

9 Connecting the Condensate Drain

Condensing Water Heater

- In order to ensure proper operation of this Water Heater, need to install the condensate drain pipe to drain acidic condensate which produces during operation.
- The pH level of the condensate is approximately 2-3.
An external neutralizer must be installed on the condensate drain piping prior to disposal when required by local code or when the condensate could cause damage.

NOTE Damage caused by improperly handled condensate is not covered by the Noritz America Limited Warranty.

Location of the condensate drain piping

In climates where temperature routinely reaches below freezing, do not drain the condensate to the outdoors.
If the condensate drain pipe freezes during cold weather, the pipe will not drain condensate and the Water Heater will stop operating.

Material of the condensate drain piping

Use plastic pipe, such as PVC, for the drain line.

NOTE Do not use steel, black iron, or any other material which can corrode when placed into contact with acidic condensate.

Sizing of the condensate drain piping

In order to drain the condensate, a 1/2 in. threaded fitting is provided at the base of the Water Heater.

NOTE Do not reduce the size of the fitting or the condensate drain piping to less than 1/2 in.

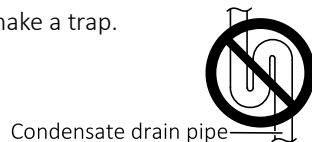
Long runs or applications where the nearest drain is above the Water Heater

Require the use of a condensate pump.
Size the pump to allow for a maximum condensate discharge of 2 GPH from the Water Heater.

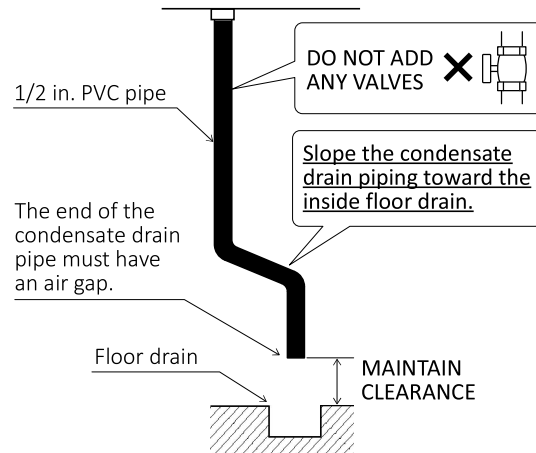
Condensate drain piping

Make the condensate drain piping run as short as possible.

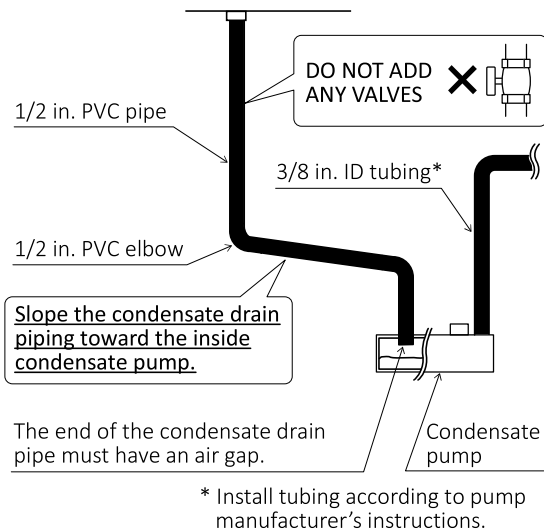
NOTE Do not make a trap.



[Condensate drain piping to floor drain]

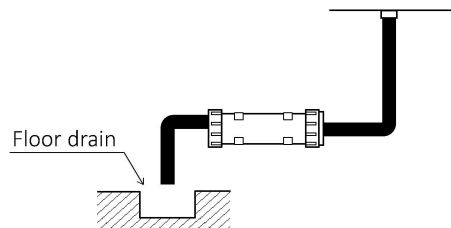


[Condensate drain piping with pump]



[If an external neutralizer is installed]

Periodic replacement of the neutralizing agent will be required.
Refer to the instructions supplied with the neutralizer for suggested replacement intervals.

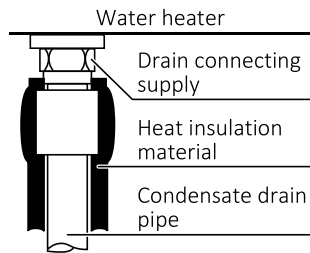


After installing the condensate drain piping

- Make sure that there are no obstructions blocking the condensate drain line from discharging condensate.
- Be sure to check that condensate is freely flowing from the condensate drain piping. Condensate will begin flowing out of the Water Heater **within 15 minutes after operation has started**.

Freeze prevention

Take measures to prevent the condensate drain lines from freezing (insulation, heat tape, electric heaters, etc.).



10 Connecting Electricity

Consult a qualified electrician for the electrical work.

This appliance must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70. In Canada, the latest CSA C22.1 Electrical Code.

⚠ WARNING

Electrical Shock Hazard

Do not connect the electrical power to the appliance until all electrical wiring has been completed. Failure to do so may result in death or serious injury from electrical shock.

⚠ CAUTION

- Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.
- Electrostatic discharge can affect electronic components. Take precautions to prevent electrostatic discharges from personnel or hand tools during the water heater installation and servicing to protect product's electronic control.

Power Supply

- The electrical supply required by the Water Heater is 120 VAC at 60 Hz. The power consumption may be up to 332 W or higher if using optional accessories. Use an appropriate circuit.
- Tie the redundant power cord outside the Water Heater. Putting the redundant length of cord inside the Water Heater may cause electrical interference and faulty operation.

- NOTE**
- Do not let the power cord contact the gas piping.
 - Do not disconnect the electrical power when not in use. When the power is off, the freeze prevention in the Water Heater will not activate, resulting in possible freezing damage.

Ground

To prevent electrical shock, provide a ground with resistance less than 100 Ω . An electrician should do this work.

- NOTE**
- Do not connect the ground to the city water or gas piping.
 - Do not tie the ground to a telephone line.

Breaker Installation

Mount a device which shuts off the electrical path automatically (leakage breaker) to detect electrical leakage.

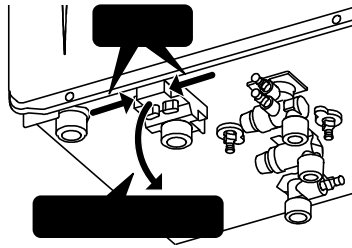
- Install the remote controller according to the instructions on page 52-57.
- Only one the Remote Controller can be connected to the Water Heater. A malfunction may occur if two or more Remote Controllers are connected.
- Install according to the National Electrical Code and all applicable local codes.
- For extensions, a 26 ft (7.9 m) cord can be purchased separately (Part #RC-CORD26).
- The Remote Controller Cord can be extended up to 300 ft (91 m) by splicing the cord and using 18 AWG wire to extend the cord to the appropriate length.
- Use a Y-shaped terminal with a resin sleeve. Without the sleeve, the copper wire may corrode and cause problems.

- NOTE**
- Do not connect the electrical power to the Water Heater until the Remote Controller installation is complete.
 - Be sure to hand tighten when screwing to the terminal block. Power tools may cause damage to the terminal block.

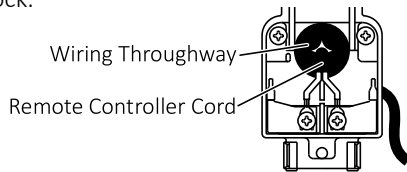
Connecting the Remote Controller Cord

1. Check to make sure that the Remote Controller Cord has plenty of slack in order to reach the external connection terminal block.
2. Make sure the electrical power is disconnected from the Water Heater.

3. Open the external remote terminal block.



4. Pass the Remote Controller Cord through the wiring throughway. Connect the Y-shaped terminals at the end of the Remote Controller Cord to the terminal block.



NOTE Tie the redundant cord outside the Water Heater. Do not put the extra length inside the Water Heater.

5. Reattach the terminal block cover.



10.3.1 On-demand Switch

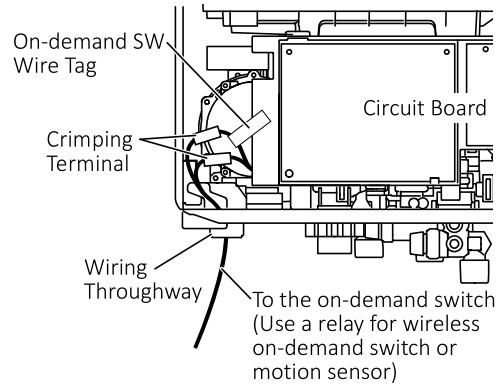
- Install the on-demand switch if necessary or when conforming to California Code of Regulations Title 24 Part 6.
- This Water Heater is compatible with on-demand switch, wireless switch and motion sensor. All on-demand switches are not supplied from Noritz, just field purchasing.
- Prepare a relay when installing wireless on-demand switch or motion sensor. Do not apply any voltage to the On-demand SW terminal. This terminal is only for No-voltage contact.
- (For Quick Connect Multi-System) Connect the on-demand switch to the Water Heater connected with Remote Controller.

Contact Rating: more than 2.7 mA @ 15 VDC.

Connecting the on-demand switch

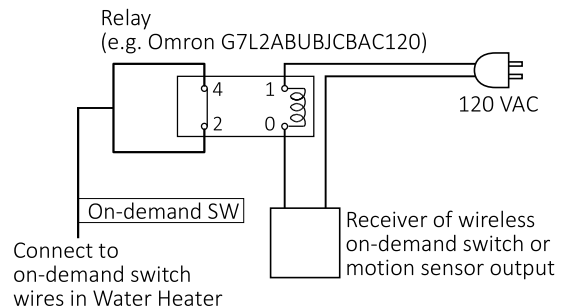
1. Leave enough slack so that the on-demand switch wires will stay connected if the Water Heater is removed from the wall.
2. Check the electrical power is disconnected from the Water Heater.
3. Remove the front cover (4 screws).
4. Connect the on-demand switch wires to On-demand SW terminal in the Water Heater. 2.7 mA @ 15 VDC will be applied to the on-demand switch.

5. When installing wireless on-demand switch or motion sensor, use a relay and connect to make contact (Normally Open Contact).
6. Reattach the front cover (4 screws).



Use a relay when connecting wireless switch or motion sensor

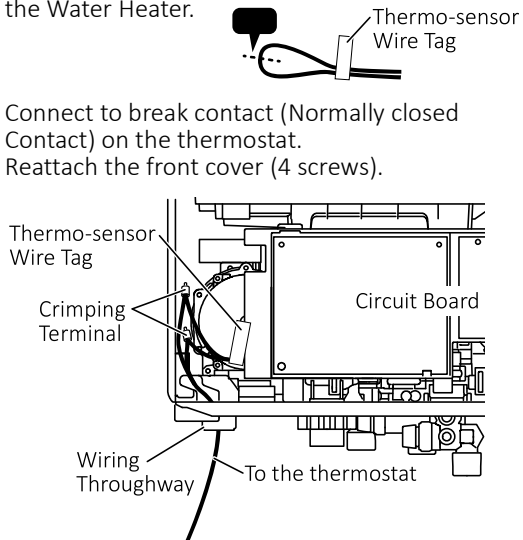
1. Refer to the step 1- 3 of “Connecting the on-demand switch”.
2. Choose a suitable installation location for the relay where it will be protected from moisture.
3. Connect the on-demand switch wires from the heater to the signal output on the relay.
4. Cut one of the electrical supply leads and connect to the signal input on the relay.
5. Secure all connections and reattach the front cover.



10.3.2 Thermo-sensor (Thermostat)

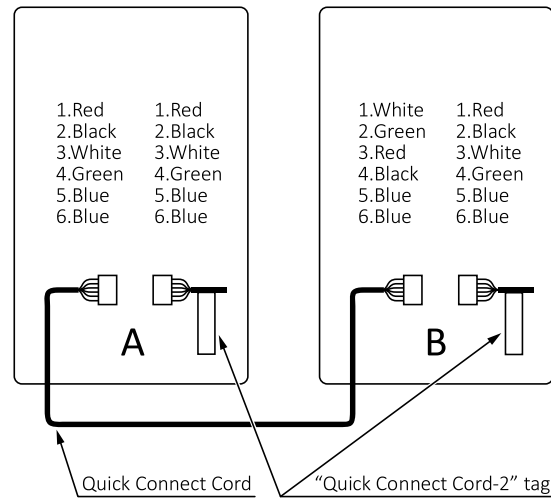
- Install the thermostat and adjust the setting in accordance with Title 24.
 - (For Quick Connect Multi-System) Connect the thermostat both of the Water Heaters.
1. Leave enough slack so that the thermostat wires will stay connected if the Water Heater is removed from the wall.
 2. Check the electrical power is disconnected from the Water Heater.
 3. Remove the front cover (4 screws).

4. Cut the Thermo-sensor wire (Looped White) in the Water Heater.
5. Connect to break contact (Normally closed Contact) on the thermostat.
6. Reattach the front cover (4 screws).



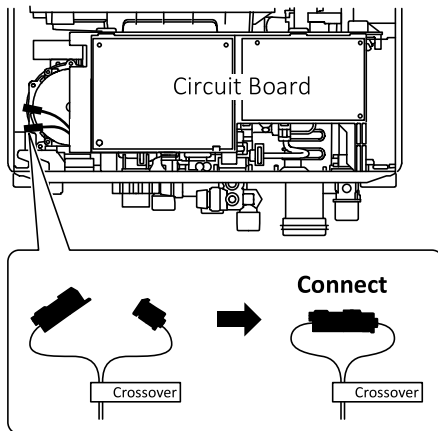
NOTE Do not connect the Remote Controller to both Water Heaters. If the Remote Controller is connected to both Water Heaters, disconnect unnecessary Remote Controller prior to installing the Quick Connect Cord.

- The wire coloring on the Quick Connect Cord will not be the same as the wire coloring of the connection plug inside the Water Heater.



10.3.3 Crossover Valve

- Connect the connector marked "Crossover" when installing the Crossover Valve.
- (For Quick Connect Multi-System) Connect the connector both of the Water Heaters.

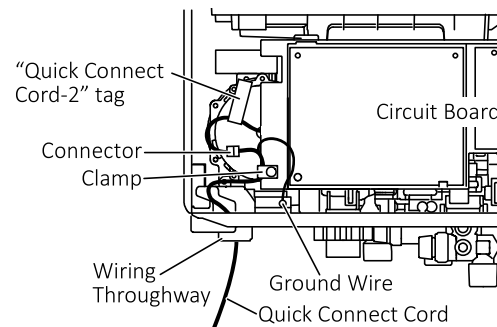


Connecting the Quick Connect Cord to the two Water Heaters

1. Check the electrical power is disconnected from the Water Heater.
2. Remove the front cover (4 screws).
3. Pass the Quick Connect Cord through the wiring throughway and into the Water Heater.
4. Plug the connector on the Quick Connect Cord to the connector inside the Water Heater.
5. Connect the ground wire (gray color wire) to the screw at the base of the Water Heater.

NOTE If the ground wire is not attached, electrical noise may cause problems.

6. Secure the Quick Connect Cord with a clamp.
7. Reattach the front cover (4 screws).



NOTE For Quick Connect Multi-System installation only use the Quick Connect Cord (part #QC-2, sold separately).

- The Remote Controller can be connected to either Water Heater A or B only.

11 Installation of the Remote Controller

- (RC-7651M-A) The Remote Controller is water resistant but not water proof. Keep it as dry as possible.
 - (RC-9018M) The Remote Controller is not water resistant. Keep it dry.
 - Unplug the electrical power from the Water Heater and do not connect the electrical power to the Water Heater until the Remote Controller installation is complete.
 - Do not disassemble the Remote Controller.
 - (RC-9018M) Keep the Remote Controller in a safe location prior to mounting it on the wall to prevent metal shavings from entering the Remote Controller.
- This Remote Controller has a built-in speaker which can be damaged by metal shavings resulting in sound cracking.

Screw tightening

- Be sure to fasten the mounting screws tightly by hand screwdriver so that the Remote Controller will be secure.

NOTE Do not use electric drivers, impact drivers and so forth.
Tightening with excessive force may cause the Mounting Bracket and the Remote Controller to be damaged and lead to failures.

- Never fasten or loosen unnecessary screws for the Remote Controller installation.

Notes on the Installation Location

- The Remote Controller should be installed in an easily accessible location.
- Install the Remote Controller on an even wall surface.
Installing it on an uneven wall surface may cause the Mounting Bracket and the Remote Controller to be damaged and lead to failures.
- Be sure to check the positions of wall studs or other obstructions when determining the installation location for the Remote Controller.

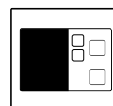
- NOTE**
- Avoid installing in a place where water or steam can come into contact with the controller.
 - Avoid locations where special chemical agents (e.g. benzene, fatty and oily detergents) are used.
 - Avoid outdoor installation, or installation in an indoor location where it will be exposed to direct sunlight.

Installation of Remote Controller Cord

- Secure the Remote Controller Cord with appropriate anchors, ties, etc.
- Wire the Remote Controller Cord in an area where it will not be directly affected by heat.
- To embed the Remote Controller Cord in concrete, brick, etc., enclose it in conduit in order to prevent the Remote Controller Cord from becoming damaged.
- (RC-9018M) When penetrating a wall containing metal lath, prevent the lath from coming into contact with any metallic conduit used in order to prevent electrical interference.

Included Accessories

Remote Controller (× 1)



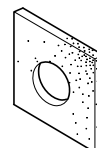
Dry Wall Anchor (× 2)



Anchoring Screw (× 2)

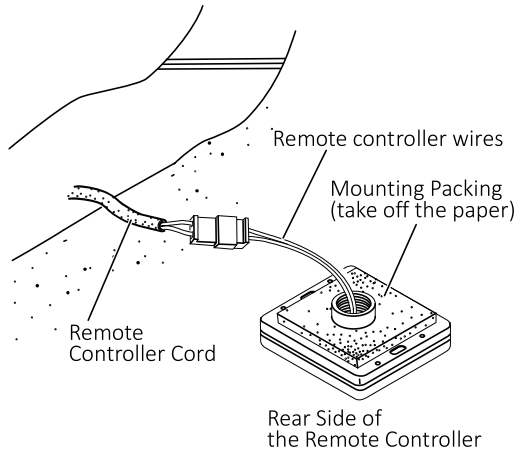


Mounting Packing (× 1)

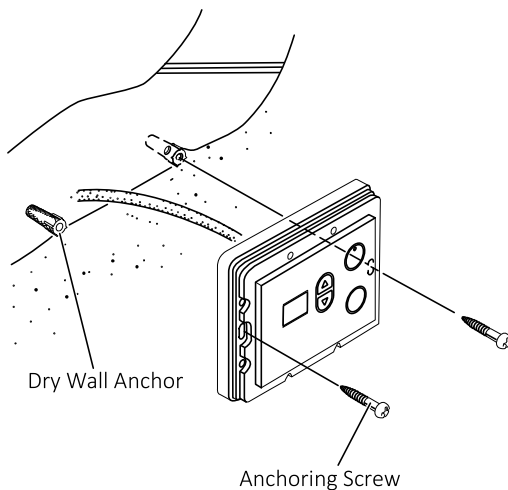


Installation


1. Apply the Mounting Packing to the rear side of the Remote Controller.
2. Connect the Remote Controller wires to the cord supplied with the Water Heater.



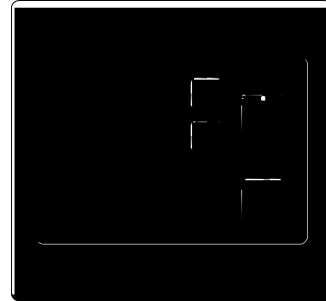
3. Remove the cover of the Remote Controller, mark the location of the screw holes, and drill holes for the Dry Wall Anchors.
4. Insert the Dry Wall Anchors, screw the Remote Controller to the wall and reattach the cover.




Post-installation Checks






1. Check if the Remote Controller is installed securely.
2. Check the Remote Controller operation. (See Owner's Guide)
 - Press the  button approximately 5 seconds after connecting the electrical power to the Water Heater.
 - Check that the display appears on the Remote Controller.

Adjusting the Temperature / Water Quantity Display









1. Turn the Water Heater off by pressing the  button on the Remote Controller.
2. Disconnect, then reconnect the electrical power to the Water Heater.

NOTE The setting must be done within the first 10 minutes of connecting the electrical power to the Water Heater.

3. Press the  button and hold it in for 2 seconds or more.
4. Press the  button several times until the item number "12" is displayed.
5. Select "[°F/gal] ↔ [°C/L]" using the  /  buttons.
 - °F/gal (Fahrenheit/Gallon): default setting
 - °C/L (Celsius/Liter)
6. To confirm the setting, turn the Water Heater on by pressing the  button on the Remote Controller.

Stopping the Recirculation Operation

1. Turn the Water Heater off by pressing the  button on the Remote Controller.
2. Press the  button and hold it in for 2 seconds or more.
3. Press the  button several times until the item number "4" is displayed.
4. Select "[on] ↔ [oF]" using the  /  buttons.
 - on (recirculation on): default setting
 - oF (recirculation off)
5. To confirm the setting, turn the Water Heater on by pressing the  button on the Remote Controller.






Limiting the Maximum Output Temperature

The maximum output temperature can be limited to prevent discharging hot water at too high of a temperature.

Default setting of maximum output temperature is 120°F (50°C).

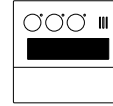
DANGER

- When changing the temperature, make sure to confirm with the customer that the temperature of the Hot Water will be very high and that there is a risk of scalding.
- Hot water heater temperatures over 125°F (52°C) can cause severe burns instantly or death from scalding.

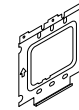
1. Turn the Water Heater off by pressing the .
2. Press and hold the  button until a sound is heard (approximately 2 seconds). [120°F/50°C] appears on the display.
3. Set the upper limit of the hot water temperature using the  /  buttons.
 - For Fahrenheit (°F): 125- 140°F (In 5°F intervals)
 - For Celsius (°C): 55°C, 60°C
4. Set the  button to ON when continuing to use the unit as is. Otherwise, let the unit sit for approximately 30 seconds.

Included Accessories

Remote Controller (× 1)



Mounting Bracket (× 1)



Flat Head Tapping Screw (× 2)



Dry Wall Anchor (× 2)



Flat Head Machine Screw (× 2)

(For junction box installation)



Round Head Machine Screw (× 2)



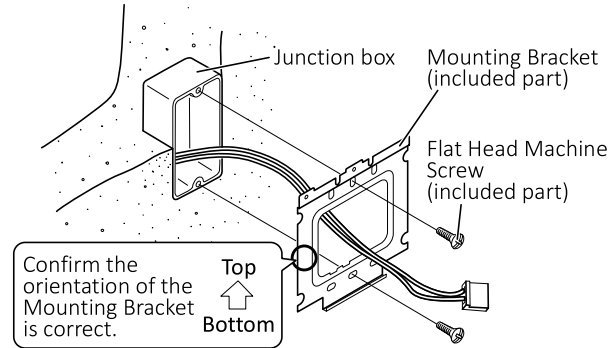
Installation

1. Attach the Mounting Bracket to the wall. The parts to be used vary depending on the attachment method.

NOTE Never use electric drivers, impact drivers, etc. Tightening with excessive force may result in deformation of the Mounting Bracket and/or failures.

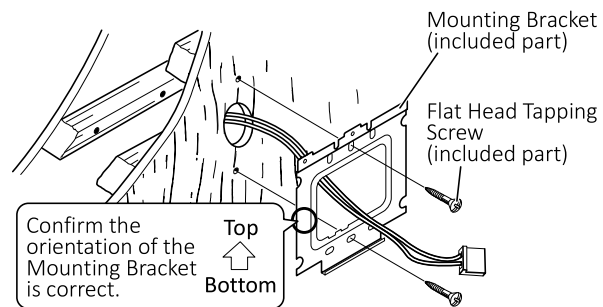
[When attaching to a junction box]

Use the Flat Head Machine Screws to attach the Mounting Bracket to the junction box.
(The Dry Wall Anchor and Flat Head Tapping Screws are not used.)



[When attaching to a wood surface]

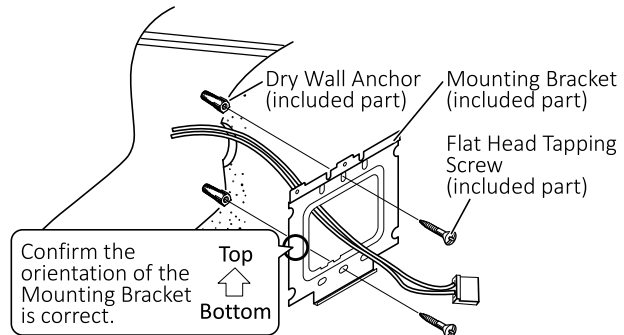
Use the Flat Head Tapping Screws to attach the Mounting Bracket.
(The Dry Wall Anchor and Flat Head Machine Screws are not used.)



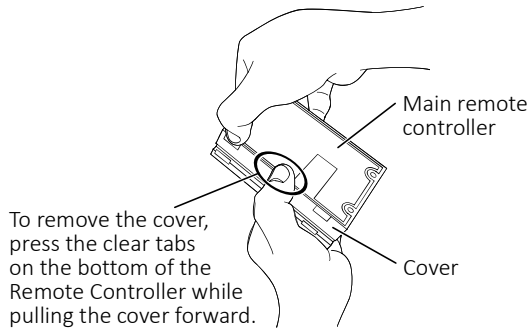
[When attaching to a concrete wall surface]

Drill a $\phi 1/4$ in. ($\phi 6$ mm) hole, approximately 1 in. (25 mm) in depth, and hammer in the Dry Wall Anchor.
Attach the Mounting Bracket using the Flat Head Tapping Screws.
(Flat Head Machine Screws are not used.)

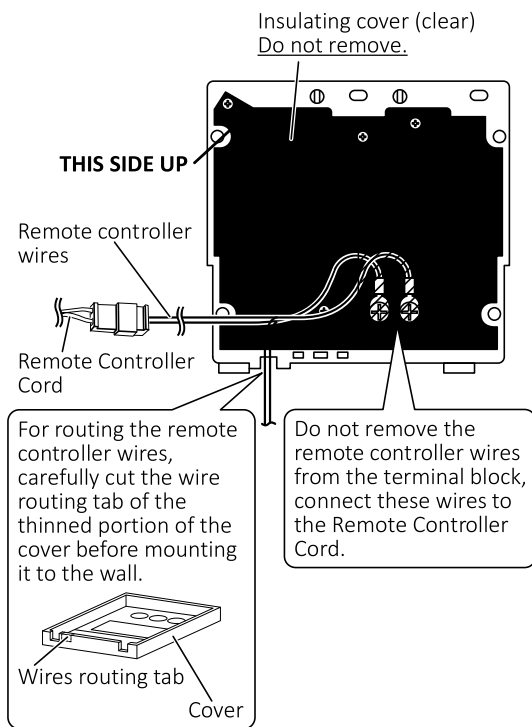
NOTE Too large hole for Dry Wall Anchor may result in failure to properly secure the Remote Controller.



- Remove the cover from the Remote Controller.
(The cover is set in the Remote Controller.)



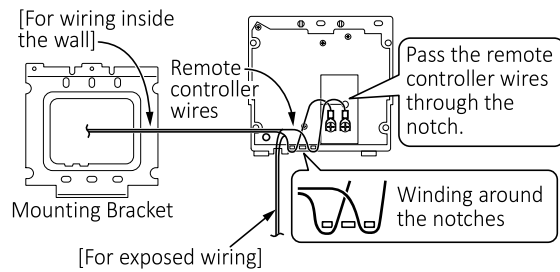
- Connect the Remote Controller wires to the cord supplied with the Water Heater.



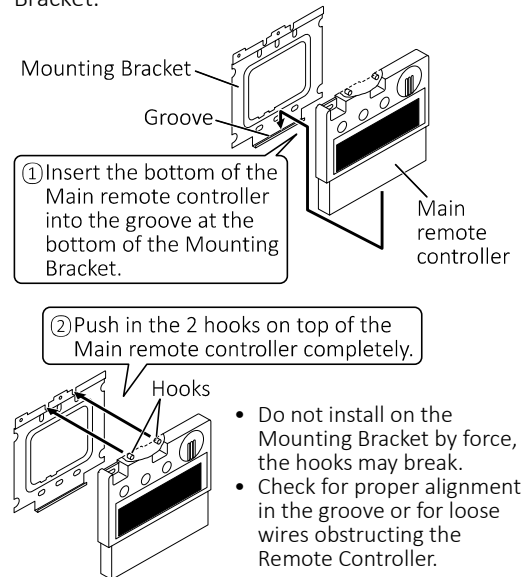
- Check the terminal is covered with Section A (■) of the insulating cover (clear, see the figure above).

NOTE If the Y-shaped terminal is not covered, the exposed section may come into contact with the Mounting Bracket resulting in improper operation or failure.

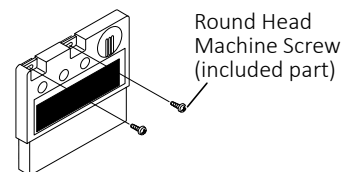
- Secure the remote controller wires by winding them around the notches.



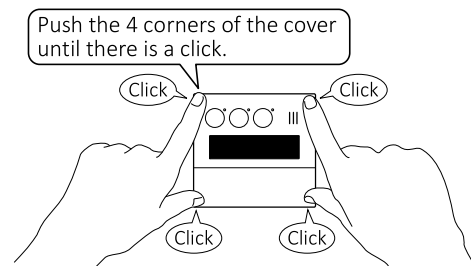
- Attach the Remote Controller to the Mounting Bracket.



- Secure the Main remote controller using the Round Head Machine Screws.

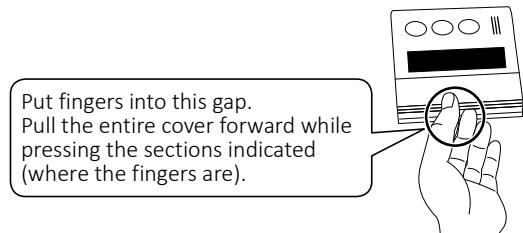


- Reattach the cover previously removed on step 2.



NOTE Incomplete installation may result in failures such as switch operation failure.

[To remove the cover after installation of the Remote Controller]



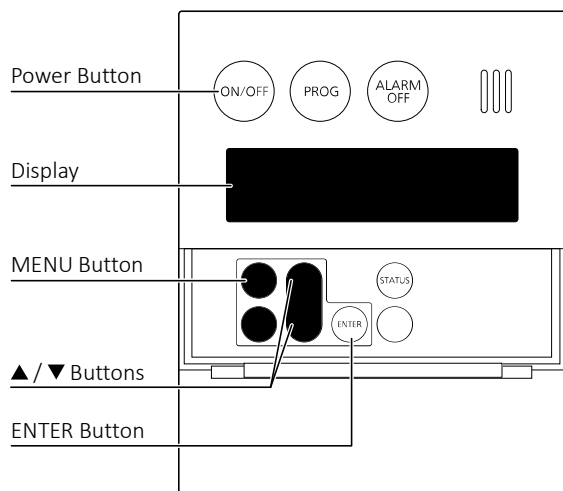
If it does not come off, insert a flat head driver into the notch at the bottom of the cover and slightly twist it to remove.

NOTE Due caution is required not to scratch the Remote Controller, the cover or the wall in doing so.

Post-installation Checks

1. Check if the Remote Controller is installed securely.
2. Check the Remote Controller operation. (See Owner's Guide)
 - Press the "Power" button approximately 5 seconds after connecting the electrical power to the Water Heater.
 - Check that the display appears on the Remote Controller.

Adjusting the Temperature / Water Quantity Display



1. Turn the Water Heater off by pressing the "Power" button on the Remote Controller.
2. Disconnect, then reconnect the electrical power to the Water Heater.

NOTE The setting must be done within the first 10 minutes of connecting the electrical power to the Water Heater.

3. Press the "MENU" button inside the cover, select "Initial settings" using the ▲ / ▼ buttons.
4. Press the "ENTER" button, the "Initial settings" screen appears on the display.
5. Select "[°F/gal] ↔ [°C/L]" using the ▲ / ▼ buttons.
 - °F/gal (Fahrenheit/Gallon): default setting
 - °C/L (Celsius/Liter)
6. Press the "ENTER" button and select either [°F/gal] or [°C/L] using the ▲ / ▼ buttons.
7. Press the "ENTER" button, "Set complete Please wait..." appears on the display for 5 seconds and then the "Initial settings" screen appears on the display.
8. To confirm the setting, turn the Water Heater on by pressing the "Power" button on the Remote Controller.

Limiting the Maximum Output Temperature

The maximum output temperature can be limited to prevent discharging hot water at too high of a temperature.

Default setting of maximum output temperature is 120°F (50°C).

⚠ DANGER

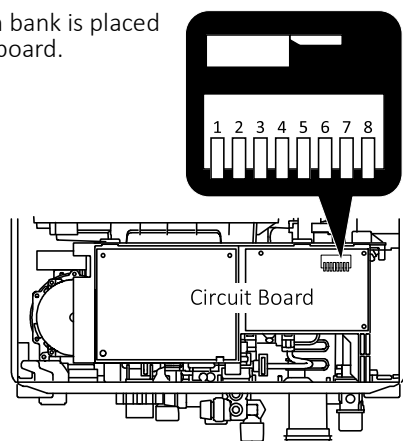
- When changing the temperature, make sure to confirm with the customer that the temperature of the Hot Water will be very high and that there is a risk of scalding.
- Hot water heater temperatures over 125°F (52°C) can cause severe burns instantly or death from scalding.

1. Turn the Water Heater off by pressing the "Power" button on the Remote Controller.
2. Press the "MENU" button inside the cover, select "Misc settings" using the ▲ / ▼ buttons.
3. Press the "ENTER" button, the "Misc settings" screen appears on the display.
4. Select "Max set Temp" using the ▲ / ▼ buttons.
5. Press the "ENTER" button, [120°F/50°C] appears on the display.
6. Set the upper limit of the hot water temperature using the ▲ / ▼ buttons.
 - For Fahrenheit (°F): 125- 140°F (In 5°F intervals)
 - For Celsius (°C): 55°C, 60°C
7. Press the "ENTER" button, "Set complete" appears on the display and then and then returns to the "Misc settings" screen.
8. To put the Water Heater back into operation, press the "Power" button. To keep the Water Heater off, either press the "MENU" button or let the Water Heater sit for 20 seconds to return to the original display.

12 Setting the DIP Switches

The location of DIP switch bank

The DIP switch bank is placed on the circuit board.



How to change the DIP switches

1. Disconnect the electrical power to the Water Heater before changing the DIP switches.*
2. Open the front cover of the Water Heater (4 screws).
3. Adjust the DIP switches.
4. Close the front cover of the Water Heater (4 screws).
5. Reconnect the electrical power to the Water Heater.

* Failure to perform this step will result a "73" code displayed on the Remote Controller and a cease in operation.
If this occurs, disconnect, then reconnect the electrical power to the Water Heater to reset the system.

DIP Switch Listing

[For outdoor installation]

Turn ON DIP switch #2.

[For using SV Conversion Kit (SV-CK-2)]

Turn ON DIP switch #3.

[For installing at an altitude of 2,000 ft (610 m) or higher]

Change DIP switch #5 and #6 by following the table below.

ON = ● / OFF = ○

| High elevation adjustment | DIP switches | |
|---------------------------------|--------------|----|
| | #5 | #6 |
| 0-2,000 ft (0-610 m) | ○ | ○ |
| 2,001-4,000 ft (611-1,219 m) | ● | ○ |
| 4,001-7,000 ft (1,220-2,134 m) | ○ | ● |
| 7,001-10,000 ft (2,135-3,048 m) | ● | ● |

[For adjusting to accommodate longer vent runs]

• When using PVC/CPVC/PP material

Change DIP switch #7 and #8 by following the table below.

ON = ● / OFF = ○

| Vent length condition | DIP switches | |
|--|--------------|----|
| | #7 | #8 |
| ① Less than 33 ft using 2 in. (50 mm) pipe | ○ | ○ |
| ② 33 ft or more using 2 in. (50 mm) pipe | ● | ○ |
| ③ Less than 75 ft using 3 in. (75 mm) pipe | ○ | ● |
| ④ 75 ft or more using 3 in. (75 mm) pipe | ● | ● |

Refer to page 20 for more details on ① to ④.

• When using 2 in. flexible PP material

Change DIP switch #7 by following the table below.

ON = ● / OFF = ○

| | Vent length | DIP switches | |
|--------------|--------------------------------|--------------|----|
| | | #7 | #8 |
| Short length | 5 ft (1.5 m) - 15 ft (4.5 m) | ○ | ○ |
| Long length | 15 ft (4.5 m) - 35 ft (10.5 m) | ● | ○ |

• When using flexible pipe for chimney

Change DIP switch #7 by following the table below.

(DuraVent® - Flex Through Chimney w/ Air Intake
(Only 3 in.))

ON = ● / OFF = ○

| Vent length condition | DIP switch #7 | Maximum equivalent vent length* V (Vertical) + H (Horizontal) | Equivalent length |
|-----------------------|---------------|--|---|
| Short length | ○ | < 50 ft (15 m) | Flexible pipe: 1 ft (0.3 m) Rigid pipe: 1 ft (0.3 m) |
| Long length | ● | 50 ft (15 m)–75 ft (22.5 m) | 90° elbow: 5 ft (1.5 m) 45° elbow: 3 ft (0.9 m) |

* The maximum vent length includes elbows.

(Centrotherm® - Flex Through Chimney w/ Air Intake
(Only 3 in.))

ON = ● / OFF = ○


| Vent length condition | DIP switch #7 | Maximum equivalent vent length* | Equivalent length |
|-----------------------|---------------|--|---|
| Short length | ○ | Exhaust vent V (Vertical) + H (Horizontal): < 50 ft (15 m) Air Intake: < 50 ft (15 m) | Flexible pipe: 1 ft (0.3 m) Rigid pipe: 1 ft (0.3 m) |
| Long length | ● | Exhaust vent V (Vertical) + H (Horizontal): 50 ft (15 m)–75 ft (22.5 m) Air Intake: < 75 ft (22.5 m) | 90° elbow: 5 ft (1.5 m) 45° elbow: 3 ft (0.9 m) |

* The maximum vent length includes elbows.






13 Setting for Recirculation

Auto recirculation (Learning mode) start automatically when the Remote Controller is turned on. When changing other recirculation mode (e.g. conforming to Title 24), change the setting as follows.

For RC-7651M-A



1. Turn the Water Heater off by pressing the  button on the Remote Controller.
2. Disconnect, then reconnect the electrical power to the Water Heater.


NOTE The setting must be done within the first 10 minutes of connecting the electrical power to the Water Heater.

3. Press the  button and hold it until the Remote Controller displays item number “99”.
 - This will put the Water Heater into Maintenance Writer mode.
 - If pressing the  button does not put the Water Heater into Maintenance Writer mode, make sure the remote controller display is blank, unplug the Water Heater for 60 seconds, and try again.
4. Change the Maintenance Writer item number display using the  /  buttons, and then press the  button for 0.5 seconds.

ON = ● / OFF = ○

| | | | | |
|--|---|---|---|---|
| | ○ | ○ | ○ | ○ |
| | ● | ○ | ● | ● |
| | ○ | ○ | ● | ○ |
| | ○ | ○ | ● | ● |









- The item number setting change from “OFF” to “ON”.
 - If the PRIORITY indicator turns on when an item number is displayed, this indicates an “ON” setting for that item number, and if the PRIORITY indicator is off, the item number is “OFF”.
5. After setting these item number, press and hold both the  /  buttons for five seconds to confirm the new settings.
 - The Remote Controller will emit a beeping tone and the display will go blank when the settings are confirmed.
 - If this is not done, the Water Heater will not put the setting changes into effect.

- NOTE**
- The setting changes can be cancelled by pressing the  button before confirming the settings, or if the Water Heater is left alone for 10 minutes without confirming the settings.
 - If the default setting needs to be changed again, disconnect the electrical power to the Water Heater, reconnect it and repeat this procedure.

For RC-9018M



1. Turn the Water Heater off by pressing the “Power” button on the Remote Controller.
2. Disconnect, then reconnect the electrical power to the Water Heater.

NOTE The setting must be done within the first 10 minutes of connecting the electrical power to the Water Heater.

3. Press the  /  buttons and hold them until the Remote Controller displays item number “99”.
 - This will put the Water Heater into Maintenance Writer mode.
 - If pressing the  /  buttons does not put the unit into Maintenance Writer mode, make sure the remote controller display is blank, unplug the Water Heater for 60 seconds, and try again.
4. Change the item number on the column of the item using the  /  buttons, and then press the “ENTER” button.
 - “Item number” stops blinking and “Data state (OFF or ON)” will start blink.
5. Change from “OFF” to “ON” using the  /  buttons, and then press the “ENTER” button.
 - “Data state (ON)” stops blinking and “Item number” will start blink.

ON = ● / OFF = ○

| | | | | |
|--|---|---|---|---|
| | ○ | ○ | ○ | ○ |
| | ● | ○ | ● | ● |
| | ○ | ● | ○ | ○ |
| | ○ | ○ | ● | ○ |
| | ○ | ○ | ● | ● |

6. After setting these item number, press and hold both the  /  buttons until the Remote Controller will emit a beeping tone.
 - If this is not done, the Water Heater will not put the setting changes into effect.
7. Disconnect the electrical power to the Water Heater.
Wait 10 seconds or more, and reconnect the electrical power.

14 Trial Operation

The installer should test operate the Water Heater, explain to the customer how to use the Water Heater, and give the owner this manual before leaving the installation.

Trial Operation

⚠ DANGER

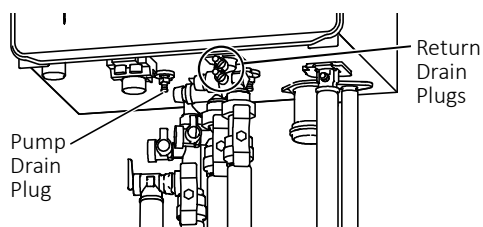
There is a scald potential if the setting temperature is too high.


Should overheating occur, or the gas supply fail to shut off, turn off the manual control valve to the appliance.

- NOTE**
- White smoke may be noticed from the exhaust vent during cold weather. This is not a malfunction of the Water Heater.
 - If the Water Heater does not operate normally, refer to “Troubleshooting” in the Owner’s Guide.


1. Purge the air in the Water Heater and all the water line in accordance with following procedure.
 - 1) Open a hot water fixture to confirm that water is available, and then close the fixture.
 - 2) (Only with the return line) Open the pump drain plug and 2 return drain plugs to purge the air in the return line.


NOTE Drain water into a bucket to prevent water damage.




2. Open the gas supply valve.
3. Turn on the  button or the “Power” button on the Remote Controller (the Power indicator will turn on).
 - Recirculation pump turns on automatically and starts Auto recirculation mode. (If using On-Demand (Title 24) mode, press the on-demand switch to start pump operation.)

NOTE If a gurgling sound occurs or an error code “63” appears on the Remote Controller, air may be trapped in the cold water supply line and the hot water return line.

- 1) Turn off the  button or the “Power” button.

- 2) Repeat step 1-1) and 2).
- 3) Turn on the  button or the “Power” button.
- 4) If necessary, repeat until the air is completely purged from the cold water supply line and the hot water return line.

[If installed a single water heater]

4. After two minutes since turning on the  button or the “Power” button, open a hot water fixture and confirm that the Flame symbol comes on, and that hot water is being produced.


NOTE If an error code “11” appears on the Remote Controller, air may be trapped in the gas line.

- 1) Close a hot water fixture.
- 2) Turn the Water Heater off and then back on.
- 3) Reopen a hot water fixture.
- 4) If necessary, repeat until the air is completely purged from the gas line.

5. Check that the hot water temperature changes by pressing the ▲ / ▼ buttons.

Proceed to Steps 6 and 7

[If installed with a Quick Connect Multi-System]

4. Two minutes after turning on the  button or the “Power” button, slowly open a hot water fixture and check that a Water Heater ignites independently.

NOTE If an error code “11” or “F11” appears on the Remote Controller, air may be trapped in the gas line.



- 1) Close a hot water fixture.
- 2) Turn the Water Heater off and then back on.
- 3) Reopen a hot water fixture.
- 4) If necessary, repeat until the air is completely purged from the gas line.

5. To change ignition priority on the Water Heaters, press and hold the Minimum burner set button on the circuit board. After two minutes since changing ignition priority, repeat step 4.

Water Heater A Ignites
Water Heater B Doesn't Ignite

Press and hold the Minimum burner set button on Water Heater B

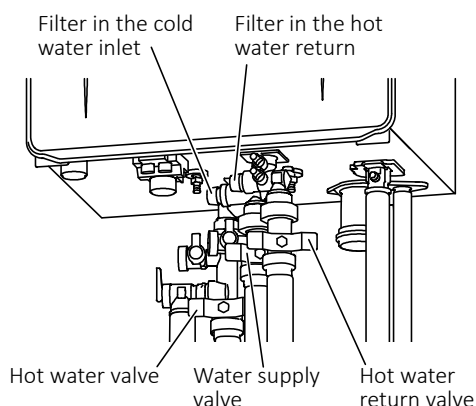
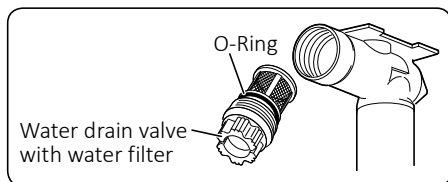
Water Heater A Doesn't Ignite
Water Heater B Ignites

- NOTE**
- If an error code “63” appears on the Remote Controller, air is trapped in the cold water supply line and the hot water return line.
 - 1) Turn off the  button or the “Power” button.
 - 2) Purge the air from the cold water supply line and the hot water return line.
 - 3) Turn on the  button or the “Power” button.
 - 4) If necessary, repeat until the air is completely purged from the cold water supply line and the hot water return line.
 - If step 4 and step 5 cannot be done, the Quick Connect Cord may not be properly connected. Check that the cord is properly connected.

Proceed to Steps 6 and 7

[Procedure to follow after step 5 for both installation of a single Water Heater and installation with a Quick Connect Multi-System]

6.
 - Make sure that there are no obstructions blocking the condensate drain line from discharging condensate.
 - Be sure to check that condensate is freely flowing from the condensate drain piping. Condensate will begin flowing out of the Water Heater **within 15 minutes after operation has started.**
7. After the trial operation, clean the filters in the cold water inlet and the hot water return according to the procedure as follows.
 - 1) Close the hot water valve, the water supply valve, and the hot water return valve.



- 2) With a bucket ready, remove the water drain valves.

NOTE Approximately 0.85 gallon (3.2 L) of water will drain out.

- 3) Clean each water filter with a brush under running water.
- 4) Reattach the water drain valves (with water filter).

NOTE Do not lose the O-Ring.

- 5) Open the hot water valve, the water supply valve, and the hot water return valve. Check that water does not leak from the water drain valves.
- 6) Purge the air again referring to step 1-3 on page 60.

If error codes “11”, “12”, and “90” appear, check the following contents.



[“11” : Ignition failure, “12” : Flame loss]

- Check that the gas supply line is appropriately sized.
- Check that the gas supply pressure is within the ranges required in this manual.
- Check that the gas supply matches the type indicated on the Water Heater’s rating plate.
- Air may be left in the gas piping. Cycle the power ON/OFF.
- Check that the settings of all DIP switches are appropriate.

[“90” : Combustion abnormality]

- Check that the air supply / exhaust vent for blockage.
- Check that the gas supply pressure is within the ranges required in this manual.
- Check that the condensate piping is not frozen or clogged.
- Check that the condensate piping is in a downward slope.
- Check that the settings of all DIP switches are appropriate.

Handling after trial operation

- Recirculation operates continuously for the first 24 hours after turn on the  button. When stopping the recirculation, turn off the  button, or change the setting referring to “Stopping the Recirculation Operation” on page 53.
- Explain the “Important Safety Information”, “Operation Procedures” and “Follow-up Service” according to the Owner's Guide supplied with the Water Heater.
- If the Water Heater will not be used immediately, close off all gas and water shut off valves, drain all of the water out of the Water Heater and the plumbing system to prevent the Water Heater and system from freezing, and bleed the gas out of the gas line.
Refer to the procedure for preventing damage from freezing in the Owner's Guide.

NOTICE

Freezing is not covered by the Noritz America Limited Warranty.

Shutdown Instructions

1. Stop any water demand.
2. Turn off the electrical power.
3. Turn the gas control manual valve clockwise to the off position.

Lighting Instructions

⚠ WARNING

A fire or explosion may result if these instructions are not followed, which may cause loss of life, personal injury or property damage.

This Water Heater does not have a pilot. It is equipped with an ignition device that automatically lights the burner.

Do not try to light the burner by hand.

1. Read the safety information in the installation manual or on the front of the Water Heater.
2. Turn off all electrical power to the Water Heater.
3. Do not attempt to light the burner by hand.
4. Turn the gas control manual valve (external to the Water Heater) clockwise to the off position.
5. Wait five minutes to clear out any gas. If the smell of gas remains, stop, and follow the instructions on page 3 of Owner's Guide.
6. Turn the gas control manual valve counterclockwise to the on position.
7. Turn on the electrical power to the Water Heater.
8. The Water Heater will now operate whenever hot water is called for. If the Water Heater will not operate, follow the shutdown instructions and call a service technician.

15 Checklist After Installation

After installing the Water Heater, review the following checklist. You should be able to answer “Yes” to all of the items in the checklist. If you answer NO to any item, installation is not complete. Review the appropriate sections to complete the installation.

If you have additional questions or need assistance with installation, contact Noritz America at 1-866-766-7489.

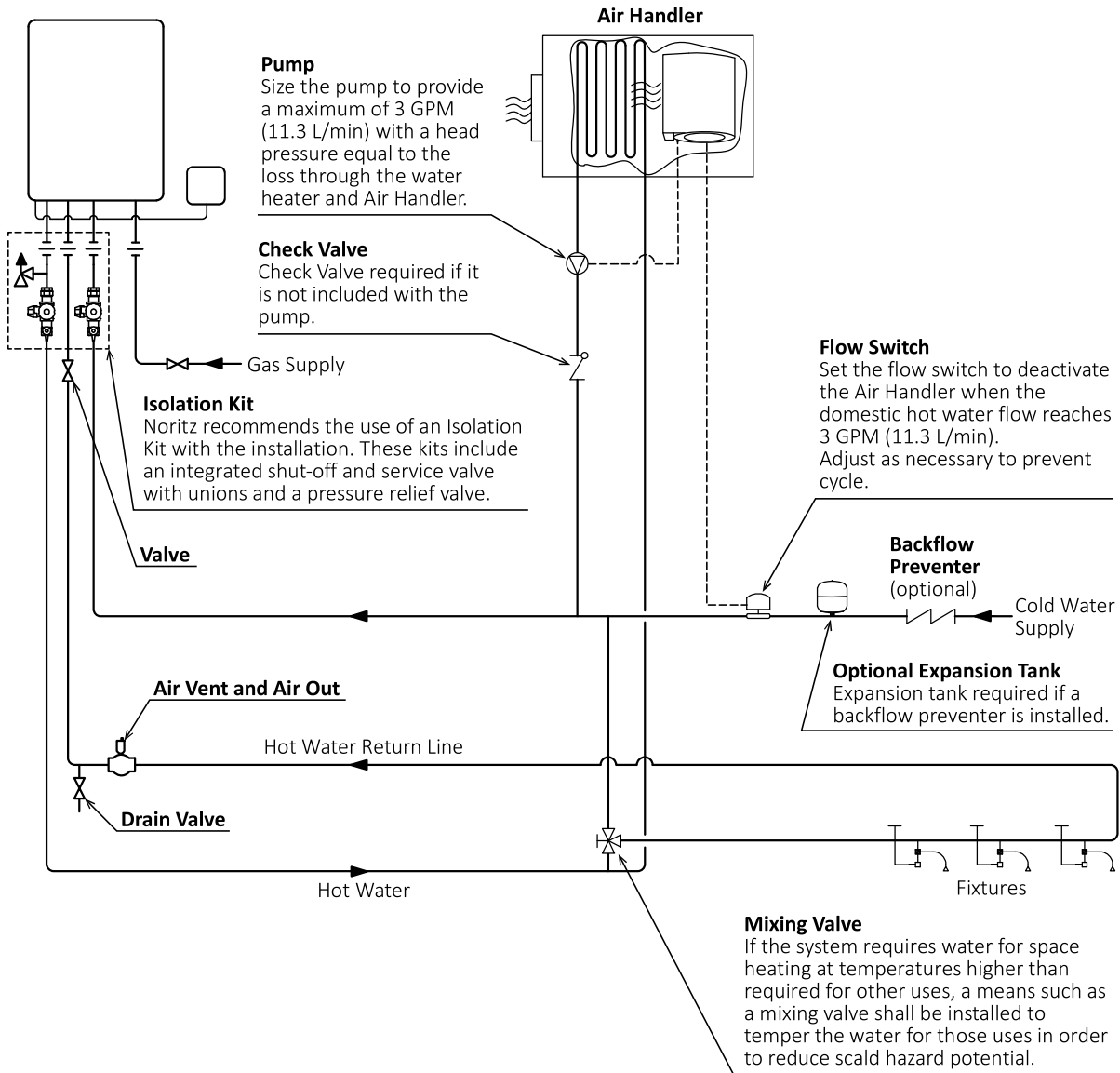
| | | |
|--|--|--|
| Make sure that the Water Heater is not installed in the following places. | | |
| <ul style="list-style-type: none"> • Places where gasoline, benzene and adhesives are handled • Places in which corrosive gases (ammonia, chlorine, sulfur, ethylene compounds, acids) are present in the air • Places dust or debris will accumulate | | |
| Make sure that the Water Heater meets the required clearances. | | |
| Make sure that the condensate container is filled with water. | | |
| Make sure that required combustion air is supplied to the Water Heater. | | |
| Make sure using vent materials approved for use with category IV appliances. | | |
| Make sure that there is no leakage or loose connection in the venting system. | | |
| Make sure that the vent length is within the requirement. | | |
| Make sure that bird screen(s) is installed on the vent termination. | | |
| Make sure that the termination meets the clearance requirements. | | |
| When using a horizontal section, make sure that the horizontal vent slope is 1/4 in. upwards for every 12 in. (300 mm) toward the termination. | | |
| Make sure that the intake pipe and exhaust pipe are properly installed. | | |
| Make sure that the vent system conforms with local codes, state codes, or national codes as ANSI/NFPA and CSA. | | |
| Make sure that the gas type is compatible with the type indicated on the Water Heater’s rating plate. | | |
| Clean out any debris from the gas piping before connecting the Water Heater. | | |
| Make sure that the gas piping size is appropriate. | | |
| Make sure that the inlet gas pressure is within the specified range. | | |
| Make sure that there are no leaks from the Water Heater and its gas connection. | | |
| Clean out metal powder, sand and dirt from the water piping before connecting the Water Heater. | | |
| Make sure to check and test the water quality to see if water treatment is necessary. | | |
| Make sure that the water supply pressure is 15 to 150 psi (103.4 to 1034 kPa). | | |
| Make sure that there is no water leakage from the cold water supply pipe and the hot water supply pipe. | | |
| Make sure that the pressure relief valve is installed. | | |
| Make sure that the cold water supply line and the hot water supply line are properly connected to the Water Heater. | | |

| | | |
|---|--|--|
| Make sure that appropriate heat insulation measures are taken according to regional climate. (e.g. wrapping with heat insulation materials, using electric heaters) | | |
| (Only for crossover mode) Make sure the crossover valve is installed at the furthest fixture from the Water Heater on the hot water line. | | |
| | | |
| Make sure that the condensate drain piping is connected. | | |
| Make sure that corrosion resistant material is used for the condensate drain piping. | | |
| Make sure that the size of the condensate drain piping is 1/2 in or larger. | | |
| Make sure that the condensate drain piping slopes towards the inside floor drain or condensate pump. | | |
| Make sure that the end of the condensate drain pipe is open to the atmosphere. | | |
| Make sure that the condensate has been treated before disposal as necessary. (when required by local code or when the condensate could cause damage) | | |
| Make sure that measures are taken to prevent the condensate drain lines from freezing. (e.g. insulation material, heat tape or electric heater) | | |
| | | |
| Make sure that the electrical supply is 120VAC at 60 Hz. | | |
| Make sure the grounding resistance is less than 100 Ω. | | |
| Make sure the Remote Controller Cord is correctly installed. | | |
| (Only for crossover mode) Make sure the connector marked "Crossover" is connected. | | |
| | | |
| Make sure that the location of the Remote Controller is appropriate. | | |
| Check the Remote Controller operation accordance with the Owner's Guide. | | |
| Make sure that the display appears on the Remote Controller. | | |
| | | |
| Make sure that all DIP switches are set correctly. | | |
| | | |
| (When conforming to Title 24) Make sure that recirculation settings are set appropriately. | | |
| | | |
| Open a hot water fixture, make sure the BURNER ON indicator or the Flame indicator is displayed on the Remote Controller and hot water is present at the fixture. | | |
| Clean the filter in the cold water inlet after the trial operation. | | |
| If the Water Heater will not be used immediately, do the following. <ul style="list-style-type: none"> • Close all gas and water shutoff valves. • Drain all the water in the Water Heater and the plumbing system. • Disconnect the electrical power to the Water Heater. | | |
| Make sure there is no error code indication "63" on the Remote Controller after trial operation. | | |
| Make sure there is no gurgling sound occurs when the pump operating. | | |
| Explain the "Important Safety Information", "Operation Procedures" and "Follow-up Service" according to the Owner's Guide to the customer. | | |
| | | |
| Make sure that only one Remote Controller is installed. | | |

16 Plumbing Applications

Combination Potable Water and Space Heating System

- The Water Heater cannot be used for space heating applications only.
- Only POTABLE water may be plumbed through the Water Heater.
- Change the recirculation setting to “Always Recirc ON” mode referring to page 59.
- Crossover valve is not available for the Space Heating system.



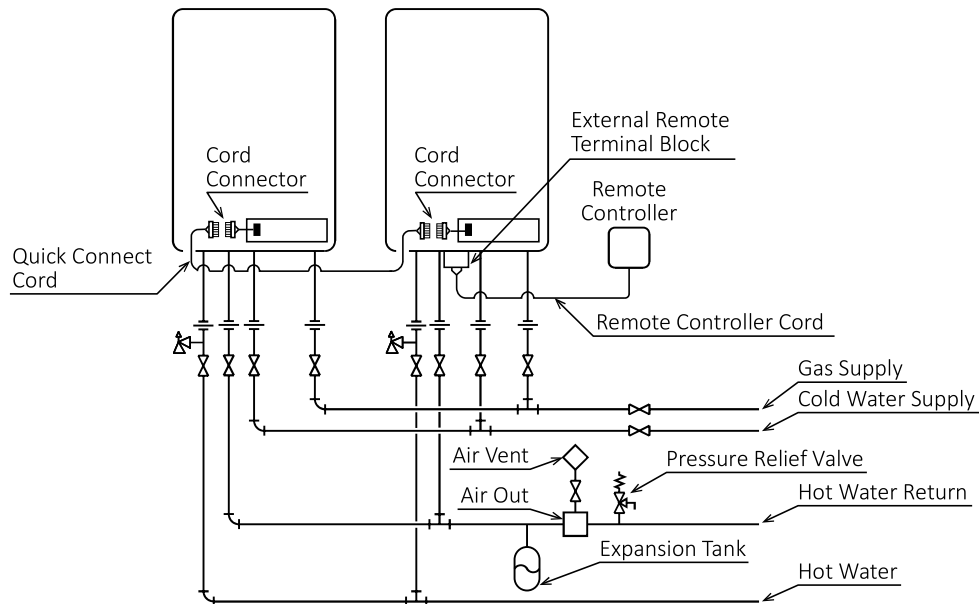
17 Installation of the Quick Connect Multi-System

The Quick Connect Multi-System allows the installation of two Water Heaters together utilizing only the Quick Connect Cord (part #QC-2, sold separately).

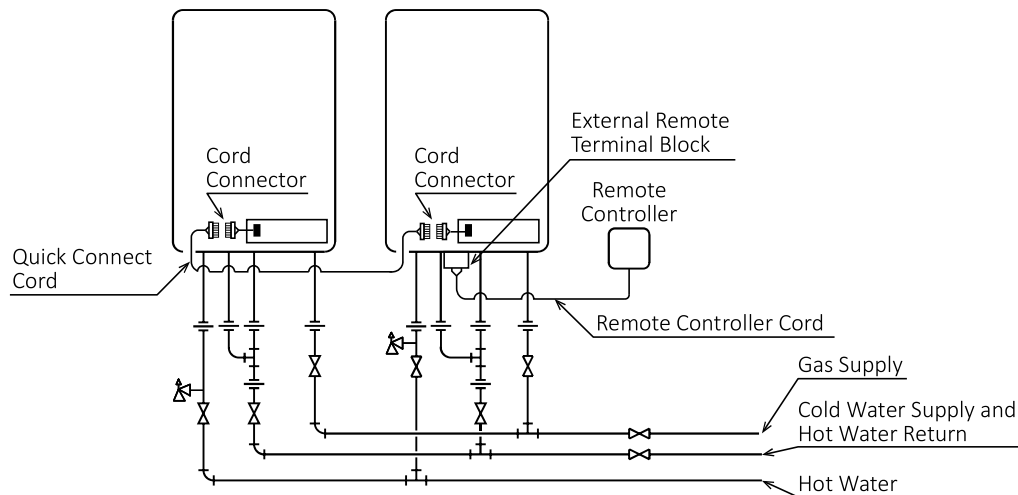
System Diagram

- Connect a single Remote Controller to only one of the Water Heaters.
- Water Heaters must be same model.

[With the return line]



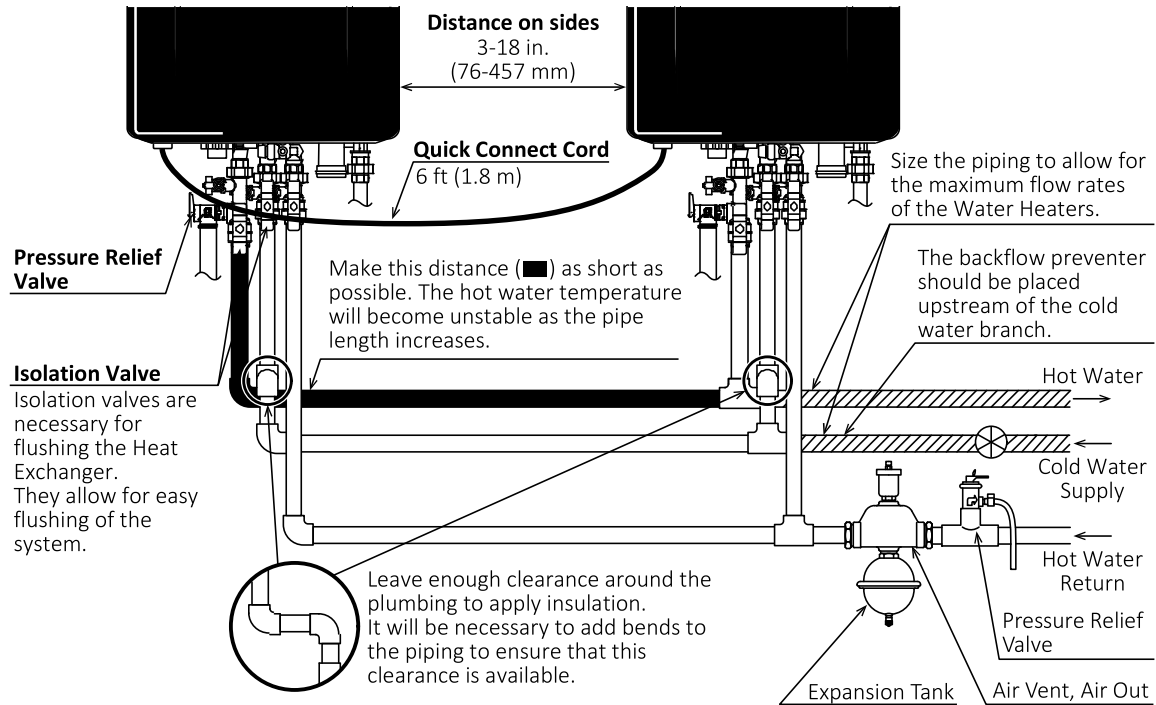
[With the Crossover Valve]



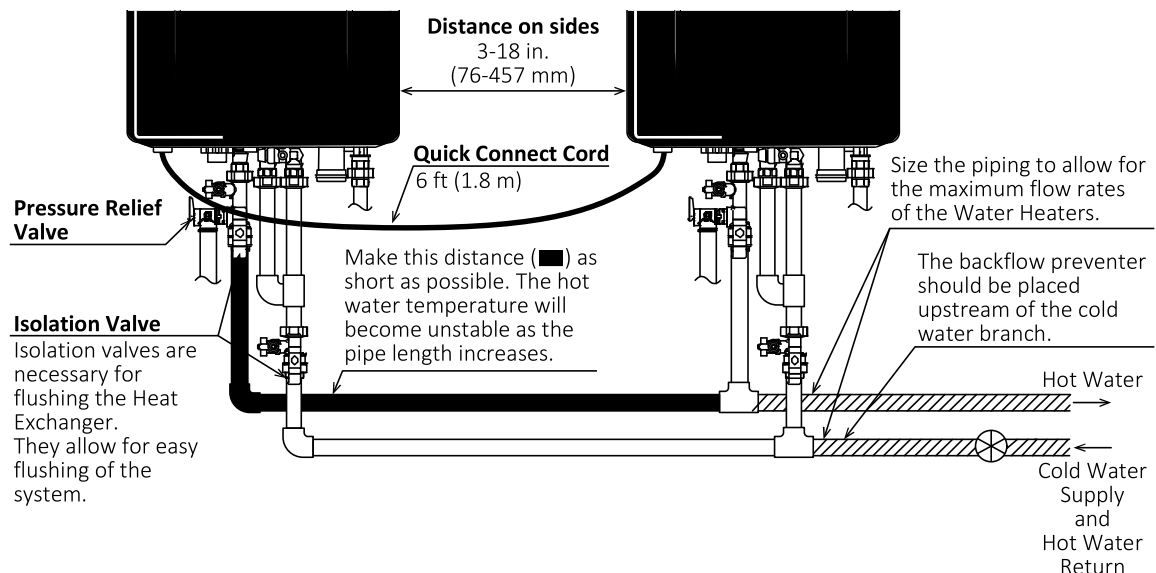
Typical Plumbing

Insulate or apply heating materials to both the cold water supply piping and the hot water supply piping to prevent freezing during cold weather and to prevent heat loss through the piping.

[With the return line]



[With the Crossover Valve]



18 Maintenance

- Check the following to ensure proper operation of the Water Heater periodically.
- Also check the items of maintenance described in the Owner's Guide.

[Venting System]

- The venting system must be examined periodically by a qualified service technician to check for any leaks or corrosion.
- Do not obstruct the flow of combustion and ventilation air.

[Burner]

- Check the burner flame periodically for a proper blue color and consistency.
- If the flame does not appear normal, the burner may need to be cleaned by a qualified service technician.

[Pressure relief valve]

- Operate the pressure relief valve once a year to ensure that it is functioning properly and there is no obstruction. Turn the power off to the Water Heater before opening the pressure relief valve, and make sure that water draining out of the valve will not cause any damage.
- If the pressure relief valve discharges periodically, it may be due to thermal expansion in a closed water system. Contact the water supplier or a local plumbing inspector on how to correct this situation. Do not plug the pressure relief valve.

[Water filter]

- Check and clean the filter inside of cold inlet connection.

NOTICE

Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

NOTE This procedure is only intended for use by a qualified service professional or authorized Noritz Service Representative. Any unauthorized use of this procedure may result in voiding the Noritz America Limited Warranty. Contact Noritz America (1-866-766-7489) for additional support.

If the alarm code "C1#*" is flashing on the Remote Controller, it means there is Scale Build-up in the Heat Exchanger. To prevent damage to the Heat Exchanger from Scale Build-up, the Heat Exchanger needs to be flushed** to remove the Scale Build-up.

Damage to the Water Heater due to Scale Build-up is not covered by the Water Heater's warranty.

To clear the alarm code "C1#*", the Heat Exchanger must be flushed.

If the alarm code "C1#*" is displayed and flashing on the Remote Controller, contact Noritz America (1-866-766-7489).

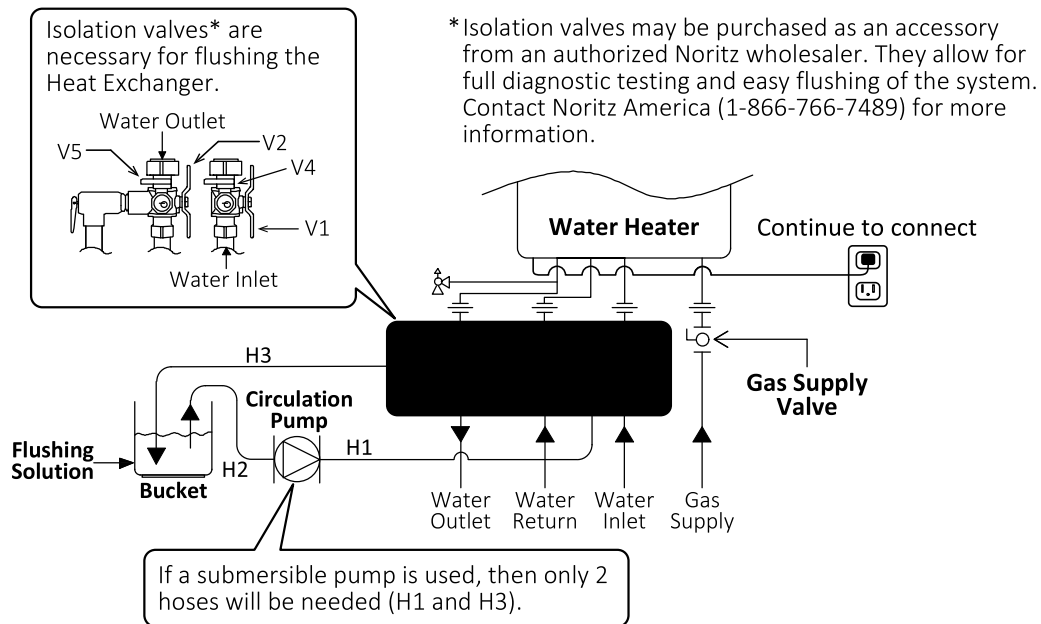
* Warning indication, # = 1-9

** Connect the blue connector marked "FLUSH" for flushing near the Circuit Board when flushing the Heat Exchanger. After connecting it, the Water Heater is set to "Flushing Mode".

NOTE The Water Heater must remain connected to the electrical power when flushing the Heat Exchanger.

The preparation of the flushing system

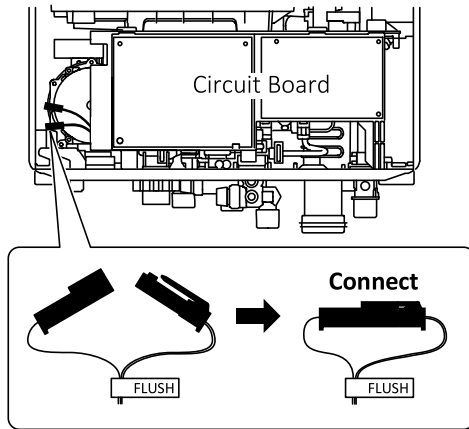
1. Close the gas supply valve.
2. Close the water inlet valve (V1), the water outlet valve (V2) and the water return valve (V3).
3. Connect the one drain hose (H1) to the drain valve (V4), and then the other to the circulation pump.
4. Connect the drain hose (H2) to the circulation pump.
5. Connect the drain hose (H3) to the drain valve (V5).
6. Pour 1 gallon of "Calcium, Lime and Rust Removal Product" and 1 gallon water into the bucket.
7. Noritz recommends "Calcium, Lime and Rust Removal Product" for flushing.
8. Place the both drain hoses (H2 and H3) into the bucket filled with the flushing solution.
9. Open the both drain valves (V4 and V5).



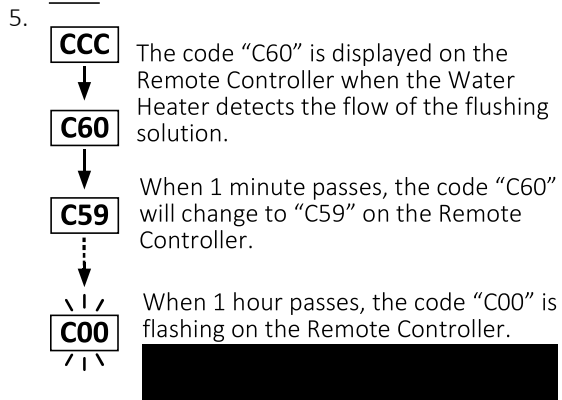
For Single Water Heater

[Procedure 1. Flushing the Heat Exchanger]

1. Open the front cover.
2. Connect the blue connector marked "FLUSH" for flushing near the Circuit Board.



3. Then the code **CCC** is displayed on the Remote Controller.
4. Turn on the circulation pump to circulate the flushing solution through the Water Heater for 1 hour at a rate of 1.5 GPM or more.



NOTE Check whether the reverse connection of the hose (H1) and (H3) if the display number will not change. In that case, the flow rate of the flushing solution may be under 1.5 GPM.

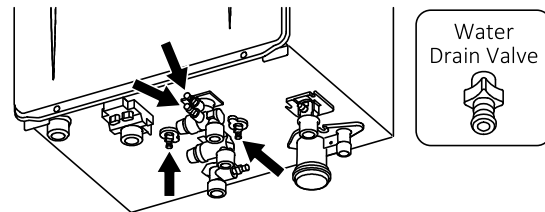
6. Turn off the circulation pump.

[Procedure 2. Cleaning the Heat Exchanger]

The flushing solution needs to be rinsed and cleaned out of the Water Heater.

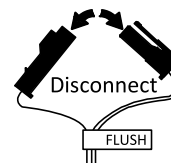
Below is the way to rinse and clean the flushing solution.

1. Remove both drain hoses (H2 and H3) from the bucket. And then place the drain hose (H3) into the sink or outside to drain.
2. Close the drain valve (V3) and then open the water inlet valve (V1). Do not open the fresh water outlet valve (V2).
3. Clean the Water Heater with fresh water for 3 minutes or more. (Needs to have enough time to clean the Water Heater.)



NOTE The Water Heater has four "Water Drain Valves" on the bottom of the Water Heater. Place a bucket under the Water Heater to drain water from the "Water Drain Valves". Carefully unscrew the "Water Drain Valves" to rinse flushing solution out of the Water Heater for about 10 seconds, then close the "Water Drain Valves".

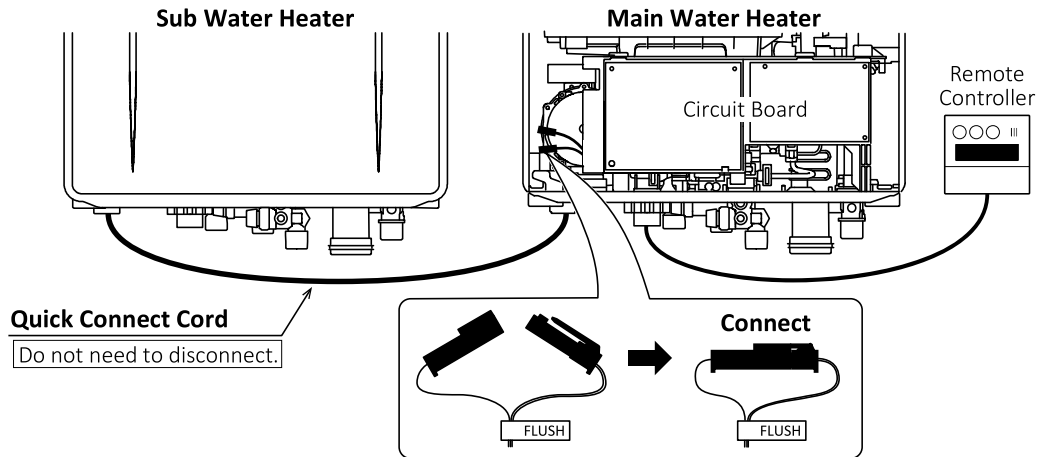
4. Close the drain valve (V4) and then remove the drain hose (H3) from the drain valve (V4).
5. Remove the drain hose (H1) from the drain valve (V3).
6. Disconnect the blue connector marked "FLUSH" for flushing. The code "C00" goes out on the Remote Controller.



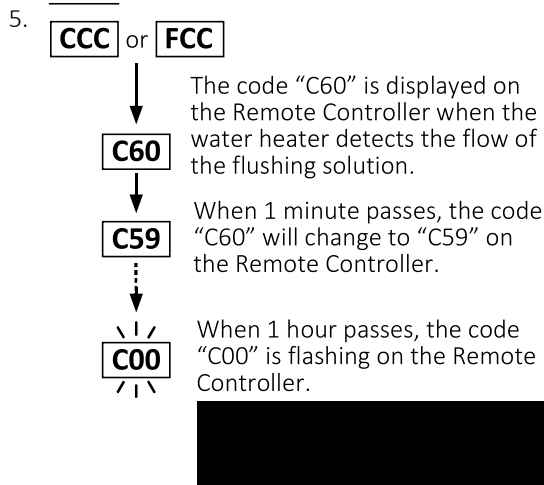
7. Close the front cover.
8. Open the gas supply valve and water outlet valve (V2).
9. Check for correct operation of the Water Heater.

For Quick Connect Multi-System

1. Open the front covers.
2. Connect the blue connector marked "FLUSH" for Water Heater needing to be flushed.
(The Water Heater is isolated from Quick Connect Multi-system when the blue connector marked "FLUSH" for flushing is connected. Do not need to disconnect the Quick Connect Cord.)

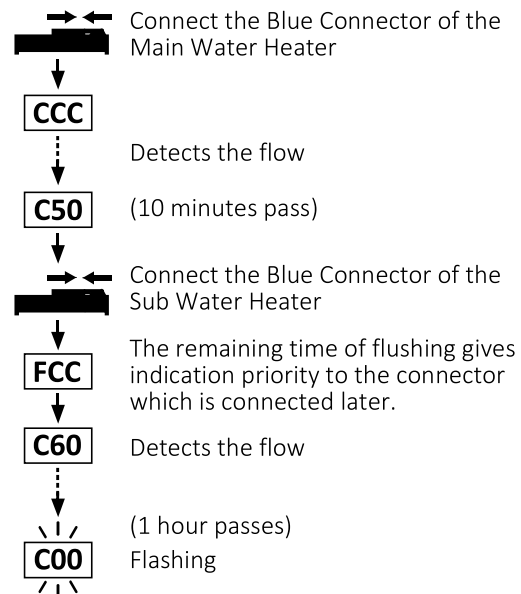


3. Then the code **CCC** or **FCC** is displayed on the Remote Controller.
 - "CCC" is displayed when the Blue Connector of the Main Water Heater is connected.
 - "FCC" is displayed when the Blue Connector of the Sub Water Heater is connected.
4. Turn on the circulation pump to circulate the flushing solution through the Water Heaters for 1 hour at a rate of 1.5 GPM or more.



NOTE Check whether the reverse connection of the hose (H1) and (H3) if the display number will not change. In that case, the flow rate of the flushing solution may be under 1.5 GPM.

(e.g. The display when the both Water Heaters are flushed at the same time)



6. Turn off the circulation pump.
7. Rinse and clean the flushing solution out of the Water Heaters in accordance with "For Single Water Heater [Procedure 2]". (See the "Procedure 2.1-2.5".)
8. Disconnect the blue connector marked "FLUSH" for flushing.
The Code "C00" goes out on the Remote Controller.
9. Close the front covers.
10. Open the gas supply valves and water outlet valves.
11. Check for correct operation of the Water Heaters.

