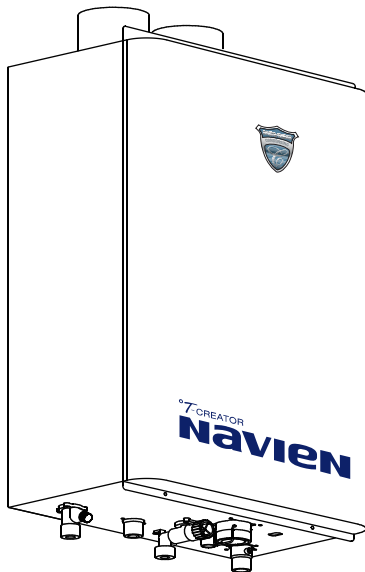


Condensing 98%

NAVIENT

Navigating Energy and Environment

Owner's Operation Manual



For potable water heating and space heating



MODEL	
CR-180(A)	CC-180(A)
CR-210(A)	CC-210(A)
CR-240(A)	CC-240(A)

Keep this manual near the Navien Condensing Water Heater for future reference whenever maintenance or service is required.

⚠ WARNING

If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electrical switch: do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.





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Safety Instructions

Safety-related messages and instructions have been provided in this manual and on water heater to warn you and others of a potential injury hazard. Read and follow all safety messages and instructions throughout this manual. It is very important to understand these safety section for installing, operating and servicing of Navien water heaters.

Safety Related Symbols

	<p>This is safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.</p>
 DANGER	<p>DANGER indicates an imminently hazardous situation which, if not avoided, could result in injury or death.</p>
 WARNING	<p>WARNING indicates a potential hazardous situation which, if not avoided, could result in injury or death.</p>
 CAUTION	<p>CAUTION indicates an imminently hazardous situation which, if not avoided, may result in minor or moderate injury.</p>
CAUTION	<p>CAUTION used without the safety alert symbol indicates a potential hazardous situation which, if not avoided, could result in property damage.</p>

All safety messages will refer to a potential hazard. Follow the instruction in this manual exactly to avoid the risk of injury.

Safety Instructions



WARNING Safety Precautions


- Read and understand this safety information before installing, operating or servicing this Navien Water Heater.
- This manual must remain with the Navien Water Heater.
- Have your installer show you the location of the gas shut-off valve and show you how to close the valve. Close the manual shut-off valve if the Navien Water Heater ever becomes subjected to overheating, fire, flood, physical damage or any other such damaging condition. And, DO NOT operate the water heater again until it has been checked by qualified personnel.
- DO NOT turn on water heater unless water and gas supplies are fully opened.
- DO NOT turn on water heater if cold water supply shut-off valve is closed.
- DO NOT use this Navien Water Heater for other than its intended purpose as described in this manual.
- DO NOT attempt to repair or replace any part of your water heater unless it is specifically recommended in this manual. All other servicing should be referred to an Authorized Service Technician.
- Make certain power to water heater is turned "OFF" before attempting to make any repairs to your Navien water heater.
- Label all wires prior to disconnecting and servicing controls. Wiring errors can cause improper and/or dangerous operation. Verify proper operation after servicing.
- Improper adjustment, alteration, service or maintenance can cause property damage, personal injury, or death.
- To prevent scalding, always check the temperature of the hot water before showering, bathing, etc..
- DO NOT attempt to change the temperature setting while someone is using the water heater.
- DO NOT use parts other than those specified for this equipment.
- DO NOT operate the water heater if you feel something is wrong with the unit.
- DO NOT allow children to operate or otherwise handle the the unit.





WARNING

This product must be installed and serviced by a licensed plumber, a licensed gas fitter, or a professional service technician. Improper installation and/or operation by an unqualified person will void the warranty.

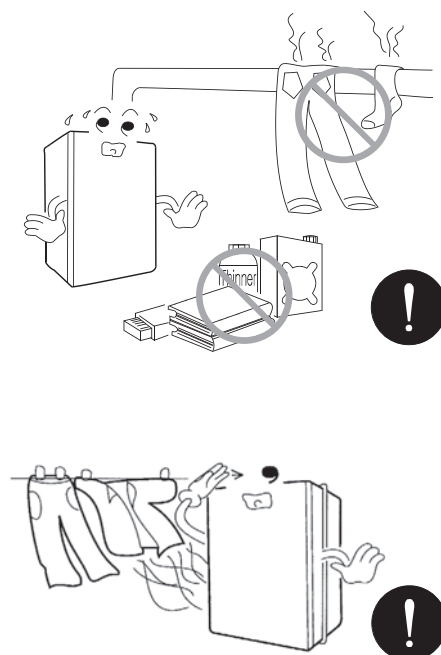
Safety Instructions


DANGER



<p> Vapors from flammable liquids will explode and catch fire causing death or severe burns. Do not use or store flammable products such as gasoline, solvents or adhesives in the same room or area near the water heater.</p> <p>Keep flammable products:</p> <ol style="list-style-type: none"> 1. far away from heater; 2. in approved containers; 3. tightly closed; and 4. out of children's reach. 	<p>Water heater has a main burner flame:</p> <ol style="list-style-type: none"> 1. which can come on at any time; and 2. may ignite flammable vapors. <p>Vapors:</p> <ol style="list-style-type: none"> 1. cannot be seen; 2. are heavier than air; 3. go a long way on the floor; and 4. can be carried from other rooms to the main burner flame by air currents.
<p>Read and follow water heater warnings and instructions. If owners manual is missing, contact the retailer or manufacturer.</p>	

- ▶ DO NOT place flammable liquids such as oils or gasoline, etc. near the water heater;
- ▶ DO NOT place combustibles such as newspapers and laundry etc. near the water heater or venting system;
- ▶ DO NOT place or use hair spray, spray paint or any other type of spray can near the water heater or the venting system (including the vent terminator);
- ▶ DO NOT place anything in or around the vent terminals that could obstruct the air flow in and out of the water heater such as a clothes line.
- ▶ DO NOT operate the water heater when the front cover is opened. Operating the water heater under such condition may cause fire or carbon monoxide(CO) poisoning, which may result in property damage, personal injury or even death.



Safety Instructions



DANGER

WHAT TO DO IF YOU SMELL GAS

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

- ❑ **DO NOT OPERATE THE WATER HEATER. DO NOT OPEN ANY FAUCETS. Smell all around the water heater area for gas. Be sure to smell near the floor because as some gas is heavier than air and will settle near the floor.**
 - ▶ DO NOT try to light any appliance.
 - ▶ DO NOT touch any electric switch.
 - ▶ DO NOT use any phone in your building.
 - ▶ Immediately call your Gas Supplier from a neighbor's phone.
 - ▶ Follow the Gas Supplier's instructions.
 - ▶ If you cannot reach your Gas Supplier, call the police or/and the fire department.
 - ▶ DO NOT return to your home until authorized by your gas supplier or the fire department.



DANGER

COMPROMISED VENTING SYSTEM

- ❑ Failure to follow the Venting Section of the installation manual may result in the unsafe operation of this water heater. To avoid the risk of fire, explosion or asphyxiation from carbon monoxide, never operate the water heater unless it is properly vented to outside and has an adequate air supply for proper operation;
- ❑ Be sure to inspect the vent terminator and the air intake pipe annually to ensure safe operation of the water heater;
- ❑ Immediately turn off and do not use the water heater if any of the vent pipes, vent elbows and/or the air intake pipe are :
 - i. damaged in any way;
 - ii. have separated at a joint;
 - iii. are cracked or show evidence of corrosion, rusting or melting;



WARNING

Improper venting may cause a build-up of carbon monoxide (CO). Breathing carbon monoxide can cause brain damage or death. Read and follow the above instructions carefully.

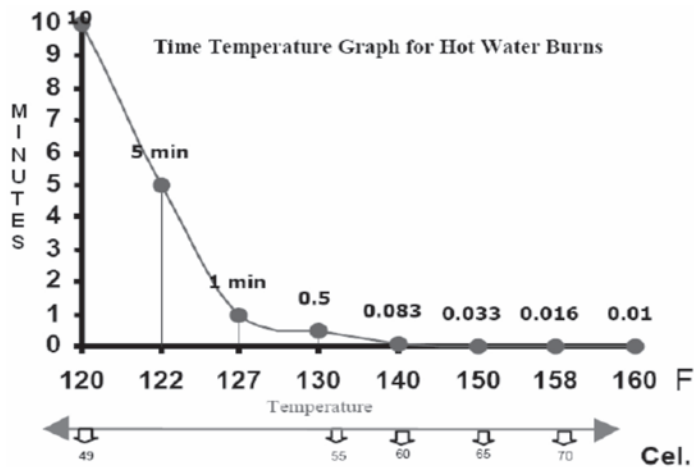
Safety Instructions



DANGER HOT WATER TEMPERATURE SETTING

- ❑ This Navien water heater is factory set at 120°F (49°C) for your safety and comfort. Increasing the set temperature increases the risk of accidental scalding. Consult the chart below before you decide to adjust the set temperature.

Water Temperature	Time in which a young child can suffer a full thickness (3rd degree) burn*
70°C (160°F)	Less than 1 second
60°C (140°F)	1 second
55°C (130°F)	10 seconds
49°C (120°F)	10 minutes
37°C (100°F)	Very low scald risk



! DANGER



Water temperature over 125°F can cause severe burns instantly or death from scalds.

Children, disabled and elderly are at highest risk of being scalded.

See instruction manual before setting temperature at water heater.

Feel water before bathing or showering.

Temperature limiting valves are available, see manual.



DANGER

- ❑ Households with small children, disabled, or elderly persons may require 120°F (49°C) or lower temperature setting prevent contact with “HOT” water.
- ❑ Water temperatures over 125°F can cause severe burns instantly or death from scalds. If the proposed water heater outlet temperature is above 125°F, a thermostatically controlled mixing valve or temperature limiting valve should be considered to reduce the risk of scalding. Contact a licensed plumber or the local plumbing authority for further information

Navien Limited Warranty:

GENERAL

Navien America, Inc. (Navien) warrants this water heater and its component parts to be free from defects in materials and workmanship, under normal use and service, for the Applicable Warranty Period. At its option, Navien will replace the defective component part(s), in accordance with the terms of this Limited Warranty, if it fails in normal use and service during the Applicable Warranty Period. The replacement component part(s) must be Navien Original Equipment component part(s). The replacement component part(s) will be warranted only for the remaining portion of the original component part's Applicable Warranty Period.

APPLICABLE WARRANTY PERIODS

Period of Coverage			
Heat Exchanger		All other Parts and Components	
CR Series Residential DHW use only	CC Series Commercial and Residential "Combi"	CR Series Residential DHW use only	CC Series Commercial and Residential "Combi"
15 years	10 years	5 years	5 years



Proof of purchase is required to obtain warranty service. You can show proof of purchase with dated sales receipt, by completing and mailing the enclosed warranty registration card within 30 days of purchasing the product or by registering online at www.navienamerica.com

EFFECTIVE DATE

The Effective Date of warranty coverage (the beginning of the Applicable Warranty Periods) is the date of purchase of this water heater, if properly registered. Should the unit be installed in a new home the product warranty will take affect as of close of escrow.

HEAT EXCHANGER WARRANTY

The Applicable Warranty Period for a CR series Heat Exchanger failure installed in a Residential application (including domestic recirculation) is **Fifty (15)** years from the Effective Date. The Applicable Warranty Period for a CC series Heat Exchanger failure installed in a Commercial application or a Residential "Combi" application (DHW and space heating) is **Ten (10)** years from the Effective Date. For any Residential "Combi" application, a CC series unit is recommended. If a CR series unit is used in a Residential Combi application, the Applicable Warranty Period for a Heat Exchanger failure is **Two (2)** years from the Effective Date.

PARTS WARRANTY (excluding heat exchanger)

The Applicable Warranty Period for a CR series Part(s) failure installed in a Residential application (including domestic recirculation) is **Five (5)** years from the Effective Date. The Applicable Warranty Period for a CC series Part(s) failure installed in a Commercial application or a Residential "Combi" application (DHW and space heating) is **Five (5)** years from the Effective Date. For any Residential "Combi" application, a CC series unit is recommended. If a CR unit is used in a Residential "Combi" application, the Applicable Warranty Period for a Part(s) failure is **One (1)** years from the Effective Date.

Navien America, Inc. Limited Warranty

LABOR ALLOWANCE:

The Applicable Period for this Labor Allowance for all water heater models is One (1) year from the Effective Date. The payment and amount of any payment are subject to approval at Navien's sole discretion. The Labor Allowance will be paid based on Navien's Schedule of Labor Allowances.

TRANSFERRABILITY

This warranty is offered to the original and subsequent owners of the water heater but is limited to the original address registered with the warranty only. The warranty will be void if the water heater is relocated to any other location.

WARRANTY EXCLUSIONS

This warranty does not cover the following conditions:

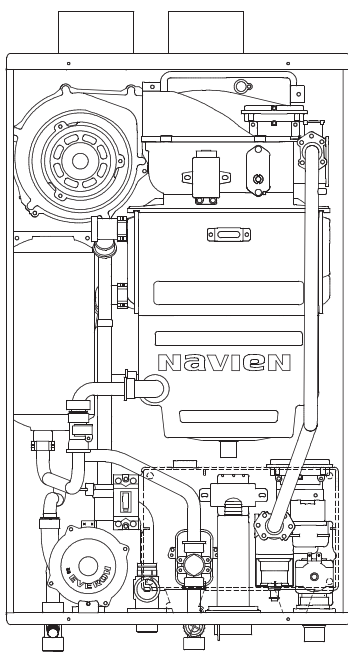
- ▶ Damages, malfunctions, or failures resulting from failure to install the water heater in accordance with applicable building codes, ordinances or normal plumbing and electrical trade practices;
- ▶ Damages, malfunctions or failures resulting from improper installation or failure to operate and maintain the water heater in accordance with the manufacturer's instructions provided;
- ▶ Performance problems caused by improper sizing of the water heater or the gas supply line, the venting connection, combustion air openings, electric service voltage, wiring or fusing;
- ▶ Damages, malfunctions or the all failures caused by conversion from natural gas to LP gas or LP gas to natural gas or attempt to operate with a type of gas not specified for the water heater;
- ▶ Damages, malfunctions or failures caused by operating the water heater with any parts removed or with parts that have been modified, altered or unapproved for installation;
- ▶ Damages, malfunctions or failures caused by abuse, negligence, alteration, accident, fire, flood, freezing, lightning and other acts of God;
- ▶ Heat Exchanger failures caused by operating the water heater in a corrosive or contaminated atmosphere;
- ▶ Damages, malfunctions or failures caused by poor water quality, lime or mineral build-up or sediment build-up;
- ▶ Damages, malfunctions or failures caused by operating the unit at water temperatures outside the factory calibrated temperature limits and/or exceeding the maximum setting of the high limit control;
- ▶ Heat Exchanger failures caused by operating the water heater when it is not supplied with potable water at all times;
- ▶ Damages, malfunctions or failures caused by subjecting the heat exchanger to pressures or firing rates greater or lesser than those shown on the rating plate;
- ▶ Units installed outside of the fifty states (and the District of Columbia) of the United States of America and outside of Canada;
- ▶ Rating plate has been removed by an unauthorized person. A water heater should not be operated if the rating plate has been removed;
- ▶ If the water heater is installed outdoors;
- ▶ Damage due to freezing;

Model Description & Legend:

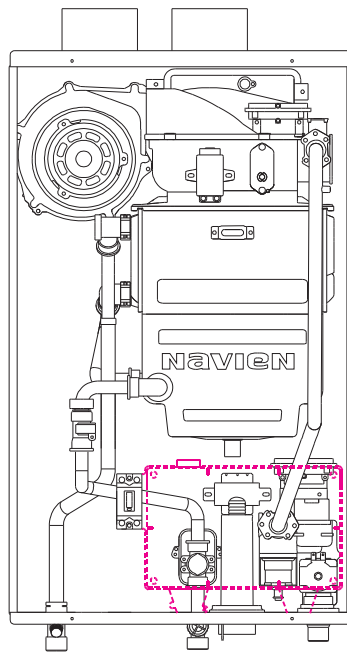
Model Description Legend	
CR	Condensing Residential (portable domestic hot water only) Maximum Temperature: 140°F Dual Stainless Steel Heat Exchangers with Copper piping
CC	Condensing Commercial (potable domestic hot water, space heating and commercial applications) Maximum Temperature: 185°F Dual Stainless Steel Heat Exchangers with Stainless steel piping
A	With Pump and 0.5 US gallon (2 litre) Mini-Buffer Tank

CR-210A : Condensing Residential with built in pump and buffer tank

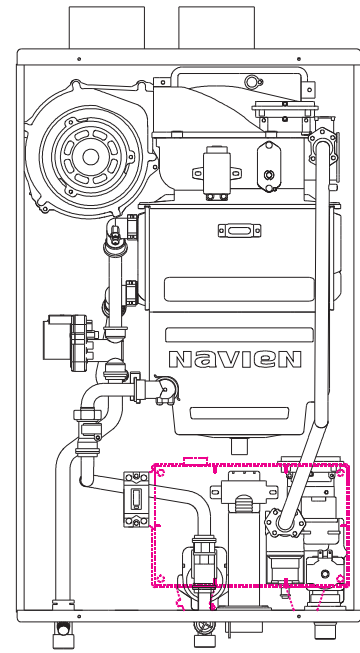
CR, CC-210 : Condensing Residential/Commercial without pump and buffer tank



CR-A Series



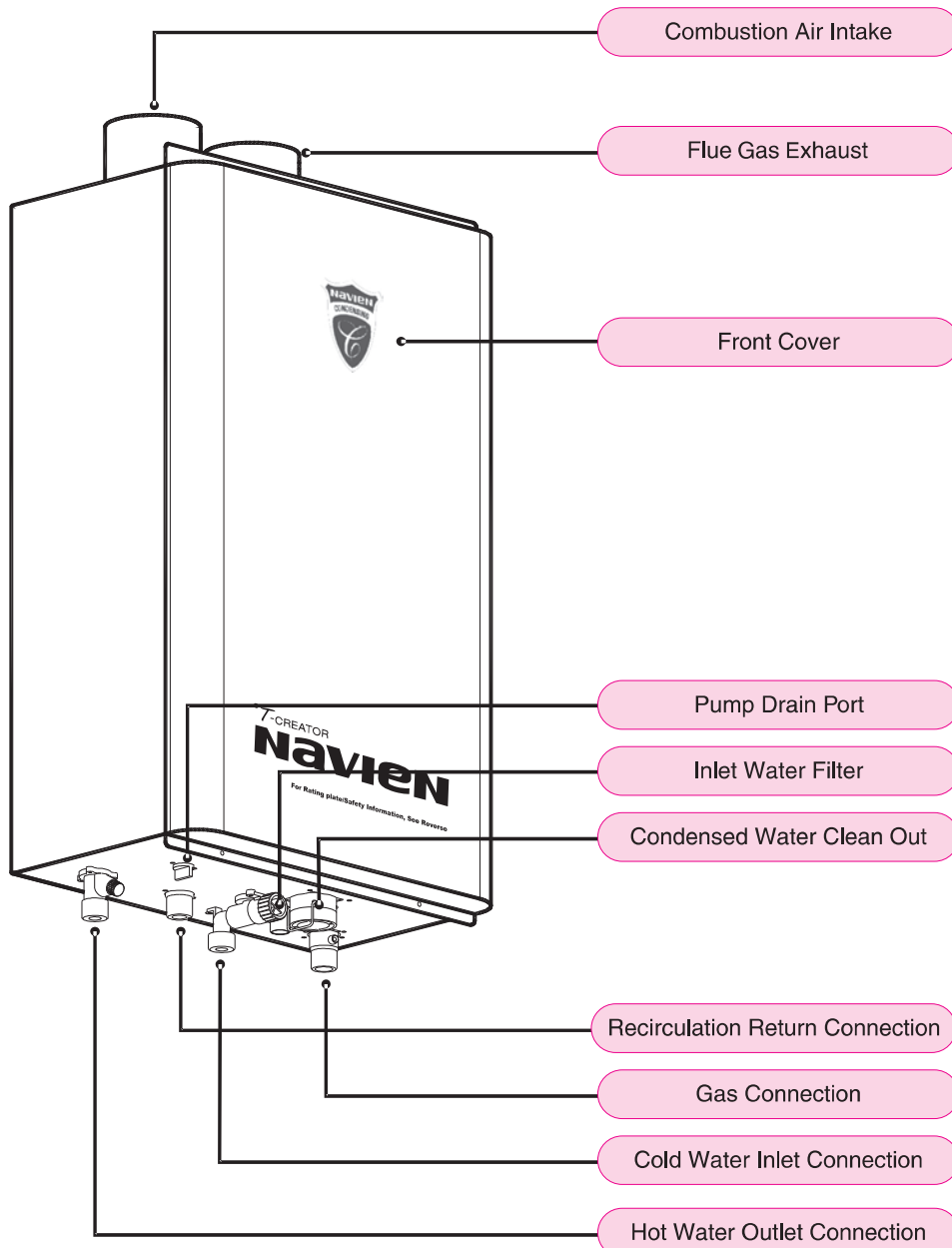
CR Series



CC Series

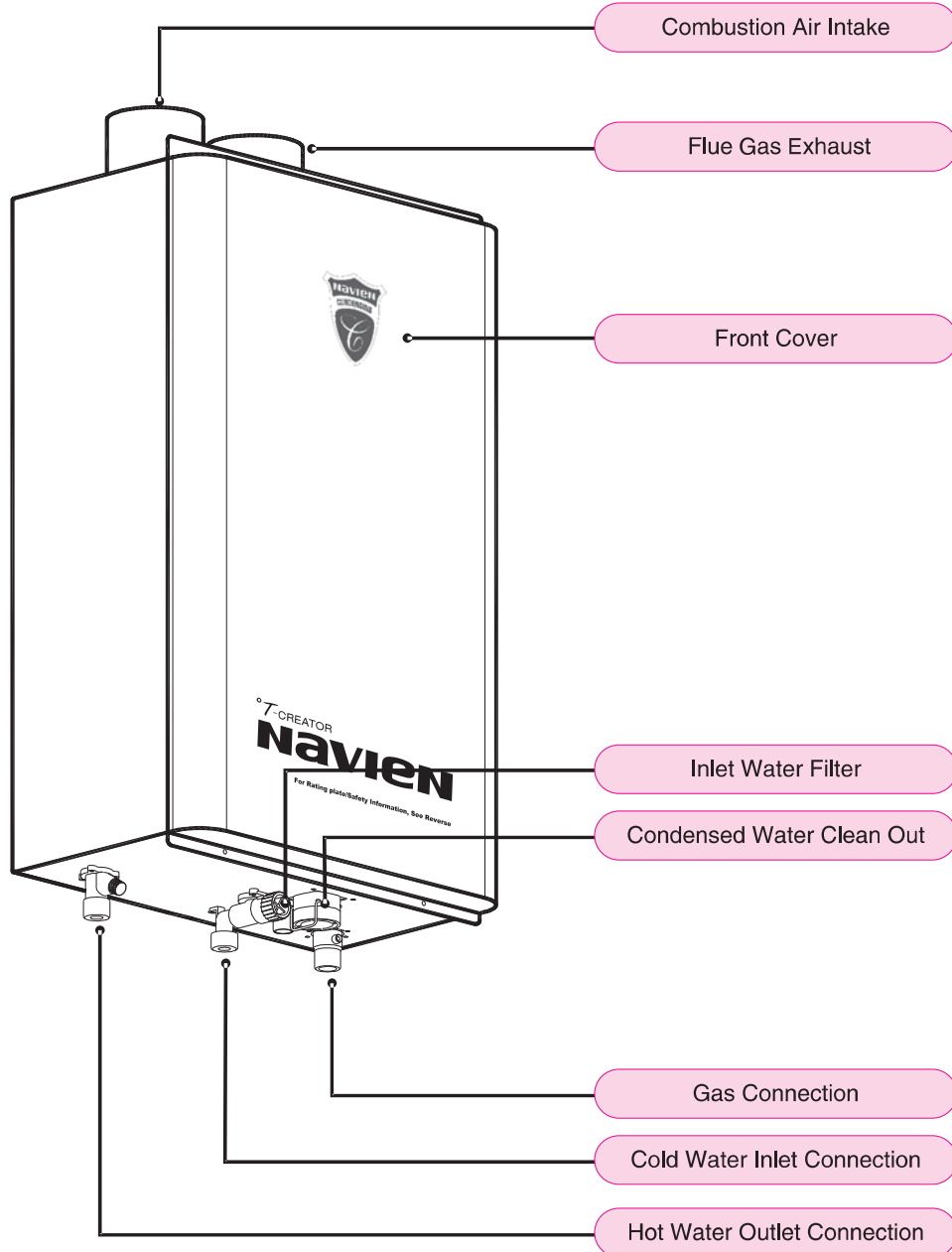
General Parts

CR-A Water Heater

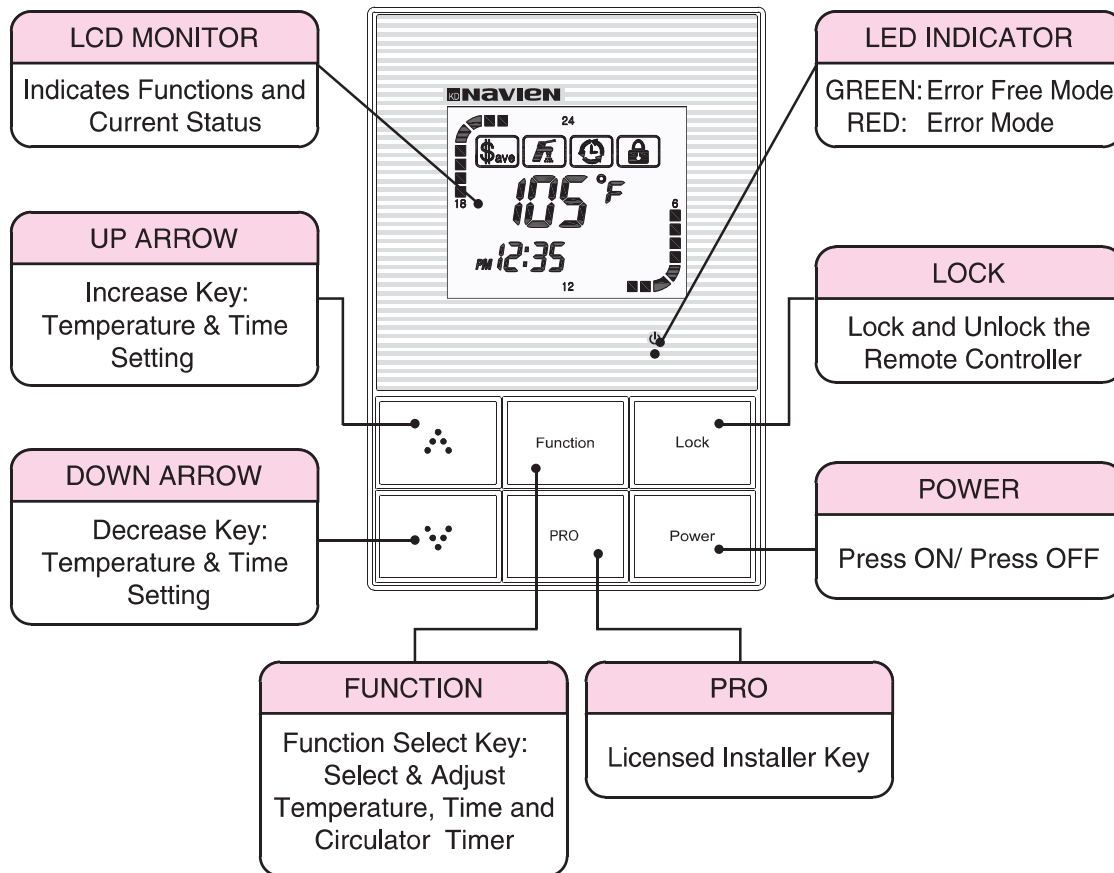


General Parts





CR, CC Water Heater

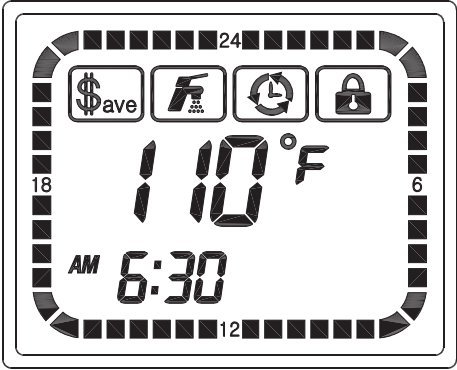


Remote Controller



□ LCD Monitor

-  Energy saving Indicator
-  Hot wter "in use" Indicator
-  Recirculation Indicator
-  Lock Indicator



110°F Temperature Indicator
(Error codes are displayed in the event of a failure)

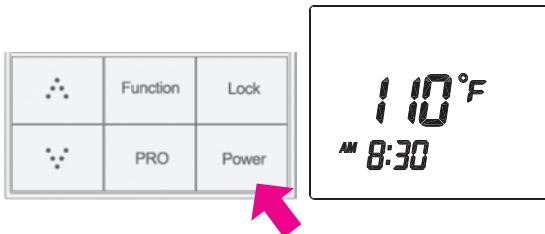
AM 6:30 Clock

The Navien remote controller allows the customer to adjust hot water temperatures and to diagnose certain operating and fault conditions. The factory set temperature of the remote controller is at 120°F. Remove the protective sheet from the remote controller surface.

Remote Controller Set-Up Instructions

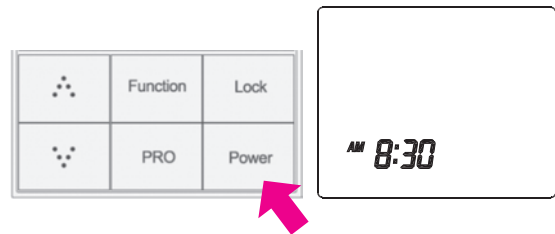
Turning the Remote Controller On/Off

❑ To turn the remote controller “ON”, press the button.



When power is “ON”, the temperature will be displayed on the remote controller.

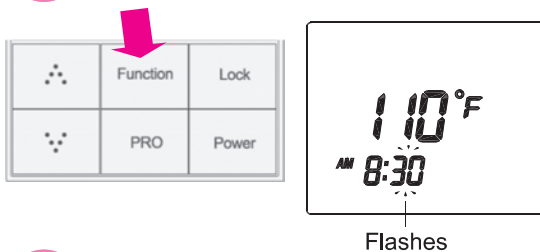
❑ To turn the remote controller “OFF”, press the power button again.



When the power is “OFF”, remote controller is OFF, only the time is displayed.

Setting the Clock

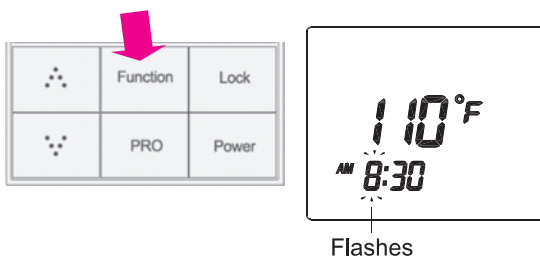
1 Press the Function button and hold for 3 seconds.



The minute section of the time display will flash.



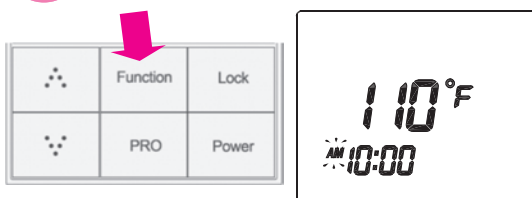
2 Setting the hour and minute.



Use the Δ (Up) or ∇ (Down) buttons to scroll until the desired minute time is reached. Press the “Function” button to set.

Once the “Function” button is pressed, the hour section of the time displays flashes. Use the Δ (Up) or ∇ (Down) to scroll until the desired hour is reached. Press the “Function” button again to set.

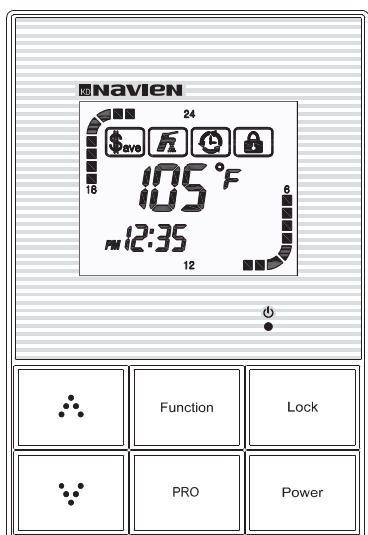
3 Setting AM or PM.



Once the “Function” button is pressed, “AM/PM” flashes on the display. Use the Δ (Up) or ∇ (Down) buttons to select AM or PM. After 3 seconds, the selection is automatically set.



Adjusting the Temperature



- ❑ Use the remote controller to adjust the outlet water temperature of the Navien Water Heater;
- ❑ To adjust the hot water temperature, all hot water taps must be closed, the internal circulator must be off and any external circulating pumps must also be turned off;
- ❑ Simply use the Δ (Up) or ∇ (Down) buttons to scroll until the desired temperature is displayed on the Digital Monitor.

*** NOTE: THE TEMPERATURE CAN ONLY BE ADJUSTED BETWEEN 98°F AND 110°F WHEN THE UNIT IS IN OPERATION(A HOT WATER FAUCET IS OPEN);**

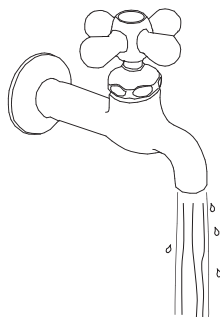
*** THE TEMPERATURE CAN ONLY BE ADJUSTED WHILE THE INDICATOR IS FLASHING.**



WARNING

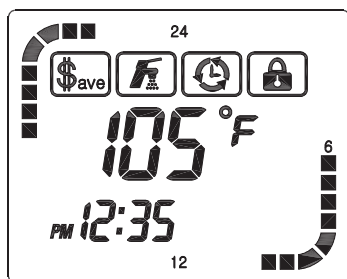
Water temperatures over 125°F can cause severe burns instantly. See the “Safety Instructions” section for appropriate temperature settings.

Hot Water Tap



- ❑ To operate the Navien water heater, press the “ON/OFF” button and use Δ (Up) and ∇ (Down) buttons on the remote controller until the desired temperature is displayed on the screen. Then simply open any hot water faucet. This will automatically light the burner and provide hot water at the preset temperature.

*** NOTE: THE NAVIEN WATER HEATER HAS A DATA MEMORY FUNCTION THAT WILL RETAIN AND RESTORE DATA IN THE EVENT OF A POWER OUTAGE.**



- ❑ Navien Water Heater has a built in back-light. The screen’s backlight will illuminate when a button on the controller is pushed.

*** NOTE: IF THE BACK-LIGHT ON THE DISPLAY GOES DARK, THE REMOTE CONTROLLER’S INTERNAL BATTERY IS DISCHARGED. WAIT FOR A FEW MINUTES UNTIL THE BATTERY RECHARGES AND THE BACK-LIGHT WILL AUTOMATICALLY ILLUMINATE THE DISPLAY AGAIN.**

Hot Water Temperature Adjustment

1 Press the “ON/OFF” Button to Turn the Controller “ON”:



When the power is “ON”, the set temperature will be displayed on the remote controller.

When the power is “OFF”, only the time will be displayed on the remote controller.

2 Set temperature.

*** NOTE: FOR ALL RESIDENTIAL APPLICATIONS, NAVIEN RECOMMENDS A TEMPERATURE OF 120°F OR BELOW. THE INITIAL FACTORY SETTING IS 120°F.**

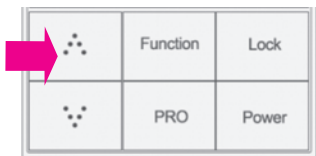
□ For Temperatures Between 98°F and 120°F:



Press ▲(Up) and ▼(Down) Key to adjust desire temperature. The desired temperature it will be automatically set.

*** For temperatures between 98°F and 120°F, temperatures can be adjusted in increments of 1°F.**

□ For Temperatures Between 125°F and 140°F :



Each time ▲(Up) Key is pressed for 3 seconds, temperature increases by 5°F. The desired temperature it will be automatically set.

Each time ▼(Down) Key is pressed, temperature decreases by 5°F.

*** For temperatures between 121°F and 140°F, temperatures can be adjusted in increments of 5°F.**

□ For Temperatures Above 140°F (140°~185°) (only to be used in COMMERCIAL and HEATING APPLICATIONS) :



Pro Key is pressed for 5 seconds, high temperature adjustment mode is readied.

Each time Pro Key is pressed for 5 seconds in high temperature adjustment mode, temperature increases by 10°F(140~180°F) or 5°F(180~185°F). The desired temperature it will be automatically set.

Each time ▼(Down) Key is pressed, temperature decreases by 10°F(140°F~180°F) or 5°F(180~185°F).

*** The Pro Key can only be used and adjusted by factory trained installers. For Navien training and Certification information, call 1-800-519-8794, or visit the website at www.navienamerica.com.**

The Example.

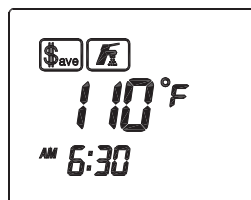
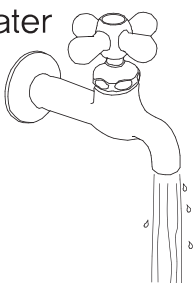
(unit : °F)

CR, CC		CC	
△(Up), ▽(Down) Key	△(Up), ▽(Down) Key	Pro , ▽(Down) Key	Pro , ▽(Down) Key
98~120°F	125~140°F	150~180°F	185°F
Adjusted by 1°F	Adjusted by 5°F	Adjusted by 10°F	Adjusted by 5°F


- Once a temperature is selected, the unit will operate at that selected temperature until that temperature is changed.
- A Navien water heater will not provide hot water instantly at the hot water fixture unless using “A” series unit is in use with “external recirculation” mode and having a recirculation line plumbed in from the furthest fixture back to the unit itself.
- Any existing cold water in the hot water lines must be purged prior to hot water reaching the hot water fixtures.

3 Turning the hot water “ON”:

Hot Water



When a hot water faucet is opened, the unit will automatically start. The GREEN LED indicator will illuminate indicating normal operation.

‘  ’ will appear in the display.

When the water heater is “condensing”, the “Energy Saving” indicator appears on the monitor.

‘  ’ Energy saving indicator.

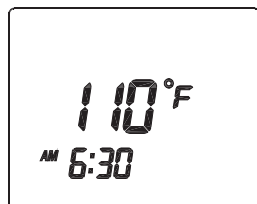
! WARNING

- To prevent scalding, always test the water temperature prior to bathing or showering.




4 Turning the hot water “OFF”:

Hot Water

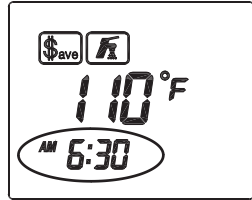


When the hot water faucet is closed, the water heater turns off automatically. The GREEN LED indicator turns off.

‘  ’ will disappear from the display

“A” Series Recirculation Timer Setting

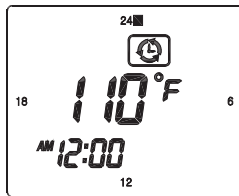
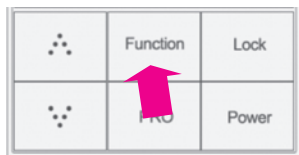
1 Check the current time.




Before setting the Recirculation timer, ensure the Remote Controller is set to the CURRENT time. If the clock is not set to the current time, please adjust the clock (see page 14).

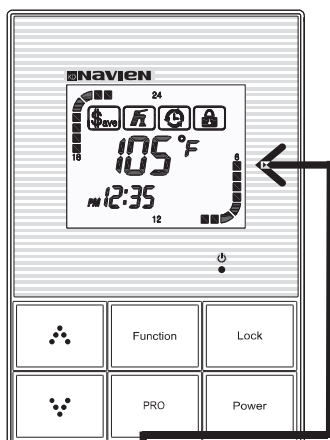
Next, determine when recirculation is needed and for how long an interval (for example, recirculation could be set to run from 6AM to 9AM and from 6PM to 9PM daily—see screen sample below).

2 Press the Function Button.



When the “Function” button is pressed, ‘’ appears and ‘■’ flashes. The circulation timer blinks.

3 Setting the Circulation Timer:

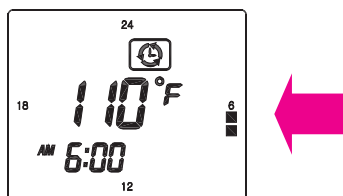


Press the Δ (Up) or ∇ (Down) Key to adjust the cursor ‘■’ around the 24 hour clock in 30 minute increments. The 24 hour clock is displayed around the perimeter of the Remote Controller display screen:

When the cursor ‘■’ arrives at a desired recirculation start time, press the “FUNCTION” button once and hold for 3 seconds to select that time. The selected time turns to a solid black block. This indicates 30 minutes of running time. For example, scroll to “6” and press and hold the “FUNCTION” key for 3 seconds. A black block will appear on the screen indicating that the circulation pump will start at 6AM and will run until 6:30AM. If the circulation is required for a longer period or multiple circulation periods are desired, repeat the above selection process until the desired circulation periods are blackened.

Each solid black block indicates one 30 minute Recirculation period

4 Deactivate Circulator timer and periods



Move indicator ‘■’ to a blacked block period and press the “FUNCTION” key to deactivate the recirculation pump for the current period. Repeat this action to clear multiple periods.

Lock Function Setting

The “LOCK” key function will prevent or unintentional temperature adjustments on the Remote Controller. When the “LOCK” key is in operation, the “FUNCTION” or the \triangle (Up) or ∇ (Down) key cannot be utilized. To disengage the “LOCK” function, press the LOCK key disengages.

- 1 Press the Lock Button.



To engage and disengage the “LOCK” key feature, press and hold down the key for 3 seconds.

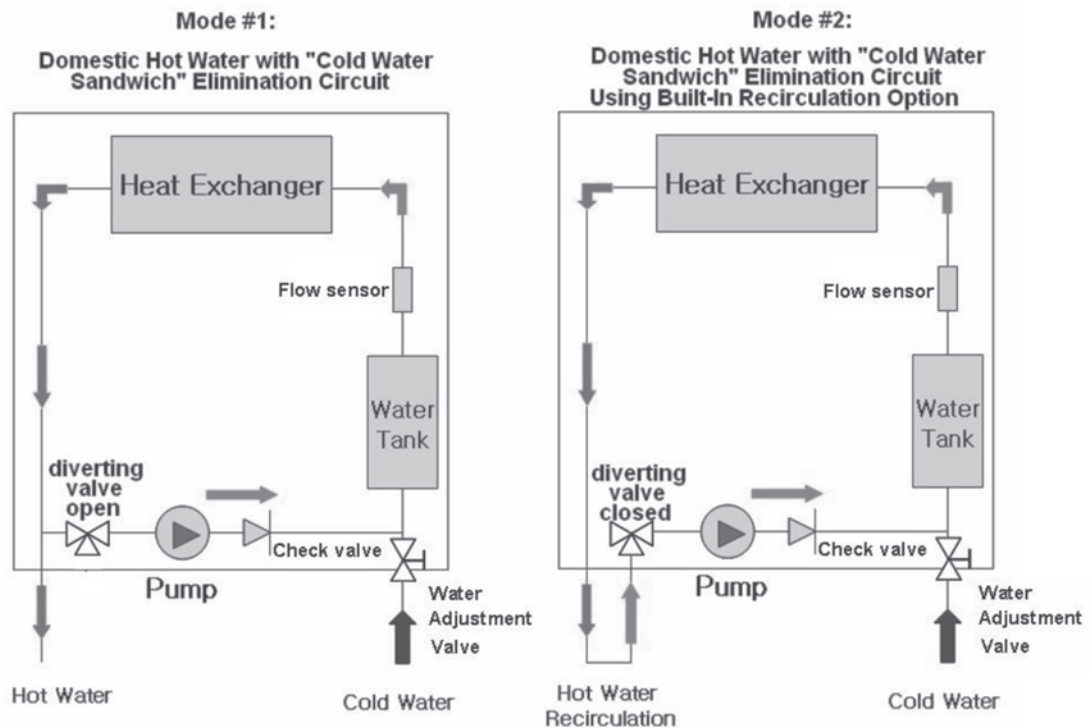
NOTE: WHEN THE POWER IS “OFF”, THE “LOCK” FUNCTION CANNOT BE USED.

Applications

“A” Series models Built-In Circulation Function:

On all “A” series models, there are two pre-heating modes the unit can operate in: internal circulation mode or external recirculation mode. The desired mode is selected by manually adjusting a 3-way valve inside the unit and adjusting the DIP switches on the computer board.

Navien Models with “A” Series Two Operational Modes:



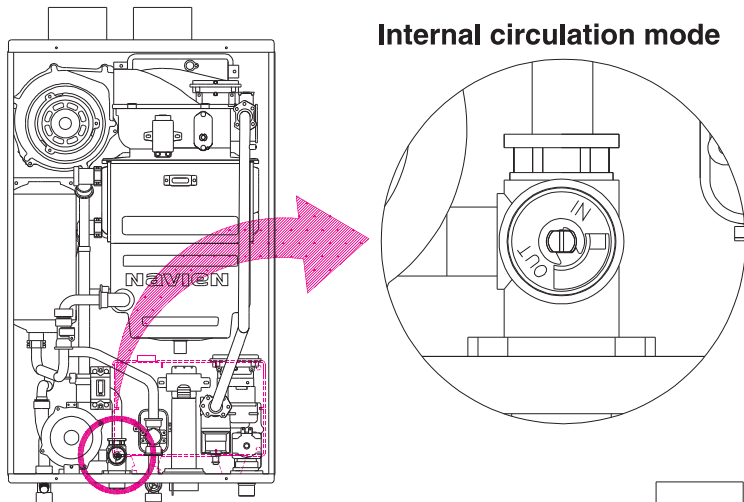
There are 3 main performance advantages of selecting the “A” series:

- 1) elimination of any minimum flow rate requirement;
- 2) elimination of any hot/cold/hot stacking, the so-called “cold water sandwich”;
- 3) quicker hot water delivery to your fixtures, thus less water waste;

NOTE: When you select this function, there will be some minor efficiency loss as a result of the unit maintaining a steady temperature within the circulation loop. In many cases though, the reduction in gas savings due to the efficiency loss will be more than recovered by savings on your water bill.

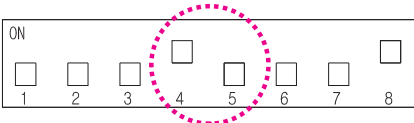
“A” Series Internal Circulation Mode:

All “A” series models are factory set to “Internal circulation” mode. The diagram below shows the internal circulation flow path for pre-heating:

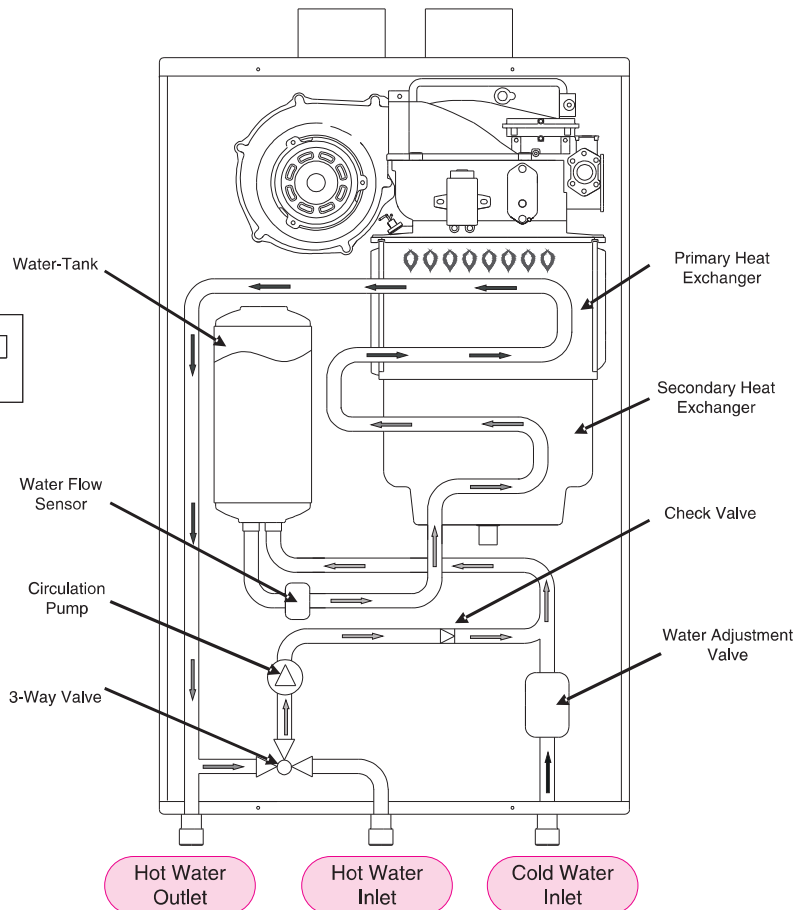


Location of the 3-way valve

DIP-SW2

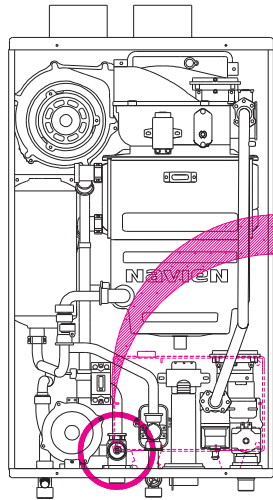


Dip-switch setting of Internal circulation mode

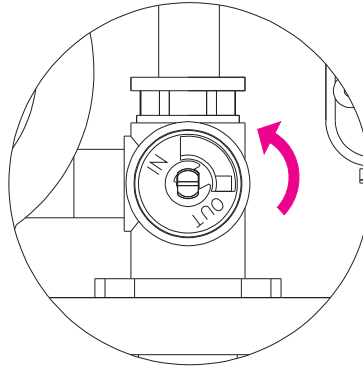


“A” Series External Circulation Mode:

When connecting the water heater to an external recirculation loop, the 3-way valve and the DIP switches on the computer board should be set to “external recirculation”.

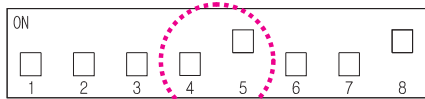


External circulation mode

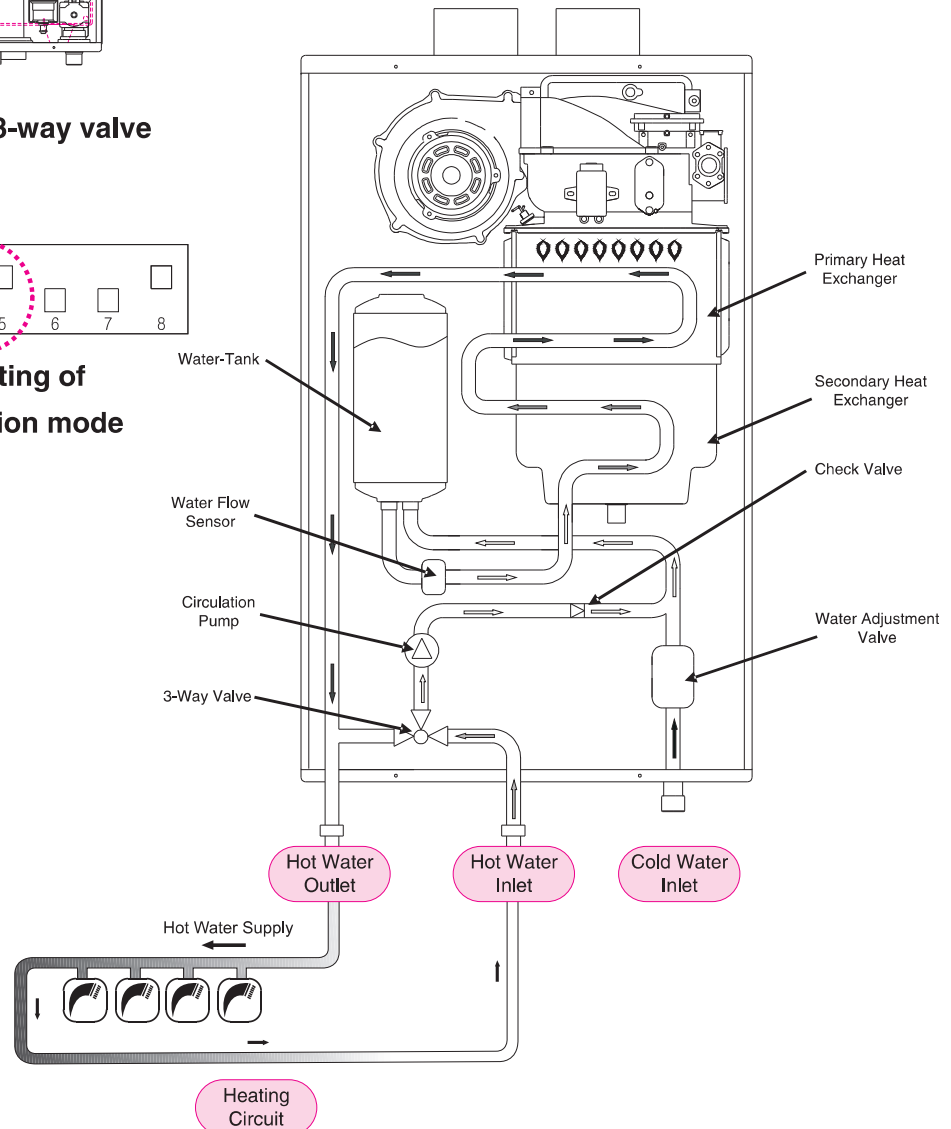


Location of the 3-way valve

DIP-SW2



Dip-switch setting of External circulation mode



Applications

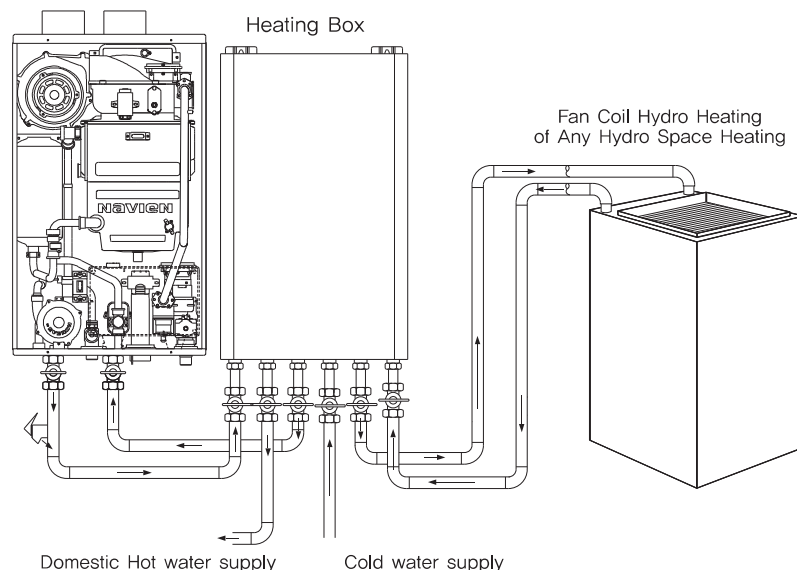
Space Heating Applications

The Navien Water Heater can be used for potable hot water heating and combination space heating applications. For ideal DHW/Space Heating combination systems, use this water heater with Navien's Heating Box Model HBO (for open-loop installations) or HBC (for closed loop installations).



WARNING

- Toxic chemicals used in boiler treatments such as alcohol, glycerol and glycol, must not be introduced into the system when using this water heater for open loop combination (potable water and space heating) systems;
- The Navien Water Heater can be used to supply potable water and space heating but shall not be connected to any heating system or component(s) previously used with non-potable water;
- When the space heating portion of your system requires water temperatures higher than 120°F (49°C), a means such as a mixing valve should be installed to temper the hot water delivered to any fixtures thereby reducing the potential for scalding.



NOTE: This illustration is a conceptual design only. There are many design variations of the application of controls and equipment presented. Designers must add all necessary safety and auxiliary equipment to conform to code requirements and proper design practice. For more details, contact the Navien America Technical Department.

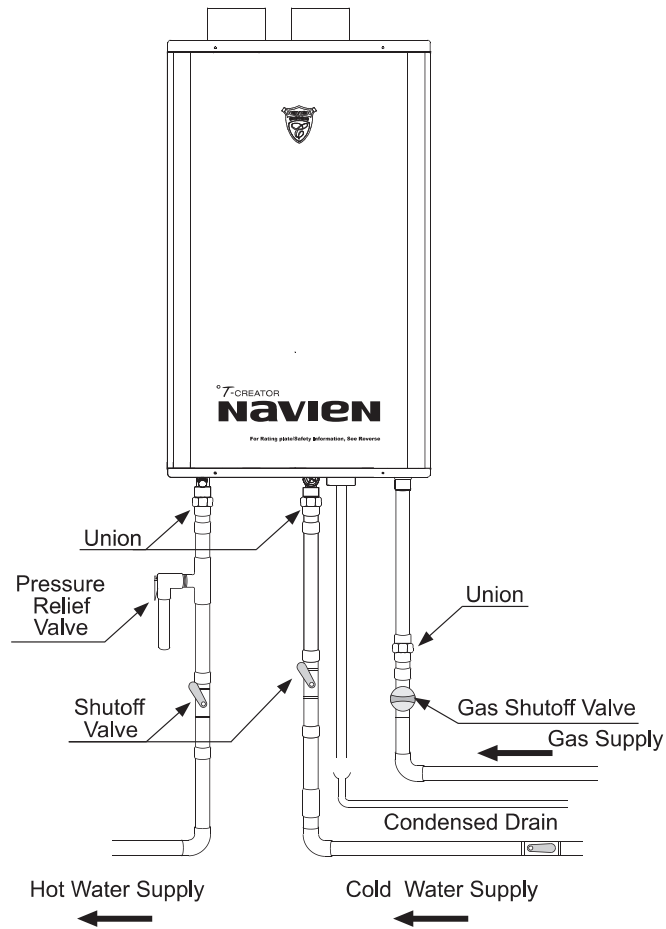
Cleaning the Water Heater:

1 Regular Maintenance:



CAUTION

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



► Cleaning the Water Heater:

Wipe the outside surface with a wet cloth. Use a non-acidic, non-abrasive cleanser to remove any surface stains;

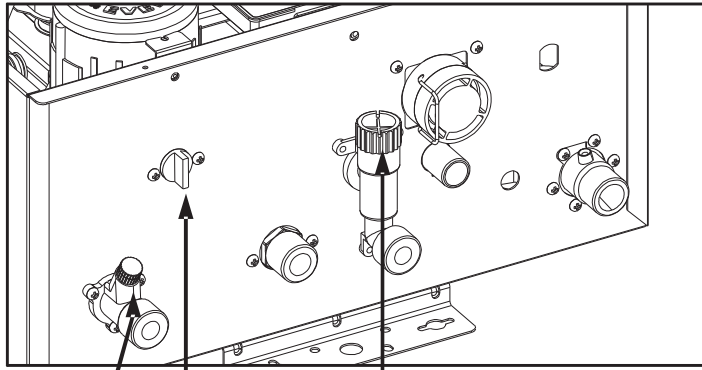
► Cleaning the Remote Controller

Wipe the surface with a wet cloth. The remote controller is moisture resistant but NOT water proof. Keep it as dry as possible.

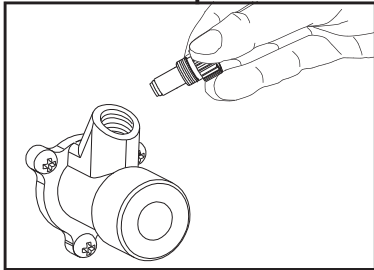
Draining the Water Heater:



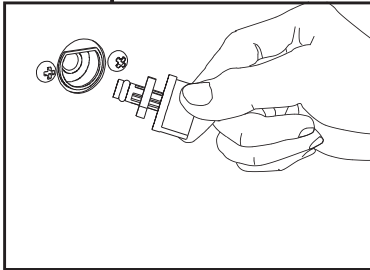
Draining the water heater - Parts you need to know:



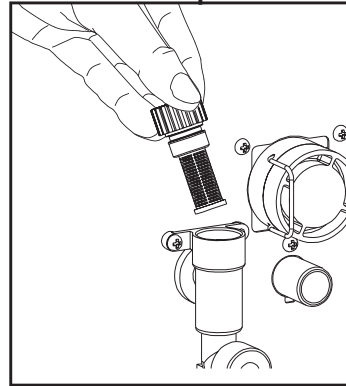
Bottom of water heater



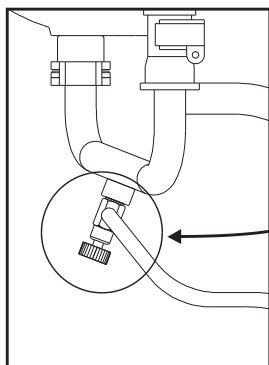
Hot Outlet Drain



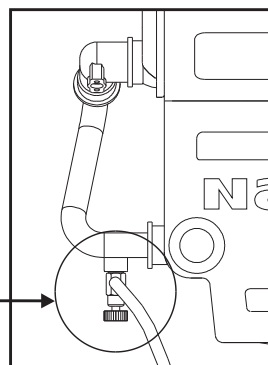
Pump Drain plug



Cold Inlet Filter



Internal Drain (#1)



Internal Drain (#2)

Draining the Water Heater:



Draining the water heater:

Procedure to drain the water heater (figure below). You will need to prepare a bucket to collect some of the water to be drained.

1. Turn off the power to the unit;
2. Close the gas valve;
3. Close the water supply valve on the inlet to the unit. If there is no valve, turn off the water supply at the water meter;
4. Open fully all hot water faucets; there may be some remaining water in the plumbing lines but it will quickly drain and the water flow should stop;
5. Open the drain plug at hot outlet side; open the 2 drain valves inside the unit; open the drain valve at the pump and remove the filter from the cold inlet side;
6. When the water is completely drained, return the 2 drain plugs and the inlet filter and close the 2 drain valves inside the unit;



Refilling the water heater:

1. Confirm that the 2 drain plugs and the inlet filter had been re-inserted and that the 2 drain valves inside the unit are closed;
2. Slowly open the water supply valve on the inlet to the unit. If there is no valve at the water heater, turn on the water supply at the water meter;
3. Inspect the unit for possible leaks both inside and outside of the unit; if there are leaks, contact your installer, service contractor or NAVIEN for service instructions.
4. Once all of the air has left the hot water lines, close all hot water faucets.
5. Turn on power to the unit;
6. Open the gas valve.
7. Open a hot water faucet to test for normal operation; the unit should operate normally.

Cleaning the Inlet Water Filter:

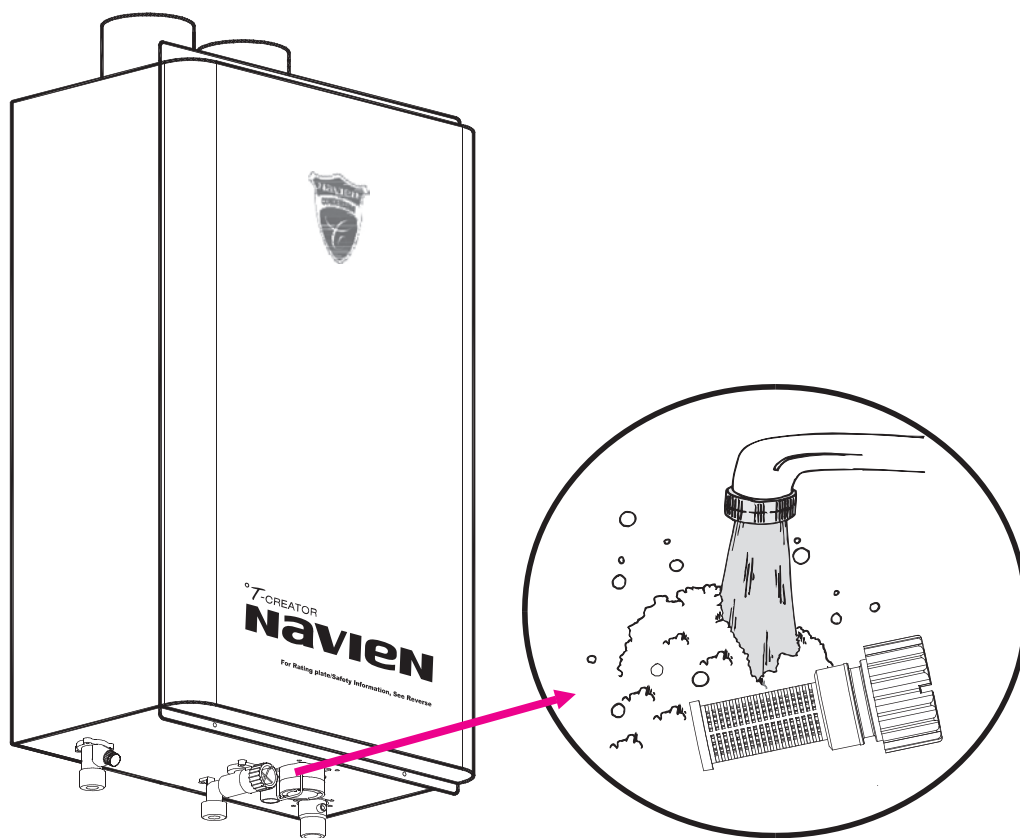


Procedure:

Procedure to clean the cold water inlet filter (figure below). You will need to have a bucket ready to collect the water drained from the water heater.

Follow steps 1 through 5 of the previous “Draining the water heater” section;

1. Clean the inlet filter by rinsing it under a faucet and scrubbing with a brush if needed;
2. When the water is completely drained, return the 2 drain plugs and the inlet filter and close the 2 drain valves inside the unit;
3. Follow steps 2 through 7 of the previous “Refilling the water heater” section;



Cleaning the Air-Intake Filter:

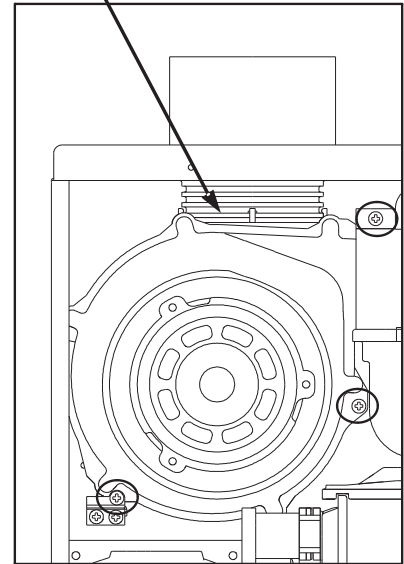


Cleaning the air intake filter:

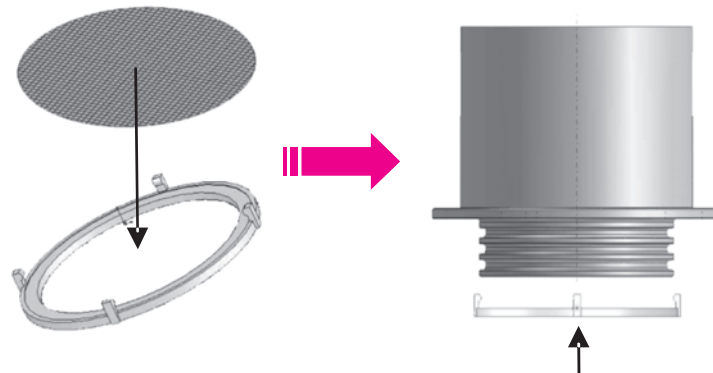
1. Locate the air filter just above the fan and under the air intake pipe in the top left corner of the water heater;

2. To access the filter, you will need to remove the fan. There are three Philips screws that need to be removed. The screws are located in the circled areas in the diagram to the right. Make note of which screw is taken from which hole as the sizes are different. Once the screws are removed, gently wiggle and slide the fan to the left, then pull it out towards the front.

Air inlet filter



3. Once the fan is removed, remove the filter from the bottom of the intake pipe. Remove the screen from the plastic assembly and clean it with a toothbrush and water. Re-fit the screen into the plastic assembly and fit the filter and frame onto the bottom of the air intake pipe.



4. Once the filter is back on the intake, re-set the fan back to its original position (insert the fan on an angle into the back corner of the case and then move it into its correct position). Re-insert the screws into their original location.

Freeze Protection:



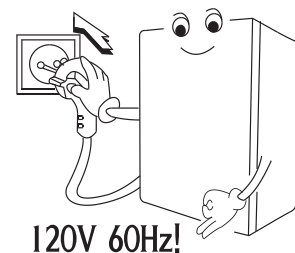
CAUTION

Damage caused by freezing is NOT covered under Warranty

- ▶ Freezing damage will only occur if backdrafting is present caused by negative pressure within the building. This situation is not caused by the Navien water heater and as such is not Navien's responsibility. Navien will not warrant any damage due to freezing. The installing contractor must be aware of this situation and ensure that there is sufficient make-up air to avoid such a situation.
- ▶ This water heater is designed for indoor installation ONLY. Do NOT install this unit outdoors.
- ▶ To avoid any freezing issues, Navien strongly recommends the use of Direct Vent. Ensure the exhaust vent pipe AND the air intake pipe are both connected directly from the water heater collars (top of unit) to the outdoors. This Direct Vent type installation will minimize any air movement within the unit.

1 DO NOT unplug the electric power supply cord

- ▶ The freeze protection function requires electricity. If the water heater is installed in a cold area that experiences freezing temperatures and/or frequent power outages, drain the unit to avoid damage. The freeze protection will operate regardless of whether the remote controller ON or OFF.



2 **Navien "A" Series Condensing water heaters**

- ▶ The Navien water heater models CR,CC-180A, CR,CC-210A and CR,CC-240A have an optional recirculation mode. If this mode is selected and even if the air intake pipe is not connected as explained above, the water heater should not freeze.

Freeze Protection:

1

If the hot water will not flow and you suspect the water heater is frozen:

▶ Follow the steps below :

1. Close the gas valves;
2. Turn off the power button;
3. Open the faucet closest to the water heater;
4. Use a hair dryer(s) or a portable electric heater to heat up the heat exchangers within the water heater; heat both the primary and the secondary heat exchangers;
5. Check every couple of minutes to see if water is running at the open faucet;
6. When the water is flowing again, check for possible water leaks from the equipment and piping before using.

2

Extended Periods of Non-Use and/or Power Outages:

▶ If the water heater will not be used for an extended period or if there is a potential for power outages, drain the water heater as follows :

1. Turn off the power to the unit.
2. Close the gas valve;
3. Close the water supply valve on the inlet to the unit. If there is no valve, turn off the water supply at the water meter;
4. Open all hot water faucets; there may be some remaining water in the plumbing lines that will drain but any water flow should quickly stop;
5. Open the drain plug at hot outlet side; open the drain valve inside the unit; open the drain valve at the pump and remove the filter from the cold inlet side;
6. When the water is completely drained, return the drain plugs;

Basic Troubleshooting and Frequently Asked Questions:

- If an 'Error Code' displays on the remote controller, follow the troubleshooting chart below before contacting your installer, service contractor or NAVIEN representative;
- Troubleshooting step #1 is to turn the unit OFF and then ON to reset the Navien water heater;
- If after resetting and following the steps outlined below, the water heater does not return to consistent operation, contact your installer, service contractor or Navien for service instructions.

Problem	Possible Cause(s)	What to do
There is no water at all when the hot water tap is opened.	<ul style="list-style-type: none"> • Is the cold water filter clean? • Is the unit display flashing an error code? • Is the unit frozen? 	<ul style="list-style-type: none"> • Make sure the shut-off valves on the hot and cold pipes are open; • Check if there is any error code flashing on the remote controller;
When the tap is opened, there is no hot water or the hot water turns cold and stays cold.	<ul style="list-style-type: none"> • Is the hot water fixture sufficiently open to draw at least 0.5 GPM through the water heater? • Is the unit display flashing an error code? • If there is an external recirculation system installed, is there a check valve on the recirculation return line? 	<ul style="list-style-type: none"> • Check if there is any error code flashing on the remote controller;
It takes too long time to get hot water to the fixtures.	<ul style="list-style-type: none"> • If the unit is an "A" model, consider using the external recirculation mode. 	<ul style="list-style-type: none"> • Have contractor install a recirculation return line from the furthest faucet possible back to the water heater.
The water is not hot enough.	<ul style="list-style-type: none"> • Is the set temperature too low? 	<ul style="list-style-type: none"> • Check unit's temperature setting; • Check for cross plumbing between cold and hot water lines;
The water is too hot.	<ul style="list-style-type: none"> • Is the set temperature set too high? 	<ul style="list-style-type: none"> • Check unit's temperature setting.

Error Code Guide:

Error Code	Reason	Self-diagnostic / Action
E001	Water is boiling inside the heat exchanger	<ol style="list-style-type: none"> 1. Clean the inlet water strainer (part#55); 2. Check the automatic flow adjustment valve(part#53); 3. Check the heat exchanger; remove and clean with a cleaning solution;
E003	Ignition failure	<ol style="list-style-type: none"> 1. Check to see if the main gas supply valve is open; 2. Check that the power is "ON"; 3. Check the igniter for spark (part#34);
E004	False flame detection	<ol style="list-style-type: none"> 1. Ensure ground wire is connected; 2. Check the igniter for spark;
E007	Hot water outlet: thermistor -open	<ol style="list-style-type: none"> 1. Check the thermistor(part#62); 2. Replace the thermistor;
E008	Hot water outlet: thermistor -short	<ol style="list-style-type: none"> 1. Check the thermistor; 2. Replace the thermistor;
E009	Abnormal fan motor activity	<ol style="list-style-type: none"> 1. Check and clean the air filter (part#9); 2. Check and clean the fan motor (part#21);
E010	Abnormal air pressure	<ol style="list-style-type: none"> 1. Check the vent pipe for obstructions; 2. Check and clean the air filter (part#9);
E012	Flame loss	<ol style="list-style-type: none"> 1. Check the main gas line (valve open?); 2. Check intake air pipe; 3. Check ground wire; 4. Check power supply;
E015	Abnormal control board	<ol style="list-style-type: none"> 1. Check power supply; 2. Check the GFI;
E016	Overheating of heat exchanger	<ol style="list-style-type: none"> 1. Turn OFF the system for at least 30 minutes then restart; 2. Clean the inlet water strainer (part#55); 3. Check the automatic flow adjustment valve(part#53); 4. Check the heat exchanger; remove and clean with a cleaning solution;

If any of the above solutions do not resolve the problem with the water heater, contact Navien's Technical department at 1-800-519-8794.

Error Code Guide:

Error Code	Reason	Self-diagnostic / Action
E021	Cold water inlet: thermistor 1–open	1. Check Thermistor(part#62); 2. Replace Thermistor;
E022	Cold water inlet: thermistor 1 -short	1. Check Thermistor; 2. Replace Thermistor;
E027	Abnormal activity of the air pressure sensor	1. Check the vent pipe for obstructions; 2. Check and clean the air filter (part#9);
E030	Exhaust Overheat: exhaust high limit switch shuts down the unit when the flue temperatures exceed 149°F (65°C)	1. Turn OFF the system for at least 30 minutes then restart; 2. Clean the inlet water strainer (part#55); 3. Check the automatic flow adjustment valve(part#53); 4. Check the heat exchanger; remove and clean with a cleaning solution.
E032	Cold water inlet: thermistor 2 - Open	1. Check the thermistor(part#62); 2. Replace the thermistor;
E033	Cold water inlet: thermistor 2 - Short	1. Check the thermistor; 2. Replace the thermistor.
E035	Abnormal activity of the gas pressure sensor	1. Check gas line.
E036	Communication failure	1. Contact to Navien tech. dept.
E037	Water Leak Inside unit	1. Close cold water main.

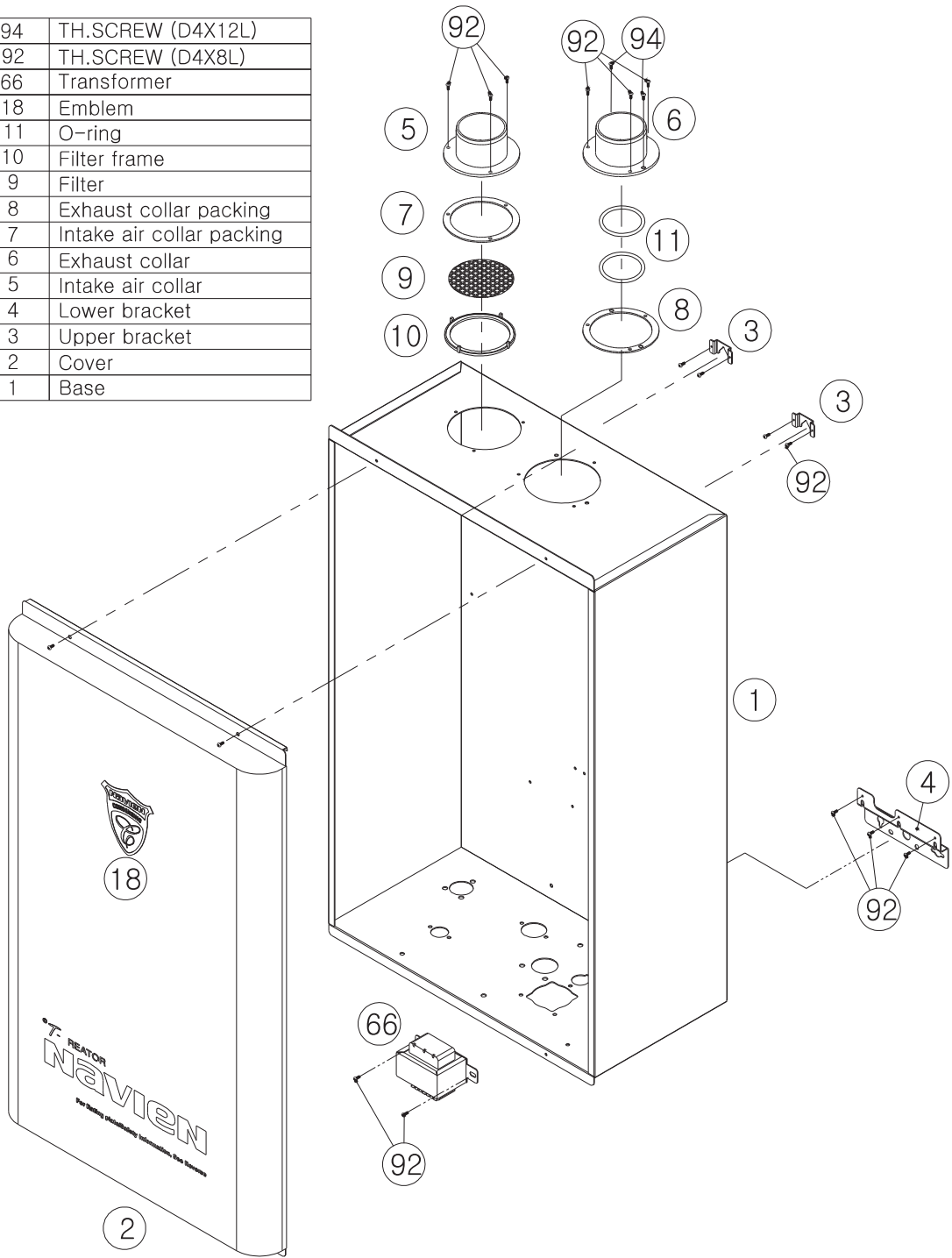
There will be error codes displayed on the remote controller and on the computer board (within the unit) of any problems or failures that occur with the water heater.

****NOTE:**** To reset the water heater, either unplug and re-plug the electric supply or if a remote controller is installed, press the power button of the remote controller “OFF” then “ON”.

Components Diagram & Parts List

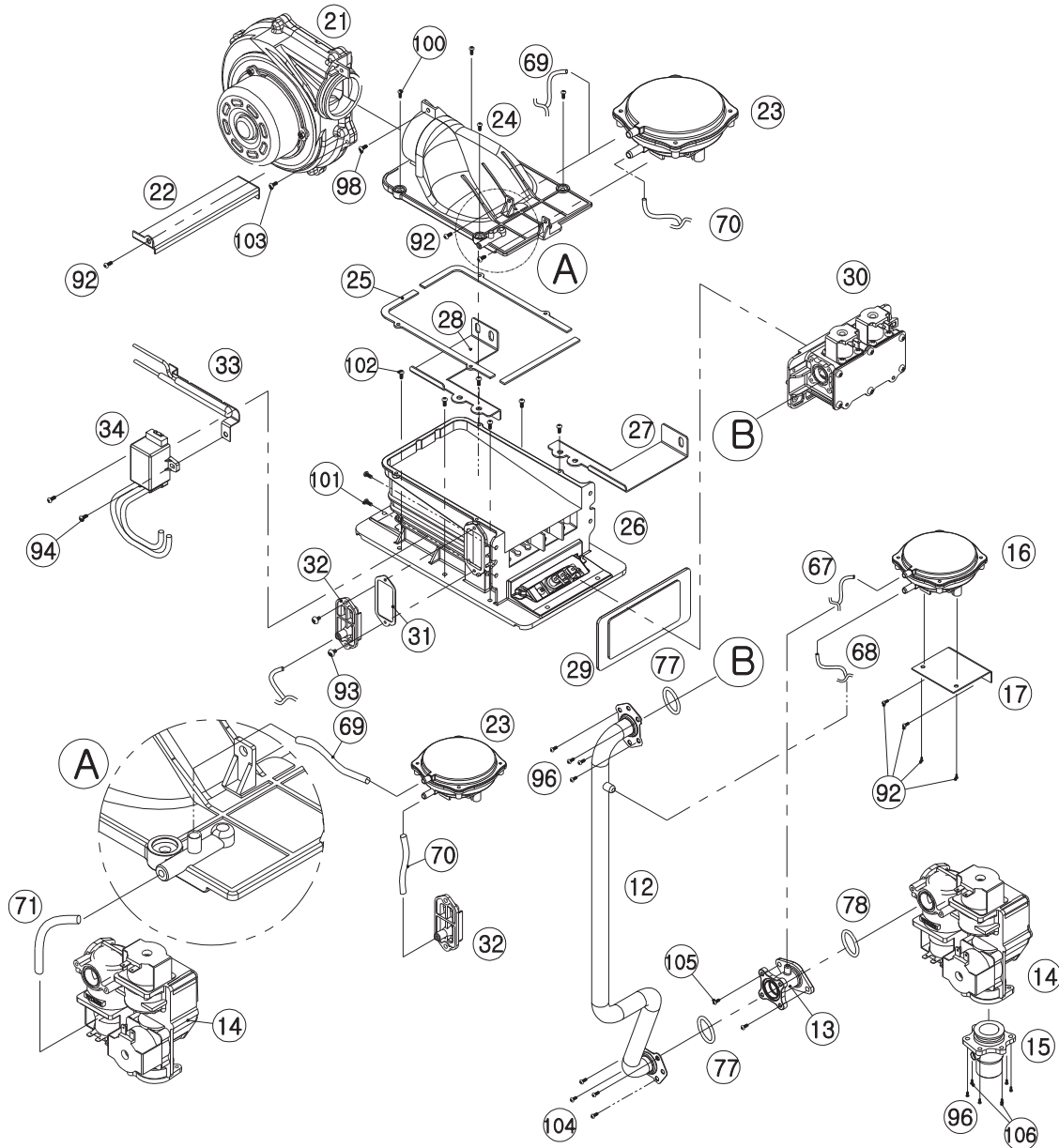
CASE ASSEMBLY : CR-A, CR, CC

94	TH.SCREW (D4X12L)
92	TH.SCREW (D4X8L)
66	Transformer
18	Emblem
11	O-ring
10	Filter frame
9	Filter
8	Exhaust collar packing
7	Intake air collar packing
6	Exhaust collar
5	Intake air collar
4	Lower bracket
3	Upper bracket
2	Cover
1	Base



Components Diagram & Parts List

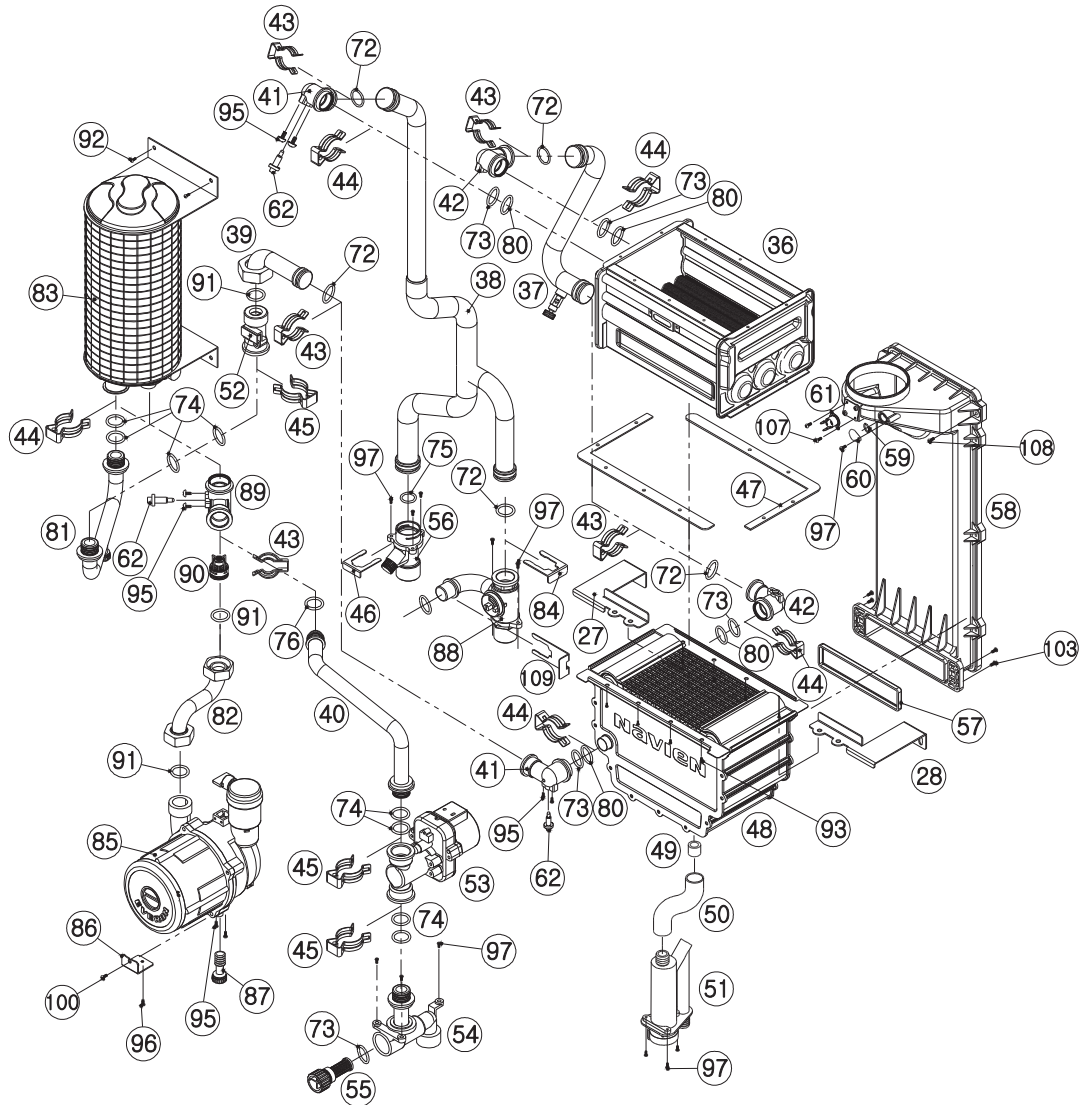
BURNER ASSEMBLY : CR-A, CR, CC



27	Burner bracket(L)	77	O-ring 19.8X2.4t	106	BOLT (M4X12L)STS
26	Burner assembly	71	Tube(black) 6X3X550L	105	BOLT (M4X10L)STS
25	CAID packing	70	Tube(black) 7X4X170L	104	BOLT (M4X6L)STS
24	Combustion air intake duct	69	Tube(black) 7X4X50L	103	SCREW (D4X16L)
23	Air pressure sensor	68	Tube 7X4X170L	102	SCREW (D4X14L)
22	Fan bracket	67	Tube 7X4X550L	101	SCREW (D4X12L)
21	Fan	34	Igniter	100	SCREW (M4X8L)
17	GPS bracket	33	Themperature fuse	98	TAP SCREW (D4X8L)
16	Gas pressure sensor	32	APS venturi	96	TH.SCREW (D4X6L)STS
15	Gas inlet	31	APS venturi packing	94	TH.SCREW (D4X12L)
14	Main gas valve	30	Manifold	93	TH.SCREW (D4X6L)
13	GPS venturi	29	Packing	92	TH.SCREW (D4X8L)
12	Gas pipe	28	Burner bracket(R)	78	O-ring 19.8X2.7t

Components Diagram & Parts List

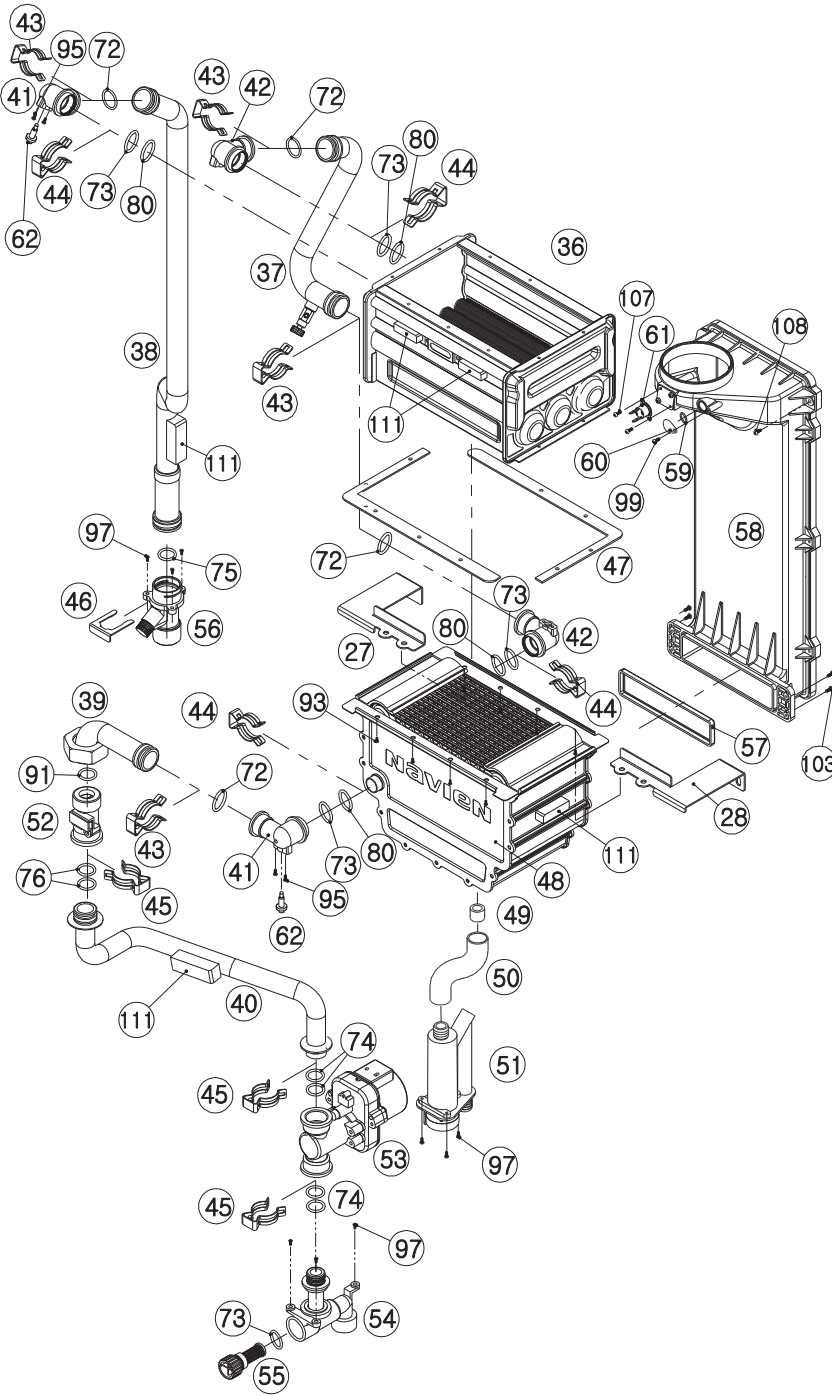
WATER WAY ASSEMBLY : CR-A



52	Water flow sence	83	Mini buffer tank	109	Circulation pump clip
51	Siphon	82	Pump outlet pipe	108	HEAD SCREW (D4X24L)
50	Siphon hose	81	Water flow secsor inlet pipe	107	BOLT (M3X5L)
49	Siphon ring	80	Back-up ring	103	SCREW (D4X16L)
48	Secondary heat exchaner	76	O-ring 17.8X2.4t	100	SCREW (M4X8L)
47	Packing	75	O-ring 17.5X2.7t	97	TH.SCREW (D4X10L)STS
46	Fastener "18A"	74	O-ring 15.8X2.4t	96	TH.SCREW (D4X6L)STS
45	Fastener "D"	73	O-ring P18	95	TH.SCREW (D4X6L)
44	Fastener "F"	72	O-ring 15.8X2.7	93	TH.SCREW (D4X10L)
43	Fastener "E"	62	Thermistor	92	TH.SCREW (D4X8L)
42	Water pipe adaptor "B"	61	High-limit switch	91	Packing 20A X 2.5t
41	Water pipe adaptor "A"	60	Gas check port plate	90	Check valve
40	Flow adjustment v/v outlet pipe	59	Gas check port packing	89	Buffer tank adaptor
39	Secondary H/E supply pipe	58	Exhaust duct	88	3-way valve
38	Hot water supply pipe	57	Exhaust duct packing	87	Pump drain plug
37	H/E connecting pipe	56	Hot water supply adaptor	86	Pump bracket
36	Primary heat exchanger	55	Water strainer	85	Circulation pump
28	Burner B/K (R)	54	Cold water inlet adaptor	84	Fastener "16A"
27	Burner B/K (L)	53	Flow adjustment valve		

Components Diagram & Parts List

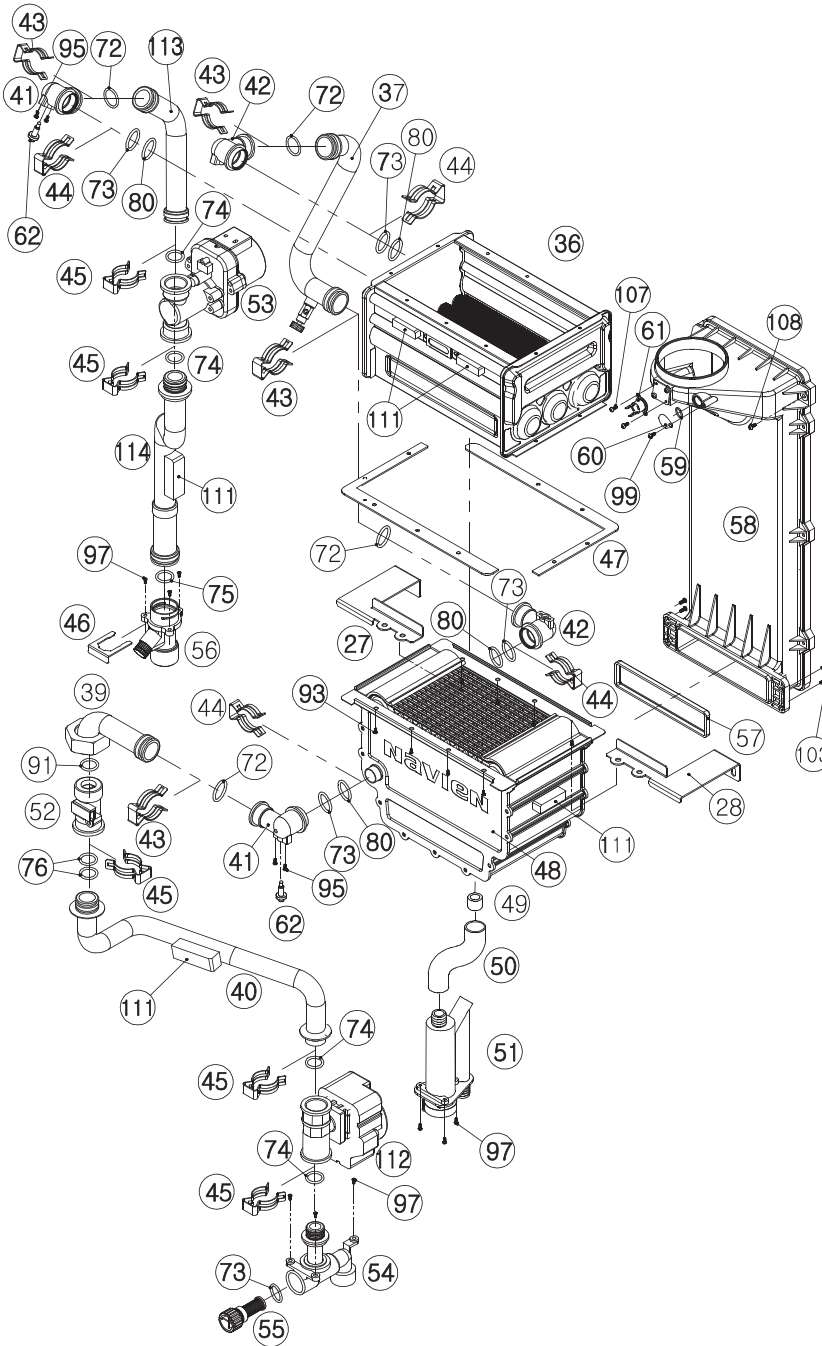
WATER WAY ASSEMBLY : CR



111	Ceramic heater
108	HEAD SCREW (D4X24L)
107	BOLT (M3X5L)
103	SCREW (D4X16L)
99	TAP SCREW (D4X14L)
97	TH.SCREW (D4X10L)
95	TH.SCREW (D4X6L)
93	TH.SCREW (D4X10L)
91	Packing (20AX2.5t)
80	Back-up ring
76	O-ring 17.8X2.4t
75	O-ring 17.5X2.7t
74	O-ring 15.8X2.4t
73	O-ring P18
72	O-ring 15.8X2.7
62	Thermistor
61	High-limit switch
60	Gas check port plate
59	Gas check port packing
58	Exhaust duct
57	Exhaust duct packing
56	Hot water supply adaptor
55	Water strainer
54	Cold water inlet adaptor
53	Flow adjustment valve
52	Water flow sence
51	Siphon
50	Siphon hose
49	Siphon ring
48	Secondary heat exchanger
47	Packing
46	Fastener "18A"
45	Fastener "D"
44	Fastener "F"
43	Fastener "E"
42	Water pipe adaptor "B"
41	Water pipe adaptor "A"
40	F/A valve outlet pipe
39	Secondary H/E supply pipe
38	Hot water supply pipe
37	H/E connecting pipe
36	Primary heat exchanger
28	Burner B/K (R)
27	Burner B/K (L)

Components Diagram & Parts List

WATER WAY ASSEMBLY : CC



114	Hot water supply pipe B
113	Hot water supply pipe A
112	2-Way valve
111	Ceramic heater
108	HEAD SCREW (D4X24L)
107	BOLT (M3X5L)
103	SCREW (D4X16L)
99	TAP SCREW (D4X14L)
97	TH.SCREW (D4X10L)
95	TH.SCREW (D4X6L)
93	TH.SCREW (D4X10L)
91	Packing (20AX2.5t)
80	Back-up ring
76	O-ring 17.8X2.4t
75	O-ring 17.5X2.7t
74	O-ring 15.8X2.4t
73	O-ring P18
72	O-ring 15.8X2.7
62	Thermistor
61	High-limit switch
60	Gas check port plate
59	Gas check port packing
58	Exhaust duct
57	Exhaust duct packing
56	Hot water supply adaptor
55	Water strainer
54	Cold water inlet adaptor
53	Flow adjustment valve
52	Water flow sence
51	Siphon
50	Siphon hose
49	Siphon ring
48	Secondary heat exchaner
47	Packing
46	Fastener "18A"
45	Fastener "D"
44	Fastener "F"
43	Fastener "E"
42	Water pipe adaptor "B"
41	Water pipe adaptor "A"
40	F/A valve outlet pipe
39	Secondary H/E supply pipe
37	H/E connecting pipe
36	Primary heat exchanger
28	Burner B/K (R)
27	Burner B/K (L)

Service

- ▶ Should you have any questions about this Navien water heater or if your water heater requires adjustment, repair or routine maintenance, it is suggested that you first contact the original installer. In the event the firm is unavailable, please refer to the contractor locator section of the Navien website (www.navienamerica.com) or contact to the Navien America Inc. Service Department:

Navien America Inc.

17855 Fitch Ave

Irvine, CA 92614

Tel) 949 955-9009 Fax) 949 955-9229

- ▶ When contacting the manufacturer, please have the following information ready:
 - ① Model and serial number of the water heater as shown on the rating plate (located on the back side of the front cover);
 - ② Address where the water heater is physically located;
 - ③ Name and address of original installer and any service agency who has performed service on the water heater;
 - ④ Date of original installation and dates of any service work was performed;
 - ⑤ Details of the problem as best as you can describe them;
 - ⑥ List of people, with dates, who have been contacted regarding your problem.

Condensing **98%**
NAVIENT
Navigating Energy and Environment

Navient Gas Water Heater



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