

Rinnai

PERFORMANCE DATA

To View Performance Data:

- Press and hold the **▼ (Down)** button for two seconds (Fig 1).
- While holding the **▼ (Down)** button, press and hold the **“Domestic Hot Water” (DHW)** button (hold both buttons at the same time) (Fig 1).
- Use the **▲ (Up)** and **▼ (Down)** buttons (Fig 2) to scroll to the desired information described in Table 1(A), Performance Data.
- The data for the performance number automatically appears in the display (Fig 3).
- To exit performance data, repeat step 2 above.

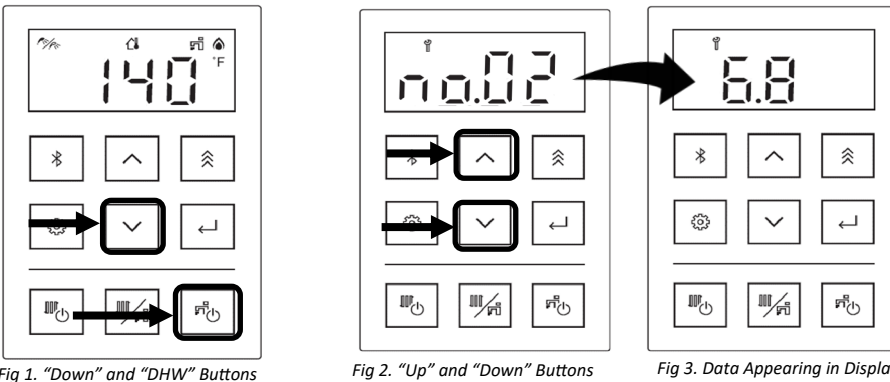


Fig 1. "Down" and "DHW" Buttons Fig 2. "Up" and "Down" Buttons Fig 3. Data Appearing in Display

#	Data	Unit
01	Water Pressure	PSI/bar*
02	Supply Temperature	°F/°C*
03	Outdoor Temperature	°F/°C*
04	Return Temperature	°F/°C*
05	Freeze Protection Temperature	°F/°C*
06	Exhaust Temperature	°F/°C*
07	Fan Frequency	Hz
08	Venturi Position	0=Closed, 1=Open
09	Venturi Cycles	x100
10	Pump Cycles	x100
11	Pump Hours	x10
12	Pump for Boiler	0=OFF, 1=ON
13	Pump for System (Pumps 1-3)	See Table 1(B) to right for more information.
14	See Table 1(B) to right for more information.	0=OFF, 1=ON

Pump	ON	OFF
Pump 1	__ _1	__ _0
Pump 2	__ _1	__ _0
Pump 3	__ _1	__ _0

Units of Measurement	Temp.	Water Flow	Pressure
1: English	°F	gal/min	psi
2: Metric	°C	L/min	bar

* See "Units of Measurement" section to right.

ELECTRICAL DIAGNOSTICS

COMPONENT	WIRE COLOR	VOLTAGE	RESISTANCE	PCB CONNECTOR	PCB PIN
Power Supply	Black-White	AC108~132V	N/A	CN200	1-3
Flame Rod	Black-Body	More than 0.5VAC	N/A	CN8	20
Spark Electrode	White-Black	11~14VDC*	N/A	CN7	1
Combustion Fan	Red-Black	7~48VDC*	N/A	CN7	18-19
	White-Black	2~14VDC*	N/A	CN7	16-18
Venturi Control Device	Blue-Black	N/A	350~550Ω	CN11	1-9, 2-9, 3-9, & 4-9
	Red-Black	N/A	8-11, 8-12, 8-13, & 8-14	CN11	8-11, 8-12, 8-13, & 8-14
Gas Solenoid Valve	Yellow-Black	4~6VDC*	N/A	CN11	8-16 & 6-7
Exhaust Thermistor	White-White	11~14VDC*	15~25Ω	CN8	11-12
	White-White	N/A	59°F: 11.4-14kΩ 85°F: 6.4-7.8kΩ 113°F: 3.6-4.5kΩ 140°F: 2.2-2.7kΩ 221°F: 0.6-0.8kΩ	CN7	3-6
Heat Exchanger Thermistor	White-White	N/A	113°F: 3.6-4.5kΩ 140°F: 2.2-2.7kΩ 221°F: 0.6-0.8kΩ	CN7	11-14
Supply Thermistor	White-White	N/A	113°F: 3.6-4.5kΩ 140°F: 2.2-2.7kΩ 221°F: 0.6-0.8kΩ	CN7	5-6
Return Thermistor	White-White	N/A	113°F: 3.6-4.5kΩ 140°F: 2.2-2.7kΩ 221°F: 0.6-0.8kΩ	CN7	8-10
Freeze Protection Thermistor	Black-Black	N/A	113°F: 3.6-4.5kΩ 140°F: 2.2-2.7kΩ 221°F: 0.6-0.8kΩ	CN7	7-10
Transformer	White-Grey	AC108~132V	N/A	CN202	1-2
	Red-Red	AC20~30V (Possible to measure at Output terminal as substitute position)	N/A	CN202	3-4
Overheat Switch	Black-Black	Less than 1VDC	Less than 2Ω	CN8	4-15
Water Pressure Sensor	Red-Black	11~14VDC	N/A	CN8	5-9
	Yellow-Black	0 kPa: 655-745 mV; 200 kPa: 2,155-2,245 mV; 400 kPa: 3,655-3,745 mV	N/A	CN8	1-9
Water Level Electrode	White-White	11~14VDC	N/A	CN8	13-14
Integrated Pump	White-Black	AC108~132V	N/A	CN101	1-2
Control Panel	Black-Black	11~14VDC	N/A	CN6	1-2

* When the unit is operating.

PC BOARD BUTTONS

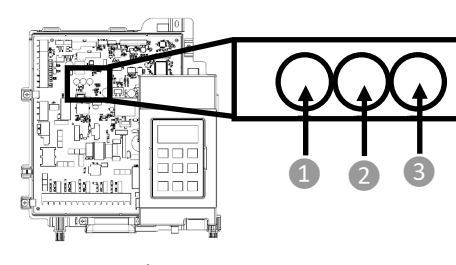


Fig 4. PC Board Buttons

Item #	PC Board Switch #	Primary Function	Notes
1	Button 1	Parameter Setting Mode	Refer to section "12.4 Parameter Settings" in Boiler Installation and Operation Manual.
2	Button 2	Deaeration Mode	Refer to section "10. Commissioning" in Boiler Installation and Operation Manual.
3	Button 3	Data Transfer Mode/Test Combustion Mode/Flushing Mode	This is for transferring PCB data when replacing the PCB. Refer to the instructions included in the replacement parts. Also, this is used for setting the boiler into forced combustion mode and flushing mode.

Important Safety Notes

There are a number of (live) tests required when performing electrical diagnostics on this product. Proceed with caution at all times to avoid contact with energized components inside the boiler. Only trained and qualified service technicians should attempt to repair this product. Before checking for resistance readings, disconnect the power source to the unit and isolate the item from the circuit (unplug it).

Electrical Diagram
Refer to the Wiring Diagram attached to the back of the boiler front cover.

Flame Rod
Place one lead of your meter to the flame rod and the other to the ground. When the unit is attempting to ignite, you should read more than 2 VAC.

Amp Fuses
This unit has two (2) amp glass fuses located on the PC Board. Remove the fuses and check continuity through it. If you have continuity through each fuse, then it is functioning. Otherwise, the fuse is blown and must be replaced.

PARAMETER SETTINGS

- To access the parameter settings, press and hold the SW 1 Button on the PC Board for five seconds (Fig 5). 00-R appears on the display (Fig 6).

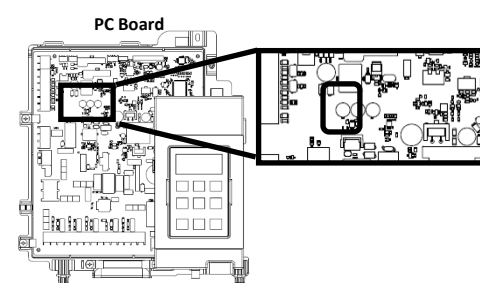


Fig 5. SW 1 Button on PC Board

Parameter #	Setting Description	A (Default)	Selection						
			b	C	d	E	F	H	
00	Outdoor Temperature Sensor: Enables or disables the outdoor temperature sensor.	In Use	Not In Use						
01	Outdoor Reset Curve: (*) This parameter shows up only when selecting Outdoor Temperature Sensor "In Use" as selecting parameter number 00. For selecting outdoor reset curve, see below: Curve 1: Standard baseboard, high efficiency air handler, cast iron or panel radiators, Curve 2: Staple up radiant, Curve 3: High temperature air handler or oversized baseboard. Curve 4: Low Mass Radiant, Curve 5: High Mass Radiant, Curve 6: Radiators, Curve 7: Custom curve based on customer input.	1	2	3	4	5	6	7	
02	Boost: Available when parameter 02 is selected as "A." Boost Mode increases the CH set temperature above the outdoor reset curve target when the boiler has been running on an unusually long call for heat.	30 Minutes	60 Minutes						
03	Maximum Outdoor Temperature: Available when parameter 02 is set to "A." Sets maximum outdoor temperature the boiler will fire in CH mode and can prevent boiler from firing in warm outdoor temperatures.	No Maximum	77°F (25°C)						
04	Service Soon: SS is a time-based service indicator set during installation.	Disabled	0.5 Year	1 Year	2 Years				
05	Pressure Indication on Controller Panel: The current pressure will cycle on the controller display. If an external pressure gauge is present, it is permissible to change the setting to "No."	Yes	No						
06	De-Rate: This parameter is to limit maximum input when it is necessary.	No	Setting 1	Setting 2					
2B	Indirect Tank: Enables the Indirect Tank Function for Pump 4.	On	Off						
29	Indirect Tank Thermistor/Thermostat Selection: Selects the method of controlling the indirect tank.	Thermostat	Thermistor						
30	Indirect Tank Supply Temperature with Thermostat Control: This parameter is available when parameter number 2B is selected as "A" and parameter number 29 is selected as "b." This selects the supply temperature for the indirect tank when using a thermostat. 180°F (Default) is the maximum supply temperature. The higher the supply temperature to the tank, the quicker the tank will heat up. If this temperature is too high, select other settings as appropriate. Ensure the indirect tank supply temperature is 18°F (10°C) higher than the set point temperature of the tank thermostat.	180°F (82°C)	Tank Setting Temperature +18°F (10°C)	Tank Setting Temperature +27°F (15°C)					
31	Indirect Tank Supply Temperature with Thermostat Control: This parameter is available when parameter number 2B is selected as "A" and parameter number 29 is selected as "A." This selects the supply temperature for the indirect tank when using a thermostat. 180°F (Default) is the maximum supply temperature. The higher the supply temperature to the tank, the quicker the tank will heat up. If this temperature is too high, select other settings as appropriate.	180°F (82°C)	160°F (71°C)	140°F (60°C)					
32	Allowed indirect tank temperature drop before firing (with thermostat) This parameter is available when parameter number 2B is selected as "A" and parameter number 29 is selected as "b." This selects the differential temperature between the indirect tank setpoint temperature and the thermostat reading. The smaller the value, the more frequently the indirect tank will call for heat.	5.4°F (3°C)	10.8°F (6°C)	16.2°F (9°C)	21.6°F (12°C)				
33	Indirect Tank Operation Option This parameter is available when parameter number 2B is selected as "A." When a 3-Way Valve and the boiler pump are to be used for recovering the indirect tank, select "b." Only 120 VAC 3-Way Valves may be used in this application.	Use Pump	Use 3-Way Valve						
34	Indirect Tank Simultaneous Heating-Up This parameter is available when parameter number 2B is selected as "A" and parameter number 32 is selected as "A." This selects the operation of the indirect tank heating by priority or simultaneously with CH. When "Indirect Tank Priority" is selected, other pumps except for the indirect tank pump will not operate while the tank is being heated. When "Simultaneous Heating with Indirect Tank and CH", all pumps may operate simultaneously. When in Simultaneous mode, if the tank does not achieve the Indirect Tank Setpoint Temperature within 60 minutes, it will transition to Indirect Tank Priority.	Indirect Tank Priority	Simultaneous Heating with Indirect Tank and CH						
35	Indirect Tank Priority Time This parameter is available when parameter number 2B is selected as "A." This selects the time that the indirect tank will maintain priority. After this period of time passes, the indirect tank will cease to be heated and central heating will have priority. If there is still an indirect tank demand after 60 minutes passes of CH priority, indirect tank priority will begin again.	60 Minutes	40 Minutes	90 Minutes					
35	CH Temperature Limitation to Allow Simultaneous Operation with Indirect Tank This parameter is available when parameter number 2B is selected as "A." parameter number 32 is selected as "A" and parameter number 33 is selected as "b." This enables CH setting limitation during simultaneous heating. This can prevent unintentionally supplying high temperature supply water to low water heating temperature applications such as floor heating. During simultaneous operation, the heating supply temperature is based on the indirect tank supply temperature. When "NO" is selected, make sure that the CH system and heating application is designed to allow for the high supply temperature.	Yes	No						
40	Linked Operation Among Each CH Pumps This parameter enables linked operation among each CH pumps. For example, when parameter b is selected and T/T 1 is active, both pump 1 and 2 are ON. The T/T wire must be connected to the T/T1 connection. This setting is primarily for an application that requires two pumps or more for one zone, such as in use with an injection loop or similar system.	No	Linked Together CH Pump 1 and Pump 2	Linked Together CH pump 1, pump 2 and pump 3	Linked Together CH pump 1, pump 2, pump 3 and pump 4				
41	Linked Operation Between Main Boiler Pump and CH Pump 1: This enables the linked operation between the main boiler pump and CH pump 1. Example: when the main pump is on, pump 1 is also on.	No	Yes (Linked together)						
42	Main Pump Runs When the Target Temperature is Reached: This selects the mode of the main pump running when the target setpoint is achieved. This setting is for whether running on intervals to reduce pump operation or continuously running to reduce wait time to re-fire. Intervals are 10 minutes ON and 30 minutes OFF.	Continuously	Intervals						
43	External Pump Runs When the Temperature is Reached: For selecting the mode of external pump running when the temperature is reached to setting. This is setting for whether stopping external pump running to reduce pump operation timing or operating as same as main pump operation to enable to deliver remained heat in heat exchanger.	Same as Main Pump	Does Not Run						
44	External Pump Running at Freeze Protection Operation: Selects the mode of external pump running when freeze protection operation. This is setting for whether stopping external pump running to reduce pump operation timing or operating as same as main pump operation to enable to deliver remained heat to the system for keeping system piping from freezing. But it could reduce the temperature inside heat exchanger.	Does Not Run	Same as Main Pump						
45	Freeze Protection Level: This selects the freeze protection level. Selecting "b" will prevent the boiler from operating in freeze protection mode more than believed necessary.	Normal	For Warm Room Temp						
46	The Differential Temperature From Extinguishing Fire to Fire Again: How much temperature drop is permitted by the supply water thermistor before the boiler will fire again. When selecting "Quick", the boiler will fire more frequently and achieve more temperature control	Normal	Quick						
46	CH Setting Temperature	Temperature Drop	Temperature Drop						
47	The Time Which Not Allow to Fire Again for CH: For selecting time which not allow to fire again for CH after shutdown burner. This is setting for whether preventing from frequently operating unit or allowing frequent operation for quick heating up again.	Normal (3 Minutes)	Quick (10 Seconds)	15 (8°C)	15 (8°C)				
48	Heating Eco Mode On Time This setting changes the on time of the heating Eco mode. This mode enables greater energy savings by reducing the length of time the boiler is operating. The output temperature of the boiler is slower in this mode.	30 Minutes	15 Minutes						
50	Air Handler Connection: The setting changes to enable to AH output with linking pump 3.	No	Yes						
51	Air Handler Post Pump Extension Setting: Extending the post Pump timing of pump 3.	15 Seconds	40 Seconds						
60	N/A: Manufacture Use Only	Manufacture Use Only	Manufacture Use Only						
61	Thermostat Usage: Changes the mode between Thermostat Usage and Central Heating Button.	Thermostat Used	CH ON button used. Boiler fires based on return water temperature.						
62	Gas Type: For selecting gas type when conducting gas conversion.	Natural Gas	Liquid Propane						
63	Model: Manufacture Use Only	Manufacture use only	Manufacture use only						
64	Vent Material Used: This selects the venting material used. The boiler is set from the factory to be installed in a PVC venting system. If CPVC, PP, or other approved venting is used, this may be adjusted. See the section on PVC Safety Switch for more information.	PVC	Material other than PVC: CPVC, PP, or Other.						
65	Altitude Setting: Sets the elevation of the boiler installation.	Level 0: 0-2,000 ft (0-610m)	Level 1: 2,001-5,400 (610-1646m)	Level 2: 5,401-7,700 ft (1,646-2,347m)	Level 3: 7,701-10,200 ft (2,347-3,109m)				

Fig 6. "00-R" shown in display

Fig 7. "Up", "Down" and "Select" Buttons

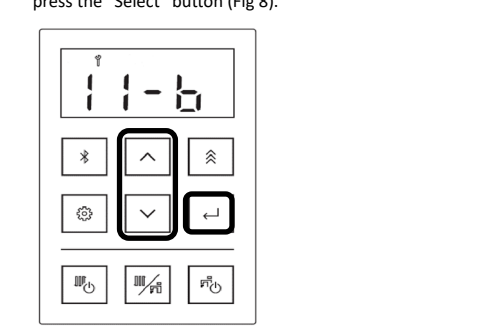


Fig 8. "Up", "Down" and "Select" Buttons

- To exit parameter settings and enter normal operation mode, press and hold the SW1 Button on the PC Board.

For more information on parameter settings, refer to the "I-Series Plus Condensing Boiler Installation and Operation Manual."

DIAGNOSTIC CODES

To Display Diagnostic Codes:

- Press and hold the "DHW" button for two seconds and then the **▲ (Up)** button simultaneously (Fig 9).
- The last nine maintenance codes display and flash one after the other.
- To exit diagnostic codes and return the boiler to normal operation, press and hold the "DHW" button for two seconds, and then the **▲ (Up)** button simultaneously.

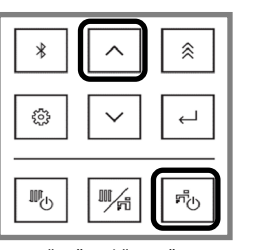


Fig 9. "Up" and "DHW" Buttons

Table 6. Error Reset

Code	Description	Reset Method
540	High Exhaust Temperature	Venturi Control (150), Gas Valve Adjustment Limit (180), Gas Valve Adjustment (220), High Exhaust Temperature (540), and Freeze Issue (890) can be reset by shutting down power to the boiler.
55	Service Soon (SS)	Venturi (170) and Solenoid Valve (540) allow only interlock rest. Please call Rinnai Technical Support.
FFF	Maintenance Indicator	Other error can be reset by Indirect Tank "On/Off" button or "Central Heating" (CH) button.

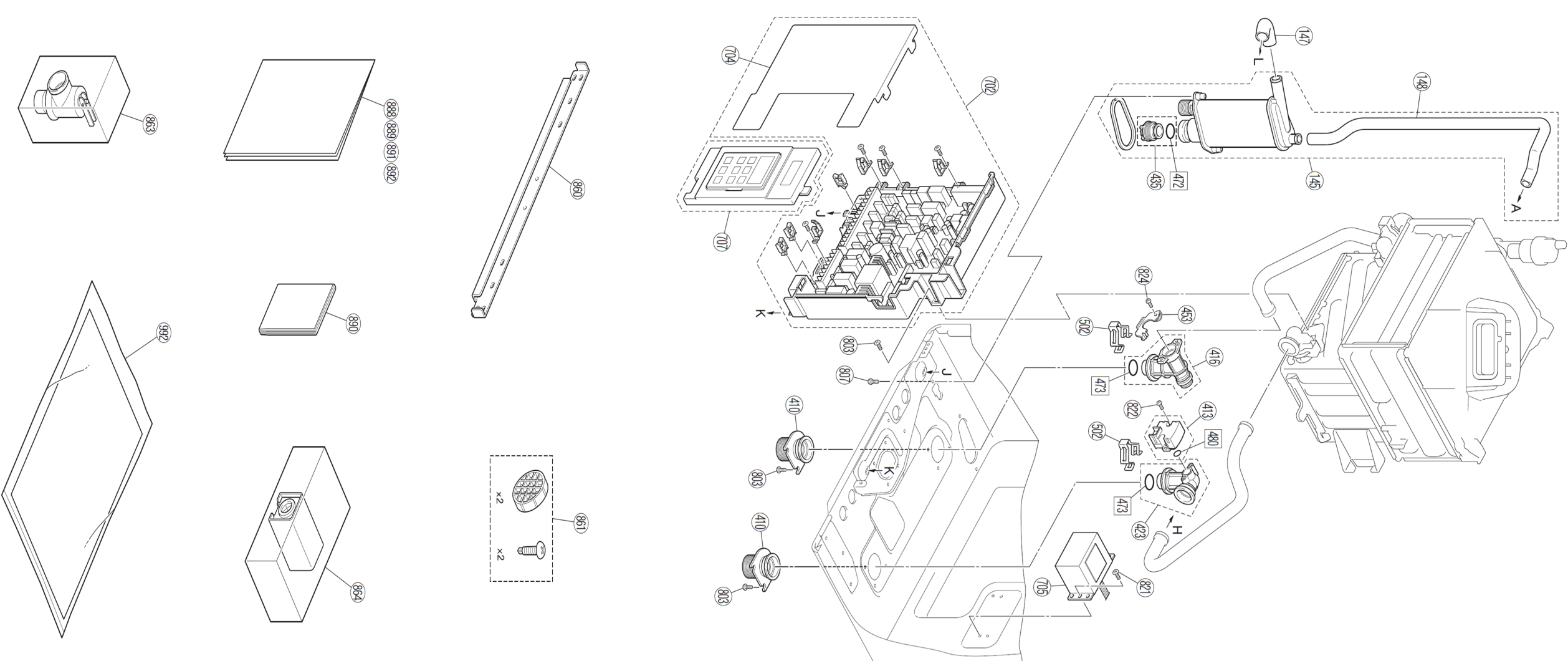
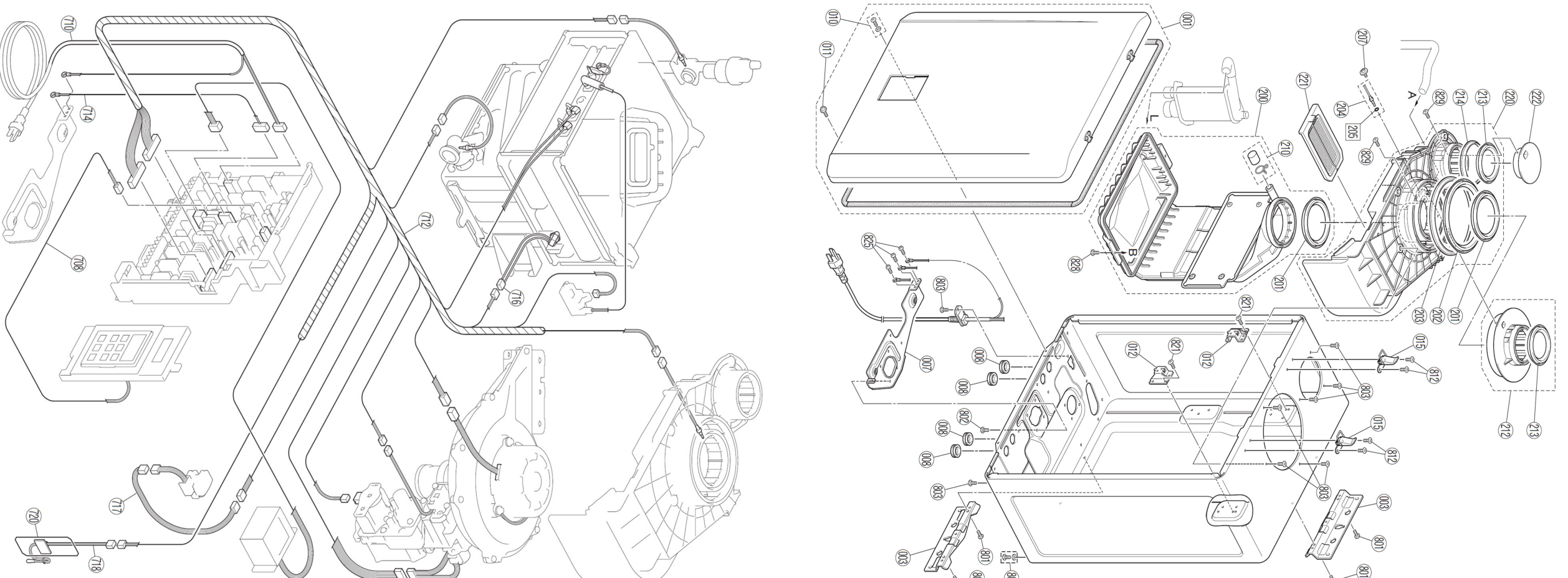
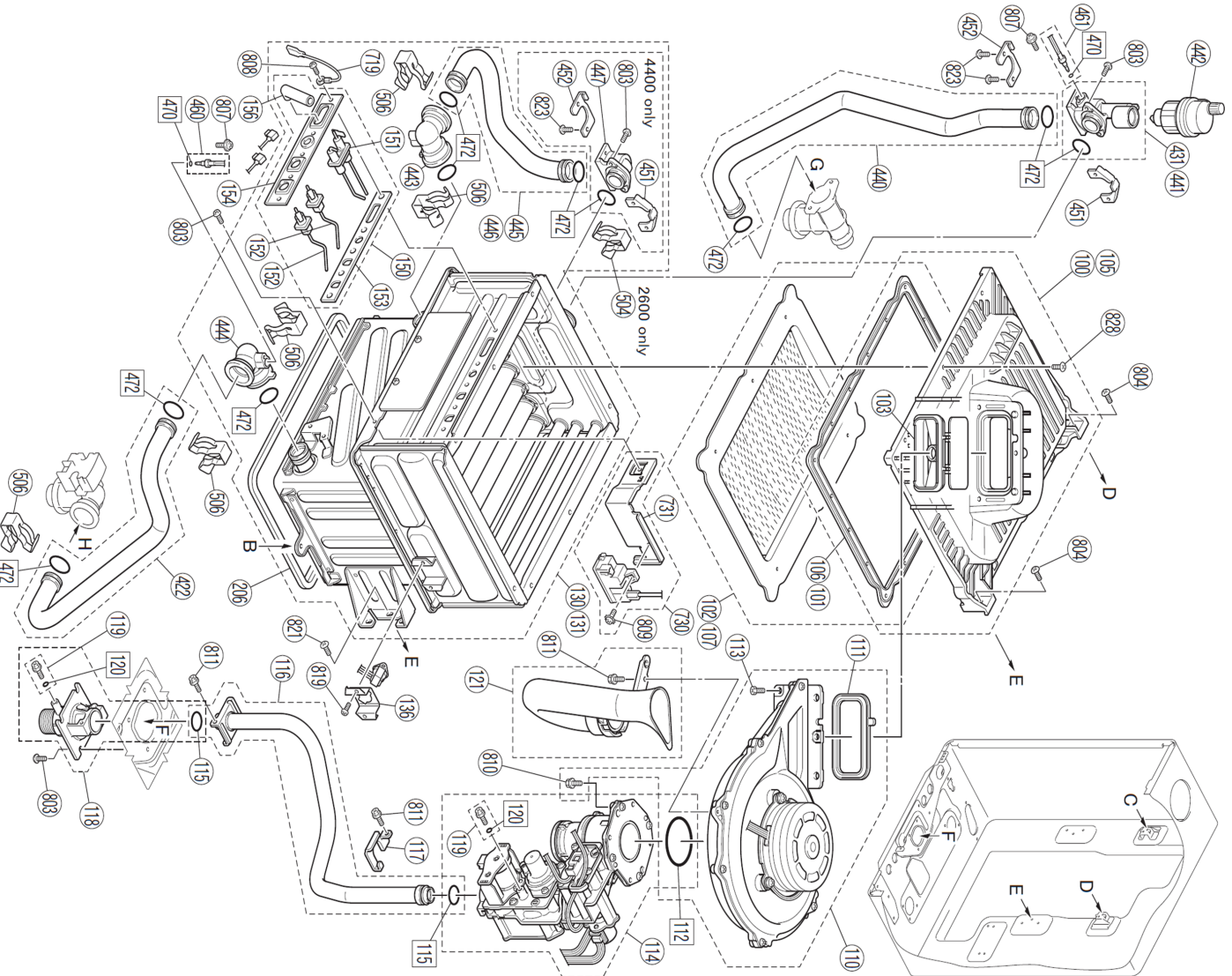
Table 7. Diagnostic Codes

Code	Description	Resolution
100	Air Supply or Exhaust Blockage/Condensate Trap is Full	<ul style="list-style-type: none"> Fan current initial check error. Ensure condensate line and trap is not blocked. Ensure internal air filter is clean with no obstructions. Ensure the resistance of the exhaust thermistor.* Ensure combustion air and exhaust vents are not blocked and the approved venting materials are being used. Ensure either the exhaust ring or intake cap is removed properly. Ensure vent length is within limits. Check fan for debris and ensure wheel turns freely. Verify fan check valve is not stuck between fan casing and burner body.
110	No Ignition (Unit Not Turning On)	<ul style="list-style-type: none"> Ignition Error. If the unit is installed in a propane system, ensure that gas is in the tank. Bleed all air from the gas lines. Check the ground wire for the PC Board. Ensure the flame rod wire is connected. Ensure the venting is installed in accordance to this manual. Ensure the venting is installed in accordance to this manual. Check that the surface of the electrode and flame rod are clean. Check gas solenoid valves for open or short circuits.* Verify gas orifice installed is correct for the gas system the unit is installed in. Check flame rod voltage to ground during ignition.
120	Flame Failure	<ul style="list-style-type: none"> Boiler has flame failure. Check that the gas is turned on at the boiler, gas meter, and/or propane cylinder. If the unit is installed in a propane system, ensure that gas is in the tank. Ensure the venting is installed in accordance to this manual. Ensure the flame rod wire is connected. Ensure the gas type and inlet gas pressure are correct. Bleed all air from the gas lines. Check the ground wire to the PC Board. Check flame rod voltage to ground during ignition.
140	Heat Exchanger Overheat	<ul style="list-style-type: none"> Overheat switch is tripped. Measure the resistance of the Overheat Switch.* Check the heat exchanger surface for hot spots which may indicate blockage due to scale buildup. Ensure the boiler pump is not locked up. Ensure that all of the valves in the CH circuit are open. Ensure the boiler and CH circuit does not have a freezing condition. The surface of the heat exchanger may turn to a black color as stainless steel is tempered even in normal conditions. This does not indicate an abnormal condition. Check for damage on the exhaust, seal, and venting.
150	Venturi Control	<ul style="list-style-type: none"> Venturi operation error. Ensure the venturi motor is operating correctly.* Replace the gas valve assembly.
160	High Outgoing Temperature	<ul style="list-style-type: none"> Safety shutdown because DHW outgoing temperature is too hot. Check sensor wiring for damage of outgoing thermistor. Measure resistance of outgoing thermistor.* Ensure the gas valve has no damage and the orifice is installed correctly. Replace the gas valve assembly.
170	Venturi Blockage	<ul style="list-style-type: none"> Check the venturi and silencer for blockage. Before resealing the error, check if the condensate drain is block and if the venting is connected properly.
180	Gas Valve Adjustment Limit	<ul style="list-style-type: none"> Ensure gas type is correct. Ensure the ground from PCB is correct. Ensure gas type parameter is correct. Please call Rinnai Technical Support.
190	Electrical Grounding	<ul style="list-style-type: none"> Secondary circuit ground fault. Check all electrical components for electrical short.
210	Data Transfer Error	<ul style="list-style-type: none"> If the PCB has been replaced, ensure the data transfer process is complete.
220	Gas Valve Adjustment	<ul style="list-style-type: none"> Ensure a Reed switch is located properly. Ensure the gas valve adjustment is operating correctly.*
250	Condensate Pump (Accessory)	<ul style="list-style-type: none"> Boiler will operate for 60 seconds. Confirm wire connections and harnesses are good. Ensure the condensate reservoir is empty and condensate pump is operational.
310	Freeze Protection Thermistor	<ul style="list-style-type: none"> Check sensor wiring for damage. Measure the resistance of the sensor. Replace if necessary.
350	Supply Thermistor	<ul style="list-style-type: none"> Check sensor wiring for damage. Clean the surface of the sensor. Measure the resistance of the sensor. Check the return thermistor. Replace if necessary.
360	Return Thermistor	<ul style="list-style-type: none"> Check sensor wiring for damage. Measure the resistance of the sensor. Replace if necessary.
370	Indirect Thermistor	<ul style="list-style-type: none"> Check if the indirect thermostat is not used at the setting for thermistor usage. Check sensor wiring for damage. Measure resistance of sensor and replace sensor, if necessary. Replace if necessary.
380	Exhaust Thermistor	<ul style="list-style-type: none"> Check sensor wiring for damage. Clean the surface of the sensor. Measure the resistance of the sensor. Check the return thermistor. Replace if necessary.
390	Outdoor Thermistor	<ul style="list-style-type: none"> Ensure that parameter number 00 is set to the appropriate position. Check sensor wiring for damage. Measure the resistance of the sensor. Replace if necessary.
400	Pressure Sensor	<ul style="list-style-type: none"> Check sensor wiring for damage. Measure the voltage of the sensor. Replace if necessary.
490	High/Low Water Pressure	<ul style="list-style-type: none"> If the water pressure is too low, add water into the system until at least 13 PSI is observed. Ensure there are no leaking components in the CH system. If the pressure is too high, adjust the pressure to a maximum of 30 PSI. Ensure the pressure relief valve and water fill are working correctly.
490	Low Water Cut-Off (LWCO)	<ul style="list-style-type: none"> Ensure the LWCO device is working correctly. Ensure the LWCO jumper is connected properly when LWCO is not in use. Ensure the output is 24 V AC. If it is not, a transformer is needed.
520	Solenoid Valve Circuit	<ul style="list-style-type: none"> Check the flame rod and wire for damage. Close the gas shut off valve installed near the boiler. Ensure the flame rod and wire are not wet. Check the output from the PC Board to the solenoid gas valve. If the output from the PC Board is abnormal, replace the PC Board. If the output from the PC Board is normal, replace the gas control.

* See "Electrical Diagnostics" section of this document.



Gas Conversion Kits		
Models	Gas Type	Kit Number
IP150S		
IP120S		
IP090S	NG/LPG	804000124
IP060S		



ITEM	DESCRIPTION	PART NUMBER	IP150S	IP120S	IP090S	IP060S
001	Front Cover Panel Assembly-FR	809000306	1	1	1	1
003	Wall Mount Bracket	109000594	2	2	2	2
007	Connection Reinforcement-Plate	809000307	1	1	1	1
008	Rubber Bushing	CF79-41020-A	4	4	4	4
010	Residential Screw and Washer	106000645	1	1	1	1
011	Ground Screw	109000076	1	1	1	1
012	Combustion Chamber Support Plate	109000597	2	2	2	2
015	Latch	109001393	2	2	2	2
100	Burner Assembly-Large	806000082	1	1	1	1
101	Burner Gasket-Large	109000609	1	1	1	1
102	Burner Plate Assembly-L	806000050	1	1	1	1
103	Combustion Check Valve Assembly	108000135	1	1	1	1
105	Burner Assembly-medium	806000083	1	1	1	1
106	Burner Gasket-medium	109000610	1	1	1	1
107	Burner Plate Assembly-M	806000052	1	1	1	1
110	Combustion Fan Assembly	108000130	1	1	1	1
111	Fan Mounting Packing	109001396	1	1	1	1
112	O-ring	109000612	1	1	1	1
114	Gas Valve Assembly	Z0A4A0514UK	3	3	3	3
115	O-ring	806000252	2	2	2	2
116	Gas Connection Pipe	806000085	1	1	1	1
117	Gas Tube Bracket	109000635	1	1	1	1
118	Inlet Gas Supply Connection	106000119	1	1	1	1
119	Inlet Gas Test Port Screw	106000138	2	2	2	2
120	O-ring	M108-13-4	2	2	2	2
121	Noise Filter	106000271	1	1	1	1
130	Heat Exchanger Assembly-Large	807000234	1	1	1	1
131	Heat Exchanger Assembly-Middle	807000235	1	1	1	1
136	OHS Bracket	109000614	1	1	1	1
145	Condensate Trap	807000236	1	1	1	1
147	Condensate Drain Tube	807000237	1	1	1	1
148	Drain Tube at Air Intake	807000238	1	1	1	1
150	Electrode/Flame Rod Assembly	805000150	1	1	1	1
151	Electrode	805000151	1	1	1	1
152	Flame Rod	805000152	1	1	1	1
153	Electrode Gasket	805000153	1	1	1	1
154	Electrode Plate	109001401	1	1	1	1
156	Electrode Sleeve	109000620	1	1	1	1
200	Exhaust Duct Assembly	808000044	1	1	1	1
201	Exhaust Gasket	109001403	2	2	2	2
202	Intake Gasket	109001404	1	1	1	1
203	Air Supply Seal Ring	109001405	1	1	1	1

ITEM	DESCRIPTION	PART NUMBER	IP150S	IP120S	IP090S	IP060S
204	Exhaust Thermistor	105002024	1	1	1	1
205	O-ring	107000323	1	1	1	1
206	Exhaust Duct Gasket	808000051	1	1	1	1
207	Thermistor Screw	109000622	1	1	1	1
210	Rubber Cap	109001407	1	1	1	1
212	Exhaust Adapter Ring	108000132	1	1	1	1
213	Air Inlet Seal Ring - 2 inch	109001408	1	1	1	1
214	Air Inlet Gasket	109001409	1	1	1	1
220	Duct Assembly	108000133	1	1	1	1
222	Air Inlet Filter	108000086	1	1	1	1
410	CH Connection	807000182	2	2	2	2
413	Water Pressure Sensor Assembly	807000185	1	1	1	1
416	Plate HEX-CH Heating Connection-2	807000209	1	1	1	1
422	CH Heating Return Pipe Assembly	807000208	1	1	1	1
423	CH Heating Connection Assembly	807000193	1	1	1	1
431	Heat Exchanger Pipe Connection	807000193	1	1	1	1
435	Trap Drain Plug Assembly	807000195	1	1	1	1
440	HEX-CH Heating Connection Pipe	807000196	1	1	1	1
441	Heat Exchanger Pipe Connection-medium	807000197	1	1	1	1
442	Air Vent	808000052	1	1	1	1
443	Secondary Heat Exchanger Outlet Fitting	807000198	1	1	1	1
444	Secondary Heat Exchanger Inlet Fitting	807000199	1	1	1	1
445	Primary-Secondary Pipe Assembly-Large	807000200	1	1	1	1
447	Primary-Secondary Pipe Assembly-Medium	807000201	1	1	1	1
447	Primary-Secondary Connecting Fitting	807000202	1	1	1	1
451	Pipe Bracket	809000168	2	2	2	2
452	Retention Clip	809000169	2	2	2	2
453	Pipe Bracket	809000170	1	1	1	1
460	Thermistor Sensor	805000154	1	1	1	1
461	Thermistor Sensor	805000155	1	1	1	1
470	O-ring	807000215	2	2	2	2
472	O-ring	807000204	11	11	11	11
473	O-ring	807000205	2	2	2	2
480	O-ring	807000207	1	1	1	1
502	Clip	809000173	2	2	2	2
504	Clip	809000174	1	1	1	1
506	Clip	109000638	5	5	5	5
702	PC Board - CH	805000167	1	1	1	1
704	PCB Cover	809000312	1	1	1	1
705	Power Transformer	805000158	1	1	1	1
707	Controller Unit	805000159	1	1	1	1
708	Controller Unit Harness	105002042	1	1	1	1

ITEM	DESCRIPTION	PART NUMBER	IP150S	IP120S	IP090S	IP060S
710	Power Cord	805000160	1	1	1	1
712	Sensor Harness-2	805000168	1	1	1	1
714	Heater Ground Harness	805000162	1	1	1	1
716	Over Heat Switch	805000164	1	1	1	1
717	Water Pressure Connection Harness	805000090	1	1	1	1
718	Thermistor Sensor	805000165	1	1	1	1
719	Igniter Ground Harness	105000243	1	1	1	1
720	Guide Seal	809000176	1	1	1	1
730	Igniter Assembly (Module)	805000183	1	1	1	1
731	Igniter Plate	805000166	1	1	1	1
800	Screw	109000746	4	4	4	4
801	Screw	CP-30583	4	4	4	4
802	Screw	ZBA0408UK	3	3	3	3
803	Screw	CP-30580	25	25	25	25
804	Screw	109000648	2	2	2	2
807	Screw	U217-449	6	6	6	6
808	Screw	109001417	5	5	5	5
809	Screw	CP-80452	1	1	1	1
810	Screw	109000179	3	3	3	3
811	Screw	109001416	3	3	3	3
812	Screw	109000649	4	4	4	4
821	Thermistor screw	ZFA80406UK	2	2	2	2
821	Truss Screw	109000598	14	14	14	14
822	Screw	809000178	2	2	2	2
824	Screw	809000179	1	1	1	1
825	Screw	109000179	3	3	3	3
828	Screw	109000793	2	2	2	2
829	Ground Screw	809000182	10	10	10	10
829	Screw	809000310	2	2	2	2
840	Cable Clip	109001297	1	1	1	1
841	Cable Clip	809000311	1	1	1	1
842	Cable Clip	CP-90124-3	1	1	1	1
860	Mount Bracket	109000628	1	1	1	1
861	Vent Screen Set	108000104	1	1	1	1
863	Pressure Relief Valve	807000211	1	1	1	1
864	Outdoor Thermistor Kit	803000081	1	1	1	1
888	User Manual - EN	800000193	1	1	1	1
889	Installation Manual - EN	800000191	1	1	1	1
890	Tech Sheet	800000196	1	1	1	1
891	User Manual - FR	800000206	1	1	1	1
892	Installation Manual - FR	800000207	1	1	1	1
992	Gas Conversion Kit	804000124	1	1	1	1