30R, TWVR30RX, TWV3S, TWV3SR and TWVR3SRX)

600 WOG

Operating Pressure: 125 psi

Operating Temperature: 40°F to 180°F

3/4" ID Gas Connectors

(included with TK30RB21-18, TK30RB21-24, TK3SRB21-18 and TK3SRB21-24 Tankless Water Heater Kits)

Btu Rating: 290,900

Operating Pressure: 1/2 psi maximum

Operating Temperature: -40°F to 150°F

3/4" Full-Port Gas Ball Valve

(included with TK30RB21-18G3 and TK30RB21-24G3 Tankless Water Heater Kits)

425 WOG

ANSI Z21.15-CSA 9.1 Pressure 1/2 psi maximum; temps 32°F to 125°F