



## J1000 system (J400) to J400 Balboa Conversion



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Please read complete instruction, even if you have done one in the past.

Also, please review all components to have customer drain spa before arrival if needed.

We are working very hard to make all controllers “Plug and Play”.



There are multiple controllers that are being sent out depending on part availability.

- 1) Controller with DSMT plugs for a “Plug and Play” installation.
- 2) Controller with some components having DSMT plugs – clearRay and stereo.
- 3) Controller with all Pump(s), circ pump and heater cables needed to be installed.



On packs that do not have the DSMT adapter plugs for an easy “Plug and Play” installation, spa will have to be drained.

You will need access to the back of the pump(s) and top of circ pump and for installation.  
(removal of circ pump might be required)



## **VERY IMPORTANT**

For the heater, it is highly recommend that the heater be removed **completely** for easier installation of cable wires. Not following these instruction can potentially damage the heater stud. Since heater nuts are set with lock tight, **Very, Very** important that bottom stud is secured when removing top nut. Only 1 heater cable removal is required. Same when re-installing the new heater cable. If not done correctly, heater stud will break off.

**Please review carefully**



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Since all cords coming from controller are the same, each component is labeled on circuit board. You can remove each cord to each component and label I for pump I, C for circ pump, etc...

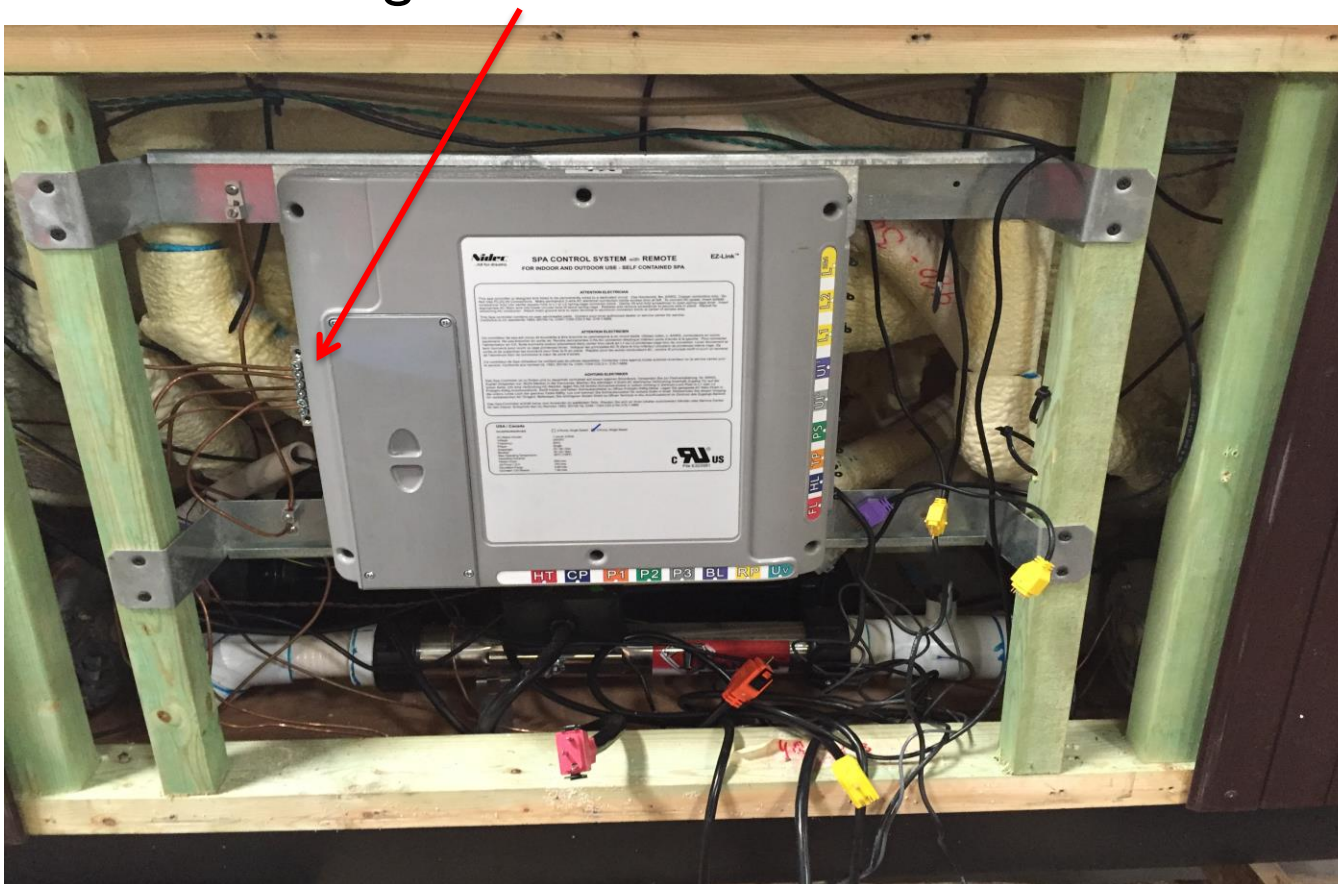
When cutting tie straps (especially for LED lights), be careful that wires are not cut.

Also, you will be using the “old” flow switch in spa. Some controllers will have the “Special Adapter” that you will plug into. Some controllers will require you to cut and use butt connectors to install the “old” flow switch into the adapter.

Disregard slides showing DSMT adapters if not applicable.



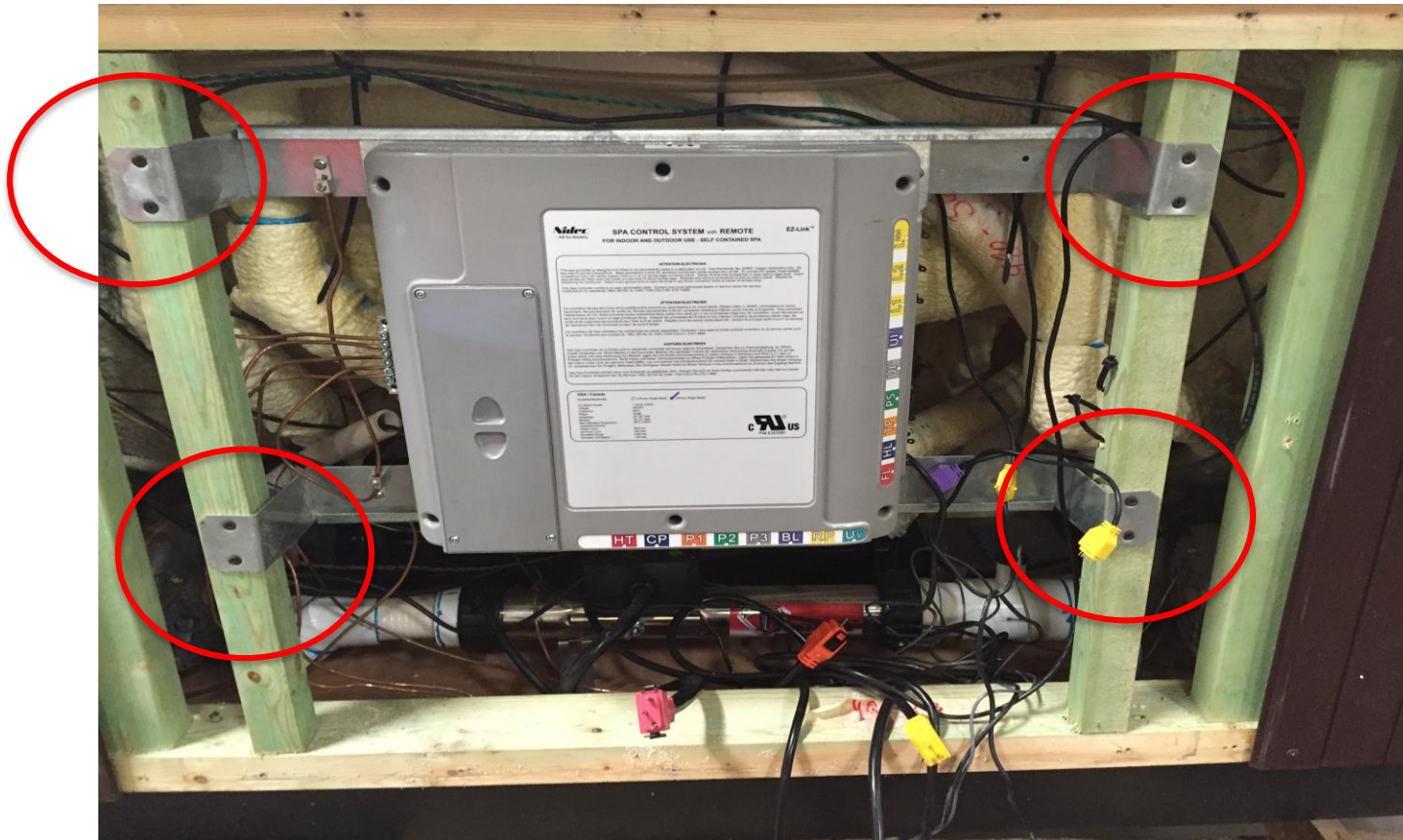
Power spa down & unplug all cables from side and bottom of load box  
(Panel, Lights, Sensors, Pump(s), UV/Ozone, Heater, Ect..)  
Remove all ground wires from terminal block.







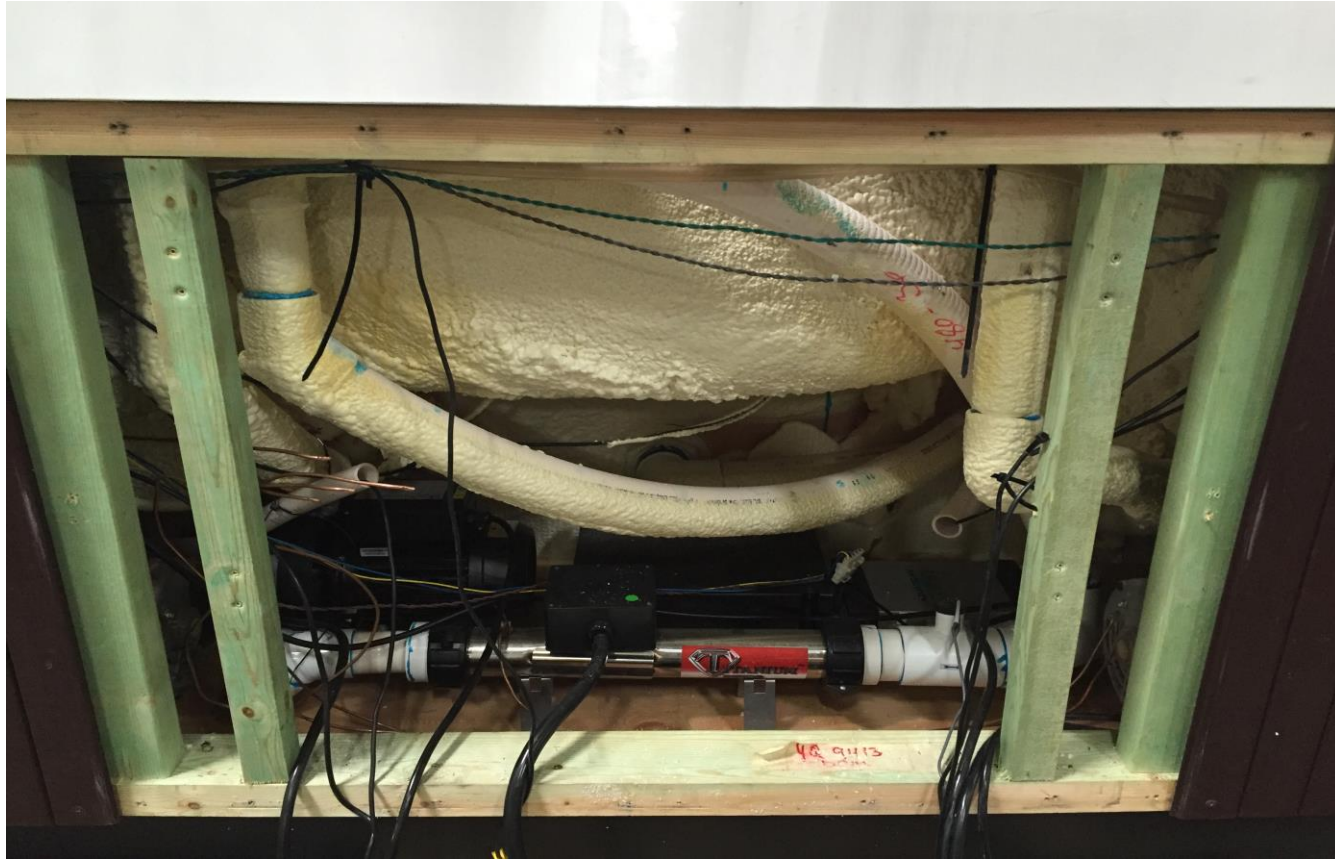
Remove screws and save. Take out brackets and remove load box. We will use these screws to install “NEW” controller and stereo (optional).







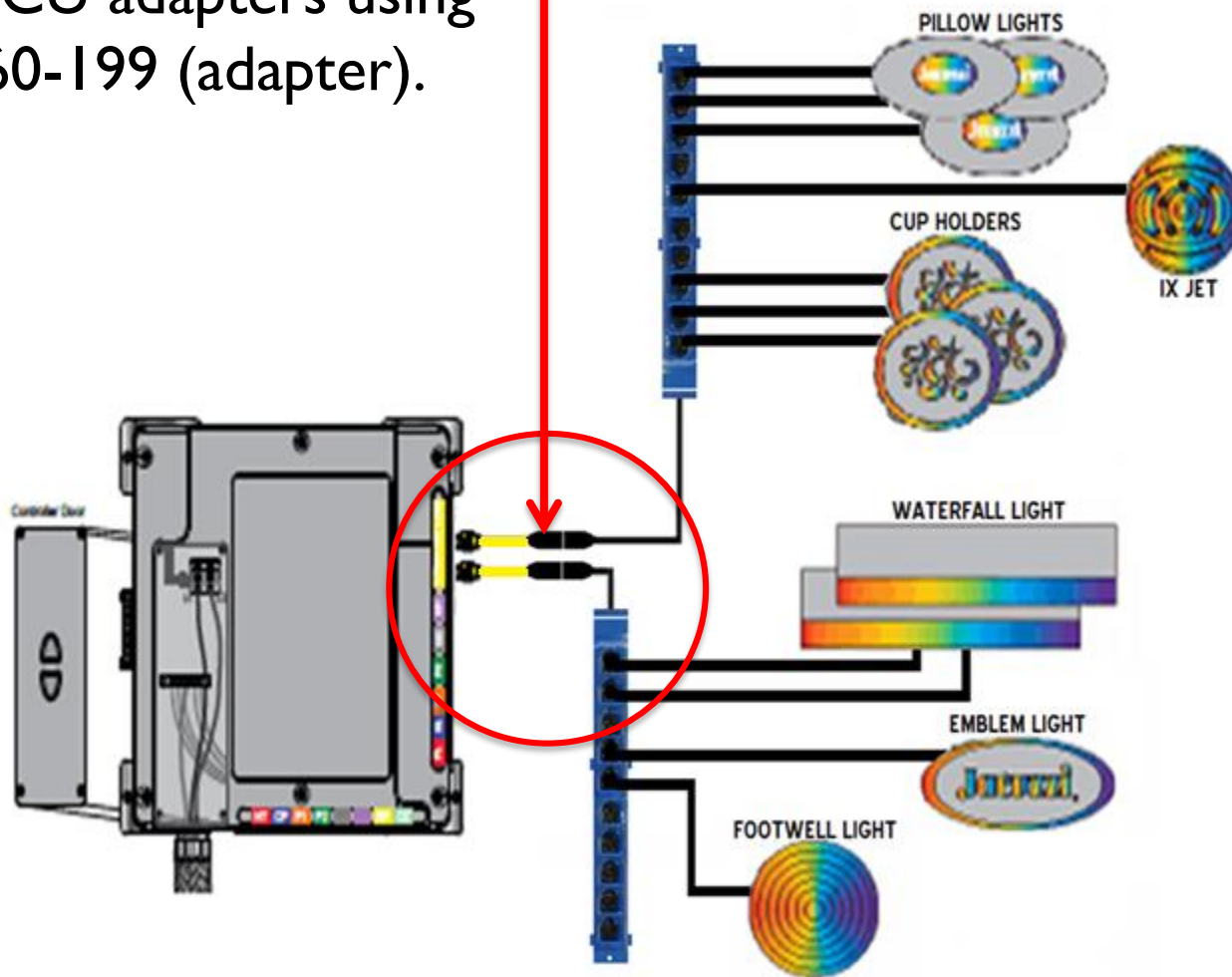
Position all cables forward.





Unplug at Mini Din and discard yellow plugs. We will reuse “BLUE” DCU adapters using part 6560-199 (adapter).

Note: If ribbon cables DCU adapters, we will discuss later.





\*We will move both “Blue” DCU adapters to center, closer to “NEW” controller. Cut tie straps to allow DCU adapter to extend.

*Caution when cutting tie straps, do not want to cut wires*

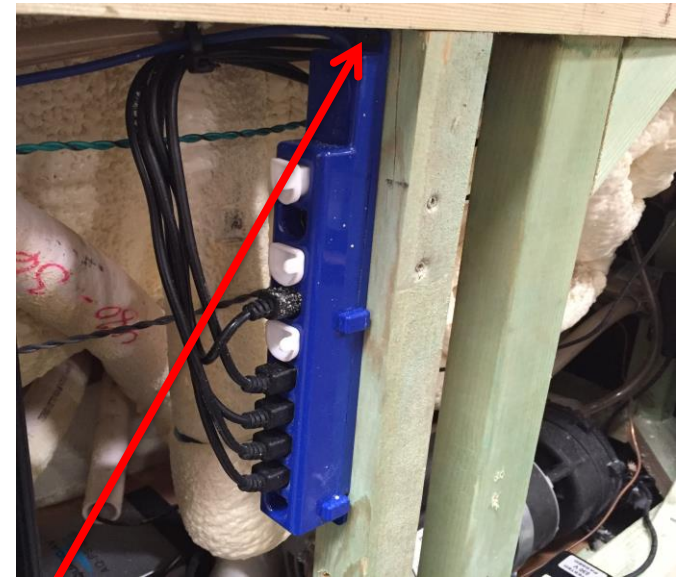
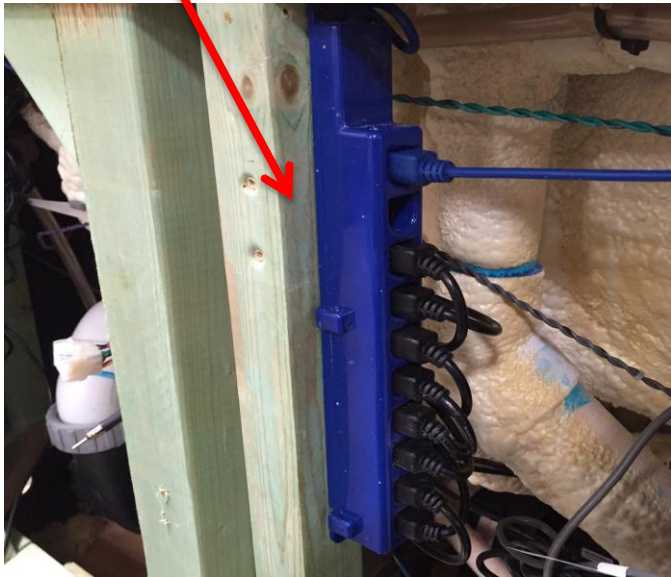


\* Note: On J-415/J-425, we will leave “Blue” DCU adapter in place





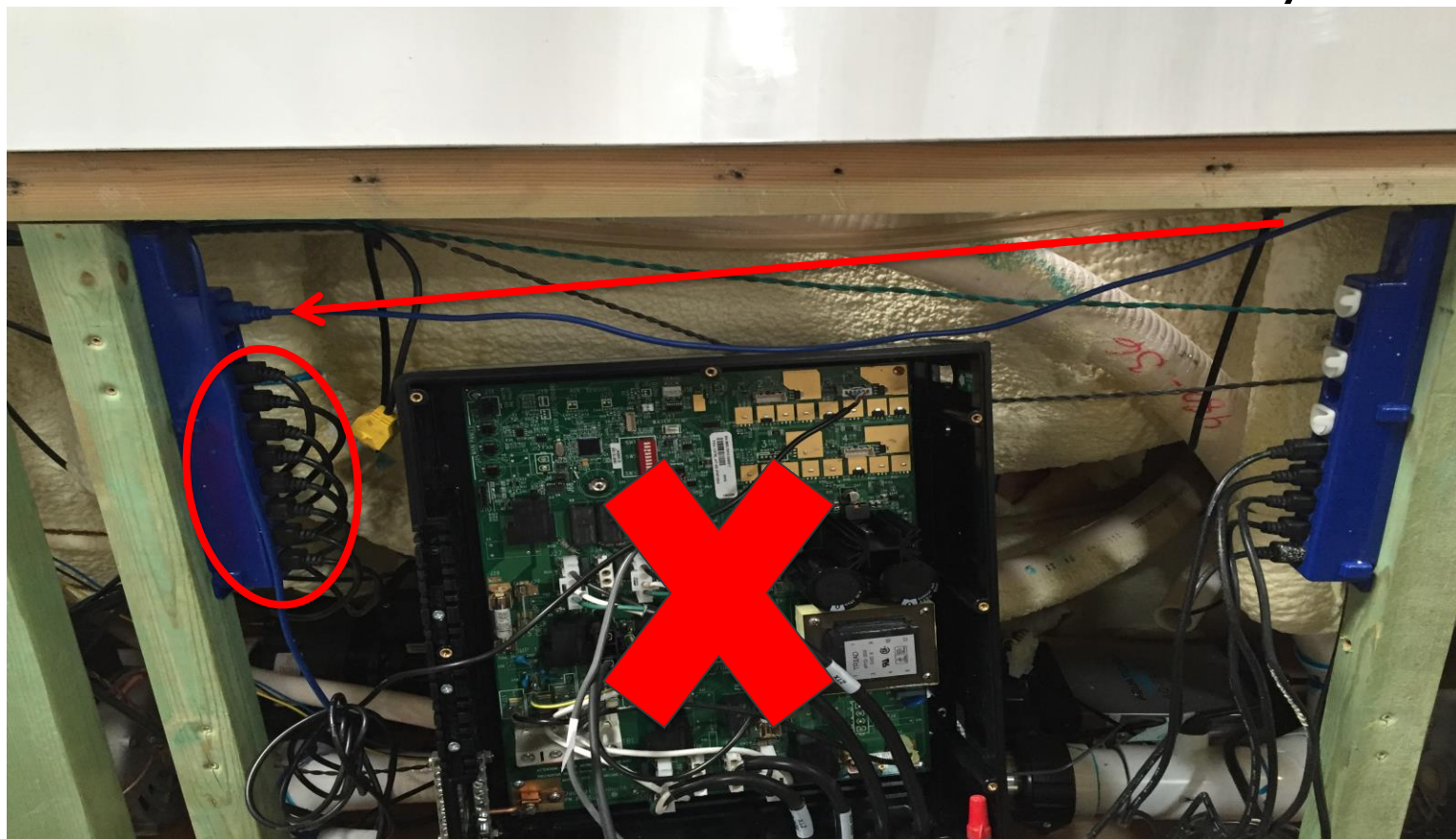
Install DCU adapters as far back as possible to allow front door to close. An extra hole at DCU adapter is needed to secure with screws. Also, make sure DCU adapter cable is towards top.





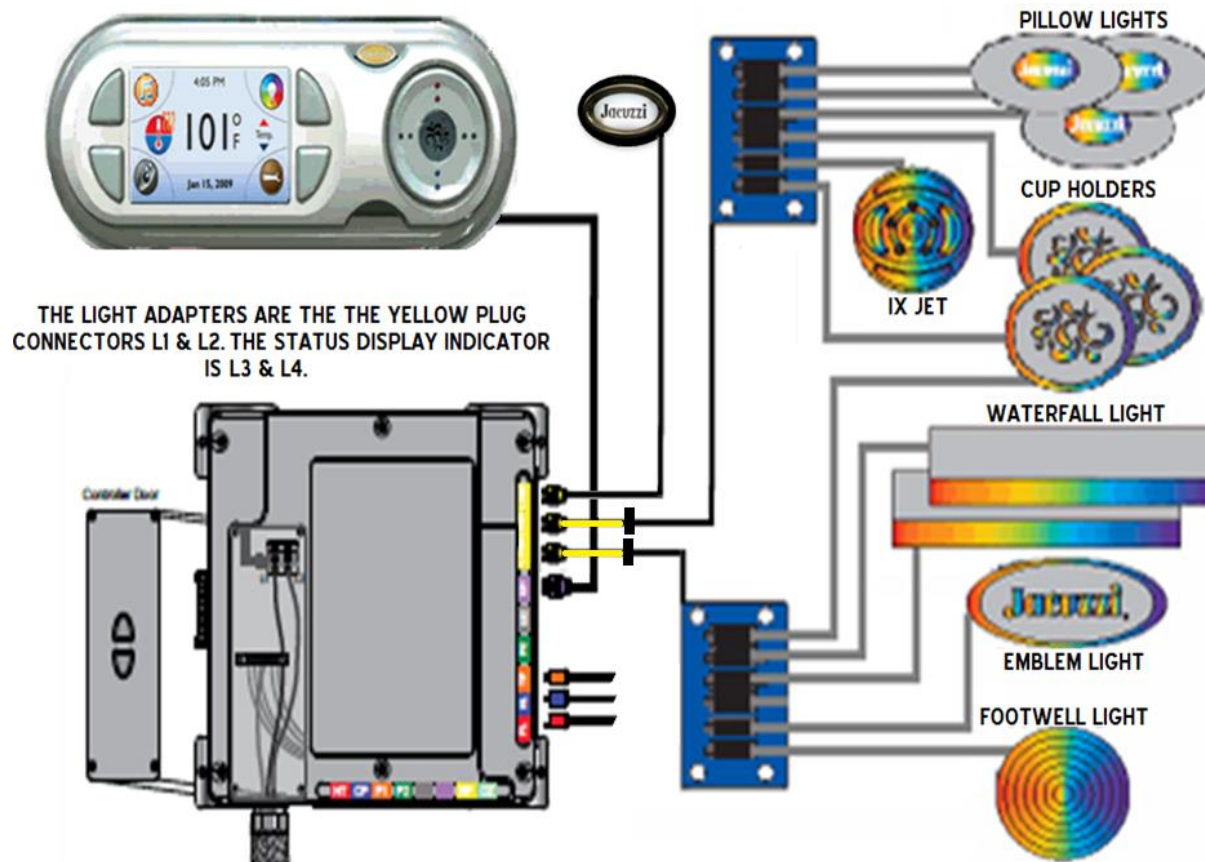
With DCU adapters installed, plug right DCU adapter into left DCU adapter top port. Load up left DCU adapter with as many LED lights.

NOTE: New controller should not be installed yet.





Note: We will address light installation after controller is in place.  
Also, we will discuss installation of older spa with ribbon cables.





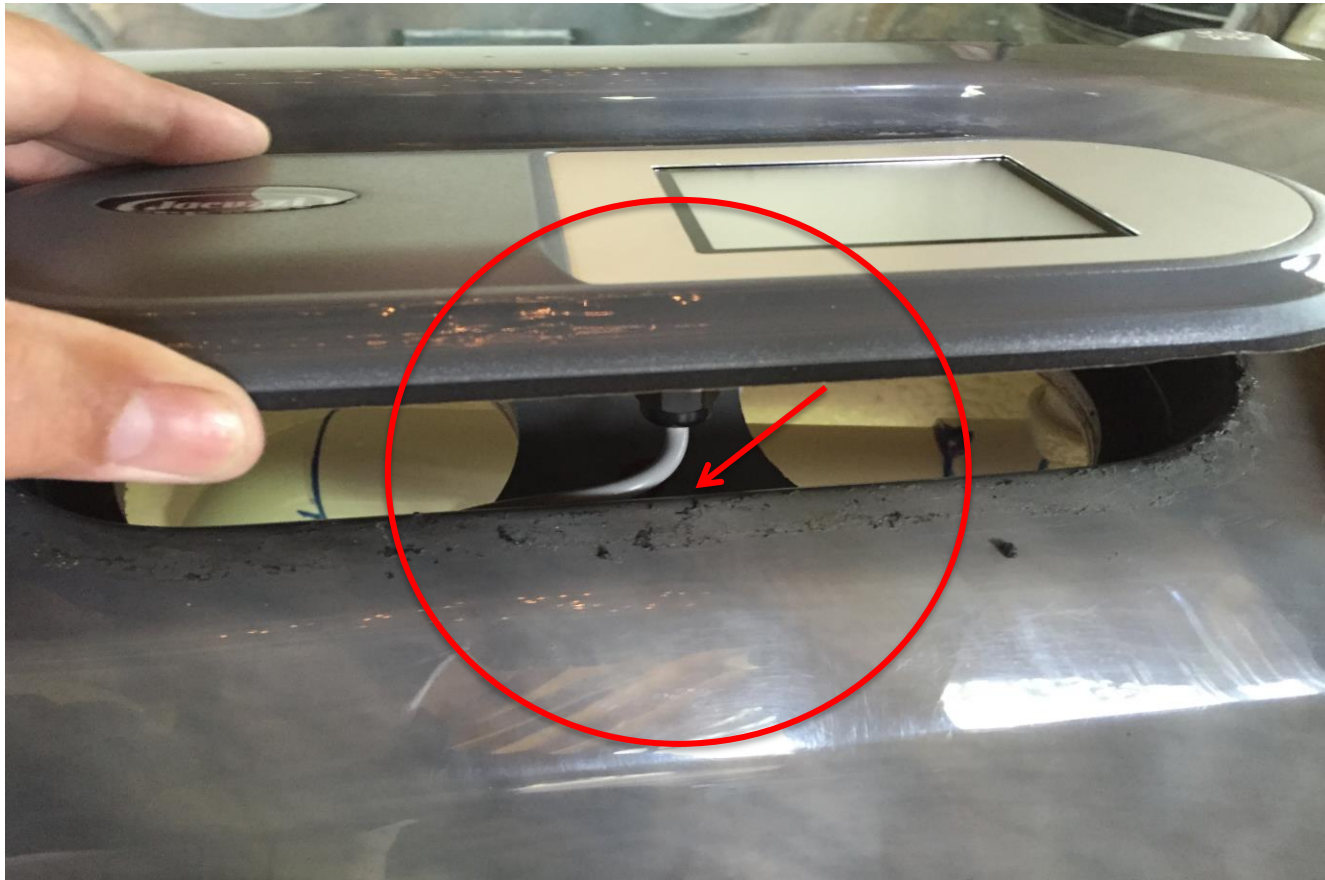


Place rag on spa to protect acrylic and remove top panel.



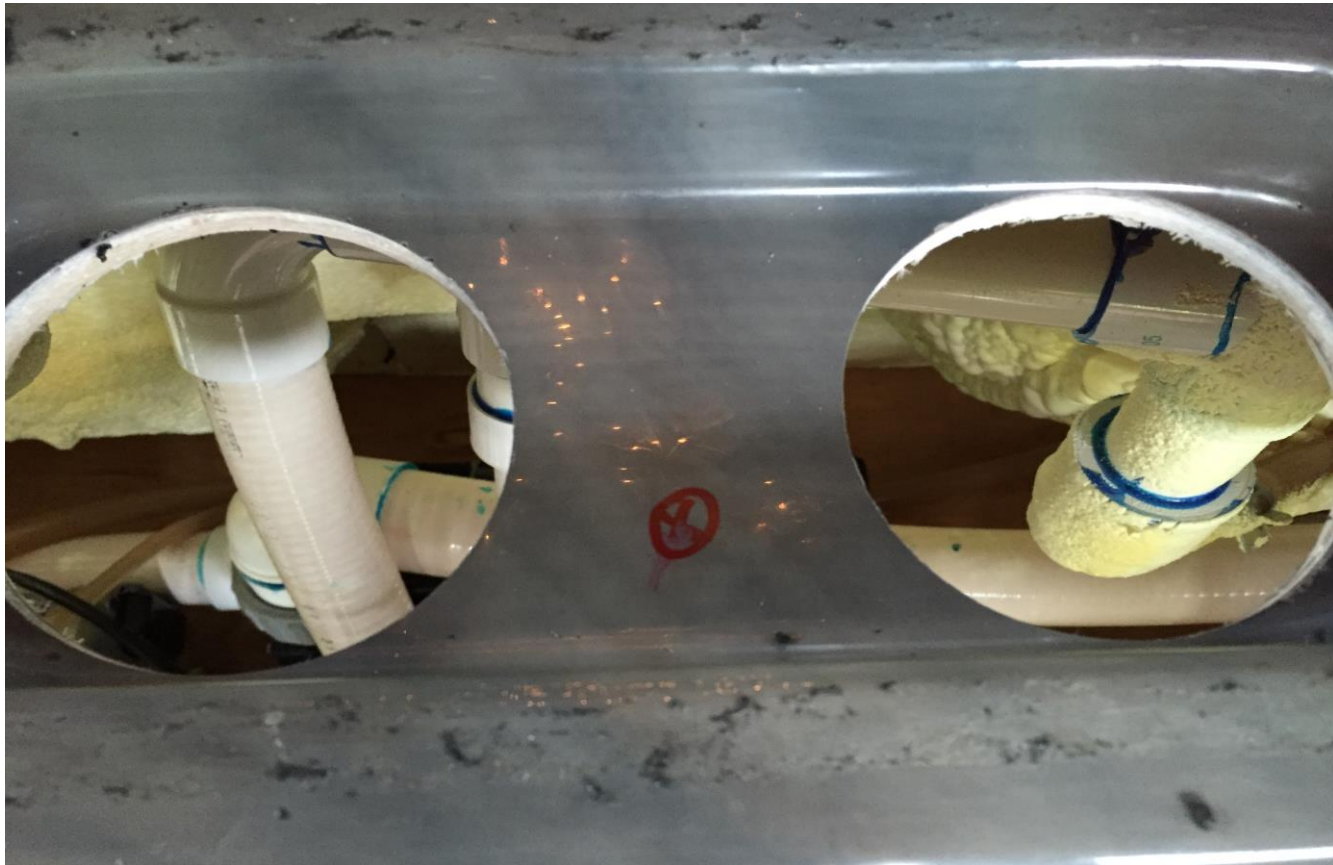


Grab “NEW” top panel and place in opening. Grab a marker and slightly lift top panel and mark area where wire housing is hitting acrylic.





With top panel removed, start drilling at marked area.



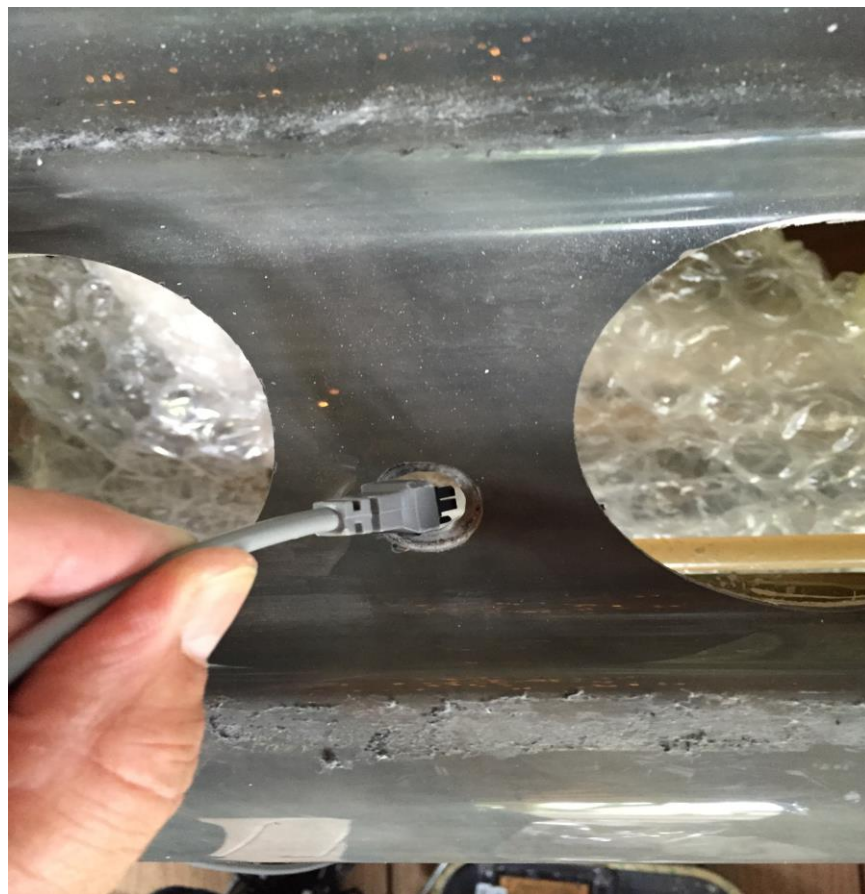




Grab a  $\frac{3}{4}$ " drill bit and drill hole through acrylic.



Grab panel plug and confirm that it will fit through opening.





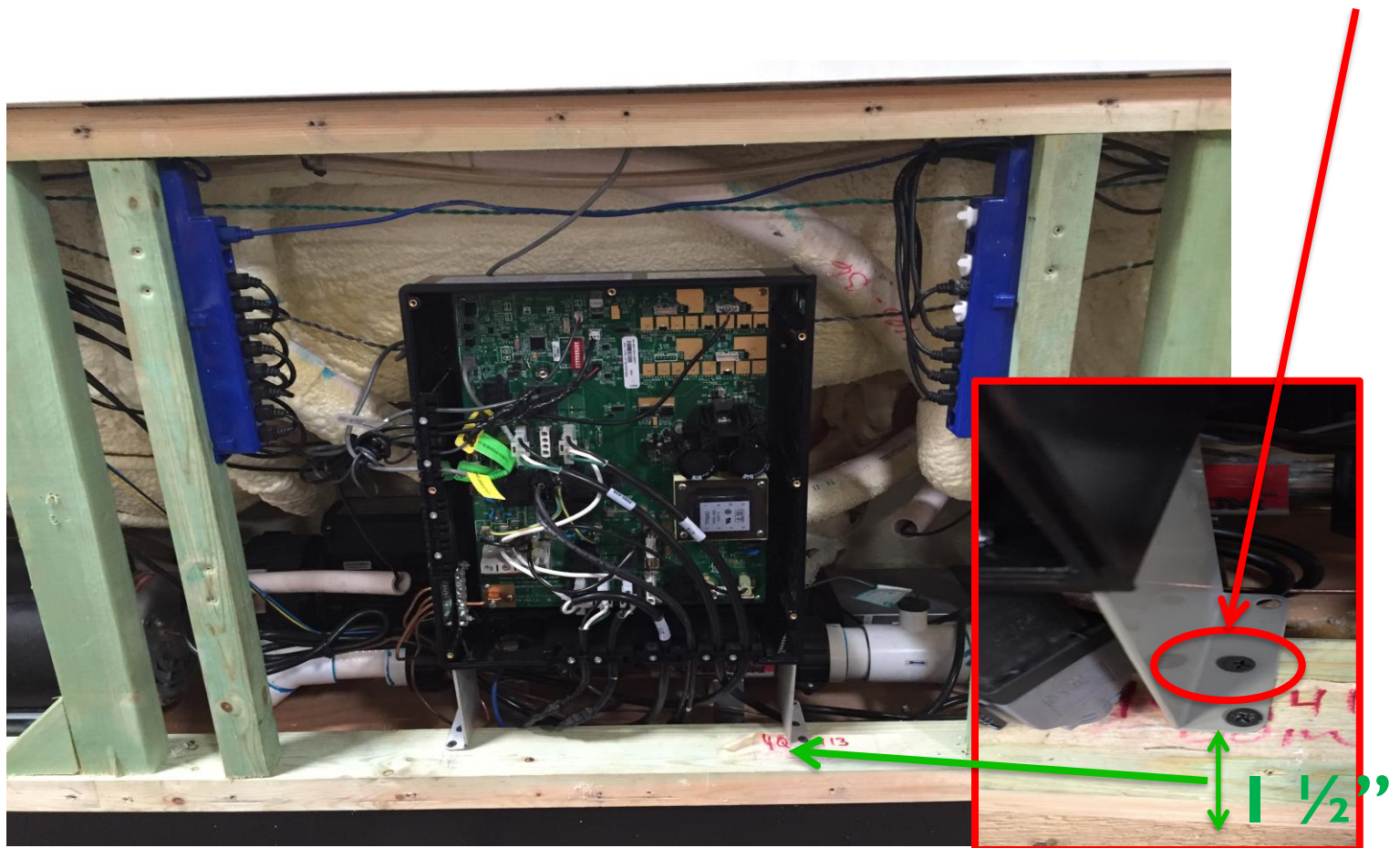
With plug through opening, confirm that panel sits flush on acrylic.  
Once all is good, prep area & install “NEW” panel.





## With DSMT plugs

Now place “NEW” controller in center about 1 ½” in, this will allow door to close. Using screws from old brackets, place screws on front hole to secure on both sides to base. Drill extra hole in bracket and add 2<sup>nd</sup> screw.







## With DSMT plugs

Locate and plug in each component. You can follow plug at board for location. Note: Each plug is individually keyed.





# J1000 Controller Plugs Color

RED - Heater

BLUE - Circ Pump

ORANGE - Pump 1

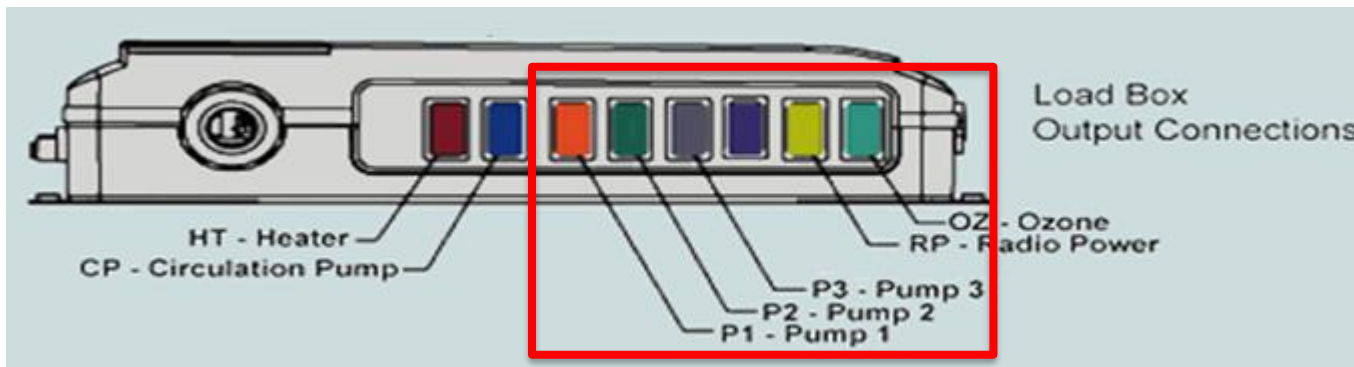
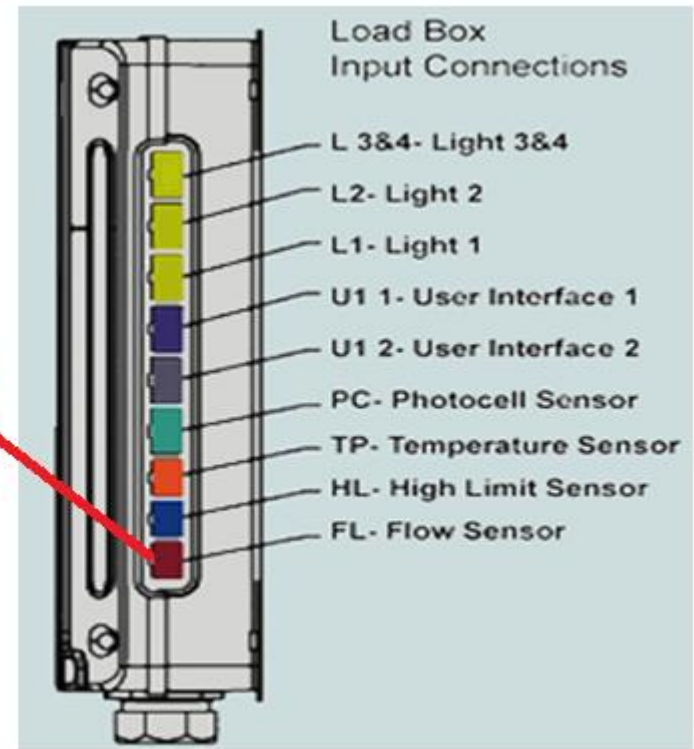
GREEN - Pump 2

GREY - Pump 3

YELLOW - Stereo Power Supply

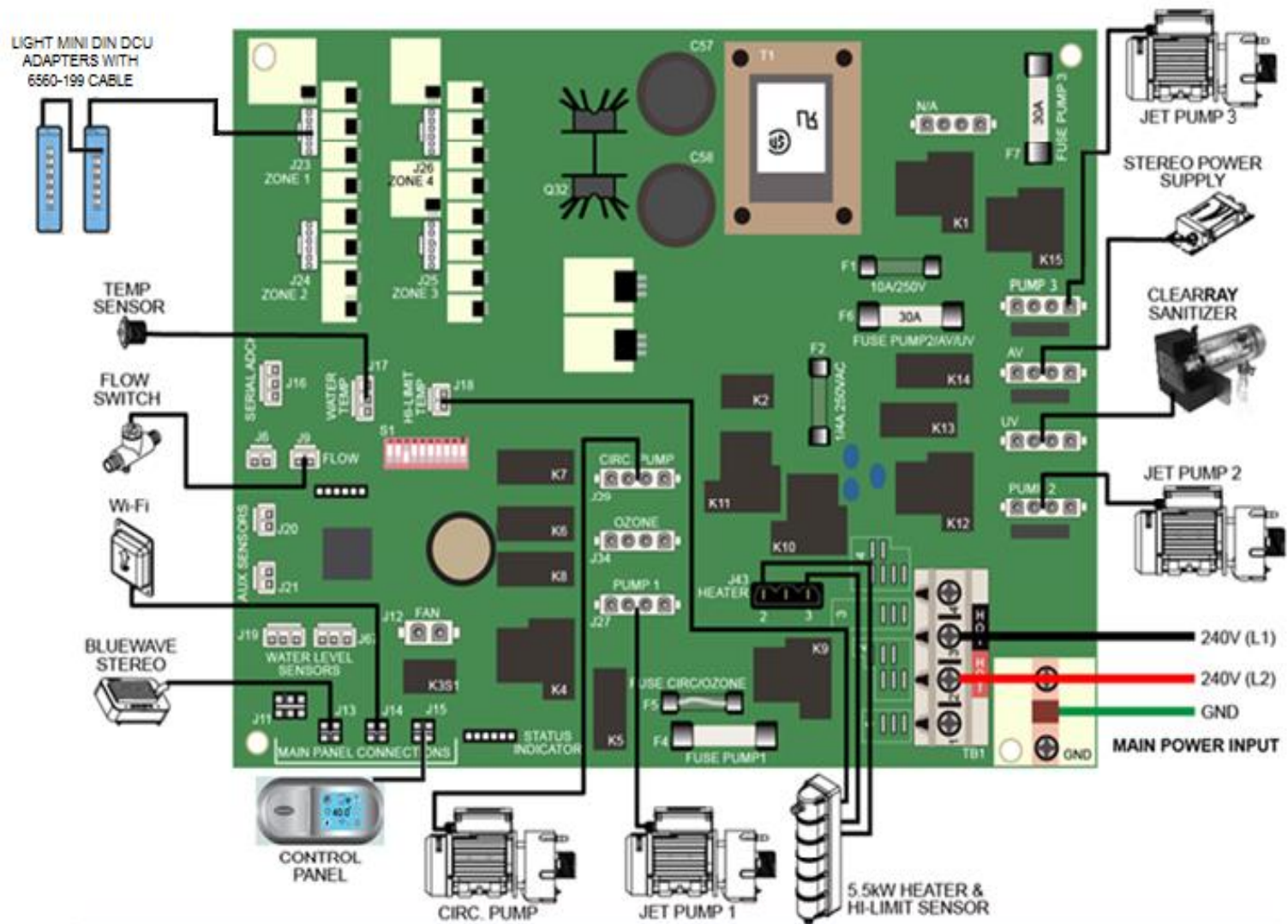
TEAL - UV/Ozone

RED - Flow  
Switch





# Component Layout

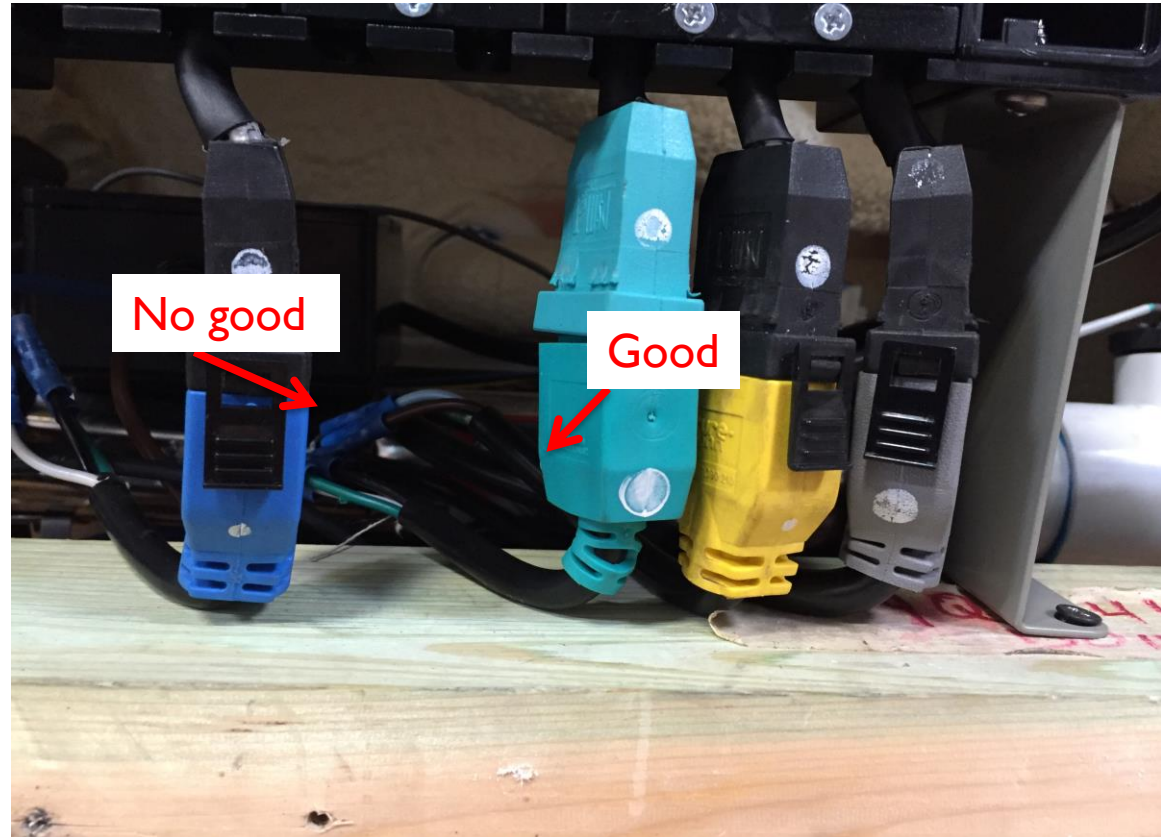






# Make sure plugs are flush

**Note: Add tape with tie strap for better connection especially to Heater plug**

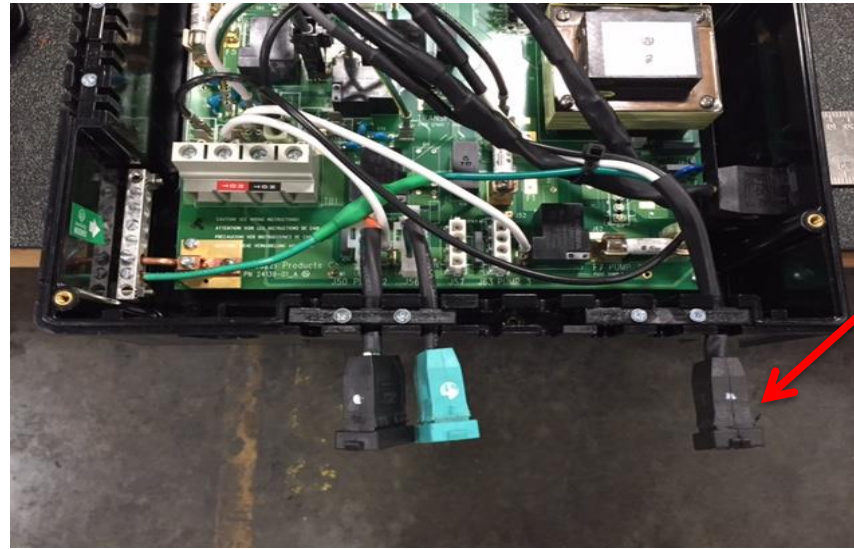


**Note: Some plugs might have black clip missing, no problem.  
Plugs will sit on bottom wood base to support.**

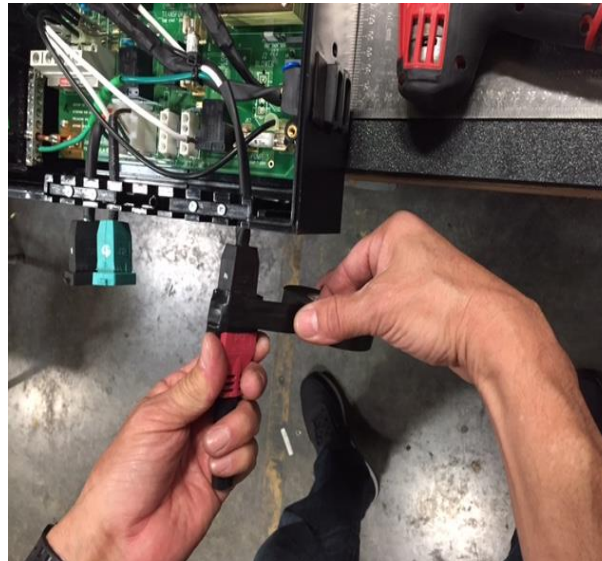


# Option A – If Heater adapter is available

**Note: Add tape with tie strap for better connection especially to Heater plug**



**Heater**







## Without DSMT plugs

With spa drained and controller removed, take heater completely out of spa.





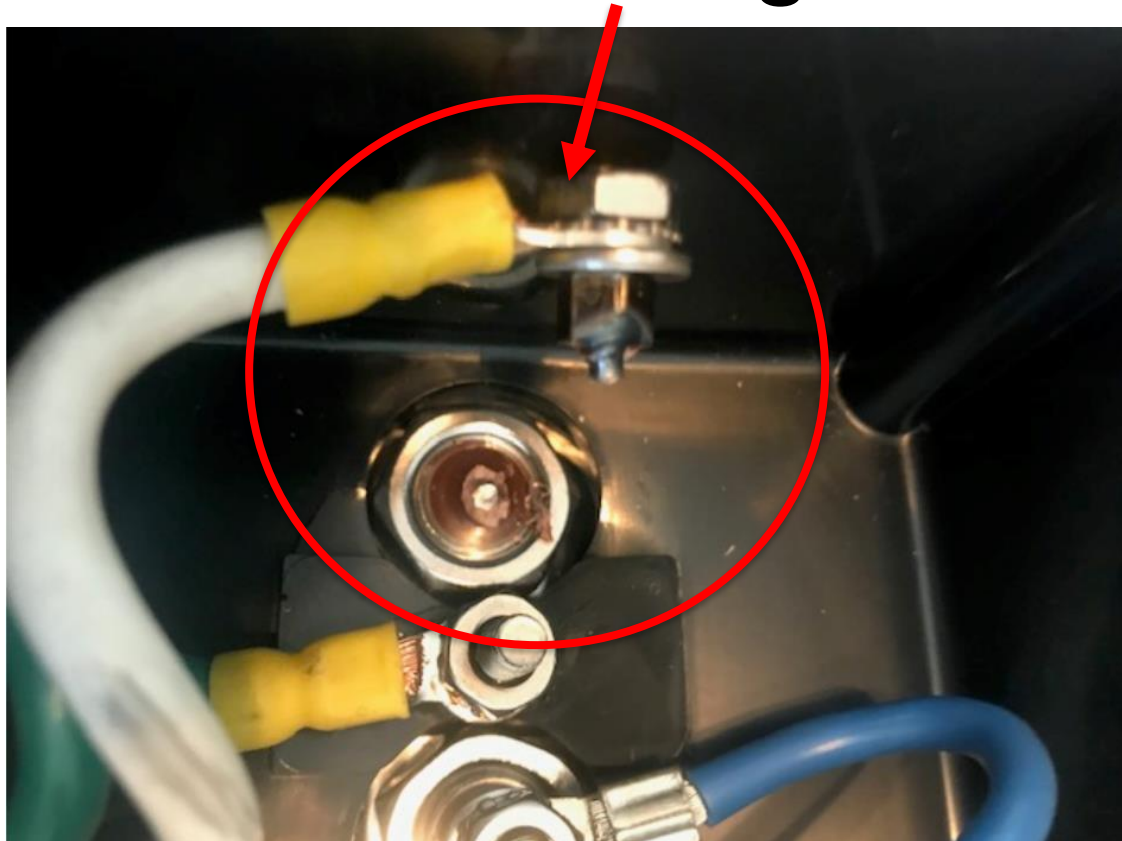


## Option B – If Heater adapter is not available

Very Important!!!

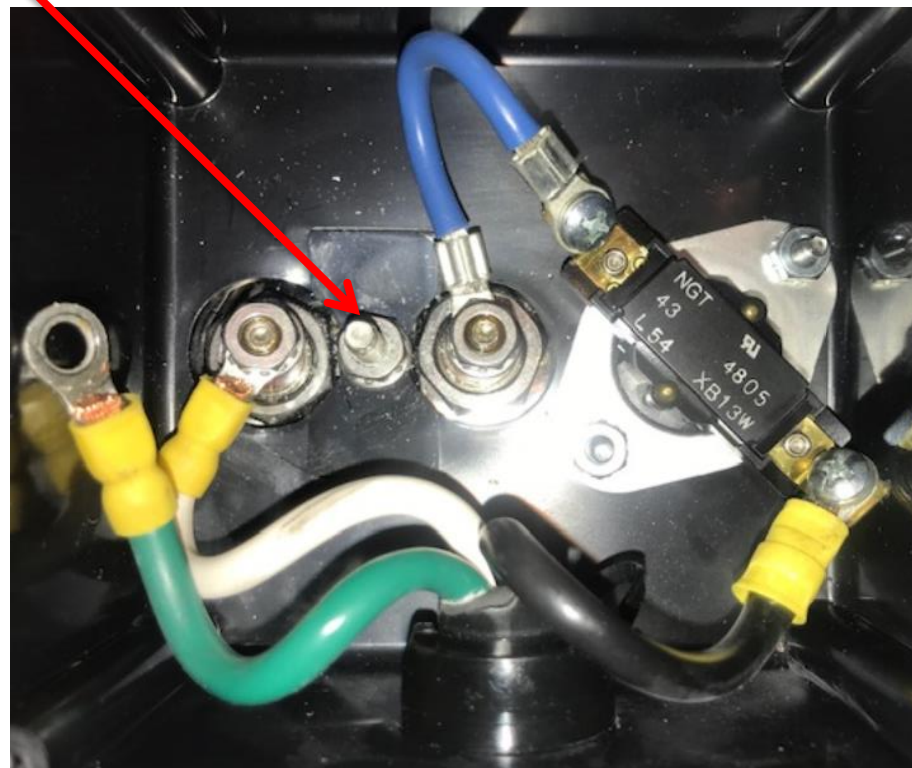
**Must** follow these instructions in detail.

We are avoiding this.





Entire black electrical box will be removed. 1<sup>st</sup>, remove the ground wire using a 3/8" socket to remove nut.

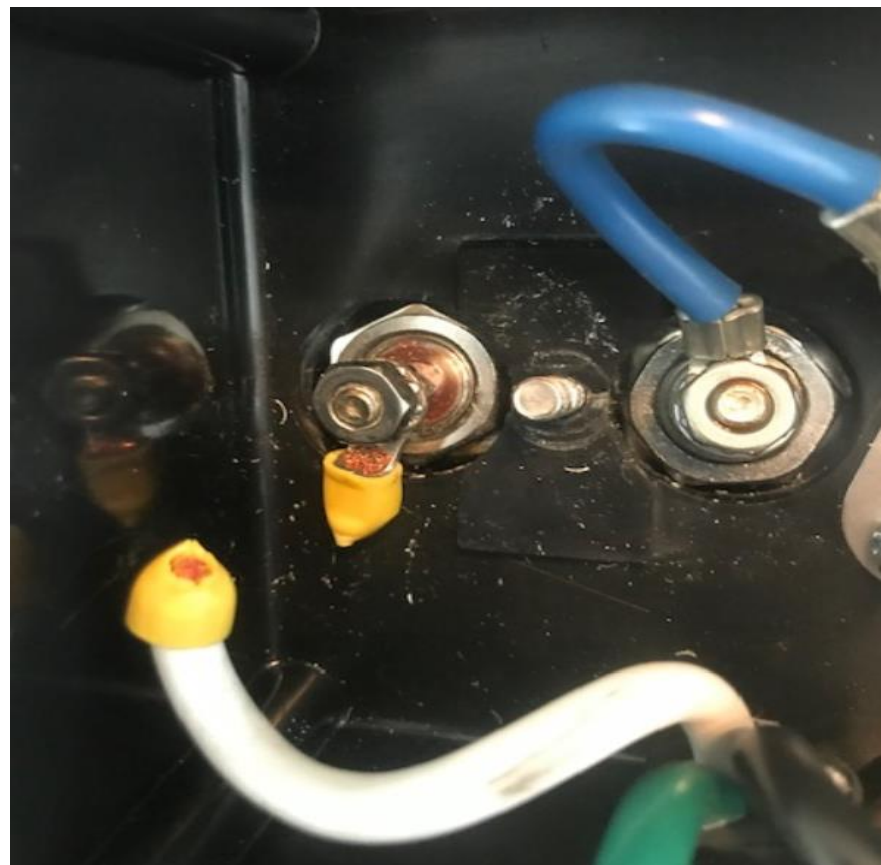


Note: Only removing these 2 wires, 1 hot and ground



Using some dikes, cut off white wire at heater terminal.

**Do not try to remove nut with socket**



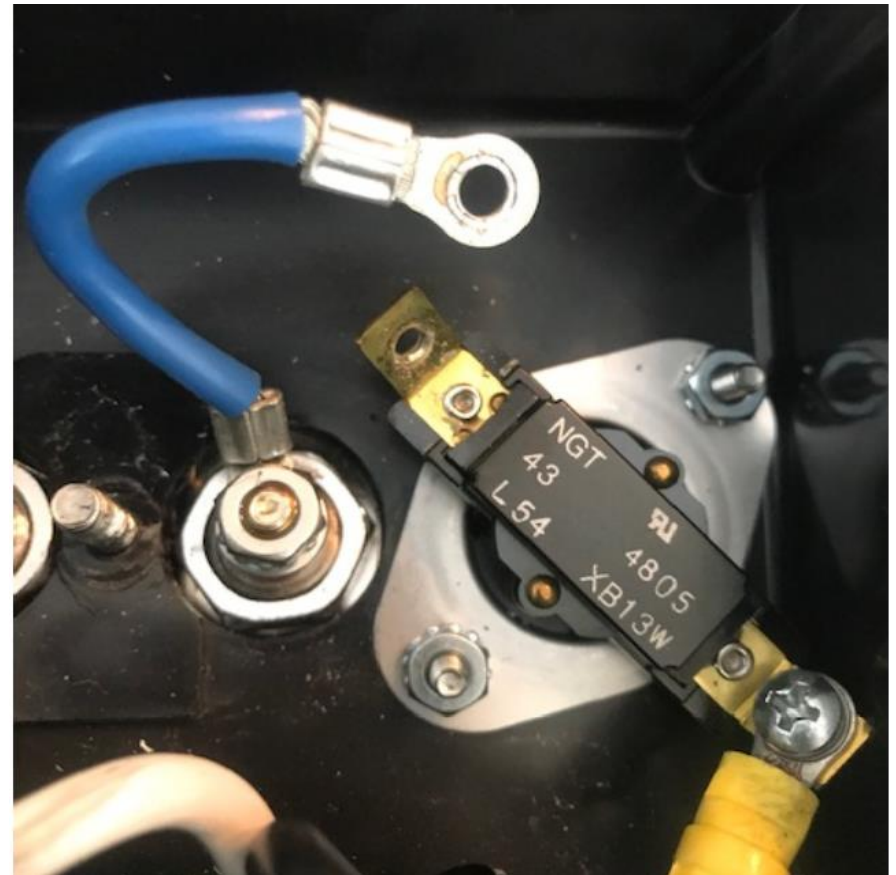
This is 1 of the hot wires





Using a phillips head screw driver, remove the other hot wire.

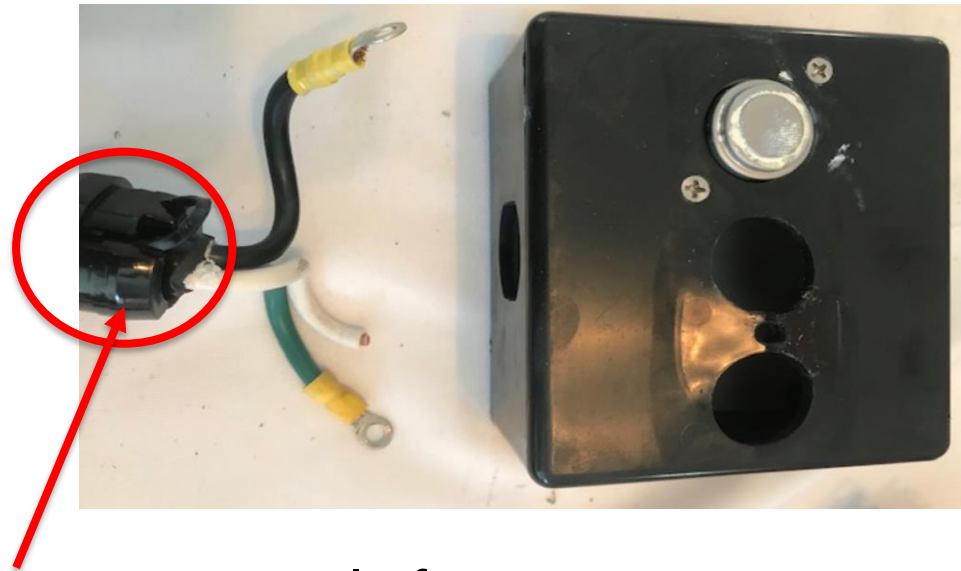
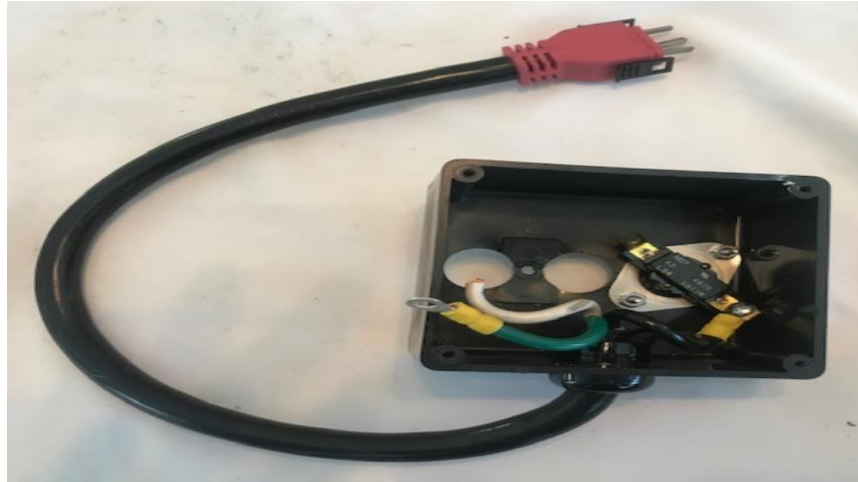
**Do not try to remove nut with socket**



This is the other hot wire

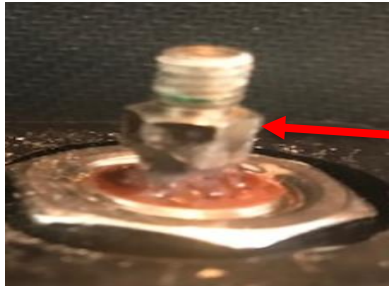


Now you can remove the black electrical box and “old” heater cable.



Remove and save strain relief.

With heater stud exposed, this is the **Most Important Part** of this process. Using some needle nose vise grip pliers (**a must**), you are tightly securing the heater stud. Once it is secured, grabbing the needle nose vise grip pliers (making sure it does not move), use your 3/8" socket to loosen and remove nut. Since there is lock tight, secure the needle nose vise grip pliers the entire time while removing the nut.





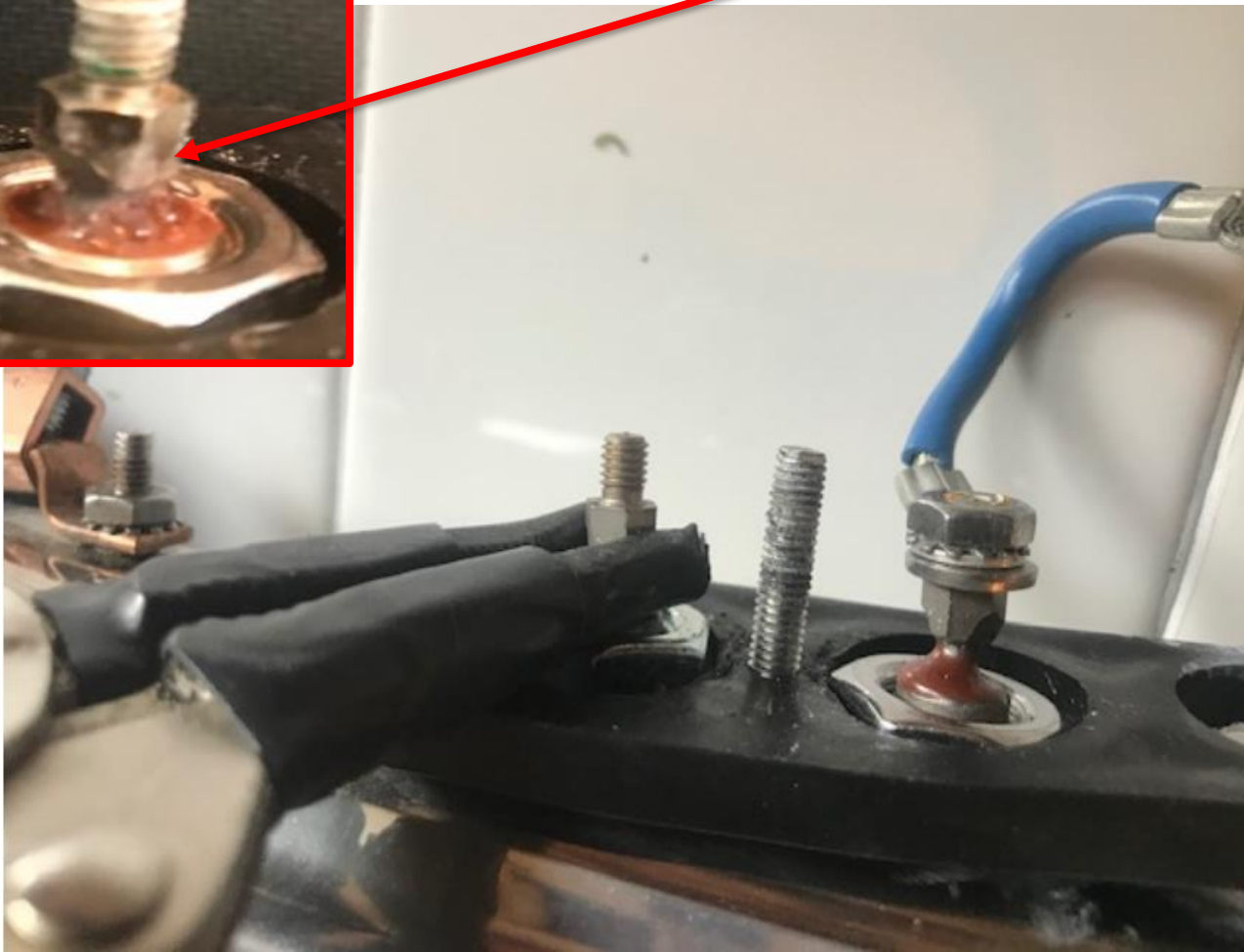


Great Sign... Ready to go....





Use the needle nose vise grip pliers and grab towards the bottom of heater stud.





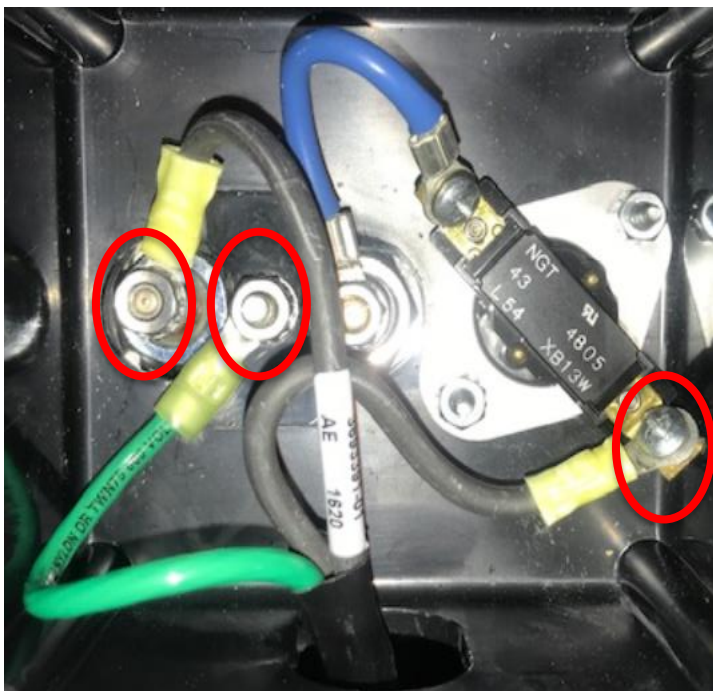
Place electrical box on heater and secure placing nut on ground stud so box does not move. Makes installation easier.







Grab heater cable provided. We will install inside heater electrical box.







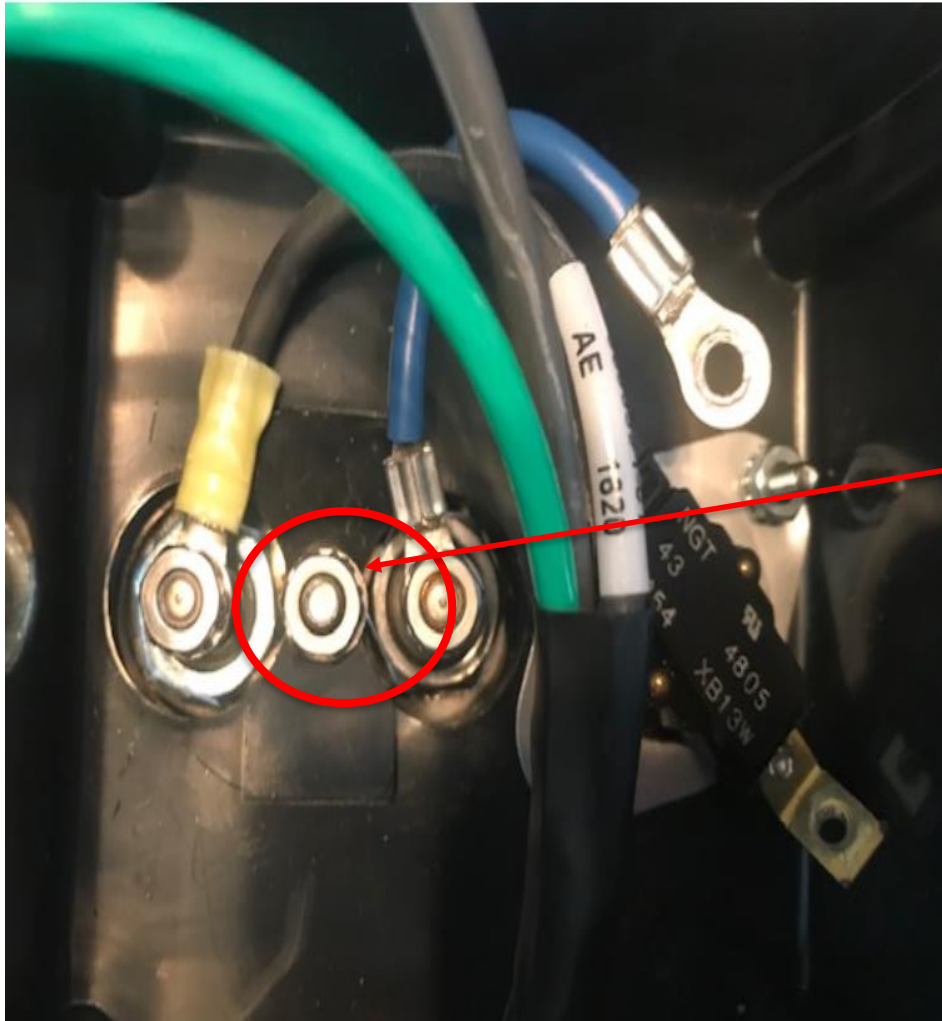
## This is one of the next important process



While gripping needle nose vise grip pliers, grab heater cable that was included and install any 1 of the 2 black wires to heater stud, place nut and tighten with 3/8" socket securing the pliers the entire time.

Remove pliers and make sure heater wire is secured to stud. If not, repeat until secured.

**Note:** A loose wire can cause heater damage

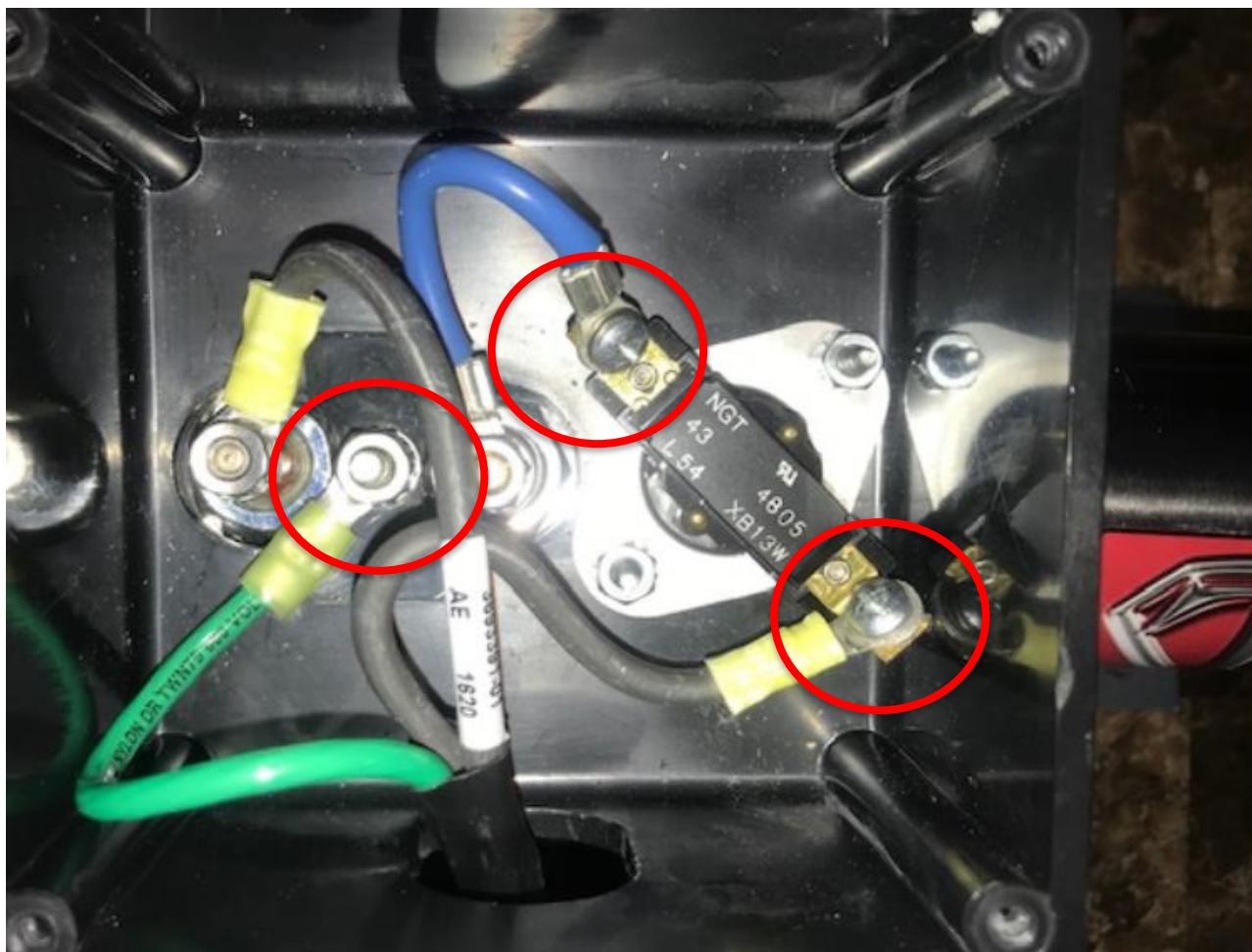


Remove the ground nut. That was holding electrical box in place. We will now install the remainder of the wires.

Note: When installing wires, be very careful that wires are not touching each other. This can cause board damage or breaker to trip.



Next, install the ground wire. This will secure black electrical box. After that, install the blue wire and the last black heater wire to thermal disk.







Install strain relief fitting from old heater to secure cable and install cover. Now re-install heater back into spa.





Locate the back of pump(s) and top of circ pump. You will need to add cables from new controller. Remove each cable from the “new” controller and label C for I pump, C for circ, ect and install.

Back of Pump(s)

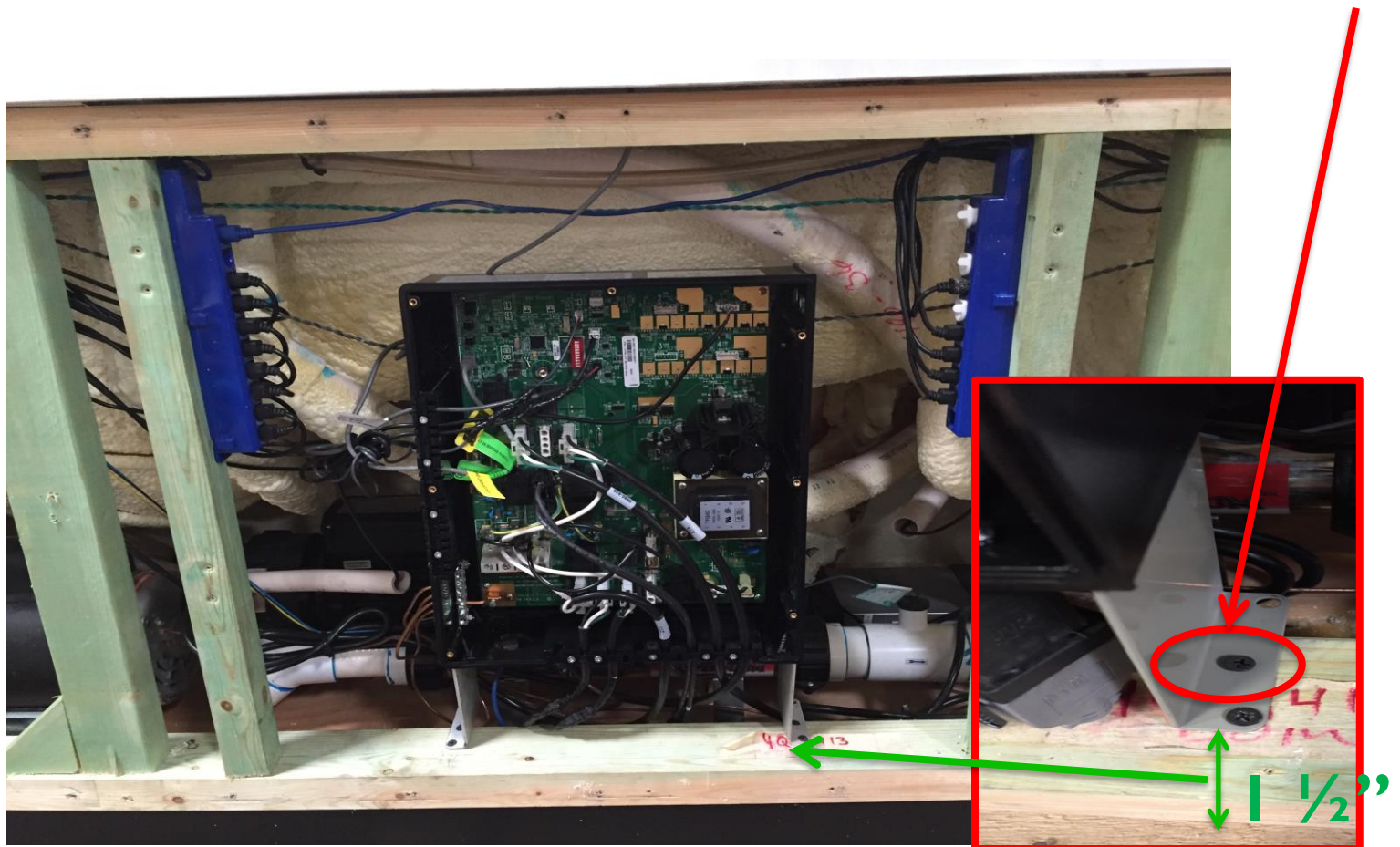


Top of Circ. Pump

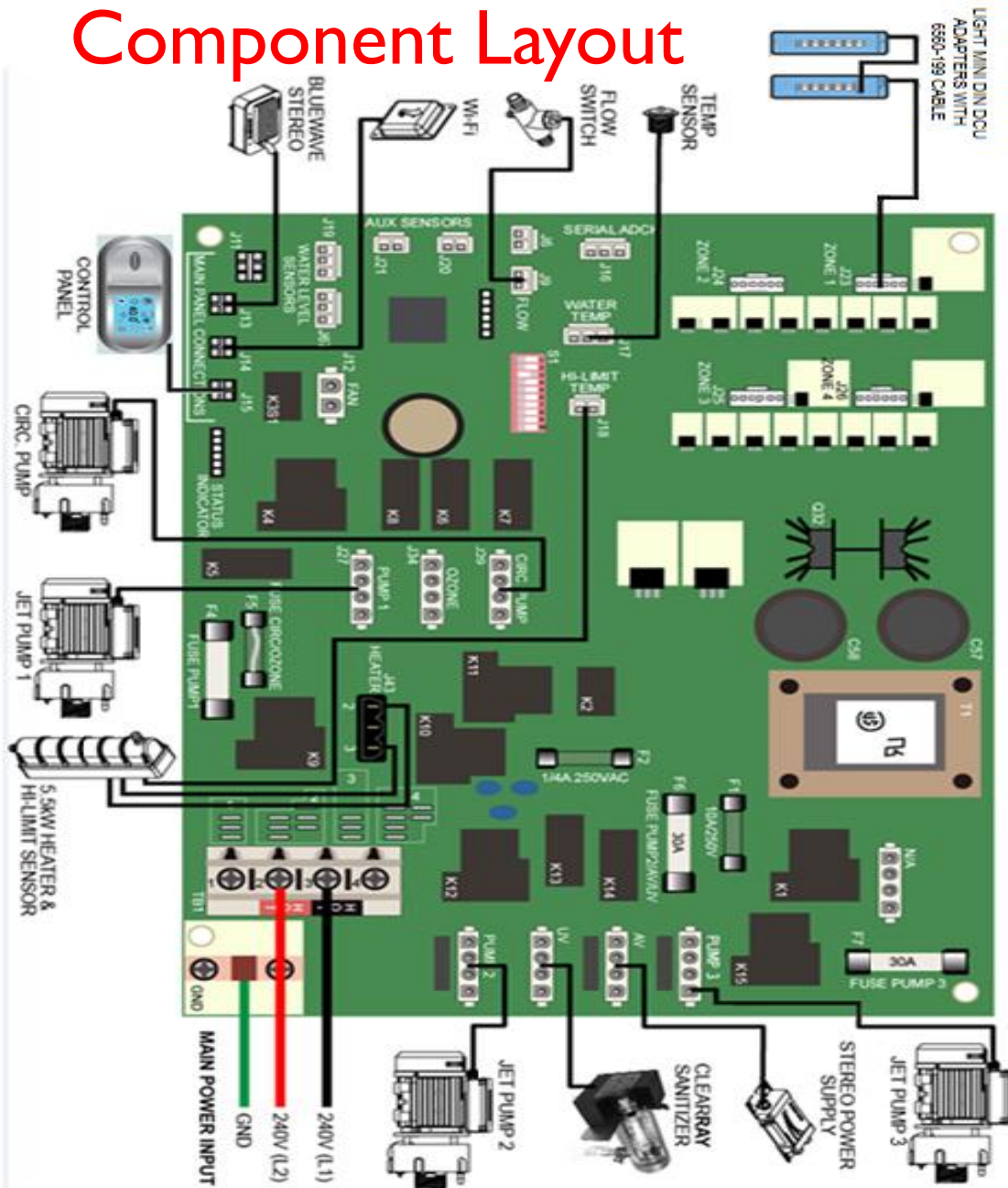




Now place “NEW” controller in center about 1 ½” in, this will allow door to close. Using screws from old brackets, place screws on front hole to secure on both sides to base. Drill extra hole in bracket and add 2<sup>nd</sup> screw.



# Component Layout



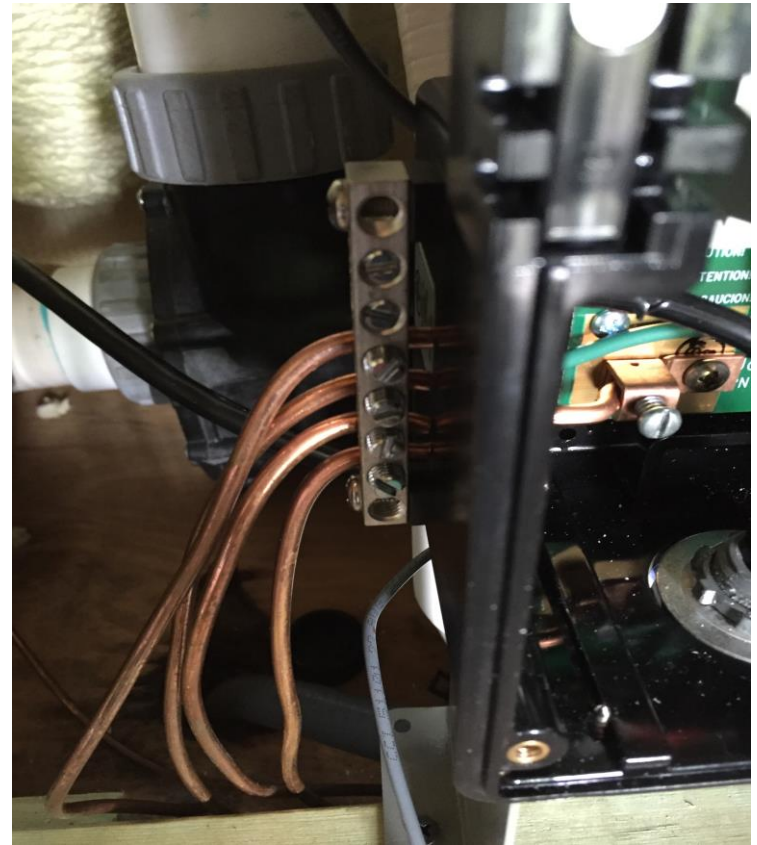
Install pump(s), circ pump and heater cables to circuit board.



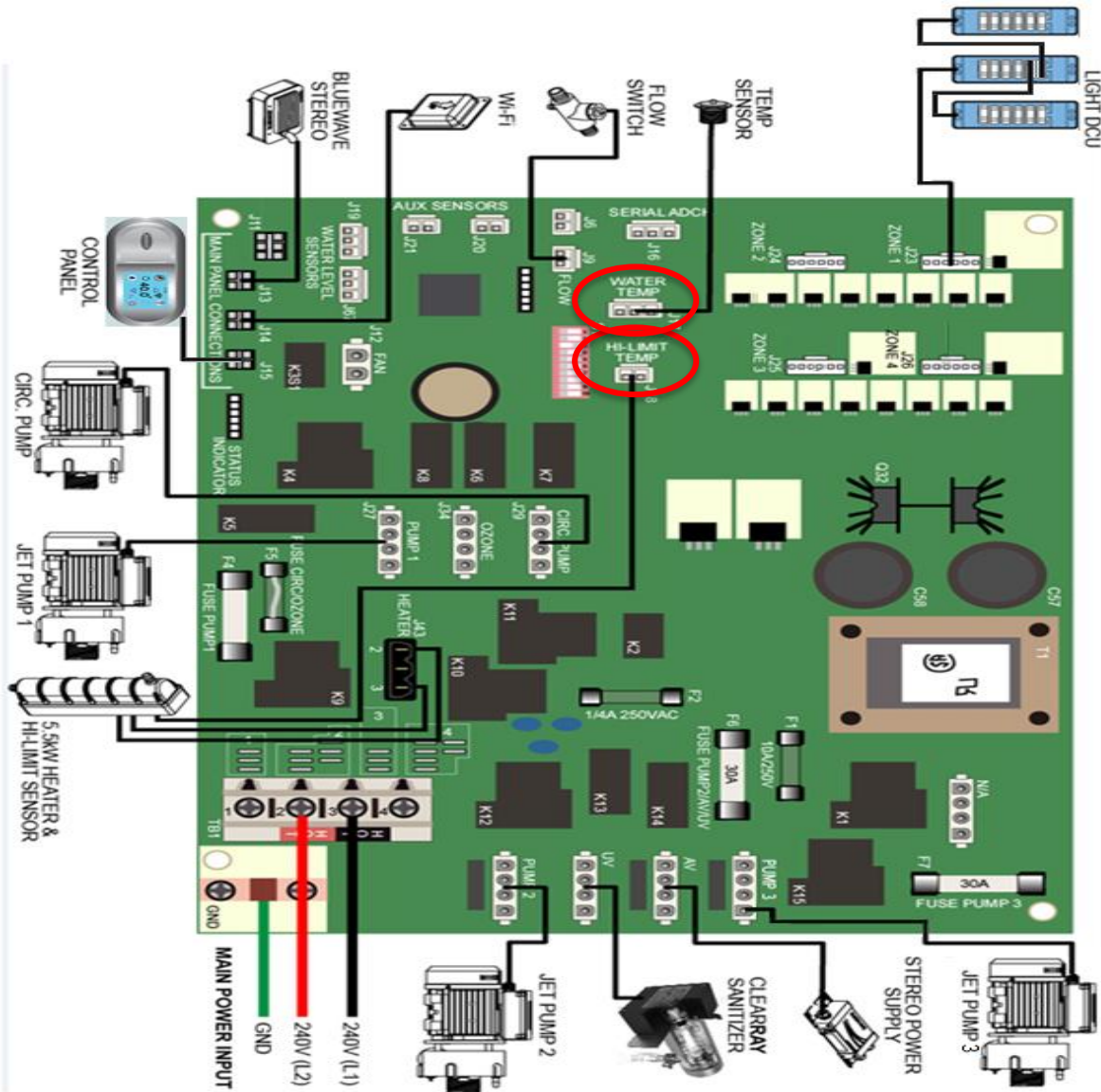


Install ground wires to “NEW” Controller.

Note: You will need to cut most wires since they are too long.







Install “NEW” temperature sensor and plug into WATER TEMP at J17.

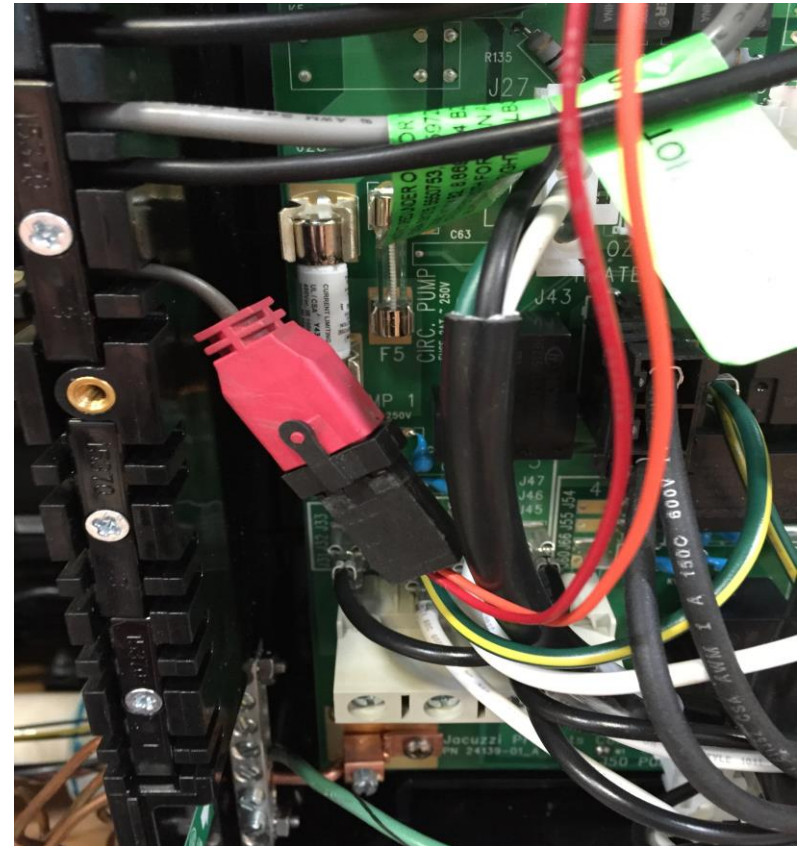
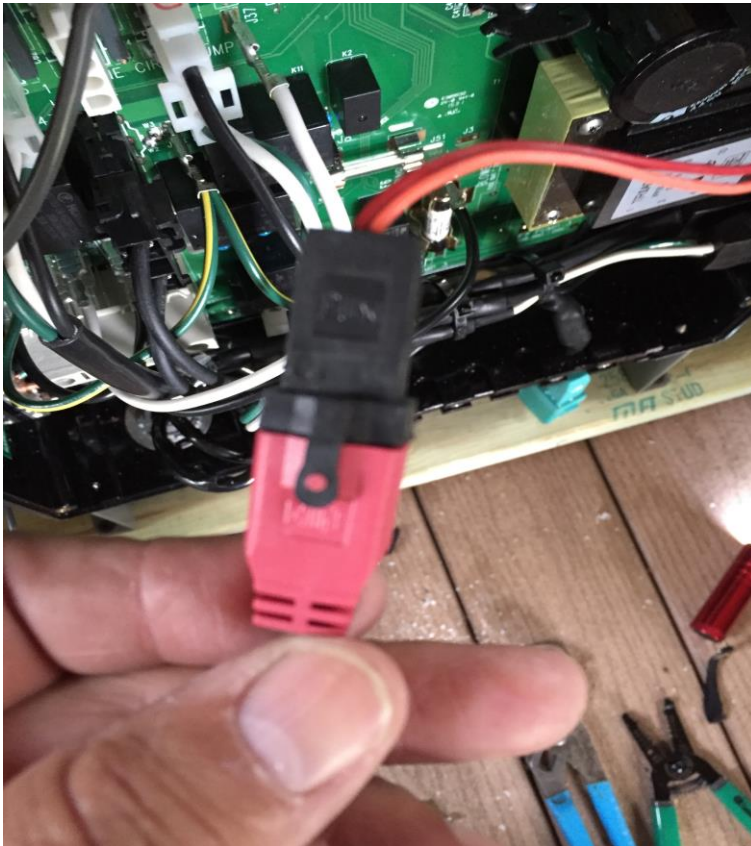
**Note: DO NOT CUT AND SPLICE TEMP SENSOR PLUG, MUST REPLACE!**

Also, install “NEW” hi-limit at heater and plug into HI-LIMIT TEMP at J18.



# Option A – If Flow Switch adapter is available

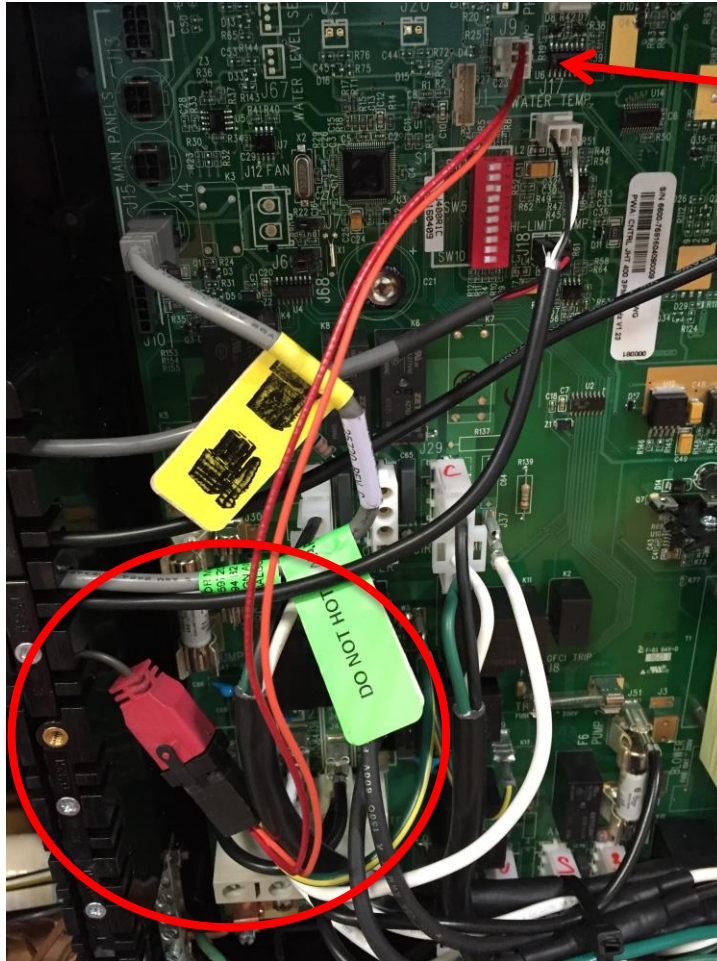
Grab flow switch plug (RED) and plug into special adapter.







# Option A – If Flow Switch adapter is available



Picture showing flow switch with special adapter.



## Option B – If Flow Switch adapter is not available

Note: We will re-use old Flow Switch



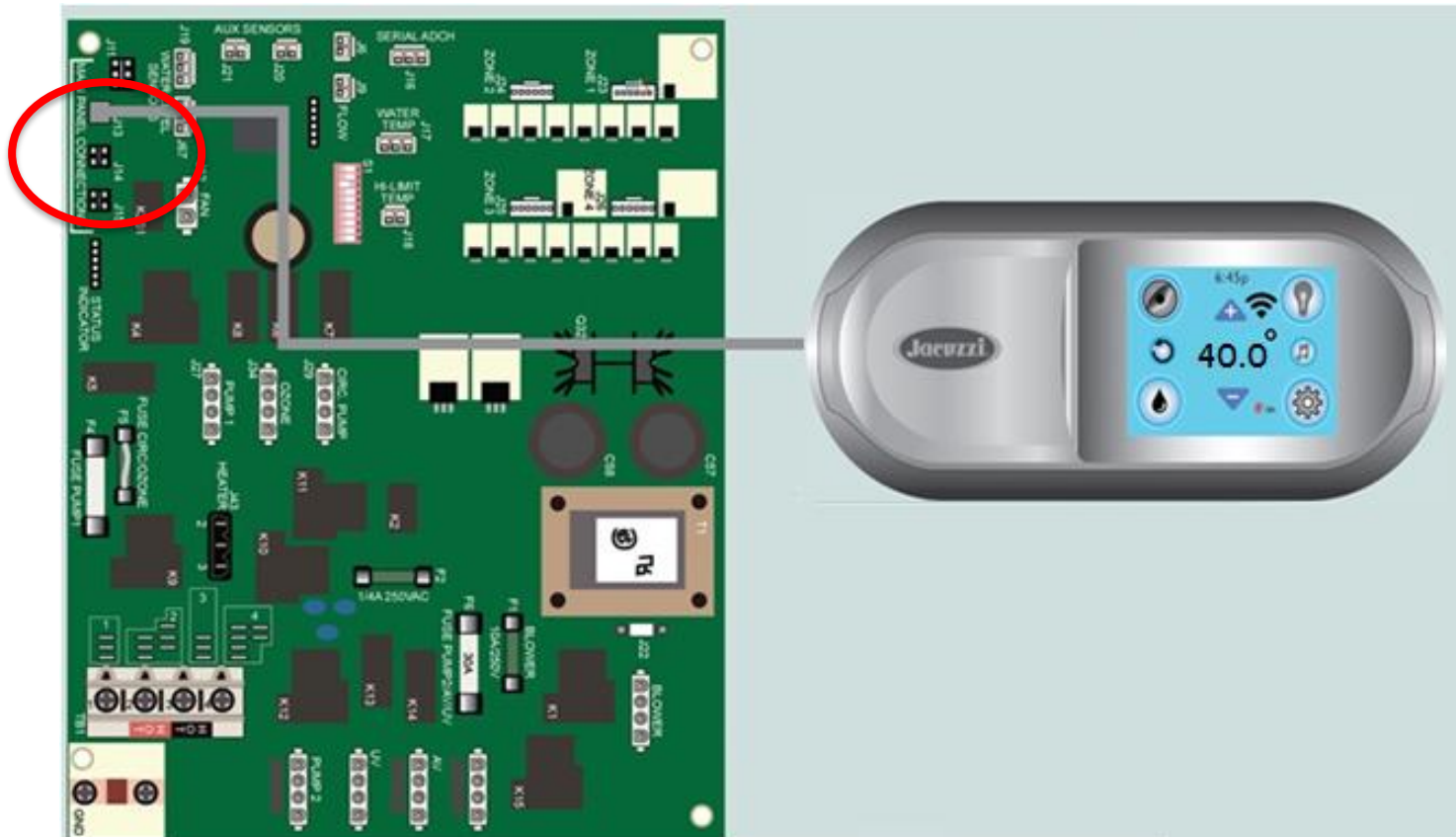
After you install new Temperature Sensor and Hi-Limit, grab old Flow Switch and cut off end (red plug) and splice wires. Install into butt connectors and crimp on.

Note: It is okay to cut and splice in the old flow switch. You **Do Not** want to do that with the temperature sensor or hi-limit since those work off resistance.





Grab top panel plug and plug into any port at  
MAIN PANELS J13, J14 or J15

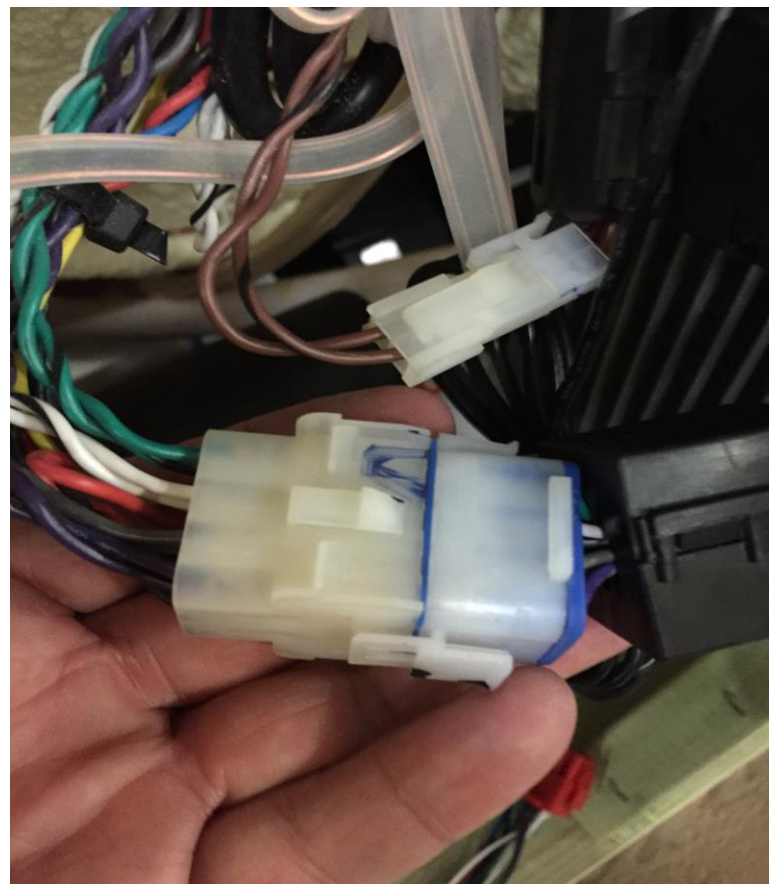
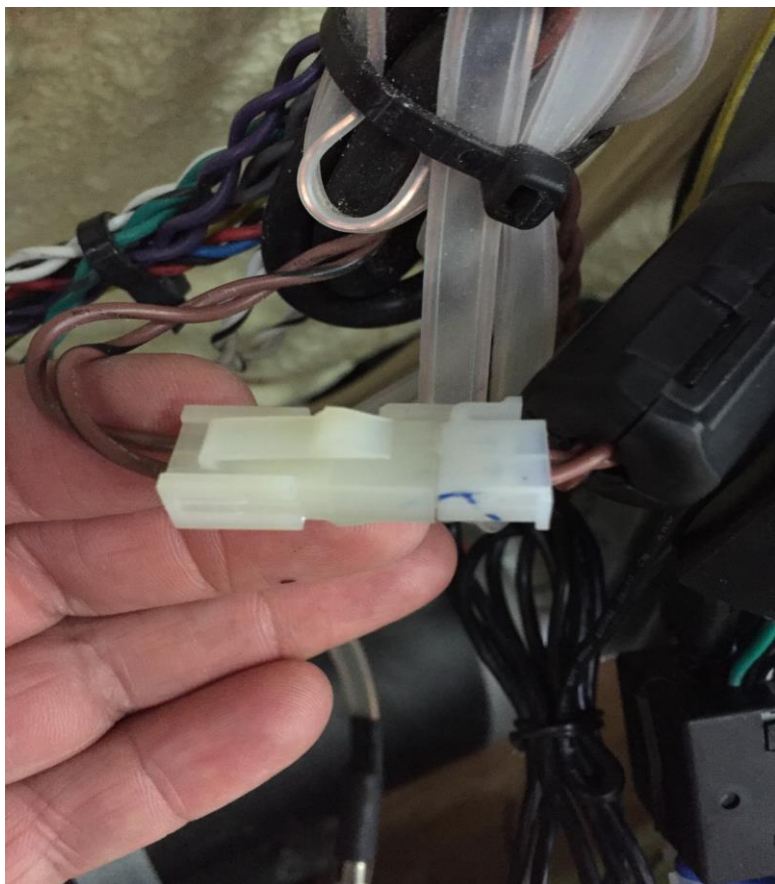




If stereo spa, install  
“NEW” BLUEWAVE  
stereo at 2 x 2 using  
screws removed from  
old brackets.



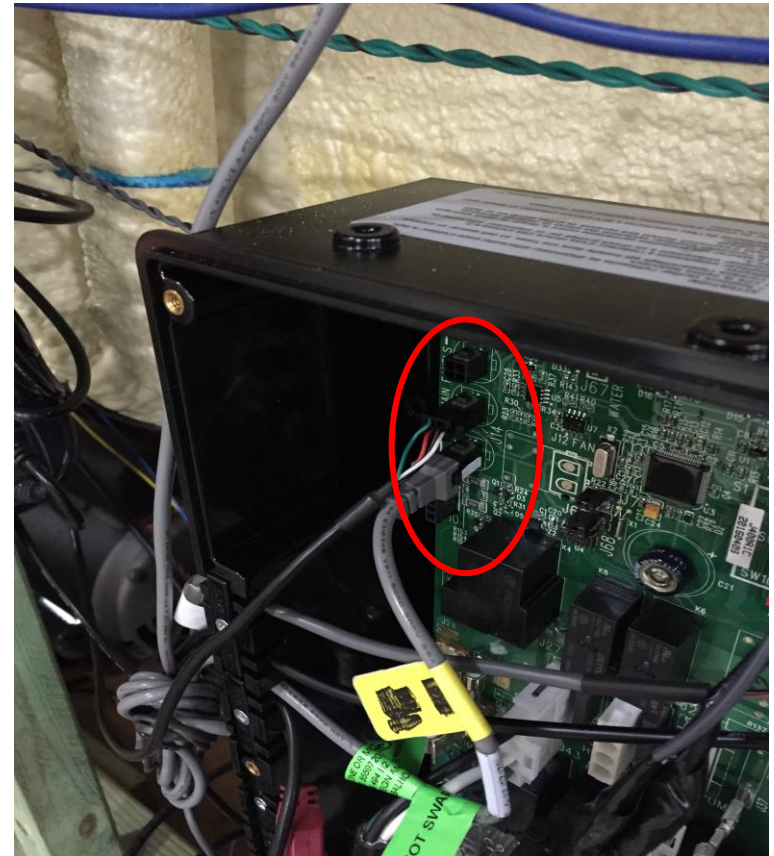
If old stereo is Aquatic BLUEWAVE, install old harness adapters (Sub & 12 position plug) into “NEW” BLUEWAVE stereo.





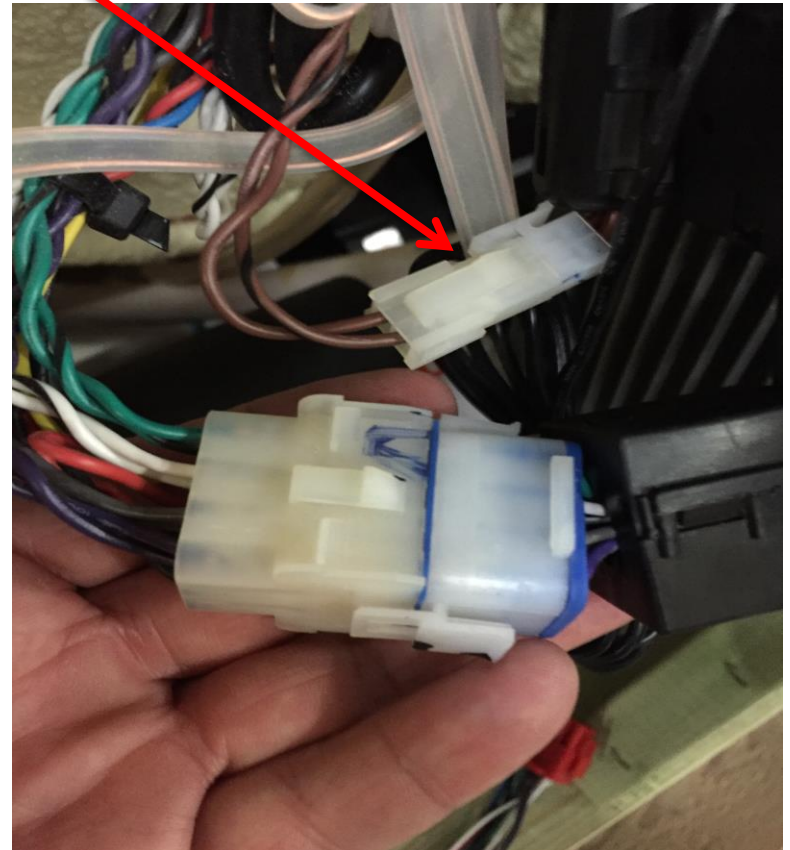
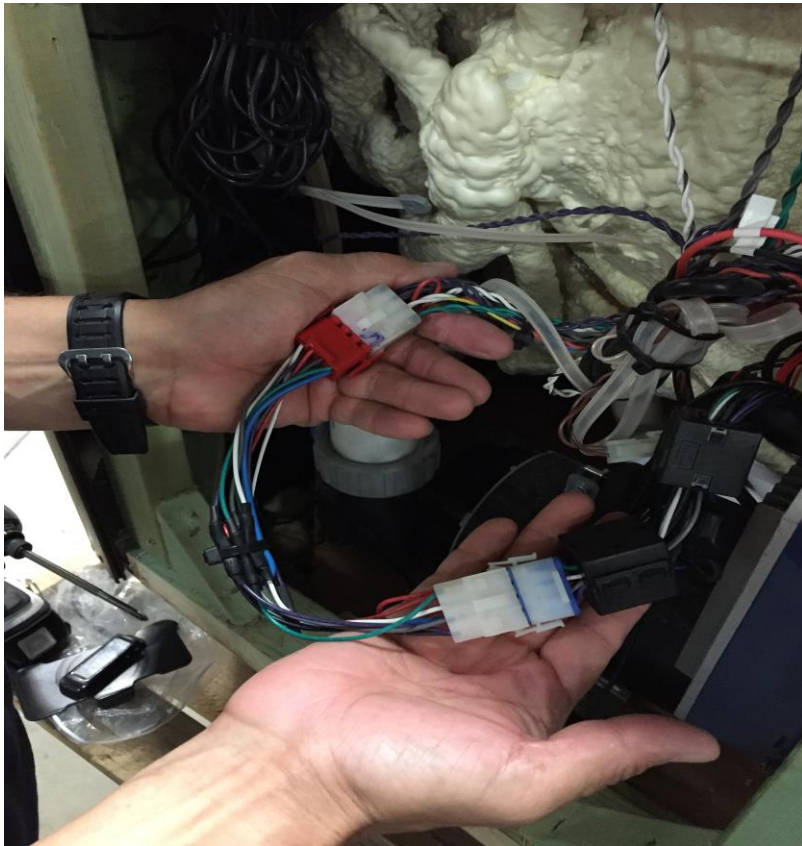


Grab “NEW” BLUETOOTH stereo plug and plug into any port at MAIN PANELS J13, J14 or J15





If old stereo was JBL, special adapter 6560-093 is needed. Plug RED plugs into old harness and other end into "NEW" BLUEWAVE stereo.  
Install Sub plug also.





Antenna plug is not used









# J-400 Settings

## Music Screen (if stereo spa)

**Note: Stereo must be on to allow Bluetooth device to connect**

When the user selects the Stereo button  from the Home screen, screen below shall be displayed.

- Press the power button  to turn on Bluewave Stereo. Once on , now you can establish a Bluetooth connection from your Bluetooth device.
- From your Bluetooth device, make sure that the Bluetooth setting is ON.
- Follow pairing instruction and connect to “BLUEWAVE”.
- Password is “0000”. If successful, it will show “Connected” on your device next to “BLUEWAVE”.
- Once connected, Bluetooth icon  will be highlighted.



**Note: The BT icon cannot be selected manually unless a Bluetooth connection is established on your device**



## BLUEWAVE™ SPA STEREO SYSTEM

- 1 Tap the music icon on the control panel screen then touch the power button located on the top right to turn on the stereo.
- 2 From your Bluetooth device, make sure that the Bluetooth setting is ON.
- 3 Follow the pairing instructions for your Bluetooth device and connect to "BLUEWAVE™" device that appears on your screen.
- 4 If asked for a password, enter the password "0000" and then connect.
- 5 If the pairing process is successful, your Bluetooth device will show "Connected" right next to "BLUEWAVE™".
- 6 Once the connection is established, Bluetooth "BT" icon on the screen will be highlighted confirming the connection.

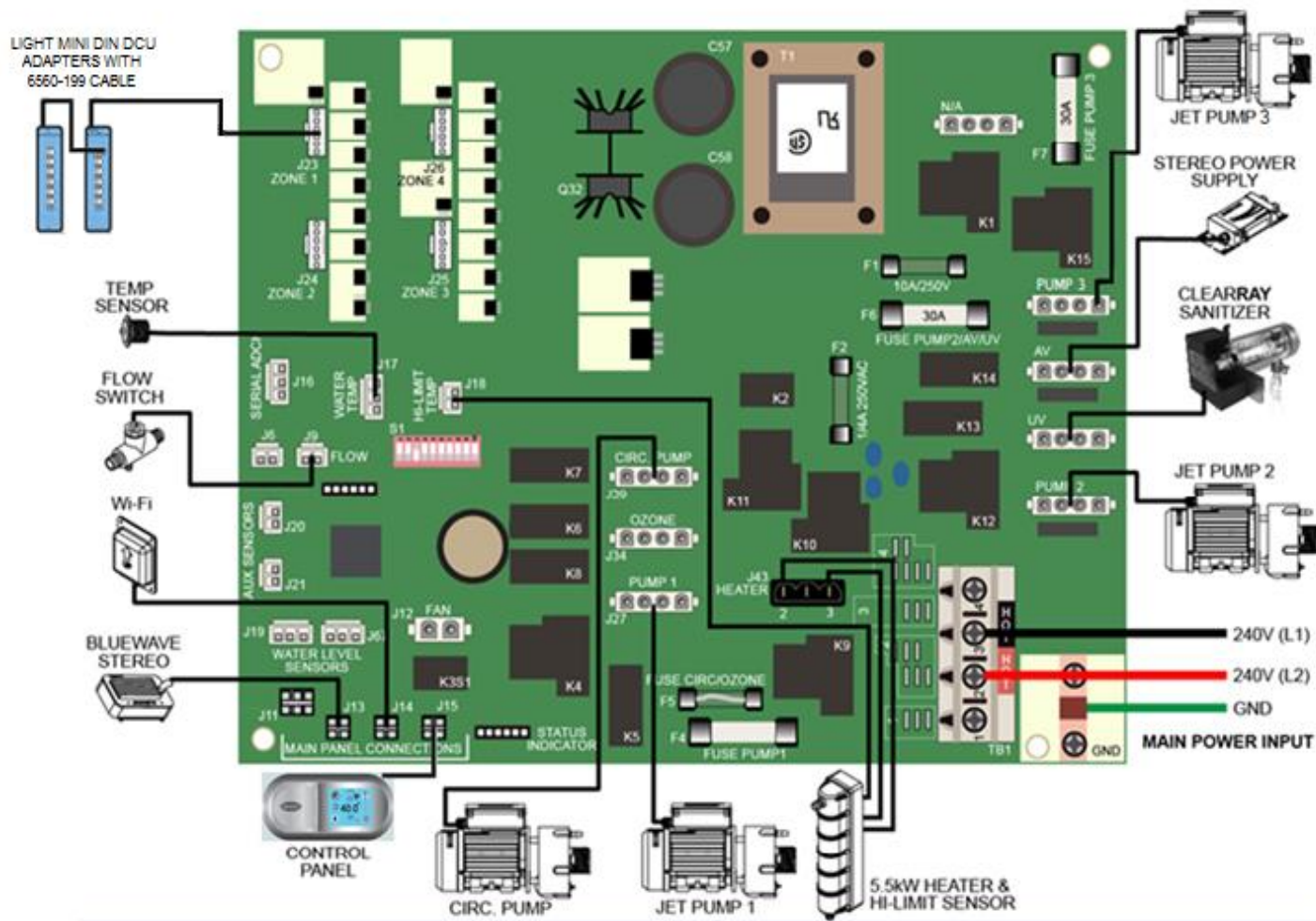
NOTE: The BT icon cannot be selected manually unless a Bluetooth connection is established with your device.

6530-463RevB





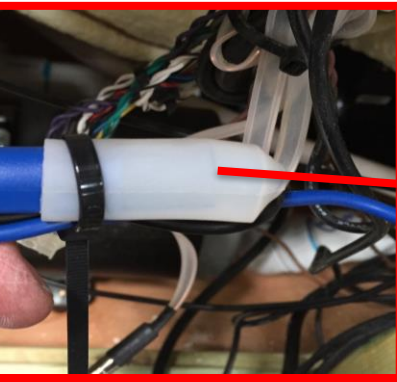
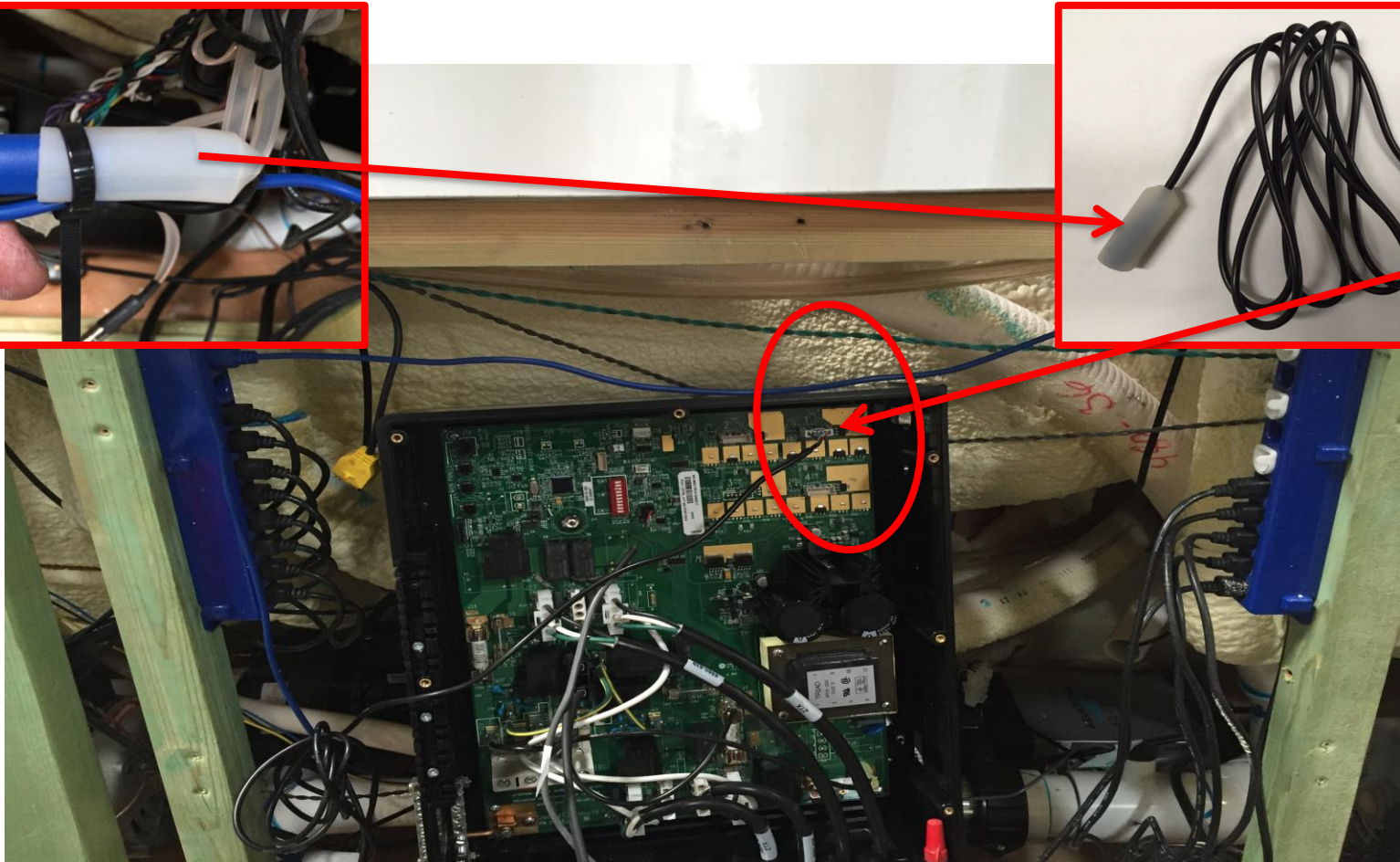
# Plugging in lights with Mini Din





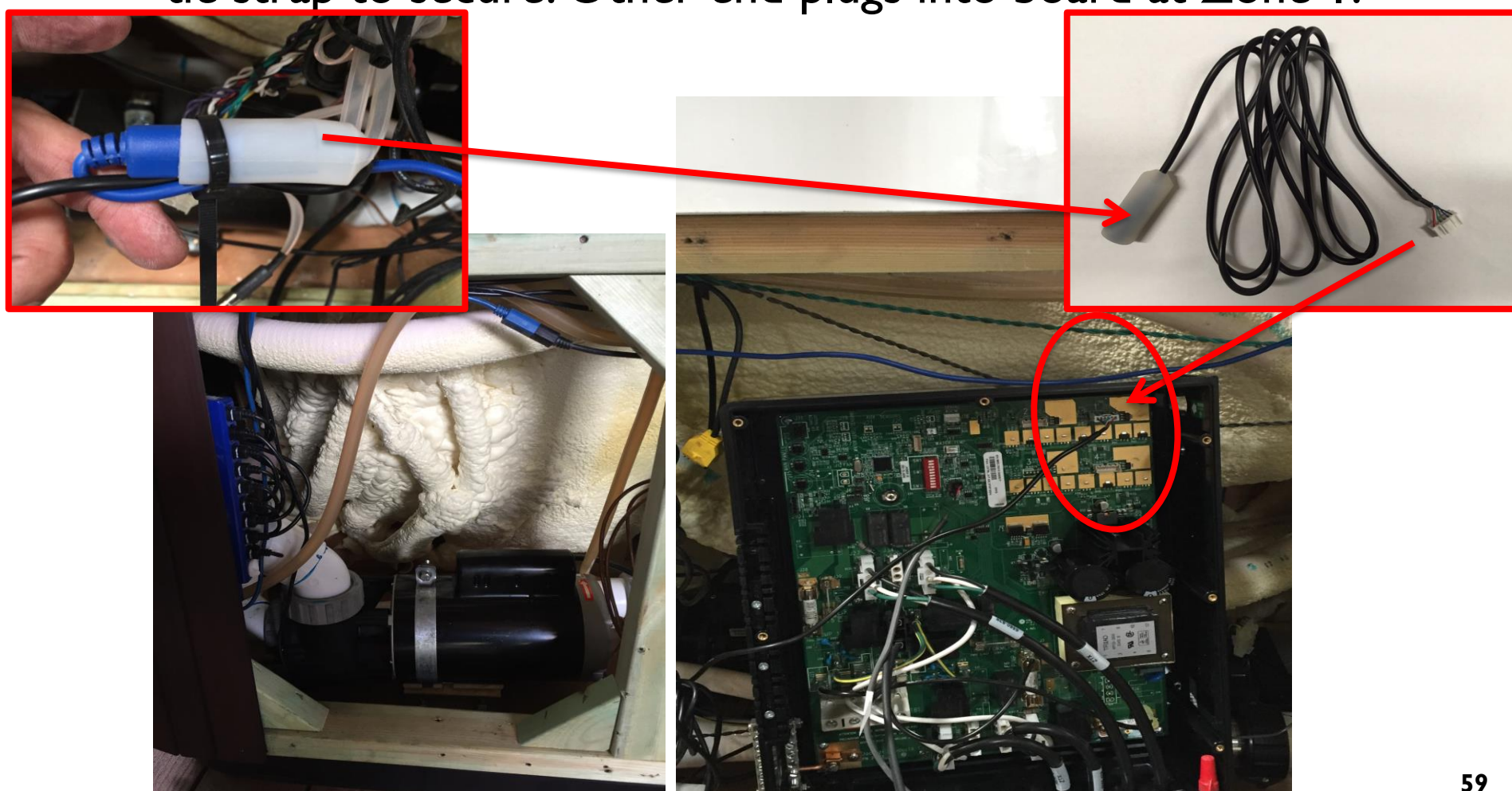


Grab 6560-199 adapter and plug mini din to left DCU adapter and add tie strap to secure. Other end plugs into board at Zone 1.





J415/J425 there is only 1 "Blue" DCU adapter. Do not relocate. Grab 6560-199 adapter and plug mini din to DCU adapter and add tie strap to secure. Other end plugs into board at Zone 1.

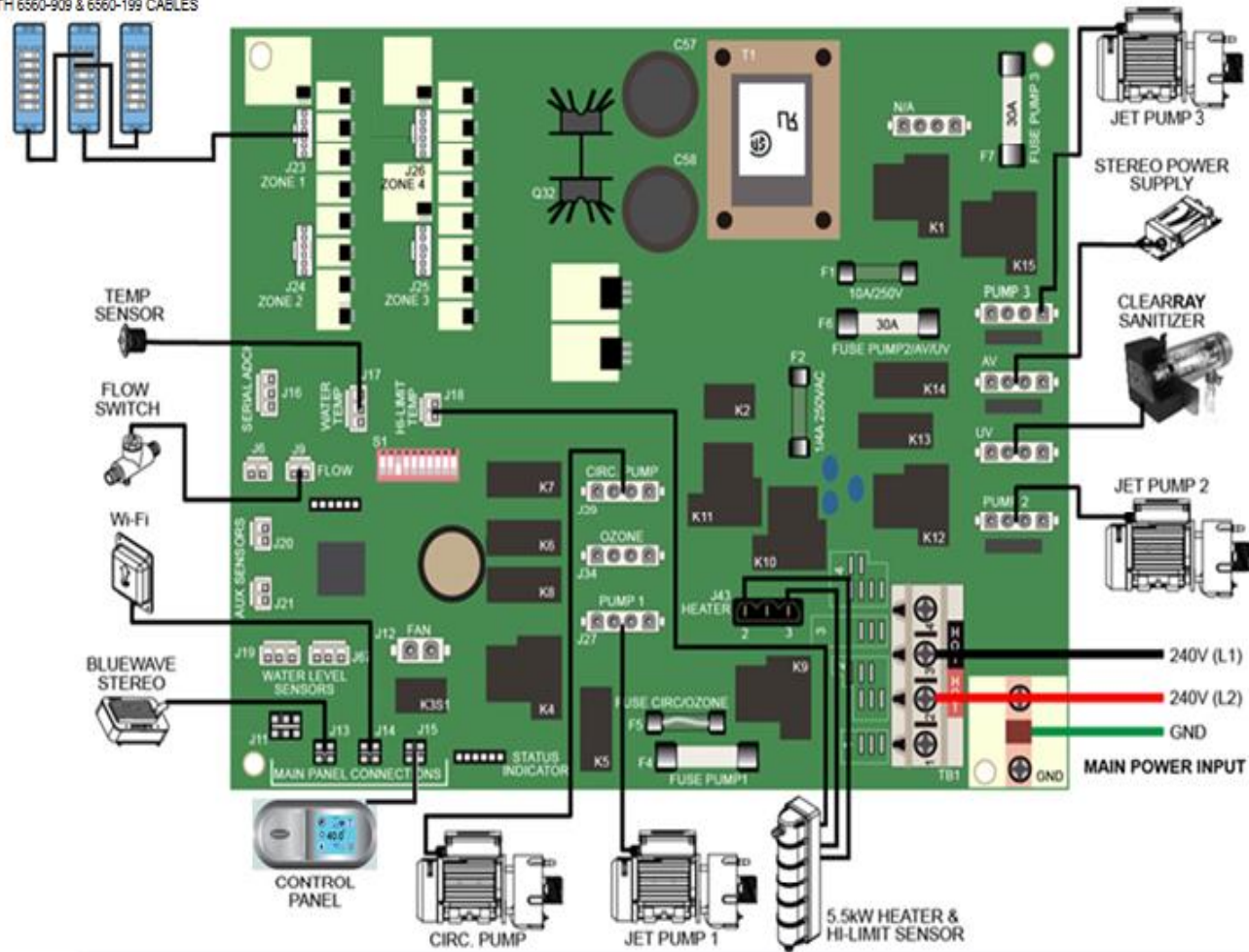




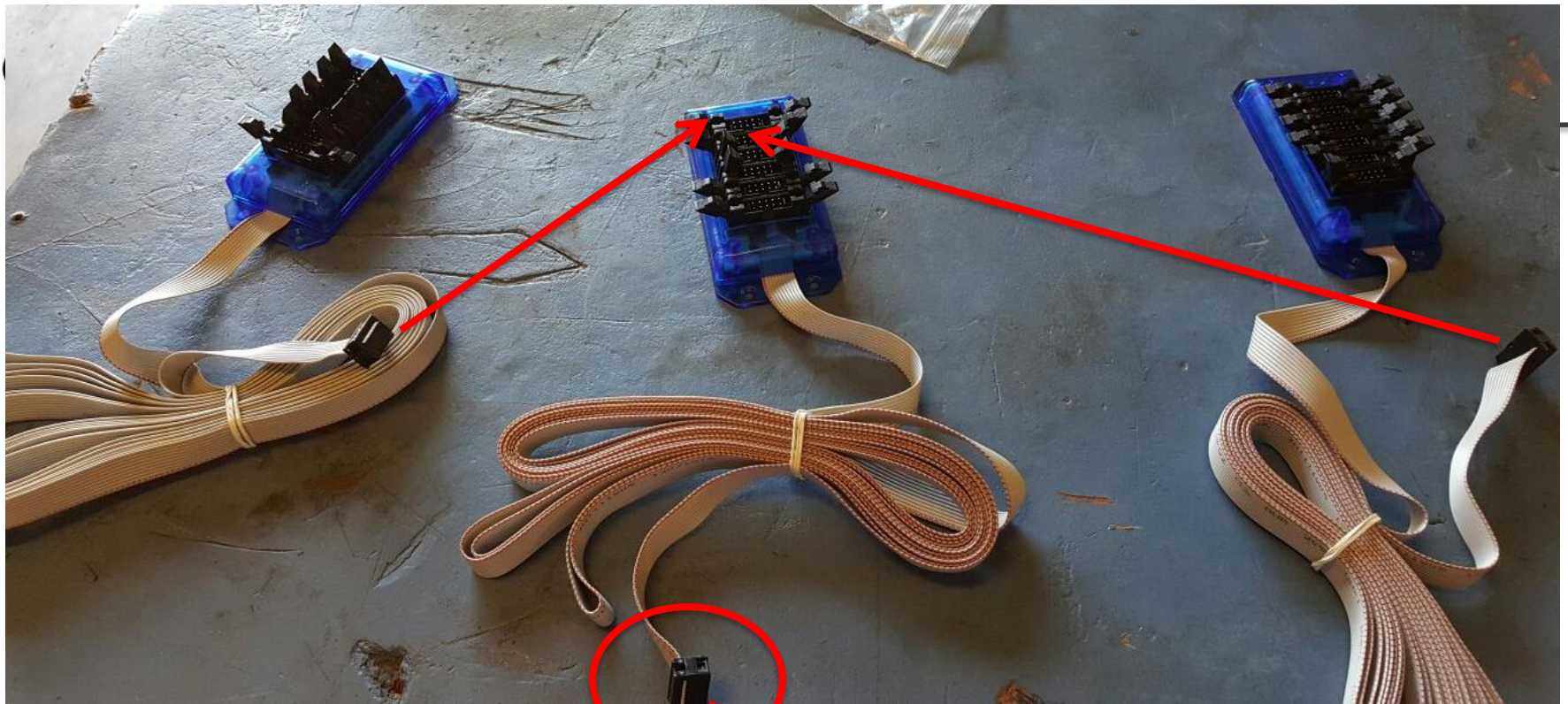


# Plugging in lights with Ribbon Cables

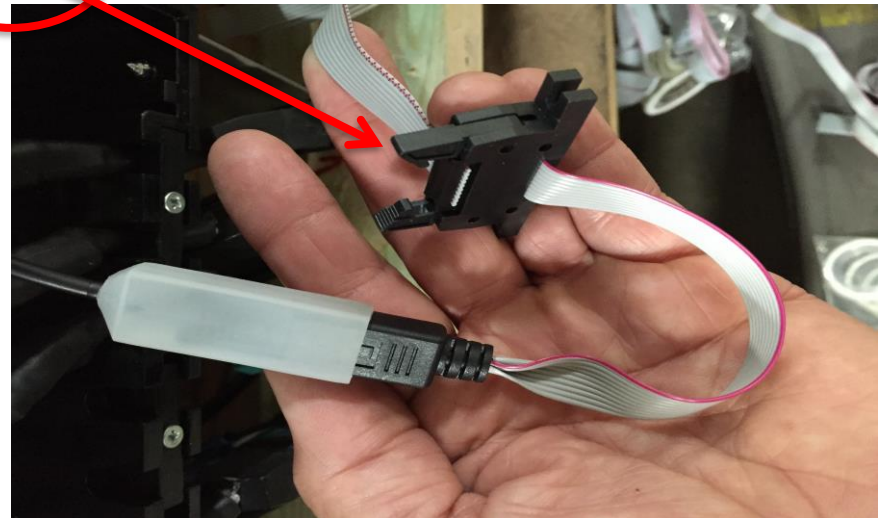
LIGHT DCU ADAPTERS 6560-332  
WITH 6560-909 & 6560-199 CABLES





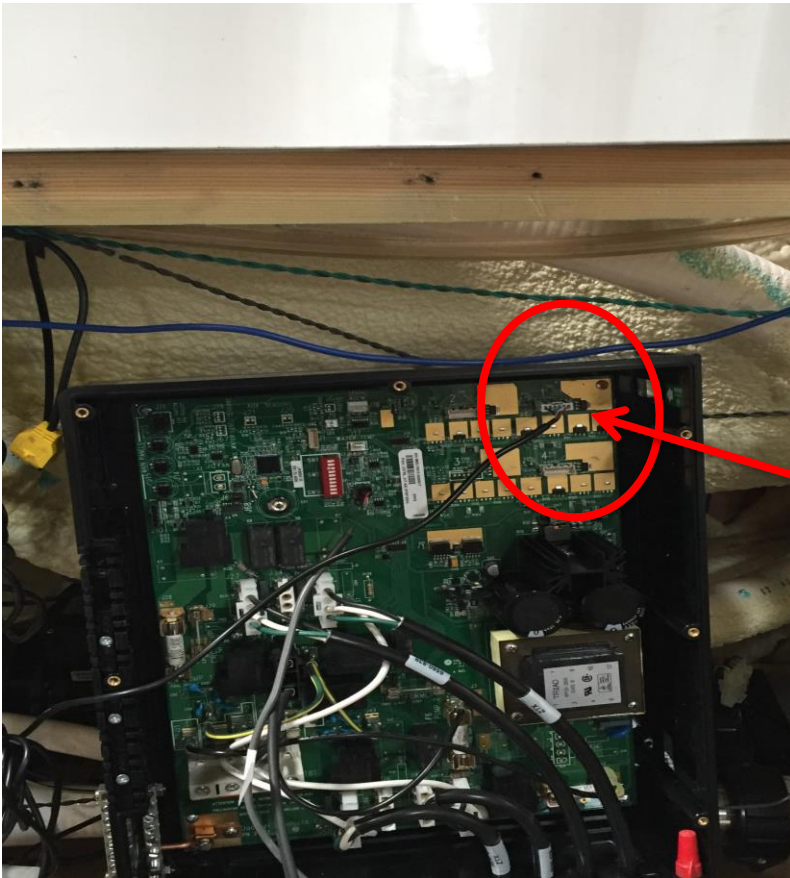


Remove old DCU adapters & discard. Grab 3 “NEW” adapters 6560-332 with ribbon cables and plug 2 into 1 adapter. Grab single ribbon plug from adapter and plug into 6560-909 adapter.





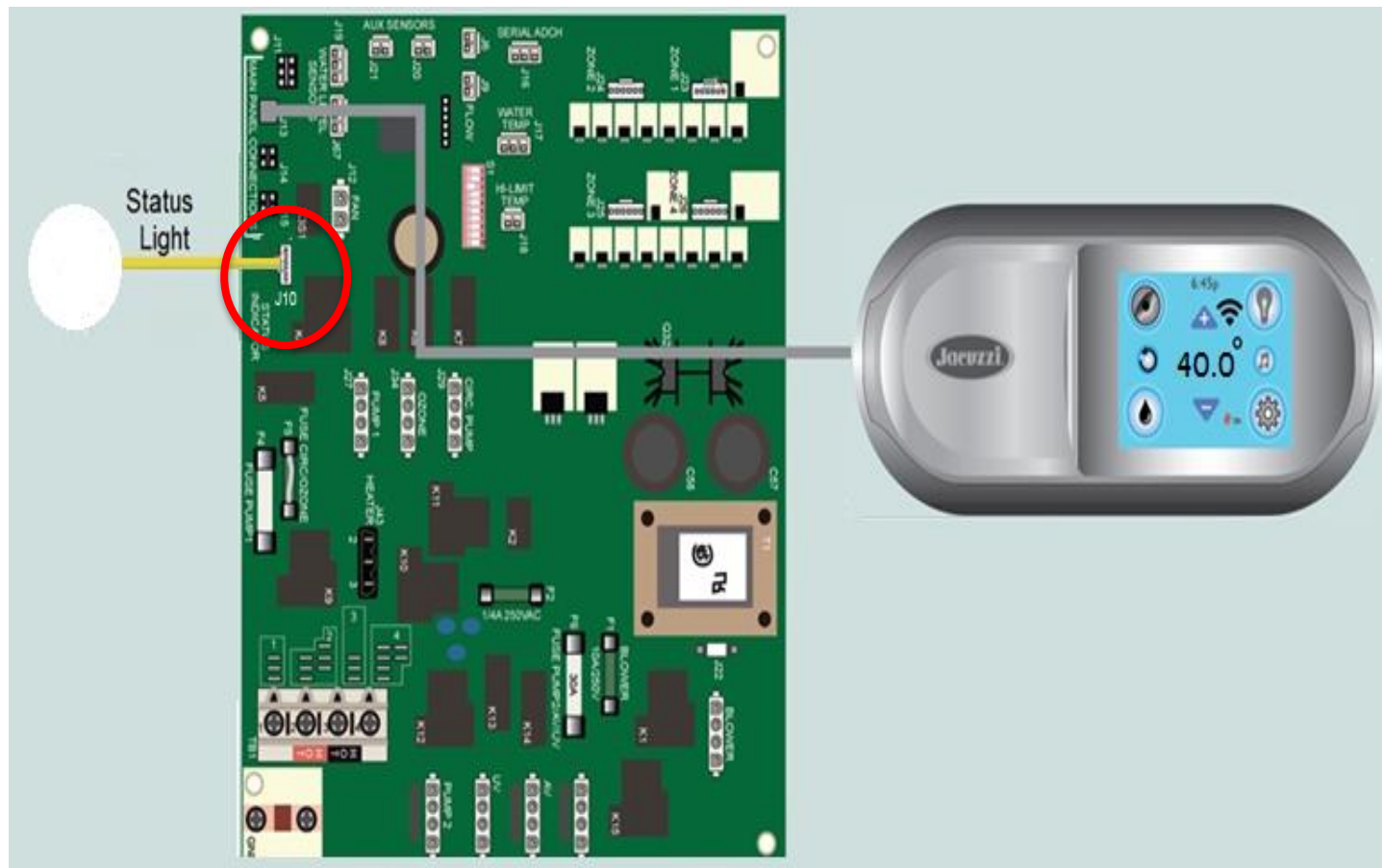
With 6560-909 adapter plugged in on one side, grab 6560-199 adapter and plug mini din plug ends. Plug other end into board at Zone 1.



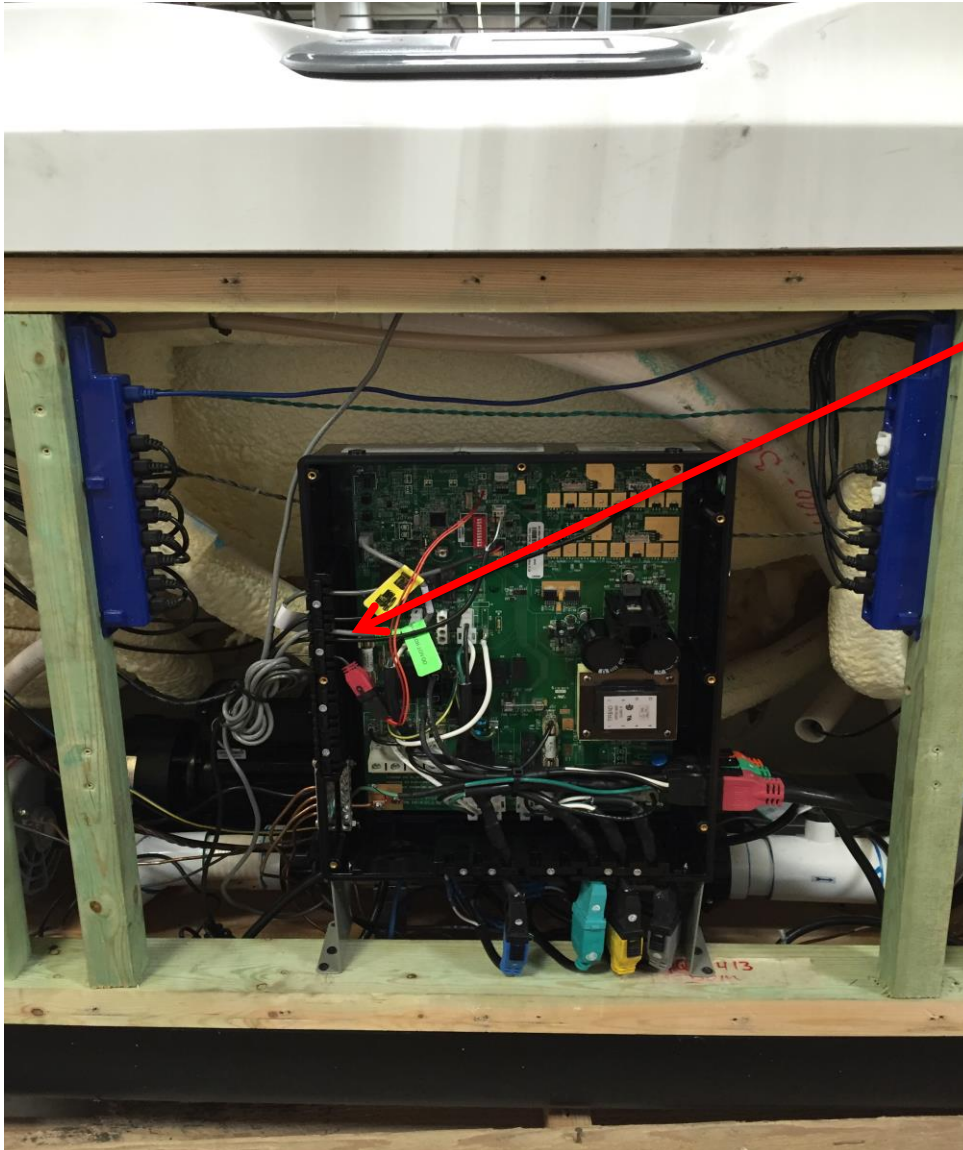




Remove old status light and replace. At board, plug in at J10.







Set wires/cables in place & tie strap wires.

Hook up electrical, set dip switch and Job complete!!



# Dip Switch Settings

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**9/2016+**



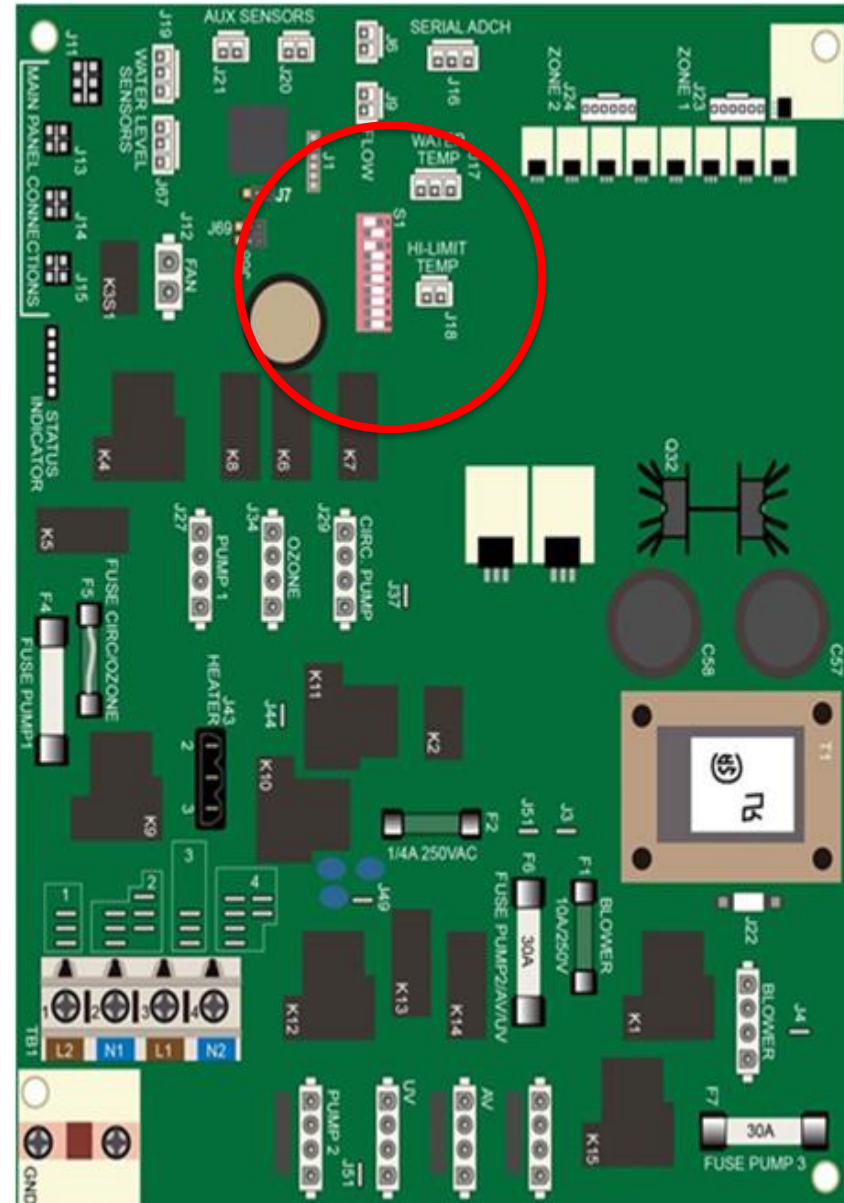
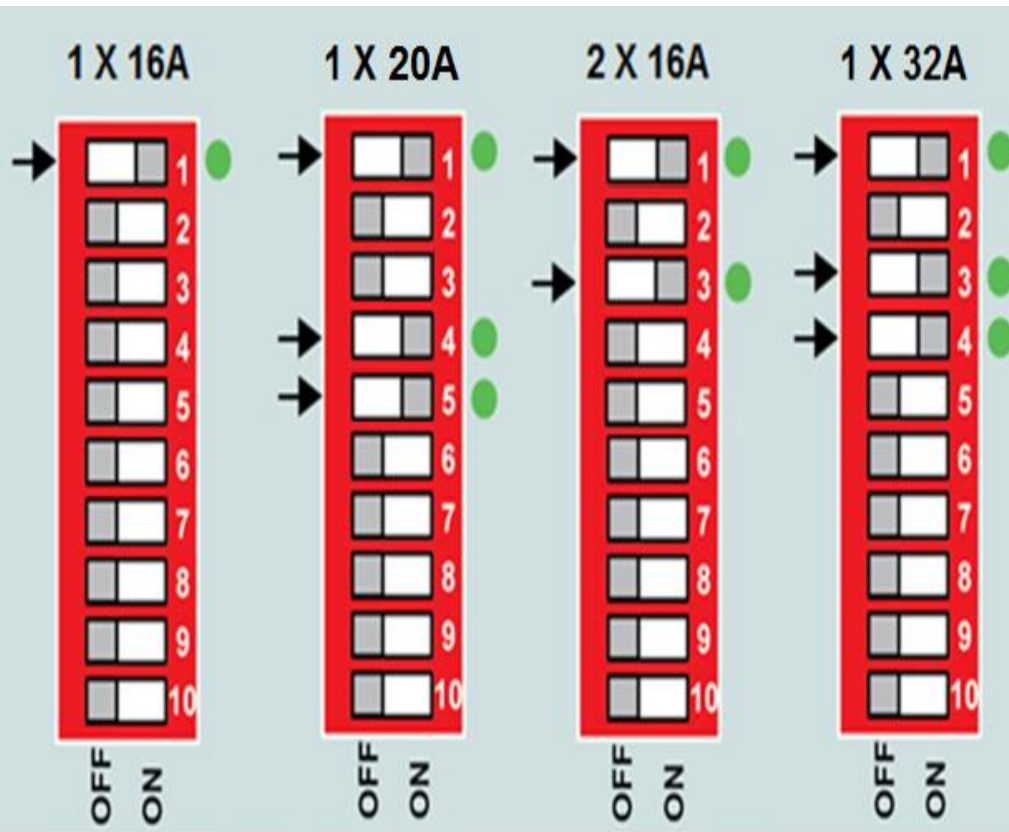






# Dip Switch Settings

Export







# Dip Switch Settings

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BREAKER	DIP SWITCH NUMBER									
	1	2	3	4	5	6	7	8	9	10
1x16A	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2x16A	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1x32A	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
1x40A or 1x16A/1x32A	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
1x16A/1x20A	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
3x16A	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF





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### Configuration settings for J415-J480 Models

#### **Single Service (default setting):**

- 1x16A      (J415 Only) This setting will turn the heater off any time the jets pump is activated.
- 1x20A      This setting will turn the heater off any time either one of the pumps are activated on two pump models.
- 1x32A      This setting is for all two pump model spas. Both pumps and the heater will be allowed to operate at the same time.

#### **Dual Service:**

- 2x16A      (J415 Only) Both the jets pump and the heater will be allowed to operate at the same time.
- 1x16A/1x20A      This setting is for all two pump model spas. Both pumps and the heater will be allowed to operate at the same time.

#### **Three Phase Service:**

- 3x16A      This setting is for all two pump model spas. Both pumps and the heater will be allowed to operate at the same time.



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### **Configuration settings for J495 Models**

#### **Single Service (default setting):**

1x32A      This setting will allow the heater to operate when two jets pumps are activated. If all three pumps are activated the heater will shut off.

1x40A      All three jets pumps and the heater will be allowed to operate at the same time.

#### **Dual Service:**

1x16A/1x32A      All three jets pumps and the heater will be allowed to operate at the same time.

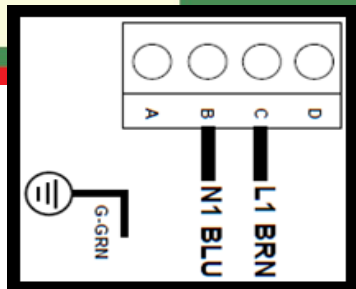
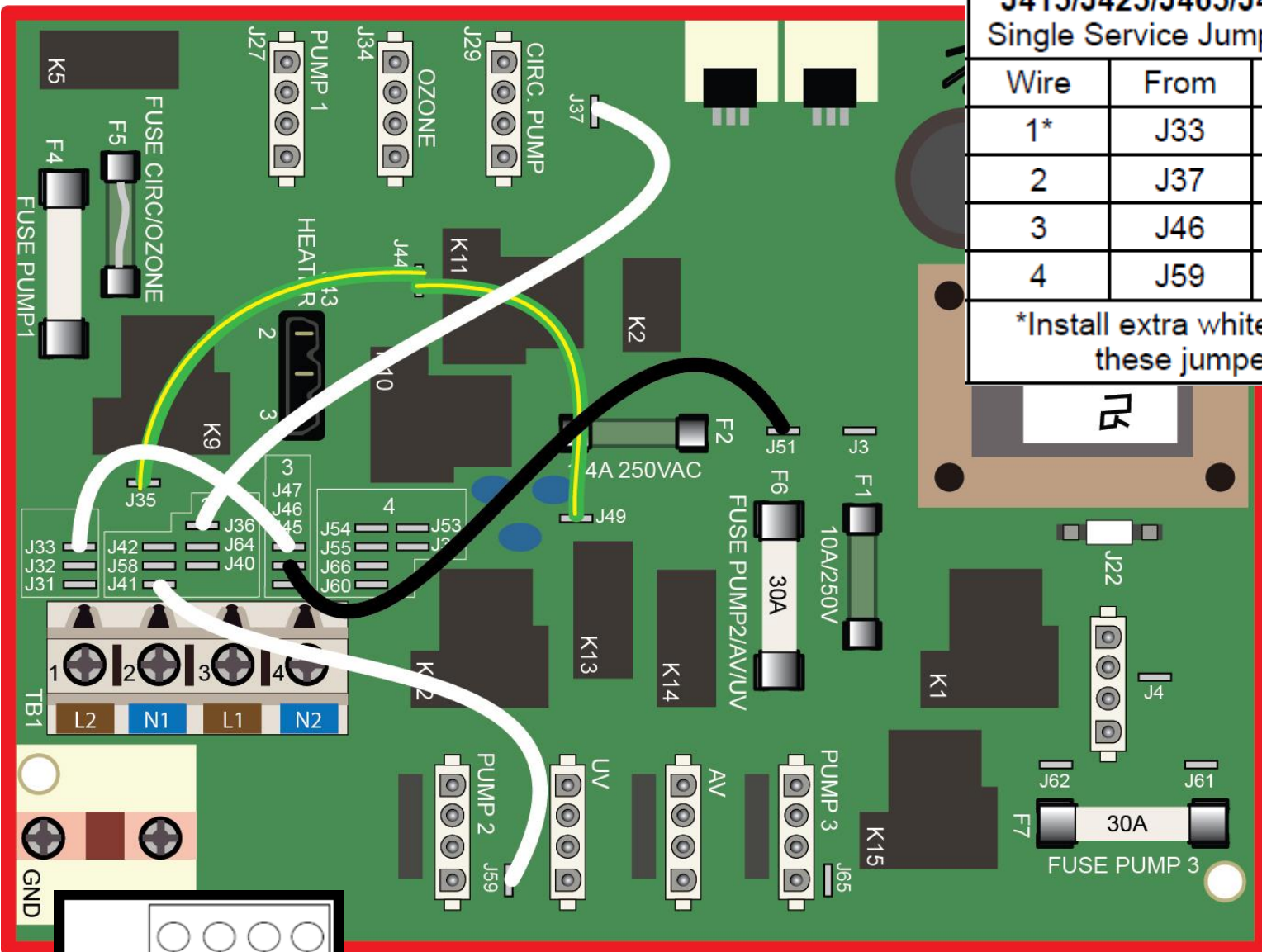
#### **Three Phase Service:**

3x16A      All three jets pumps and the heater will be allowed to operate at the same time.

# J415/J425/J465/J470/J480 Single Service Jumper Wiring

Wire	From	To
1*	J33	J47
2	J37	J36
3	J46	J51
4	J59	J41

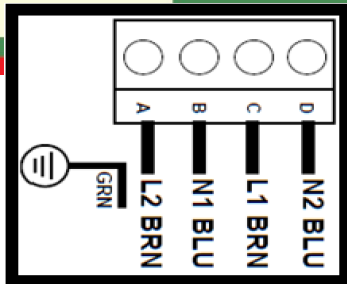
\*Install extra white wire at these jumpers



BREAKER TERMINAL  
CONNECTIONS  
L1 = All Components



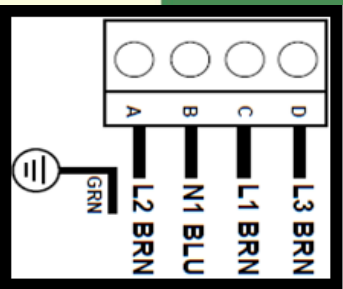
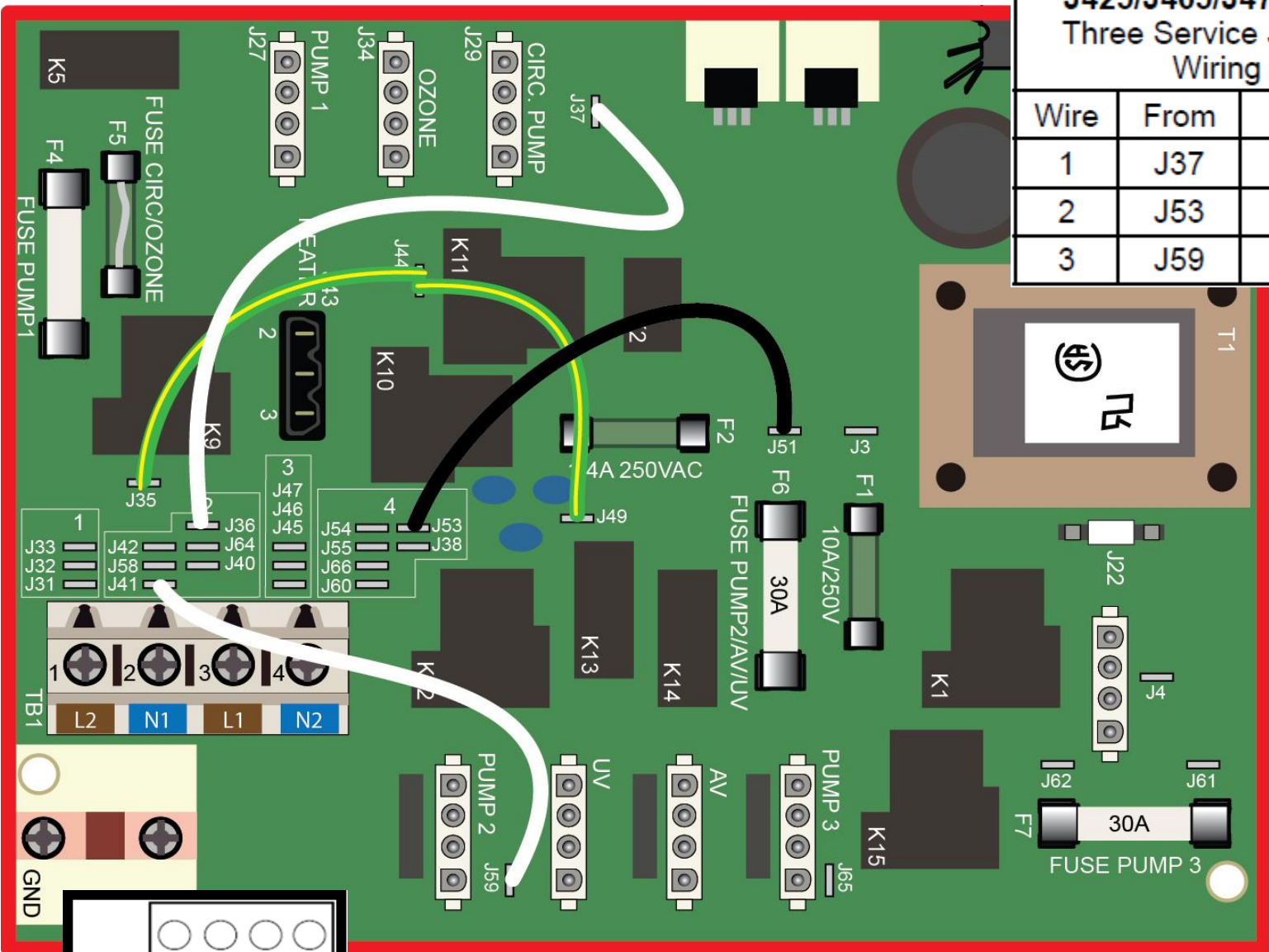
Wire	From	To
1	J33	J51
2	J37	J53
3	J59	J38



L1 = Heater & Transformer  
L2 = All other components

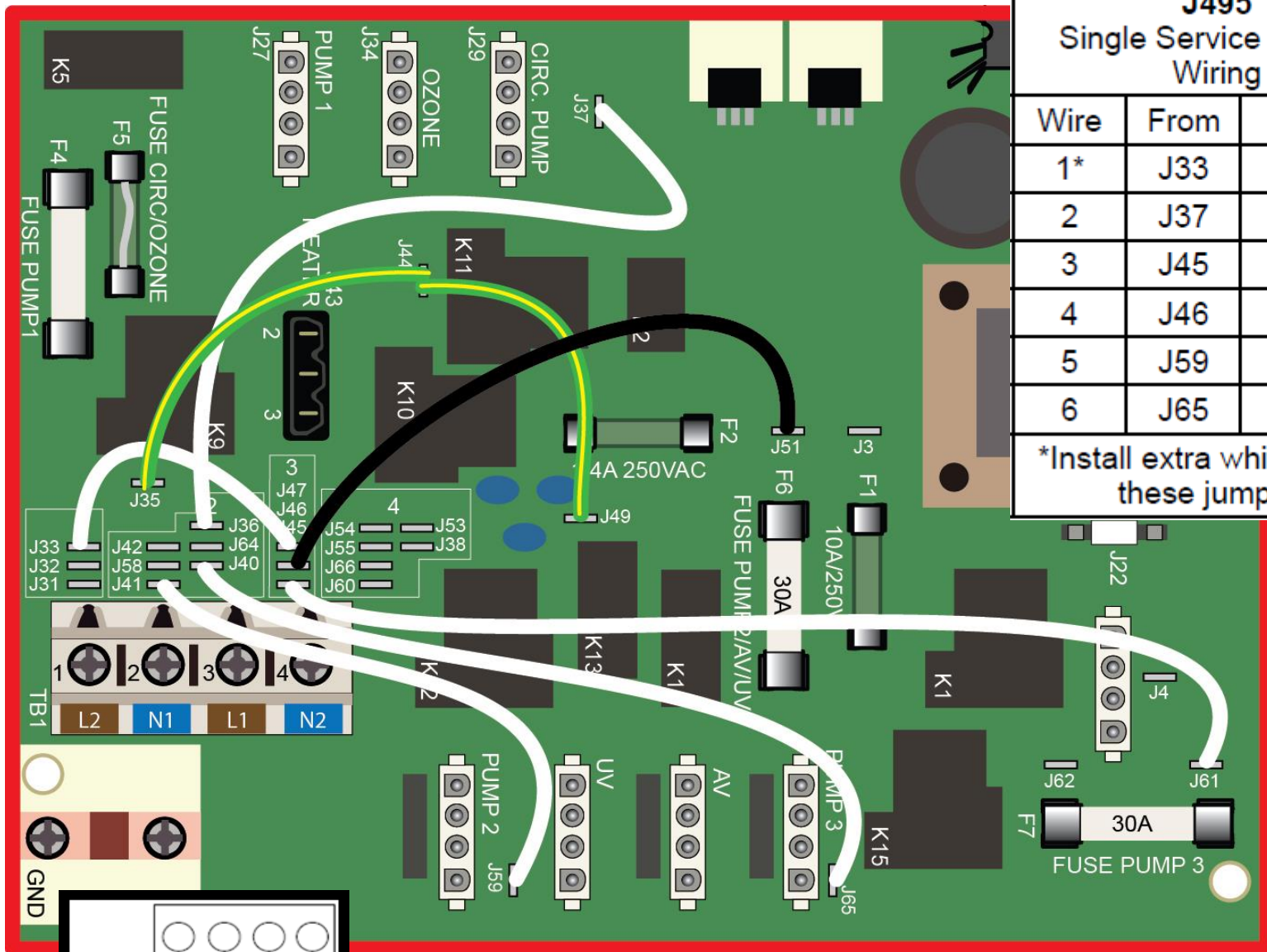
# J425/J465/J470/J480 Three Service Jumper Wiring

Wire	From	To
1	J37	J36
2	J53	J51
3	J59	J41

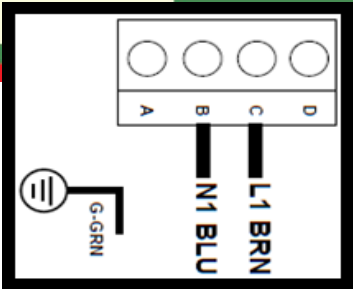


**BREAKER TERMINAL CONNECTIONS**

L1 = Heater & Transformer  
 L2 = Pump 1 and other components  
 L3 = Pump 2



J495 Single Service Jumper Wiring		
Wire	From	To
1*	J33	J47
2	J37	J36
3	J45	J61
4	J46	J51
5	J59	J41
6	J65	J40
*Install extra white wire at these jumpers		



BREAKER TERMINAL  
CONNECTIONS  
L1 = All Components



