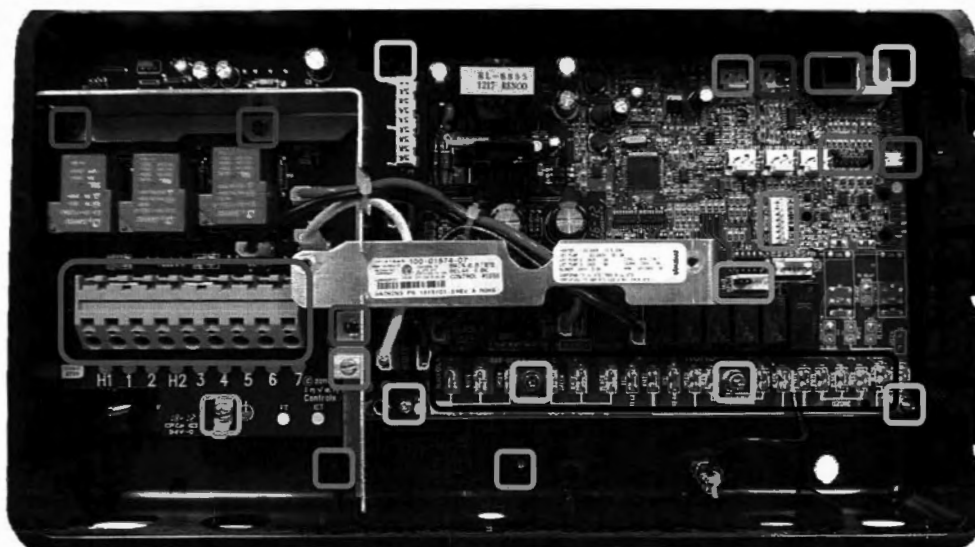













REPLACEMENT

ADVENT™ Orca Main PC Board 60Hz Replacement for ALL Utopia 2009 – 2012 3RD Qtr. and Paradise 2010 – 2012 3RD Qtr.

WARNING! Before applying power to the control box, complete the entire procedure contained in these instructions.

Refer to the illustration below to locate the various control box components referred to within this procedure.



 TERMINAL BLOCK	 PRESSURE SWITCH	 SERVICE JUMPER
 MOUNTING SCREWS	 CONTROL AND HI-LIMIT THERMISTOR	 SOURCE AND HEATER GROUNDING LUGS
 RETAINING SCREWS AND GROUNDING LUGS	 CONTROL AND AUX PANEL	 HEATER RELAY BOARD RETAINING SCREWS
 POWER CONNECTIONS FOR COMPONENTS	 PERIPHERAL INTERFACE COMMUNICATION	

Removing the Heater Relay Board from the Control Box

1. Disconnect power to the spa and access the equipment compartment.
2. On the front of the control box, remove the screws and open the control box cover.
3. Remove the screw holding the horizontal cover bracket then slide it to the right to remove it from the control box.
4. Disconnect the Red, Black and White wires from the Main PC Board with needle nose pliers. **Figure 1.1**
5. Remove all four screws securing the heater relay board (2 retaining and 2 grounding screw).
6. Remove the metal guard from the control box.
7. Using the lift points, gently lift the heater relay board straight out of the control box. **Figure 1.2**
8. **Caution:** Board will still be firmly connected to the Main PC Board, lifting heater relay board straight out will disconnect it from the Main PC Board.

Wires from the Heater Relay Board

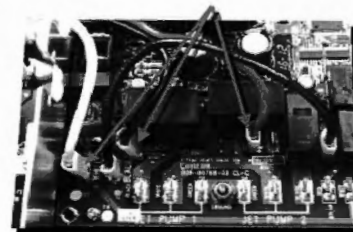


FIGURE 1.1

Removing the Main PC Board from the Control

1. On the top right side of the control box, disconnect the two thermistors from the thermistor inputs and the pressure switch from its input.
2. On the right side, disconnect the ribbon cable for the main control panel and the cord for the auxiliary panel, if applicable.
3. Along the bottom of the control box, identify and **mark all wires** for the components from the flag terminals and disconnect them. Save the strain reliefs (if undamaged).
4. Disconnect the black wire mounted on the Main PC Board located on terminal P12 and P13. Transfer wire to the new Main PC Board if needed. **Figure 1.3**
5. Locate the **service jumper and transfer** it to the new Main PC Board. **Note: Service Jumper is located on port P9 pin 5.**
6. Remove the retaining screws (3) and the grounding 8mm nuts (3) securing the board. **Figure 1.3**
7. If the board is being returned with a warranty claim, be sure to package it in original factory packaging (the

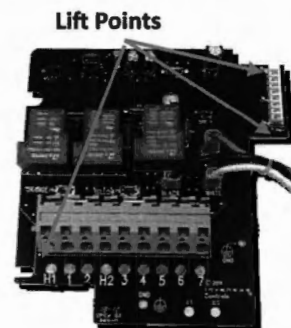


FIGURE 1.2

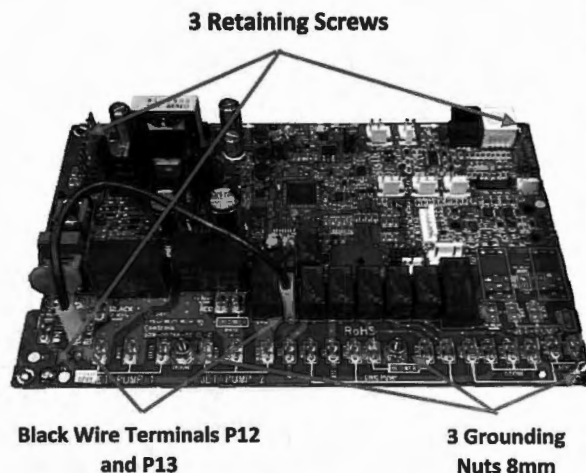


FIGURE 1.3

Mounting the New Main PC Board into the Control Box

1. Place the Main PC Board in the control box and make sure all screw holes line-up.
2. Install the 3 grounding nuts making sure they line-up with the grounding plate on the back of the control box.
3. **Caution: Make sure screw and nut connections are aligned perfectly. Install the 3 retaining screws.**

Mounting the Heater Relay Board into the Control Box

1. Line up the connector on the top right of the heater relay board with the connection on the top left of the new Main PC Board.
2. Making sure the screw holes are lined up, use the lift points and press down firmly to secure the relay board. **Figure 1.2**
Caution: Make sure connections are aligned perfectly.
3. Line up metal guard and secure the heater board using the four screws (2 retaining screws and the 2 grounding screws).
4. Connect the RED, WHITE, AND BLACK wires from the heater relay board, through the guard slot, to the labeled connections on the Main PC Board. **Figure 1.1**
5. Line up the horizontal cover bracket and screw into place.
Note: Make sure to slide cover bracket into slot in the metal guard.

Reconnecting all components

Note: *If necessary refer to illustration on the front page to locate the various control box components.*

1. On the top right side of the control box, connect the pressure switch, Hi-Limit thermistor and cord for the Auxiliary panel.
2. On the right side, connect the ribbon cable for the main panel (orient red strip to the left). **Figure 1.4** and the cord for the auxiliary panel, if applicable.
3. On the middle right side, connect the light controller to the Peripheral Interface port.
4. **Note:** *If additional accessories are present, use the I2C communication hub.*
5. Along the bottom of the control box, connect all components back to original flag terminals.



FIGURE 1.4

Wiring the line voltage conduit to terminal block TB-1



If the line voltage is wired incorrectly, damage to the control box may occur.

ELECTRICAL REQUIREMENTS

ALL SPAS MUST BE WIRED IN ACCORDANCE WITH ALL APPLICABLE NATIONAL AND LOCAL ELECTRICAL CODES. ALL ELECTRICAL WORK SHOULD BE DONE BY AN EXPERIENCED, LICENSED ELECTRICIAN. WE RECOMMEND THE USE OF APPROPRIATE ELECTRICAL CONDUIT, FITTINGS, AND WIRE FOR ALL CIRCUITS.

- The wiring instructions are located below.
- Refer to the illustrations at the bottom of the page and locate the spa model and operating voltage.
- Wire the terminal block (TB-1) as shown:

230 VAC, 40 AMP, 60 HZ INPUT WIRING PERMANENTLY CONNECTED MODELS

WIRES FROM THE 30AMP BREAKER

- Connect the blue (hot) wire from the subpanel 30 amp breaker terminal L1 to TB-1, terminal 5.
- Connect the white (neutral) wire from the subpanel 30 amp breaker terminal N to TB-1, terminal 7.
- Connect the red (hot) wire from the subpanel 30 amp breaker terminal L2 to TB-1, terminal 6.

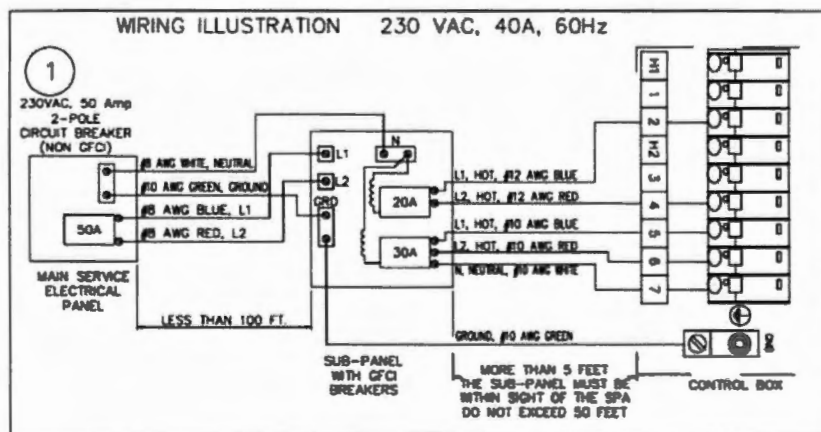
WIRES FROM THE 20AMP BREAKER

- Connect the red (hot) wire from the subpanel 20 amp breaker terminal L2 to TB-1, terminal 4.
- Connect the blue (hot) wire from the subpanel 20 amp breaker terminal L1 to TB-1, terminal 2.

GROUND WIRE FROM THE SUBPANEL

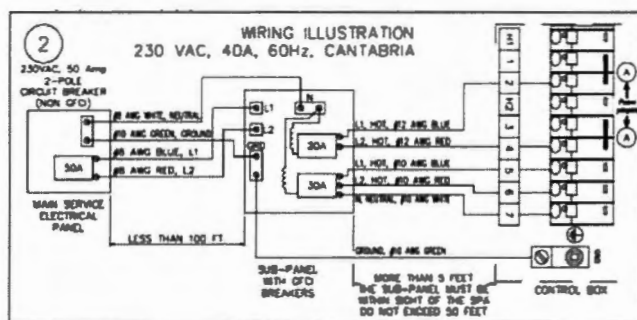
- Connect the green (ground) wire from the subpanel ground bar to the source grounding lug.

UTOPIA AND PARADISE SERIES PERMANENTLY CONNECTED MODELS (Excluding Cantabria)



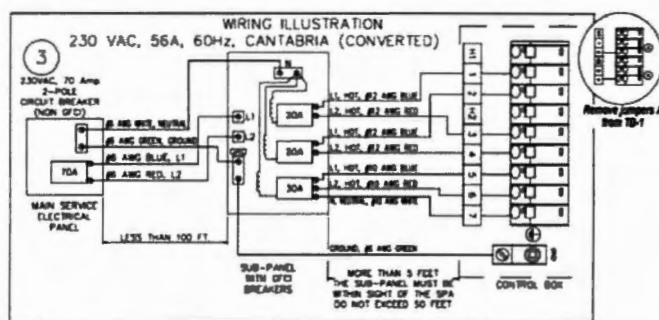
WIRING ILLUSTRATION 1

CANTABRIA® UTOPIA SERIES



WIRING ILLUSTRATION 2

CANTABRIA® UTOPIA SERIES (70A Conversion)



WIRING ILLUSTRATION 3

CONVERTED CANTABRIA (THE FOLLOWING THREE STEPS ONLY APPLY TO THIS CONFIGURATION).

WIRES FROM THE 20AMP BREAKER

- Connect the red (hot) wire from the subpanel 20 amp breaker terminal L2 to TB-1, terminal 1.
- Connect the blue (hot) wire from the subpanel 20 amp breaker terminal L1 to TB-1, terminal 3.
- Remove jumpers "A" shown in **WIRING ILLUSTRATION 2**, and set soft jumper J18 to '-'

SOFT JUMPER SET UP INSTRUCTIONS

Note: The Soft Jumpers program the control box to work in a specific Spa. Mod-

Accessing the Configuration Mode

Attention: This step applies to ALL Models.

1. Make sure the power is OFF.
2. Locate **P9** on the Main PC Board and jump pins 4 and 5 (left pins) to access to the program settings. **Figure 1.5**
3. Turn the spa power ON and wait for the control panel revision to appear on the display.
4. Base on the model and year of the spa, complete the configuration process following steps on the next two pages.

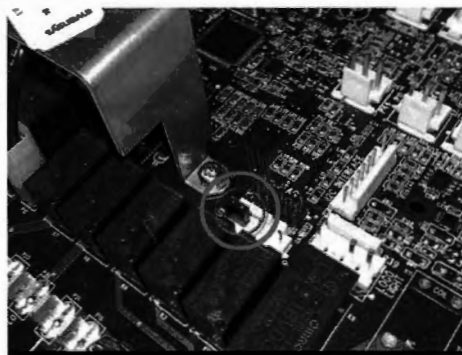


FIGURE 1.5

Configuring the Control Box

Attention: The following steps apply *ONLY* to *Utopia 2009 – 2010* and *Paradise 2010*.
Set each jumper (1- 18) according to the table below.

1. Wait for the control panel to display the revision number.
2. To access the jumper settings you will need to simultaneously press the **TEMP ▼** button, and the **LIGHT** button. **Figure 2.1** **NOTE:** For Cantabria model use the **JET 3** button instead of 'LIGHT' button.
3. The control panel will display **SPA2+**. Press the **TEMP ▼** button to access jumpers 1-18. **Figure 2.2**
4. The control panel will display **01-** or **01+**. To change the setting from Negative "-" to Positive "+" or vice versa, you will use the **JETS 1** button. **Figure 2.3** **NOTE:** For Cantabria model use the **LIGHT** button instead of **JET 1** button.
5. Each jumper setting will need to be confirmed in the program. To confirm each jumper setting press the **TEMP ▲** button twice, the **H2O** symbol will flash three times at the bottom right of the display.
6. Once every jumper has been set, use the **TEMP ▼** button to scroll back through all the jumpers to verify all were properly set.
7. Turn the spa power OFF.
8. Remove the service jumper connecting Pins 4 and 5 in **P9**. Park jumper on pin 5.
9. Turn the spa ON and test all components for proper operation.



FIGURE 2.1



FIGURE 2.2



FIGURE 2.3

ADVENT™ ORCA CONTROL BOX CONFIGURATION

Utopia 2009 – 2010
Paradise 2010

SPA SERIES	SPA MODEL	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14	J15	J16	J17	J18
UTOPIA	GENEVA - GEB	-	-	-	-	-	+	-	-	+	-	-	+	-	+	+	+	+	+
	NIAGARA - NIB	-	-	-	-	-	+	-	-	+	-	-	+	-	+	+	+	+	+
	TAHITIAN - TAB	-	+	-	-	-	+	-	-	+	-	-	+	-	+	+	+	+	+
PARADISE	ELATION - ELM	-	-	-	-	-	+	-	-	+	-	-	+	-	+	+	+	+	+
	CANTABRIA - CAB	-	-	-	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+
		-	-	-	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+
PARADISE	KAUAI - KAA	+	+	-	-	-	+	-	-	+	-	-	-	-	+	-	-	-	-
	MOOREA - MOA	-	-	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-
	HAWAIIAN - HAA	-	-	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-
PARADISE	MARTINIQUE - MRA	-	+	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-
		-	+	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-
		-	+	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-

NOTE REFERENCE

NOTE 1: CONVERTING TO 70 AMP SERVICE SET J18 = NEGATIVE (-)

Configuring the Control Box

Attention: The following steps apply *ONLY* to *Utopia* and *Paradise* 2011 to 2012 3rd Qtr.
Set each jumper (1- 18) according to the table below.

1. Wait for the control panel to display the revision number.
2. To access the jumper settings press the **MODE ▼**. **Figure 3.1**
3. The control panel will display **SPA2+**. Press the **ON ▲** button once. **Figure 3.2**
4. The control panel will display to **J01 -** or **J01 +**. To change the setting from Negative “-” to Positive “+” or vice versa, press the **ON ▲** button. **Figure 3.3**
5. Each jumper setting will need to be confirmed in the program. To confirm each jumper setting press the **OFF ▼** button twice, the **SET** symbol will flash three times at the top left of the display.
6. Once every jumper has been set, use the **MODE ▼** or **MODE ▲** button to scroll through all the jumpers to verify all were properly set.
7. Turn the spa power OFF.
8. Remove the service jumper connecting Pins 4 and 5 in **P9**. Park jumper on pin 5.
9. Turn the spa ON and test all components for proper operation.



FIGURE 3.1



FIGURE 3.2



FIGURE 3.3

ADVENT™ ORCA CONTROL BOX CONFIGURATION Utopia and Paradise 2011 – 2012 3rd Qtr.

SPA SERIES	SPA MODEL	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14	J15	J16	J17	J18
UTOPIA	GENEVA - GEB	-	-	-	-	-	+	-	-	+	-	-	+	-	+	+	+	+	+
	NIAGARA - NIB	-	-	-	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+
	TAHITIAN - TAB	-	-	-	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+
PARADISE	CANTABRIA - CAB	-	-	-	-	-	+	-	-	+	-	+	+	+	+	+	+	+	+
	KAUAI - KAA	+	+	-	-	-	+	-	-	+	-	-	-	-	+	-	-	-	-
	MARTINIQUE - MRA	-	+	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-
	SALINA - SAA	-	+	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-

NOTE REFERENCE

NOTE 1: CONVERTING TO 70 AMP SERVICE SET J18 = NEGATIVE (-)

