

## 4. Maintaining the Water Heater

### 4.1 Cleaning the Water Heater

#### CAUTION

Make sure the water heater is turned off and the power supply is disconnected before cleaning the water heater. The water heater may remain hot for several minutes after it is turned off. To prevent burns, wait until the water heater has cooled down before cleaning.

To clean the water heater, wipe the outside with a damp cloth. Use a non-acidic, non-abrasive cleaner to remove any surface stains. The front panel is moisture resistant, but it is not waterproof. Keep it as dry as possible.

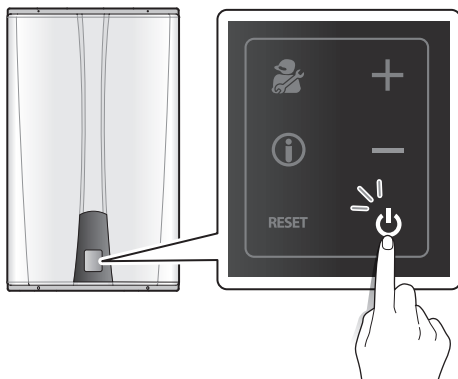
### 4.2 Draining the Water Heater

You need to drain the water heater before performing maintenance tasks, such as cleaning the inlet water filter, or to prevent the water heater from freezing when it will not be used for an extended period.

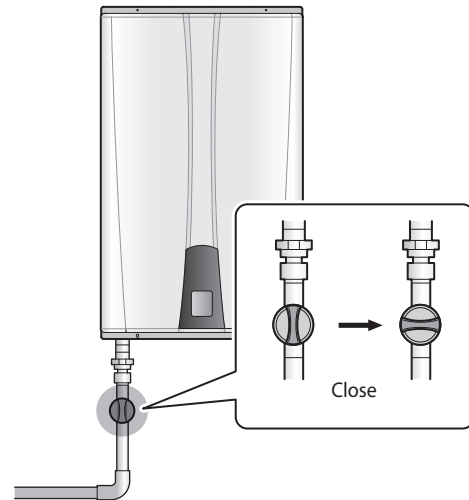
Refer to the “2.2 Parts of the Water Heater” on page 6 for details about part locations.

To drain the water heater:

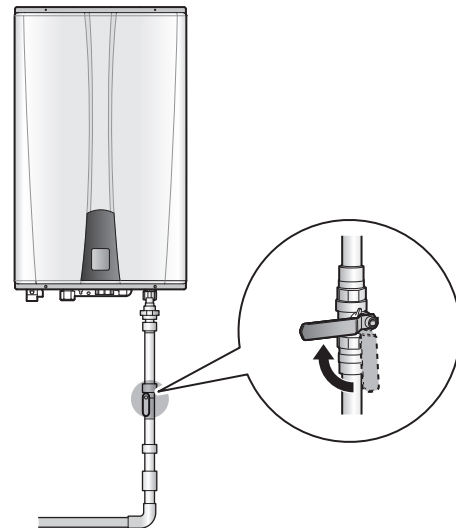
1. Place a bucket under the water heater, to collect the residual water inside the water heater.
2. Press the Power button on the front panel to turn off the power to the water heater.



3. Close the gas valve.

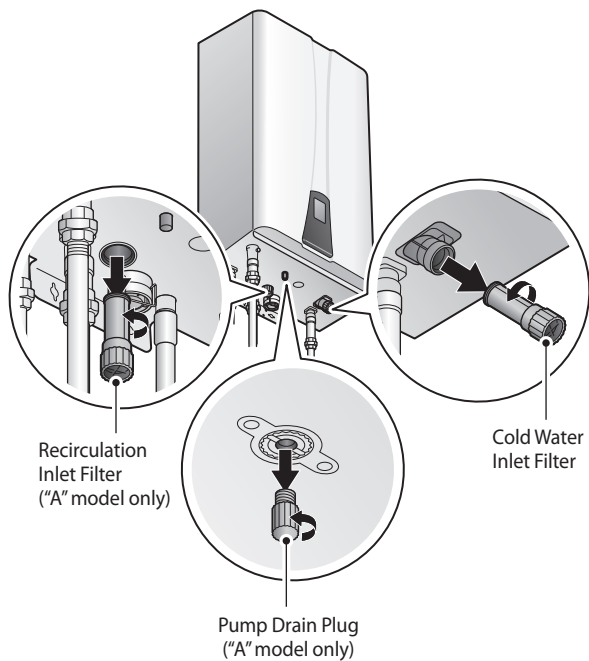


4. Close the water supply valve on the inlet to the water heater. If there is no valve, turn off the water supply at the water main.



5. Open all hot water faucets completely. The water that remains in the plumbing lines will drain out.

- Remove the recirculation inlet filter from the bottom of the water heater ("A" model only).



- Open the pump drain plug ("A" model only).
- Remove the cold water inlet filter.
- Allow the residual water to drain from the water heater.
- When the water is completely drained, reinsert the recirculation inlet filter and the cold water inlet filter, and then close the pump drain plug.
- To refill the water heater follow the steps of "Draining the Water Heater" in reverse.

### 4.3 Flushing the Heat Exchanger

#### ⚠ CAUTION

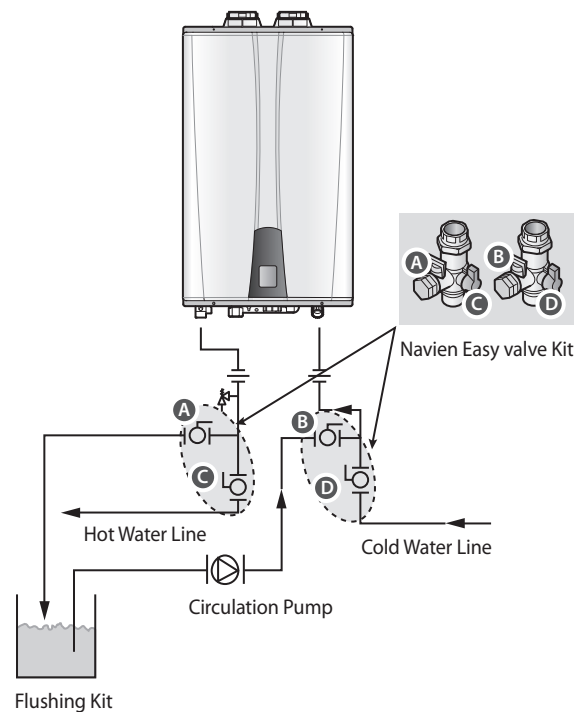
Flushing the Heat Exchanger is a somewhat complicated procedure. Read the following instructions carefully before attempting this procedure. If you are uncertain about any of the steps in the procedure, contact an authorized technician or licensed professional. Keep in mind that improper maintenance can void your warranty.

Refer to the "2.2 Parts of the Water Heater" on page 6 for details about part locations.

Before flushing the Heat Exchanger, gather the following items:

- A bucket that is 5 gallons or larger
- Cleaning solution diluted with water
- 3 hoses
- A water circulation pump

To flush the Heat Exchanger:

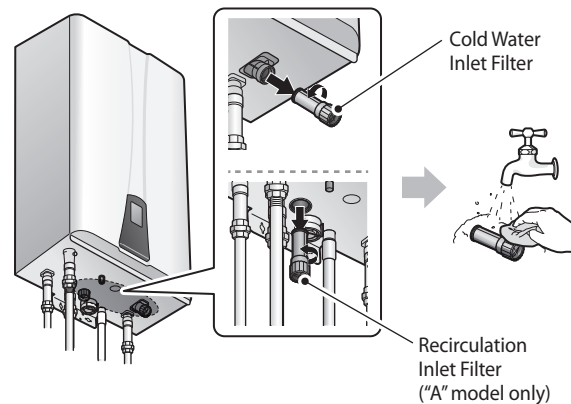


1. Press the Power button on the front panel to turn off the water heater.
2. Disconnect the power supply to the water heater.
3. Close the "C" and "D" valves on the hot and cold water lines.
4. Connect one tube to the "A" valve and place the free end in the bucket.
5. Connect one of the tubes to the circulation pump outlet and the cold water line at the "B" valve.
6. Connect one tube to the circulation pump inlet and place the free end in the bucket.
7. Pour the cleaning solution into the bucket.
8. Open both "A" and "B" valves.
9. Turn on the circulation pump and allow the solution to circulate through the water heater for at least 45 minutes.
10. Rinse the cleaning solution from the water heater:
  - a. Remove the free end of the drain tube from the bucket and place it in the condensate drain or laundry tub (wherever the water heater drains).
  - b. Close the "B" valve and open the "D" valve. Do not open the "C" valve yet.
  - c. Allow water to flow through the water heater for 5 minutes.
  - d. Close the "A" valve and open the "C" valve.
11. Disconnect all tubes.
12. Remove the cold water inlet filter from the water heater and clean out any residue.
13. Reinsert the filter and ensure the filter cap is securely tightened.
14. Reconnect the power supply to the Water Heater.
15. Press the Power button on the front panel to turn on the water heater.

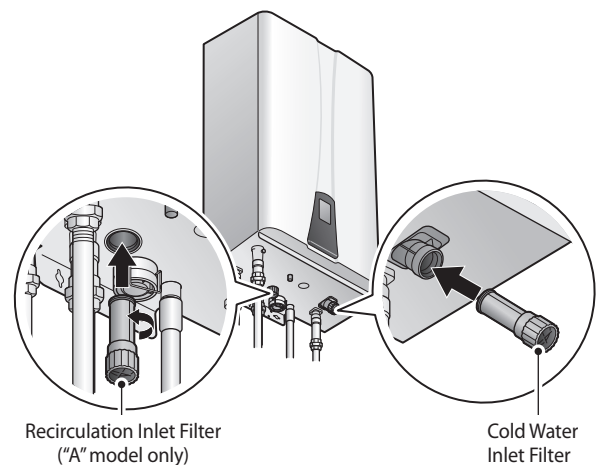
## 4.4 Cleaning the Inlet Water Filter and Recirculation Inlet Filter

To clean the filters:

1. Drain the water heater. Refer to "4.2 Draining the Water Heater" on page 10.
2. While the filters are removed, rinse it with clean running water (cold) and, if necessary, scrub it clean with a brush.



3. Reinsert and tighten the filters.



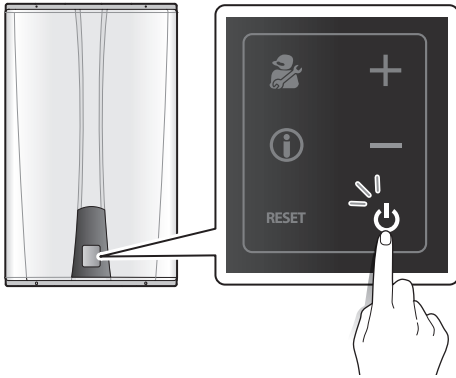
4. Refill the water heater. Refer to "4.2 Draining the Water Heater" on page 10.

## 4.5 Cleaning the Air Intake Filter

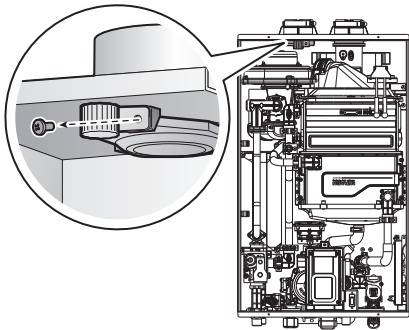
If the air intake filter becomes clogged by dust or lint, the water heater will cease to operate and "Error Code 10" will appear on the front panel display. To properly maintain the water heater, you should clean the air intake filter every 3-4 months.

To clean the air intake filter:

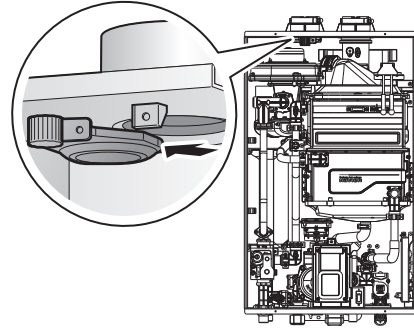
1. Press the Power button on the front panel to turn off the water heater.



2. Disconnect the power supply to the water heater.
3. Remove the front cover of the water heater.
4. Remove the screw that secures the air intake filter (the filter is located at the top left of the water heater).



5. Pull the filter out of the water heater.



6. Remove the filter from the plastic assembly and clean it with a toothbrush and clean running water.



7. Allow the filter to dry completely.
8. Reinsert the filter into the plastic assembly.
9. Place the filter assembly back into the water heater and secure it with the screw.
10. Replace the front cover.
11. Reconnect the power supply to the water heater.
12. Press the Power button on the front panel to turn on the water heater.

## 4.6 Protecting the Water Heater from Freezing

### CAUTION

Damage due to freezing is not covered by the Navien limited warranty.

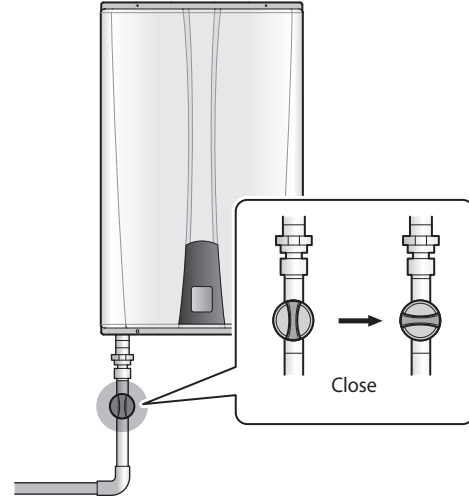
- Freezing damage is most likely to occur due to back drafting caused by negative pressure in the building. This is not a manufacturing defect, and therefore, Navien will not warrant any damages due to freezing. The installer is responsible for ensuring that there is sufficient make-up air to avoid such a situation and the owner is responsible for ensuring that protection against freezing is maintained.
- To avoid freezing issues, we strongly recommend the use of a direct vent exhaust and intake system. Your installer should ensure that the exhaust vent pipe and the air intake pipe are both connected directly from the collars on the top of the water heater to the outdoors. This type of vent system minimizes air movement within the water heater.
- This water heater has an optional recirculation mode that is used for freeze protection. This mode should prevent the water heater from freezing, even if the intake air duct is not vented directly.
- The water heater is designed for indoor or outdoor installation. However, it should not be installed outdoors in areas that are prone to freezing temperatures.

To ensure that the water heater does not freeze, follow these guidelines:

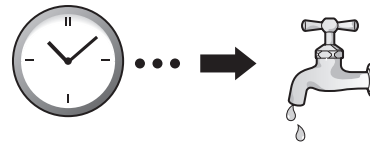
- **Do not unplug the power supply cord**, except for routine maintenance. The water heater has a freeze protection function that requires electricity. The freeze protection function will operate regardless of whether or not the power is turned on or off, as long as the electric supply is still connected.
- **Do not close the gas valve**, except for routine maintenance, as this will limit additional freeze protection ("A" model only).
- If the power or gas supplies must be disconnected for an extended period, drain the water heater. Freezing damage may occur if there is a loss of power or an interruption in the gas supply to the water heater.
- **If the water heater will not be used for an extended period, drain the water heater.**

If hot water will not flow and you suspect that the water heater is frozen, follow these steps:

1. Press the Power button on the front panel to turn off the water heater.
2. Close the gas valve.



3. Open the hot water faucet that is closest to the water heater.
4. Use a hair dryer or a portable electric heater to heat up both the primary and secondary Heat Exchangers.
5. Check every few minutes to see if water is running at the open faucet.



6. When the water starts flowing again, check the water heater and piping for leaks. If you detect any leaks or the water heater is not operating properly, contact an authorized technician or licensed professional.