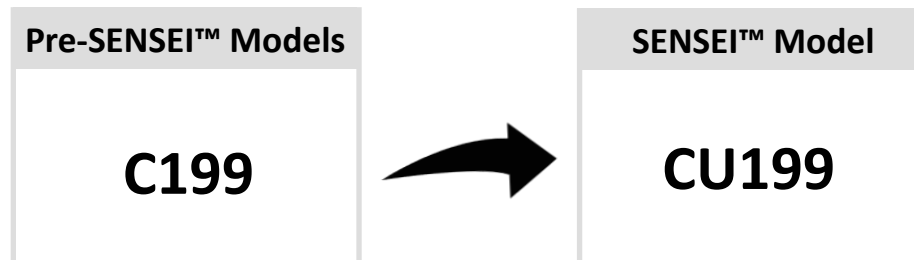


For help with product installation, troubleshooting, servicing and more, visit
www.rinnai-lms.com

Follow these instructions when retrofitting pre-SENSEI™ Condensing Tankless Water Heaters (C199 models) with SENSEI™ Condensing Tankless Water Heaters (CU199 models) on the Demand Duo™ Commercial Hybrid Water Heating System.



- A trained and qualified professional must install and inspect the Demand Duo™ before use. The warranty will be voided due to any improper installation.
- The retrofit procedure must be followed according to the instructions in this document.
- For more information on the tankless water heater, including venting options, parameter settings and maintenance, refer to the Commercial Tankless Water Heater Installation and Operation Manual supplied with each CU199 tankless water heater.

WARNING

Failure to correctly assemble the components according to these instructions may result in a water leak, gas leak, or explosion resulting in property damage, personal injury, and/or death.

You Will Need

All items below are field-supplied except for the Rinnai tankless water heater.

- Rinnai SENSEI™ CU199 Tankless Water Heater
- Standard plumbing tools such as pliers, pipe wrenches and screwdrivers
- Additional drain line

SENSEI™ models have a separate pressure relief valve (PRV) connection. When replacing pre-SENSEI™ models with a SENSEI™ model, the PRV drain line will need to be extended using field-supplied 3/4 in. plumbing fittings.

- 3/4 in. Brass “Street” Elbow
- Standard garden hose (to drain the system)

Turn Off Power, Gas and Water

- 1 Turn off the incoming electrical power supply by unplugging the power cord or by turning off the electricity at the circuit breaker.
The temperature controller on the tankless water heater does not control the electrical power.
- 2 Turn off the incoming gas supply at the manual gas valve.
- 3 Turn off the cold water supply valve located on the cold water supply line feeding the system (Figure 1).

Drain the Demand Duo™

- 4 Drain the Demand Duo™ by following the steps below:
 - Connect one end of a garden hose to the storage tank drain valve and place the other end next to a free-flowing drain (Figure 1).
 - Open the drain valve by turning the knob counter-clockwise. ↺
 - Open a hot water faucet to allow air into the plumbing system.
 - While the system is draining, proceed to the next step.

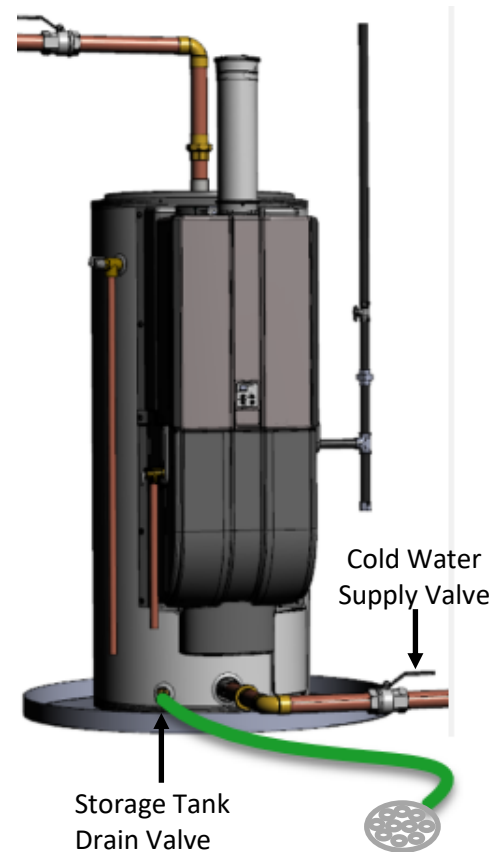


Figure 1. Cold Water Supply and Drain Valves

Disassemble and Remove Pre-SENSEI™ Water Heater (C199) from Demand Duo™

IMPORTANT

While disassembling, keep the parts and screws nearby because you will need them to connect to the SENSEI™ unit.

- 5 Loosen the four screws along the perimeter of the lower enclosure and remove the lower enclosure.

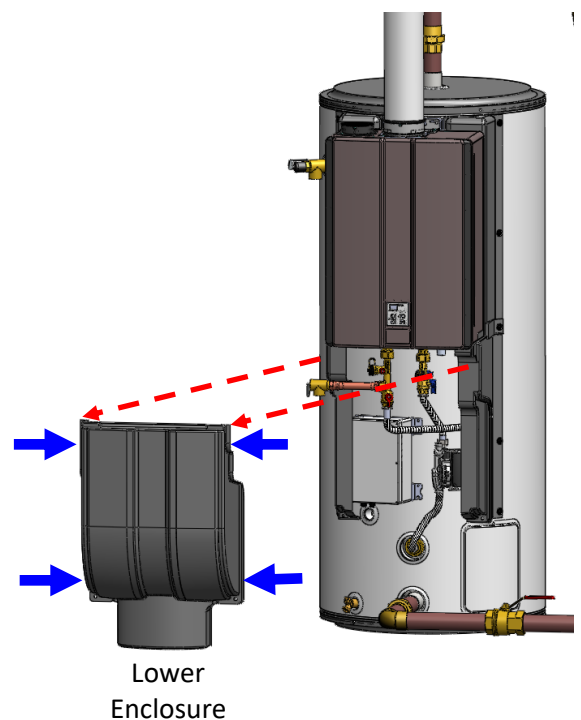


Figure 2. Remove lower enclosure

6 Remove the gas connection (field-installed) from the system.

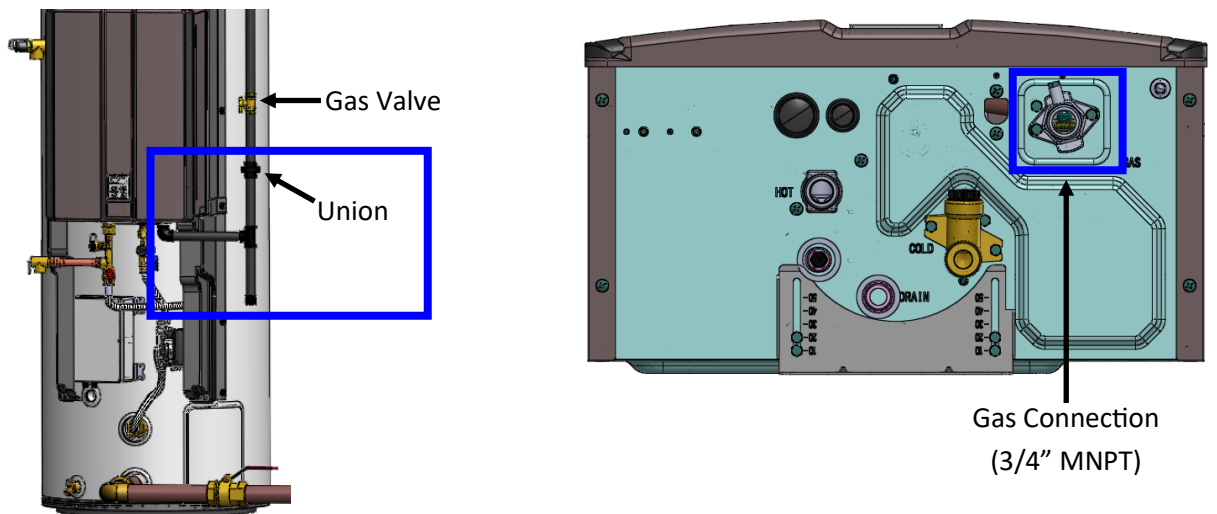


Figure 3. Gas Connection

CAUTION Make sure the system is completely drained before proceeding with the next step.

7 Disconnect the hot water and cold water valves from the swivel unions on the water heater.

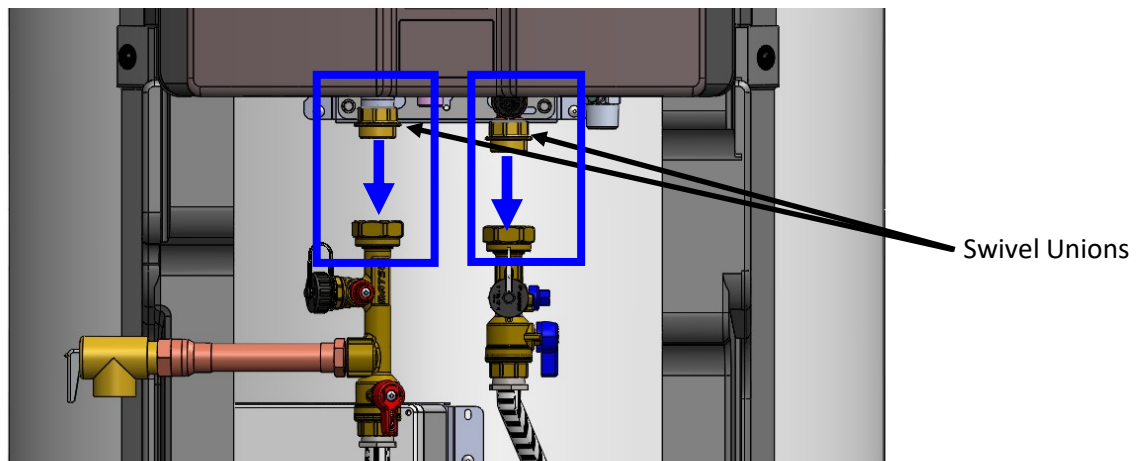


Figure 4. Disconnect hot and cold water valves

8 Remove the tankless water heater from the tank mounting brackets. Place the back side of water heater on a flat, clean surface free of debris or dirt.

CAUTION Do not place the water heater on wet or damp surface.

9 Remove the union nuts from cold water and hot water connections.

All piping connections are now removed from the Pre-SENSEI™ water heater. Proceed to the next step to reconnect the piping on the SENSEI™ water heater.

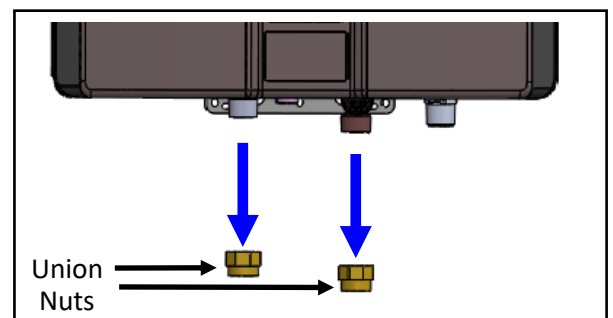


Figure 5. Remove Union Nuts

Install SENSEI™ Water Heater (CU199) on Demand Duo™ and Connect Piping

10 Place the back side of the SENSEI™ water heater (CU199) on a flat, clean surface free of debris or dirt.

CAUTION Do not place the water heater on wet or damp surface.

Assemble the union nuts to the cold and hot water connections.

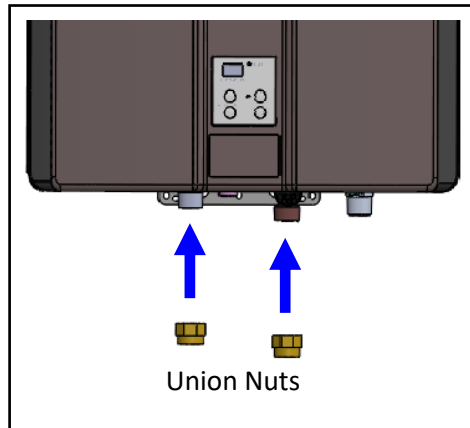


Figure 6. Assemble Union Nuts

11 Remove the flex line and pressure relief valve (PRV) assembly from the hot valve kit.

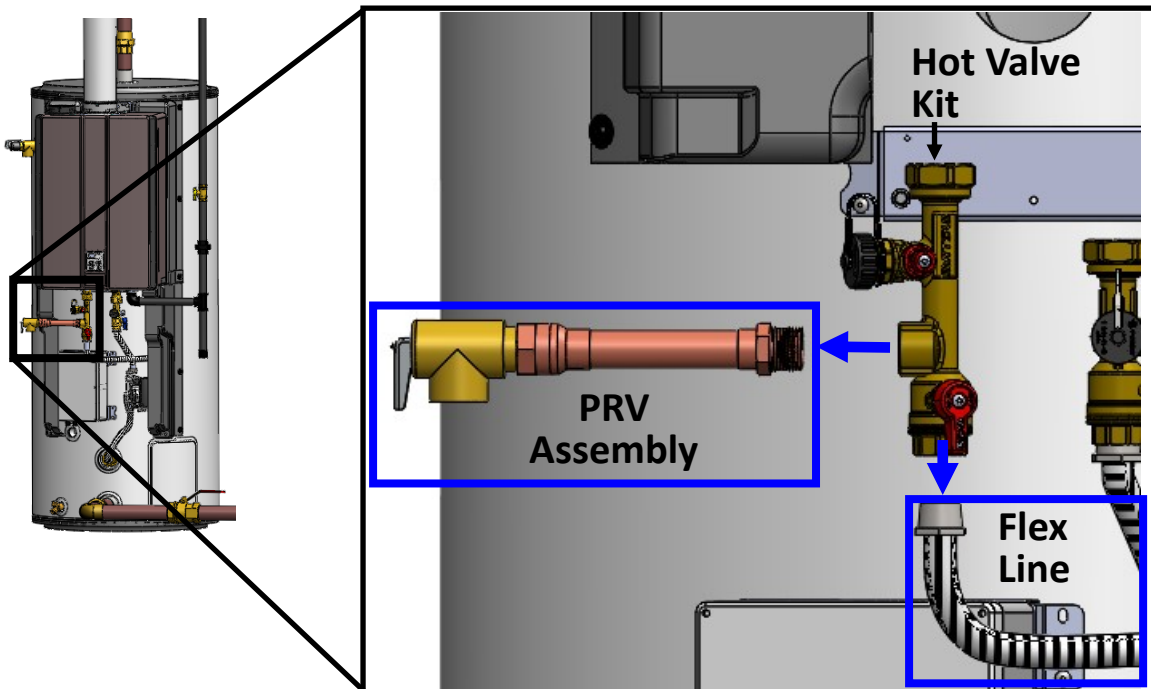


Figure 7. Remove Flex Line and PRV

- 12 Assemble a field-supplied brass “street” elbow (3/4 in.) to the bottom of the hot valve kit. Assemble the hot flex line on the Demand Duo™ assembly to the open side of the “street” elbow.

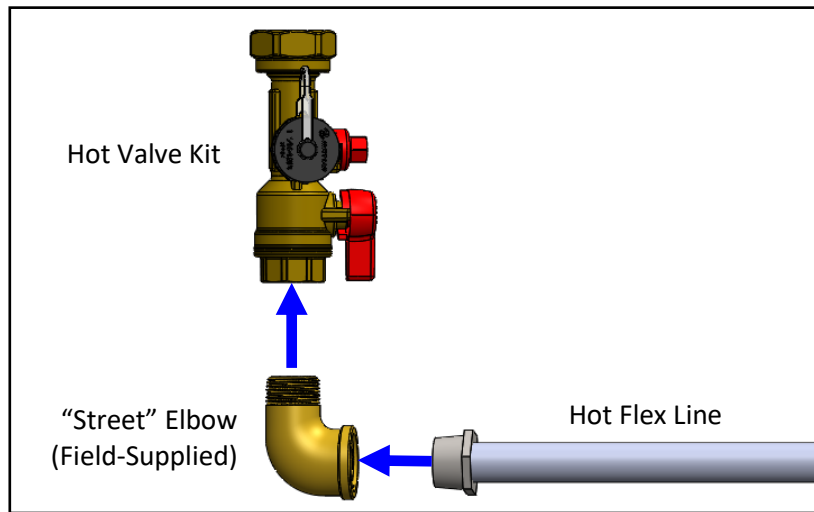


Figure 8. Assemble Street Elbow

- 13 Mount and secure the SENSEI™ tankless water heater to the tank. Install the hot and cold valves to the union nuts on the bottom of the tankless water heater.

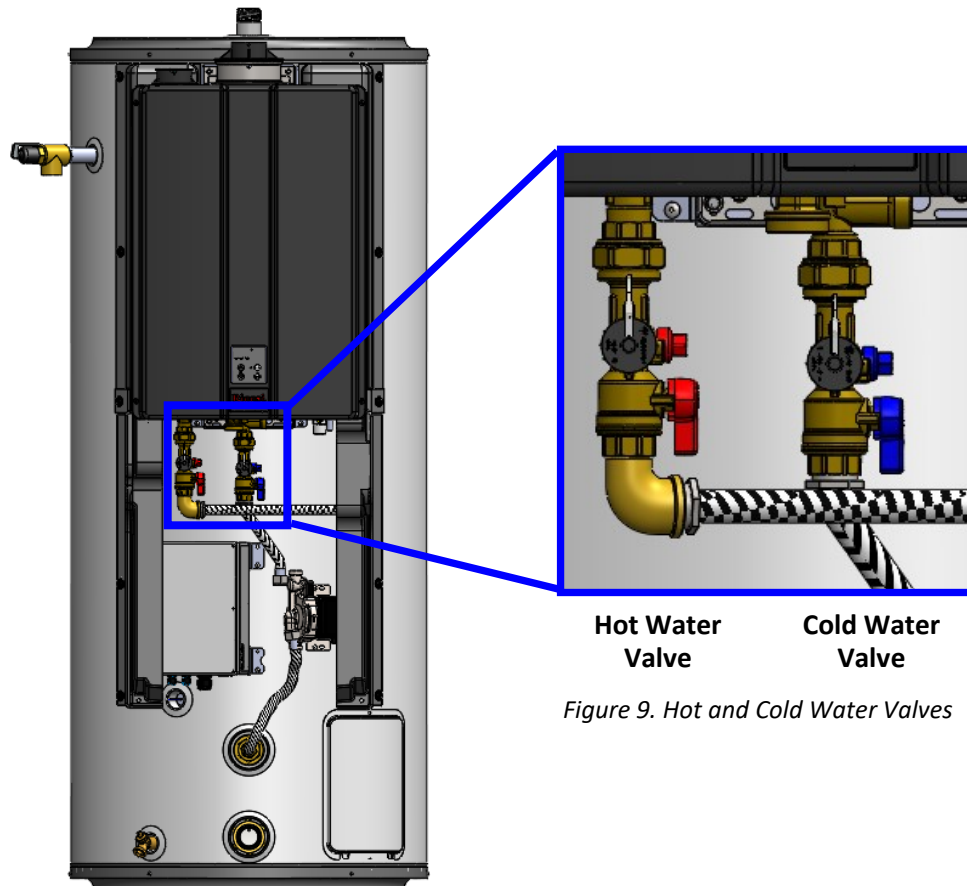


Figure 9. Hot and Cold Water Valves

14

SENSEI™ models have a separate pressure relief valve (PRV) connection and include a PRV Adapter Assembly. When replacing pre-SENSEI™ models with a SENSEI™ model, the PRV must be removed from the PRV adapter and additional pipe will need to be added to extend the PRV to the outside of the Demand Duo™ enclosure.

IMPORTANT
Use industry standard plumbing practices to fabricate the extension pipe.

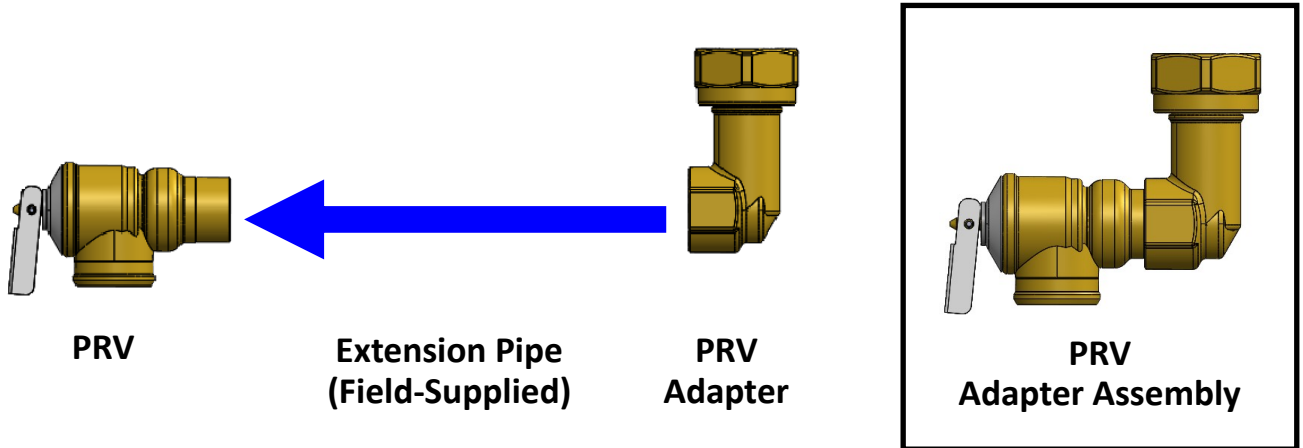


Figure 10. PRV Connection and Adapter Assembly

Install PRV Extension

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Assemble the PRV assembly and extension to the bottom of the tankless water heater as illustrated. Trim plastic enclosure as needed to allow access for the PRV and condensate drain line.

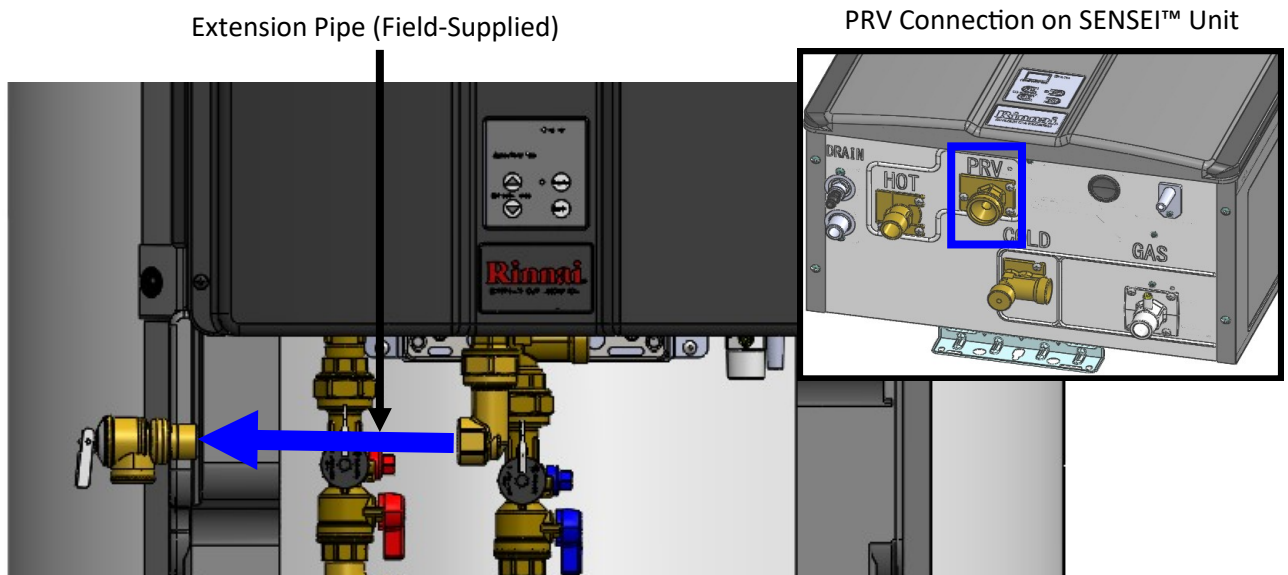
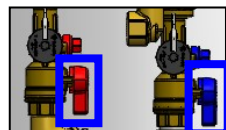



Figure 11. PRV Assembly and Extension

IMPORTANT
Before proceeding with the next step, confirm the hot and cold water valve handles are in the **On** position.



Fill the System

- 16 Close the storage tank drain valve (turn knob clockwise ) and remove the garden hose (Figure 12).
- 17 With the hot water faucet open, slowly open the cold water supply valve to the system.
When water starts flowing from the hot water faucet, the system is full.
- 18 Turn off the hot water faucet.
- 19 Inspect the system for leaks.

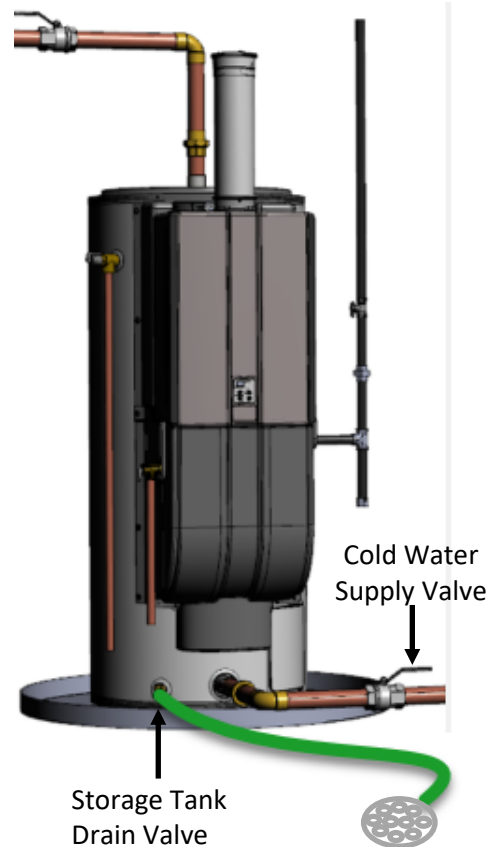


Figure 12. Cold Water Supply and Drain Valves

Turn On Gas, Power and Water

- 20 Turn on the gas supply valve.



Check all gas connections for leaks.

- 21 Turn on the incoming electric power and press the **On/Off** button on the front of the tankless water heater (Figure 13).

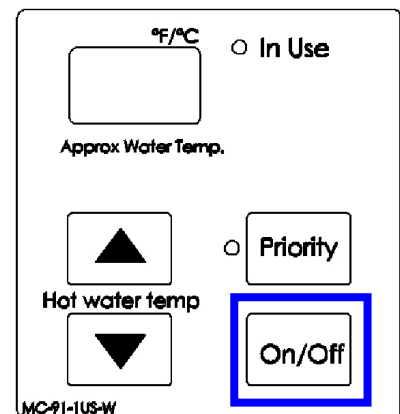


Figure 13. On/Off Button

If You Need Service

Contact Rinnai Customer Care at 1-800-621-9419.



Learn more about Rinnai high-performance Tankless Water Heaters, Hybrid Water Heating Systems, Boilers, Vent-Free Fan Convectors and EnergySaver® Direct Vent Wall Furnaces at:

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Local, state, provincial, federal and national fuel gas codes must be adhered to prior to and upon installation.

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