



# TECHNICAL TRAINING AND SERVICE MANUAL



## IKONIC™ TANKLESS WATER HEATERS

### SUPER HIGH EFFICIENCY (Condensing)

RTGH-S11i	RTGH-S10i	RTGH-S84i
RTGH-SR11i	RTGH-SR10i	RTGH-SR84i
RTGH-SPR11i	RTGH-SPR10i	RTGH-SPR84i
CRTGH-S11i	CRTGH-S10i	CRTGH-S84i
CRTGH-SR11i	CRTGH-SR10i	CRTGH-SR84i
CRTGH-SPR11i	CRTGH-SPR10i	CRTGH-SPR84i
RUTGH-S11i	RUTGH-S10i	RUTGH-S84i
RUTGH-SR11i	RUTGH-SR10i	RUTGH-SR84i
RUTGH-SPR11i	RUTGH-SPR10i	RUTGH-SPR84i
CRUTGH-S11i	CRUTGH-SR11i	CRUTGH-SPR11i
RTGH-SC11i	RTGH-SCP11i	

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**TECHNICAL SUPPORT LINE**

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 Fax: 334-260-1341

**ORDER CENTER**

1-800-621-5622

**RHEEM WATER HEATERS**

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 Montgomery, AL 36109  
 Website: [www.Rheem.com](http://www.Rheem.com)  
 e-mail: [Techserv@Rheem.com](mailto:Techserv@Rheem.com)

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# SAFETY AND INTRODUCTION

The purpose of this manual is to provide technical and troubleshooting information to technicians and service professionals ONLY. Homeowners should consult the Use and Care Manual ( AP22745) for general informational and installation inquiries or contact technical support prior to attempting to service to this electric water heater.

It is imperative that all persons who are expected to install, repair or adjust this water heater read this and the Use and Care manual. This manual is intended solely for professional technicians intending to assist in repairing or servicing an ICONIC water heater. Any questions regarding the operation, maintenance, service or warranty of this water heater should be directed to the seller from whom it was purchased.

## READ THE SAFETY INFORMATION

Before inspecting, diagnosing, repairing or operating any water heater, be sure to examine all of the safety and warning labels on the water heater. Follow the instruction on these warning labels. Read and understand the Use and Care Manual that was shipped with the water heater. Failure to do so can result in unsafe operation of the water heater resulting in property damage, bodily injury, or death. If you have any problems reading or following the instructions in the Use and Care Manual, seek the help of a licensed and qualified professional.

## ELECTRICAL SHOCK

Troubleshooting and repairing this water heater can expose you to electrical shock. Some of the diagnostic procedures require the presence of AC and DC volt electricity. Use extreme caution when performing these procedures. When replacing an unserviceable component, turn off all power to the water heater and check for the presence of power with a multi meter or test lamp.

The ignition cable carries more than 10,000 volts of electrical energy. Use extreme caution when diagnosing the Tankless Gas Water Heater.


## FLAMMABLE LIQUIDS AND VAPORS

Gasoline, as well as other flammable material and liquids (adhesives, solvents, etc.), and their vapors are extremely dangerous. **DO NOT** handle, use or store gasoline or other flammable or combustible materials anywhere near or in the vicinity of a water heater. The spark ignition and burner assembly in the water heater controls can ignite these vapors. Failure to do so can result in property damage, bodily injury or death.

## WATER TEMPERATURE ADJUSTMENT

Safety and energy conservation are factors to be considered when selecting the water temperature setting on the thermostat. Water temperatures above 125 F can cause severe burns or death from scalding. The chart shown here may be used as a guide in determining the proper water temperature for your application.

**⚠ DANGER**



Water temperature over 125°F (52°C) 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.

The temperature of the water in the heater is regulated by the electronic control and surface mounted temperature sensors.

**⚠ DANGER: Hotter water increases the potential for Hot Water SCALDS.**

Temperature	Time To Produce a Serious Burn
120°F (49°C)	More than 5 minutes
125°F (52°C)	1½ to 2 minutes
130°F (54°C)	About 30 seconds
135°F (57°C)	About 10 seconds
140°F (60°C)	Less than 5 seconds
145°F (63°C)	Less than 3 seconds

Table courtesy of Shriners Burn Institute

# TROUBLESHOOTING TOOLS

## SAFETY FIRST

**Your safety and safety of others is very important. This manual is only intended for qualified service technicians. ALWAYS USE CAUTION while testing voltages and/or gas supply.**



### MULTI-METER

Used to measure Resistance and voltage.



### MULTI-METER NEEDLE SET

Used on meter test leads to access connectors while measuring Resistance & Voltage.



### MANOMETER

Used to measure gas pressure during standby and operation.

## MEASURING VOLTAGE AND RESISTANCE

### ⚠ WARNING

**WHILE MEASURING VOLTAGE, DO NOT** cross/touch multi meter leads together. This will cause damage to electrical components.

**WHEN INSERTING LEADS INTO WIRING CONNECTOR** insert on the wiring side to prevent damage to connector.

**BEFORE MEASURING RESISTANCE, TURN OFF** all electrical power and make sure to REMOVE CONNECTOR from the circuit (control board). Check resistance on connector that was removed.

**WHEN MEASURING VOLTAGE, DO NOT REMOVE** CONNECTOR; insert multimeter leads prior to operating unit.

**WHEN MEASURING DC VOLTAGE, if the meter displays the dash (-----) swap the position of your black and red leads on the connector.**

**⚠ WARNING: DO NOT touch any grounding areas.**

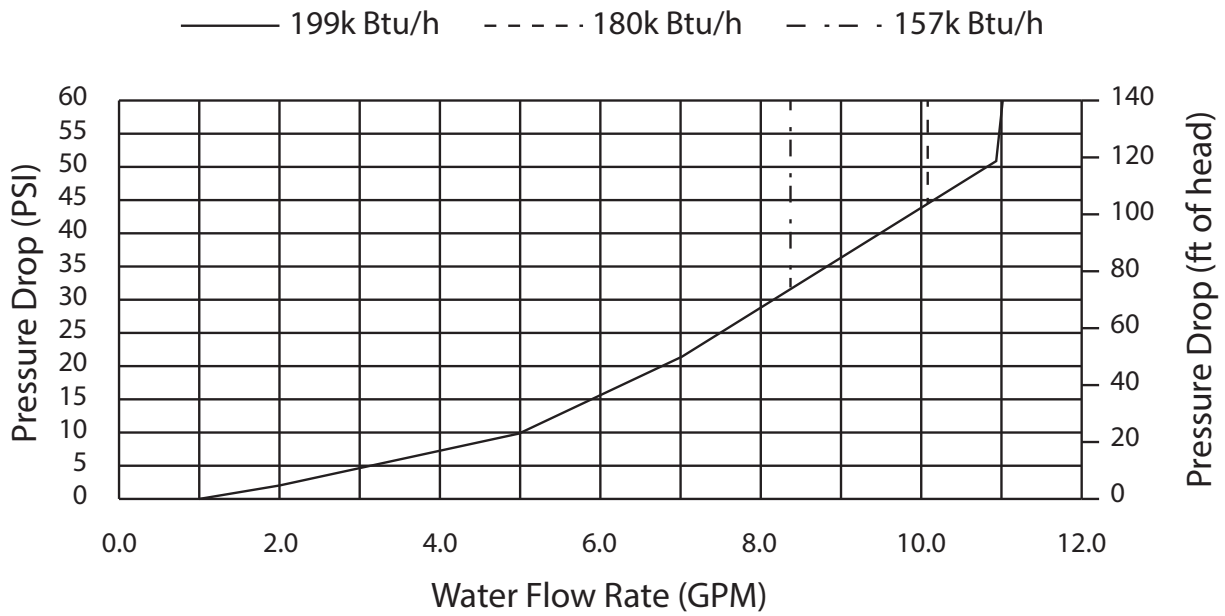


# GENERAL INFORMATION

## ICONIC PRESSURE DROP

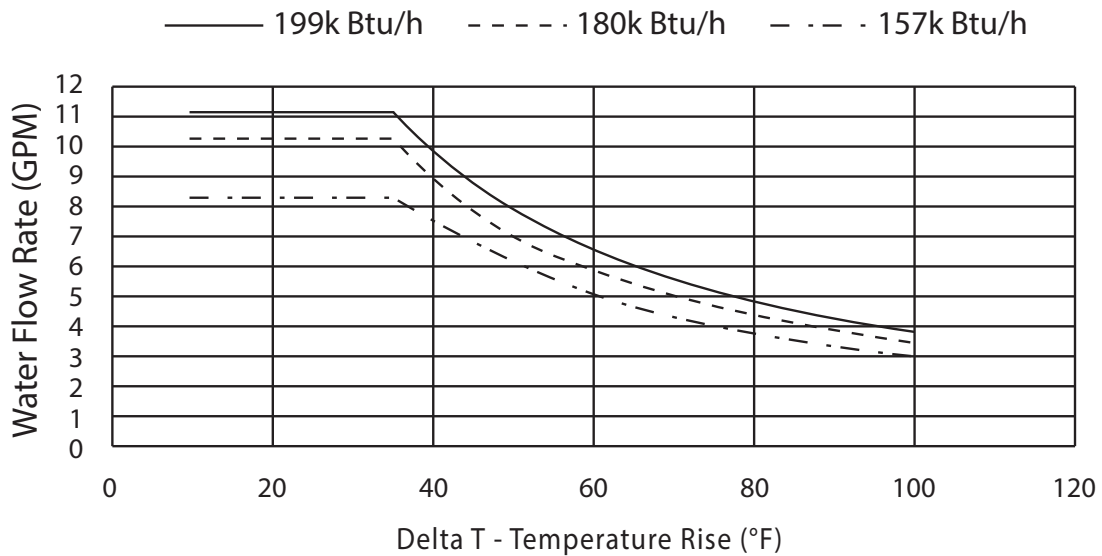
**NOTE:** Pressure drop curve for Iconic is different from existing condensing model. See table below for Iconic Pressure Drop information.

### Pressure Drop Curve



Graph above generated at 35°F Delta T. Graph below generated with 70°F (21°C) inlet water temperature

### Temperature Rise Curve



# GENERAL INFORMATION

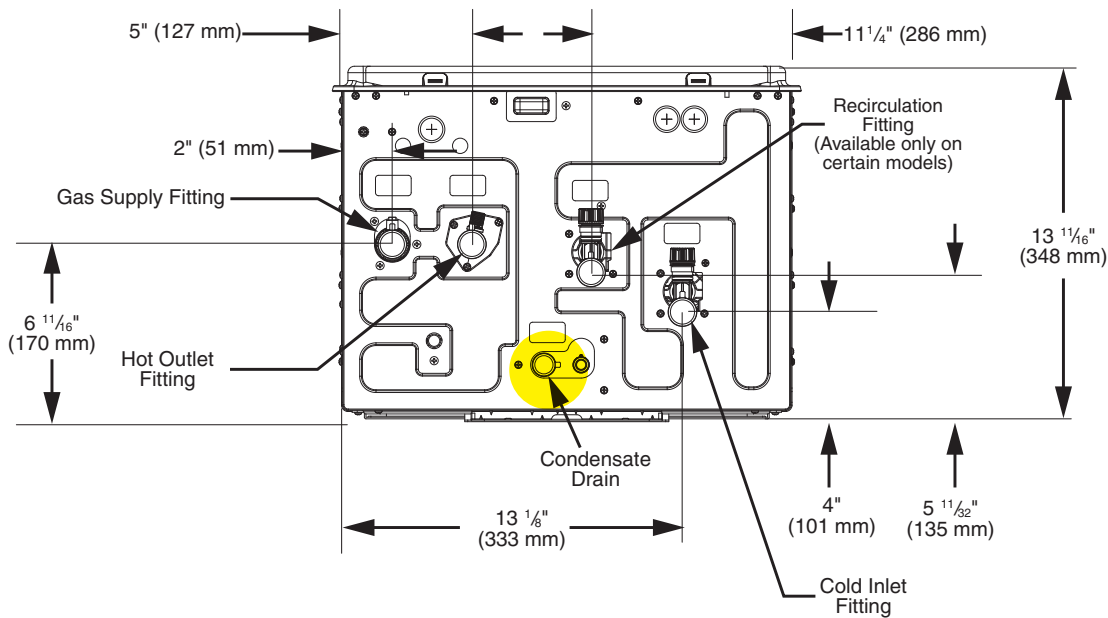
## GAS

Proper gas size is imperative, as this unit may be able to get sufficient gas but other appliances on the same gas line will not. This could cause issues throughout the home.

## CONDENSATION

Remove the cap to prevent an A022 error code. Connect a 1/2" drain hose at the condensation drain (Green connection in following illustration.) The yellow connection in the illustration is used to drain condensation from a neutralizer. (Most users will not need this connection.)

**BOTTOM VIEW**





# GENERAL INFORMATION

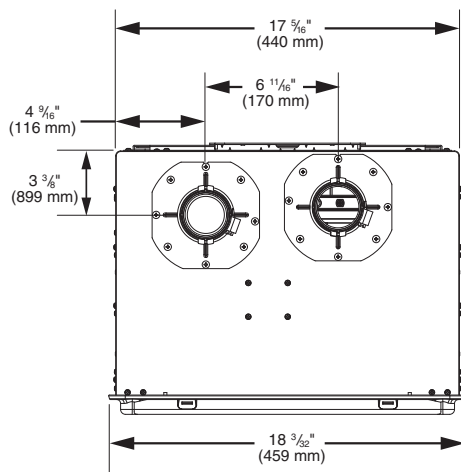
## 1.1.1 SPECIFICATIONS

SPECIFICATION		RTGH-S11I RTGH-SR11I RTGH-SPR11I	RTGH-S10I RTGH-SR10I RTGH-SPR10I	RTGH-S84I RTGH-SR84I RTGH-SPR84I
Dimensions	Width	17.3 in (440 mm)		
	Height	28.6 in (726 mm)		
	Depth	13.7 in (348 mm)		
Approval Gas Type		Batural (NG) and Liquid Propane (LP)		
Maximum Gas Consumption		199,900 Btu/h	180,000 Btu/h	157,000 Btu/h
Minimum Gas Consumption		11,000 Btu/h		
Gas Supply Pressure	NG	4.0 in w.c. - 10.0 in w.c.		
	LP	8.0 in w.c. - 13.0 in w.c.		
Minimum Activation Flow Rate		0.4 GPM		
Extinction Flow Rate		0.26 GPM		
Vent Size (Indoor Only)		2 in or 3 in		
Service Connections	Gas Supply	¾ NPT		
	Cold Water Inlet	¾ NPT		
	Hot Water Outlet	¾ NPT		
	Recirculation Fitting (Built-in Pump model only)	¾ NPT		
Electrical Consumption	Normal	100 W		
	Standby	3.5 W		
	Antifreeze Protection	200 W		

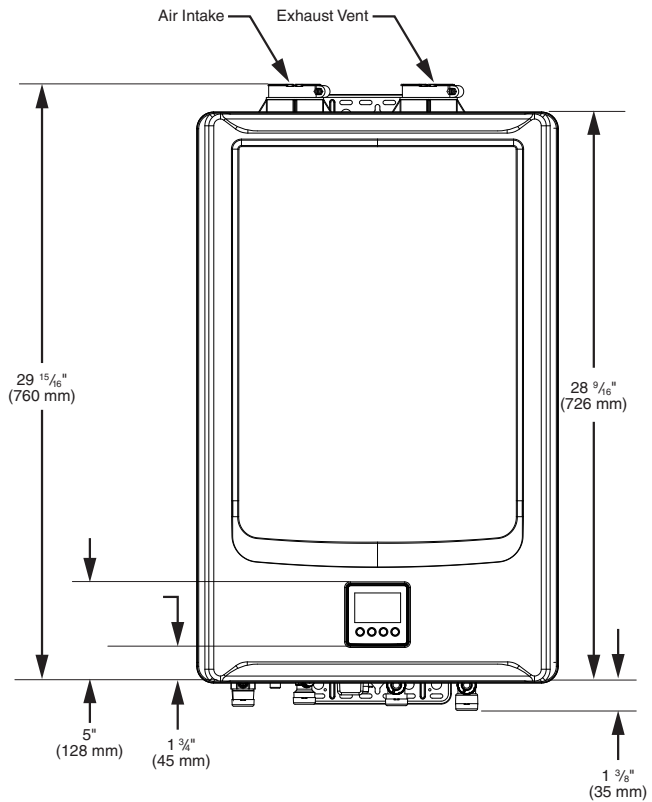
# GENERAL INFORMATION

## SPECIFICATIONS OF THE ICONIC AND INSTALLATION GUIDELINES

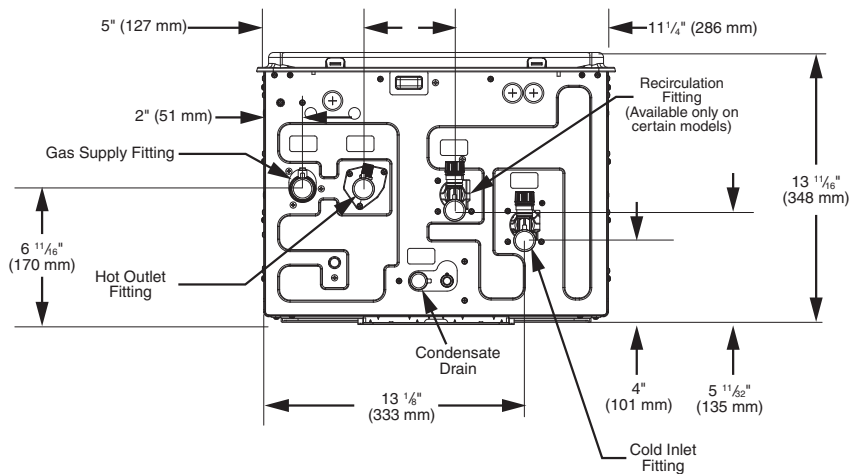
**TOP VIEW**



**FRONT VIEW**



**BOTTOM VIEW**



# GENERAL INFORMATION

## SPECIFICATIONS OF THE ICONIC AND INSTALLATION GUIDELINES

### 1.1.2 VENTING FOR DIRECT VENT WATER HEATER

The vent exhaust and air intake must be vented outside as described in the use and care manual.

**DO NOT** vent this water heater through a chimney. It must be vented separately from all other appliances.

#### NOTICE

The unit can be vented using only the following recommended pipe material.

Use only 2 or 3 inch diameter pipe. Refer to local codes for restrictions on the use of PVC, CPVC, or ABS pipe and fittings. All exhaust venting materials for product installed in Canada must meet ULC-S636. Acceptable materials or equivalent:

- PVC (Schedule 40, ASTM D-1785)
- CPVC (Schedule 40, ASTM F-441)
- ABS (Schedule 40, ASTM D-2661) (Not permitted in Canada)

The fittings other than the VENT TERMINAL should be equivalent to the following:

- PVC (Schedule 40, DMW, ASTM D-2665)
- CPVC (Schedule 40, DMW, ASTM F-438)
- ABS (Schedule 40, DMW, ASTM D-2661) (Not permitted in Canada)
- Category III Stainless Steel

**DO NOT USE Schedule 20, Cell Core, Drain Pipe, Galvanized, Aluminum, or B-Vent.**

VENT SYSTEM DIAMETER	MIN. ALLOWED EQUIVALENT VENT LENGTH		MAX. ALLOWED EQUIVALENT VENT LENGTH		VENT SYSTEM TERMINATION
	Feet	Meters	Feet	Meters	
Inches					
2	1	0.3	70	21.3	90° Elbow
3	1	0.3	150	45.7	90° Elbow

A 90 elbow is equivalent to 6 ft.(1.83 m) of 2"diameter straight pipe, and to 5 ft.(1.52 m) of 3" diameter straight pipe.

A 45 elbow is equivalent to 3 ft. (0.9 m) of 2" diameter straight pipe, and to 2.5 ft. (0.75m) of 3" diameter straight pipe.

# GENERAL INFORMATION

## SPECIFICATIONS OF THE ICONIC AND INSTALLATION GUIDELINES

### 1.1.3 FLOW RATE

**RTGH S11i ( SR11i)**

TEMPERATURE RISE (°F)								
35	45	50	60	70	78	80	90	100
11.2	8.8	7.9	6.6	5.6	5.1	4.9	4.4	3.9
Max Water Flow - GPM (gallons per minute)								

**RTGH S10i ( SR10i)**

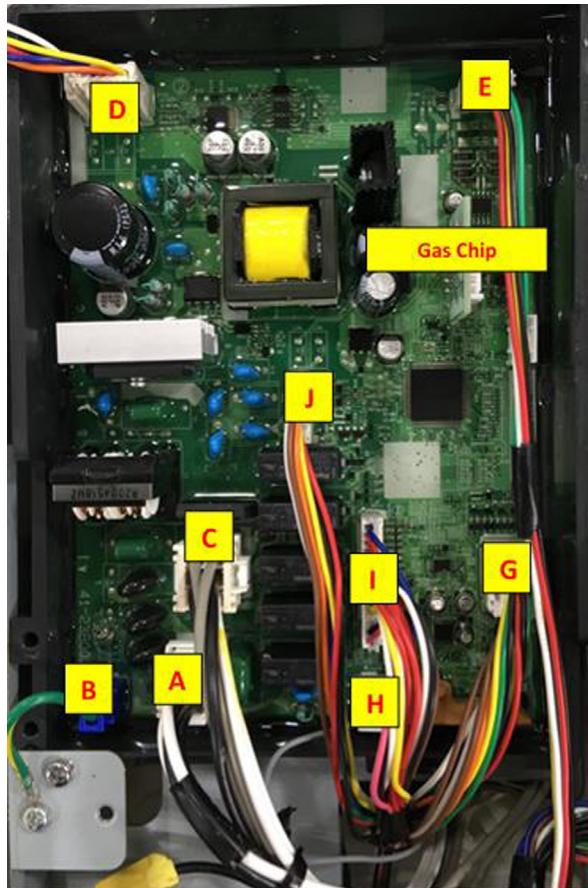
TEMPERATURE RISE (°F)								
35	45	50	60	70	78	80	90	100
10.1	7.9	7.1	5.9	5.1	4.6	4.4	3.9	3.5
Max Water Flow - GPM (gallons per minute)								

**RTGH S10i ( SR10i)**

TEMPERATURE RISE (°F)								
35	45	50	60	70	78	80	90	100
8.4	6.9	6.2	5.2	4.4	4.0	4.4	3.4	3.1
Max Water Flow - GPM (gallons per minute)								

# GENERAL INFORMATION

## 1.2 CONTROL BOARD CONNECTORS



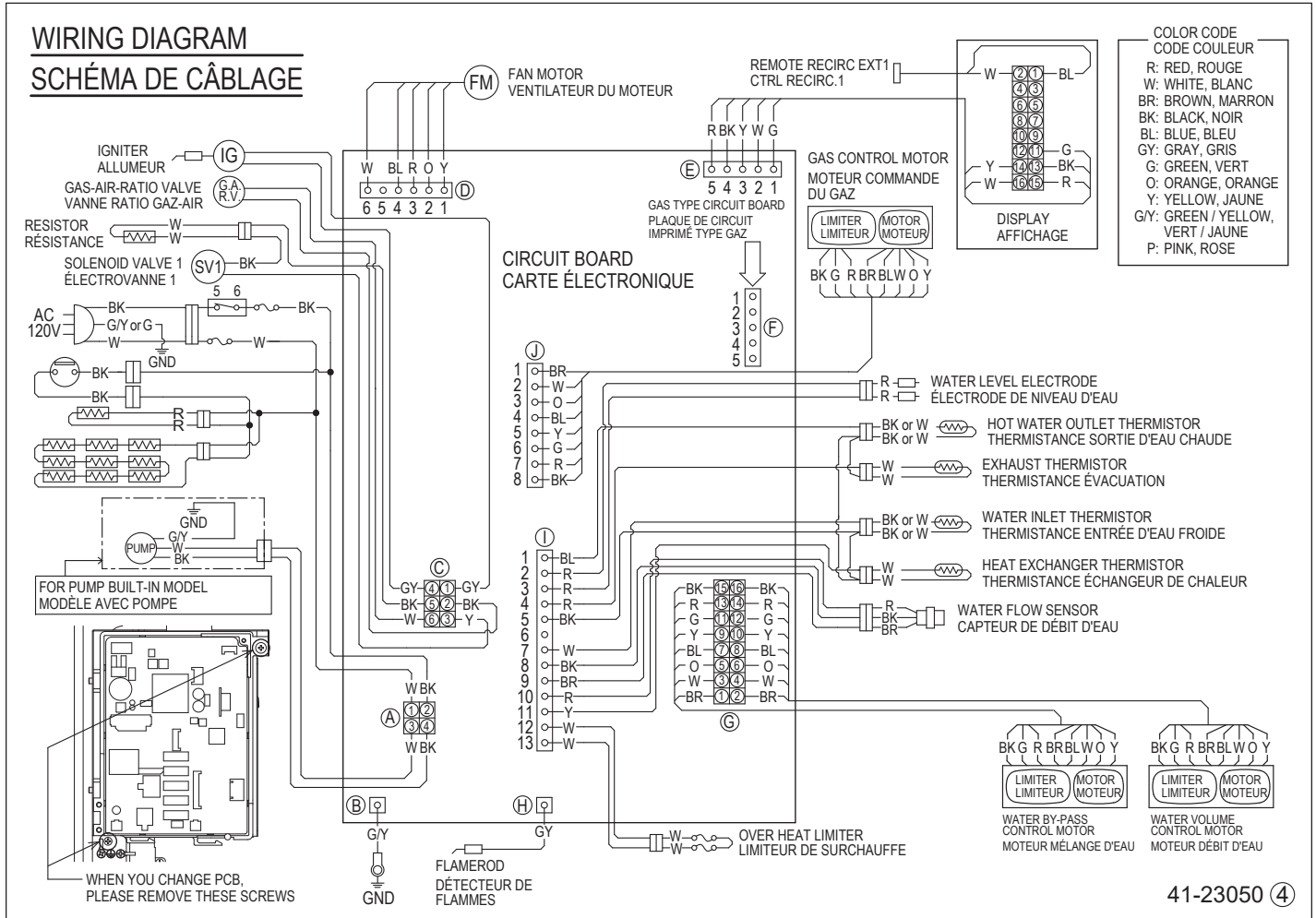
### \*\*\* GAS CHIP\*\*\*

**When replacing Control Board, you must use the original chip on the new Control Board. New Control Board must be programmed.**

CONNECTOR#	MOLEX COLOR	WIRE COLOR
A	White	White, Black, White, Black
B	Blue	Green / Yellow
C	White	Gray, Black, Yellow, Gray, Black, White
D	White	Yellow, Orange, Red, Blue, White
E	White	Green, White, Yellow, Black, Red
G	White	Brown, Brown, White, White, Orange, Orange, Blue, Blue, Yellow, Yellow, Green, Green, Red, Red, Black, Black
H	White	White
I	White	Blue, Red, Red, Black, White, Black, Brown, Red, Yellow, White, White, Black, Pink
J	White	Brown, White, Orange, Blue, Yellow, Green, Red, Black

# GENERAL INFORMATION

## 1.3 DIAGNOSTIC POINTS ON CONTROL BOARD



CONNECTION #	WIRE COLOR	NORMAL VALUE	WHAT ARE YOU CHECKING?
A	W1-BK2	AC108 - 132 V	Do you have power to the control board?
	W3-BK4	AC108 - 132 V	Do you have power to the pump?
C	GY1-GY4	AC108 - 132 V	Is the igniter working properly?
	Y3-BK5	DC90 - 120V 0.8kΩ - 2.4kΩ	Solenoid valve 1 OK?
	W6-BK2	AC108 - 132 V	Gas - Air - Ratio valve OK?

# GENERAL INFORMATION

## 1.3 DIAGNOSTIC POINTS ON CONTROL BOARD

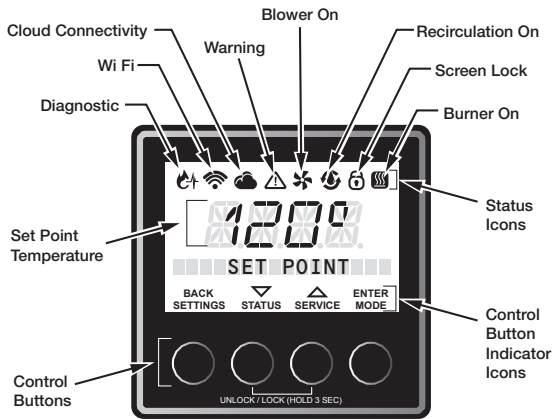
CONNECTION #	WIRE COLOR	NORMAL VALUE	WHAT ARE YOU CHECKING?
D	W6 - BL4	DC144 - 192 V	Does the fan motor have the proper voltage?
	Y1 - BL4	DC4 - 10 V (Pulse)	Is the fan motor producing regular pulse?
	R3 - BL4	DC12 - 18 V	Does the fan motor have the proper voltage?
E	R5 - BK4	DC11 - 17 V	Does the user interface have voltage?
H	GY1 - GND	AC1 - 100 V	Flame rod detecting flame?
I	W12 - W13	5K $\Omega$ - 500K $\Omega$	Is the Over Heat Limiter OK?
	BR9 - BK8	DC 2 - 5V (Pulse) More than 1,310 pulses/minute	Does the water flow sensor send a pulse? (Only when water is flowing thru the unit)
	R10 - BK8	DC 11 - 17V	Does the water flow sensor have voltage? (Power ON; no water flow)
	W7 - BK5	68°F = 10.3 k $\Omega$ 104°F = 4.9 k $\Omega$	Is the water inlet thermistor working?
	W13 - BK5	68°F = 10.3 k $\Omega$ 104°F = 4.9 k $\Omega$	Is the water outlet thermistor working?
	Y11 - BK5	68°F = 10.3 k $\Omega$ 104°F = 4.9 k $\Omega$	Is the heat exchanger thermistor working?
	R4 - BK5	68°F = 10.3 k $\Omega$ 104°F = 4.9 k $\Omega$	Is the exhaust thermistor working?

# GENERAL INFORMATION

## 1.4 LCD ON THE USER INTERFACE

This Tankless water Heater has the Liquid Crystal Display (LCD) on the user interface.

This user interface allows you to adjust the water temperature and view the operating status or error codes.



### 1.4.1 SETTING TO ENABLE/DISABLE TO WATER HEATER

This tankless water heater can set the enable/disable mode with the Liquid Crystal Display (LCD) on the User Interface.

1. Press the "MODE" button. After the LCD displays "ENABLE/DISABLE", press the "ENTER" button.
2. The factory setting is "DISABLE". Press the "▼" or "▲" button to select "ENABLE" or "DISABLE" and press the "ENTER" button.



To exist this setting, press "BACK" button until initial screen is displayed.



# GENERAL INFORMATION

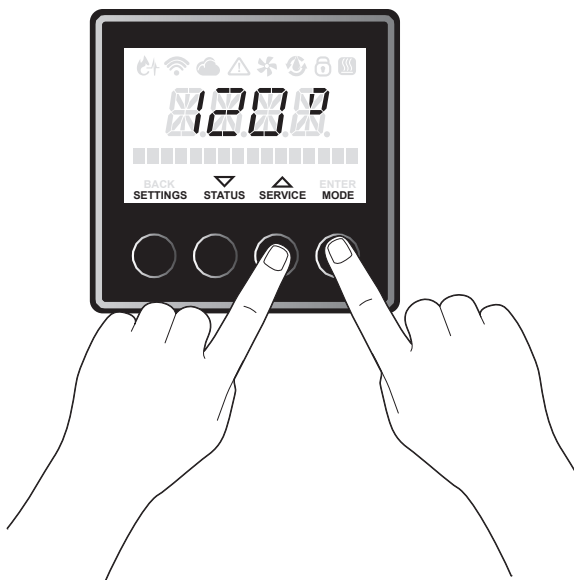
## 1.4.2 SETTING OPERATION MODE

This tankless water heater can set the operation mode with the Liquid Crystal Display (LCD) on the User Interface.

1. Display needs to be unlocked before the settings can be changed. Push and hold two buttons in center until beeping sound is heard. Once unlocked the “SETTINGS”, “STATUS” or “SERVICE” menus can be accessed.



2. Using the Liquid Crystal display (LCD) on the user interface, Press and hold the right-most 2 buttons for 5 seconds until a beeping sound is heard.

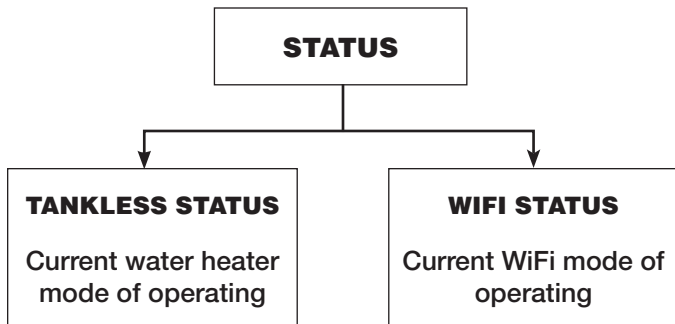


To exit the operation mode and return the water heater to normal operation, press the “BACK” button.

# GENERAL INFORMATION

## 1.5 STATUS MENU ITEMS DESCRIPTION

This tankless water heater can show the operating status with the LCD on the User Interface.

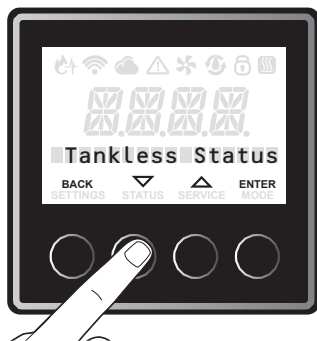


### 1.5.1 TANKLESS STATUS

1. Press the “STATUS” button as pictured below.



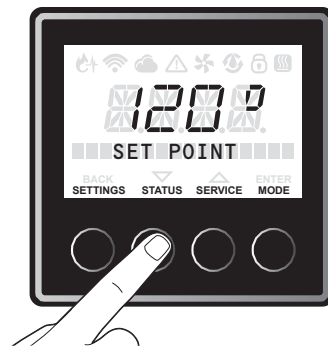
2. Press the “▲” or “▼” button until “Tankless Status” is displayed, and press the “ENTER” button.



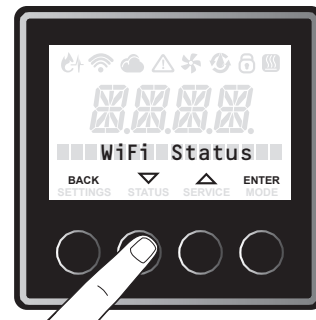
3. Press the “▲” or “▼” button to navigate through the menu items. The status menu items are in the next section.

### 1.5.2 WIFI STATUS

1. Press the “STATUS” button.



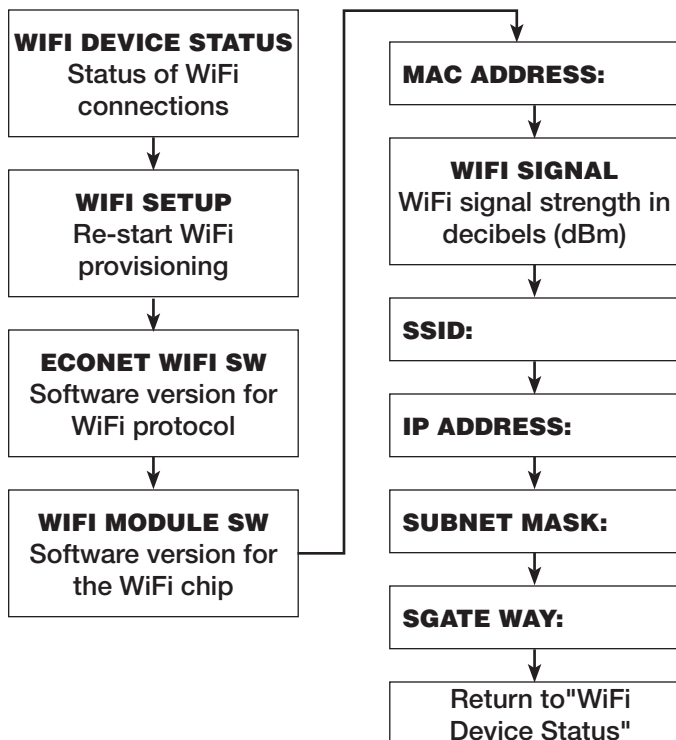
2. Press the “▲” or “▼” button until “WiFi Status” is displayed, and press the “ENTER” button.



# GENERAL INFORMATION

## 1.5.2 WIFI STATUS

3. Press the “▲” or “▼” button to navigate through the menu items. The status menu items are below:

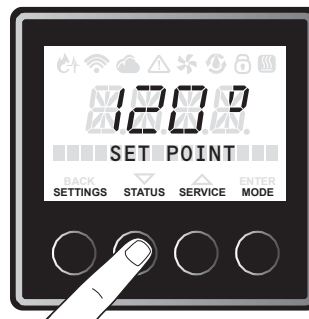


2. To set up the WiFi connection, press “ENTER.” The WiFi signal is broadcasted for 30 minutes and the user should download and use the EcoNET Application, available on Android and iPhone, to continue the setup process.
3. Follow the prompts in the application to complete set-up.

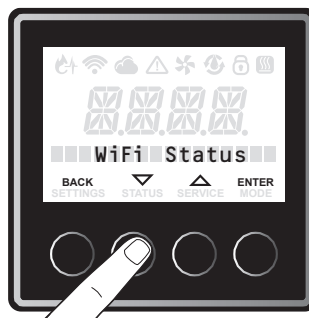
**NOTE: If user chooses to NOT to set up WiFi, initially, press “BACK” button. WiFi signal will not be broadcasted until user goes to additional steps.**

## WIFI SETUP (AFTER INITIAL POWER UP)

1. Press the “STATUS” button.



2. Press the “▼” or “▲” button until WiFi status ” is displayed, and press ENTER ” button.



## 1.5.3 WIFI SETTING

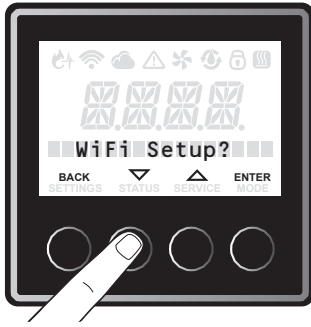
WiFi Setup (At Initial Power Up) The display will prompt WiFi set up at initial power up.

1. Press “ENTER” to continue WiFi setup or BACK” to exit setup and turn OFF WiFi signal broadcast.

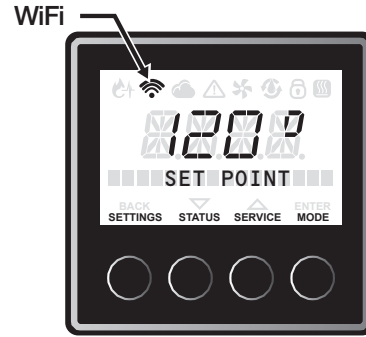


# GENERAL INFORMATION

3. Press the “▼” or “▲” button until “WiFi Setup?” is displayed, and press “ENTER” button.



5. In the event that WiFi credentials are changed, please follow WiFi setup steps again.



4. Press the “▼” or “▲” button until “Yes” is displayed, and press “ENTER” button.

To reset WiFi setting, please refer to section 1.7.6 Reset WiFi setting .

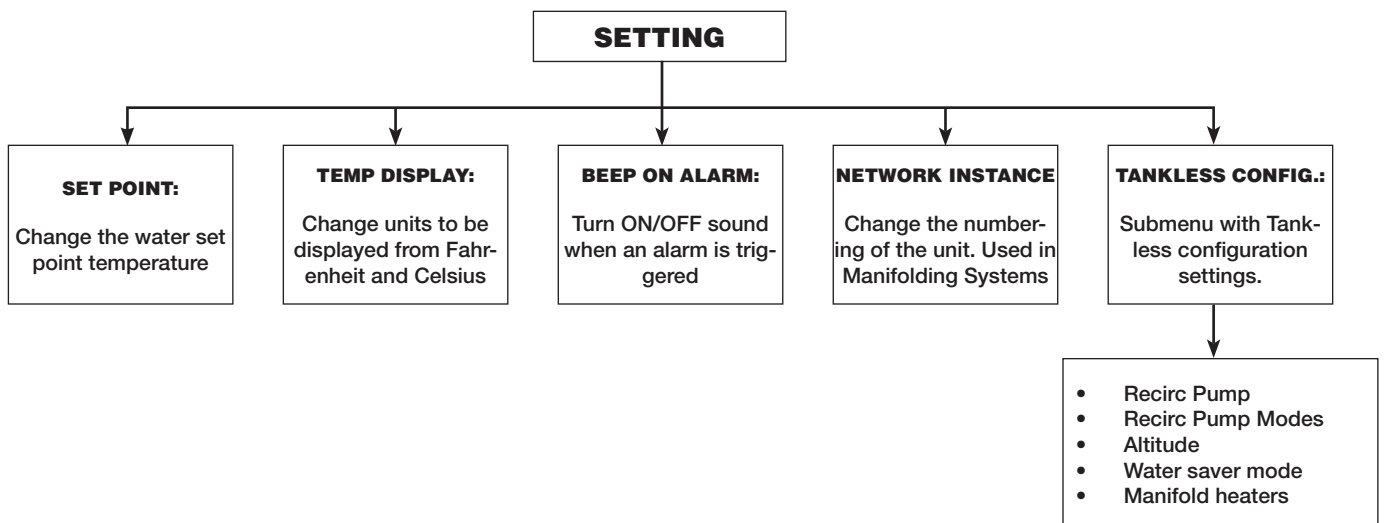
WiFi signal will start to broadcast (WiFi icon will start to blink) for 30 minutes and user can use the EcoNet A pplication to setup WiFi. If setup is not completed within 30 minutes, WiFi will stop broadcasting.

User should go to these steps again to re start WiFi setup.

Once WiFi is setup correctly, WiFi icon will become solid.

## 1.6 SETTING MENU ITEMS DESCRIPTION

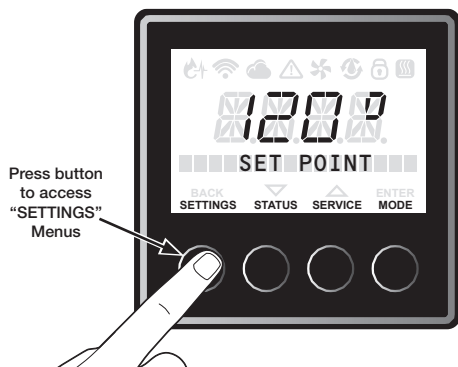
This Tankless water heater can set the several operations of this water heater with the Liquid Crystal Display (LCD) on the User Interface



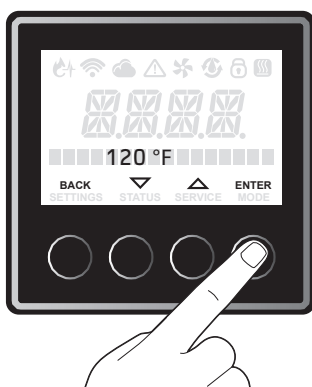
# GENERAL INFORMATION

## 1.6.1 SETTING THE SET POINT TEMPERATURE

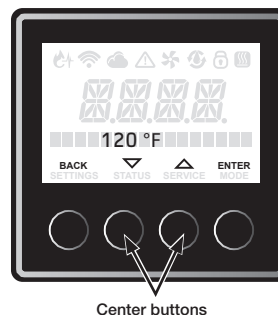
1. Press the “ SETTINGS ” button.



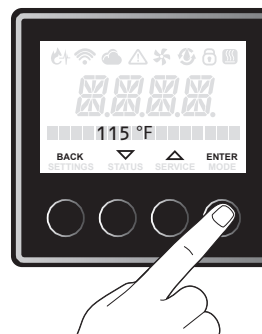
2. Scroll thru the menu to select “ SET POINT ”, to enter the set point mode press “ ENTER ” button, which is the right most button.



3. Now press the “ ▼ ” or “ ▲ ” button in the center of the display to increase or decrease the temperature. Temperature can be changed in increments of 1°F.



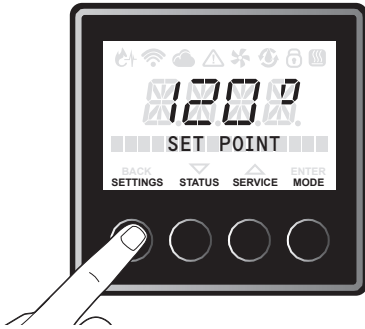
4. Once temperature is set to the desired value, press “ ENTER ” button, right most button to store value. To exit this setting, press BACK " button until the initial screen is displayed.



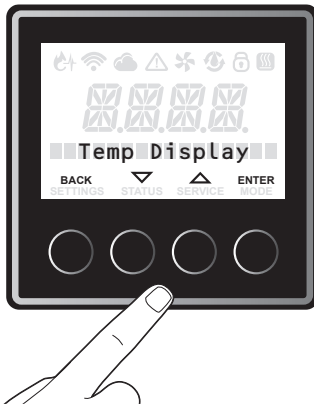
# GENERAL INFORMATION

## 1.6.2 SETTING THE TEMPERATURE DISPLAY

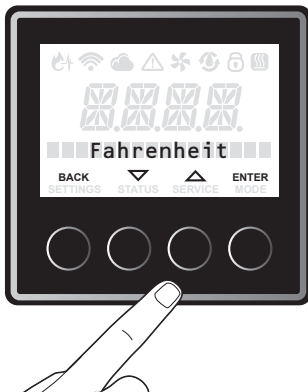
1. Press the "SETTINGS" button.



2. Press the "▼" or "▲" button until "Temp Display" is displayed, and press "ENTER" button.

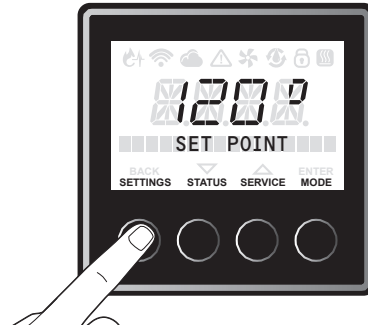


3. The factory setting is " Fahrenheit ". Press the "▼" or "▲" button to select " Fahrenheit " and Celsius ", and press ENTER " to confirm. To exit this setting, press BACK " button until the initial screen is displayed.

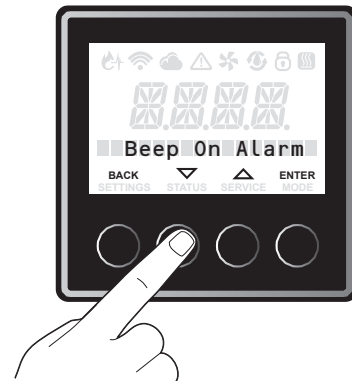


## 1.6.3 SETTING BEEP ON ALARM

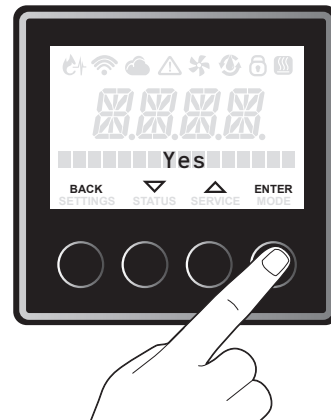
1. Press the "SETTINGS" button.



2. Press "▼" or "▲" button until " Beep On Alarm " is displayed, and press " ENTER " button to confirm.



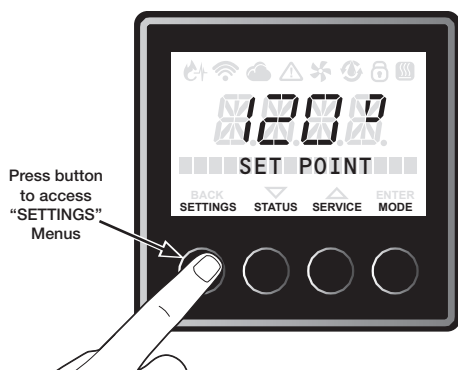
3. The Factory setting is "NO". Press the "▼" or "▲" button to select "NO" and YES ", and press "ENTER" to confirm. To exit this setting, press "BACK" button until the initial screen is displayed



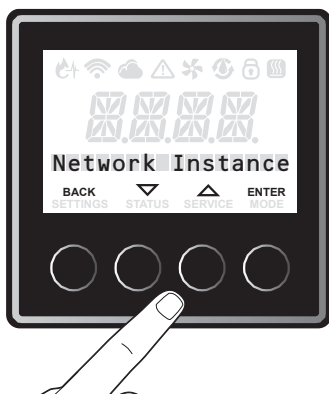
# GENERAL INFORMATION

## 1.6.4 NETWORK INSTANCE

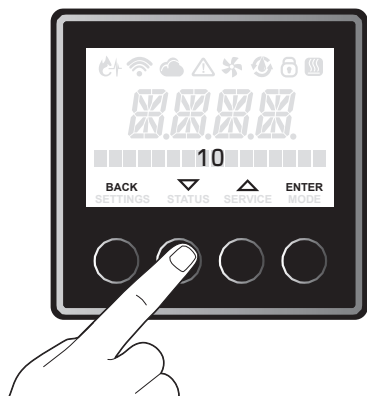
1. Press the "SETTINGS" button.



2. Press the "▼" or "▲" button until "Network instance" is displayed, and press "ENTER" button to confirm.



3. The factory setting is "1". Press the "▼" or "▲" button to select "1" to "20" for each water heater, and press "ENTER" to confirm. To exit this setting, press "BACK" button until the initial screen is displayed.

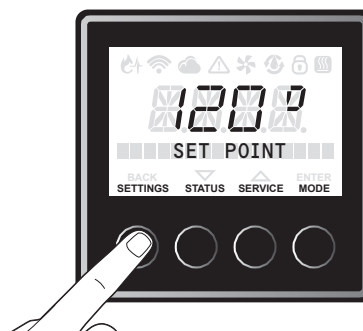


## 1.6.5 TANKLESS CONFIGURATION

This section is applicable for pump built in models, and standard models with an external pump following the pump installation described in this Use and Care manual. If the external pump is installed independently from the water heater, this section is not applicable. For recirculation setting, timer mode, schedule mode, and on demand mode are available. Timer mode also has Performance mode and Energy Saver mode. Read next several pages to set most suitable mode. Contact service department if additional help is needed.

### 1.6.5.1.1 TIMER MODE

1. Press the "SETTINGS" button.

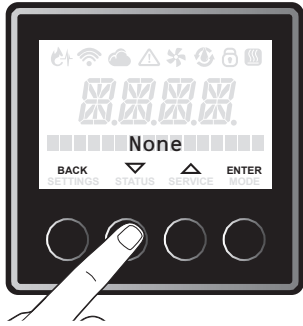


2. Press the "▼" or "▲" button until "Tankless Config" is displayed, and press "ENTER" button to confirm.



# GENERAL INFORMATION

- The Factory setting is "None". Press the "▼" or "▲" button to select "Timer Perf" or "Timer E Saver" and press "ENTER" to confirm. To exit this setting, press BACK " button until the initial screen is displayed.



## RECIRCULATION OPERATION TIMER MODE

The water heater is turned ON when the recirculation pump starts operation. The water heater produces hot water at the setting temperature. When the return water temperature reaches approximately 15°F below the setting temperature, the water heater and the pump will turn OFF.

The cycle will restart at the approximate time based on the temperature thermistor readings.

### PERFORMANCE MODE (TIMER PERF)

The performance mode operates as below;

- Higher energy consumption due to more pump cycles.
- Pump cycles ON Every 15 to 30 minutes.

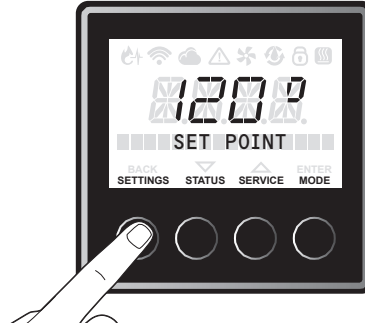
### ENERGY SAVER MODE (TIMER E SAVER)

The Energy Saver mode operates as below;

- Less energy consumption due to more pump cycles.
- Pump cycles ON Every 30 to 60 minutes.

## 1.6.5.1.2 ON DEMAND MODE

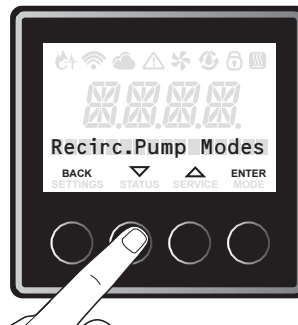
- Press the " SETTINGS " button.



- Press the "▼" or "▲" button until Tankless Config " is displayed, and press the " ENTER " If incorrect setting is entered at any steps, press the " BACK " button until the initial screen. Redo from step 1.



- Press the "▼" or "▲" button until "Recirc. Pump Modes" is displayed, and press "ENTER" to confirm.





# GENERAL INFORMATION

- The Factory setting is “ None ”. Press the “ ▼ ” or “ ▲ ” button until “ On Demand ” is displayed, and press "ENTER" to confirm. To exit this setting, press "BACK" button until the initial screen is displayed.



## RECIRCULATION OPERATION ON DEMAND

The following accessories are needed to use the On Demand recirculation activation.

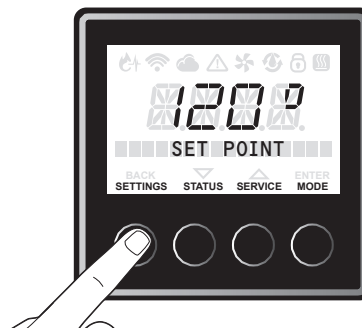
RHEEM PART NUMBER	DESCRIPTION
SP20862	Motion Sensor Kit
SP20863	Wired Push Button

When set to "On Demand" mode, the recirculation pump is ON for 5 minutes when the signal from the Motion Sensor or Wired Push Button is received, or until the return water temperature reaches approximately 15°F below the setting temperature.

For information about On Demand accessories, refer to "If You Need Service" in the U&C Manual, "Call For Assistance" for the telephone number to speak to a Customer Service Representative in the U&C manual.

### 1.6.5.1.3 SCHEDULE MODE

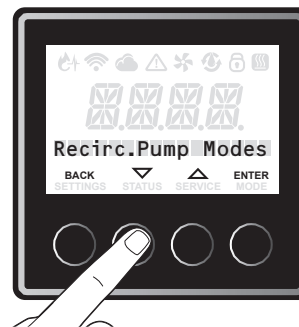
- Press the “ SETTINGS ” button.



- Press the “ ▼ ” or “ ▲ ” button until “Tankless Config” is displayed, and press the "ENTER" button.

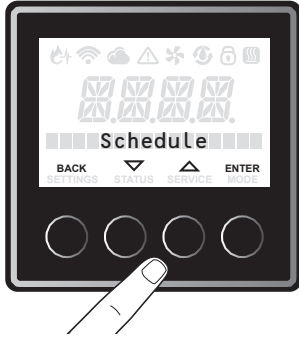


- Press the “ ▼ ” or “ ▲ ” button until "Recirc. Pump Modes" is displayed, and press “ENTER” to confirm.



# GENERAL INFORMATION

4. The Factory setting is "None." Press the "▼" or "▲" button until "Schedule" is displayed, and press "ENTER" to confirm. To exit this setting, press "BACK" button until the initial screen is displayed.

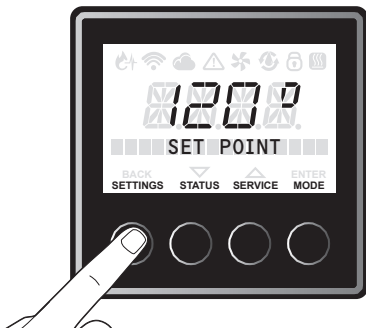


**NOTE: To use this schedule mode, Wi Wi-Fi is required on this user interface. The specific application should also be downloaded to your smart phone. Please see "Wi Wi-Fi Setting" in the U&C manual to set Wi Wi-Fi on this user interface and to download the application.**

## 1.6.5.2 MANUAL OPERATING OF RECIRC . PUMP (FOR ON DEMAND)

On demand mode allows the user to turn ON the recirculation pump manually.

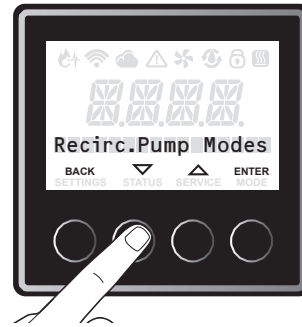
1. Press the "SETTINGS" button .



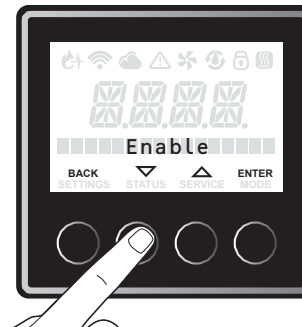
2. Press the "▼" or "▲" button until "Tankless Config." is displayed, and press the "ENTER" button. If incorrect setting is entered at any steps, press the "BACK" button until the initial screen. Redo from step 1.



3. Press the "▼" or "▲" button until "Recirc. Pump" is displayed, and, press "ENTER" to confirm.



4. The Factory setting is "Disabled". Press the "▼" or "▲" button until "Enable" is displayed and press the "Enter" button. To exit the setting, press "BACK" button until the initial screen is displayed.



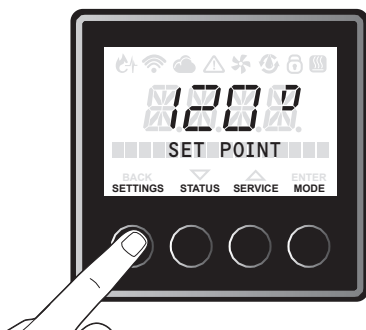
# GENERAL INFORMATION

## RECIRCULATION OPERATION MANUALLY OPERATE PUMP

When set the “Recirc. Pump” ON, the recirculation pump is ON for 5 minutes or until the return water temperature reaches approximately 15 F below the setting temperature.

### 1.6.5.3 HIGH ALTITUDE ADJUSTMENT

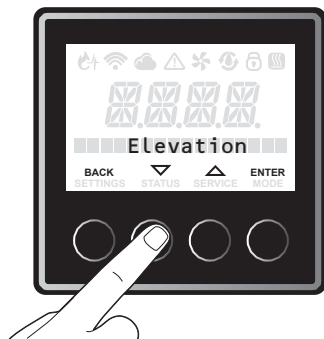
1. Press the “ SETTINGS ” button.



2. Press the “ ▼ ” or “ ▲ ” button until Tankless Config ” is displayed, and press ENTER ” to confirm.



3. Press the “ ▼ ” or “ ▲ ” button until “Elevation” is displayed, and press the “ ENTER ” button.



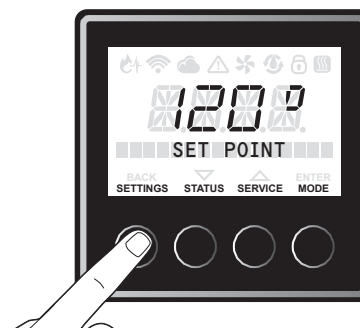
4. The factory setting is “ Sea Level Press the “ ▼ ” or “ ▲ ” button to select "Low Altitude", "Med. Altitude" and "High Altitude", and press "ENTER" to confirm.



SECTION	HIGH-ALTITUDE
Sea Level	0 – 2,000 ft (0 m – 610 m)
Low Altitude	2,001 ft – 5,400 ft (610 m – 1,650 m)
Med. Altitude	5401 ft – 7,900 ft (1,650 m – 2,410 m)
High Altitude	7,901 ft – 10,200 ft (2,410 m – 3,110 m)

### 1.6.5.4 WATER SAVING CONTROL

1. Press the “ SETTINGS ” button.



# GENERAL INFORMATION

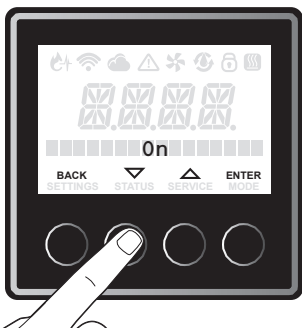
2. Press the “▼” or “▲” button until "Tankless Config." is displayed, and press "ENTER" to confirm.



3. Press the “▼” or “▲” button until "Water Saver Mode" is displayed, and press "ENTER" to confirm.



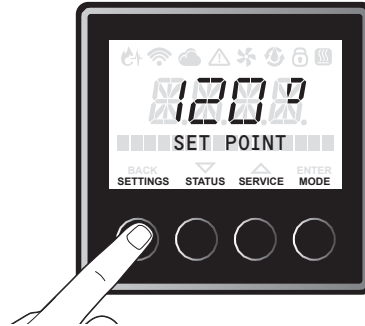
4. The Factory setting is "Off" Press the “▼” or “▲” button to select "On" and press the "ENTER" button to confirm. To exit this setting, press "Back".



## 1.6.5.5 SETTING MANIFOLD HEATERS

This setting is used to tell the “Manager (unit with instance number 1)” in a series of manifold heaters how many manifold heaters it will be managing. Refer to the following steps to set this.

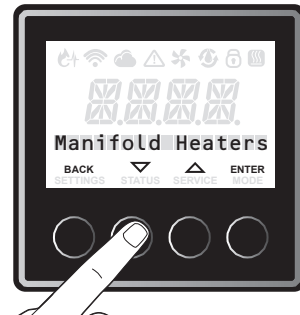
1. Press the “SETTINGS” button.



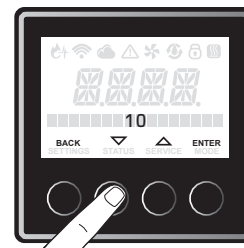
2. Press the “▼” or “▲” button until "Tankless Config" is displayed, and press "ENTER" to confirm.



3. Press the “▼” or “▲” button until "Manifold heaters" is displayed, and press “ENTER” to confirm.



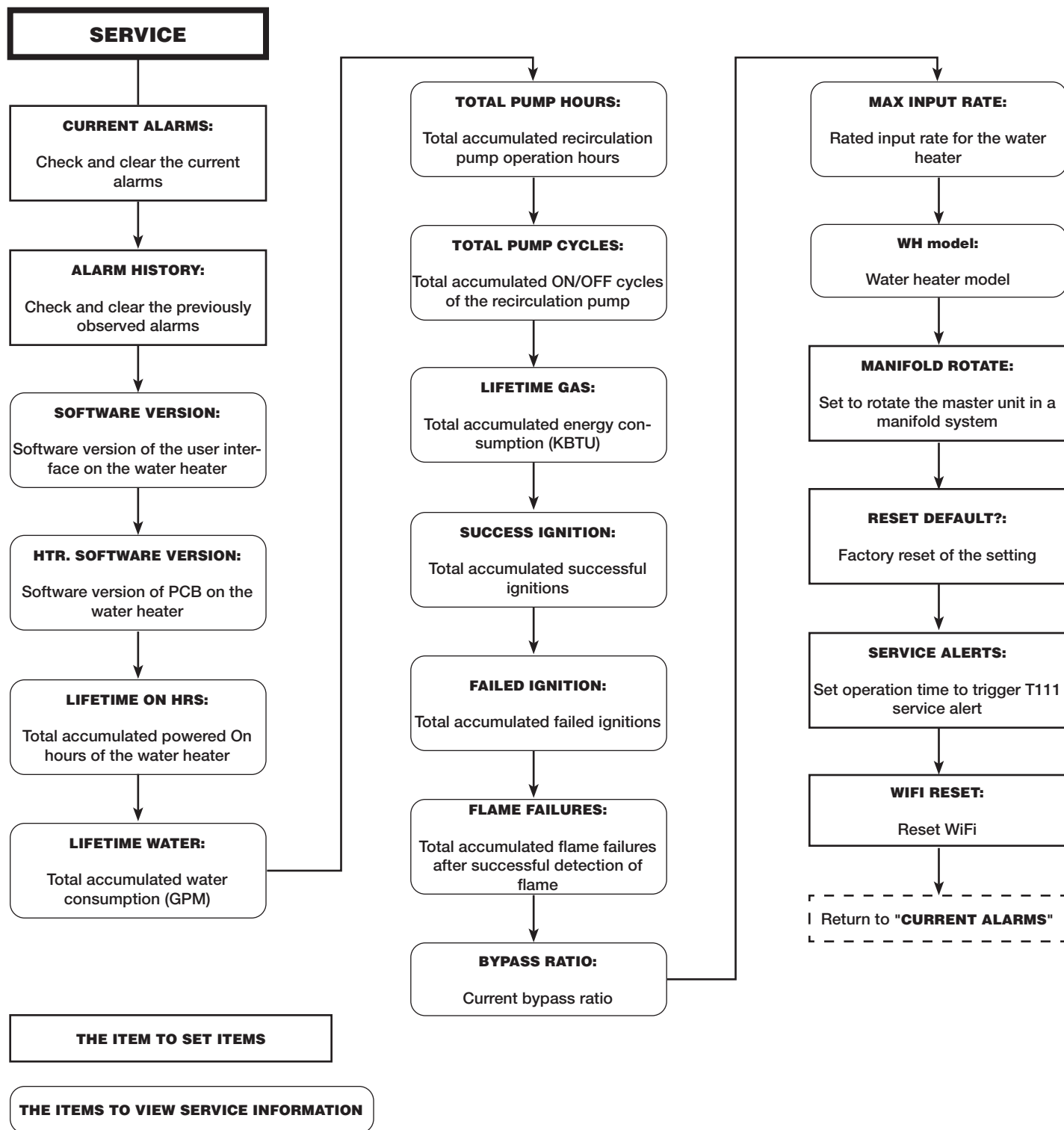
4. The factory setting is "1". Press the “▼” or “▲” button to select the number of heaters of be managing " 1 " to "20 ", and press "ENTER" to confirm. To exit this setting, press "BACK".



# GENERAL INFORMATION

## 1.7 SERVICE MENU ITEMS DESCRIPTION

This tankless water heater can set several operations and display all service information of this water heater with the Liquid Crystal Display (LCD) on the User Interface.



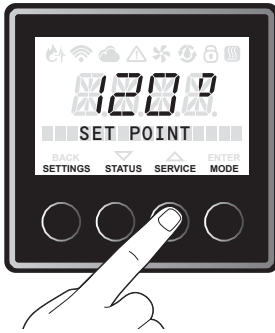
# GENERAL INFORMATION

## 1.7.1 VIEWING ACTIVE ALARMS

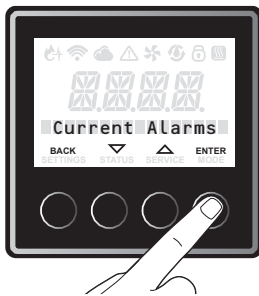
This water heater can display up to 4 active alarms. Users may clear these alarms on the user interface by completing the following steps.

Confirming the current alarms (up to 4 alarms)

1. Press the "SERVICE" button



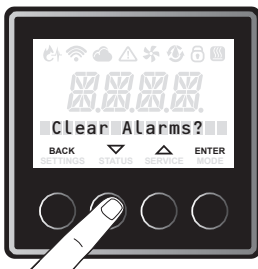
2. Press the "▼" or "▲" button until "Current Alarms" is displayed, and press "ENTER" to confirm.



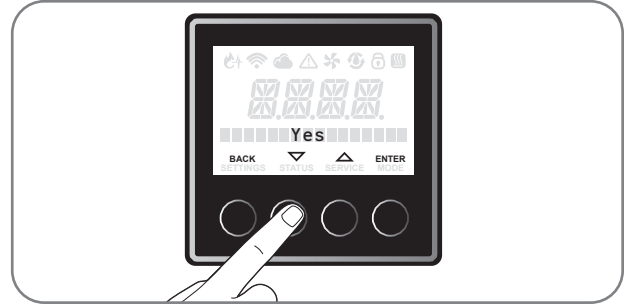
3. Press the "▼" or "▲" button and the LCD displays current alarm 1 to 4.

## CLEARING THE CURRENT ALARMS

1. Redo from above step.2, and press the "▼" or "▲" button until "Clear Alarms?" is displayed. Press "ENTER" to confirm.



2. Press the "▼" or "▲" button until "Yes" is displayed, and press the "ENTER" To exit this setting, press "BACK" until the initial screen is displayed.

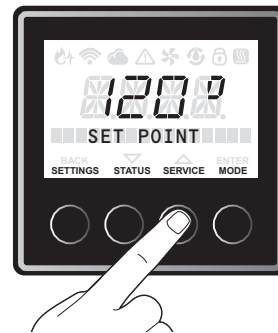


## 1.7.2 ALARM HISTORY AND CLEAR HISTORY

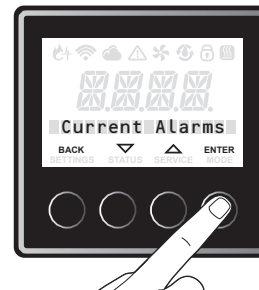
This water heater can display up to 6 previously observed alarms. Users may clear these alarms on the user interface by completing the following steps:

**Confirming the previously observed alarms (up to 6 alarms)**

1. Press the "SERVICE" button.



2. Press the "▼" or "▲" button until "Current Alarms" is displayed. Press "ENTER" to confirm.



3. Press the "▼" or "▲" button, the LCD displays previously observed alarm 1 to 6.

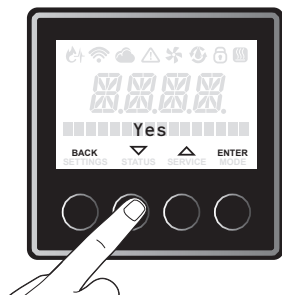
# GENERAL INFORMATION

## CLEARING HISTORICAL ALARMS

1. Redo from above step.2, and press the “▼” or “▲” button until "Clear History?" is displayed, and press “ENTER” to confirm.



2. Press the “▼” or “▲” button until "Yes" is displayed, and press the “ENTER” button. To exit this setting, press “BACK” button until the initial screen is displayed.



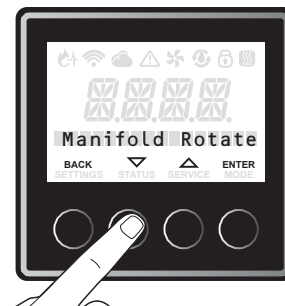
## 1.7.3 MANIFOLD ROTATE

This tankless water heater can be set to rotate the master unit in a manifold system by completing the following steps:

1. Press the “SERVICE” button



2. Press the “▼” or “▲” button until "Manifold rotate?" is displayed, and press the "ENTER" button.



3. The factory setting is “No”. Press the “▼” or “▲” button until "Yes" is displayed, and press the “ENTER” button. To exit this setting, press “BACK” button until the initial screen is displayed.

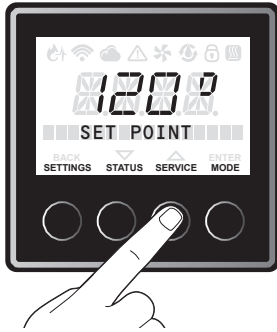
# GENERAL INFORMATION

## 1.7.4 RESET THE DEFAULT SETTINGS

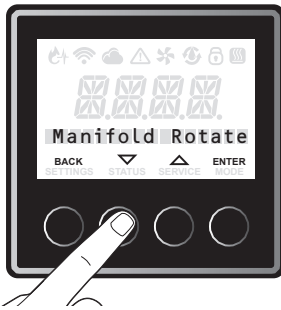
This tankless water heater can be reset to the default settings of the water heater by completing the following steps: (This will not affect accumulated values)

### Confirming the previously observed alarms (up to 6 alarms)

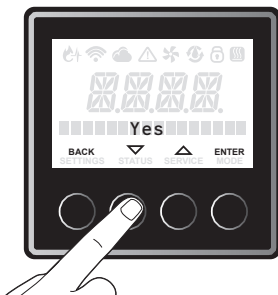
1. Press the "SERVICE" button.



2. Press the "▼" or "▲" button until "Reset Defaults" is displayed, and press the "ENTER" button.



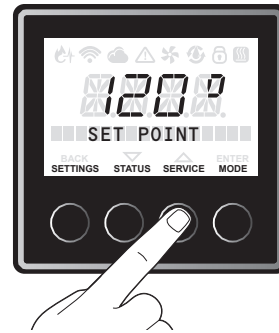
3. The factory setting is "No". Press the "▼" or "▲" button until "Yes" is displayed, and press the "ENTER" button. To exit this setting, press "BACK" button until the initial screen is displayed.



## 1.7.5 SETTING SERVICE ALERTS

Service alerts remind users of water heater maintenance activities such as flushing the heat exchanger or replacing the water treatment filter (if applicable) in order to maximize the life of your tankless water heater.

1. Press the "SERVICE" button.



2. Press the "▼" or "▲" button until "Service Alert" is displayed, and press the "ENTER" button.



3. The factory setting is "500 Hours". Every 500 combustion hours, a service alert is provided. Press the "▼" or "▲" button to choose "500 Hours", "750 Hours" or "1000 Hours" and press the "ENTER" button to confirm.

To exit this setting, press "BACK" button until the initial screen is displayed.



**NOTE: Changing default 500 hours is NOT recommended.**

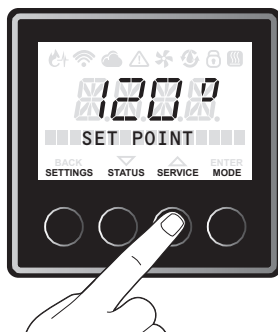


# GENERAL INFORMATION

## 1.7.6 RESET WIFI SETTING

These steps are to reset the WiFi chip, in the event that WiFi stops working and WiFi credentials are NOT changed.

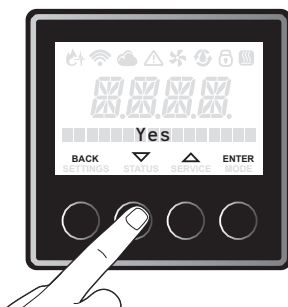
1. Press the "SERVICE" button.



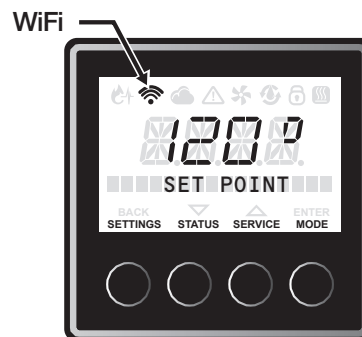
2. Press the "▼" or "▲" button until "WiFi reset" is displayed, and press the "ENTER" button.



3. Press the "▼" or "▲" button until "Yes" is displayed, and press the "ENTER" button.



4. WiFi signal will reset and WiFi will start blinking again. WiFi will try to reconnect to the stored WiFi network using the same credentials. Once WiFi is connected again correctly, WiFi icon will become solid.



# ERROR CODE DIAGNOSTICS

## 2.1 NO ERROR CODE AND NO HOT WATER

### EXPLANATION

No hot water is delivered when water is flowing through unit and with LCD displaying the hot water temperature setting.

**NOTE: For “NO POWER” complaint (LCD will not turn on) Check wall outlet for 120V. If voltage is present, check two 10 amp fuses at the control board.**

When replacing an unserviceable component, turn off all power to the water heater and check for the presence of power with a multimeter or test lamp.

### POSSIBLE CAUSE

- Water flow (0.4 GPM to active)
- Unit was not setting “Enable”.
- Water flow sensor

## SETTING "DISABLE/ENABLE"

**NOTE: This tankless water heater needs to be set to “Enable” on the user interface. (The factory setting is “Disable”.) See instructions below:**

1. Press the “MODE” button.



2. “Disabled” shows on LCD after “Enable/Disable” is displays.

3. Press the “ENTER” button.



## WATER FLOW SENSOR

1. Use cold water shutoff valve to turn OFF water supply to unit.
2. Turn power switch to OFF position. Wait 10 seconds.
3. Turn power switch to ON position. Wait 20 seconds, Confirm Mode is Enabled.
4. Turn water supply ON; check the nearest hot water fixture for hot water.

### FINAL CHECK: Water flow sensor in water volume control valve.

1. Check the voltage between #10 wire (Red) and #8 wire (Black) at the connector “ I ”.
2. With the unit turn ON and no water flow, you should read 11 17 DC volts.
3. If reading is not 11 17 DC Volts, replace the control board.
4. If you have voltage, check the voltage between #9 wire (Brown) and #8 wire (Black) with the water flowing.
5. If you have a reading and no main burner, replace the control board.
6. If you do not have a reading, remove any debris from water volume control valve.

# ERROR CODE DIAGNOSTICS

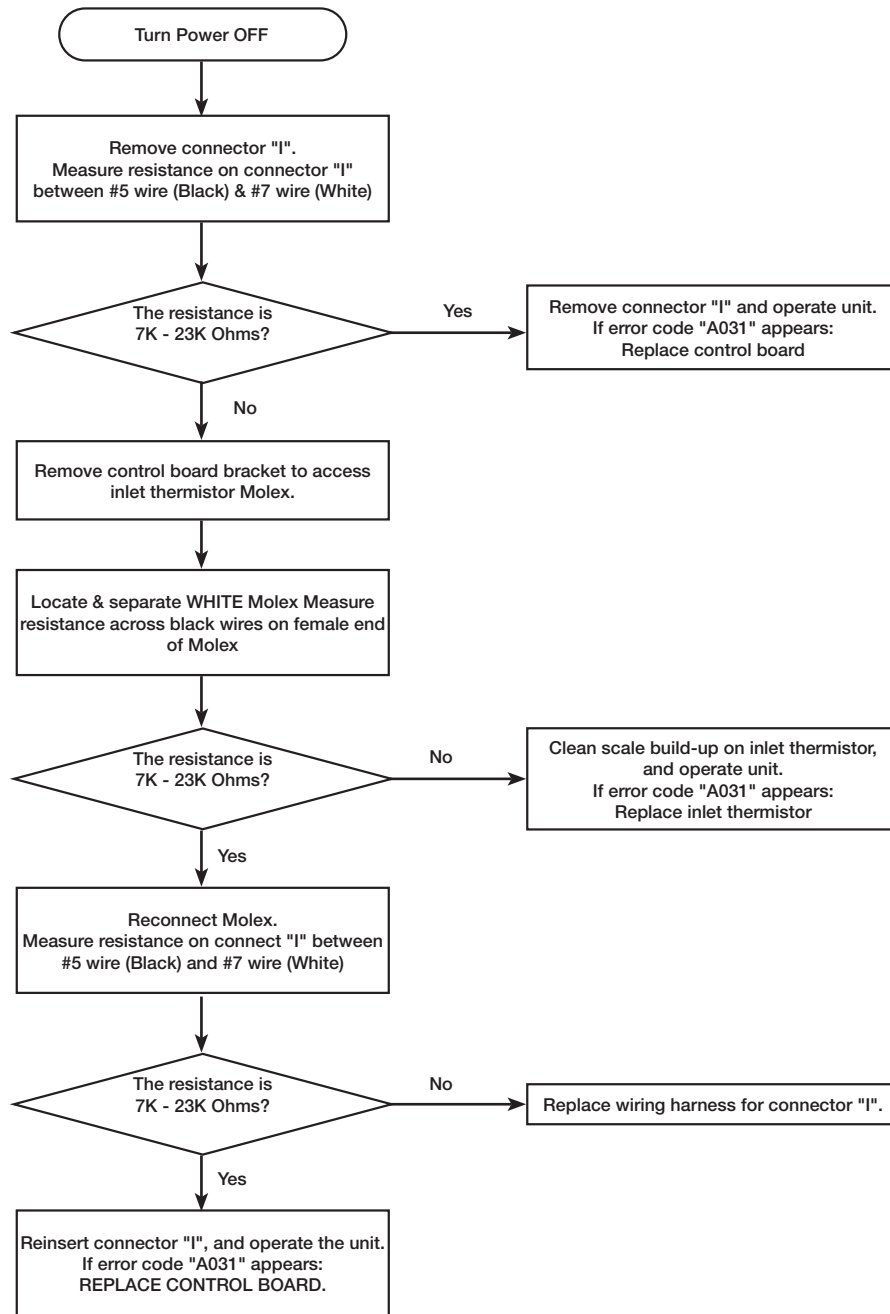
## 2.2 ERROR CODE LIST

### A031 ERROR CODE

Inlet Thermistor Malfunction.

### Diagnostic Check

Inlet Thermistor.



# ERROR CODE DIAGNOSTICS

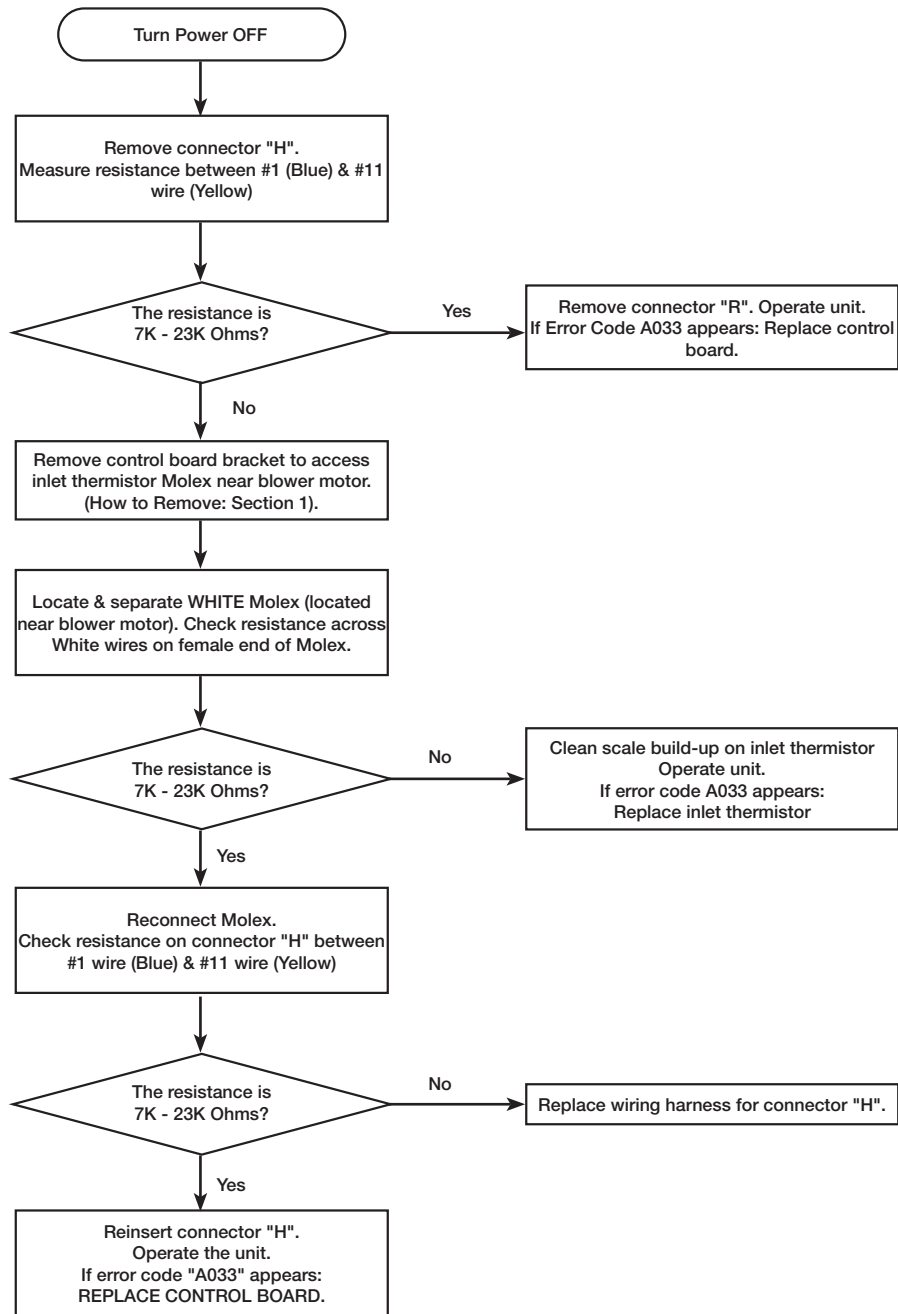
## 2.2 ERROR CODE LIST

### A033 ERROR CODE

Outlet Thermistor Malfunction.

### Diagnostic Check

Outlet Thermistor.



# ERROR CODE DIAGNOSTICS

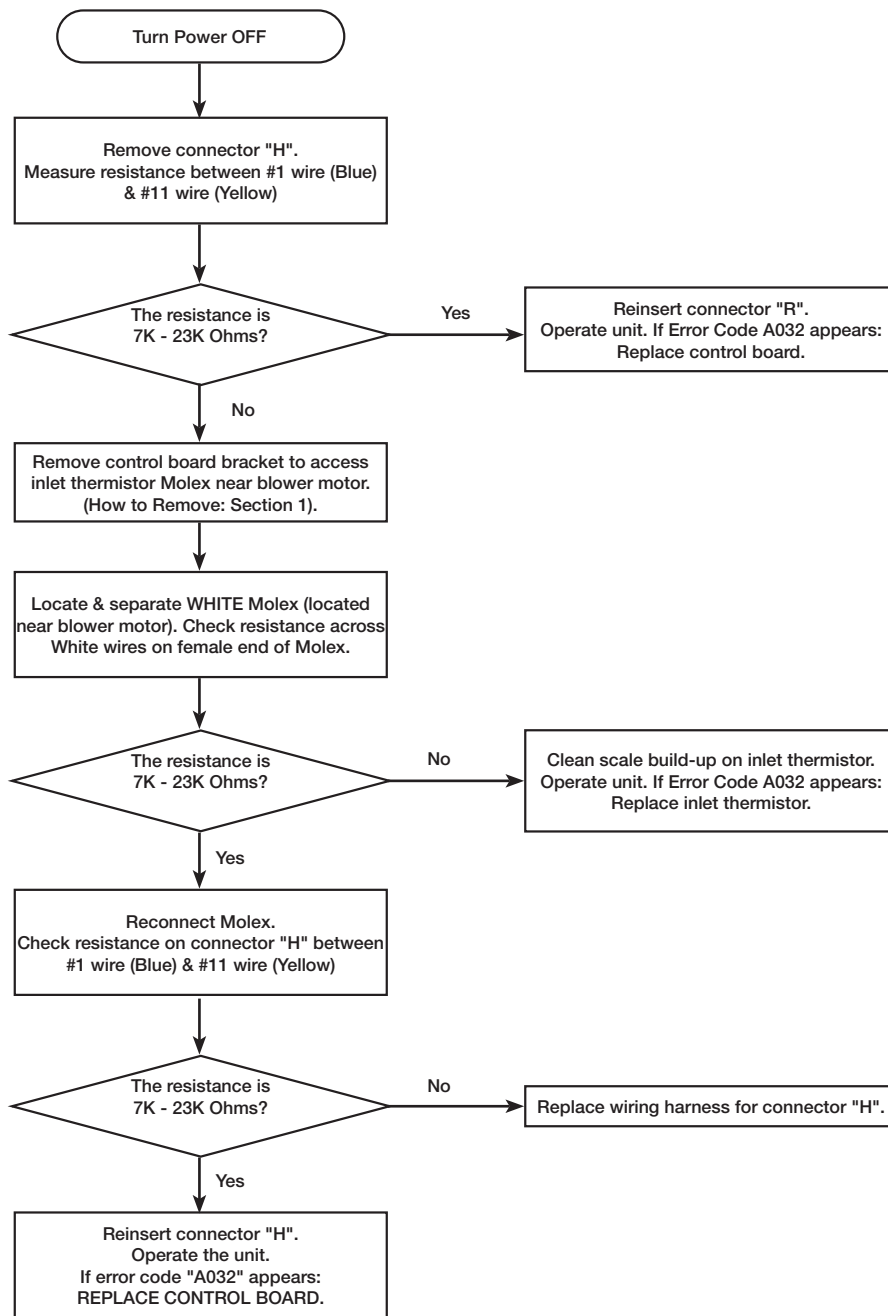
## 2.2 ERROR CODE LIST

### A032 ERROR CODE

Heat Exchanger Thermistor Malfunction.

### Diagnostic Check

Heat Exchanger Thermistor.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A2## ERROR CODE WATER HEATER COMM. FAILURE INSTANCE ## (## IS NO.02 TO NO,20)

#### EXPLANATION

This water heater can manifold up to 20 units. In this case, these water heaters have to have a set instance for each unit. To set the instance for each unit, refer to section "1.6.4 Network instance"

If one of the water heaters in the manifold unit displays an error code, the manager water heater displays the "A2##" error code on the Liquid Crystal Display (LCD) on the User Interface.

For example, if 20 water heaters are in a manifold and the unit of instance, No.5, displays the same error code, the manager water heater (instance No.1) displays "A205" error code.

#### DIAGNOSTIC CHECK ITEMS

- Water heater error code is displayed.

#### CHECK METHOD

Confirm the water heater error code displayed error code, and make a diagnosis corresponding to the error code.

# ERROR CODE DIAGNOSTICS

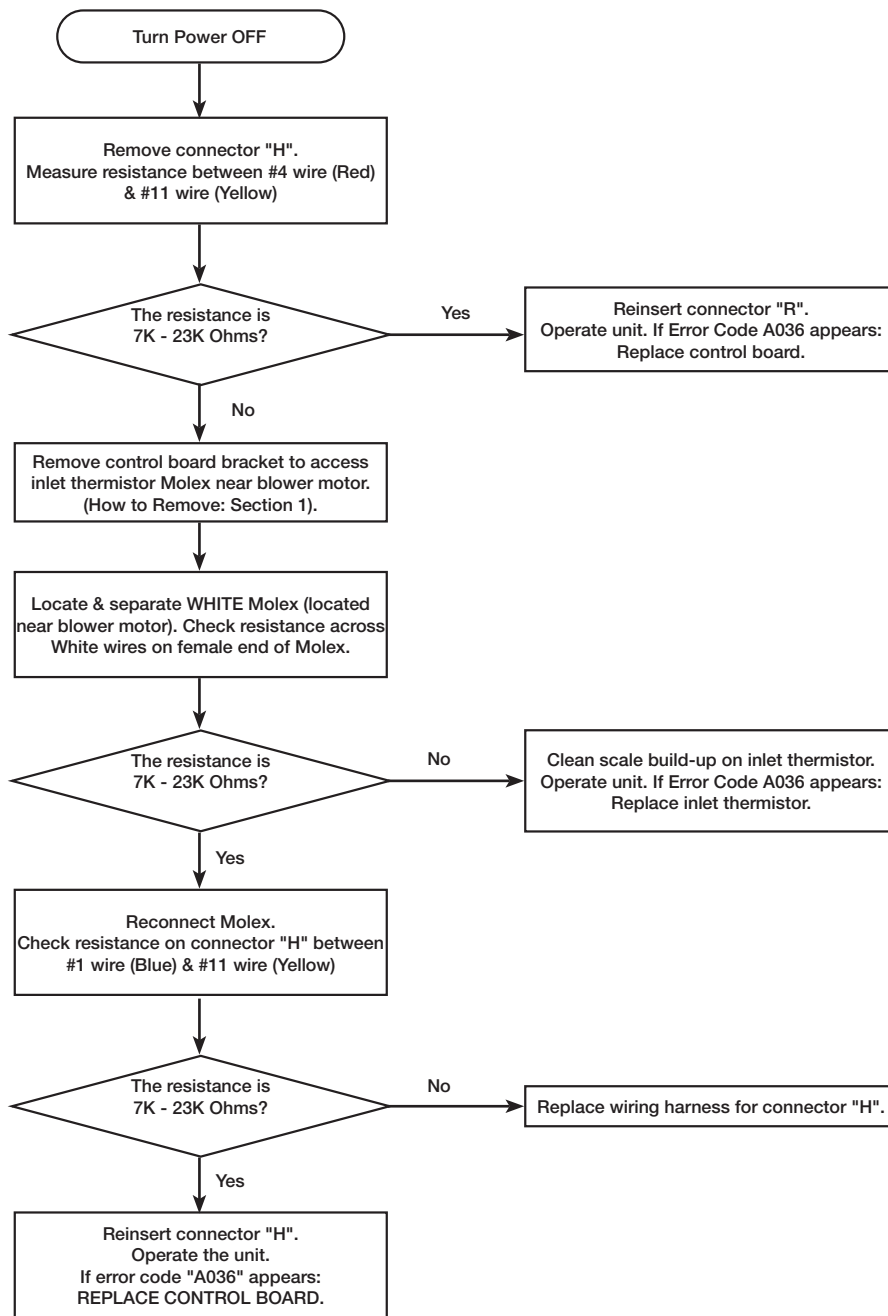
## 2.2 ERROR CODE LIST

### A036 ERROR CODE

Exhaust Thermistor Malfunction.

### Diagnostic Check

Exhaust Thermistor.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A035 ERROR CODE

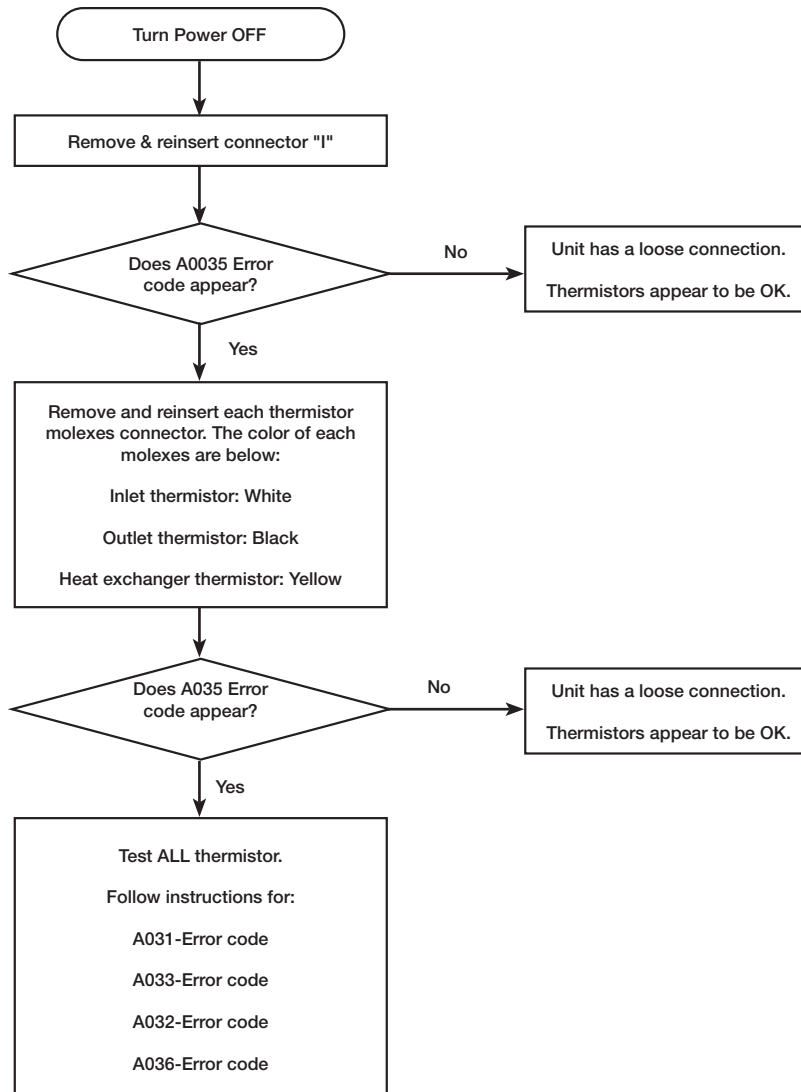
Improper thermistor connection

This tankless water heater has three thermistors (Inlet, Outlet and Heat exchanger thermistor)

If one or more possibly has a poor connection or not connected in proper location, the water heater displays the “ A035 ” error code on the Liquid Crystal Display (LCD) on the User

### Diagnostic Check

- Inlet thermistor
- Outlet thermistor
- Heat exchanger thermistor





# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A014 ERROR CODE

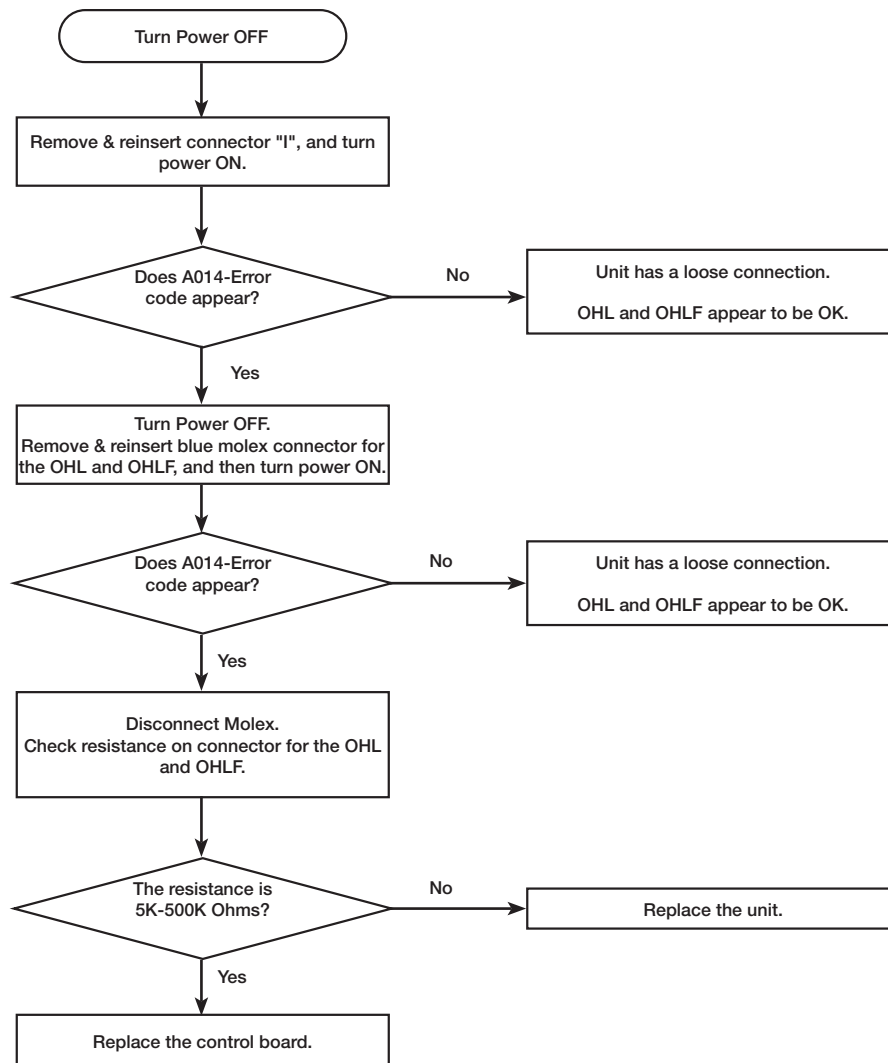
Over Heat Limiter (OHL) activated.

This tankless water heater has an Over Heat Limiter (OHL) and an Over Heat Limit Fuse (OHLF).

If the OHL or OHLF has been activated, the water heater displays the “ A014 ” error code on the User Interface. This is normally caused by inadequate/wrong GAS SUPPLY and/or VENTING.

### Diagnostic Check

- Over Heat Limiter (OHL)
- Over Heat Limit fuse (OHLF)



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A011 ERROR CODE

Flame Not Detected From Flame Rod.

In the case of ignition failure, the water heater will attempt ignition 10 times (Including the post page every 3 times).

If no flame is detected, the water heater displays the "A011" error code on the Liquid Crystal Display (LCD) on the User Interface.

### Diagnostic Check

- Gas supply pressure
- Gas filter
- Air filter
- Venting
- Igniter rod
- Flame rod
- Gas air ratio valve
- Solenoid valve (SV)

### Check Method

Gas supply pressure

1. Check the gas supply pressure at the gas connection of the water heater.

The correct gas pressure are below;

- Natural Gas (NG); 4.0" 10.0" W.C
  - Liquid Propane (LP); 8.0" 13.0" W.C
2. While the static pressure is normal, the use of another gas appliance may cause a possible drop to the water heater. Therefore, it is required to check the dynamic pressure.
    - Static pressure: Gas pressure during standby
    - Dynamic pressure: Gas pressure at max combustion

To set to max combustion, please refer to section "1.4.2 Setting operation mode" in this manual.

### Gas Filter

Check with the gas filter at the gas connection of the water heater that filter is not closed by some foreign substance.

If the gas filter is closed by something, clean the gas filter and remove the cause to be closing the gas filter

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A011 ERROR CODE

Flame Not Detected From Flame Rod.

#### Air Filter

Check with the air filter at the inlet air connection of the water heater that airflow is not blocked. If the air filter is blocked, clean the air filter and remove debris and or blockages.

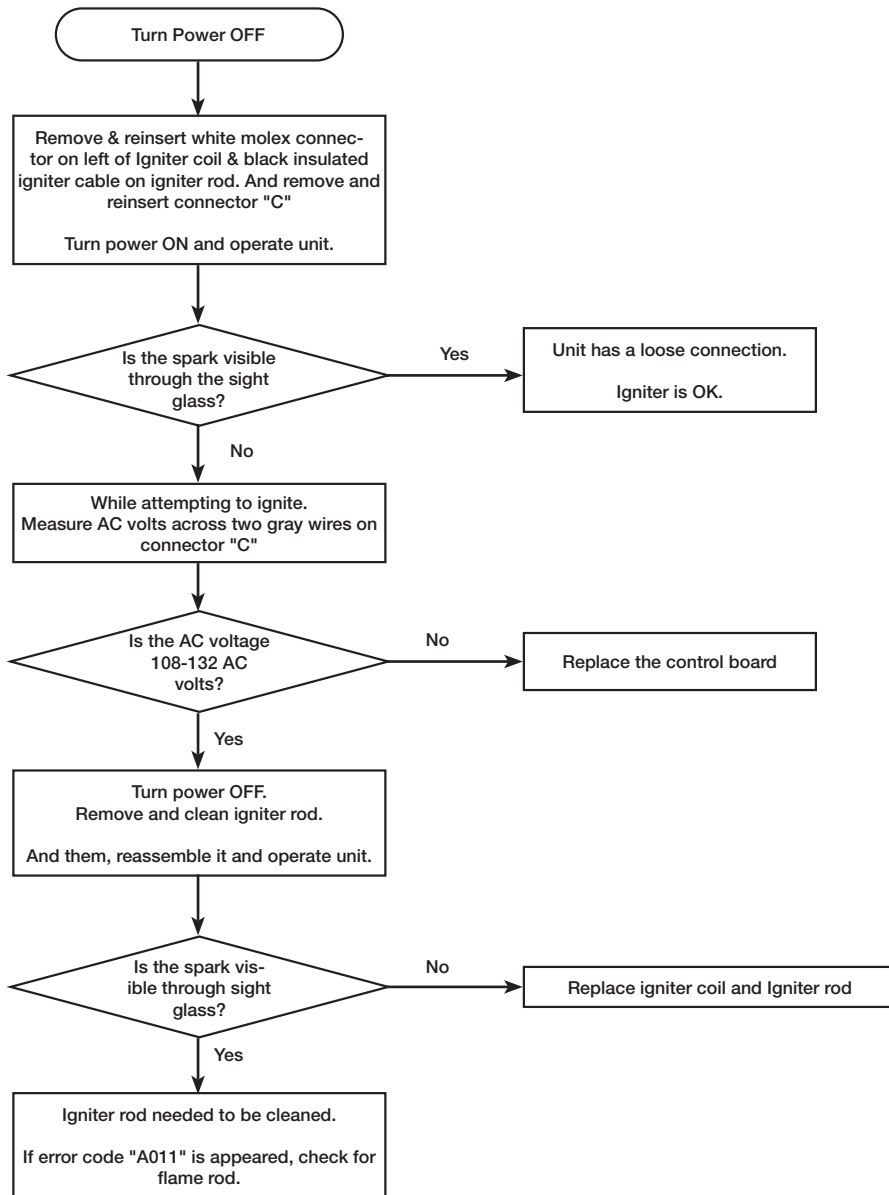
#### Venting

Check the condition of venting (Ex The connections of vents, the terminal vent top). If the connection of venting is removed or the terminal vent top is blocked, reconnect the vents or clean the terminal vent top (Both inlet side and exhaust side)

Refer to section "1.1.2 Venting for direct vent water heat" in this manual or refer to U&C manual for installation instructions.

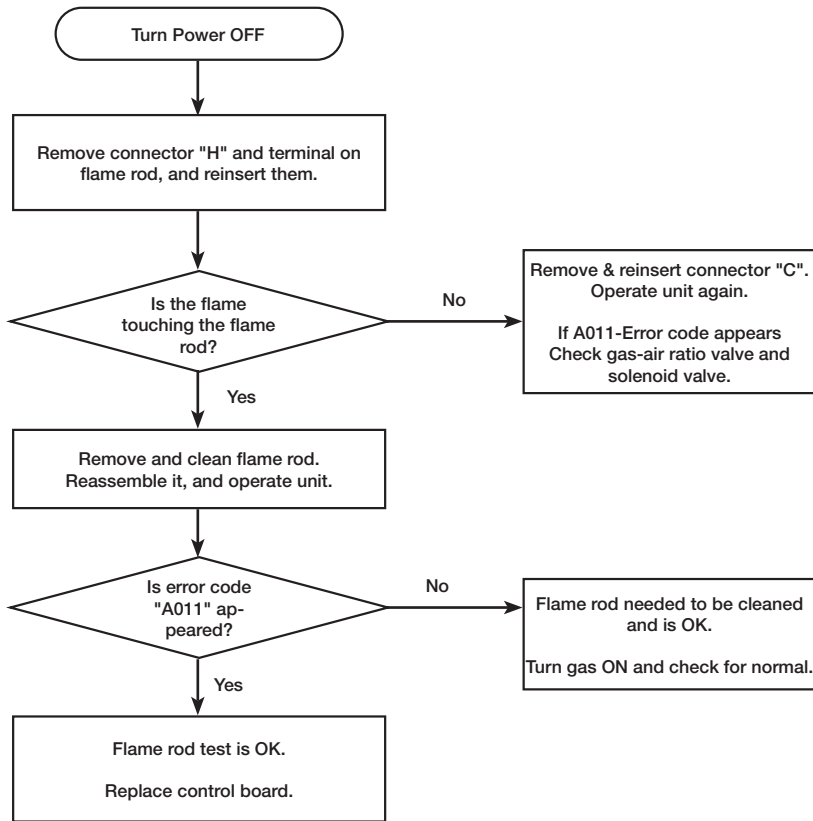
#### Igniter rod (Spark is not visible)

If the spark is not visible through the sight glass, refer to the following steps to check igniter rod and coil.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST



### A011 ERROR CODE

Flame Not Detected From Flame Rod.

#### Flame rod (Flame is visible)

If the spark is visible through the sight glass, refer to the flow chart on the left to check flame rod.

#### Gas air ratio valve

If the spark is not visible through the sight glass, refer to the steps to check gas air ratio valve.

To check gas air ratio valve, please refer to "A010" Error code Gas SV malfunction".

#### Gas air ratio valve

If the spark is not visible through the sight glass, refer to the steps to check solenoid valve.

To check solenoid valve, please refer to "A014 Error code SV malfunction".

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A012 ERROR CODE

Unit Detected Flame and Lost It.

If the water heater detects loss of flame during combustion, the water heater stops supplying fuel, attempts to restart, counts the incidents of flame loss. If the incident occurs 15 times consecutively, the water heater displays the "A012" error code on the Liquid Crystal Display (LCD) on the User Interface.

#### Diagnostic check items.

- Gas supply pressure
- Gas filter
- Air filter
- Venting
- Flame rod
- Gas air ratio valve
- Solenoid valve (SV)

#### Check method

##### Gas supply pressure

1. Check the gas supply pressure at the gas connection of the water heater.

The correct gas pressure are below;

- Natural Gas (NG); 4.0" 10.0" W.C.
  - Liquid Propane (LP); 8.0" 13.0" W.C.
2. While the static pressure is normal, the use of another gas appliance may cause a possible drop to the water heater. Therefore, it is required to check the dynamic pressure.
    - Static pressure: Gas pressure during standby.
    - Dynamic pressure: Gas pressure at max combustion.

To set to max combustion, please refer to section "1.4.2 Setting operation mode" in this manual.

#### Gas filter

Check with the gas filter at the gas connection of the water heater that filter is not closed by some foreign substance.

If the gas filter is closed by something, clean the gas filter and remove the cause to be closing the gas filter.

#### Air filter

Check with the air filter at the inlet air connection of the water heater that filter is not closed by some foreign substance.

If the air filter is closed by something, clean the air filter and remove the cause to be closing the air filter.

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A012 ERROR CODE

Unit Detected Flame and Lost It.

#### Venting

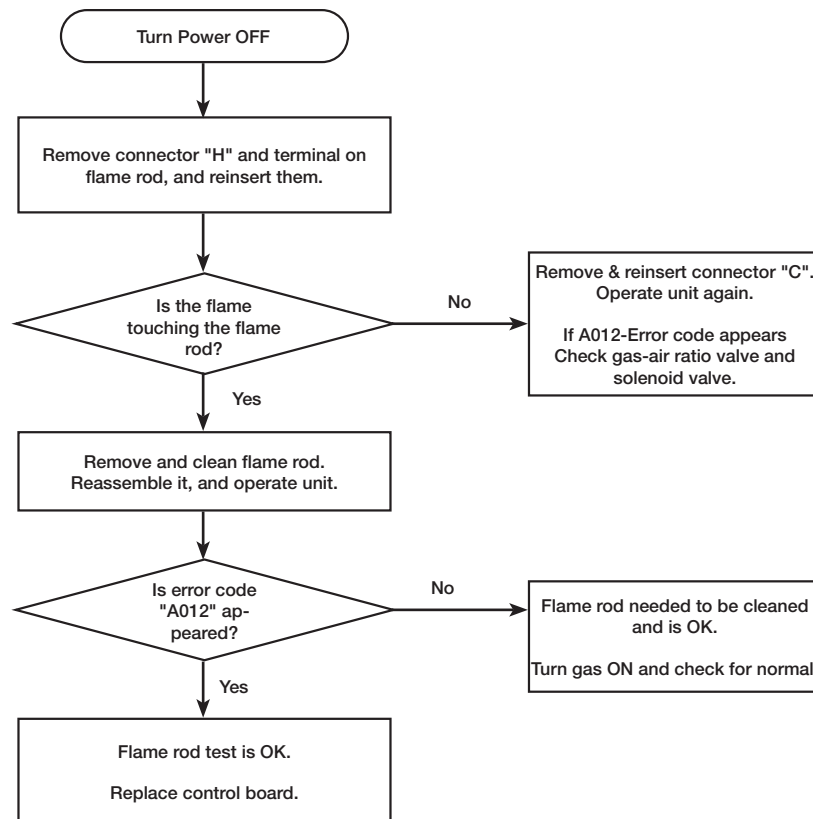
Check the condition of venting (Exp. The connections of vents, the terminal vent top)

If the connection of venting is removed or the terminal vent top is closed by something, reconnect the vents or clean the terminal vent top (Both inlet side and exhaust side)

Refer to section “1.1.2 Venting for direct vent water heat” in this manual or refer to U&C manual for installation instructions.

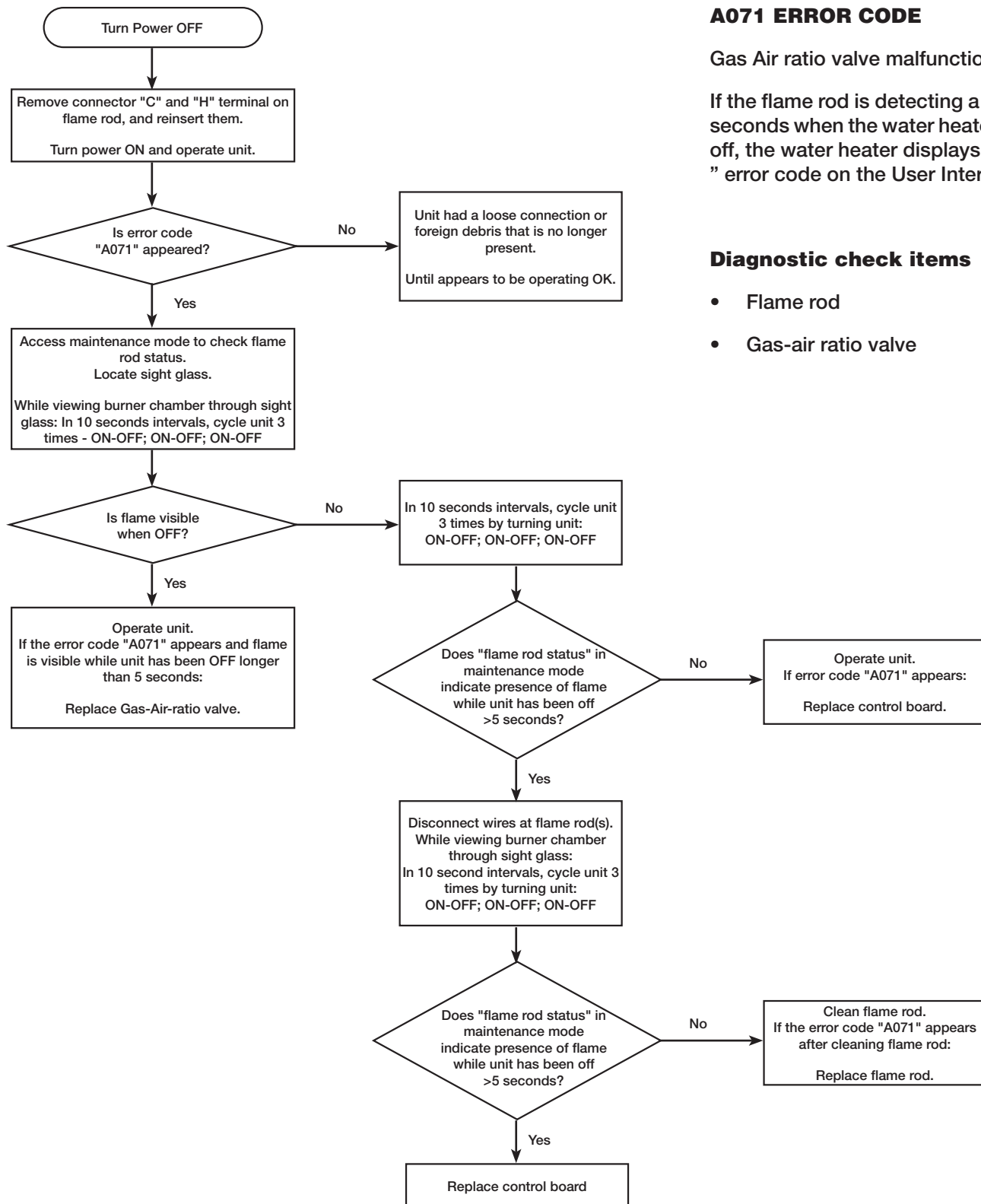
### Flame rod (Flame is visible)

Check the gas supply pressure at the gas connection of the water heater.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST



### A071 ERROR CODE

Gas Air ratio valve malfunction.

If the flame rod is detecting a flame for 8 seconds when the water heater is turned off, the water heater displays the " A071 " error code on the User Interface.

### Diagnostic check items

- Flame rod
- Gas-air ratio valve

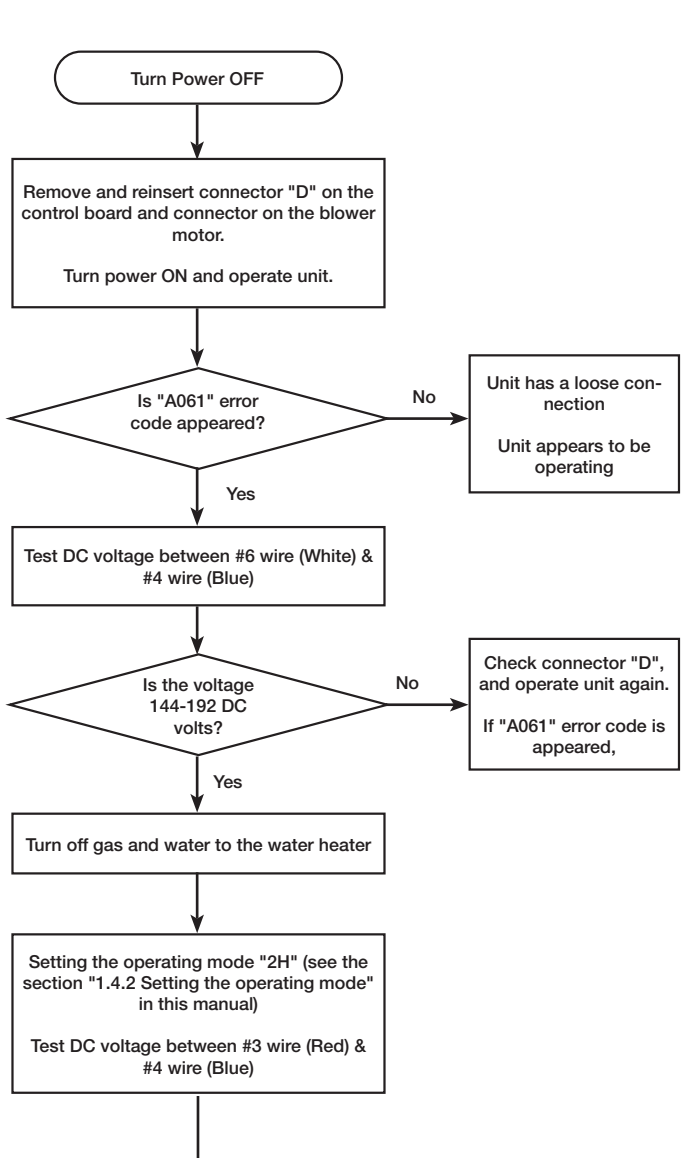
# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A061 ERROR CODE

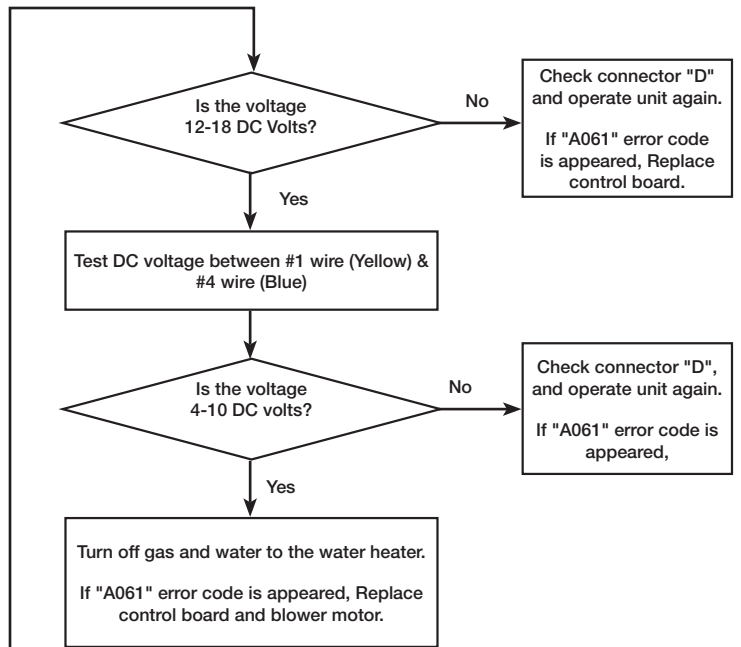
This water heater checks the RPM signal after the fan starts to run.

If the RPM signal is incorrect after the fan to run, the water heater displays the "A061 " error code on the User Interface.



### Diagnostic check items

- Blower motor



### IMPORTANT

**While performing voltage checks, DO NOT touch multi meter leads between #1 (Yellow) and #3 (Red) wires. Damage may occur to blower motor & control board.**



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

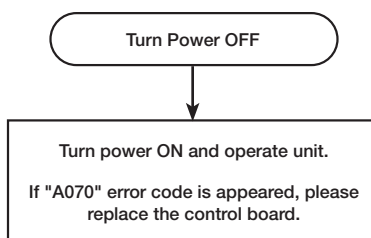
### A070 ERROR CODE

Microcomputer Abnormality.

If the microcomputer on the control board is not working properly, the water heater displays the “A070” error code on the User Interface.

### Diagnostic check items

- Control board



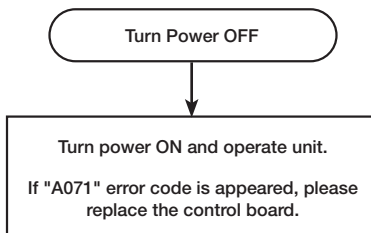
### A071 ERROR CODE

SV Circuit Failure.

If the solenoid valve (SV) is not working properly, the water heater displays the “A071 ” error code on the User Interface.

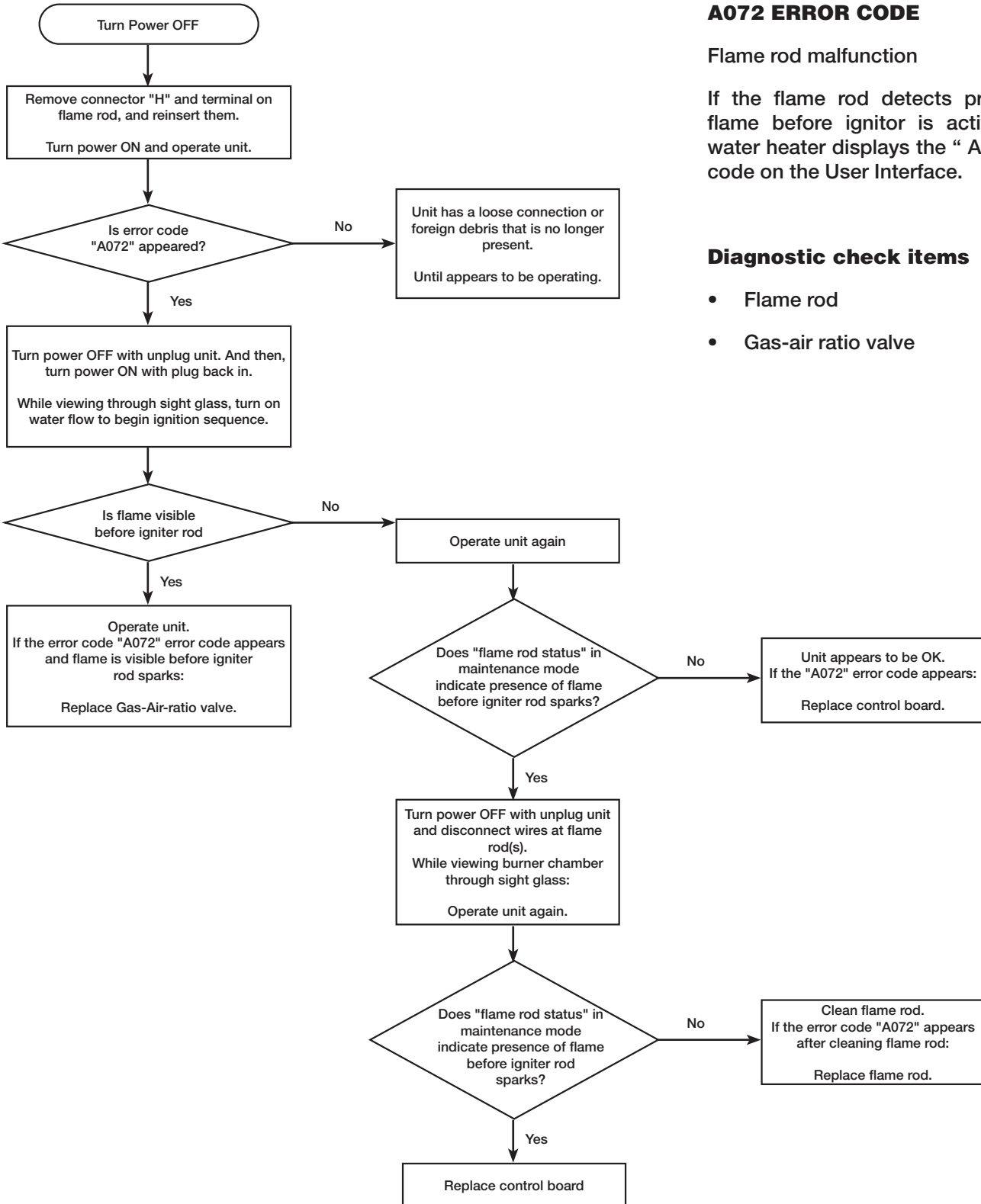
### Diagnostic check items.

- Control board



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST



### A072 ERROR CODE

Flame rod malfunction

If the flame rod detects presence of flame before ignitor is activated, the water heater displays the “ A072 ” error code on the User Interface.

### Diagnostic check items

- Flame rod
- Gas-air ratio valve

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

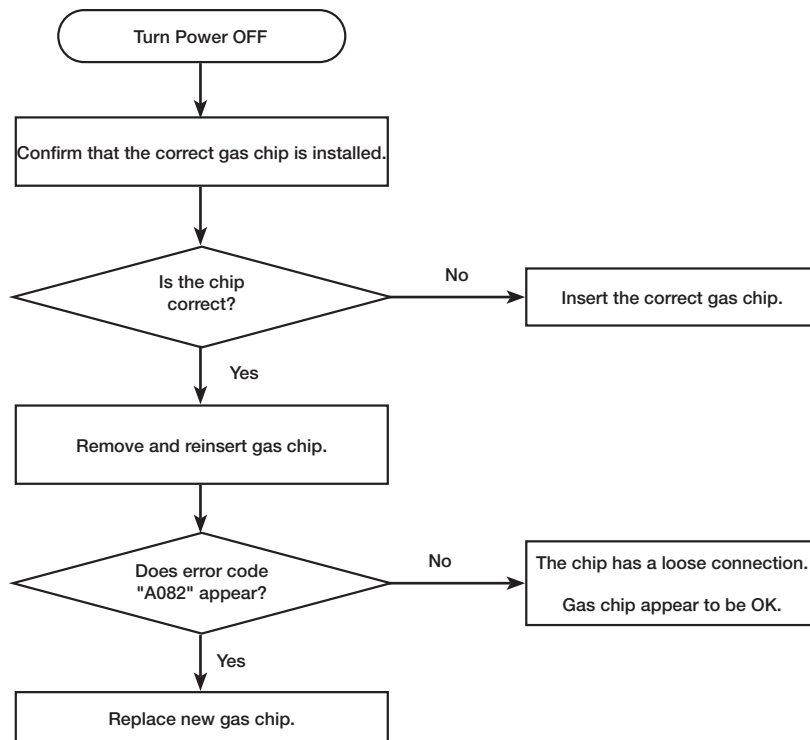
### A082 ERROR CODE

#### Installed Chip Error

This tankless water heater has a gas chip on the control board. If the gas chip has a poor connection or the data that gas chip has is inadequate/wrong, the water heater displays the "A082" error code on the User Interface.

#### Diagnostic check items

- Gas chip



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A090 ERROR CODE

Detected Blockage in Venting

If the water heater detects a blockage in the venting, the water heater displays the "A090" error code on the Liquid Crystal Display (LCD) on the User Interface.

#### Diagnostic check items

- Venting
- Air filter
- Gas inlet pressure

#### Check method

##### Venting

Check the condition of venting (Exp. The connections of vents, the terminal vent top) If the connection of venting is removed or the terminal vent top is closed by something, reconnect the vents or clean the terminal vent top (Both inlet side and exhaust side)

Refer to section "1.1.2 Venting for direct vent water heat" in this manual or refer to U&C manual for installation instructions.

To set to max combustion, please refer to section "1.4.2 Setting operation mode" in this manual.

##### Air filter

Check with the air filter at the inlet air connection of the water heater that filter is not closed by some foreign substance.

If the air filter is closed by something, clean the air filter and remove the cause to be closing the air filter.

### Gas supply pressure

1. Check the gas supply pressure at the gas connection of the water heater.

The correct gas pressure are below;

- Natural Gas (NG); 4.0" 10.0" W.C
  - Liquid Propane (LP); 8.0" 13.0" W.C
2. While the static pressure is normal, the use of another gas appliance may cause a possible drop to the water heater. Therefore, it is required to check the dynamic pressure.
    - Static pressure : Gas pressure during standby
    - Dynamic pressure : Gas pressure at max combustion

To set to max combustion, please refer to section "1.4.2 Setting operation mode" in this manual.

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

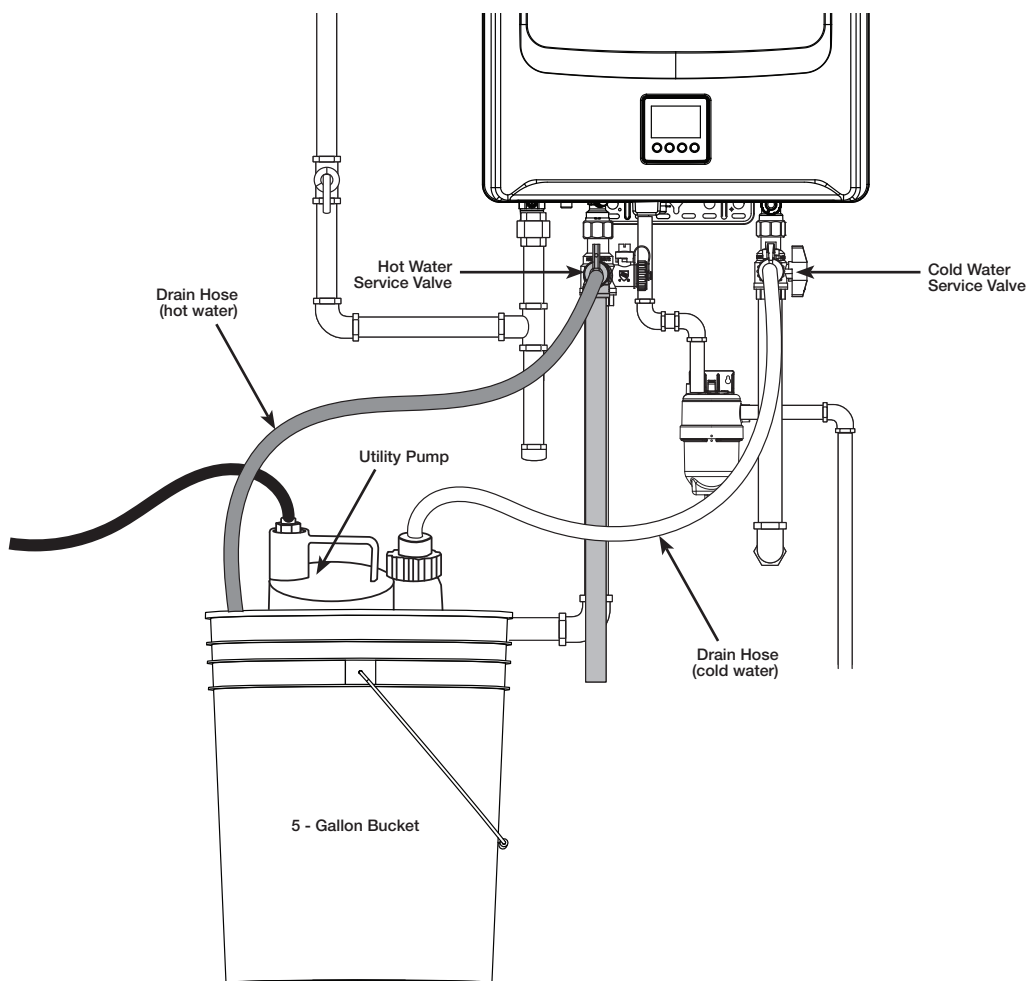
### A01L ERROR CODE

Lime build-up inside the heat exchanger

To prevent permanent damage to the unit, the unit must be drained and flushed. Flushing procedure may need to be repeated for excessive lime and scale build up.

**NOTE: Flushing instructions utilize a submersible utility pump.**

**(Provided with the Rheem/Ruud Tankless Flush Kit - RTG20124)**



# ERROR CODE DIAGNOSTICS

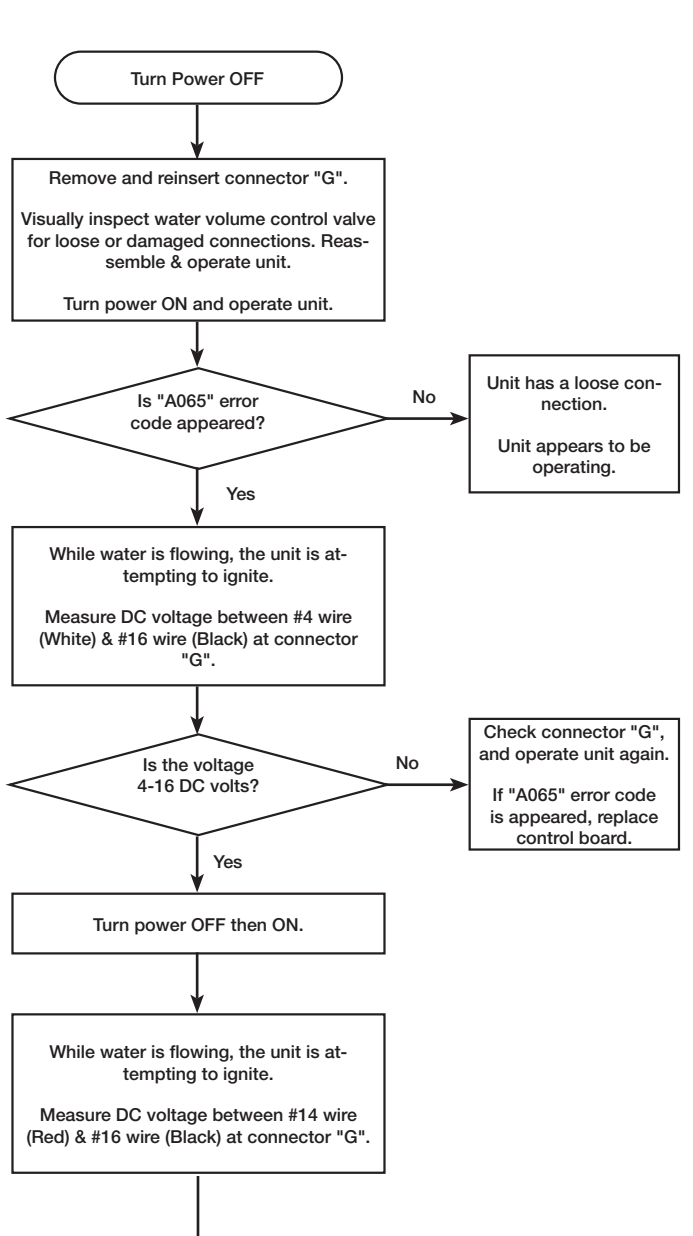
## 2.2 ERROR CODE LIST

### A065 ERROR CODE

Water volume control valve malfunction

The water volume control valve will only activate IF demand for hot water EXCEEDS the unit's limitations.

If water flow is within the unit's limitations, you will not get a voltage reading for diagnostics.



### Diagnostic check items

- Water volume control valve.

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### A066 ERROR CODE

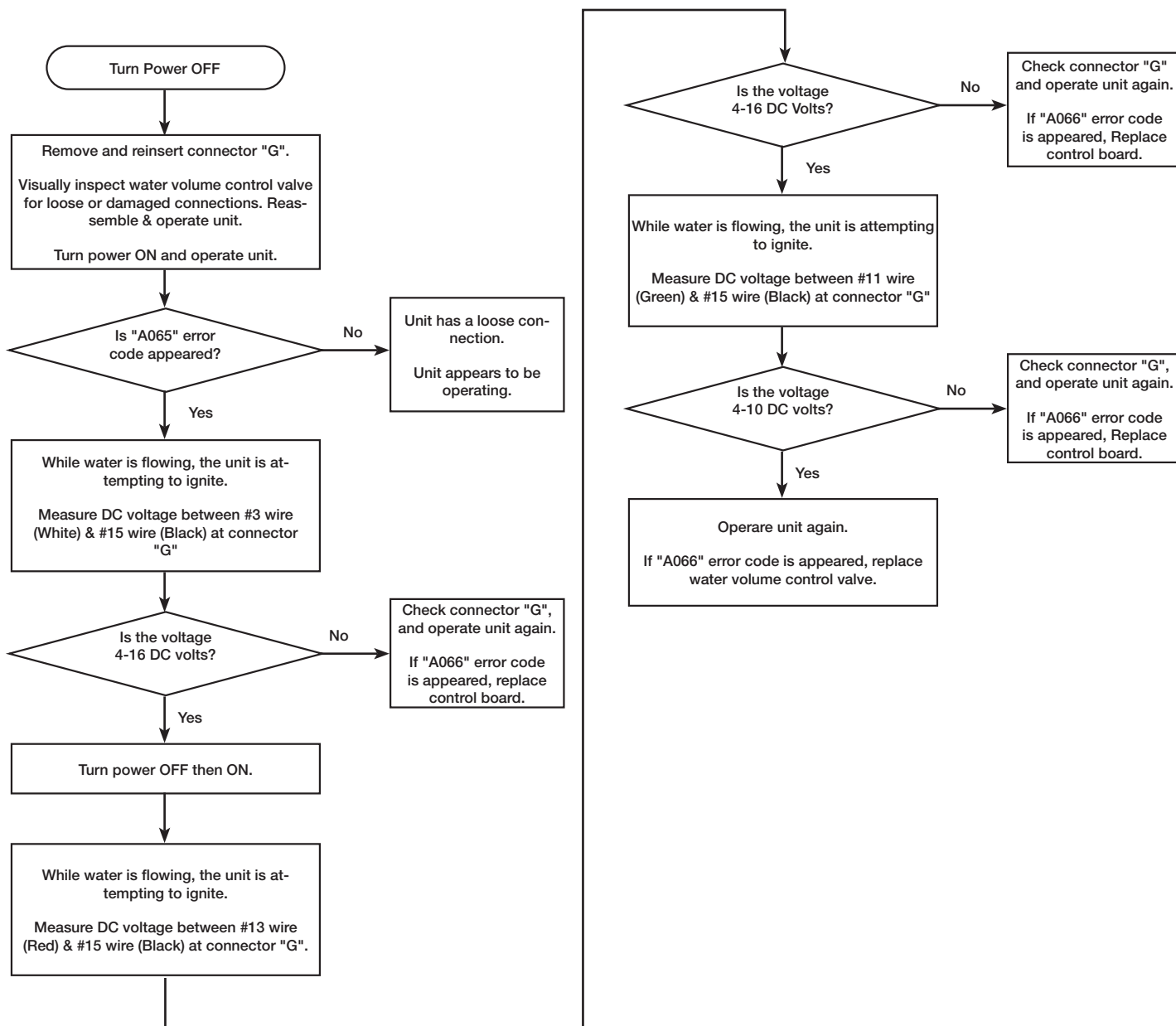
Water bypass control valve malfunction

If the bypass valve motor does not work properly, the water heater displays the "A066" error code on the User Interface.

**NOTE: : Prior to measuring voltage, turn set temperature down to 102 Water bypass valve will activate at this temperature setting.**

### Diagnostic check items

- Water Bypass control valve.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

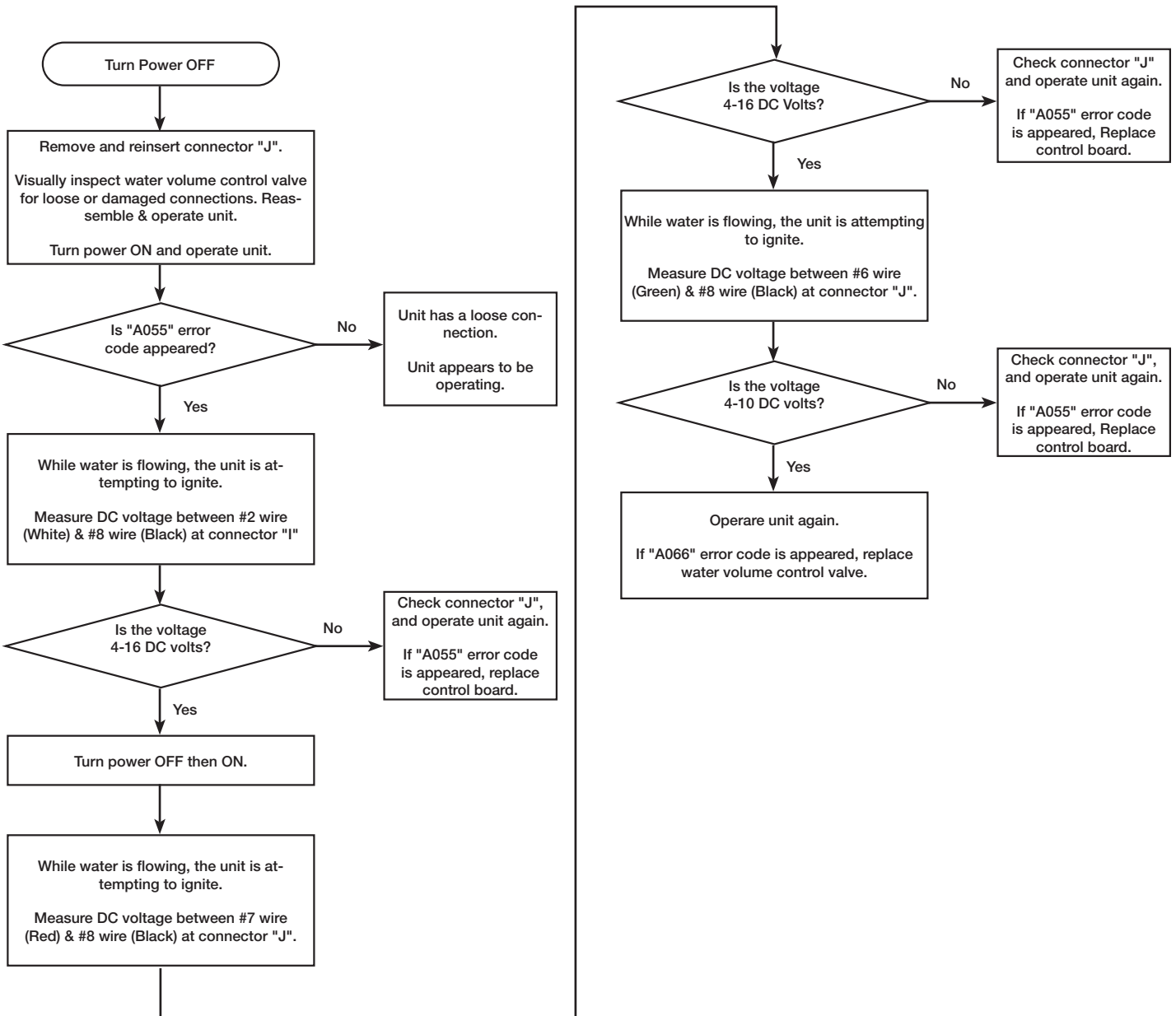
### A055 ERROR CODE

Gas motor failed.

The venturi in this water heater has a butterfly valve to control air volume. The motor adjusts the position this butterfly valve. If the motor controlling the butterfly valve does not work properly, the water heater displays the " A055 " error code on the User Interface.

### Diagnostic check items

- Gas control motor on the venture assembly





# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

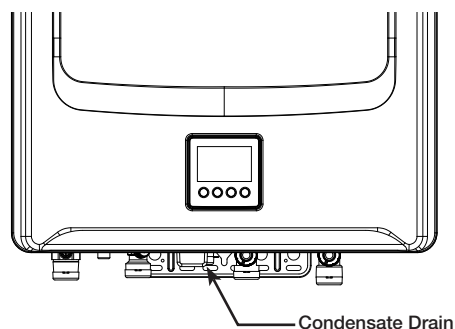
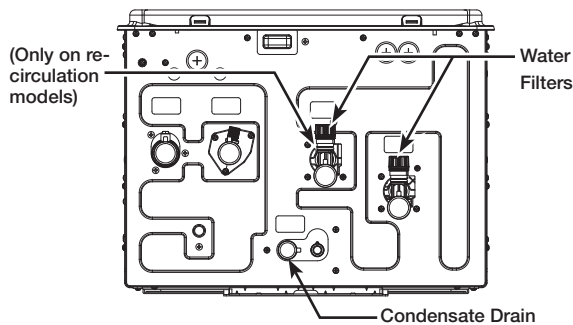
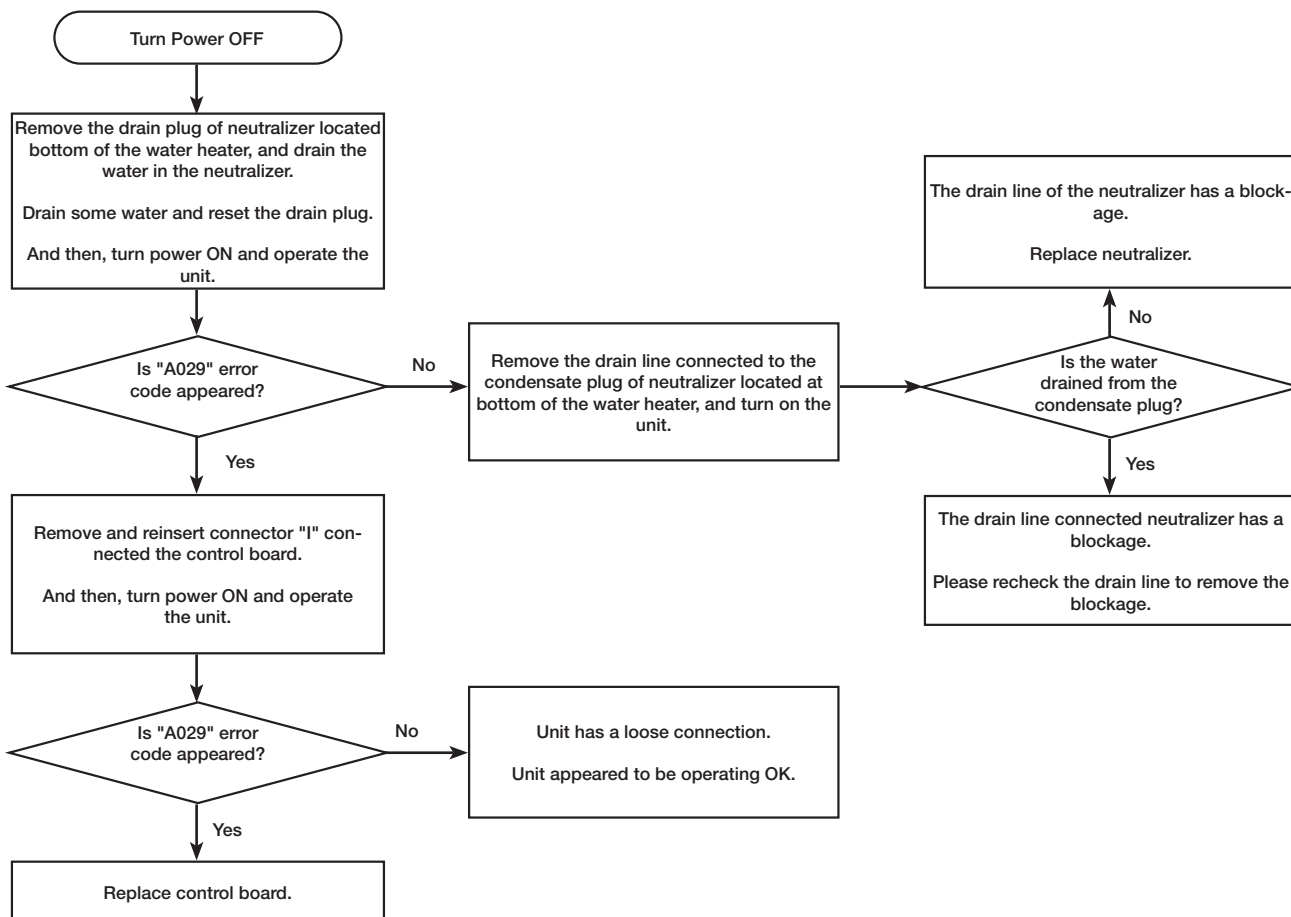
### A029 ERROR CODE

#### Condensate blockage

This water heater has a built in neutralizer. If the electrode on this neutralizer detects the water level is full or cannot detect the water level in this neutralizer the water heater displays the " A022 " error code on the User Interface.

#### Diagnostic check items

- External neutralizer.
- Drain line from unit neutralizer.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

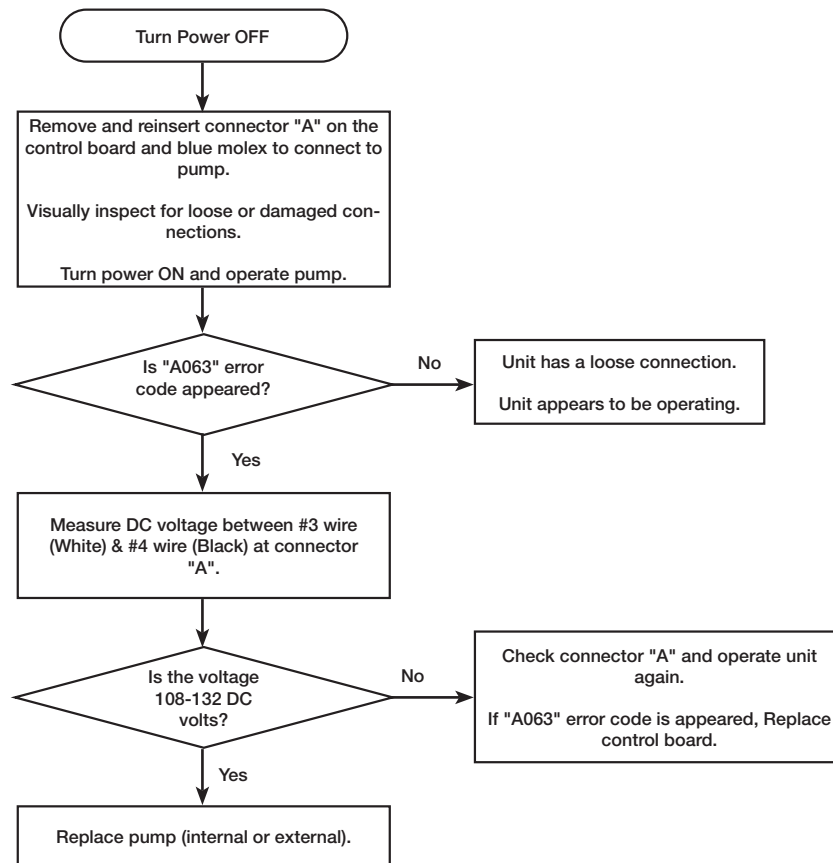
### A063 ERROR CODE

#### Pump abnormality

If the water flow sensor does not detect water flow when the recirculation pump is working, the water heater displays the "A063 " error code on the User Interface.

#### Diagnostic check

- Recirculation Pump (Internal or external).



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

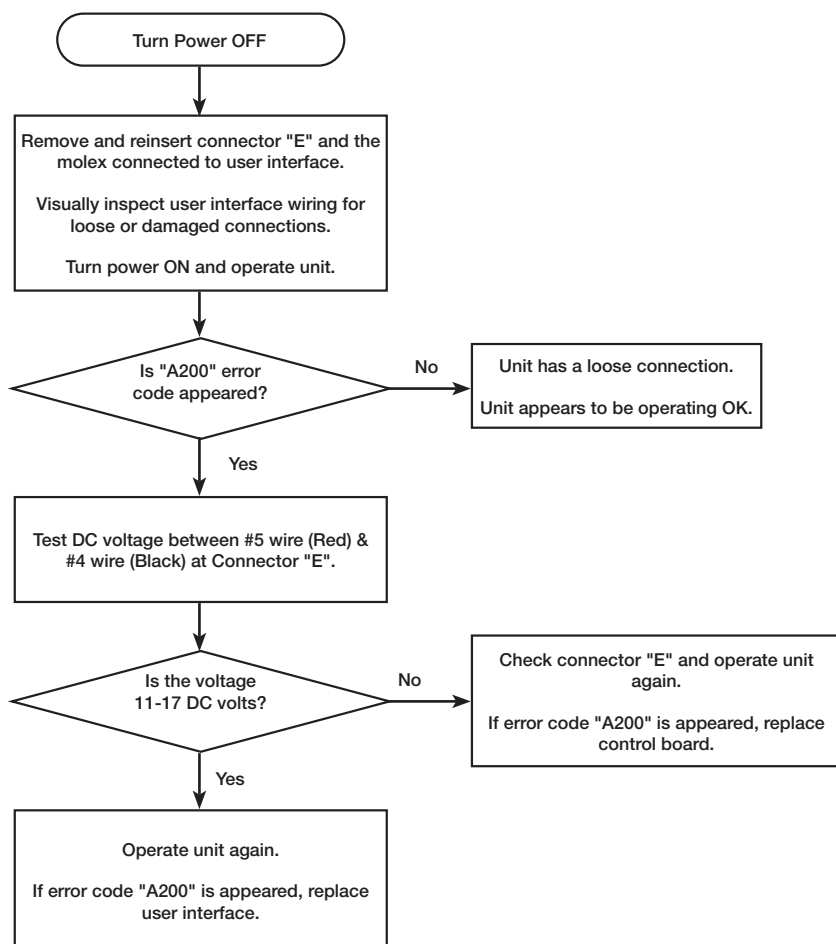
### A200 ERROR CODE

Translator to Water Heater Communication Failure.

User Interface is not communicating with control board.

#### Diagnostic check items

- User interface.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### **T110 ERROR CODE**

WiFi chip communication error

If the WiFi chip is not communicating with the user interface, the water heater displays the “ T110 ” error code on the user interface.

### **Diagnostic check items**

- User interface.

### **Check method**

If the LCD displays “T110” error code, reset WiFi setting and set WiFi again.

To reset the WiFi setting, please refer to section “1.7.6 Reset WiFi setting”.

If “T110” error code is displays even after setting WiFi again, please replace the user interface.

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### T111 ERROR CODE

Service reminder alert

If this water heater is set the service alert and the life cycle of water heater is reached the set time, the water heater displays the “ T111 ” error code on the Liquid Crystal Display (LCD) on the user interface.

This is a warning code and the unit will eventually shut down to protect unit.

**To set this service alert, refer to section 1.7.5 “Setting service alert”.**

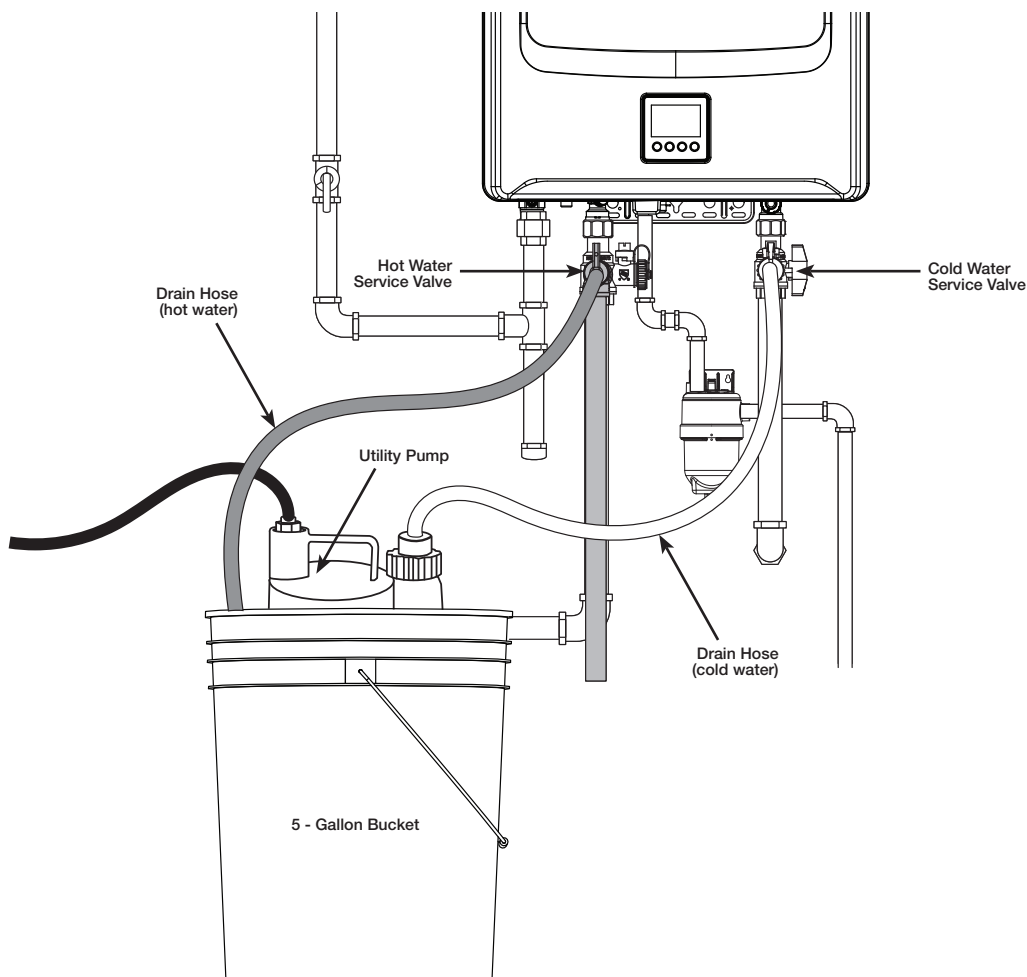
### Check method

If the LCD displays “T111” error code, the unit must be drained and flushed.

**NOTE: Flushing instructions utilize a submersible utility pump. (Provided with the Rheem/Ruud Tankless Flush kit RTG20124)**

### Diagnostic check items

- User interface.



# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### T113 ERROR CODE

The flow rate is less than 0.4 GPM through the water heater and the heater is not activating. The water heater displays the “ T113 ” error code on the on the user interface.

This water heater needs a minimum 0.4 GPM flow rate to activate the water heater.

To check the water flow rate through the unit, refer to section “1.5.1 Tankless Status”.

#### Diagnostic check items

- Not enough water flow
- Water supply line (Hot and Cold)
- Water filter

#### Check method

- The water filter and the hot & cold supply line may have a blockage.

Check the water filter located the inlet water connection, and the hot & cold water supply lines. If these filter or supply lines have a blockage, please clean them to remove the blockage.

- The water line in this unit may be blocked by scale, so the unit must be drained and flushed.

To flush the unit, please refer to section “A018 error code Lime build up detected in heat exchanger”.

- The water flow sensor in this unit may not work properly.

When a faucet is opened to flow water enough, if the unit cannot detect the water flow over than 0.4 GPM, please replace the water valve and control board.

### T114 ERROR CODE

Unit will not operate until the neutralizer is replaced.

If the time to replace neutralizer of this unit is approaching, the water heater displays the “ T114 ” error code on the Liquid Crystal Display (LCD) on the user interface.

This is a warning code and the unit will continue to operate but will eventually shut down.

#### Diagnostic check

- Neutralizer

**NOTICE: Neutralizer rocks made from Calcium carbonate (CaCO<sub>3</sub>).**  
**If this error code is displayed on the LCD, please order the neutralizer kit through Rheem/ Rund supplier as soon as possible.**

# ERROR CODE DIAGNOSTICS

## 2.2 ERROR CODE LIST

### T115 ERROR CODE

Pump schedule disable - No time received.

If the user interface does not receive the scheduled time to operate the pump when a schedule has been set (if installed with a recirculation line) the water heater displays the “ T115 ” error code) on the user interface.

#### Diagnostic check

- Schedule setting on recirculation of schedule mode.

**NOTICE: If this error code is displays on the LCD, recheck the scheduled time setting. To set the schedule mode for recirculation on this unit, please refer to section “1.6.5.1.3 Schedule mode”.**

### T116 ERROR CODE

Manifold unit fault.

If the water heaters are installed in a manifold and some units in the manifold cannot communicate to the manager unit, the water heater displays the “ T116 ” error code on the Liquid Crystal Display (LCD) on the user interface of manager unit.

#### Diagnostic check

- Connecting cable between water heaters.

#### Check method

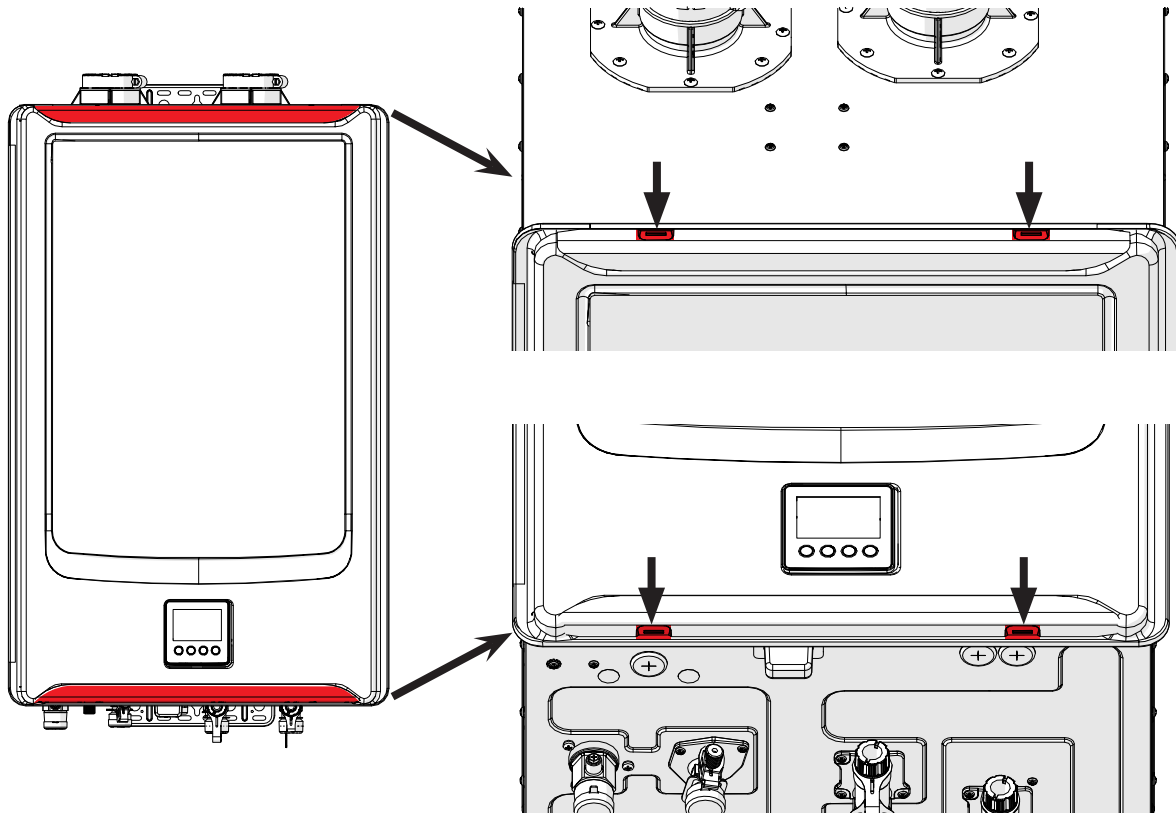
Remove and reinsert the connecting cable between water heaters

# HOW TO REMOVE COMPONENTS

## 3.1 FRONT AND PLASTIC SCREW COVER

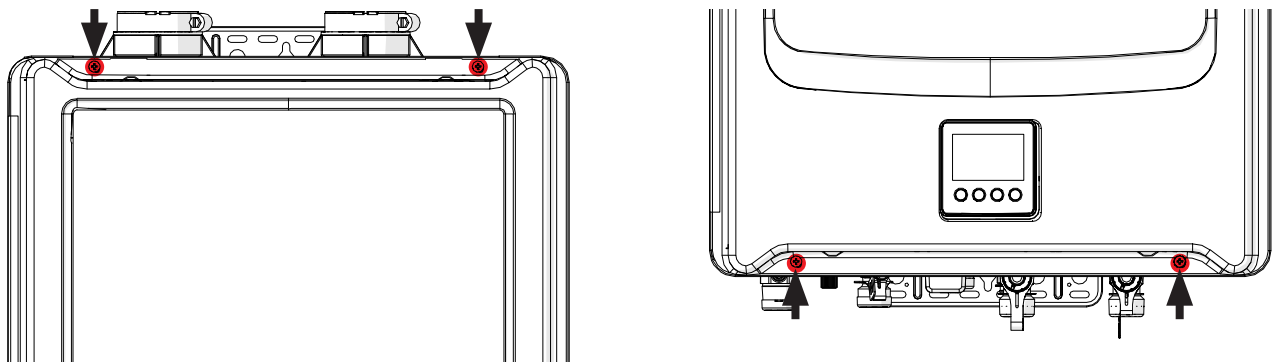
The plastic screw covers are located top and bottom on the front cover.

Press and release these parts indicated by the arrows below.



## REMOVE FRONT COVER

The front cover is tightened by 4 screws. To release front cover, remove these screws, as pictured below.

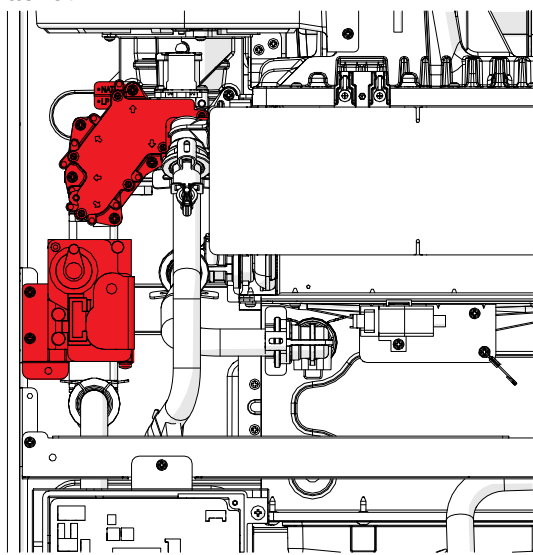




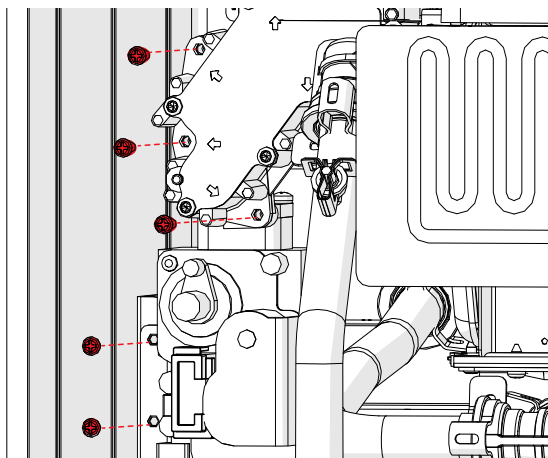
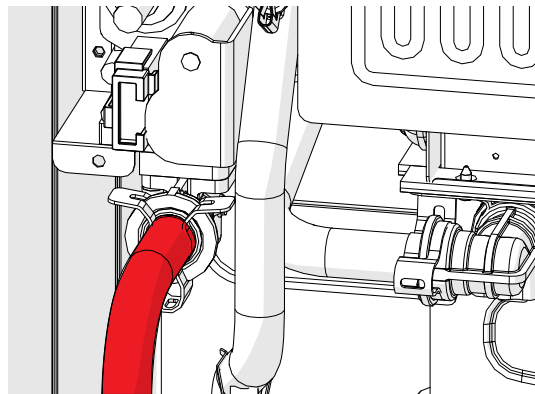
# HOW TO REMOVE COMPONENTS

## 3.2 GAS-AIR RATIO VALVE

1. Remove 3 screws connected to gas orifice block and 2 screws connected to gas-air ratio valve bracket.



2. Remove quick fastener connected gas-air ratio valve and gas connected pipe.
3. Pull the pipe from gas-air ratio valve.



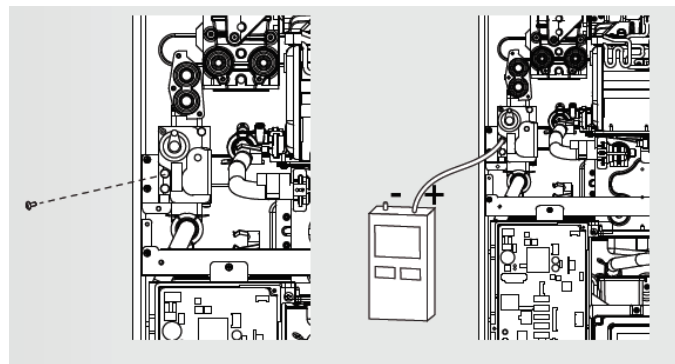
**NOTE: If the gas-air ratio valve is replaced, please recheck the manifold pressure is 0.00 in. W.C at 1L operation mode.**

**To measure the manifold pressure, remove the screw from the outlet tap on the gas valve.**

**Connect manometer to the outlet tap to measure manifold pressure as shown in figure below.**

**Re install screw after measurement is completed.**

**To set 1L operation mode, please refer to section "1.4.2 Setting operation mode"**

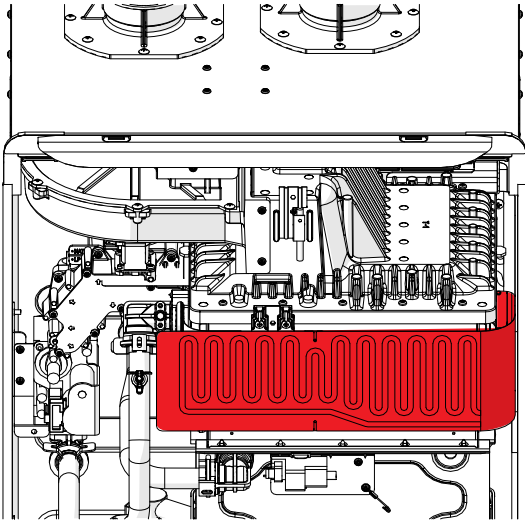


# HOW TO REMOVE COMPONENTS

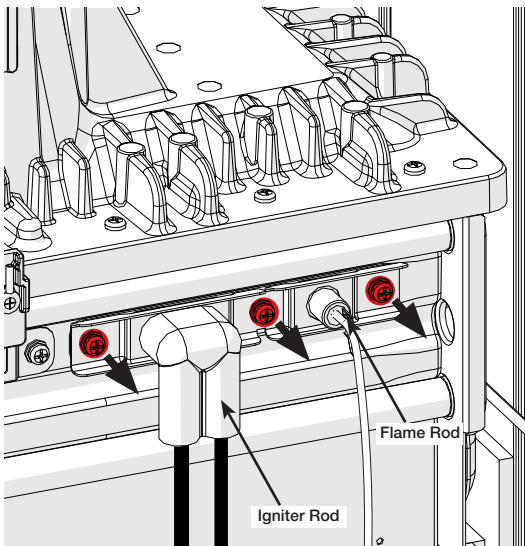
## 3.3 FLAME ROD

1. Remove the hook film part of the Over Heat Limiter (OHL). DO NOT cut the film.

**NOTE: When reassembling flame rod, please use a spare gasket if the condition of the gasket is not good. The spare gasket is located at lower left in the unit.**



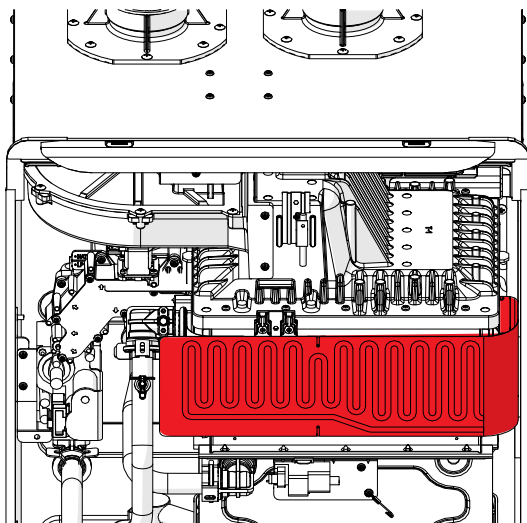
2. Remove flame rod wire from the rod.
3. Remove 3 screws from flame rod bracket, and pull the flame rod.



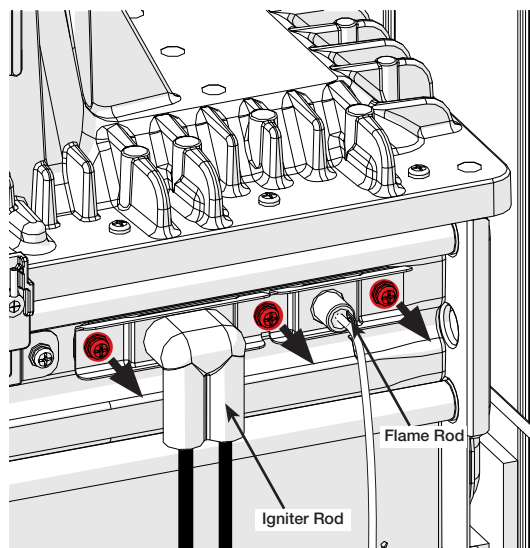
# HOW TO REMOVE COMPONENTS

## 3.4 GASKET

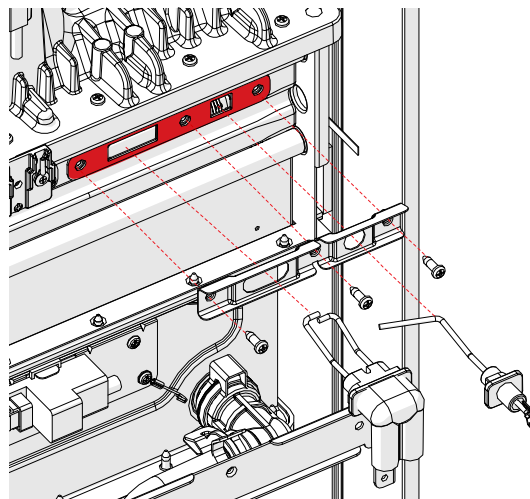
1. Remove the hook film part of the Over Heat Limiter (OHL). DO NOT cut the film.



2. Remove flame rod wire from the rod.



3. Remove 3 screws from flame rod bracket, and pull the flame rod
4. The gasket is located between the heat exchanger and flame rod bracket



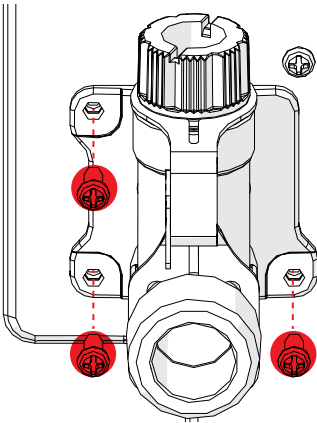
**NOTE: The spare gasket is located at lower left in the unit.**

# HOW TO REMOVE COMPONENTS

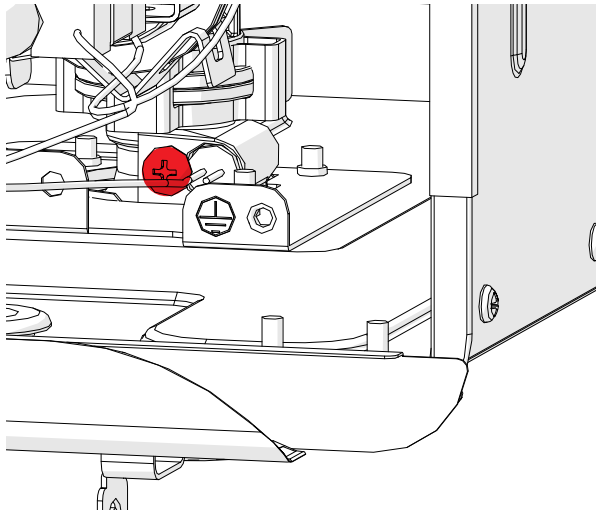
## 3.5 WATER INLET CONNECTION $\frac{3}{4}$ "

**NOTE: Before removing water inlet connection, turn off water to the water heater by closing the shut off valve.**

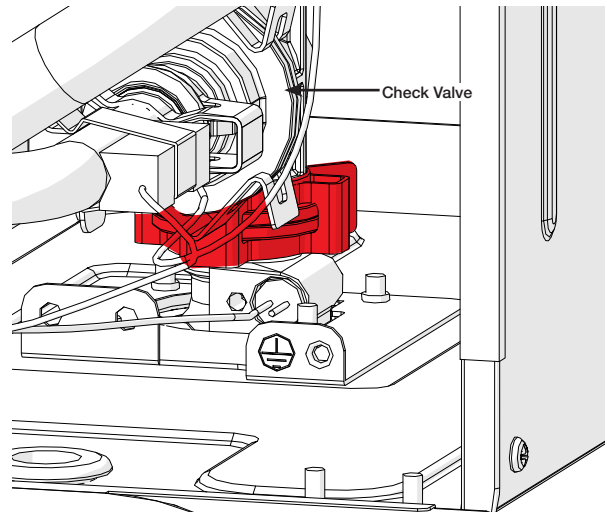
1. Remove 3 screw from the bottom plate, as pictured below.



2. Remove a screw holding freeze protection heater from water inlet connection.



3. Remove quick fastener connected to check valve.



**NOTE: If for non recirculation model, remove quick fastener connected water valve.**

# HOW TO REMOVE COMPONENTS

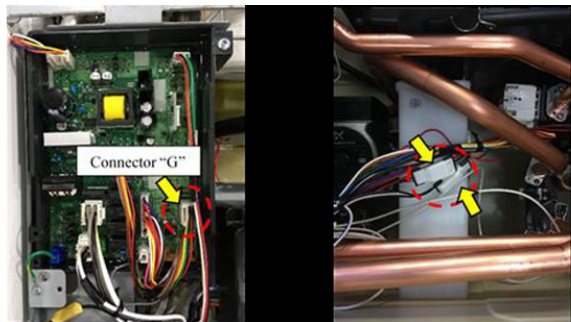
## 3.6 WATER CONTROL VALVE

**NOTE:** Before removing water inlet connection, turn off water to the water heater by closing the shut off valve.

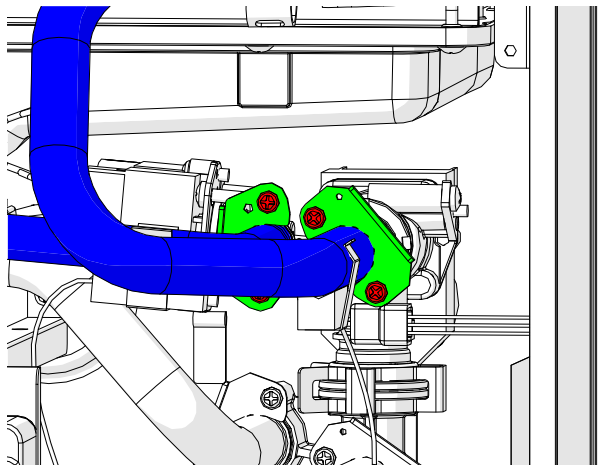
1. Remove user interface from the water heater.

**NOTE:** To remove the interface , refer to section "3.13 Display".

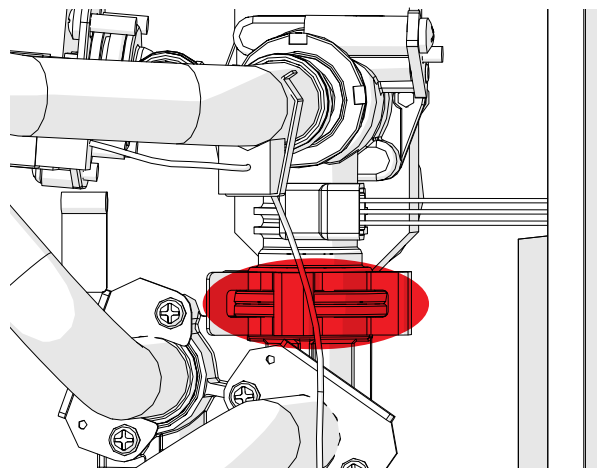
2. Remove water control wiring harness from the control board (connector "G") and remove the two white Molex connectors located rear of the user interface.



3. Remove the four screws and two flange bracket. Then, remove water inlet pipe and bypass pipe.

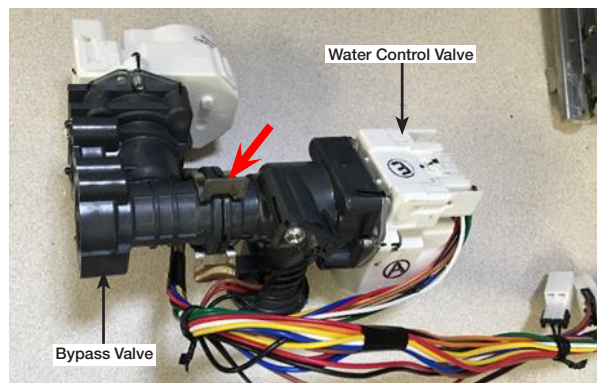


4. Remove quick fastener connected to check valve.



**NOTE:** for recirculation model, remove quick fastener connected to water inlet connection.

5. Remove quick fastener connected to bypass valve.



# HOW TO REMOVE COMPONENTS

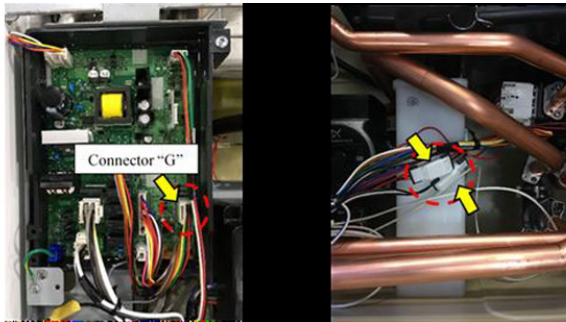
## 3.7 BYPASS VALVE

**NOTE: : Before removing water inlet connection, turn off water to the water heater by closing the shut off valve.**

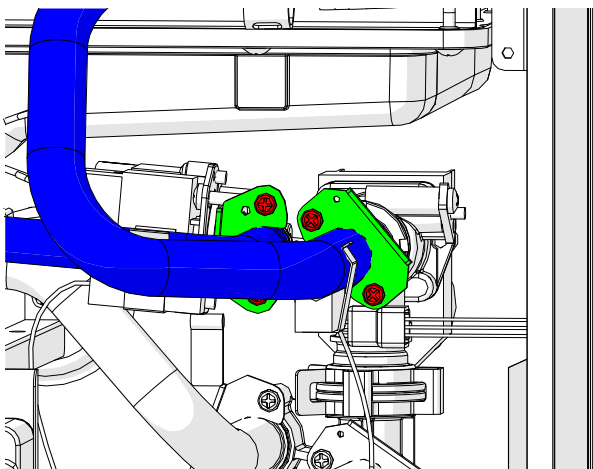
1. Remove user interface from the water heater.

**NOTE: To remove the interface , refer to section "3.13 Display".**

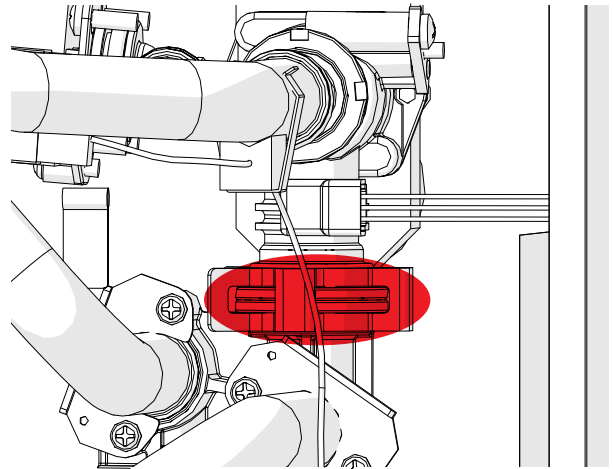
2. Remove water control wiring harness from the control board (connector "G")
3. Remove the two white Molex connectors located rear of the user interface.



4. Remove four screws and two flange bracket.
5. Remove water inlet pipe and bypass pipe

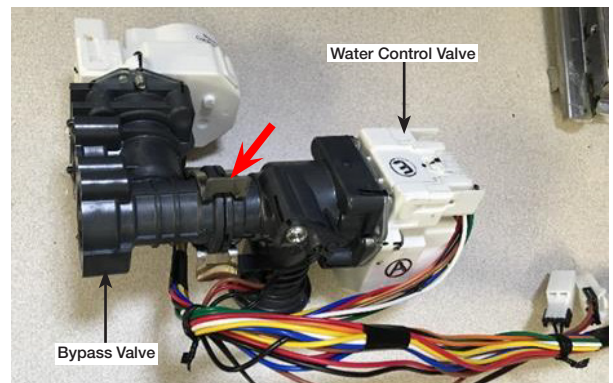


6. Remove fastener to check valve.



**NOTE: If for recirculation model, remove quick fastener connected to water inlet.**

7. Remove quick fastener connected to water control valve.



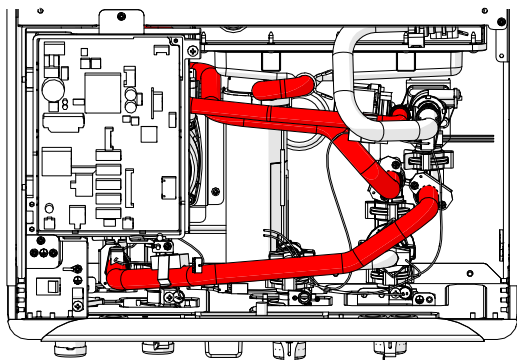
# HOW TO REMOVE COMPONENTS

## 3.8 NEUTRALIZER

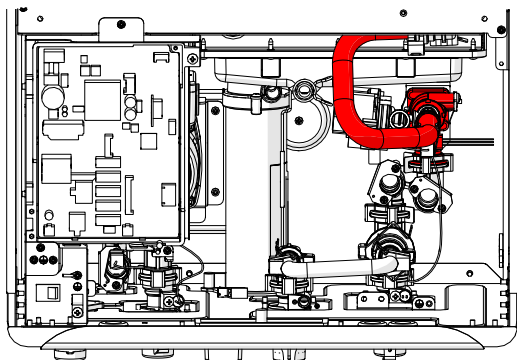
1. Remove control board and display.

**NOTE:** To remove the control board and display, refer to section “3.14 Control Board” and section “3.13 Display.”

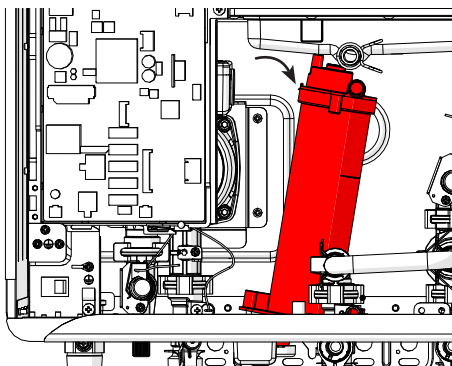
2. Remove four pipes across the front of neutralizer.



3. Remove water valve and water inlet pipe.



4. Tilt the neutralizer to the right and remove it.



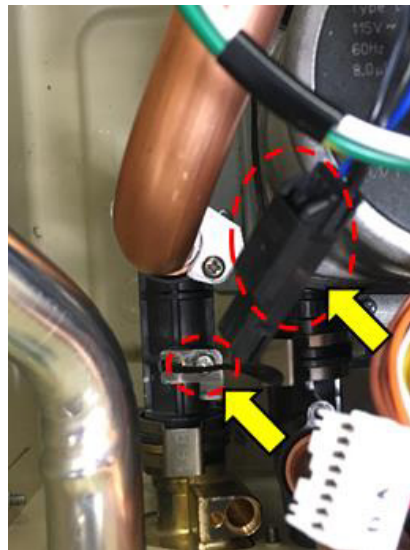
## 3.9 OUTLET THERMISTOR

**NOTE:** Before removing outlet thermistor, turn off water to the water heater by closing the shut off valve.

1. Remove control board and display.

**NOTE:** To remove the control board and display, refer to section “3.14 control board” and section “3.13 Display”.

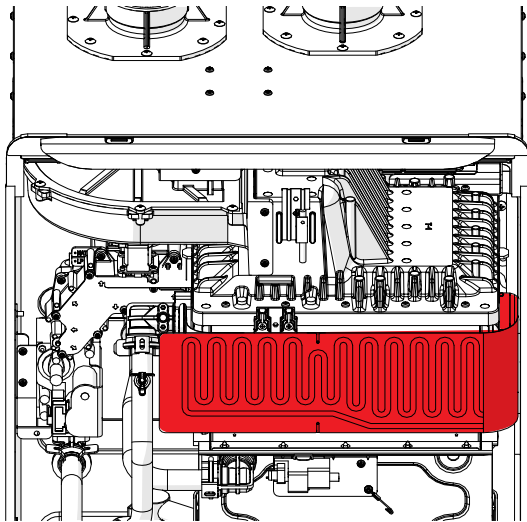
2. Remove black Molex connector from thermistor wiring harness, and remove a screw holding outlet thermistor.



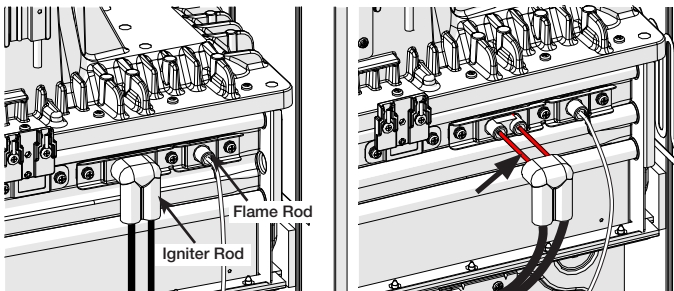
# HOW TO REMOVE COMPONENTS

## 3.10 IGNITER COIL

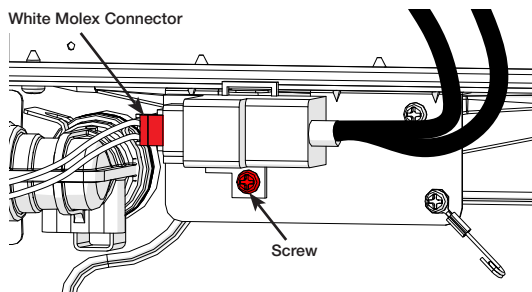
1. Remove the hook film part of the Over Heat Limiter (OHL).



2. Remove Igniter rod cover.
3. Remove igniter coil wire from igniter rod (right side).



4. Remove white Molex connector from igniter coil.
5. Remove the screw (pictured below) from the igniter bracket.

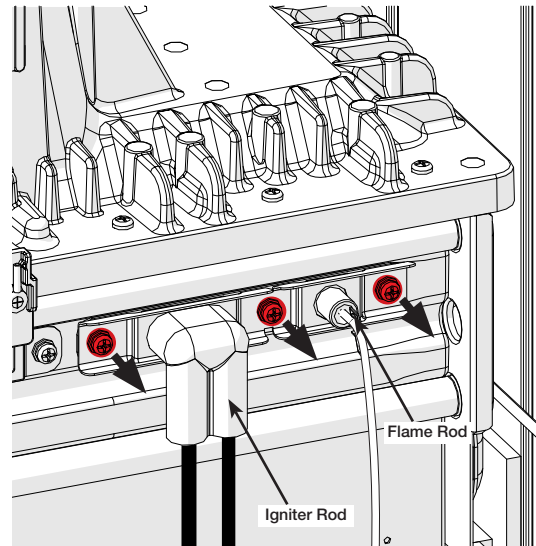


## 3.11 IGNITER ROD

1. Remove the hook film part of the Over Heat Limiter (OHL).

**NOTE: DO NOT cut the film.**

2. Remove igniter rod wire.
3. Remove 3 screws from rod bracket, and remove the igniter rod.



**NOTE: When reassemble igniter rod, please use a spare gasket if the condition of the gasket is not good.**

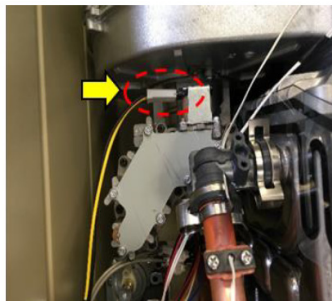
The spare gasket is located at lower left in the unit



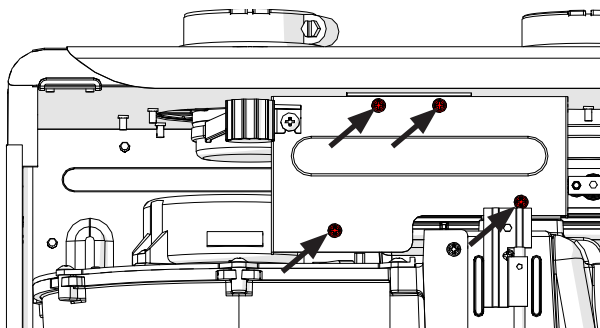
# HOW TO REMOVE COMPONENTS

## 3.12 BLOWER

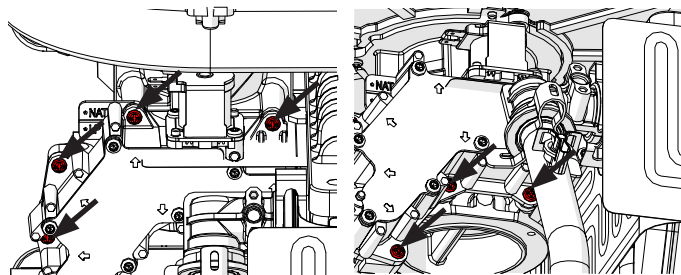
1. Remove fan control wiring harness from control board (Connector "D") and wire holder from the bracket.
2. Remove solenoid valve wiring connecting to gas orifice block.



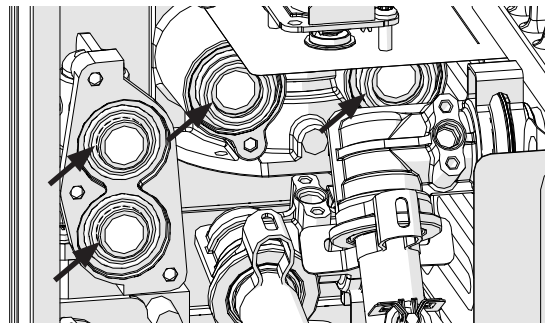
3. Remove heat exchanger bracket located top of center on water heater.



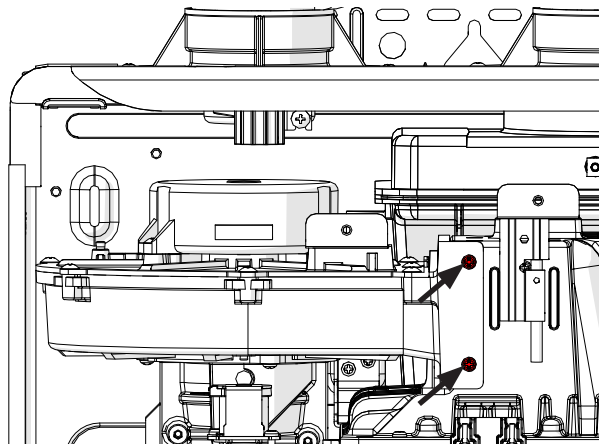
4. Remove the gas orifice block by removing the seven black screws holding it in place.



**NOTE: After removing the gas orifice block, secure four (4) gaskets in a safe location to avoid loss.**



5. Remove the two screws securing the fan assembly.



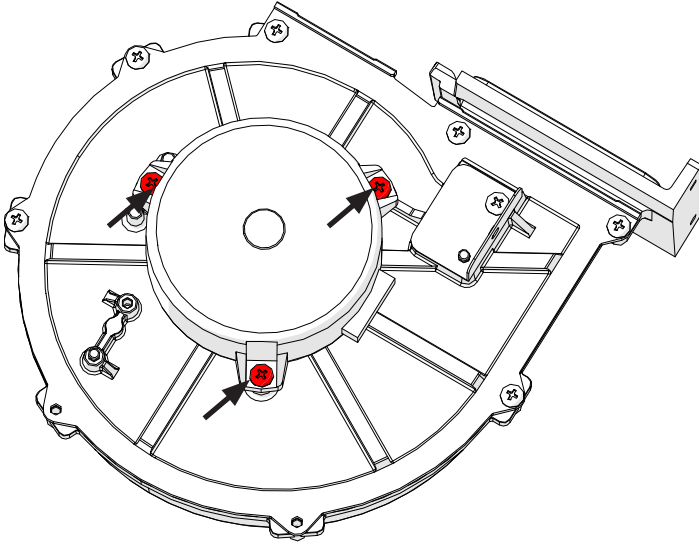
6. Remove fan assembly according to the following graphic.



# HOW TO REMOVE COMPONENTS

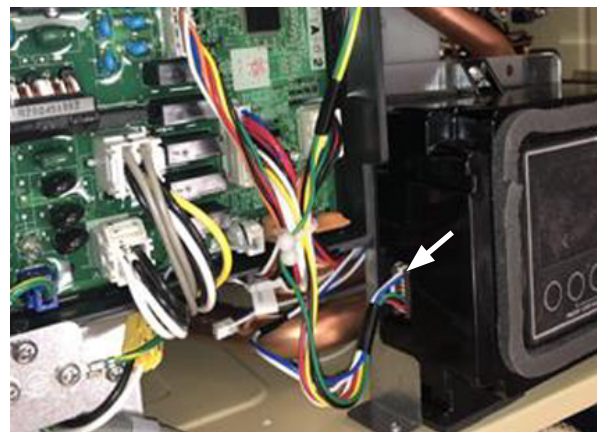
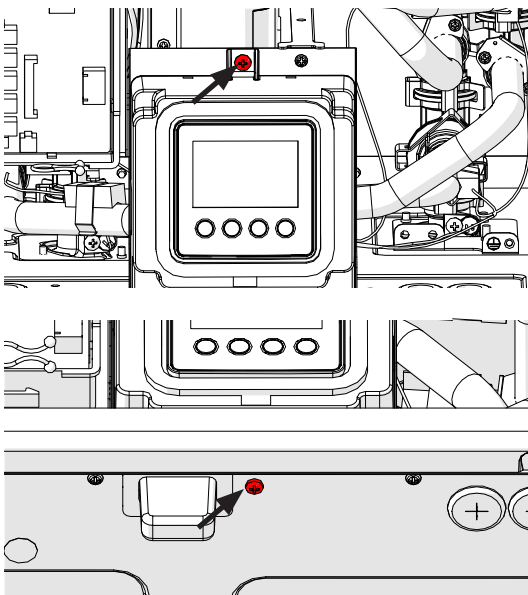
## 3.12 BLOWER CONT'D

7. Remove three screws and V enturi assembly.



## 3.13 DISPLAY ONLY

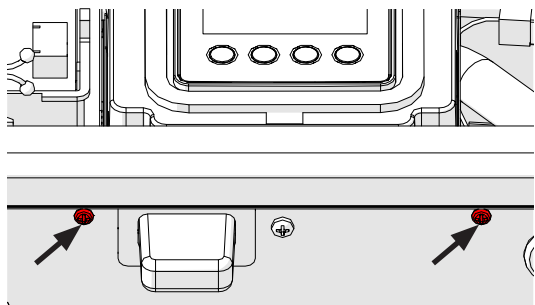
1. Remove top center screw from the display mounting bracket, and the screw located at the bottom of the unit, as pictured below.
2. Remove connector connected to display. (Located at left side of display).



# HOW TO REMOVE COMPONENTS

## 3.13 DISPLAY WITH DISPLAY MOUNTING BRACKET

1. Remove two screws located at the bottom of the unit.
2. Remove the connector "E" from the control board.



## 3.14 CONTROL BOARD ONLY

1. Remove all 9 connectors from the control board.
2. Remove the 2 screws from control board mounting bracket. (See picture below)



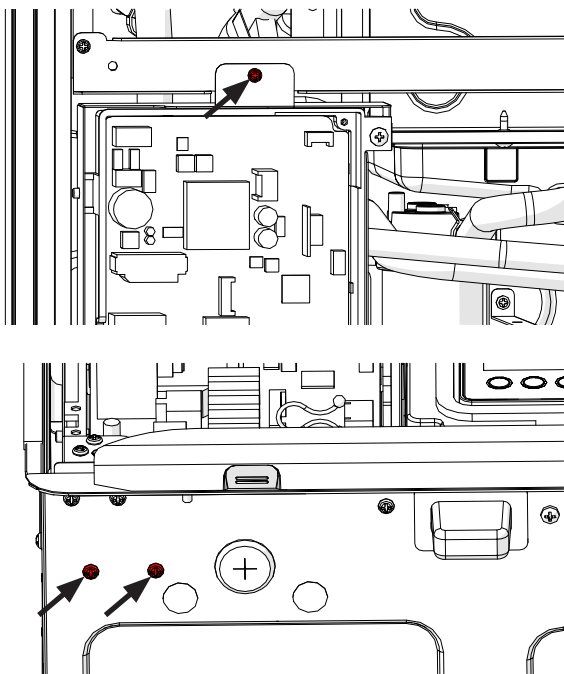
# HOW TO REMOVE COMPONENTS

## 3.14 CONTROL BOARD ONLY

1. Remove all 9 connectors from the control board.



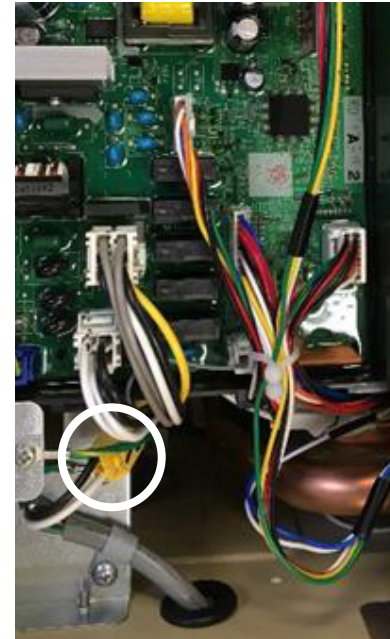
2. Remove top center screw from control board-mounting bracket, and 2 screws located on bottom.



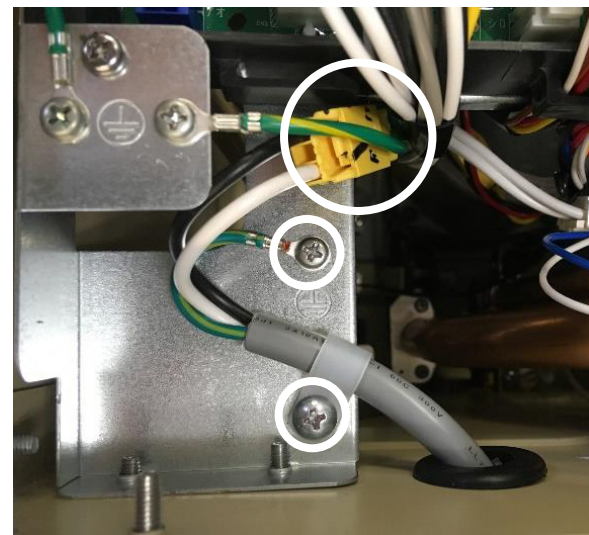
3. Pull control board bracket out of way to access components.

## 3.15 POWER CORD

1. Locate YELLOW Molex connector attached to power cord.



2. Disconnect YELLOW Molex connector and remove two screws from control board bracket as pictured below.



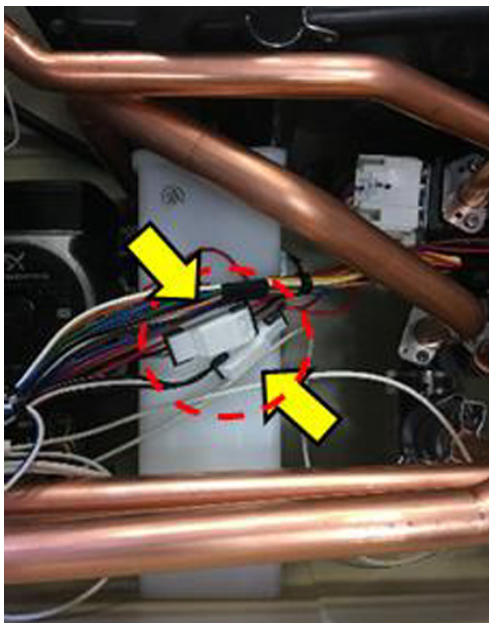
# HOW TO REMOVE COMPONENTS

## 3.16 THERMISTOR WIRING HARNESS

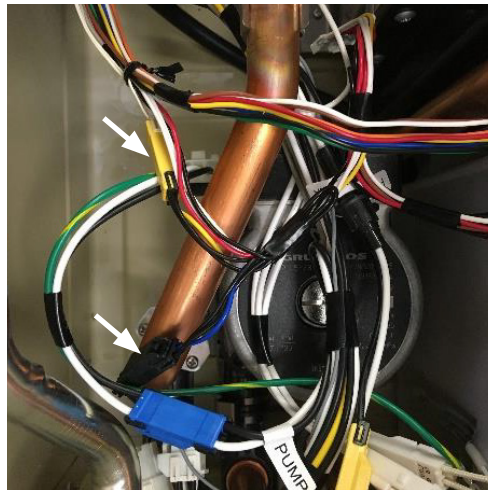
1. Remove connector "I" from control board.
2. Remove display, and control board with bracket from water heater.

**NOTE: To remove control board with bracket, refer to section "3.13 Display" and "3.14 Control board".**

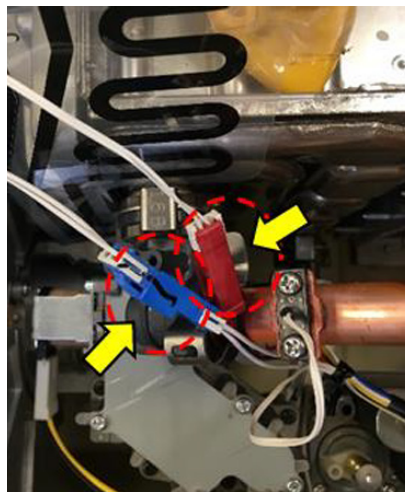
3. Remove the two (2) WHITE Molex connectors located at the front of the neutralizer.



4. Remove BLACK Molex connector connected to outlet thermistor and YELLOW Molex connector connected to heat exchanger thermistor.



5. Remove BLUE Molex connector connected to OHL (Overheat Limiter) and RED connector connected to exhaust thermistor.



# HOW TO REMOVE COMPONENTS

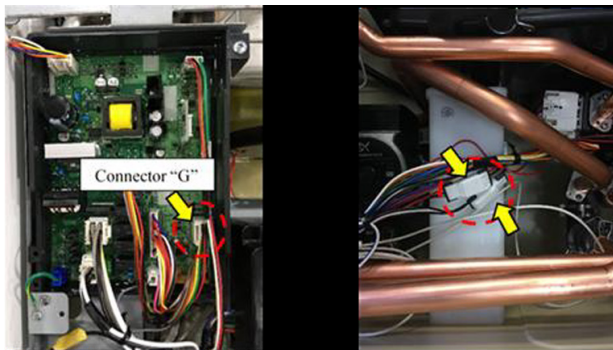
## 3.17 THERMISTOR WIRING HARNESS

**NOTE: Before removing outlet thermistor, turn off water to the water heater by closing the shut-off valve.**

1. Remove user interface (Display) from the water heater.

**NOTE: To remove the interface, refer to section "3.13 Display."**

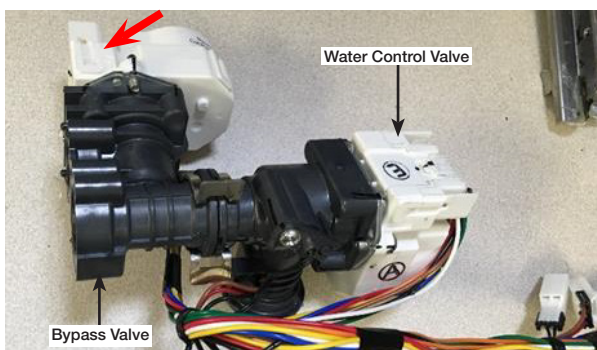
2. Remove water control wiring harness from the control board (connector "G").
3. Remove two WHITE Molex connectors located rear of the user interface.



4. Remove water control valve and bypass valve.

**NOTE: To remove this parts, refer to section "3.6 Water control valve".**

5. Remove water control wiring harness from each motor.
6. At this time, remove water flow sensor wiring and inlet water thermistor wiring from water control wiring harness



## 3.18 GAS CONTROL WIRING HARNESS

1. Remove connector "J" from control board and detach control board with bracket from water heater.

**NOTE: To remove control board with bracket, refer to section "3.14 Control board".**



2. Remove blower and venturi assembly.

**NOTE: To remove blower and venturi assembly, refer to section "3.12 Blower"**

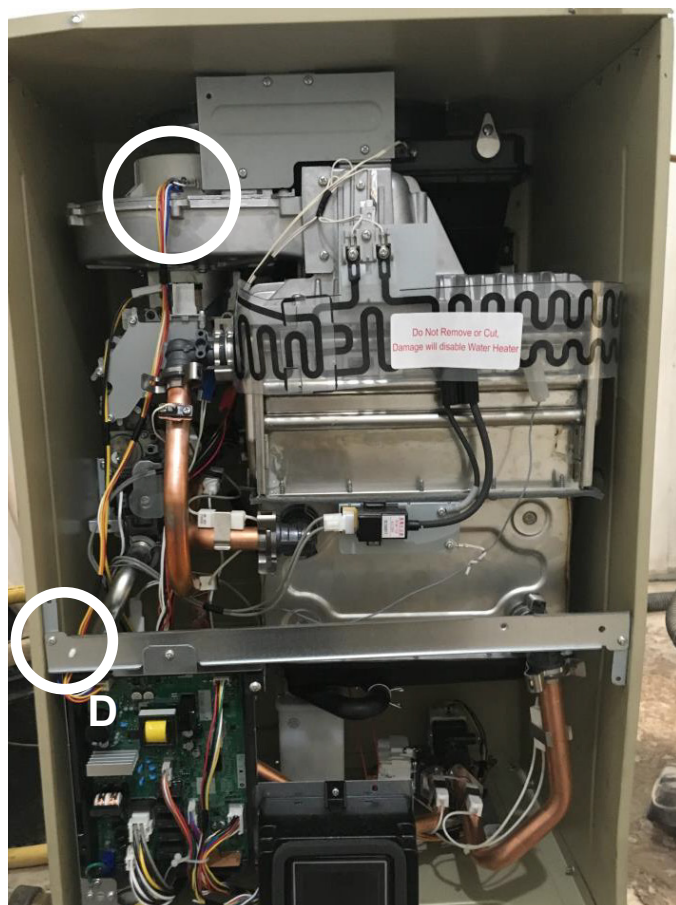
3. Remove gas control wiring harness from the motor located venturi assembly.



# HOW TO REMOVE COMPONENTS

## 3.19 FAN CONTROL WIRING HARNESS

1. Remove two (2) Molex connectors; one (1) on the blower, and D on the control board.
2. Remove wire holder from the bracket.



## 3.20 HIGH VOLTAGE GROUND WIRING

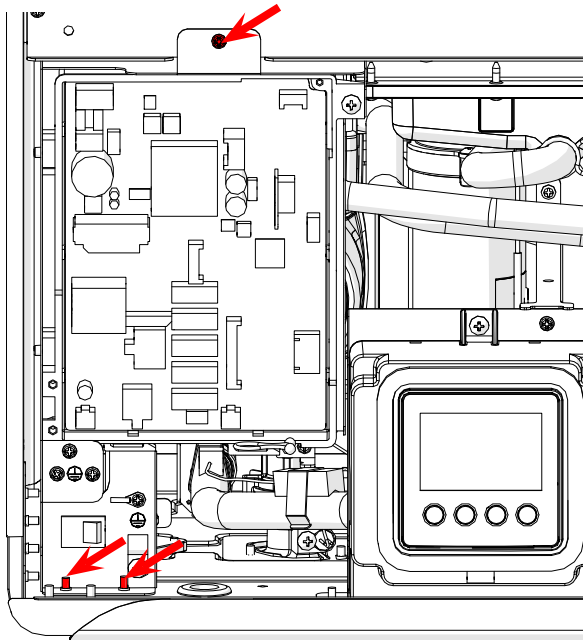
1. Remove the screw on the bracket and the cable on the LEFT.



# HOW TO REMOVE COMPONENTS

## 3.21 POWER CONTROL WIRING HARNESS

1. Remove total of three (3) screws; one (1) screw on the bracket on top, and two (2) screws below to detach the control board.

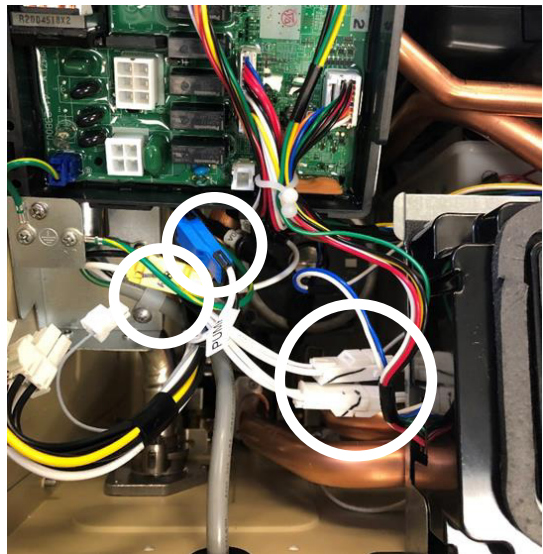


2. Remove total of three (3) connectors; A, C, H.



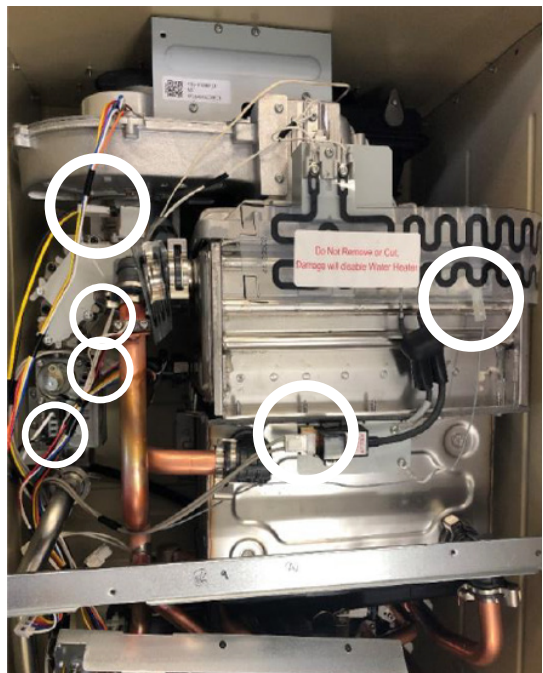
3. Shift the control board and locate total of four (4) Molex connectors; one (1) blue, one (1) yellow, two (2) white behind the control board.

4. Remove Molex connectors.



5. Trace the wiring harness and locate six (6) connectors; solenoid valve, gas-air ratio valve, two (2) white Molex connectors, igniter module, flame rod.

6. Remove connectors.





# HOW TO REMOVE COMPONENTS

## 3.22 DISPLAY CONTROL WIRING HARNESS

1. Remove the WHITE connector on the left side of the display.
2. Remove the connector E.

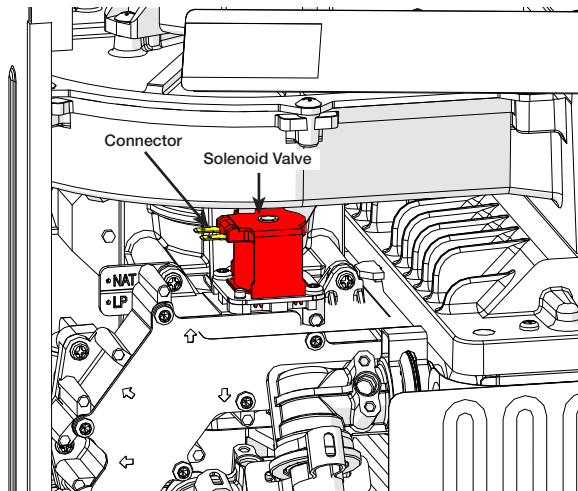


# HOW TO REMOVE COMPONENTS

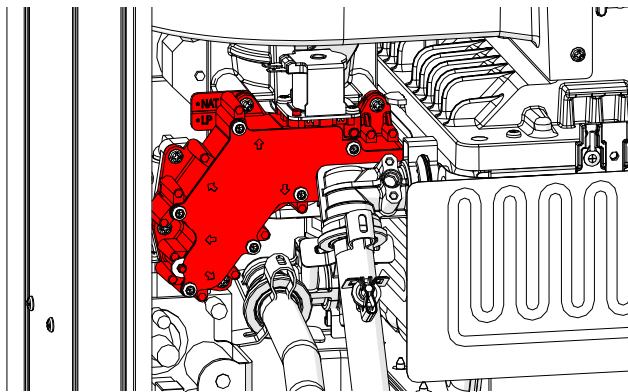
## 3.23 ORIFICE PLATE (NAT/LP)

1. Locate the solenoid valve shown in figure below and remove the connector with BLACK and YELLOW wires.

**NOTE: There is no need to remove any other wires or connectors.**



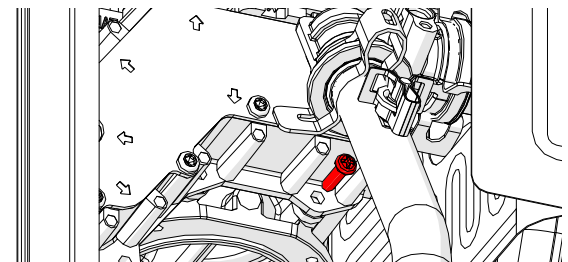
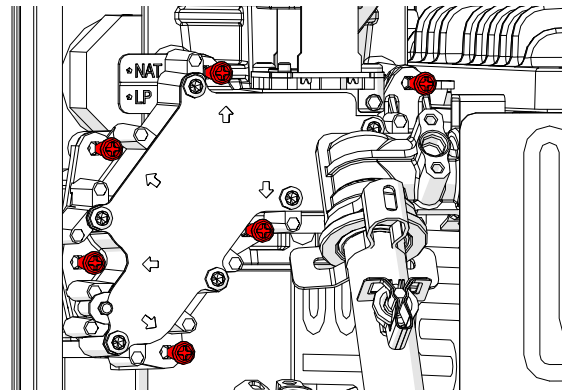
2. Locate the gas orifice block shown in the figure below.



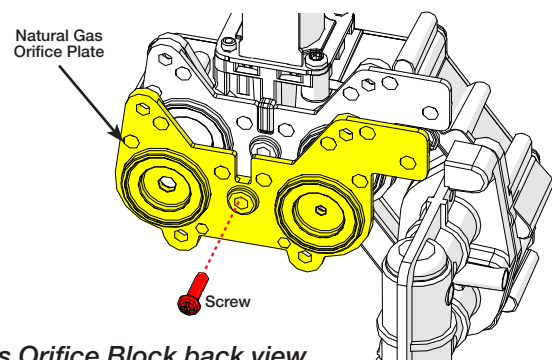
3. This component needs to be removed first, before the orifice plate can be replaced. There is no need to remove any other components
4. Remove gas orifice block by loosening the seven "Pan Phillips head" screws shown above.

**NOTE: Arrows on the front plate of the gas orifice block shows the screws that needs to be removed. DO NOT try to remove any other screws.**

5. The following figure shows the location of screws and arrows. Once the screws are loose, carefully remove the gas orifice block so as not to damage the solenoid valve or other parts. Save the screws that were removed in a safe plate.



6. Turn the gas orifice block so you can see the orifice plate and the screw holding the orifice plate to the gas orifice block.
7. Remove the screw in the middle and remove the natural gas (or LP gas) orifice plate. Replace the gaskets on the gas valve.

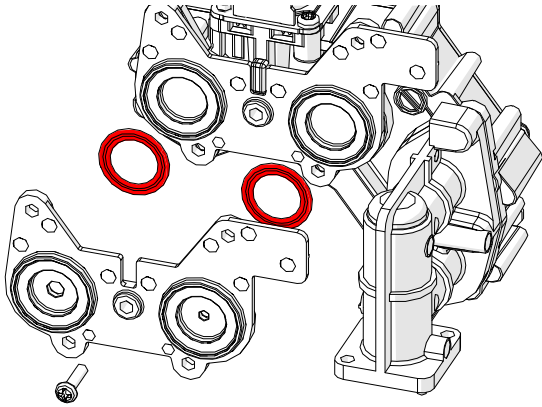


Gas Orifice Block back view.

# HOW TO REMOVE COMPONENTS

## 3.23 ORIFICE PLATE (NAT/LP)

8. Place two (2) gaskets on the LP (or NAT) orifice plate.



**NOTE: Install the orifice plate in the right orientation. To ensure a leak free joint verify both gaskets on the orifice plate and both on gas valve is in place and are in good condition, before attaching the gas orifice block.**

9. Install the LP (or NAT) orifice plate on to the gas orifice block, for use with LP (or NAT) gas.

**NOTE: To ensure a leak free joint, verify that both gaskets on the gas orifice block are in place and are in good condition, before attaching the LP (or NAT) orifice plate.**

10. Use the 7/16" long screw removed at step 7 to secure the orifice plate to the gas orifice block, DO NOT use different screw type or length.

# HOW TO CONNECT

## CONNECTING TO WIFI

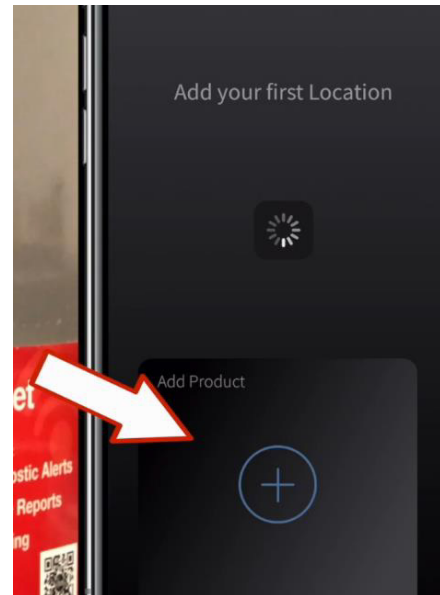
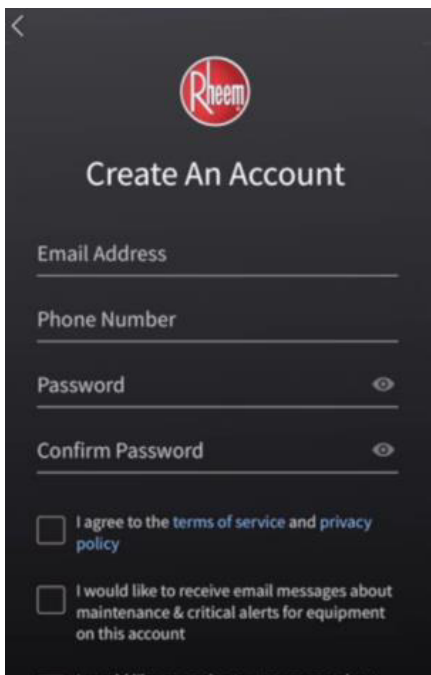
1. Scan the QR Code located on the side of the heater to download the EcoNet application.
4. Select "Add Product" on the Home screen.



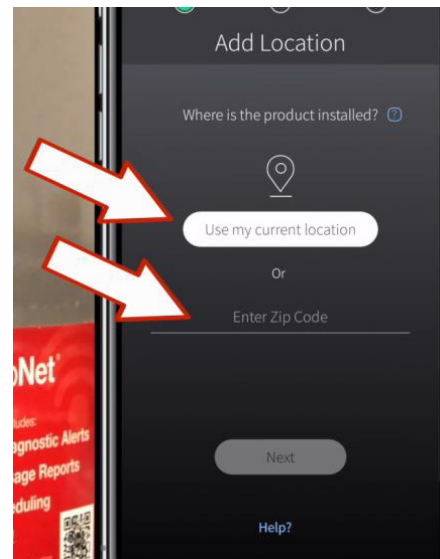
2. Press WiFi Set up on the unit to begin connecting.



3. Create an account in the EcoNet Application, and click "Submit."



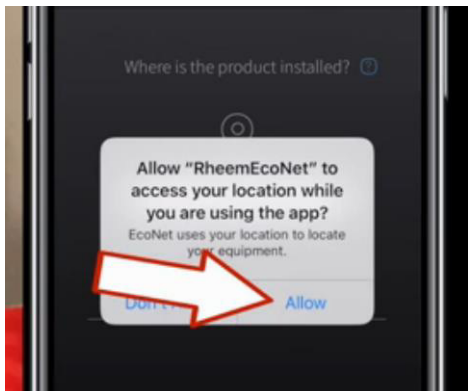
5. Enter your zip code or allow the app to use your location. When available, select NEXT.



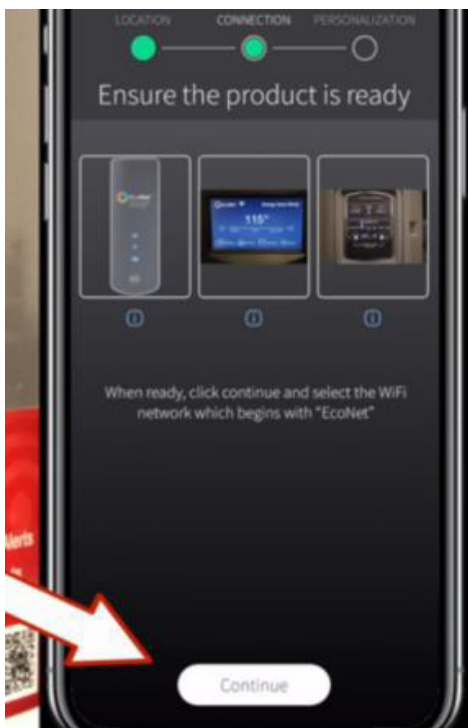
# HOW TO CONNECT

## CONNECTING TO WIFI

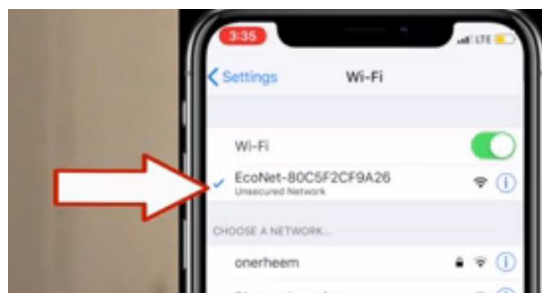
6. If using current location, select “ALLOW” when prompted to allow Rheem EcoNet to access your location while you are using the application.



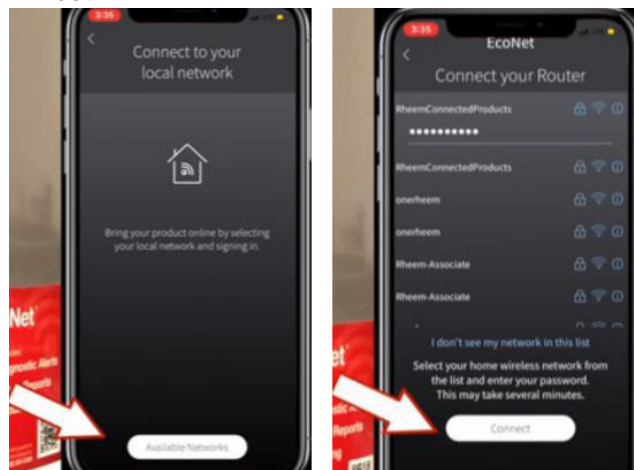
7. Ensure the product is ready to connect. The WiFi light should be flashing.



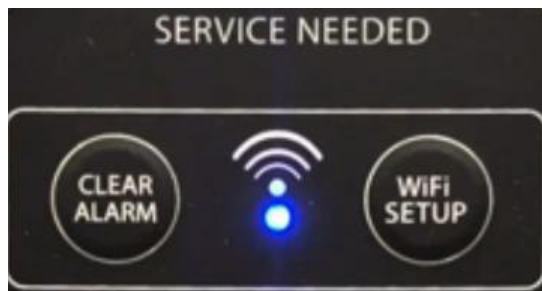
8. Go to the WiFi settings on your phone, and connect to the EcoNet network for your device.



9. Connect to your local network by clicking Available Networks and selecting your home WiFi network. Once you have selected your network, click Connect.



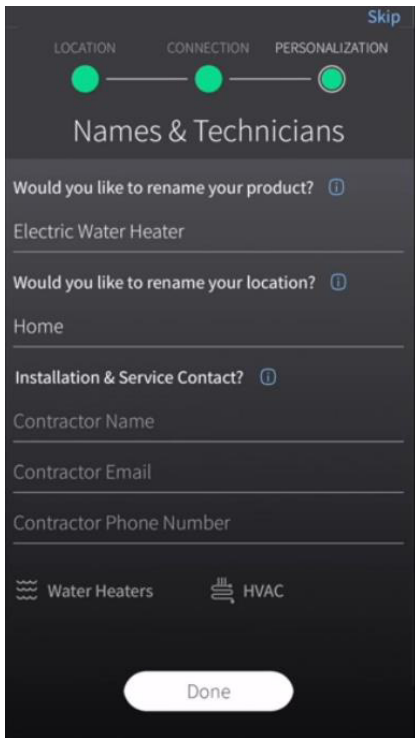
10. Once connected, the WiFi light should stop blinking and turn solid.



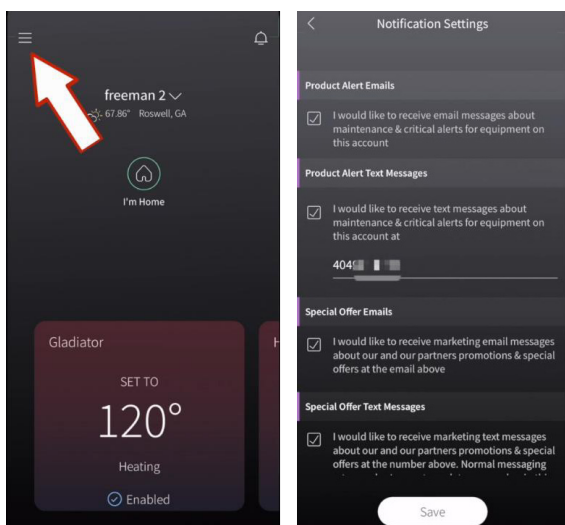
# HOW TO CONNECT

## CONNECTING TO WIFI

11. Once connected, the user may fill in the preferences, customizations, and contractor information.



12. Go to Settings, select Account, then select Notification Settings to adjust preferences.



13. Click Save to save notification settings and the set up will be complete.

# DIAGNOSTIC MODE

For additional unit information, you can connect directly to the water heater via diagnostic mode and use the Rheem Contractor app for more details including alarm and alert information. To connect to the water heater via diagnostic mode follow these steps.

1. Press the Wi Fi step up button until the unit beeps and the Wi Fi LED blinks blue.
2. From the Rheem contractor app click on the settings icon and select diagnostics Info.
3. Press the connect button in the app.
4. Follow the on screen instructions.
5. Once connected you can view detailed alarm history and network configuration settings.
6. Once complete, close the app.
7. If your water heater was connected to your home network previously, it will return to that network.

**NOTE: While connected to the contractor app, the heater will not be connected to the WiFi for 30 minutes. If the contractor finishes up within 30 minutes, he/she can push the WiFi setup button to connect it back to the previous network. The heater will automatically reconnect to the WiFi after thirty minutes.**



**TECHNICAL SUPPORT LINE**

Phone: 800-432-8373

Fax: 334-260-1341

**ORDER CENTER**

1-800-621-5622

**RHEEM WATER HEATERS**

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Montgomery, AL 36109

Website: [www.Rheem.com](http://www.Rheem.com)

e-mail: [Techserv@Rheem.com](mailto:Techserv@Rheem.com)