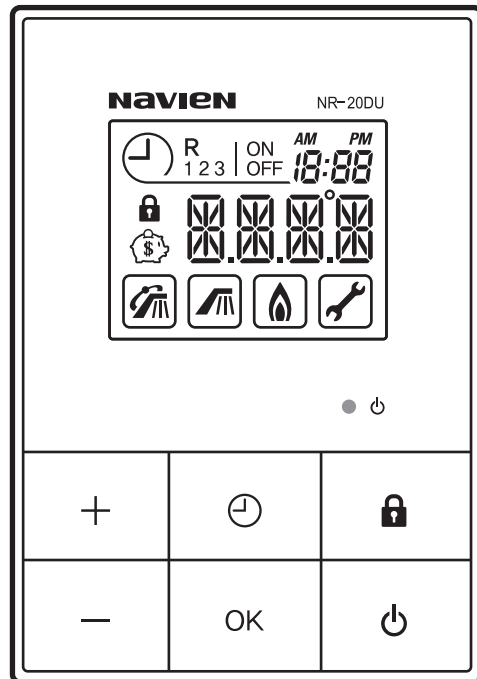# Remote Controller Manual

NAVIEN

NR-20DU

Keep this manual near this remote controller for future reference whenever maintenance or service is required.

NAVIEN User Manual

KD **NAVIEN**

Contents

Safety Instructions

The following safety symbols are used in this manual. Read and follow all safety instructions in this manual precisely to avoid unsafe operating conditions, fire, explosion, property damage, personal injury, or death. Keep this manual for future reference.

WARNING

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

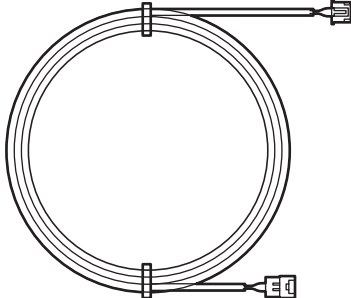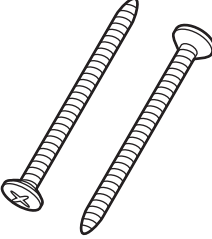|	
DANGER	Indicates an imminently hazardous situation which, if not avoided, could result in severe injury or death.
WARNING	Indicates a potential hazardous situation which, if not avoided, may result in injury or death.
CAUTION	Indicates a potentially hazardous situation that, if not avoided, could result in property damage.
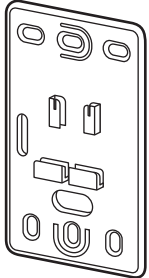
Included Items

When you open the box, you will find the following items with the remote controller. Check the box for each of the following items before installing the remote controller.

User Manual	Extension Cable	2 Tapping Screws	Wall Mounting Bracket

Connecting the Extension Cable

1. Connect one end of the extension cable to the port on the front panel of the water heater.

2. Pass the other end of the extension cable through the hole in the bracket.
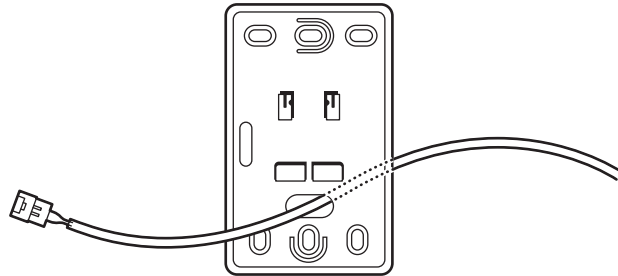
3. Connect the end of the extension cable to the cable connected to the remote controller.
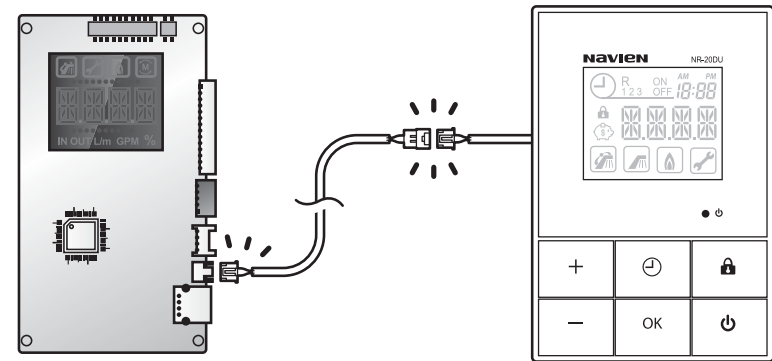
Attaching the Wall Mounting Bracket

1. Affix the bracket securely to the wall by fastening 2 screws to the wall or to the 2 holes in the wall receptacle.
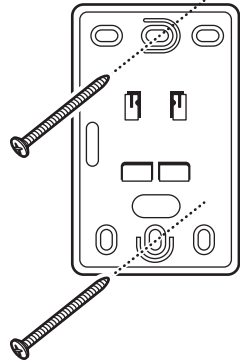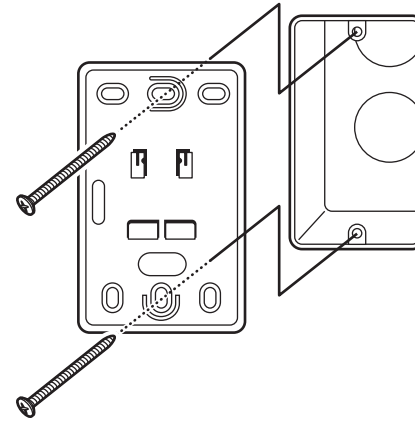
On the wall   In the wall receptacle

2. Hang the remote controller on the bracket by aligning the hooks.

Remote Controller

LCD display

Indicates functions and current status.

Timer button

Access the timer settings.

Up button

Increase the temperature or value.

Down button

Decrease the temperature or value.

LED indicator

Indicates the status of water heater.
- Green: Normal Mode.
- Red: Error occurred.

Lock button

Locks the other button operations.

Power button

Turns the remote controller on or off.

OK button

Confirms the selection.

NaVIEN   NR-20DU

LCD Display Icons

R 1 2 3 | ON OFF Timer is set.

Recirculation Mode.

AM 12:00 Displays the current time.

Hot water is in use.

120°F Displays the current set temperature.

Water heater operation is in progress.

Operations are locked.

An error code will appear on the display.

Operating in energy saving mode.

Turning the Controller On or Off
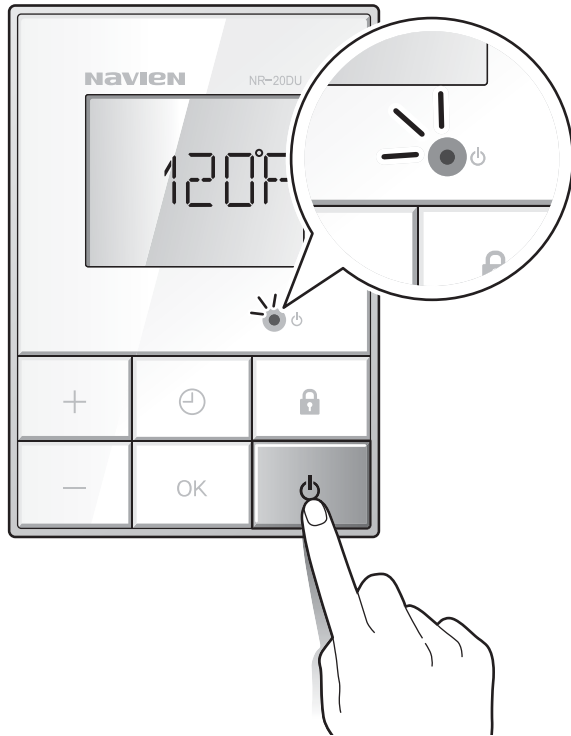
To turn the controller on or off, press the Power button.

When the power is on,

- The LCD display turns on.
- The LED indicator turns green.
- Hot water temperature is displayed.

Note
- When an error occurs, the LED indicator turns RED and blinks (except for Cascade mode).
- The backlight stays on for 8 seconds when a button is pressed.

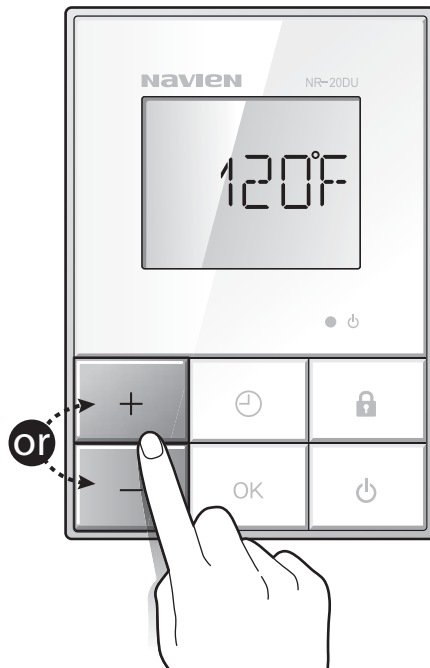# Setting the water temperature

WARNING	Setting the water temperature above 125°F (52°C) can cause instant scalding or severe burns.

Two levels of temperature settings are available depending on the DIP switch settings.

Level 1: 98~120°F (36~50°C)

- Press the Up or Down button to adjust the temperature. The temperature changes by 1°F (0.5°C).

Level 2: 120~140°F (50~60°C)

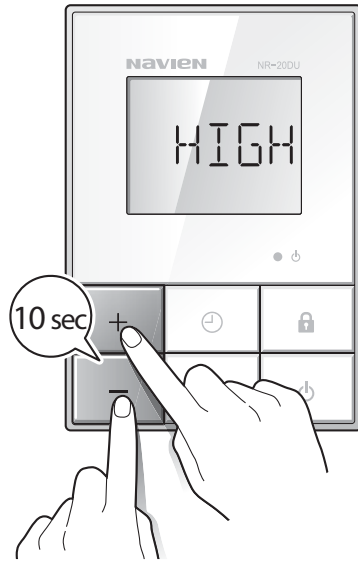- Press and hold the Up button for 2 seconds to increase the temperature by 5°F (2°C).

- Press the Down button to decrease the temperature by 5°F (2°C).

- To save the temperature setting, press the OK button.

Note
- For temperatures higher than 140°F (60°C), check the High temperature mode in the next section.

- The settings are automatically saved when you do not press any buttons for 5 seconds.

Entering High Temperature Mode (Commercial Mode)

1

2

Press and hold the Up and Down button simultaneously for 10 seconds.

- When this mode is available, "HIGH" appears for 3 seconds.
- When this mode is unavailable, "LoW" appears for 3 seconds.

⚠️ WARNING	To prevent instant scalding or severe burns, check the set temperature before using hot water.
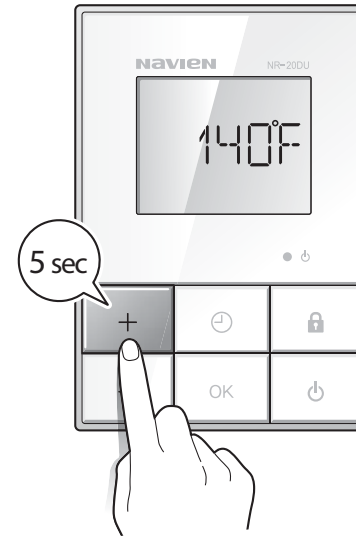
Press the Up button for 5 seconds to increase the temperature by 10°F (5°C), and press the Down button to decrease the temperature by 10°F (5°C).

Note
- Commercial Warranty applies when this mode is used. Refer to the Warranty in the Operation manual for more details.
- Commercial mode is only available for select models. Refer to the Operation Manual supplied with the water heater.

Entering Lock Mode
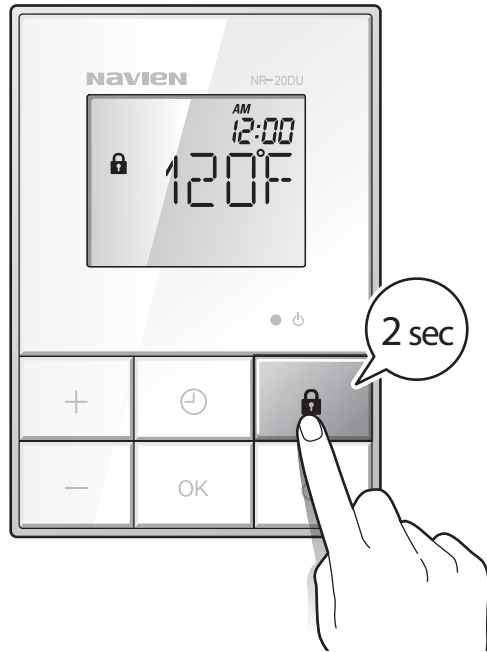
To prevent accidental pressing of the buttons and to prevent children from adjusting the controller, you can activate the Temperature Lock Mode.

To activate or deactivate Lock Mode, press the Lock button for 2 seconds.

When Lock Mode is activated,

- The Lock icon appears on the display.
- All buttons except for Lock button are locked.

Note
- Resetting errors or alarms is still available with Lock Mode activated.
- You can change the settings from the front panel with Lock Mode activated.

Setting the clock

1
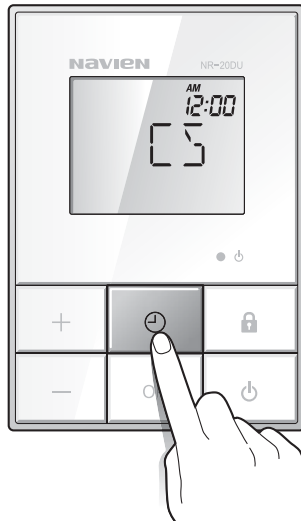
Press the Timer button.

2
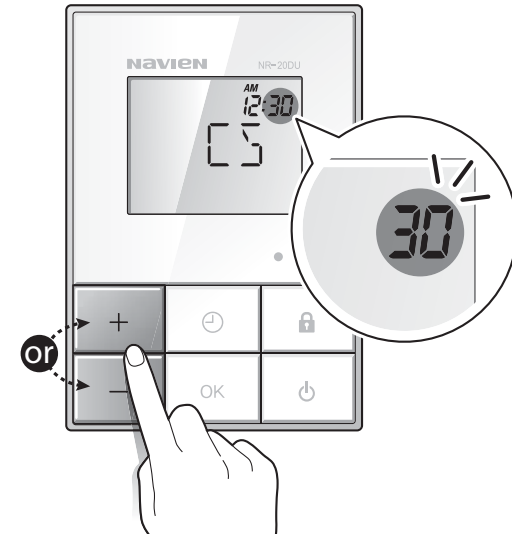
Adjust the minutes by pressing the Up or Down Button.

Press the OK button to set the minutes.

3
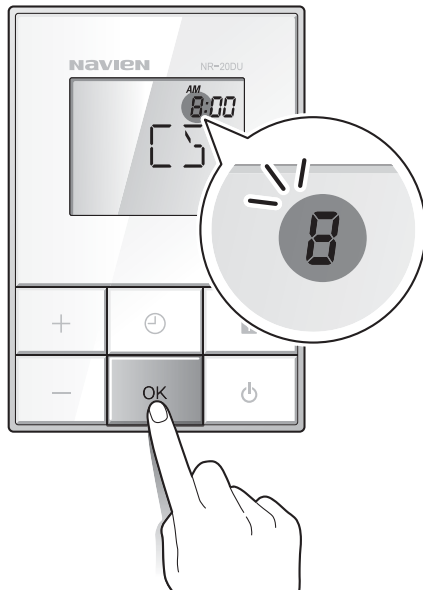
Once the minutes are set, adjust the hour by pressing the Up or Down button.

4

Press the OK button to finish and save the updated time.

Setting the Recirculation timer

1

2
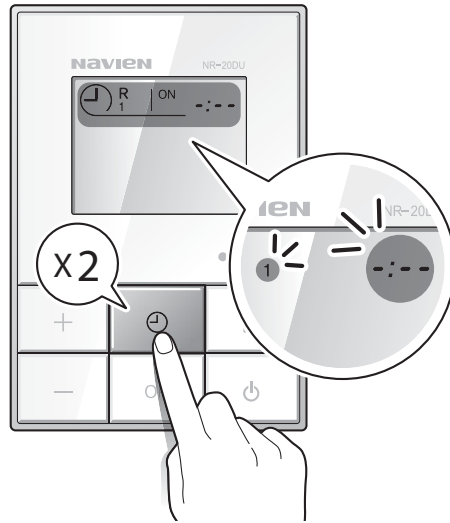
Press the Timer button twice to set the Recirculation timer.

Reservation Schedule #1 is ready to be set.
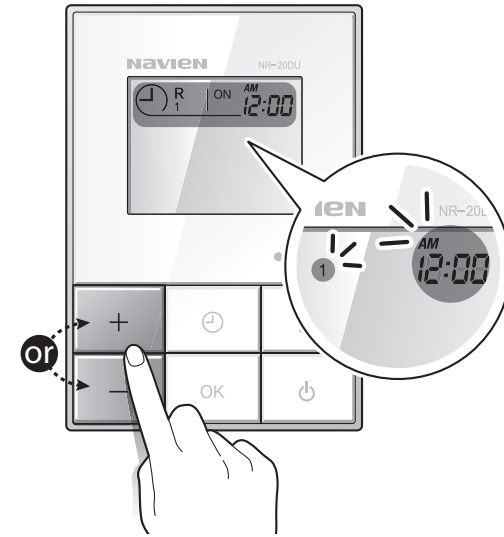
Set the recirculation activation time by pressing the Up or Down button.

Press the OK button to set the deactivation time.

Note The recirculation timer settings are divided in 30 minute increments.

3
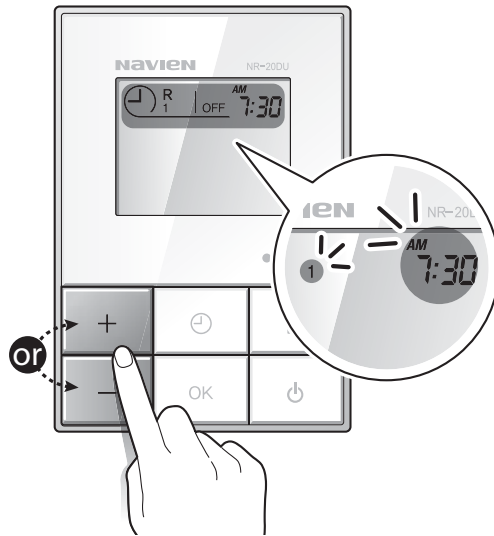
Set the deactivation time by pressing the Up or Down button.

4

Press the OK button to save the timer setting.

Repeat these procedures for Reservation Schedule Settings #2 and #3.

5
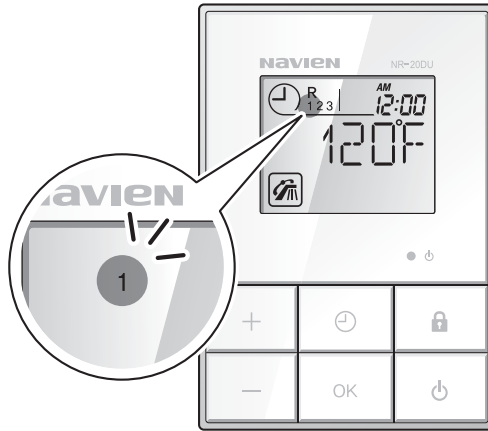
During the reservation schedule, the preheating icon turns on and the Reservation area starts flashing.

Note This is applied to A models with the preheating function only.

Canceling all timer settings
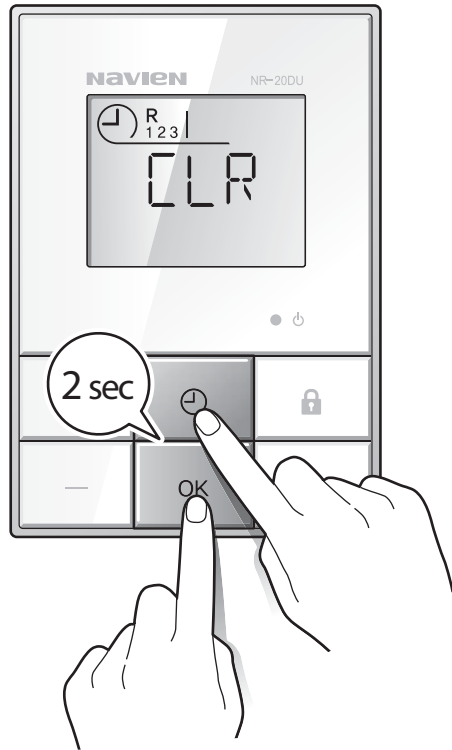
Press and hold the Timer and OK button simultaneously for 2 seconds.

"CLR" appears for 3 seconds and all timer settings are canceled.

Setting the initial number of activating units for Cascade systems

1

2
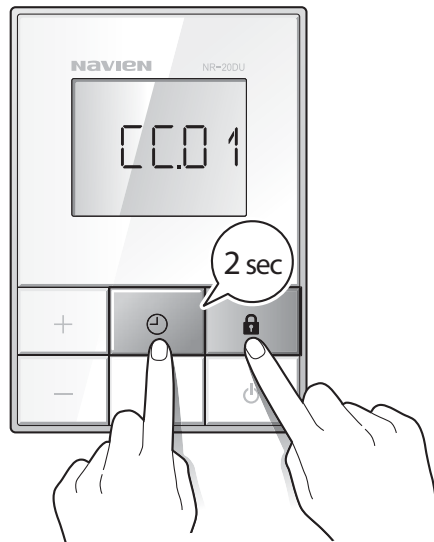
Press the Timer and Lock button simultaneously for 2 seconds with the Power off.

The number of initial activating water heaters is displayed.

Note The maximum number of units in a cascade system is 16.
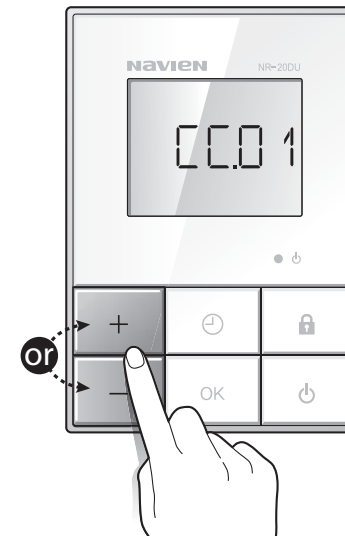
Press the Up or Down button to adjust the number of units.

Press the OK button to save the changes.

Note When you do not press the OK button for 10 seconds, the changes will not be saved.

Setting the temperature of DHW storage tank usage mode

1

2
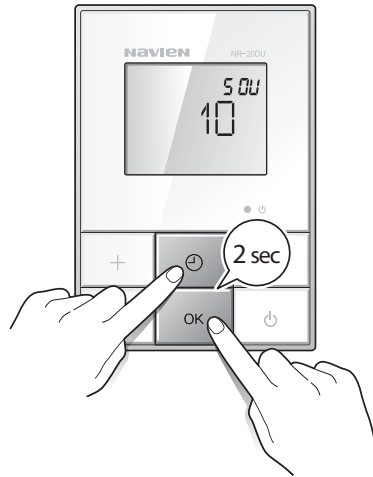
Press the Timer and OK button simultaneously for 2 seconds with the Power off to access the DHW Storage Tank mode.

Cascade On-unit (S OU) value is displayed on the LCD screen and is ready to be set.

Note This is not applied when models are set in internal or external recirculation mode.
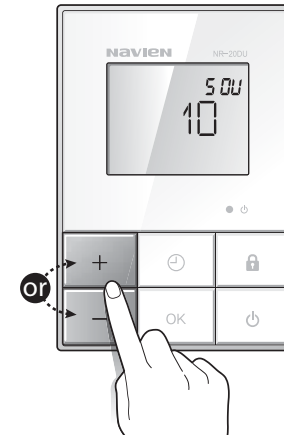
Press the Up or Down button to adjust the value by 1.

Press the OK button to switch to Cascade Off UNIT (S FU) temperature settings mode.

Note Setting value ranges from 0 to 60. The water heaters in the cascade will operate more frequently when this value is higher. (10 is recommended)

The S OU and S FU values will determine how the units in a cascade system will stage and operate based on temperature differential (7-10 is recommended). The units will operate more frequently if the S OU and S FU values are set to a higher value.

3
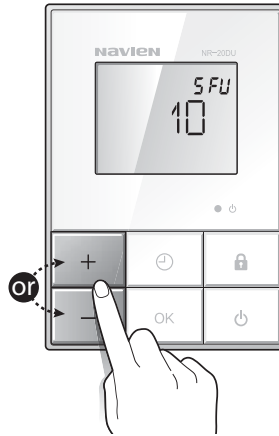
"S FU" and the corresponding value are shown on the LCD display.

Press the Up or Down button to adjust the value by 1. (0 is recommended)

Press the OK button to switch to Operation temperature settings mode.

Note Setting value ranges from 0 to the set temperature for S OU.

4
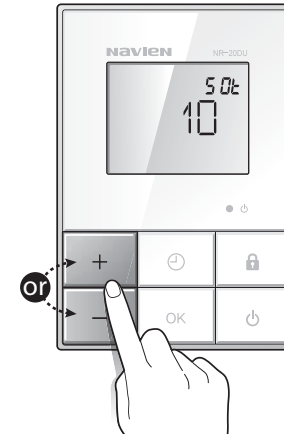
"S Ot" and the corresponding value are shown on the LCD display.

Press the Up or Down button to adjust the value by 1.

Press the OK button to switch to Stop temperature settings mode.

Note Setting value ranges from 0 to the set temperature for S Ot.

S Ot will set the differential below the set temperature for a single unit to initiate operation and provide recovery heat to the tank. The unit will operate more frequently if the S Ot is set at a higher value (10 is recommended).

Note S Ot and S Ft settings can only be used when the storage tank is heated by a single unit.

5
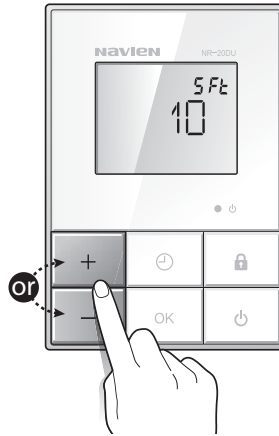
"S Ft" and the corresponding value are shown on the LCD display.

S Ft will set the differential above the set temperature for the designated unit in cascade to stop providing hot water (0 is recommended).

Note   S Ft settings can only be used when the storage tank is heated by a single unit.

Press the Up or Down button to adjust the value by 1.

Press the OK button to finish the settings and exit the settings.

Note   Setting value ranges from 0 to the set temperature.

Additional features for Cascade systems

Standby feature before On/Off

This feature allows the system to stand by until the Power is switched to On or Off.

"WAIT" is displayed while the entire Cascade water heater is powered ON or OFF.

Note This is applied to models with Cascade systems only.

System info on the Slave panel

When the remote controller is connected to the wrong panel, its ID is displayed on the LCD display as an error. In this case, you cannot control or change the settings.

Connect the remote controller to the Master panel correctly.

About errors and icons

Depending on the severity of the issue that is causing the error, the water heater will either stop its operation or will only be able to perform basic operations. A flashing red LED and error icon can be seen on the remote controller along with the associated error code.

The error code is displayed in 3 digits. (see below).
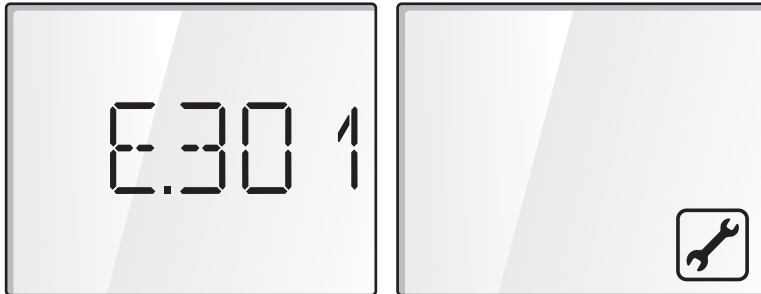
Reset errors

After the problems that are causing the errors are resolved, press the OK button once and "RST" will be displayed on the LCD display.

For Cascade systems

Regardless of error levels, the following is displayed in turn: Current status, error code, and Cascade ID.

You can reset errors manually in order to allow the water heater to continue operation.

About scale warning

Scale warning

When the water heater needs to be cleaned, the scale alarm is activated.

Current status and scale alarm code is displayed.

You can change the scale warning intervals if desired.

Deactivating the scale alarm

Press and hold the OK button for 2 seconds.

"RST" is displayed for 3 seconds.

For Cascade systems

The following is displayed in turn:

Current status, alarm code, and Cascade ID.

You can change the settings and control them.

Note   For details, see the Operation manual.

Basic Troubleshooting and Frequently Asked Questions

- If you experience a problem with the water heater, refer to the following chart for possible remedies. Error codes that appear on the front panel display are explained in the following section.

- For minor problems, resetting the water heater may resolve the issue. To reset the water heater, press the Reset button on the front panel.

- If resetting the water heater and attempting the remedies suggested in the following do not resolve the problem, contact an authorized technician, a licensed professional, or Navien Technical Support at 1-800-519-8794 for service instructions.

Problem	Possible Cause(s)	What to do
No water comes out when the hot water tap is opened.	• Is the cold water inlet filter clean? • Is an error code displayed on the front panel? • Is the water heater frozen?	• Ensure that the shut–off valves on the hot and cold pipes are open. • If an error code is displayed, refer to the Error Code Guide.
It takes too long for hot water to reach the fixtures.	Are you using the external recirculation mode?	Have a contractor install a recirculation return line from the furthest faucet back to the water heater.

Problem	Possible Cause(s)	What to do
The water from the hot water faucet is cold or turns cold and stays cold.	• Is the cold water inlet filter clean? • Is the hot water faucet open wide enough draw at least 0.5 gallons of water per minute (GPM) through the water heater? • Is an error code displayed on the front panel? • If there is an external recirculation system installed, is there a check valve on the recirculation return line?	• Clean the cold water inlet filter. See "4.4 Cleaning the Inlet Water Filter and Recirculation Inlet Filter" in the Operation manual. • Open the hot water faucet completely. • If an error code is displayed, refer to the Error Code Guide.
The water is not hot enough.	Is the set temperature too low?	• Check the water heater's temperature setting. Refer to "3.2 Adjusting the Water Temperature" in the Operation manual. • Check for cross plumbing between the cold and hot water lines.
The water is too hot.	Is the set temperature set too high?	• Check the water heater's temperature setting. See "3.2 Adjusting the Water Temperature" in the Operation manual.

Error Code Guide

Error Code	Reason	Self-diagnostic / Action
E003	Ignition failure	Ensure that the main gas supply valve is open.
E004	False flame detection	Ensure that the electrical cord is properly grounded.
E012	Flame loss	• Clean the intake air filter. See the Operation manual. • Ensure that the electrical cord is properly grounded.
E016	Overheating of heat exchanger	• Turn off the system for at least 30 minutes, and then restart it. • Clean the cold water inlet filter. See the Operation manual. • Flush the heat exchanger. See the Operation manual.
E030	Exhaust overheating (the water heater shuts down when the flue temperature exceeds 149°F (65°C)	• Turn off the system for at least 30 minutes, and then restart it. • Clean the cold water inlet filter. See the Operation manual. • Flush the heat exchanger. See the Operation manual.
E046	Abnormal operation: limit control	Contact Technical Support at 1-800-519-8794.
E047	Abnormal operation: exhaust thermostat	Contact Technical Support at 1-800-519-8794.

Error Code	Reason	Self-diagnostic / Action
E060	Abnormal operation: dual venturi	Contact Technical Support at 1-800-519-8794.
E109	Abnormal operation: fan motor	Clean the intake air filter. See the Operation manual.
E110	Abnormal air pressure	• Ensure that the exhaust pipe is free of obstructions. • Clean the intake air filter. See the Operation manual.
E407	Hot water outlet: thermostat open or short circuit	Contact Technical Support at 1-800-519-8794.
E421	Cold water inlet1: thermostat open or short circuit	Contact Technical Support at 1-800-519-8794.
E432	Cold water inlet2: thermostat open or short circuit	Contact Technical Support at 1-800-519-8794.
E434	Abnormal operation: water adjustment valve	Contact Technical Support at 1-800-519-8794.
E438	Abnormal operation: circulation pump	• External: Ensure that all water supply and return lines are open. • Internal: Check the direction of the 2-way valve.
E439	Abnormal operation: flow sensor	Contact Technical Support at 1-800-519-8794.

Error Code	Reason	Self-diagnostic / Action
E441	Hot water inlet2: thermistor open or short.	Contact Technical Support at 1-800-519-8794.
E515	Abnormal operation: controller	Check the front panel settings.
E517	Abnormal operation: DIP switch setting	Check the settings for Circuit Board DIP Switch (See the Installation manual).
E593	Abnormal operation: front panel key	Contact Technical Support at 1-800-519-8794.
E615	Abnormal operation: input and memory	Contact Technical Support at 1-800-519-8794.
E736	Abnormal operation: cascade communication	Contact Technical Support at 1-800-519-8794.
E760	Flushing/service alarm	Contact the installer to perform routine service.
E782	Abnormal operation: main panel communication	Contact Technical Support at 1-800-519-8794.

Note   If any of these remedies do not resolve the problem, contact Technical Support at 1-800-519-8794.

Memo

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Remote Controller Manual

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BG-E-MU-10-01

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Rethink, Reduce, Reuse   RECYCLE

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