

## PERFORMANCE DATA

18.07.2023 Tue 22:20:37 CH-1 CH-2 DHW NOT CONNECTED

**STATUS**  
 In operation for DHW

**FLUE** 127.4 °F

**SUPPLY** 129.0 °F

**DELTA** 20.4 °F

**RETURN** 108.6 °F

**PRESSURE** PSI

**Boiler State** In operation for DHW

**DHW State** Charging, Nominal setpoint

**HC 1 State** Room temperature limitation

**HC 2 State** ---

**Burner State** In operation

**Error Code** ---

**Diagnostic Code** ---

**ACTIVE SETPOINT:** 156.0 °F

**SETPOINT** 120.0 °F

**ACTUAL** 115.8 °F

**INDIRECT STORAGE TEMPERATURE** ---

**Fan Speed** 5491 rpm

**Flame Current** 1.7 μA

**MODULATION:** 65 %

**PUMP STATUS** ---

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**Minimum Fan Speed - LF** 1630 RPM

**Maximum Fan Speed - HF** 6120 RPM

**Ignition Fan Speed** 3300 RPM

**Fan Speed - Actual** 0 RPM

**Fan Setpoint** 0 RPM

**Current Fan Control** 0 %

**Burner Modulation** 0 %

**Ionization Current** 0.0 uA

**Room Thermostat CH-1 (H5)** Open

**Room Thermostat CH-2 (H4)** Open

**Room Thermostat CH-1 State** No Demand

**Room Thermostat CH-2 State** No Demand

**DHW State** Charged, nominal temp

**0-10V Input (H3)** 0.0 V

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**Temperatures**

**Pumps**

**Fan Speed / Ion. Curr**

**Cascade**

**Water Pressure**

Flue Gas Temperature

Boiler Temperature

Boiler Return Temperature

Outside Temperature

DHW Temperature

Boiler Setpoint

DHW Setpoint

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**IMPORTANT:** To manually reset an error code, press the reset button for less than 10 seconds.

## DIAGNOSTIC CODES

Error Code - Description	Remedies
<b>81</b> LPB short-circuit or no bus power supply	The error will auto-reset once the issue is resolved (67) 1- Check cascade communication cable to ensure the wires are not shorted 2- Ensure the cable connection from cascade module to the main control board is connected properly and secured 3- If the problem persists and the unit is not cascaded with other units, disconnect the cascade module from the main controller. <b>NOTE:</b> LPB is the cascade bus (the power comes directly from the main controller)
<b>82</b> LPB address collision	The error will auto-reset once the issue is resolved (67) <b>NOTE:</b> This error code will ONLY happens if there are two or more units connected with each other. 1- Check to ensure the cascade addresses for the units in the cascade system are unique. For instance if there are one or more units set as Master, the LPB address collision error code will be displayed.
<b>83</b> BSB-Wire short-circuit or no communication	The error will auto reset once the issue is resolved (595) 1- Ensure the wiring from the Webserver card/Wi-Fi Module and LMS is not jumped or disconnected. <b>NOTE:</b> BSB is the communication between the Webserver card/Wi-Fi Module and main controller.
<b>91</b> Data loss in EEPROM	The error will auto reset once the issue is resolved (618) This error code should only happen during flashing of the main controller at the factory. 1- Loss of data on EEPROM - replace the main control board
<b>105</b> Maintenance message	The error will auto reset once the maintenance interval has been reset (87) 1- Perform the boiler service as recommended by the manufacturer 2- Once the service has been performed, access the SERVICE page and perform a maintenance reset.
<b>110</b> SLT lock-out SLT - Safety Limit Thermostat (electronic)	This error code requires a manual reset 1- Boiler return temperature not possible (< 32°F [0°C]) - (424) 2- Boiler supply temperature not possible (<32°F [0°C]) - (422) 3- Boiler supply temperature not possible (>255°F [124°C]) - (422, 809) 4- Safety Limit Thermostat (SLT) is open (551, 412) - check continuity of thermofuse, burner door switch and jumper on high voltage terminal block) 5- Boiler return temperature > 208°F (98°C) - (425) 6- Boiler Supply Temperature > 208°F (98°C) (413, 430, 432) 7- Boiler temperature rises faster than allowed (5.4°F [3°C]) - (426, 437) 8- Reset criteria (boiler temperature less than boiler temperature setpoint and Delta-T less than 72°F [40°C] for error 426 not reached) - (427) 9- Delta T (difference between supply and return) is higher than 101°F (56°C) - (428) 10- Reset criteria (Delta-T less than 36°F [20°C] after error 433 not reached) - (429) 11- Boiler return temperature is higher than boiler supply temperature + 27°F (15°C) - (420, 431) 12- Boiler return temperature is higher than/equal to boiler supply temperature + 31°F (17°C) - (420) 13- Supply temperature increase after the burner is off - residual heat - (436) 14- Delta-T (difference between supply and return is greater than 72°F [40°C]) - (433, 438) 15- Supply temperature exceeds 208°F (98°C) - (432)
<b>111</b> Temperature limiter safety shut-down	The error will auto reset once the supplied temperature is below 203°F (95°C) (264) 1- Supply temperature has exceeded 203°F (95°C) (264)
<b>117</b> Water pressure too high (H1)	The error will auto reset once the water pressure decreases to less than 83 PSI (5.7 bars) (566) 1- Ensure the water pressure in the system does not exceed 87 PSI (6 bar). This is very unlikely since the maximum setting on the factory supplied pressure relief valve is 75 PSI. 2- If the actual pressure in the system has been confirmed to be below 87 PSI, replace the water pressure sensor.
<b>118</b> Water pressure too low (H1)	The error will auto reset once the water pressure is at least 16 PSI (1.1 bar) (566) <b>NOTE:</b> The boiler will reduce the output power when pressure in the system is between 12 PSI (0.8 bar) - 20 PSI (1.4 bar). The boiler will continue to operate and an error code will be displayed on the home screen. When the pressure increases above 20 PSI (1.4 bar) the error will disappear. If the pressure decreases below 12 PSI (0.8 bar) the boiler will shut-down and keep the error code. 1- Ensure the water pressure in the system is at least 12 PSI (0.8 bar). Check the pressure setting on the water auto feed to the boiler loop. Check for water leaks in the system piping. 2- If the pressure in the system is still below 12 PSI (0.8 bar), replace the water pressure sensor.
<b>125</b> Maximum boiler temperature exceeded	The error will auto reset once the boiler supply temperature decreases below 203°F (95°C) minus the boiler switch on differential, 20°F (11°C) - default settings. 1- The boiler temperature has reached 203°F (95°C) (286, 500, 740) 2- No temperature change on supply sensor after flame (501) 3- No temperature change on return sensor after flame (502)
<b>128</b> Loss of flame in operation (10 times)	This error code requires a manual reset 1- Loss of flame in operation (625) 2- Ionization current has fallen below 0.8uA (854) 3- Ensure the boiler electrical connection is properly grounded to the ground source. 4- Monitor the gas pressure to the unit while in operation. The gas pressure should be within the limits specified in this manual. 5- Check the flame signal on the display. It should be above 0.8uA when the burner is lit. The flame current should be stable after the boiler has been firing for at least one minute and it is normally between 3 - 7uA. If the flame current is less than 0.8uA, disassemble the burner door and check the ionization probe quality and distance to the burner (clean if necessary).
<b>130</b> Flue gas temperature maximum limit exceeded (BX3)	This error code will automatically reset if the issue is resolved within 10 minutes. Otherwise a manual reset is required. 1- Ensure the proper setting is being used for the flue gas venting material. If the flue temperature for the application is higher than 149°F (65C), vent material other than PVC must be used and the setting for the flue gas temperature limit must be set to other on the controller (SETUP-Boiler Setup). 2- The control will limit the flue temperature to 149°F (65°C) for PVC pipe and 207°F (97°C) for other venting materials. The boiler will automatically start to modulate when the vent temperature reaches 140°F (60°C) for PVC and 194°F (90°C) for other venting material. The control will shut down and monitor the vent temperature for 10 minutes. If the temperature exceeds the value shown here after 10 minutes the control will lock-out. 3- Check flue gas temperature resistance and compare to the value listed on the resistance table 4- Ensure the correct gas type is used. If the unit is Natural Gas and Propane gas is connected to the unit this will cause boiler overheating and unsafe conditions.
<b>133</b> Safety time for establishment of flame exceeded (4 times)	This error code requires a manual reset 1- The boiler failed to ignite four times during one heat call (625). 2- Check electrical connection to the unit and check for proper grounding and polarity. 3- Check the ignition transformer wiring connection for reverse polarity. 4- Check for sparks through the sight glass on the burner door. 5- If there is spark but no flame, monitor the static gas pressure to ensure it is within the limits specified in this manual. 6- Check for vent or condensate blockage. 7- If the problem persists, remove the burner door and inspect the ignition electrodes (check for gaps and distance to the burner. Clean if necessary)
<b>151</b> BMU internal fault	This error requires a manual reset Internal error on the main controller (630) 1- Error at closing(330) or opening (331) Ignition relay 2- Error at closing (332) or opening (333) gas valve relay 1 3- Error at closing (336) or opening (337) the safety relay 4- Replace the main controller
<b>152</b> Parameterization error	This error will auto-reset once the issue is resolved unless diagnostic code is 780, 781, 782, 851, 840 or 853 - manual reset required This error happens when setting parameters on the main controller. For instance, if the fan speeds are not set within the min and max range set on the main controller.
<b>153</b> Unit manually locked	This error code requires a manual reset (press reset button for less than 10 seconds) 1- Unit manually locked (reset button pressed more than 10 seconds)
<b>160</b> Fan speed threshold not reached	This error code requires a manual reset <b>NOTE:</b> These error codes happen in case the impeller on the fan gets stuck. 1- Fan speed threshold not reached: home run (377) 2- Fan speed threshold not reached: standby (378) 3- Fan speed threshold not reached: ignition (379) 4- Fan speed threshold not reached: pre-purge (380) 5- Fan speed threshold not reached: post-purge (381) 6- Fan speed threshold not reached: in operation (233, 749)
<b>162</b> Air pressure switch does not close	This error code requires a manual reset (9) 1- Air pressure switch is normally closed and will open in case of condensate or vent blockage. 2- Check the pressure switch wiring - check continuity. 3- Check vent pipe and condensate trap for blockage. Disconnect the hose from the air pressure switch and check for operation. If the unit operates normal, either condensate on vent pipe is blocked. If the unit does not operate check pressure switch. 4- Check the pressure switch wiring to ensure it is normally closed when the unit is on standby. 4- If the issue persists check replace the air pressure switch.
<b>183</b> Unit in parameterization mode	This error code requires a manual reset 1- Unit in parameterization mode (301) 2- Unit in parameterization mode (770 - parameter stick)
<b>217</b> Sensor fault	This error code will auto-reset once the issue is resolved 1- Short-circuit of ionization electrode (765, 766). The ionization current is shorted to ground. 2- Check the condensate trap to ensure the condensate is draining properly. If there is water in the heat exchanger in contact with the ionization electrode this error code will appear.
<b>317</b> Grid frequency OOR	This error code will auto-reset once the frequency is back within the range <b>NOTE:</b> This error code happens when the power frequency is out of the range [42 Hz - 72 Hz] 1- Mains frequency outside specification (275, 461)
<b>353</b> Cascade temperature sensor missing (B10)	This error code will auto-reset once the issue is resolved <b>NOTE:</b> On a cascade system, a cascade temperature sensor is required to be installed on the system loop. Once a sensor is connected to the unit, the main controller recognized the sensor. If the sensor gets disconnected this error code will be shown. If the unit is no longer set as a cascade, the sensor must be disabled from the cascade setup menu, and save sensor function must be applied from the system setup menu. 1- Cascade temperature sensor missing (B10) (139)
<b>384</b> Extraneous light	This error code requires a manual reset (625) <b>NOTE:</b> This error code happens if unit detects fan while the gas valve is not energized (false flame)
<b>385</b> Main undervoltage	This error code will auto-reset once the voltage is back within the range <b>NOTE:</b> This error code happens when the voltage is out of the range [102V -132V] 1- Voltage outside of the range (554, 555)
<b>386</b> Fan speed tolerance	This error code requires a manual reset 1- Fan speed out of tolerance (+/-300 rpm): home run (387) 2- Fan speed out of tolerance (+/-300 rpm): standby (388) 3- Fan speed out of tolerance (+/-1200 rpm): ignition (374, 382, 383) 4- Fan speed out of tolerance (+/-1200 rpm): pre-purge (389,531) 5- Fan speed out of tolerance (+/-1200 rpm): post-purge (390, 532, 534) 6- Fan speed out of tolerance (+/-1200 rpm): in operation (232, 750, 375, 385, 386)

**HOME PAGE:**  
**Left Pane** - Provides information about boiler internal temperatures, pressure, date and time.  
**Center Pane** - Displays information about boiler demand, modulation, error messages, setpoint, fan speed, and ionization current. The center pane changes color to show the boiler status: **Dark Gray** - standby; **Light Gray** - Demand; **Red** - Error Code (hard lockout); **Yellow** - Error Code (soft lockout); **Orange** - service reminder. **Right Pane** - Displays information about external devices connected to the boiler (outdoor sensor, system sensor, indirect tank sensor/thermostat, pump status, and Wi-Fi). Press the Rinnai logo to return to the main page (home).

**VIEW PAGE:**  
**Boiler State** - Displays boiler status including fan speed, modulation, input and output switches state, and fan. **Boiler Temperature** - Displays current boiler temperatures and setpoints. **Boiler Pumps** - Displays pump status, pump speed, and analog output states (0-10V or PWM signals). **Cascade** - Allows the user to monitor cascade system operation from the Master boiler screen. **History** - Provides information about boiler error codes, run hours, ignition cycles, and accumulative error code history. **Info** - Displays device information.

**GRAPH PAGE:**  
**Temperatures** - Provides options to monitor a selectable number of temperature profiles and setpoint to aid in troubleshooting. **Pumps** - Allows the user to monitor the pump status. **Fan Speed / Ion. Curr** - Allows the user to monitor fan speed and ionization current to troubleshoot in case of flame failure or fan speed tolerance issue. **Cascade** - Displays actual and setpoint temperature for the cascade system sensor graphically. **Water Pressure** - Allows the user to monitor boiler internal water pressure.

## PARAMETERS SETTINGS

**Quick Setup**

**Outdoor Reset Curve**

**Boiler Setup**  
 CENTRAL HEATING

**DHW Setup**  
 CH-1 Boiler Temperature Setpoint 179 °F  
 CH-2 Boiler Temperature Setpoint 179 °F  
 Central Heating Switching On Differential 19.9 °F

**Pump**

**Cascade**

**BMS**  
 DOMESTIC HOT WATER  
 DHW Setpoint Temperature 120.0 °F  
 DHW Switching On Differential 9.0 °F

**Wi-Fi**  
 Boiler Supply Temperature Offset for DHW 36.0 °F

**System**

**Maintenance**

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**Quick Setup**

**Outdoor Reset Curve**

**Boiler Setup**

**DHW Setup**

**Pump**

**Cascade**  
 Warm Weather Shutdown (All Circuits) 5  
 Enable Outdoor Reset Curve (All Circuits) On Off

**BMS**  
 Boiler Temperature Minimum (CH-1) 86 °F  
 Boiler Temperature Maximum (CH-1) 180 °F  
 Outside Temperature Minimum (CH-1) 5 °F  
 Outside Temperature Maximum (CH-1) 68 °F

**Wi-Fi**

**System**

**Maintenance**

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**Pump Service Mode**

**Service Mode**  
 Service Mode: ON OFF  
 Controller Stop Setpoint: MIN 50 % MAX  
 80.6 °F

**Maintenance**  
 Burner Run Hours Run Since Maintenance 0 Hours  
 Burner Cycles Since Maintenance 2 Cycles  
 Time Since Maintenance 0 Months

**Output Test**  
 Output Test P1 50 %  
 Output Test UX2 40 %  
 Output Test UX3 30 %

**Demand Test**  
 CH-1 NO NC  
 CH-2 NO NC

**ACTIVE SETPOINT:** --- °F

**Fan Speed** 0 rpm  
**Flame Current** 0.0 uA  
**MODULATION:** 0 %

Rinnai | SETUP | VIEW | GRAPH | SERVICE

**SETUP PAGE:**  
 To access the SETUP page, the user will be prompted to select the access level and enter password. The password for **Installer** is 9419. The **Technician** and **Engineer** user levels can ONLY be accessed by a Rinnai employee.  
 For more information on parameter settings, refer to the Rinnai Commercial Boiler Installation and Operation Manual.

**SETUP PAGE (Continued):**  
**Outdoor Reset Curve** - This page allows the user to select a custom outdoor reset curve based on the heating application (baseboard, hydro-air, or radiant heating). To create a curve, click on the default temperatures shown and enter the desired values for minimum and maximum boiler temperature and minimum and maximum outside temperature. The warm weather shutdown disables the boiler operation for central heating mode when the outside temperature is above this setting.

**SERVICE PAGE:**  
 This page can be accessed by any of the users described in the SETUP page. This screen can be used for boiler commissioning. **Pump Service Mode** - The pumps can be manually energized to remove air from the system. **Demand Test** - The room thermostat can be manually activated for a quick boiler operation test. **Service Mode** - This mode can be used during initial start-up to ensure the combustion levels are set properly at minimum and maximum loads. **Maintenance** - This section displays burner run hours, ignition cycles, and time since last maintenance (which can also be reset from this page). **Service Notes** - this section is used to add notes.

## ELECTRICAL DIAGNOSTICS

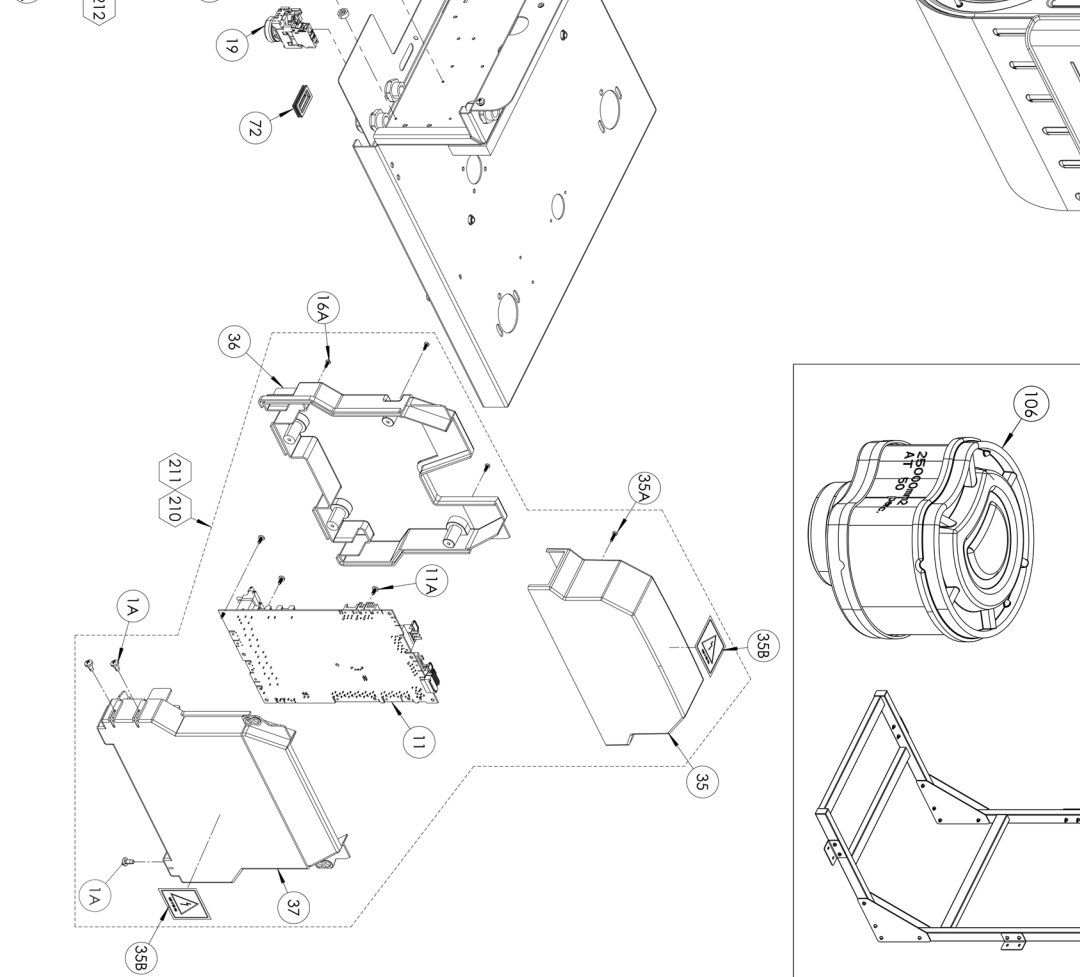
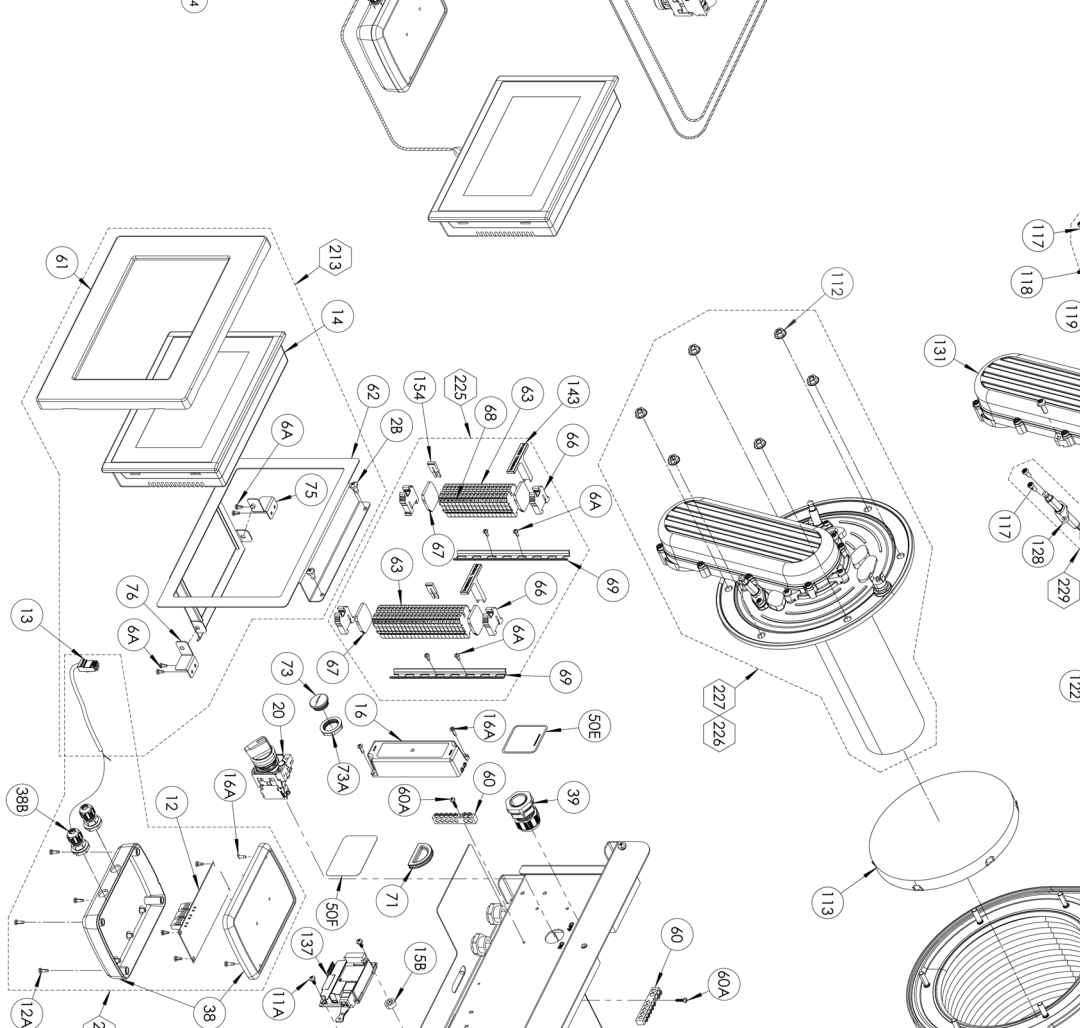
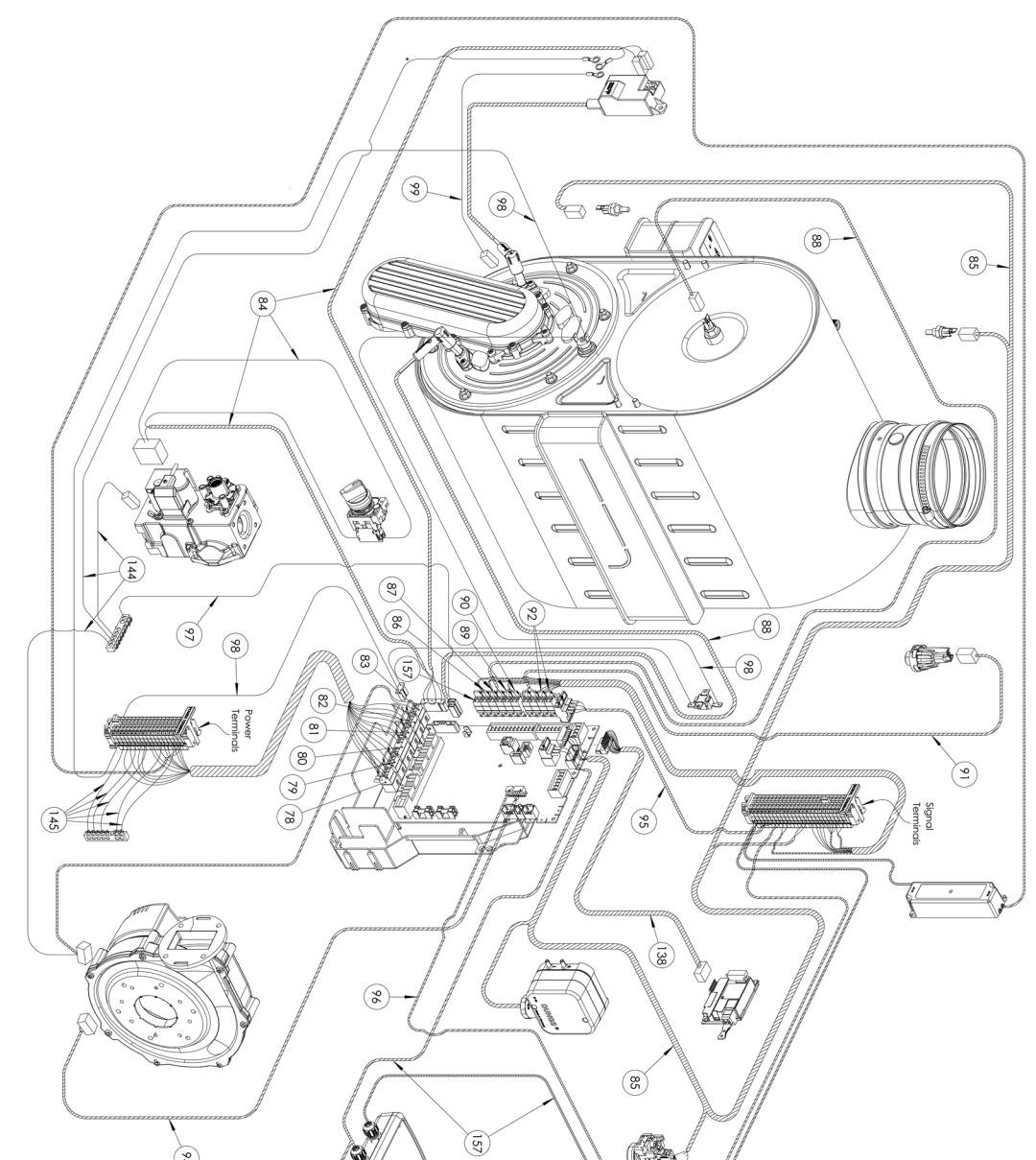
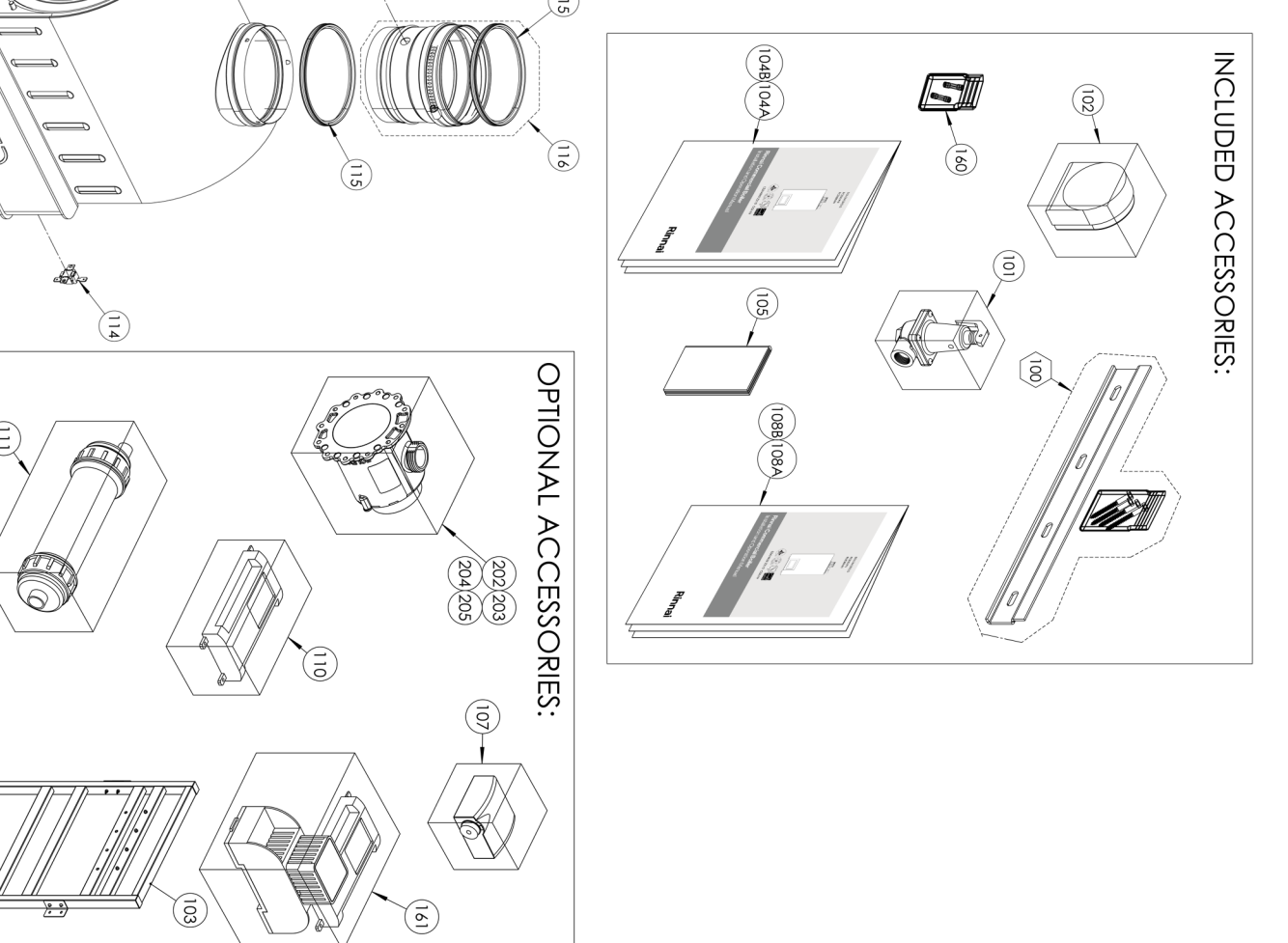
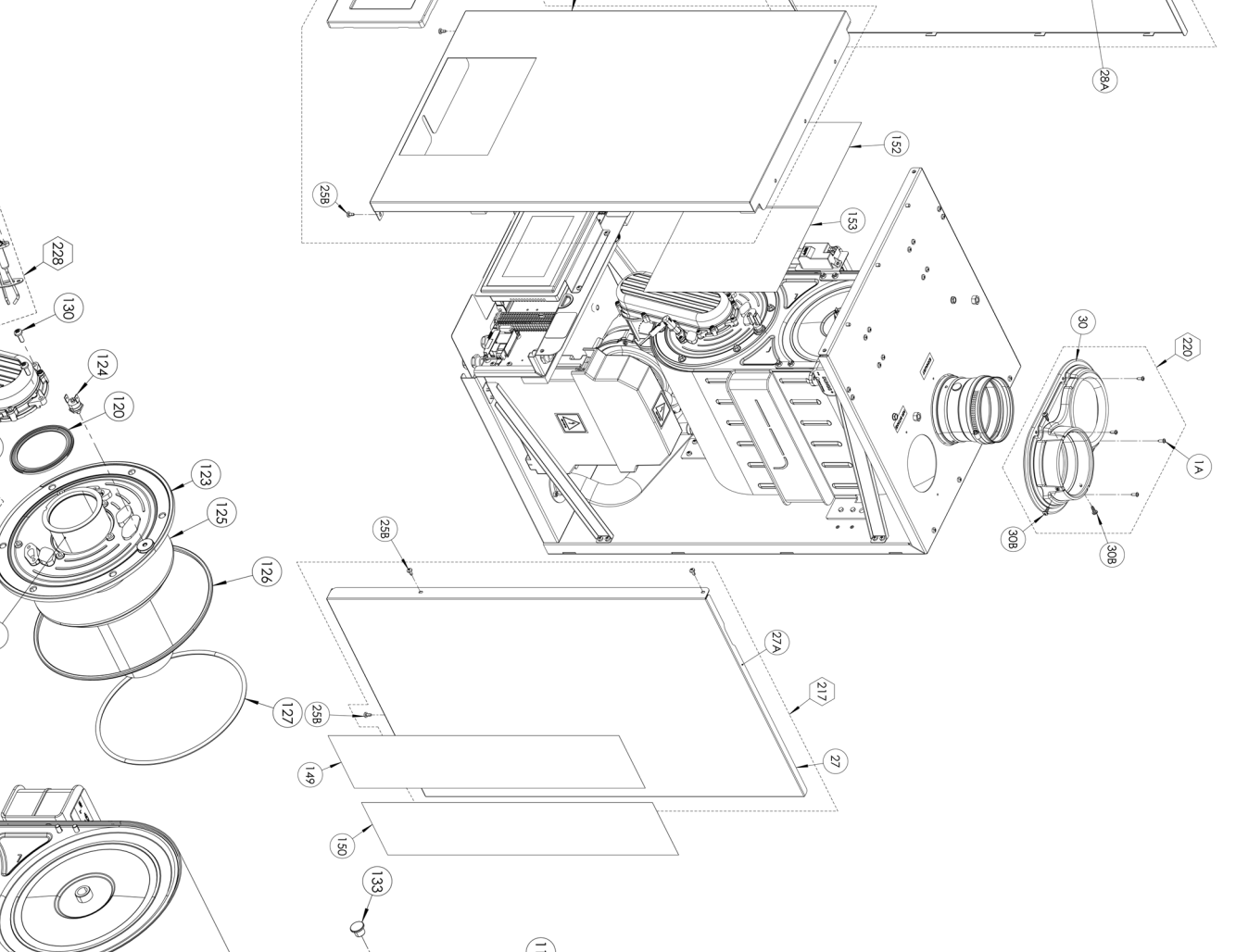
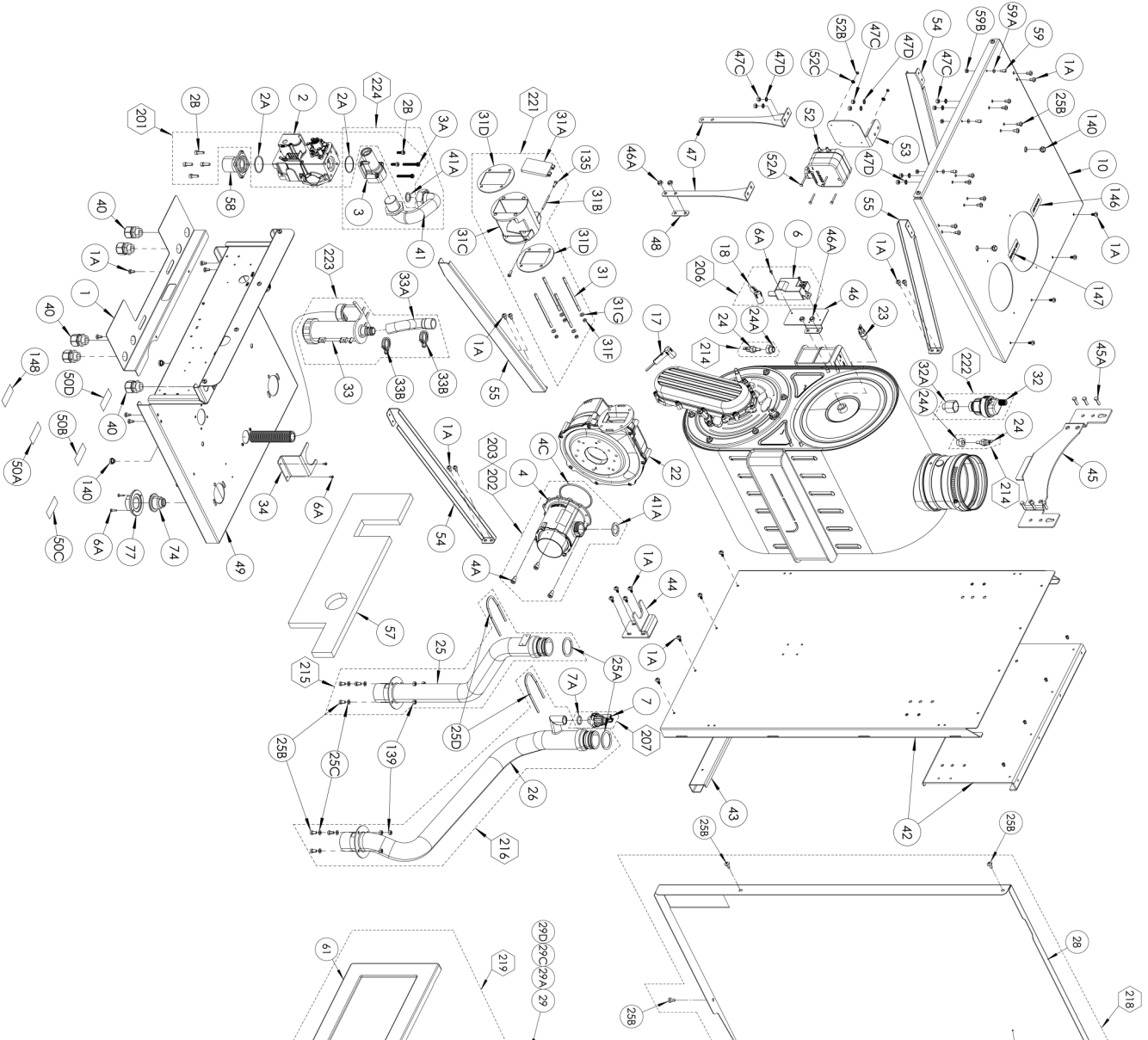
Connector	Pin	Marking	Description	Voltage
X1	1	N	Main Power Supply	120VAC
	2	PE		
	3	L		
	4	L	QX2 / CH Pump	120V AC
	5	PE		
	6	N		
	7	L1/NO	QX3 / DHW PUMP	120V AC
	8	PE		
	9	N		
	10	L1/NC	Not Used	120V AC
	11	L		
	12	PE		
	13	N		
	14	L		
	15	PE		
	16	N		
	17	L		
	18	P		
	19	N		
X2	1	L	Gas Valve	120V AC
	2	N	Power	
	3	L	Spark	120V AC
	4	N	Generator	
	5	Ion	Not used	
X3	-	Ion	Ionization Current	-
	1	+15V	Not used	-
	2	H7	Air Pressure Switch	-
	3	H3	0-10V Input	-
X4	4	RESET	Reset	-
	5	+5V	Not Used	-
	6	BX4/B7	Return Sensor	-
	7	GND	Ground	-
	8	B2	Supply Sensor	-
	1	-	Not Used	-
	2	GND	Not Used	-
	3	-	Not Used	-
XS...	3	-	Not Used	-
	4	GND	BX1 / Cascade Sensor	-

## DIAGNOSTIC CODES

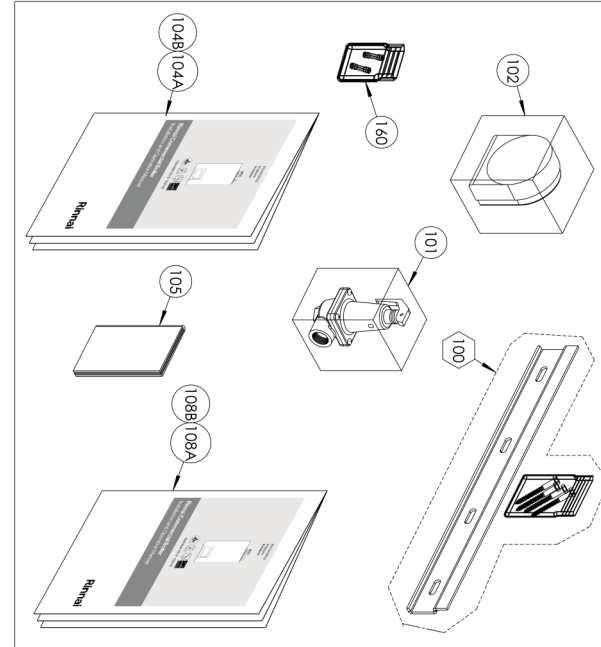
Error Code - Description	Remedies
NOTE: The numbers in parenthesis are diagnostic codes associated with each error codes	
<b>10</b> Outdoor sensor fault (B9)	The error will auto-reset once the issue is resolved (610) <b>NOTE:</b> This error code does not prevent boiler operation; however, it will prevent any other error codes to show on the home page. 1- Check the outdoor sensor connection to ensure it is not open or not connected (if not connected, the jumper should remain in place) - check continuity 2- Check outdoor sensor wiring to ensure it is connected properly (1 kOhm sensor supplied from the factory) - check continuity 3- Check the resistance of the outdoor sensor and compare to the value shown on the resistance value table 4- Replace the outdoor sensor if malfunction is detected 5- If the issue persists, replace the main control board
<b>20</b> Boiler Supply temperature sensor fault (B2)	The error will auto reset once the issue is resolved (unless the diagnostic code is 2 - manual reset required) 1- Check supply temperature sensor wiring to ensure it is connected properly (10 kOhm sensor) - check continuity 2- Check supply temperature sensor to ensure it is not short or open (2) 3- Check the resistance of the supply temperature sensor and compare to the value shown on the resistance value table (737, 591, 249, 552) 4- Replace the supply temperature sensor if malfunction is detected. 5- If the issue persists, replace the main control board
<b>26</b> Cascade temperature sensor fault (B10)	The error will auto-reset once the issue is resolved <b>NOTE:</b> This error code does not prevent boiler operation; however, it will prevent any other error codes to show on the home page. 1- Check cascade temperature sensor wiring to ensure it is connected properly (10 kOhm sensor) 2- Check cascade temperature sensor to ensure it is not short or open 3- Check the resistance of the cascade temperature sensor and compare to the value shown on the resistance value table 4 of the I/O manual. The cascade temperature sensor is ONLY required on the Master boiler. Confirm the cascade address is set correctly. Ensure the cascade sensor is set correctly on SETUP - cascade setup page. If everything is set correctly, use the save sensor option on SETUP - system setup to configure this sensor. 4- Replace the supply temperature sensor if malfunction is detected. 5- If the issue persists, replace the main control board
<b>28</b> Flue gas temperature sensor fault (BX3)	The error will auto reset once the issue is resolved (unless the diagnostic code is 0 or 540 - manual reset required) 1- Check flue gas temperature sensor wiring to ensure it is connected properly (10 kOhm sensor) - check continuity 2- Check flue gas temperature sensor to ensure it is not short (543 or 0) or open (544 or 540) 3- Check the resistance of the flue gas temperature sensor and compare to the value shown on the resistance value table 4- Replace the flue gas temperature sensor if malfunction is detected 5- If the issue persists, replace the main control board
<b>40</b> Return temperature sensor fault (B7)	The error will auto reset once the issue is resolved (unless the diagnostic code is 0 - manual reset required) 1- Check return temperature sensor wiring to ensure it is connected properly (10 kOhm sensor) - check continuity 2- Check return temperature sensor to ensure it is not short (441) or open (442) 3- Check the resistance of the return temperature sensor and compare to the value shown on the resistance value table (52, 738, 250, 0) 4- Replace the return temperature sensor if malfunction is detected. 5- If the issue persists, replace the main control board
<b>50</b> DHW temperature sensor/thermostat fault (B3)	The error will auto-reset once the issue is resolved (55) <b>NOTE:</b> This error code does not prevent boiler operation; however, it will prevent any other error codes to show on the home page. 1- Check what type of device is used to control the indirect tank temperature (sensor or aquastat). Verify that the settings on the boiler (SETUP-DHW Setup) matches the application 2- Check the DHW temperature sensor connection to ensure it is not open or not connected (if an aquastat is being used ensure the correct setting is used) 3- Check DHW temperature sensor wiring to ensure it is connected properly (10 kOhm sensor) - check continuity 4- Check the resistance of the DHW temperature sensor and compare to the value shown on the resistance value table 5- Replace the DHW temperature sensor / Aquastat if malfunction is detected 6- If the issue persists, replace the main control board

Note: PE = Ground

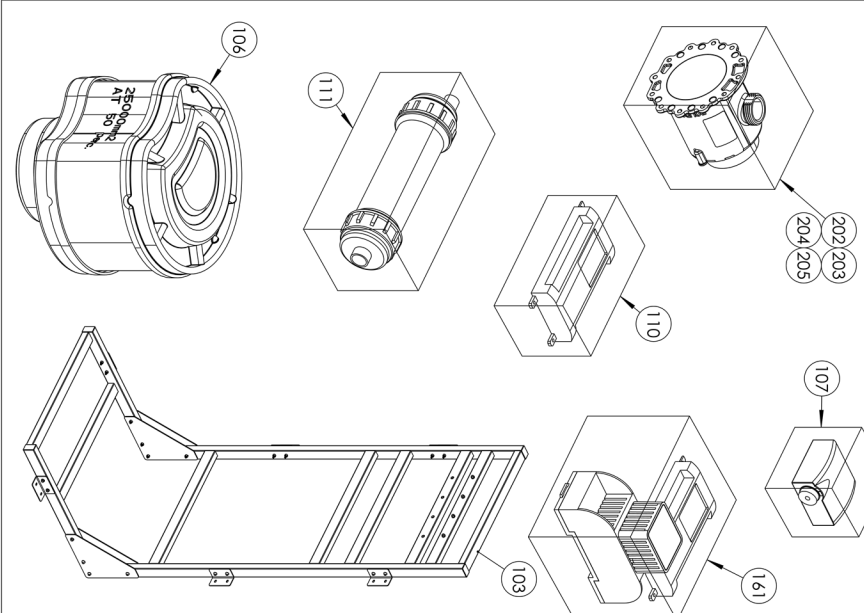
**Important Safety Notes:** A number of (live) tests are required when performing electrical diagnostics on this product. Proceed with caution at all times to avoid contact with energized components inside the boiler. Only trained and qualified service technicians should attempt to repair this product.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



**INCLUDED ACCESSORIES:**



**OPTIONAL ACCESSORIES:**



ITEM	DESCRIPTION	PART NUMBER	RCB301	RCB399
1	Bottom Plate w/ Electrical Connection	809000231	1	1
1A	Screw, DIN 7981 4.8x9.5 (F-H) Gal	809000203	11	11
2	Gas Valve	809000058	1	1
2A	O-Ring 33x2	809000204	1	1
2B	Screw M5 X 12mm, DIN 912	809000205	10	10
3	Throttle Flange	809000059	1	1
3A	Screw M5 X 35mm, DIN 912	809000267	2	2
4	Venturi 301 NG	809000060	1	1
4A	Venturi 301 LP	809000063	1	1
4B	Venturi 399 LP	809000065	1	1
4C	Screw M6 X 12mm, DIN 912	809000268	3	3
4D	O-Ring 70x3	809000206	1	1
6	Ignition Transformer	809000119	1	1
6A	Screw, DIN 7981 3.3x9.5 (F)	809000207	10	10
7	Water Pressure Sensor	807000225	1	1
7A	O-Ring, Water Pressure Sensor	809000208	1	1
10	Top Plate	809000209	1	1
11	Main Control LMS14	809000120	1	1
11A	Screw, DIN 7981 3.3x9.5 (C-H)	809000210	4	4
12	Web Server + Wi-Fi PCB	809000121	1	1
12A	Screw, DIN 7981 2.9x6.5 (C-H) Gal	809000271	6	6
13	Web Server + Wi-Fi PCB Touch Panel Cable	809000222	1	1
14	HMI Touch Panel	809000223	1	1
15B	Plastic Washer 4.8	809000211	2	2
16	Power Supply 24VDC	809000125	1	1
16A	Screw, M12.9 X 9.5, V9A-C-H DIN 7981 Gal	809000212	8	8
17	Ignition Electrode Cable	809000126	1	1
18	Reset Button	809000128	1	1
19	Gas Valve Power Switch	809000129	1	1
20	Blower w/ O-Ring	809000131	1	1
22	Fuel Temperature Sensor	809000133	2	2
23	Supply and Return Temperature Sensor Adapter	809000228	1	1
24	Supply and Return Temperature Sensor	807000229	1	1
25	Heat Exchanger Return Pipe	809000231	1	1
25A	Heat Exchanger Pipe O-Ring	809000013	6	6
25B	Screw M5 X 10mm	809000269	6	6
25C	Washer, Serrated AS.3 DIN 6798	809000214	2	2
25D	Heat Exchanger Pipe Mounting Clip	809000215	2	2
27	Right Side Panel	809000216	1	1
27A	Right Side Sealing Foam	809000217	1	1
28	Left Side Panel	809000217	1	1
28A	Left Side Sealing Foam	809000218	1	1
29	Front Panel	809000219	1	1
29A	Front Panel Sealing Foam Top	809000220	1	1
29B	Front Panel Sealing Strip	809000221	2	2
29D	Front Panel Sealing Foam Bottom	809000222	2	2
30	Vent Top	802000010	1	1
30B	Screw 4.8 X 25mm SS Panhead PH2	809000304	3	3
31	Threaded Rod For Check Valve	809000223	4	4
31A	Check Valve Flap	809000041	1	1
31B	Check Valve Pin	809000043	1	1
31C	Check Valve Body	809000044	1	1
31D	Check Valve/Blower Gasket	809000224	2	2
31F	Nut, M5 DIN 934	809000272	4	4
31G	Serrated Washer AS.3 DIN6798	809000269	4	4
32	Automatic Air Vent	807000230	1	1

ITEM	DESCRIPTION	PART NUMBER	RCB301	RCB399
32A	Automatic Air Vent Adapter	807000231	1	1
33	Condensate Trap	807000232	1	1
33A	Condensate Trap Inlet Hose	807000233	1	1
33B	Condensate Hose Clip	809000226	2	2
34	Condensate Trap Bracket	809000227	1	1
35	Main Control Top Cover	809000228	1	1
35A	Screw, DIN 7981 2.9x13	809000270	1	1
35B	Main Control Cover Warning Label	809000229	1	1
36	Main Controller Back Cover	809000230	1	1
37	Main Control Front Cover	809000231	1	1
38	Web Server Card Enclosure	809000232	1	1
38B	PG7 Cable Gland	809000233	2	2
39	PG16 Cable Gland	809000234	1	1
40	PG11 Cable Gland	809000235	5	5
41	Flexible Gas Pipe NPT3/4 - G1	809000062	1	1
41A	Gasket - venturi	809000236	1	1
42	Back Panel	809000237	1	1
43	Bottom Support - Back	809000238	1	1
44	Heat Exchanger Support - Bottom	809000239	1	1
45	Heat Exchanger Mounting Plate	809000240	1	1
45A	Screw, M6X16 CV-6K, DIN 933-8-82N5N1TCA	809000300	6	6
46	Ignition Transformer Plate	809000241	1	1
46A	Flange Nut - M6, DIN 6923	809000274	8	8
47	Heat Exchanger Front Support - Left & Right	809000242	2	2
47C	Nut, M5 DIN 934	809000272	8	8
47D	Washer, Serrated AS.3 DIN 6798	809000269	8	8
48	Heat Exchanger Front Support Spacer	809000243	1	1
49	Bottom Plate - 301	809000244	1	1
49B	Bottom Plate - 399	809000245	1	1
50A	Label, Gas	809000246	1	1
50C	Label, Return	809000248	1	1
50D	Label, Supply	809000249	1	1
50E	Label, Low Voltage Terminals	809000250	1	1
50F	Label, High Voltage Terminals	809000251	1	1
52	Fuse Pressure Switch	809000134	1	1
52A	Screw, M3 X 25mm, DIN-EN ISO 7045	809000252	4	4
52B	Nut, M3 DIN934 Galv.8	809000302	4	4
52C	Washer, Serrated AS.3 DIN 6798	809000303	4	4
53	Pressure Switch Support	809000253	2	2
54	Gusset, Right	809000254	2	2
55	Gusset, Left	809000255	2	2
57	Hand Protector Sponge	809000257	1	1
58	Gas Valve Inlet Flange	809000258	1	1
59	Front Cover Mounting Pin	809000259	3	3
59A	Washer 4.3 DIN 6798	809000275	3	3
59B	Nut, M4, DIN 934	809000276	3	3
60	Grounding Bus Bar	809000135	2	2
60A	Screw, DIN 7981 2.9x13	809000270	2	2
61	HMI Touch Panel Bezel	809000260	1	1
62	HMI Touch Panel Bracket	809000261	1	1
63	Screw Terminal Grey	809000136	43	43
66	Terminal Stopper	809000262	1	1
67	Terminal End Plate	809000263	1	1
68	Terminal Numbering Label 1-50	809000264	1	1

ITEM	DESCRIPTION	PART NUMBER	RCB301	RCB399
69	Terminal Rail 120mm	809000277	2	2
71	Gas Valve Adjustment Hole Gasket	809000265	1	1
72	Rectangular Shape Gasket	809000266	1	1
73	PG 11 Blind Cap	809000279	1	1
74	PG 11 Blind Cap Nut	809000280	1	1
75	Condensate Outlet Pipe Gasket	809000199	1	1
74A	HMI Touch Panel Mounting Hinge Left	809000200	1	1
76	HMI Touch Panel Mounting Hinge Right	809000201	1	1
77	Condensate Outlet Adapter	809000202	1	1
78	X1 Main Power Cable	809000098	1	1
79	X1 CH Pump Cable	809000099	1	1
80	X1 DHW Pump Cable	809000100	1	1
81	X1 Boiler Pump Cable	809000101	1	1
82	X1 AUX2/Auxiliary Power Cable	809000102	1	1
83	X1 AUX1/Blower Power Cable	809000103	1	1
84	X2 Gas Valve & Ignition Transformer Cable	809000104	1	1
84A	X4 APS/Supply & Return Temp. Sensor/H3 0-10V Input Cable	809000105	1	1
85	X5 System Temp. Sensor Cable	809000106	1	1
86	X5 BX2 Supply Temperature Sensor Cable	809000107	1	1
87	X5 BX1 Temperature Sensor Cable	809000108	1	1
88	X5 Fuel Temperature Sensor Cable	809000110	1	1
89	X5 B9 Outdoor Temperature Sensor Cable	809000111	1	1
90	X6 H1 Water Pressure Sensor Cable	809000112	1	1
91	X6 H5 Room Thermostat 1 & 2 Cable	809000113	1	1
92	X8 Blower PWM Signal Cable	809000114	1	1
94	X10 UVZ/3 0-10V Output Cable	809000115	1	1
95	X15 Pump PWM Signal Cable	809000116	1	1
96	X17 Grounding Cable	809000117	1	1
97	X18 Limit Thermostat Circuit Cable	809000118	1	1
99	Wall Mounting Bracket (with Screws)	809000188	1	1
100	Pressure Relief Valve, 7.5 PSI	807000224	1	1
101	Outdoor Temperature Sensor	809000047	1	1
102	RCB Floor Stand	809000097	1	1
103	RCB i/O Manual English	800000172	1	1
104A	RCB i/O Manual French	800000186	1	1
104B	RCB Technical Data Sheet	803000050	1	1
105	Air Inlet Filter	803000050	1	1
106	Cascade System Sensor	803000051	1	1
107	RCB User Manual English	800000172	1	1
108A	RCB User Manual French	800000188	1	1
108B	RCB User Manual French	803000078	1	1
110	Backnet Adapter	804000074	1	1
111	Condensate Neutralizer	806000068	6	6
112	Nut M6	806000069	1	1
113	Insulation	806000089	1	1
114	Thermo-fuse	805000140	1	1
115	Fuse Outlet Adapter 4 inch + Gasket	802000011	1	1
117	Electrode Screw	809000141	4	4
116	Fuel Outlet Adapter 4 inch + Gasket	802000012	1	1
118	Ignition Electrode	806000070	1	1
119	Ignition Electrode Gasket	805000143	1	1
120	Burner Gasket	806000070	1	1
121	Fiber Burner - 301	806000071	1	1
122	Fiber Burner - 399	806000072	1	1
123	Equipped Burner Door	806000073	1	1
124	Door Thermo Fuse	805000144	1	1

ITEM	DESCRIPTION	PART NUMBER	RCB301	RCB399
125	Door Insulation	806000074	1	1
126	Door Gasket	806000075	1	1
127	Fiber Braided	809000145	1	1
128	Ignitization Electrode	809000146	1	1
129	Ignitization Electrode Gasket	806000077	5	5
130	Air/Gas Inlet Pipe Screw	806000078	1	1
131	Equipped Air/Gas Inlet Pipe	806000079	1	1
133	Fuel Test Port Plug	806000080	2	2
135	Flapper Body Screw, MM X12 DIN912	806000081	1	1
137	Cascade Module	806000082	1	1
138	Cascade Module Cable	809000149	1	1
139	Nut, M5 DIN 934	809000272	6	6
140	UNF 3/8" Cover Bolt	809000284	4	4
143	Terminal Group Label	809000285	2	2
144	Ground Busbar Connection Cable	809000288	3	3
145	Terminal Busbar Connection Cable	809000289	5	5
146	Exhaust Label144	809000290	1	1
147	Air Intake Label	809000291	1	1
148	Reset Button Label	809000292	1	1
149	Warning Label	809000293	1	1
150	Rating Label	809000294	1	1
152	Ladder Diagram Label	809000295	1	1
153	Wiring Diagram Label	809000296	1	1
154	Terminal Jumper	809000297	2	2
155	Condensate Pipe gasket	809000298	1	1
157	Lumberg 2 Pin Connector	809000299	1	1
159	RCB Carton Box-Wall (Not Shown)	8030000283	1	1
160	Spare Fuses (6.3 Amps)	803000079	2	2
161	Backnet Adapter with LowWorks	803000080	1	1
162	Gas Valve Kit	803000052	1	1
202	Gas Conversion Kit LP to NG - 301	803000054	1	1
203	Gas Conversion Kit LP to NG - 399	803000048	1	1
204	Gas Conversion Kit NG to LP - 301	803000049	1	1
205	Gas Conversion Kit NG to LP - 399	803000055	1	1
206	Ignition Transformer Kit	803000056	1	1
207	Water Pressure Sensor Kit	803000057	1	1
210	Main Control Kit - 301 - Programmed	803000058	1	1
211	Main Control Kit - 399 - Programmed	803000057	1	1
212	Wi-Fi Kit	803000059	1	1
213	HMI Kit	803000060	1	1
214	Supply / Return Sensor Kit	803000061	1	1
215	Supply Pipe Kit	803000062	1	1
216	Return Pipe Kit	803000063	1	1
217	Right Panel Assembly Kit	803000064	1	1
218	Left Panel Assembly Kit	803000065	1	1
219	Front Panel Assembly Kit	803000066	1	1
220	Vent Top Assembly Kit	803000067	1	1
221	Check valve Assembly Kit	803000068	1	1
222	Air Vent Kit	803000069	1	1
223	Condensate Trap Assembly Kit	803000070	1	1
224	Gas Valve Throttle Kit	803000071	1	1
225	Terminal Strip Kit	803000072	1	1
226	Burner Door Assembly - 301	803000073	1	1
227	Burner Door Assembly - 399	803000074	1	1
228	Ignition Electrode	803000075	1	1
229	Ignitization Electrode Kit	803000076	1	1

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