



# Rinnai®

1-800-621-9419 rinnai.us

## INSTALLATION INSTRUCTIONS

# Cascade Cable

**For Use With Rinnai Tankless Water Heater Models:** CU199i/e and CU160i/e

**Cascade Cable Part Numbers:**

- REU-CSA-C1 (10 ft/3 m cable)
- REU-CSA-C2 (26 ft/8 m cable)



With the use of cascade cable(s), up to 24 water heaters can be electronically connected (Figure 1). This connection rotates water heater operation order to ensure equal usage among the entire system and enables all water heaters connected to modulate operation and function as one hot water source.

### IMPORTANT:

- For proper operation, do not combine different water heater models in the cascade system.
- One cascade cable is required for each water heater.

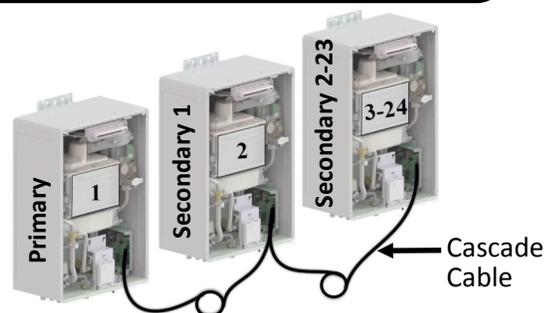
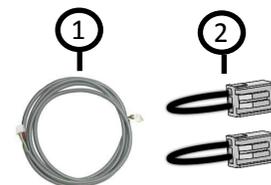


Figure 1: Example Cascade Cable Configuration

### ITEMS INSIDE PRODUCT BOX

Before installation, please make sure all parts are located inside the product box. If any items are missing or damaged, contact your local dealer/distributor or call Rinnai Customer Care at 1-800-621-9419.

Item #	Item	Qty
1	Cascade Cable	1
2	Cascade Jumper	2



### TOOLS/MATERIALS REQUIRED

- Philips head screwdriver (for removal of water heater front cover)

### INSTRUCTIONS

- Before you begin, determine which water heater will be the primary unit. Temperature settings for all water heaters in the cascade system can only be changed on the primary unit's controller.

#### Step 1: Install Cascade Cable and Jumper

For each water heater in the cascade system, follow the steps below:

1. Power OFF the water heater by unplugging the power cord or turning off the circuit breaker. The controller on the water heater does not control the electrical power.
2. Remove the water heater front panel by removing the 4 screws that secure the panel in place.
3. In the primary water heater, locate the PC board in the bottom, right corner (Figure 2).

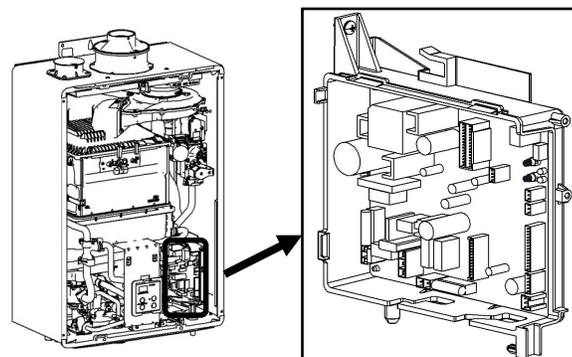


Figure 2: PC Board

4. Connect one end of the cascade cable to the **Cascade OUT** accessory port. Connect the other end of the cable to the **Cascade IN** accessory port on the PC board of the next water heater (Figure 3).
5. Repeat step 4 for each subsequent water heater in the cascade system.
6. Connect the **Cascade Jumper** to the empty accessory ports (Figure 3):
  - **Cascade IN** port on the primary unit's PC board.
  - **Cascade OUT** port on the last unit's PC board.

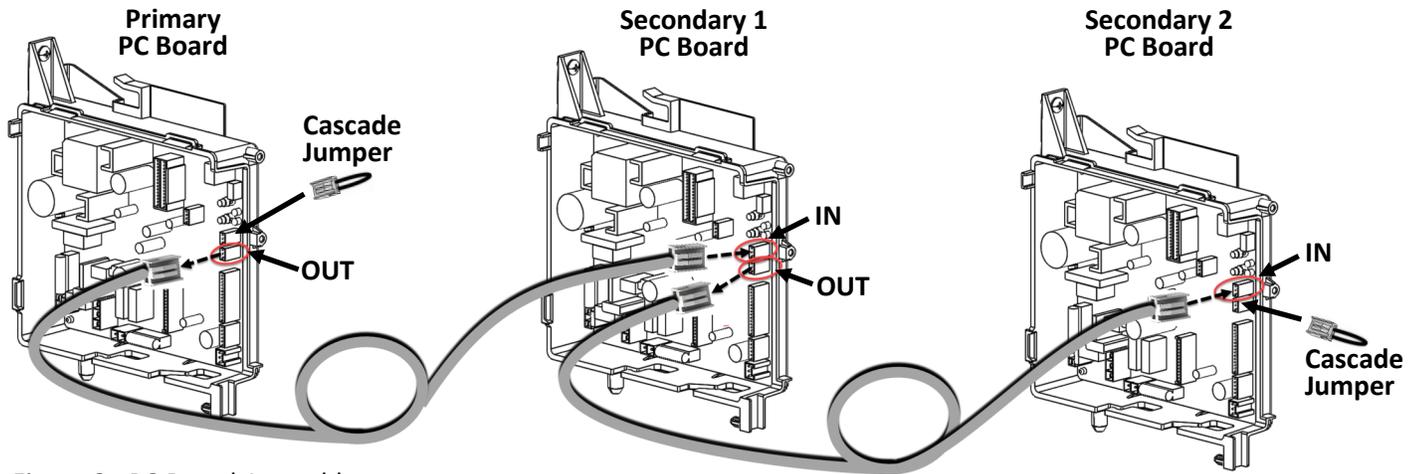


Figure 3: PC Board Assembly

7. Power ON each water heater.
8. Proceed to **Step 2: Set Parameter Settings**.

## Step 2: Set Parameter Settings

Set parameter settings for the primary and secondary water heaters:

**WARNING** Adjust only the parameter settings listed below. Do not adjust any other parameter settings unless specifically instructed to do so.

9. **Primary Water Heater Parameter Settings:** Select the water heater intended to be the primary water heater for cascade communication:
  - a. Locate the two push buttons (A and B) on the PC board (Figure 4).
  - b. Press the **A** button for 1 second. **01A** appears on the controller display (Figure 5).
  - c. Press the **▲ (Up)** button until **08A** appears on the display.
  - d. Press the **On/Off** button until **08b** appears on the display.
  - e. Selecting the primary water heater is complete.
    - The controller on all secondary water heaters displays "--".

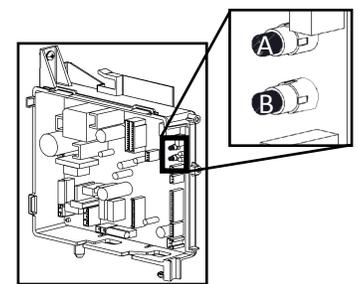


Figure 4: A and B Push Buttons

**Note:** The factory default setting for each water heater is set to **Secondary**. Parameter adjustment is only needed on the water heater identified as **Primary**. Parameter setting data in the **Primary** water heater will transfer to each of the **Secondary** water heaters after setting the secondary ID's (see Step 3: Set Secondary ID).

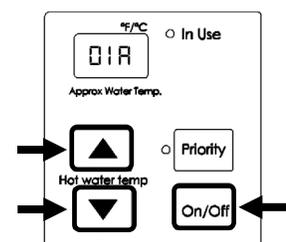


Figure 5: Controller Display

10. **Standby Units:** A maximum of six water heaters can be in standby (or a “ready-to-fire” state), meaning that the water flow control valves of the standby water heaters are open. These water heaters will fire immediately on initial water flow demand, allowing quicker response time when demand increases. When the water flow demand is determined, only the necessary number of water heaters will fire to meet that demand. Water heaters not firing will close their valves. To set the number of water heaters in standby:

- On the primary water heater controller, press the ▲ (Up) button until 09\* displays on the controller then select the desired setting by pressing the On/Off button (see Table 1).
- The number of standby units are set. Continue with **Step 3: Set Secondary ID.**

Setting	# of Water Heaters in Standby
09A	1
09B	2
09C	3
09D	4
09E	5
09F	6

Table 1: Standby Units Settings

### Step 3: Set Secondary ID

11. Set the ID for all secondary water heaters in the cascade system:

**Note:** The order of secondary IDs is not critical to operation.

- On each secondary water heater, press the **On/Off** button on the controller (Figure 6).
- The controller display changes from “- - -” to the newly set ID number, such as -01, -02, -03, etc. (Figure 6).
- When all secondary water heater IDs are set, press the **A** button on primary water heater PC board for 1 second. The set system temperature appears in the controller display.
- Setting the Secondary IDs is complete. Replace the front panel to the water heaters.

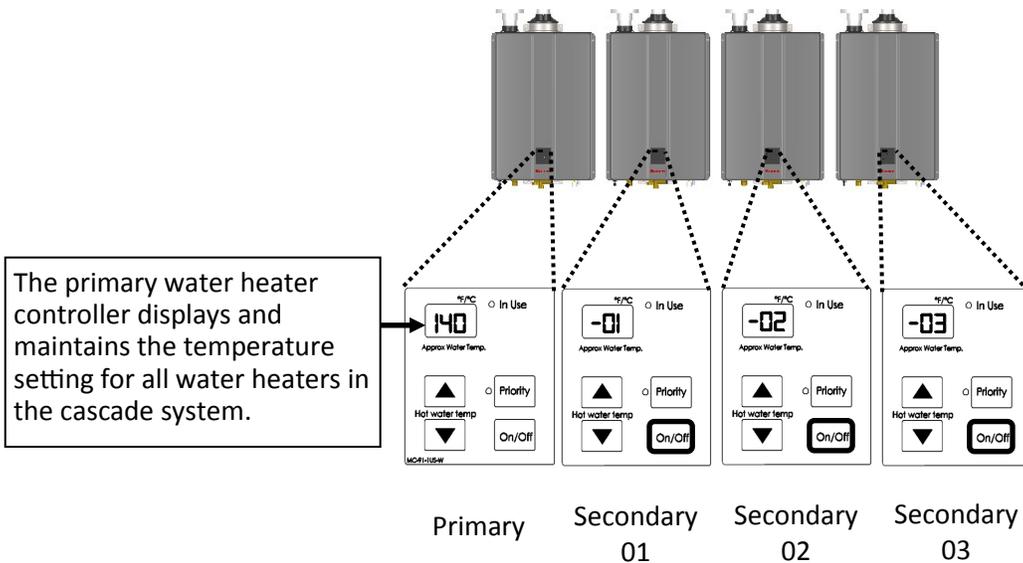


Figure 6: Primary and secondary controllers

### Error Codes

When an error code occurs on a secondary water heater:

- The primary water heater controller flashes between **SE** and the selected set temperature.
- The secondary water heater controller flashes the error code for the respective water heater.