Rinnai

PERFORMANCE DATA

To View Performance Data:

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

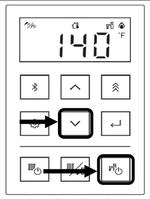


Fig 1. "Down" and "DHW" Buttons

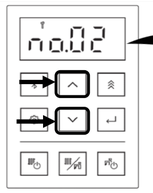


Fig 2. "Up" and "Down" Buttons

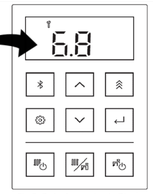


Fig 3. Data Appearing in Display

Table 1(A). Performance Data

#	Data	Unit
01	Water Pressure	PSI/bar[1]
03	Supply Temperature	°F/°C[1]
04	Return Temperature	°F/°C[1]
05	Freeze Protection Temperature	°F/°C[1]
06	Exhaust Temperature	°F/°C[1]
#	Fan Frequency	Hz
17	Venturi Position	0=Closed, 1=Open
18	Venturi Cycles	x100
20	Pump Cycles	x100
21	Pump Hours	x10
22	Pump for Boiler	0=OFF, 1=ON
23	Pump for System (Pumps 1-3) See Table 1(B) to right for more information.	0=OFF, 1=ON
24	Pump for System (Pump 4)	0=OFF, 1=ON
30	Indirect Tank Thermistor Temperature	°F/°C[1]
31	Outdoor Temperature	°F/°C[1]
33	Secondary System Temperature	°F/°C[1]
40	Energization Hours	x100
41	Combustion Hours	x10
42	Combustion Cycles	x100
45	Commissioning Cycles	x1

[1] See "Units of Measurement" section to right.

Table 1(B). Pump for System (1-3)

Pump for System (1-3)		
System Pump	ON	OFF
Pump 1	_ _ _1	_ _ _0
Pump 2	_ _1_	_ _0_
Pump 3	_1_ _	_0_ _

Units of Measurement

1. Press the "Settings" button.
2. Press the ▲ (Up) or ▼ (Down) arrows to select a unit of measurement (refer to Table 2).

Table 2. Units of Measurement

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

ELECTRICAL DIAGNOSTICS

Table 3. Diagnostic Points

COMPONENT	WIRE COLOUR	VOLTAGE	RESISTANCE	PCB Connector	PCB PIN
Power Supply	Black-White	AC108～132V	N/A	CN200	1-3
Flame Rod	Yellow(Black)-Body	more than 0.5VAC	N/A	CN7	17
Spark Electrode	White-Black	11～14VDC*	N/A	CN8	2-3
Combustion Fan	Red-Black	7~48VDC*	N/A	CN7	18-19
	White-Black	2~14VDC*	N/A	CN7	16-18
	Yellow-Black	11~14VDC*	N/A	CN7	17-18
Venturi Control Device	Blue-Blue	N/A	33~43Ω	CN11	1-2 3-4
	Blue-Black	11～14VDC	N/A	CN11	1-9
	Black-Black	Close Position: less than 1VDC Open Position: 4-6VDC		CN11	6-7
	Gray-Black	Close Position: 4-6VDC Open Position: less than 1VDC		CN11	5-7
Gas Solenoid Valve	Yellow-Black	11～14VDC[2]	15～25Ω	CN8	11-12
Exhaust Thermistor	White-White	N/A	59°F：11.4-14kΩ 86°F：6.4-7.8kΩ 113°F：3.6-4.5kΩ 140°F：2.2-2.7kΩ 221°F：0.6-0.8kΩ Disconnect the connector and measure at thermistor side.	CN7	3-6
Heat Exchanger Thermistor	White-White			CN7	6-11
Supply Thermistor	White-White			CN7	5-14
Return Thermistor	White-White			CN7	8-10
Freeze Protection Thermistor	Black-Black		32°F：38k～43k 50°F：22k～26k 68°F：14k～17k Disconnect the connector and measure at thermistor side.	CN7	7-14
Transformer	White-Grey	AC108～132V	N/A	CN202	1-2
	Red-Red	AC20～30V (possible to measure at Output terminal as substitute position)		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	0kPa：655～745mV 200kPa：2155～2245mV 400kPa：3655～3745mV		CN8	1-9
Water Level Electrode	White-White	11～14VDC	N/A	CN8	13-14
Control Panel	Black-Black	11～14VDC	N/A	CN6	1-2

[2] When the unit is operating.

PC BOARD BUTTONS

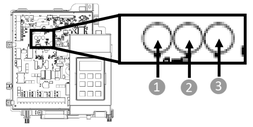


Fig 4. PC Board Buttons

Table 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

1. 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).

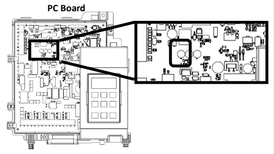


Fig 5. SW 1 Button on PC Board

2. Press the ▲ (Up) or ▼ (Down) arrows to select a parameter setting. Then, press the "Select" button (Fig 7).

Fig 6. "00-R" shown in display

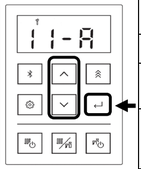


Fig 7. "Up," "Down" and "Select" Buttons

3. Press the ▲ (Up) or ▼ (Down) arrows to change the selection for the setting number (such as 11-R or 11-b). Then, press the "Select" button (Fig 8).

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

4. 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."

Table 5. Parameter Settings

Parameter #	Setting Description	Selection: A (Default)	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 undersized 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 00 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 00 is set to as "A." Sets maximum outdoor temperature the boiler will fire in CH mode and can prevent boiler from firing in warm outdoor temperatures.	77°F (25°C)	No Maximum					
04	**Service Soon:** 55 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				
28	**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 Thermistor Control:** This parameter is available when parameter number 28 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. **Indirect Tank Supply Temperature with Thermostat Control:** This parameter is available when parameter number 28 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) 180°F (82°C)	Tank Setting Temperature +18°F (10°C) 160°F (71°C)	Tank Setting Temperature +27°F (15°C) 140°F (60°C)				
31	**Allowed indirect tank temperature drop before firing (with thermistor)** This parameter is available when parameter number 28 is selected as "A" and parameter number 29 is selected as "b." This selects the differential temperature between the indirect tank setpoint temperature and thermistor 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)			
32	**Indirect Tank Operation Option** This parameter is available when parameter number 28 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					
33	**Indirect Tank Simultaneous Heating-Up** This parameter is available when parameter number 28 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					
34	**Indirect Tank Priority Time** This parameter is available when parameter number 28 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 28 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. Note: Selection d is not available when using an Indirect tank.	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 CH Setting Temperature 168°F -182°F (75-82°C) 104°F -166°F (40-74°C)	Normal Temperature Drop 27°F (15°C) 15°F (8°C)	Quick Temperature Drop 15°F (8°C) 9°F (5°C)					
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)					
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					
55	**0-10V Input Setting :** Extending the post Pump timing of pump 3.	No	Setting temperature range Set temperature —36°F (20°C)	Setting temperature range Set temperature —54°F (30°C)	Setting temperature range Set temperature —72°F (40°C)			
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.					
70	**System Thermistor Control :** Enables system temperature control using the system thermistor on the secondary loop of a cascade system.	Not In Use	In Use					
71	**Cascade :** Setting Primary or Secondary unit assignment.	Secondary	Primary					
72	**Cascade Units in Standby :** Sets which unit in the cascade is the primary unit..	1	2	3	4	5	6	
A0	**Gas Type:** For selecting gas type when conducting gas conversion.	Natural Gas	Liquid Propane					
A1	**Model:** Manufacture Use Only	Manufacture use only	Manufacture use only					
A2	**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.					
A3	**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)			

DIAGNOSTIC CODES

To Display Diagnostic Codes:

1. Press and hold the "DHW" button for two seconds and then the ▲ (Up) button simultaneously (Fig 9).
2. The last nine maintenance codes display and flash one after the other.
3. 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

Power Reset	Venturi Control (150), High Exhaust Temperature (540), and Freeze Issue (890) can be reset by shutting down power to the boiler.
Interlock Reset	Venturi (170) and Solenoid Valve (520) allow only interlock reset. Please call Rinnai Technical Support.
Other Reset	Other error can be reset by Indirect Tank "On/Off" button or "Central Heating" (CH) button.

Table 7. Diagnostic Codes

108 Air Supply or Exhaust Blockage/Condensate Trap is Full
- Fan current initial check error.
- Ensure condensate line and trap is not blocked.
- Ensure internal air filter is clean with no obstructions.
- Ensure high altitude setting is set properly (See High Altitude Setting).
- 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)
- Ignition Error.
- 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.
- Bleed all air from the gas lines.
- Check the ground wire for the PC Board.
- Ensure the flame rod wire is connected.
- Ensure the igniter is operational.*
- 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
- 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
- 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
- Venturi operation error.
- Ensure the venturi motor is operating correctly.*
- Replace the gas valve assembly.

170 Venturi Blockage
- Check the venturi and silencer for blockage.
- Before resetting this error, check if the condensate drain is block and if the venting is connected properly.

180 Electrical Grounding
- Secondary circuit ground fault.
- Check all electrical components for electrical short.

250 Condensate Pump (Accessory)
- Boiler will operate for 60 seconds.
- Confirm wire connections and harnesses are good.
- Ensure the condensate reservoir is empty and condensate pump is operational.

303 Secondary Thermistor
- Ensure that Parameter 70 is set to be available.
- Check sensor wiring for damage.
- Measure the resistance of the sensor.
- Replace if necessary.
- Ensure the installation of sensor, including insulation.

310 Freeze Protection Thermistor
- Check sensor wiring for damage.
- Measure the resistance of the sensor.
- Replace if necessary.

353 Supply Thermistor
- Check sensor wiring for damage.
- Clean the surface of the sensor.
- Measure the resistance of the sensor.
- Check the return thermistor.
- Replace if necessary.

363 Return Thermistor
- Check sensor wiring for damage.
- Measure the resistance of the sensor.
- Replace if necessary.

371 Indirect Thermistor
- Check sensor wiring for damage.
- Check if the indirect thermostat is not used at the setting for thermistor usage.
- Measure resistance of sensor and replace sensor, if necessary.
- Replace if necessary.

380 Exhaust Thermistor
- Check sensor wiring for damage.
- Clean the surface of the sensor.
- Measure the resistance of the sensor.
- Check the return thermistor.
- Replace if necessary.

393 Outdoor Thermistor
- 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
- Check sensor wiring for damage.
- Measure the voltage of the sensor.
- Replace if necessary.

430 High/Low Water Pressure
- 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.

443 Low Water Cut-Off (LWCO)
- 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
- 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.

540 High Exhaust Temperature
- Make sure boiler pump activates during operation.
- Check the exhaust thermistor wiring for damage.
- Clean the surface of the thermistor.
- Measure the resistance of the exhaust thermistor.*
- If the sensor has been replaced and the error still appears, check the return thermistor.
- If boiler is used in a hard water area, flush the DHW plate heat exchanger.
- Check the exhaust duct, seal, and venting for damage.

610 Combustion Fan
- Check the motor wire harness for loose or damaged connections.
- Measure resistance and voltage of motor wire harness.*
- Ensure the combustion fan spins freely.

700 PC Board
- PC Board circuit error.
- Replace PC Board.

710 Solenoid Valve Circuit
- Ensure Dip switch 5 on the PC Board is in the OFF position (default).
- Ensure the gas control wire is not loose or damaged.
- Ensure the heater circuit is not grounded.
- Replace the PC Board.

720 Flame Rod
- Check the flame rod and wire for damage.
- Ensure the flame rod and wire are not wet.
- If there is no issue with the flame rod or wiring, replace the PC Board.

763 0-10V Input
- 0-10V input overrange detection.
- Check the external controller settings.

831 Indirect Tank Temperature
- Indirect tank runs for more then twelve hours without cycling off.
- Check if the tank size is adequate.
- Check the thermistor location.
- Confirm that primary-secondary piping is utilized (such as low loss header, closely spaced tees, etc.)
- Check if the supply temperature for the tank is higher than the tank setting temperature (see parameter 30 in "Parameter Setting" section).
- Check sensor wiring for damage.
- Measure resistance of sensor.*
- If something is wrong on the sensor, replace the sensor.

890 Freeze Issue
- The boiler checks the heat exchanger temperature at the time of operation. If the temperature is too low, an error will occur.
- Check if there is freezing in the boiler or CH system.

FFF Maintenance Indicator
- This code is a placeholder in diagnostic code history indicating a service provider performed maintenance or service.
- Enter this code after performing service by pressing the following buttons at the same time: UP, DOWN, and DHW. FFF appears on the monitor (right image).

55 Service Soon (55)
- Service Soon (55) is a time-based service indicator set during installation. See parameter 04 in the "Parameter Settings" section for more information.
- To reset the 55 code, press the Central Heating (CH) button 5 times until 55 disappears.

NO CODE Boiler Does Not Start Heating With a Heating Demand Present
- Supply temperature or return temperature inside the boiler may be too hot.
- Ensure the pump operates properly.
- If there is a demand immediately after using DHW, wait at least three minutes for operation.

NO CODE Boiler does not start heating the indirect tank although the indirect tank is calling for heat.

After the tank priority time (Parameter 34) passes, the boiler will be in heating priority for 60 minutes.

NO CODE Supply Temperature is Different From the Setting Temperature on the Controller
- During outdoor sensor control, the supply temperature will vary dependent on the outdoor temperature.

NO CODE CH Capacity is Insufficient
- Ensure the parameters are properly set for the installation.

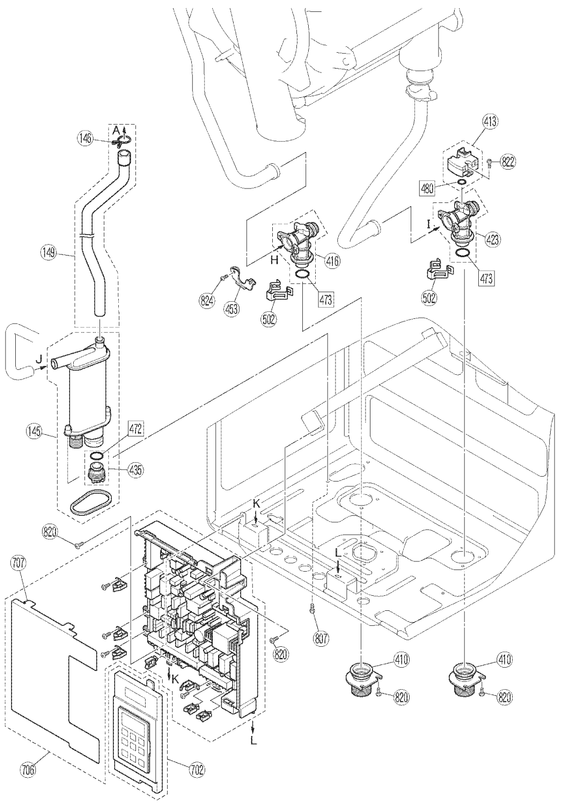
NO CODE Fan Even With No Demand
- The boiler may start or operate the pump for freeze protection operation.
- The pump may intermittently operate to prevent it from becoming stuck.

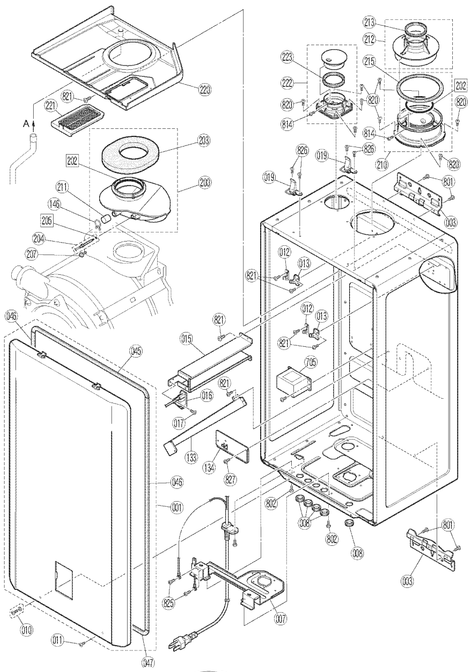
[3] See "Electrical Diagnostics" section of this document.

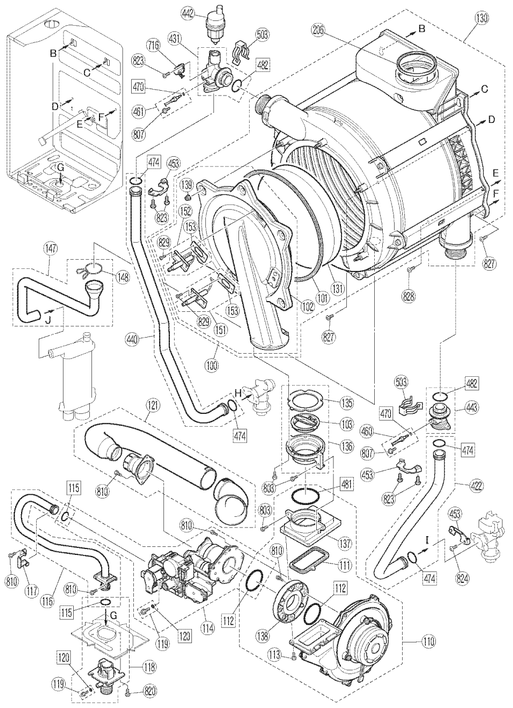
H238-0775-2(01)

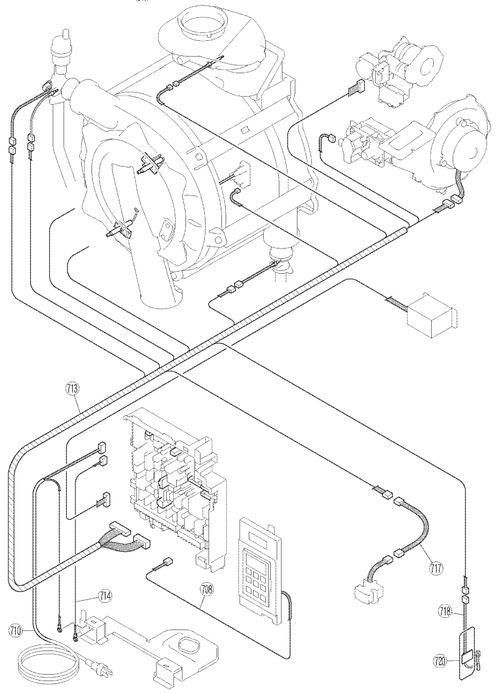
070 00012 66316 6

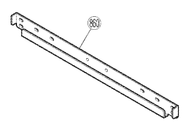
Gas Conversion Kits		
Models	**Gas Type**	**Kit Number**
IP175S	NG/LPG	804000124
IP199S		

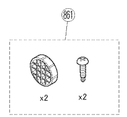


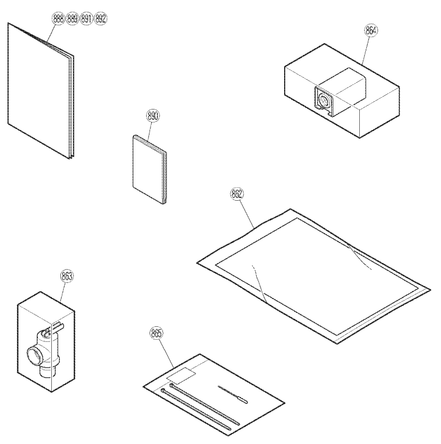












ITEM	DESCRIPTION	PART NUMBER	IP199S	IP175S
001	Front Cover Panel Assembly FF	809000313	1	1
003	Wall Mount Bracket	109000594	2	2
007	Connection Reinforcement Plate	809000315	1	1
008	Rubber Bushing	CF79-41020-A	5	5
010	Residential Screw and Washer	106000645	1	1
011	Ground Screw	109000076	1	1
012	Combustion Chamber Support Plate (L)	809000316	2	2
013	Combustion Chamber Support Plate (R)	809000317	2	2
015	Igniter bracket	809000318	1	1
016	Igniter Assembly	805000172	1	1
017	Screw	CP-80452	1	1
019	Latch	109001393	2	2
045	Front Cover Panel Gasket Top	809000319	1	1
046	Front Cover Panel Gasket Side	809000320	2	2
047	Front Cover Panel Gasket Bottom	809000321	1	1
100	Burner Door Assembly	806000086	1	1
101	Burner Door Gasket	806000087	1	1
102	Berner Insulation	806000088	1	1
103	Combustion Check Valve Assembly	808000060	1	1
110	Combustion Fan Assembly	808000061	1	1
111	Fan Mounting Packing	109001396	1	1
112	O-ring	109000612	2	2
113	Hexagon Head Screw	809000322	3	3
114	Gas Valve Assembly	806000089	1	1
115	O-ring	109000252	2	2
116	Gas Connection Pipe	806000090	1	1
117	Gas Tube Bracket	109000635	1	1
118	Inlet Gas Supply Connection	106000119	1	1
119	Inlet Gas Test Port Screw	106000138	2	2
120	O-ring	M10B-13-4	2	2
121	Noise Filter Assembly	806000091	1	1
130	Heat Exchanger Assembly	807000245	1	1
131	Heat Exchanger Insulation	806000092	1	1
133	PCB Bracket	809000323	1	1
134	Heat Exchanger Bracket	809000324	1	1
135	Adapter Gasket	809000325	1	1
136	Heat Exchanger Adapter	808000062	1	1
137	Fan Adapter	808000063	1	1
138	Gas Control Adapter	806000093	1	1
139	Hex Nut	809000326	5	5
145	Condensate Trap	807000236	1	1
146	Clip	109000137	2	2
147	Condensation Drain Tube	807000246	1	1
148	Clip	809000327	1	1
149	Drain Tube at Air Intake	807000328	1	1
151	Flame Rod	805000173	1	1
152	Electrode	805000174	1	1
153	Electrode Gasket	805000175	2	2
200	Exhaust Adapter Assembly	808000064	1	1
202	O-ring	108000018	2	2

ITEM	DESCRIPTION	PART NUMBER	IP199S	IP175S
203	Exhaust Adapter Gasket	808000065	1	1
204	Thermistor	105002024	1	1
205	O-ring	107000323	1	1
206	Exhaust Gasket	808000066	1	1
207	Thermistor Screw	109000622	1	1
210	Flue Connection Assembly	108000083	1	1
211	Cap	109001407	1	1
212	Exhaust pipe connection port - 2 inch	108000084	1	1
213	Exhaust Gasket - 2 inch	109000623	1	1
215	Air Supply Pipe Seal Ring	108000017	1	1
220	Air Supply Box Assembly	808000067	1	1
221	Air Supply Filter (set)	108000086	1	1
222	Air Supply Assembly	108000087	1	1
223	Air Supply Gasket - 2 inch	109000624	1	1
410	CH Outlet Connection	807000182	2	2
413	Water Pressure Sensor Assembly	807000185	1	1
416	Plate HEX-CH Heating Connection (for solo)	807000339	1	1
422	CH Heating Return Pipe Assembly	807000340	1	1
423	CH return Connection (for solo)	807000341	1	1
431	Heat Exchanger Pipe Connection Assembly	807000333	1	1
435	Trap Drain Plug Assembly	807000195	1	1
440	HEX-CH Heating Connection Pipe	807000334	1	1
442	Air vent	808000052	1	1
443	Heat Exchanger Return Connection	807000335	1	1
453	Pipe Bracket	809000328	4	4
460	Thermistor Sensor	805000154	1	1
461	Thermistor Sensor	805000155	1	1
470	O-ring	807000215	2	2
472	O-ring	807000204	1	1
473	O-ring	807000205	2	2
474	O-ring	807000336	4	4
480	O-ring	807000207	1	1
481	O-ring	807000337	1	1
482	O-ring	807000338	2	2
502	Clip	809000173	2	2
503	Clip	809000329	2	2
702	Integrated Control Assembly	805000177	1	1
705	Transformer	805000158	1	1
706	PC Board Assembly-Solo	805000180	1	1
707	PCB Cover	809000334	1	1
708	Controller Unit Harness	105002042	1	1
710	Power Cord Assembly FF	805000160	1	1
713	Sensor Harness	805000181	1	1
714	Heater Ground Harness	805000162	1	1
716	Over Heat Switch	805000164	1	1
717	Water Pressure Connection Harness	805000090	1	1
718	Thermistor Sensor	805000165	1	1
720	Guide Seal	809000176	1	1
801	Screw	CP-30583	4	4

ITEM	DESCRIPTION	PART NUMBER	IP199S	IP175S
802	Screw	ZBA0408UK	2	2
803	Hexagon Head Screw	ZQAA0514UK	6	6
807	Screw	U217-449	4	4
810	Screw	109000179	10	10
814	Screw	109000651	2	2
820	Screw	809000177	51	51
821	Truss Screw	109000598	24	24
822	Screw	809000178	2	2
823	Screw	CP-20883-408UK	6	6
824	Screw	809000179	2	2
825	Ground Screw	109000793	2	2
826	Screw	109000649	8	8
827	Screw	809000331	4	4
828	Screw	809000332	2	2
829	Torx screw	809000333	4	4
860	Wall Bracket	809000314	1	1
861	Vent Screen Set	108000104	1	1
862	LP Conversion Orifice-Included	806000095	1	1
863	Pressure Relief Valve	807000211	1	1
864	Outdoor Temperature Sensor	803000081	1	1
865	System Thermistor	805000179	1	1
888	User Manual - EN	800000218	1	1
889	Installation Manual - EN	N/A	1	1
890	Tech sheet		1	1
891	User Manual - FR	800000219	1	1
892	Installation Manual - FR	N/A	1	1