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Dometic 1350” Hvac 120V Dual Installation Manual

With Universal Controller

# JC REFRIGERATION INSTALLATION MANUAL



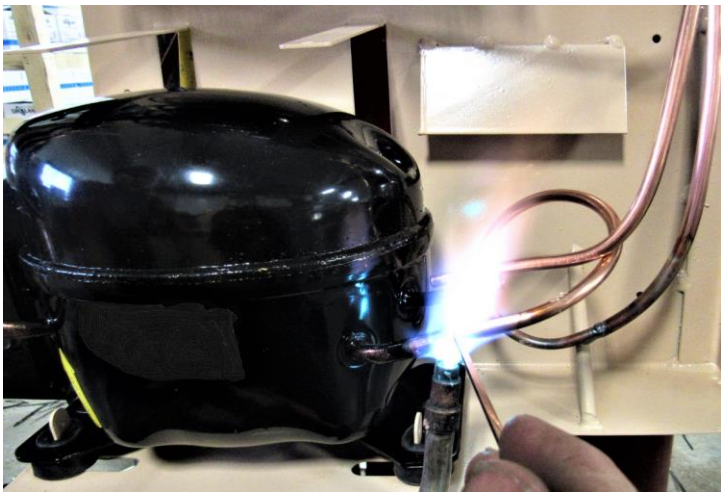

**Jr & Jeremy Lambright**

INFO@JC-REFRIGERATION.COM www.jc-refrigeration.com

**Good Day Friends, this is how it all begins, hope you find this helpful thru your installation.**



**Units prepped for compressors**



**brazed welded for strength**



## Tools needed to do the install:

**Screw gun  5/16  ¼  Phillips's  wrench  putty knife  knife  caulk gun  zip ties**





**1 or 2**

**And enough time to think things thru at times, so don't give up and hang in there to the end it will be all worth it. A cold fridge is about to be had!!**



**We at JC Refrigeration try to build these as easy to install as possible, and so these are DIY cooling units but please be aware though that our upgrades might not look quite the same, and brackets, frames, hole plates might not always line up perfectly as fridge boxes can vary at times, and so some modifications or tweaking might need to be done at times to install it. We offer installation manuals for the Hvac conversion unit to help you thru this install and feel free to send us a picture along with your question, and we will help you to the best of our ability.**

**JR & Jeremy Lambright**

## Please read through these notes before starting:

- Throughout this manual, there will times when you see (RA), (YA), or (BA). These are referring to red arrow, yellow arrow, and blue arrow. We use these to point to a certain spot or part in the pictures.
- There are differences between this install manual and the install videos you can find on the internet. So, to avoid confusion, follow only the instructions in this manual.
- With this 120V dual compressor cooling unit, unless you already have inverter power behind the fridge you might want to consider to get inverter power back there so it can run off the inverter while travelling.
- Remember your old rear or front control boards will no longer be used, they can be taken completely out or just left in and not used. Same with wires and fans, what you take off will no longer be used but can be saved for future use if needed or discarded.
- If your icemaker is no longer used then now is the time to take it out and discard all icemaker wiring. It creates more freezer space.
- It's always a good idea to take pictures of your icemaker wires if you have one so it's not so confusing to put back together
- The cooling unit should be placed in the upright position for at least 8 hours after shipping. During the install if it is laid down for not more than 2 hours, the 8-hour period does not have to be repeated.

# PLEASE NOTE: Not all of our cooling units look exactly the same. So, to avoid confusion, only follow the instructions in this manual when installing the unit.

**To start this process, begin by taking the cooling unit out of the box, if box appears to be damaged don't panic as we foam package them into the box (YA) and so the box can be practically destroyed and the unit is still not damaged. So, when you take the box apart you will notice a spray foam packing inside and so this needs to be removed and then the unit will slide out. Inside the box you should have the cooling unit, and parts needed to do the install (RA)**





**Cover up your floor with blankets and removing any door handles or smoke alarms that might hinder the exit of your refrigerator from your cabinet. Turn off the water pump (if you have an ice maker in your fridge) and the refrigerator control panel.**

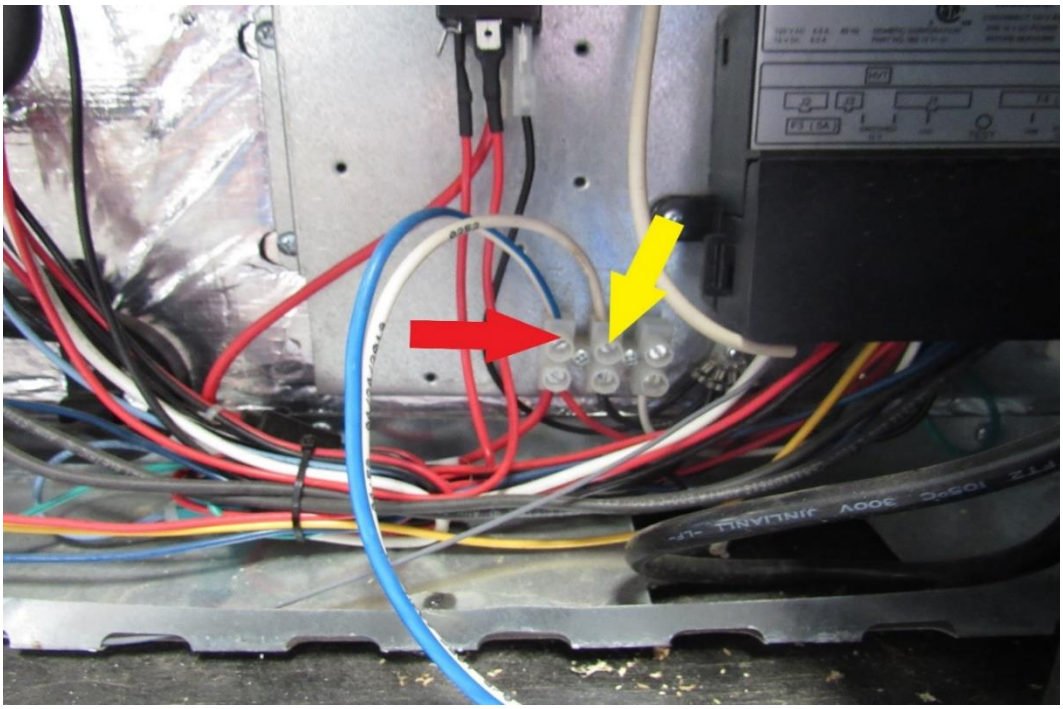
**WARNING:**

**Make sure to turn off LP gas at the tank before starting the install.**

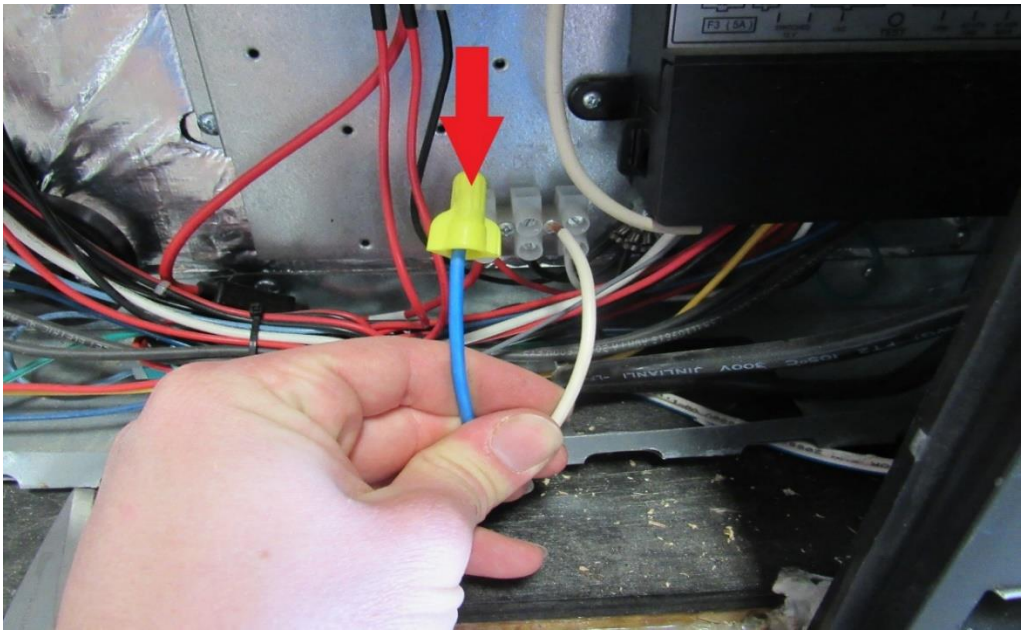


**Locate your refrigerator side vent on the outside of your RV. Good idea to take a pic of these wires or label them so you know which goes where when done.**

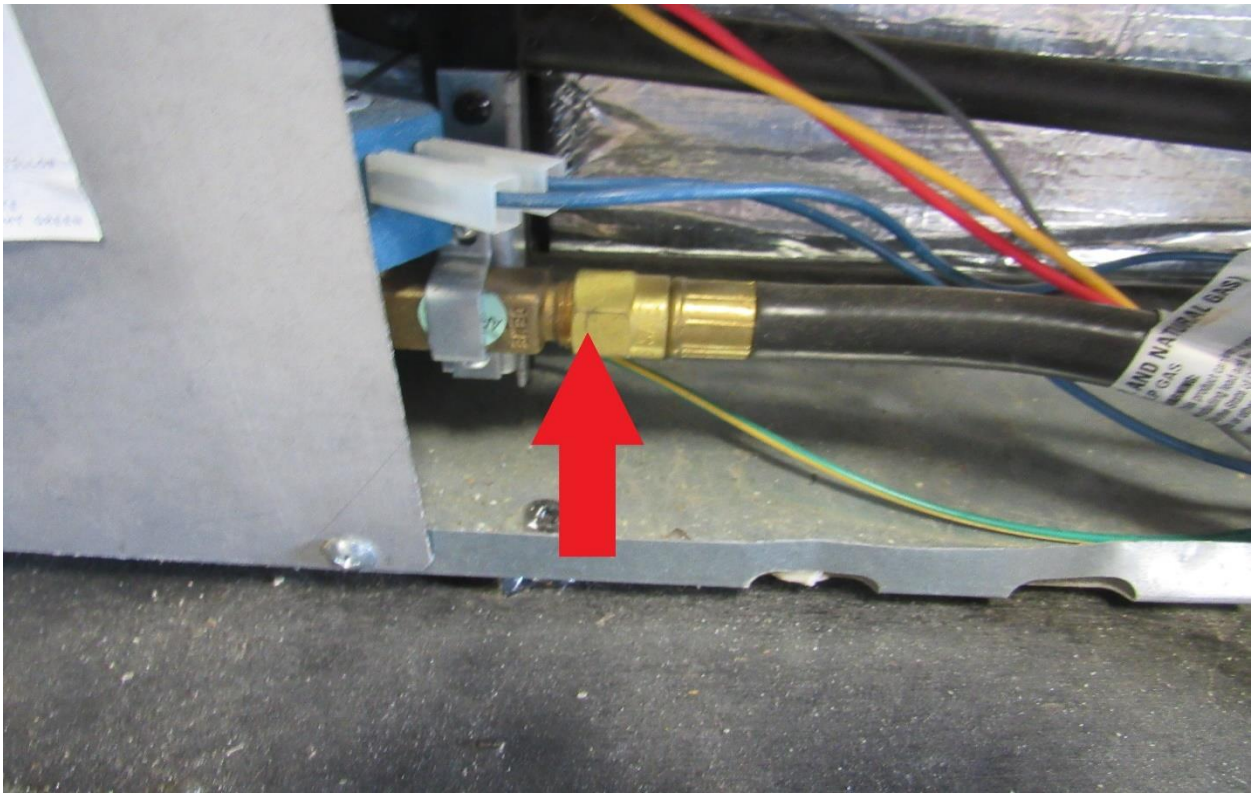
**Loosen the set screws on the positive (RA) and negative (YA) wires. Be careful and don't ground out the positve wire as it will blow your Refer fuse.**



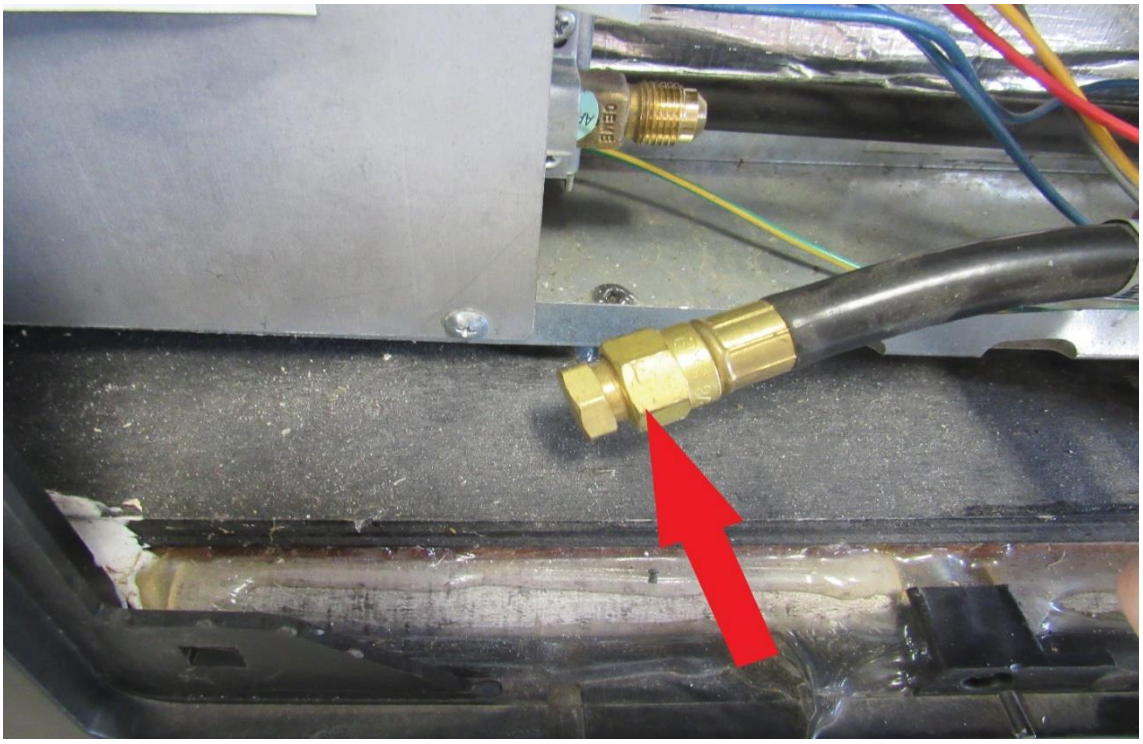
**Cap off the 12v positive wire as it is not insulated (RA). These power wires will be needed to power the controls after the fridge is back in the cabinet.**



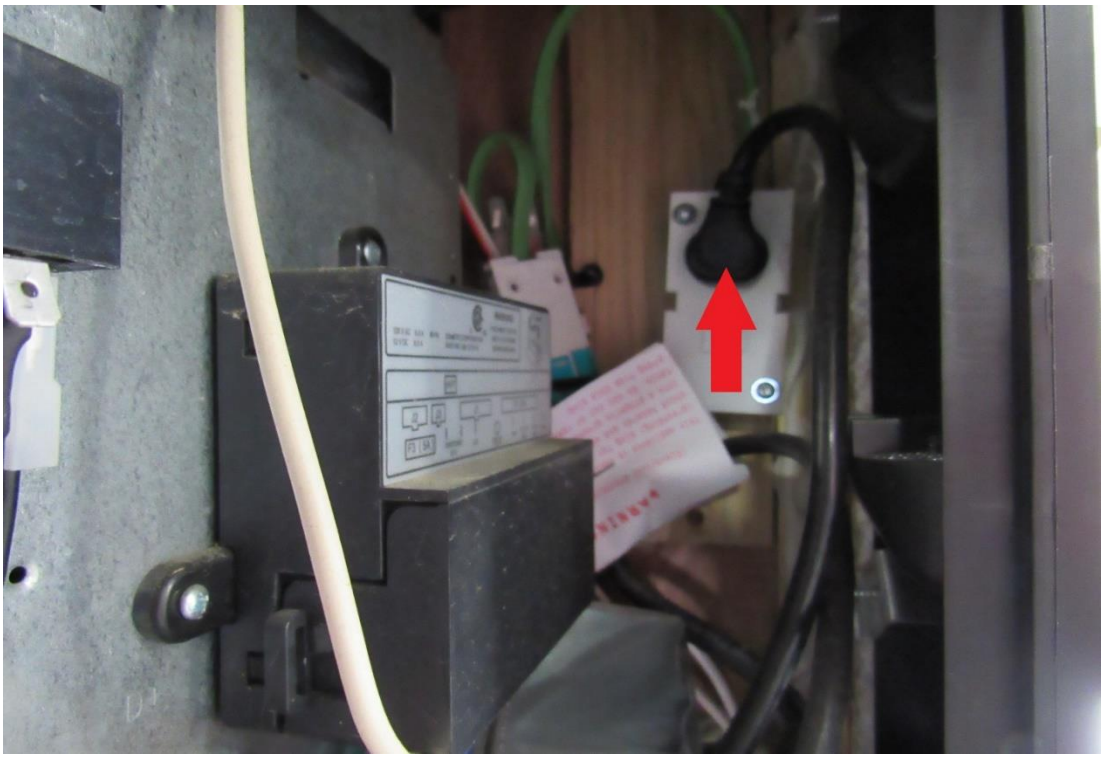
**Remove LP gas hose from the gas valve (RA). Make sure your LP is turned off.**



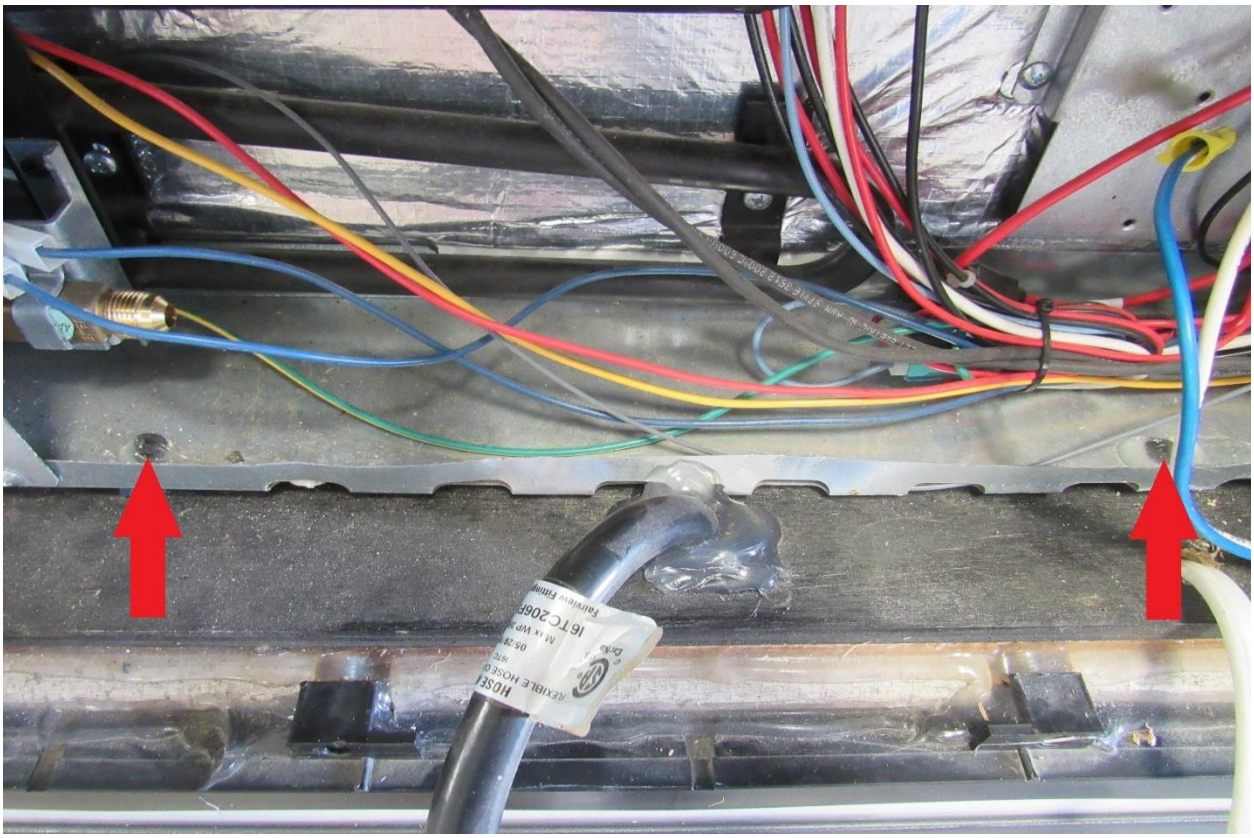
**Cap off the LP line with the supplied cap in the parts bag (RA). ). Leak check this joint with soap and water once has been turned back on.**



**Remove the 120v plug from the wall outlet (RA). Location may vary**



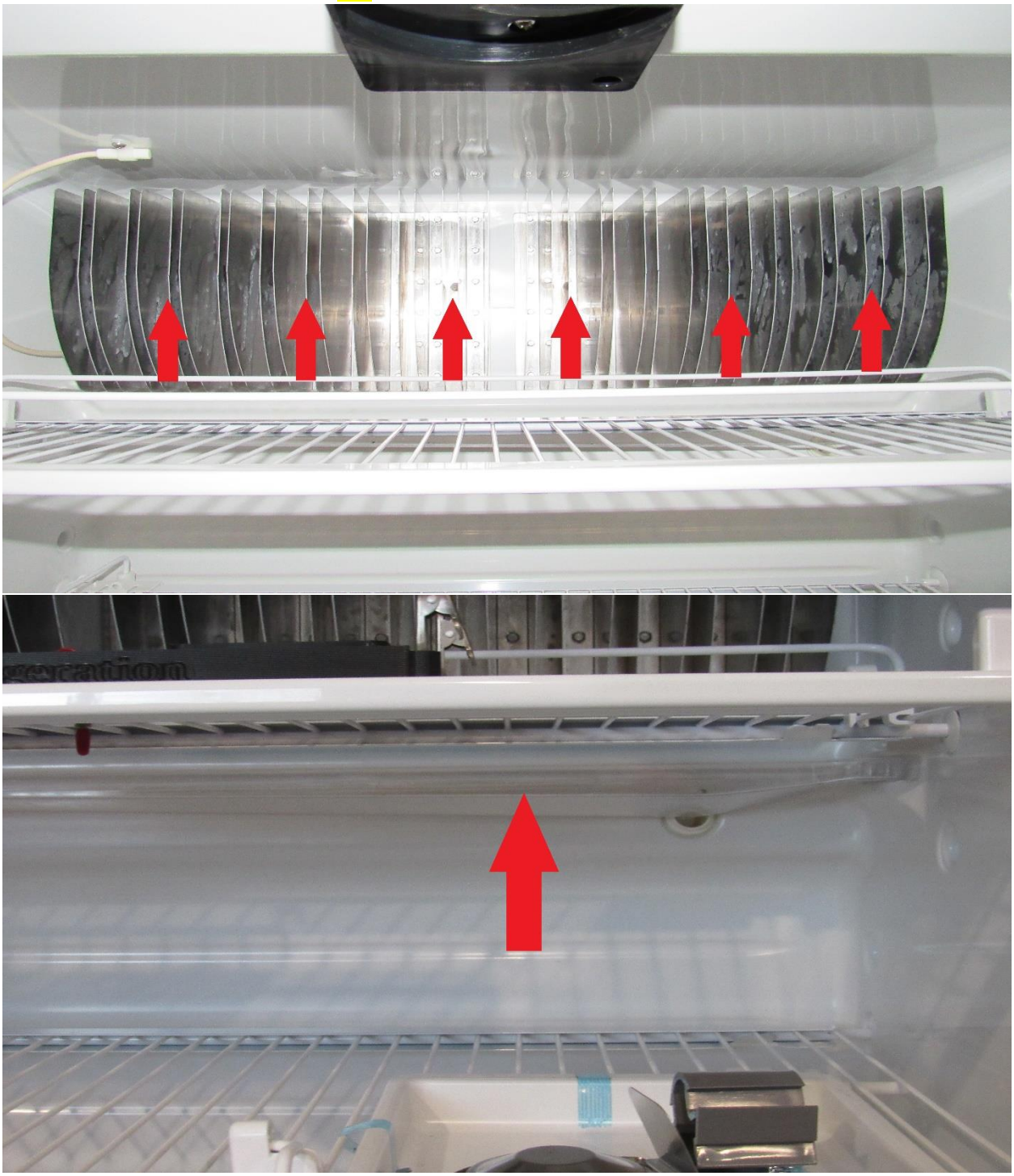
**Remove the two mounting screws (RA).**



**Going inside your RV, remove the freezer screws in the freezer section (RA).**



**Remove the screws from the fin in the refrigerator (RA). Also remove the clear defrost tray and set aside (YA).**



**Remove the screws from the front eyebrow board (RA).**




**Remove the two mounting screws underneath this top control panel (RA).**



**Fasten the top control panel back into place with the same screws you just took out so it doesn't get damaged (RA).**

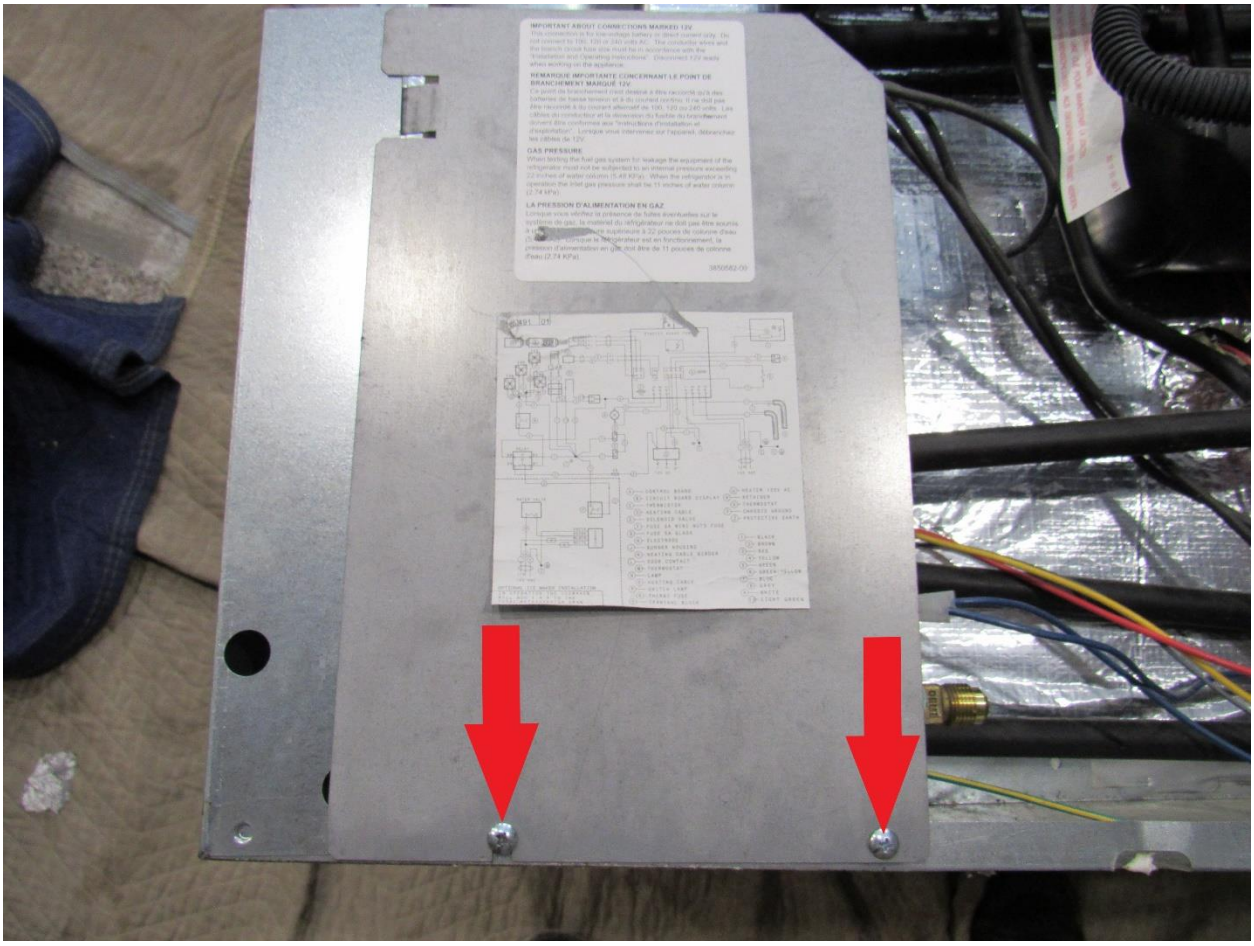



**Remove the screws from the bottom plate (RA).**

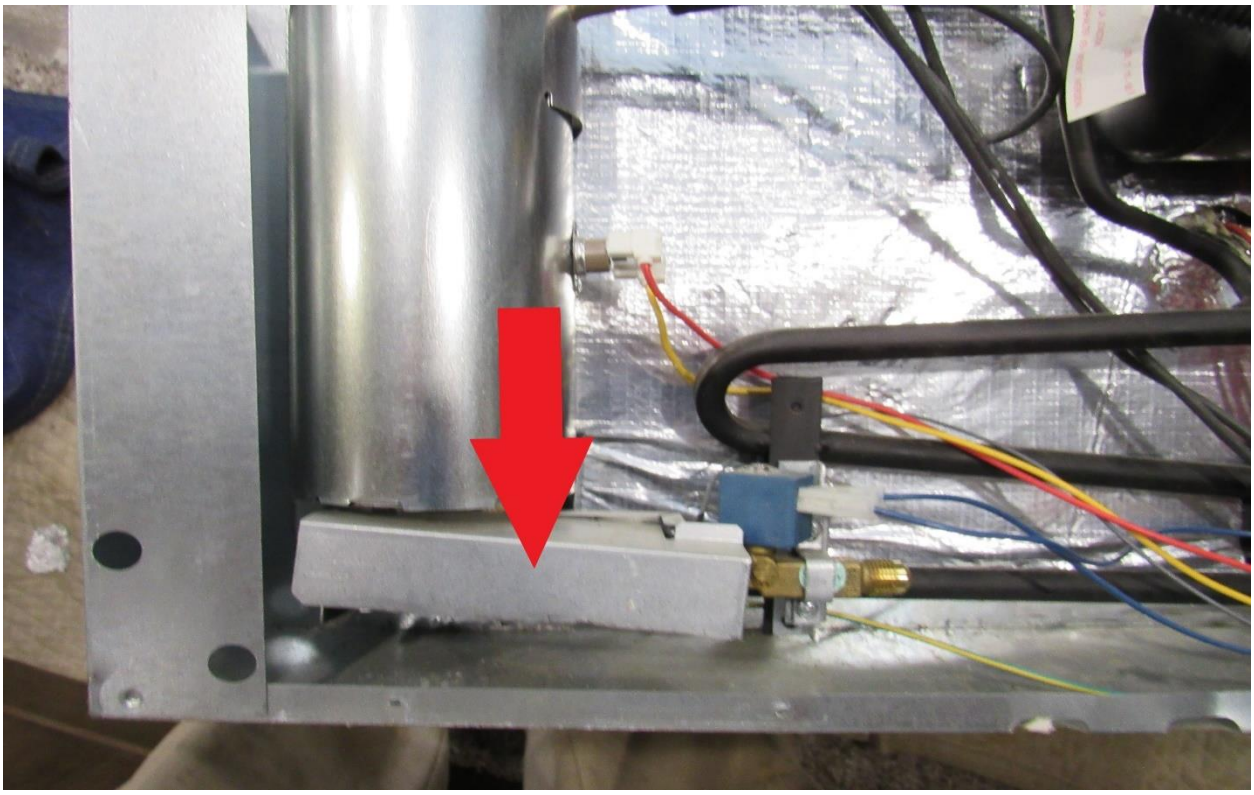


**We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits the cavity that it does not drop, but needs to be gently and carefully set on the floor and pushed or carried to your open floor area. Lay fridge face down on the floor, making sure doors are latched shut so they don't swing open and we normally put a pile of blankets on the floor by the top freezer door so the fridge is lying face down at an angle.**

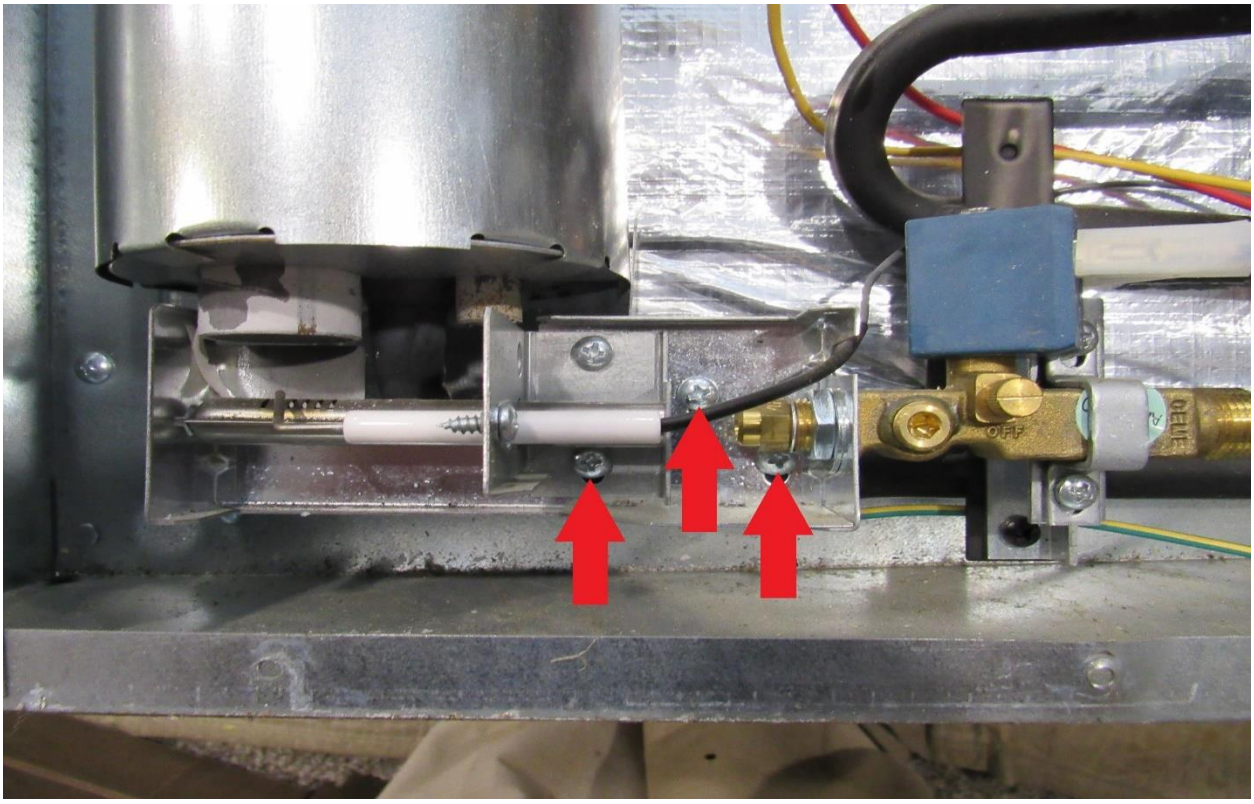
**Start by removing the screws in the burner assembly (RA).**



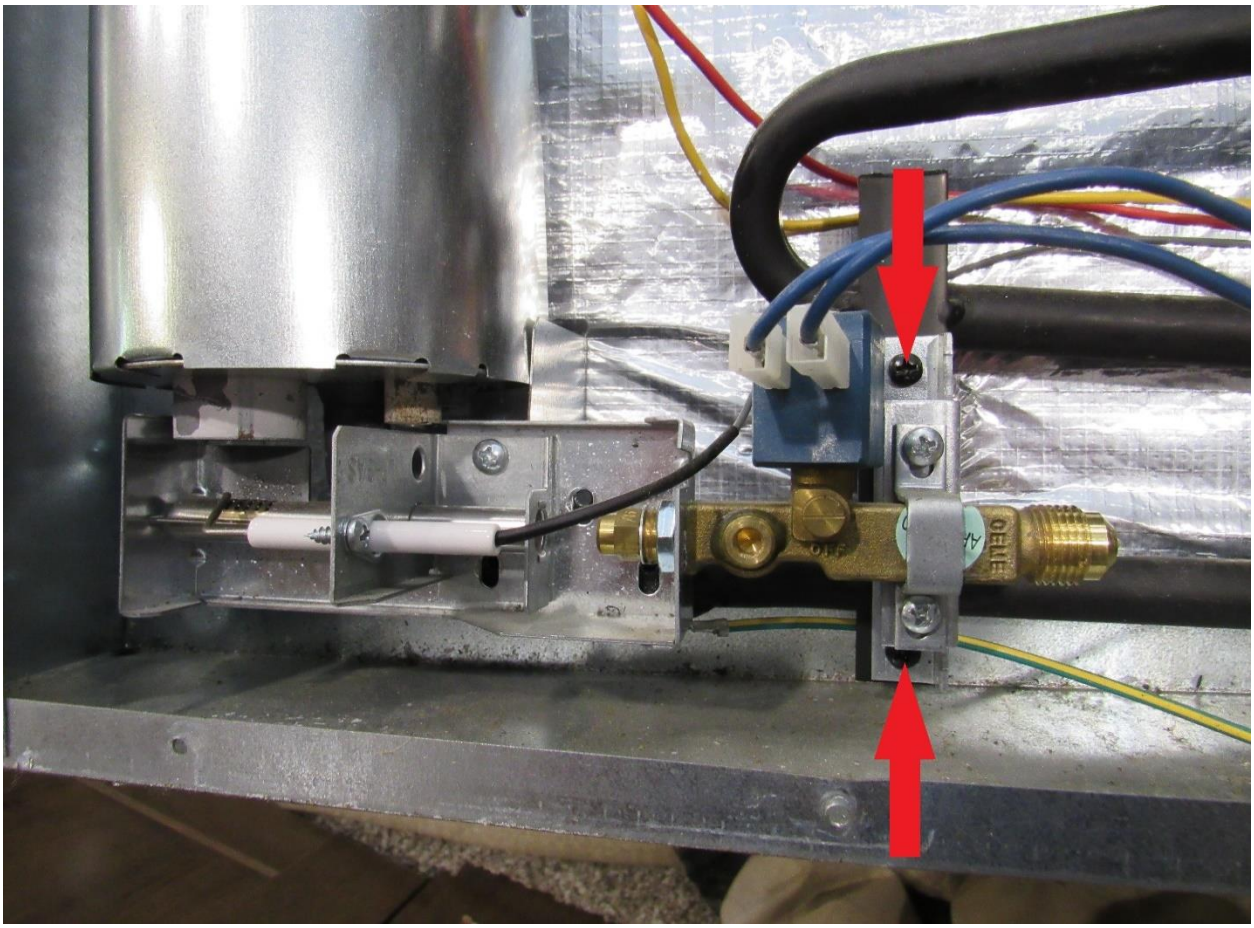
**Remove the burner cover (RA).**



**Remove the burner mounting screws (RA).**



**Remove the LP solenoid mounting screws (RA).**

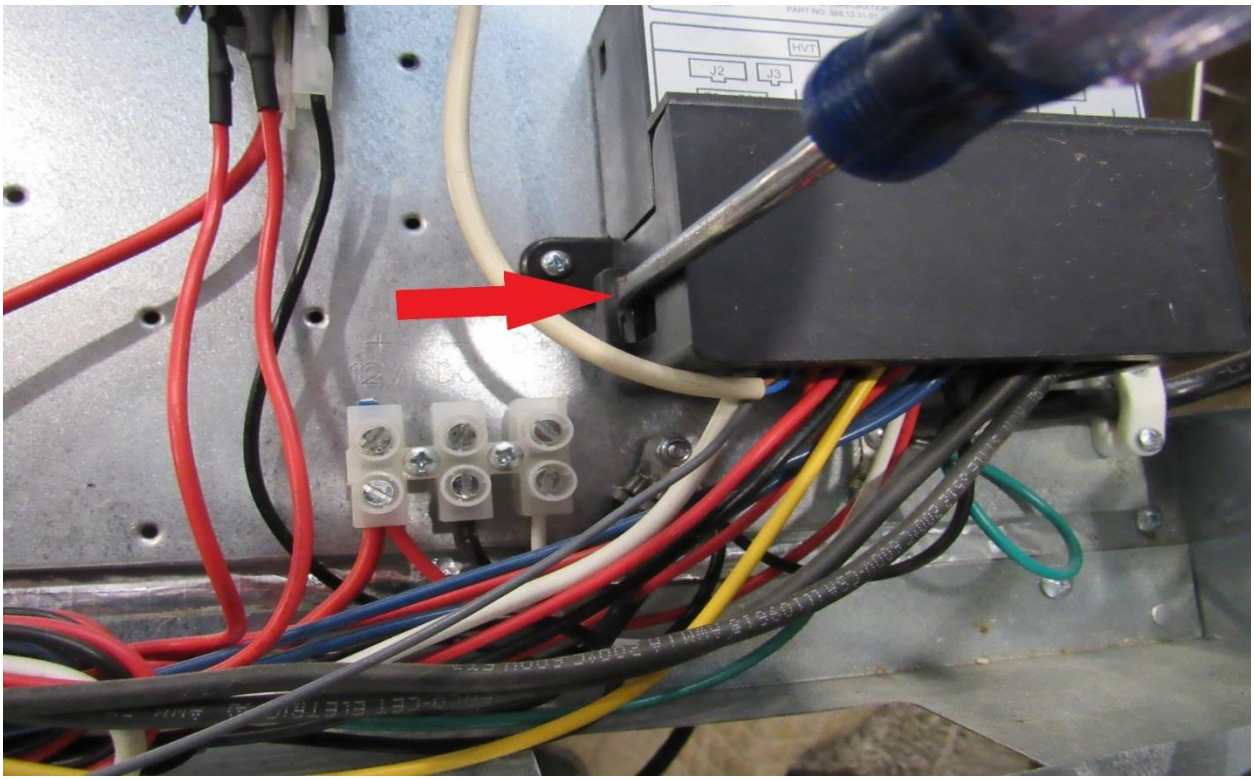


**Remove all the wiring from the control board, none of this wiring will be reused.**

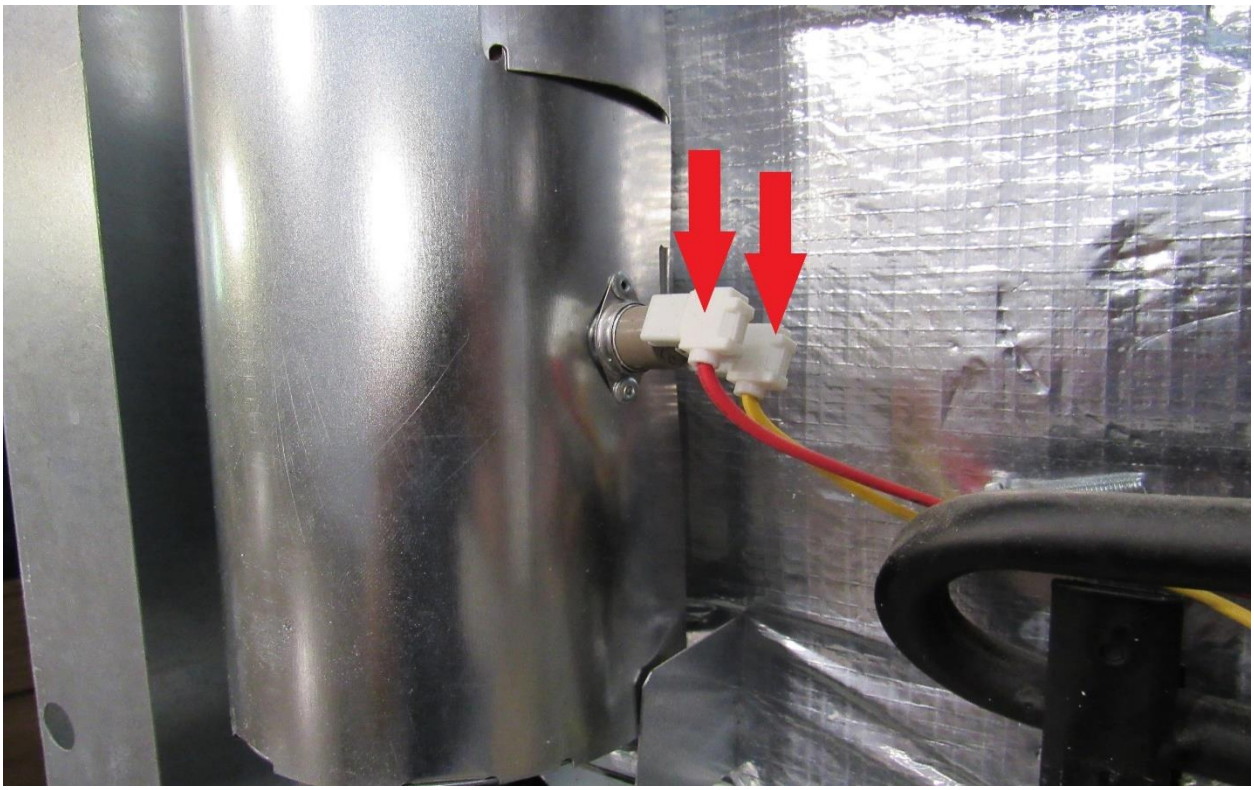
**The control board itself can be removed as well and discarded.**



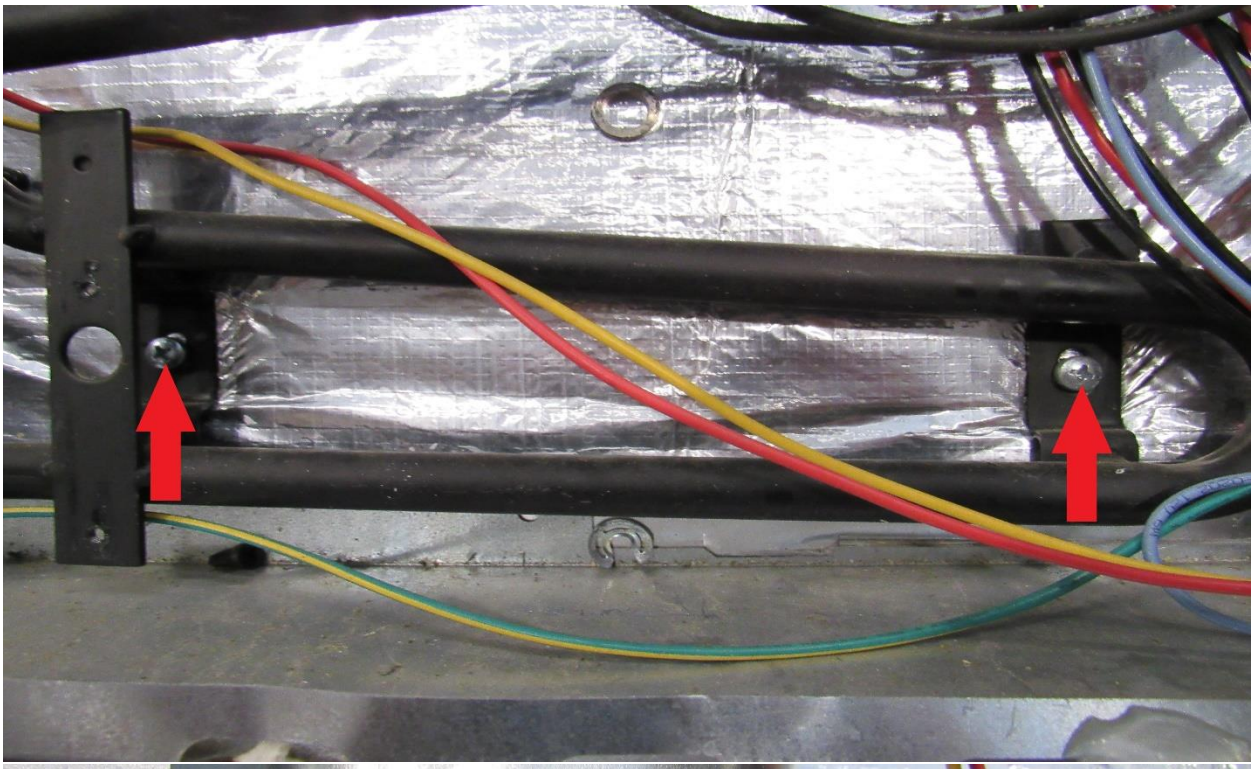

**Take a screwdriver and gently pry out the side of the board to release it (RA).**

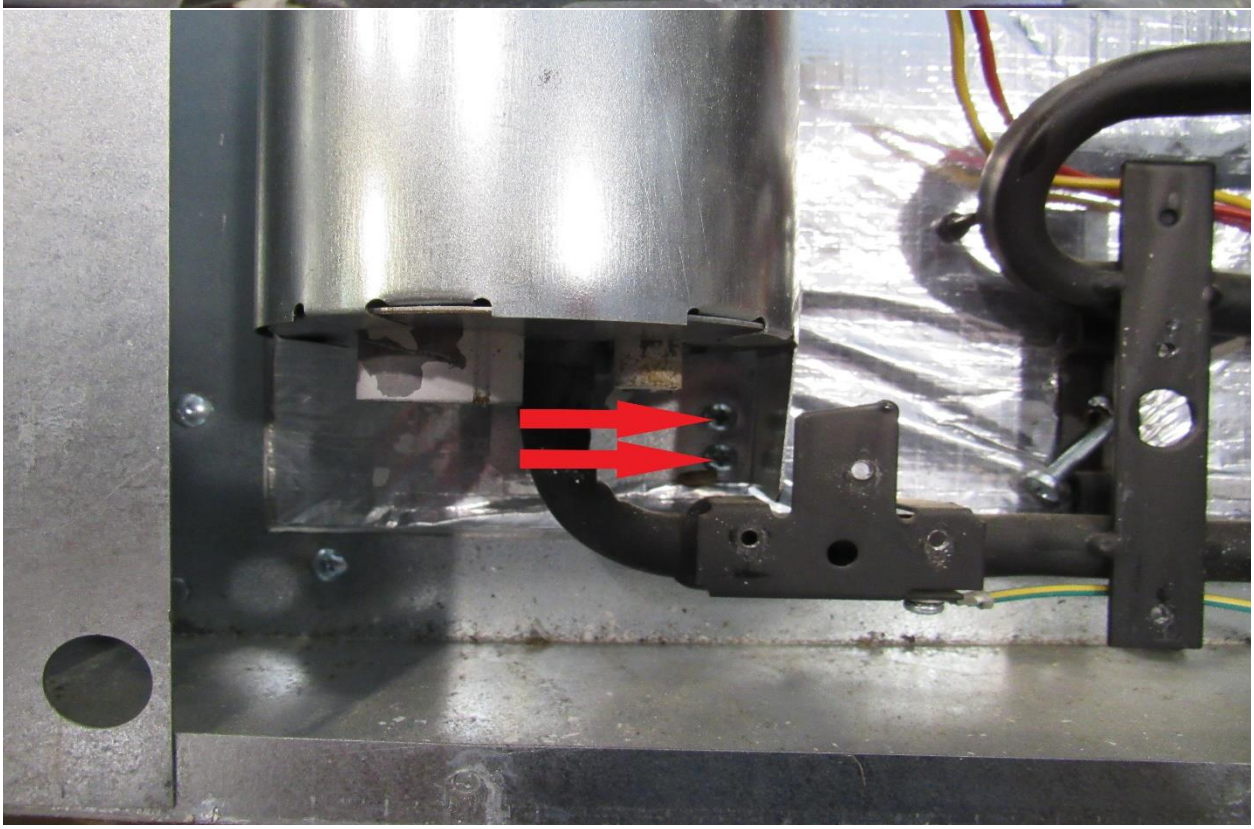


**Remove the yellow and red wire off of the temp switch (RA).**

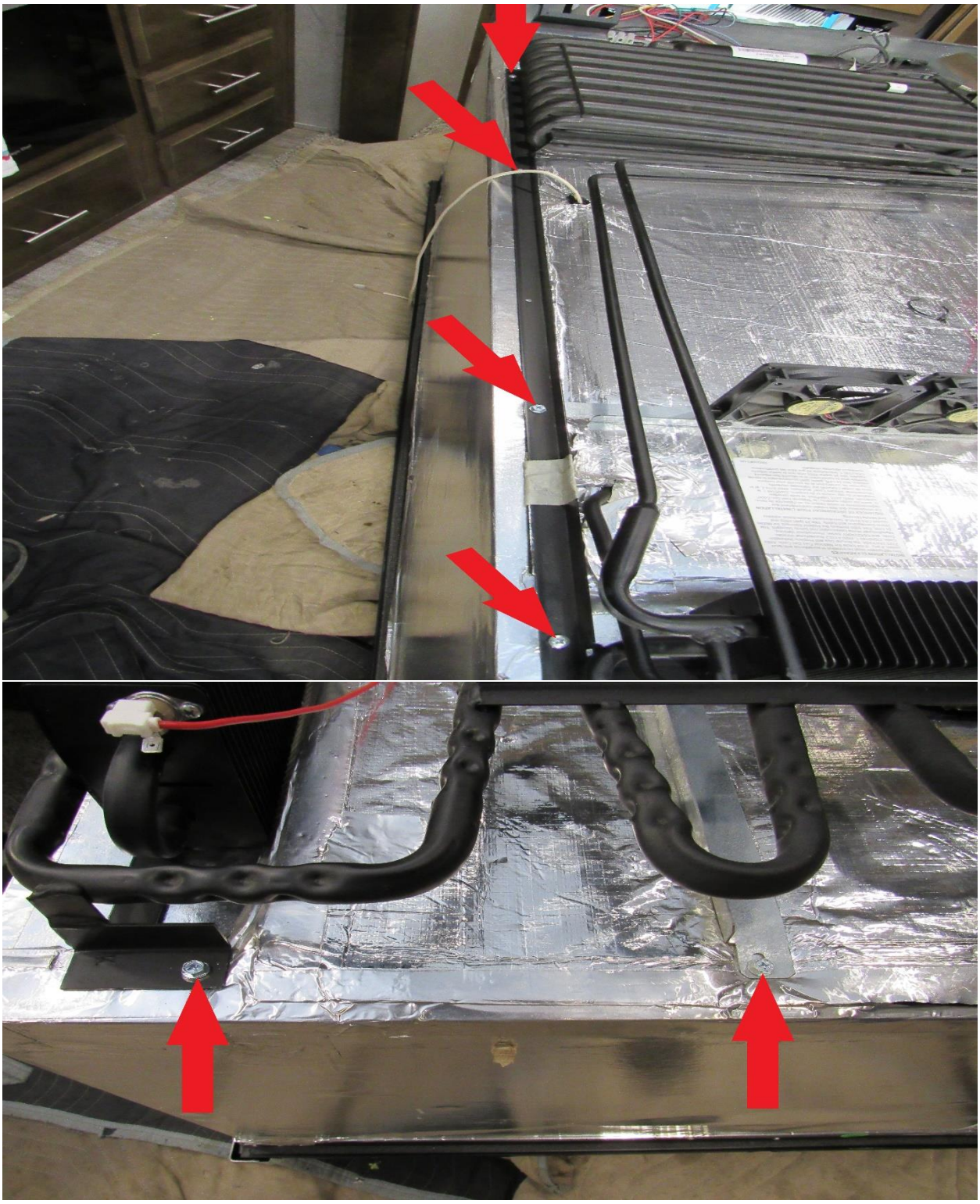


**Remove the mounting screws (RA).**

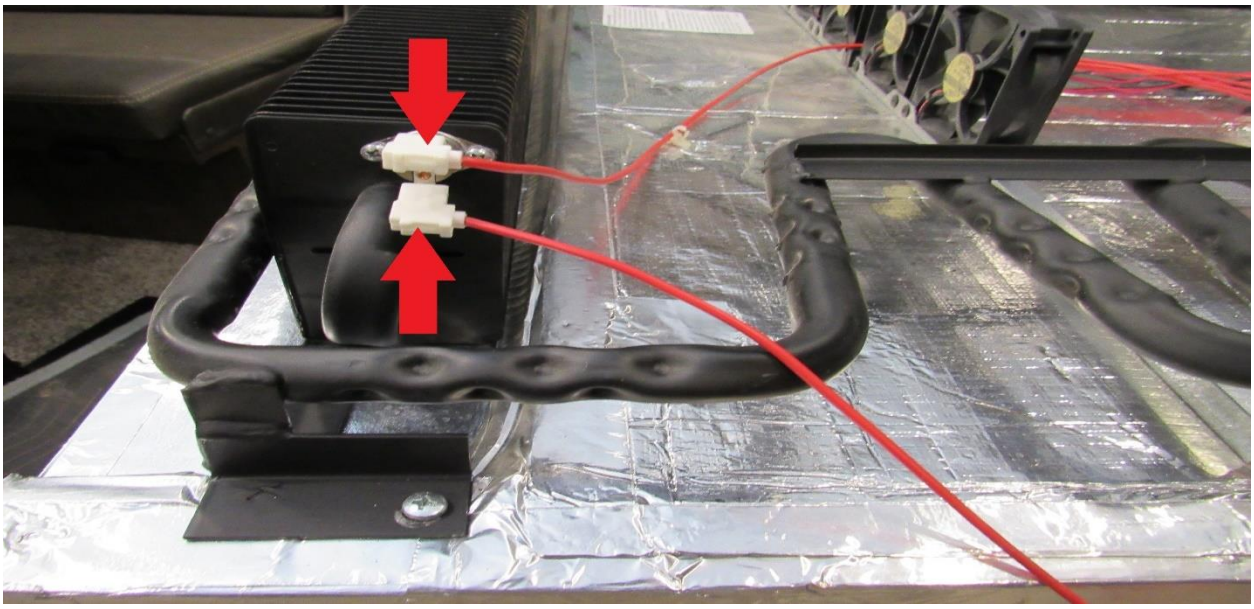




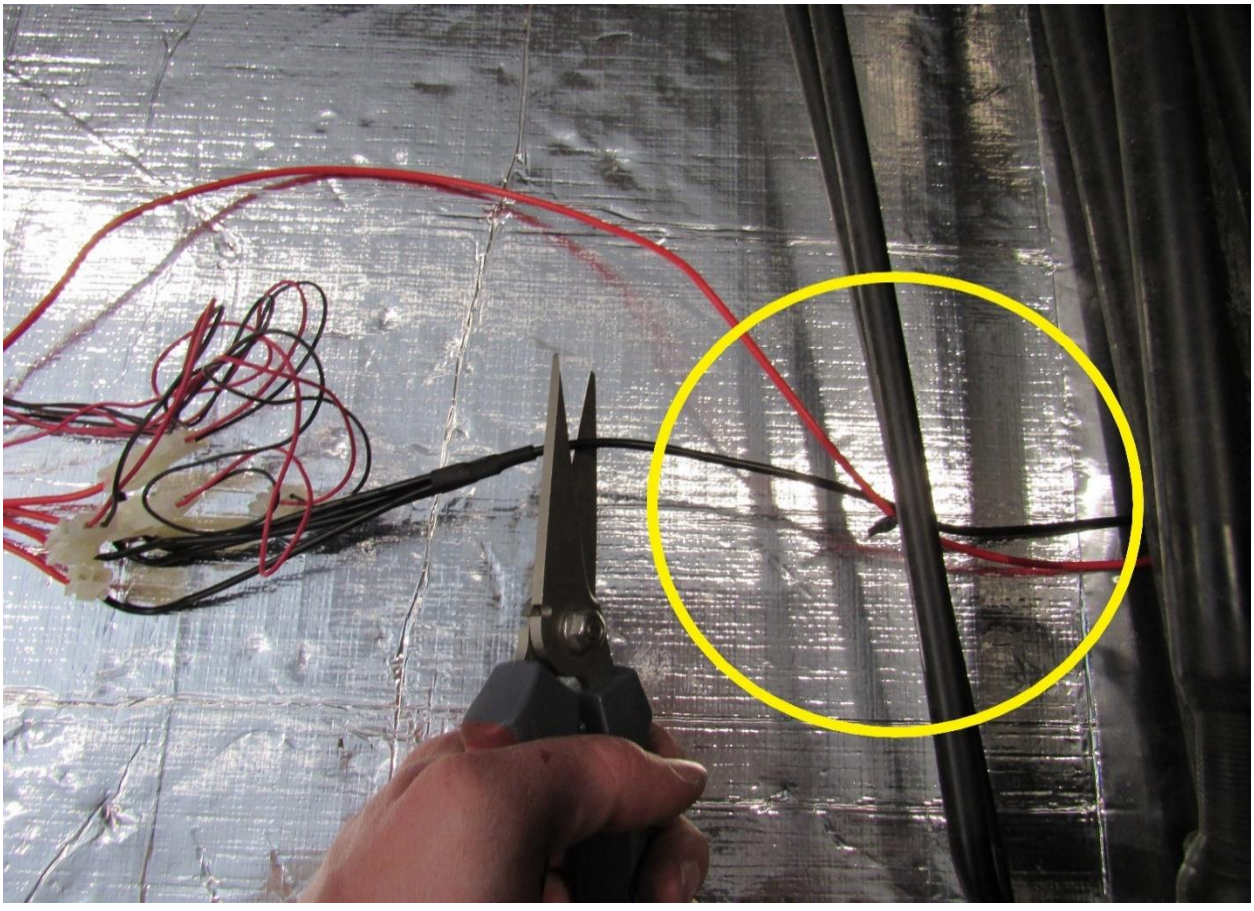
**Remove the mounting screws on the side rail (RA). These may vary**



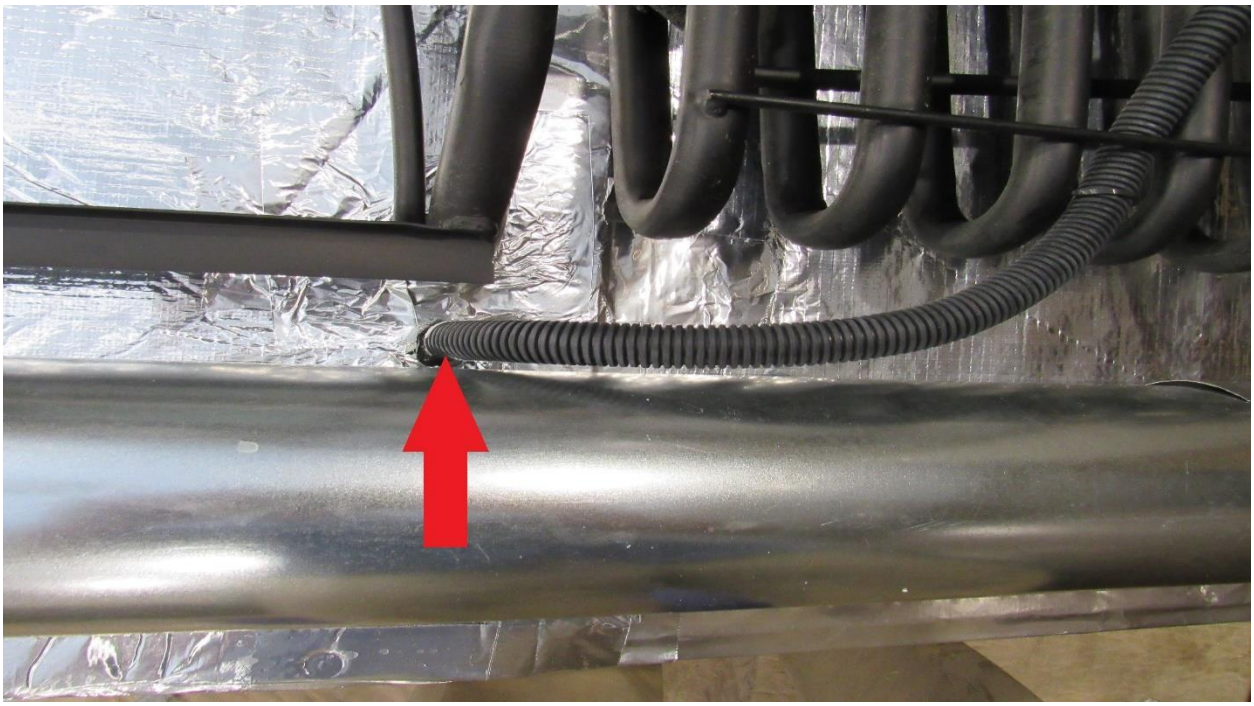
**Remove the wires from the fan temp switch (RA).**



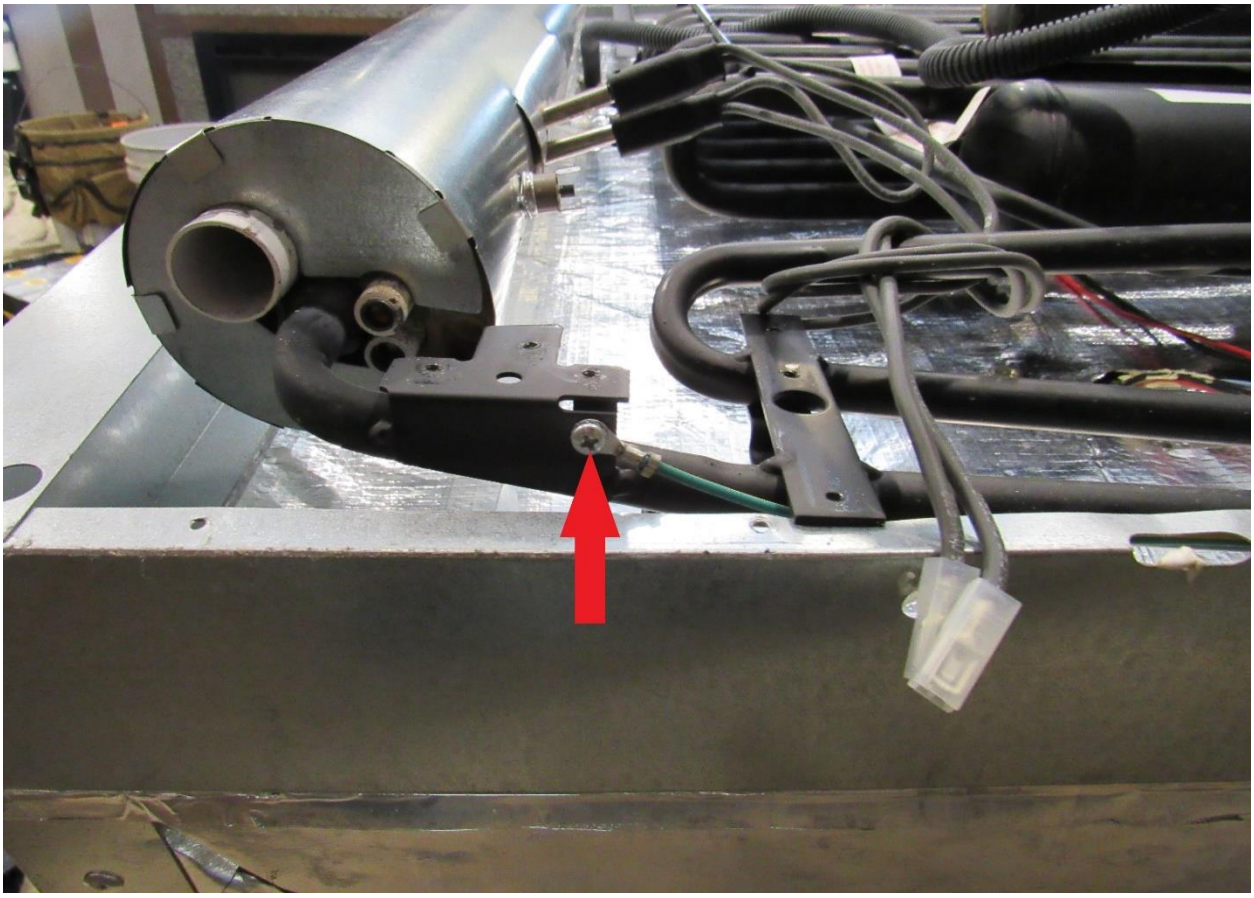
**Cut the black fan wire underneath the connections (RA). Pull the red and black wire in the yellow circle down to the board. these can just be zipped tied to the side as you will not use these.**



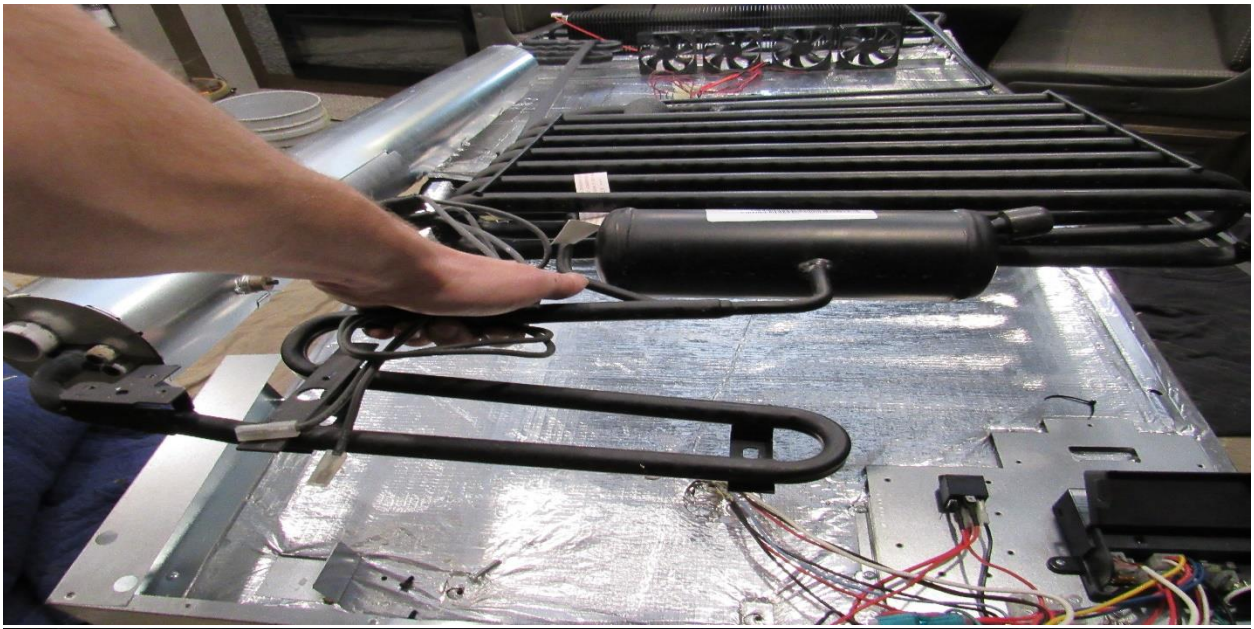
**Pull out the defrost hose (RA). Set the defrost hose to the side.**

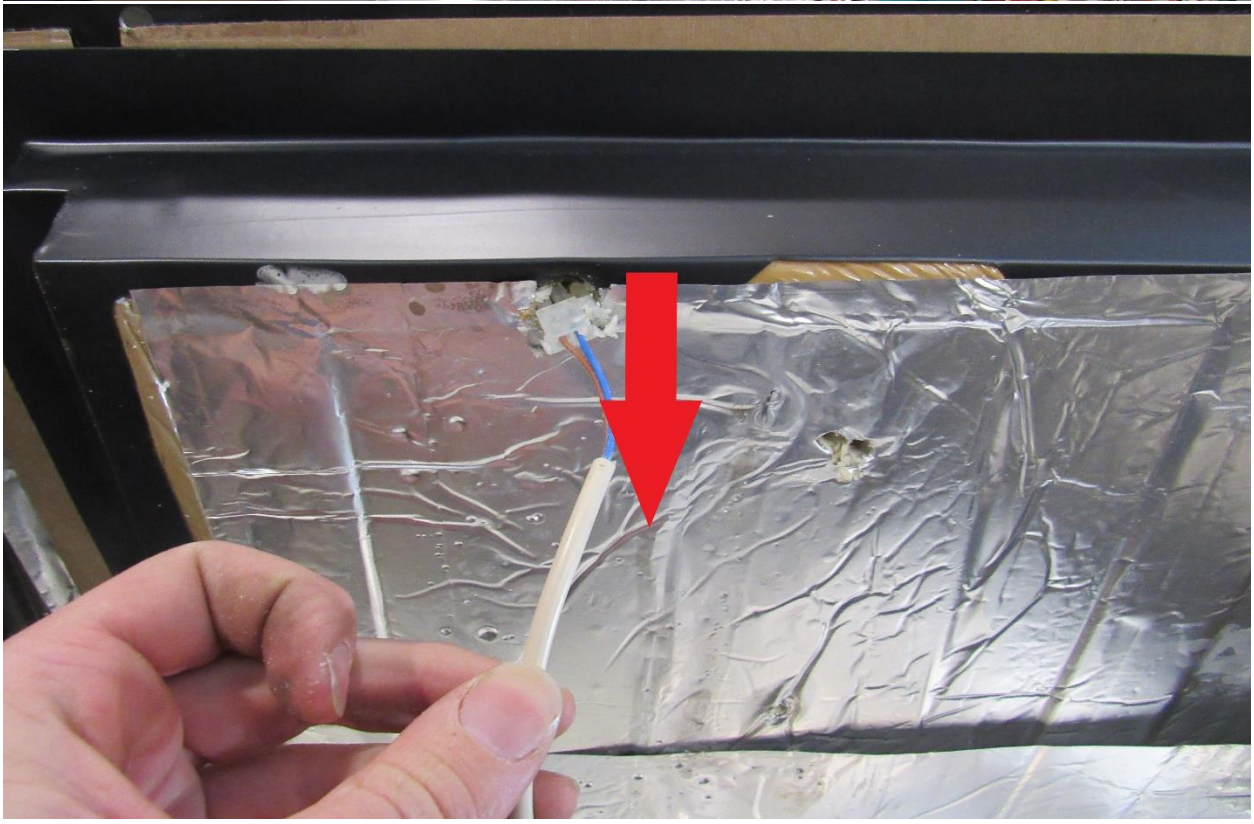


**Lift the unit up a little and remove the ground on the bottom plate (RA).**

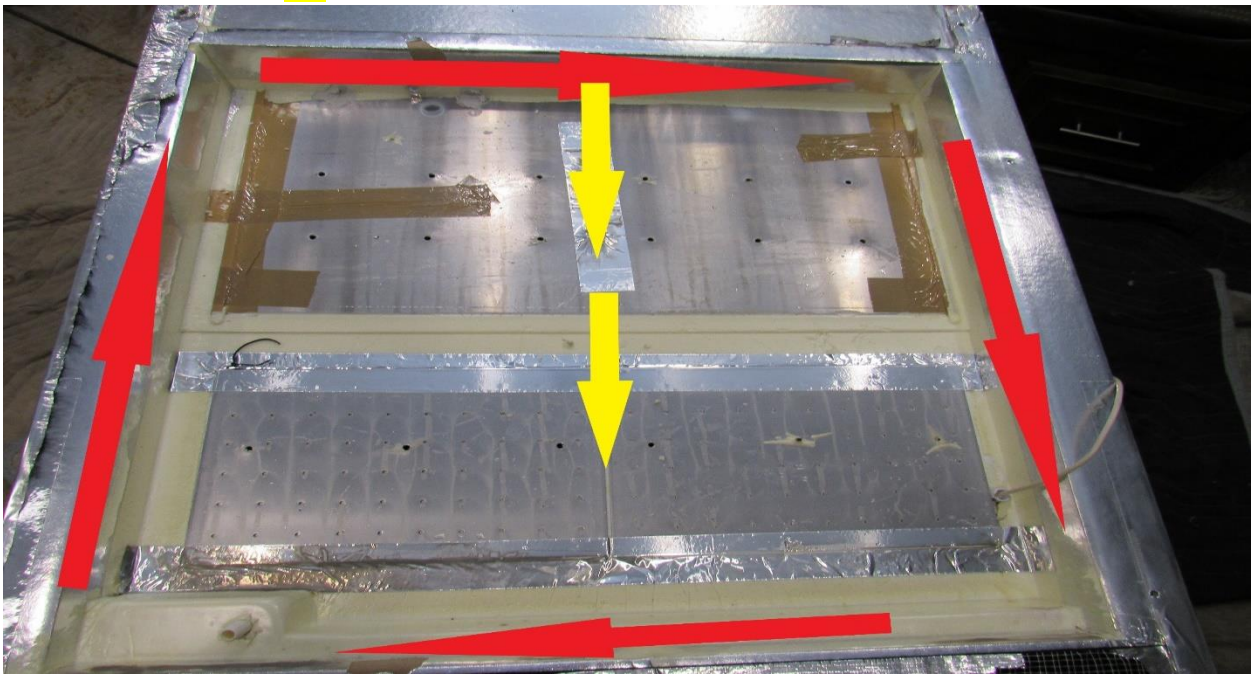


**Lift the unit straight up and out. Have someone pull the thermistor wire down through the hole in the unit as the unit is lifted out (RA). Thermistor can be taken completely out or just zip ties to the side if you choose to leave it in**

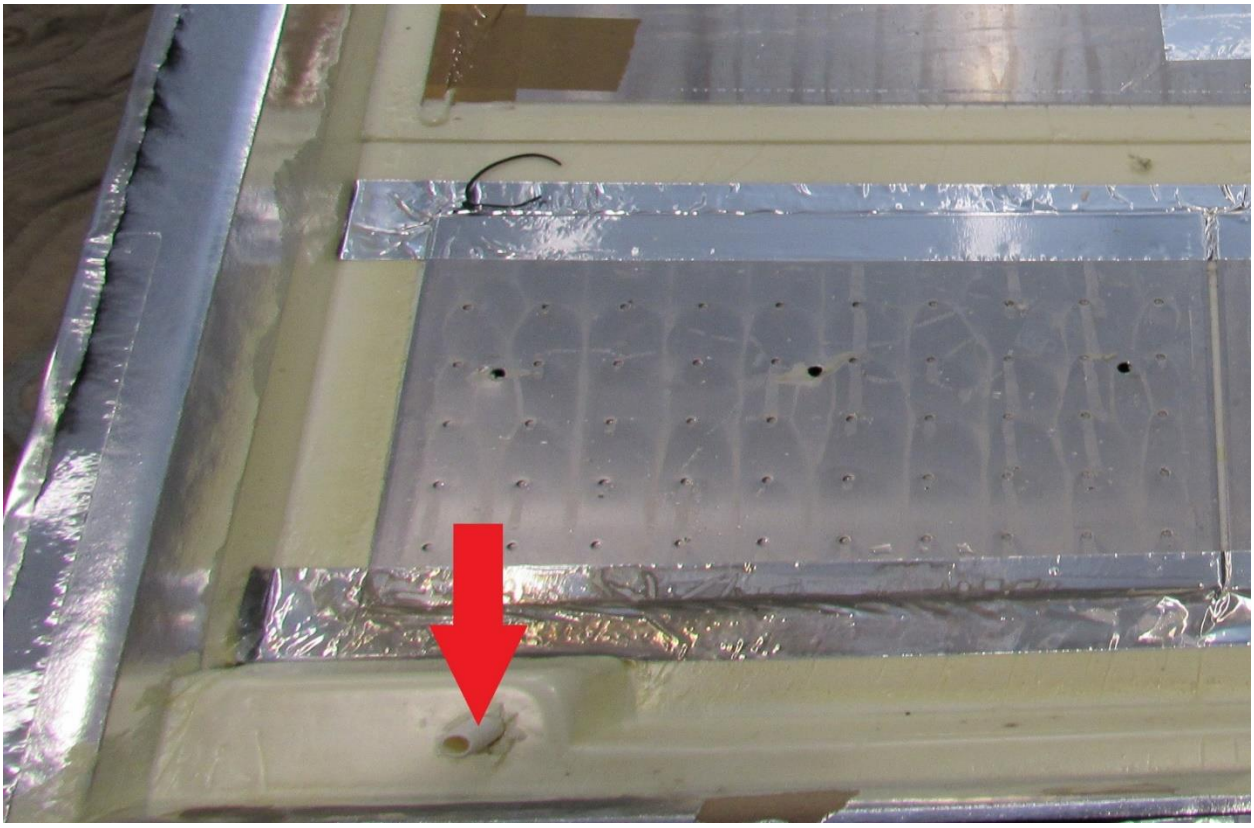




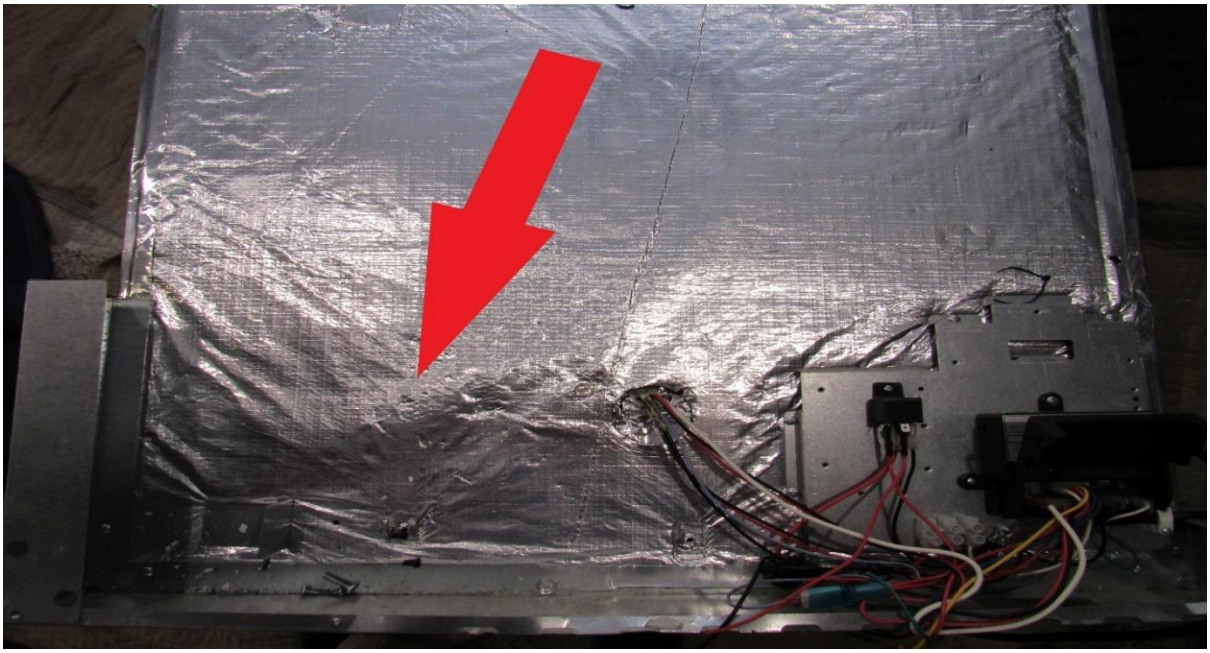
**Clean all four sides (RA) and also clean any foam or thermal mastic off of the aluminum plates (YA).**



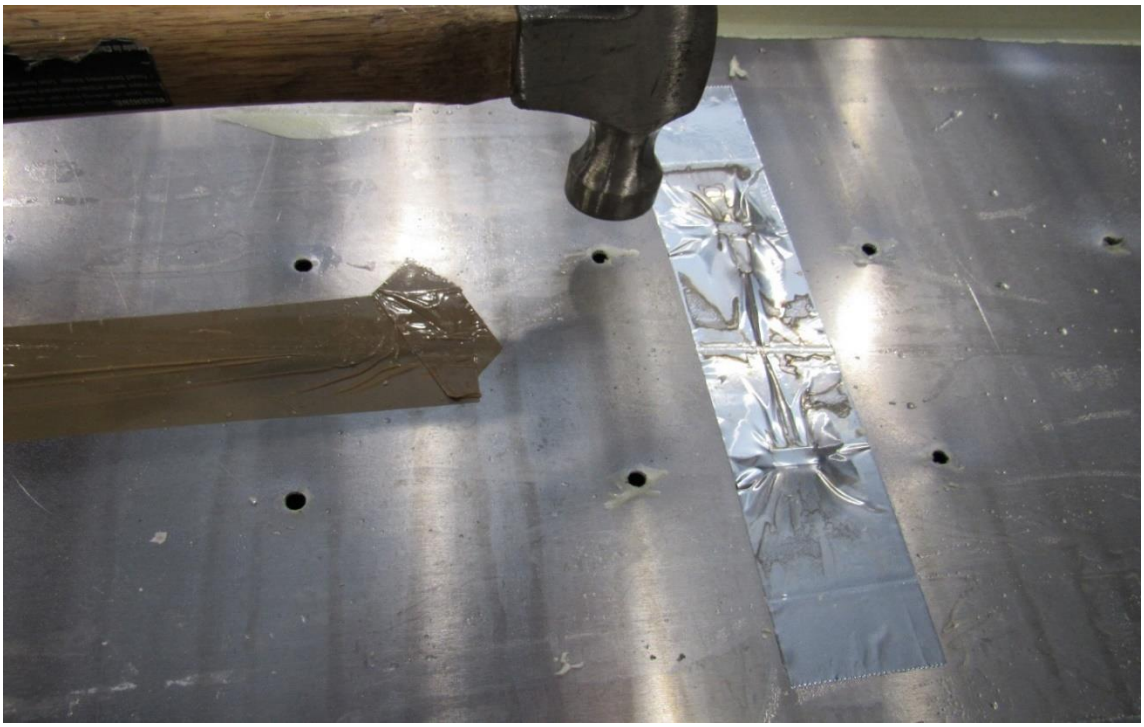
**Push defrost spigot down into the refrigerator section (RA) so it doesn't break off when the new unit is set into place.**



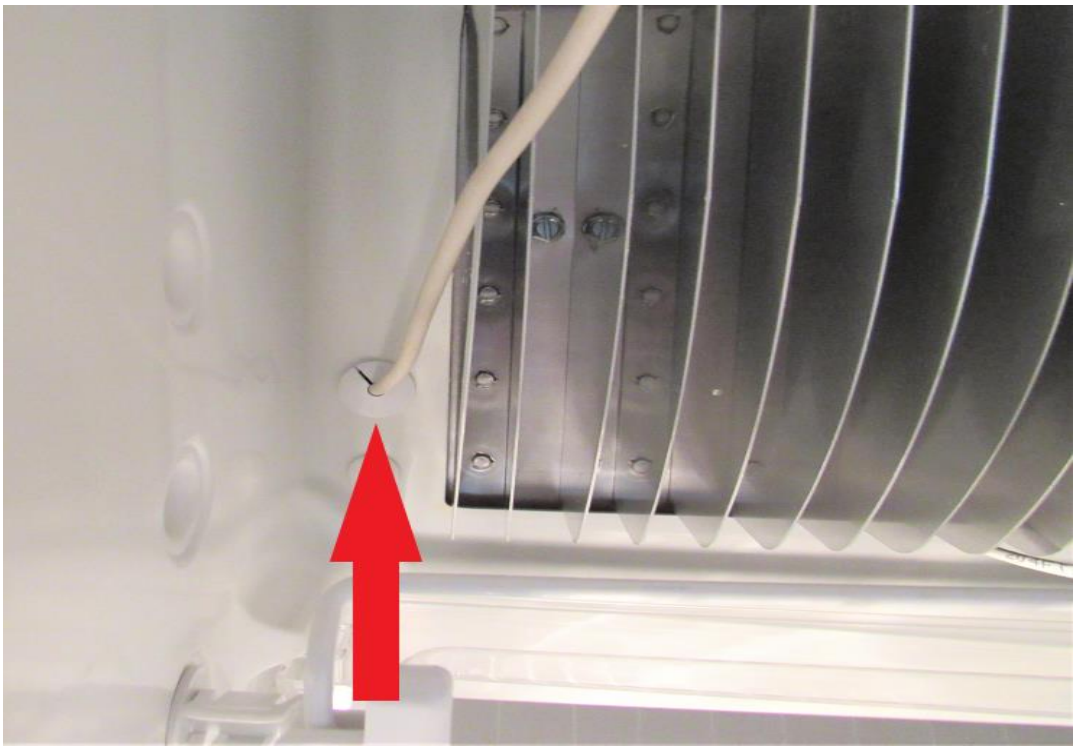
**Clean and vacuum the debris on the bottom (RA). All the original wiring and controls can be removed at this time. The bottom left hand burner protector shield needs to be removed as well. The new unit will lay better.**

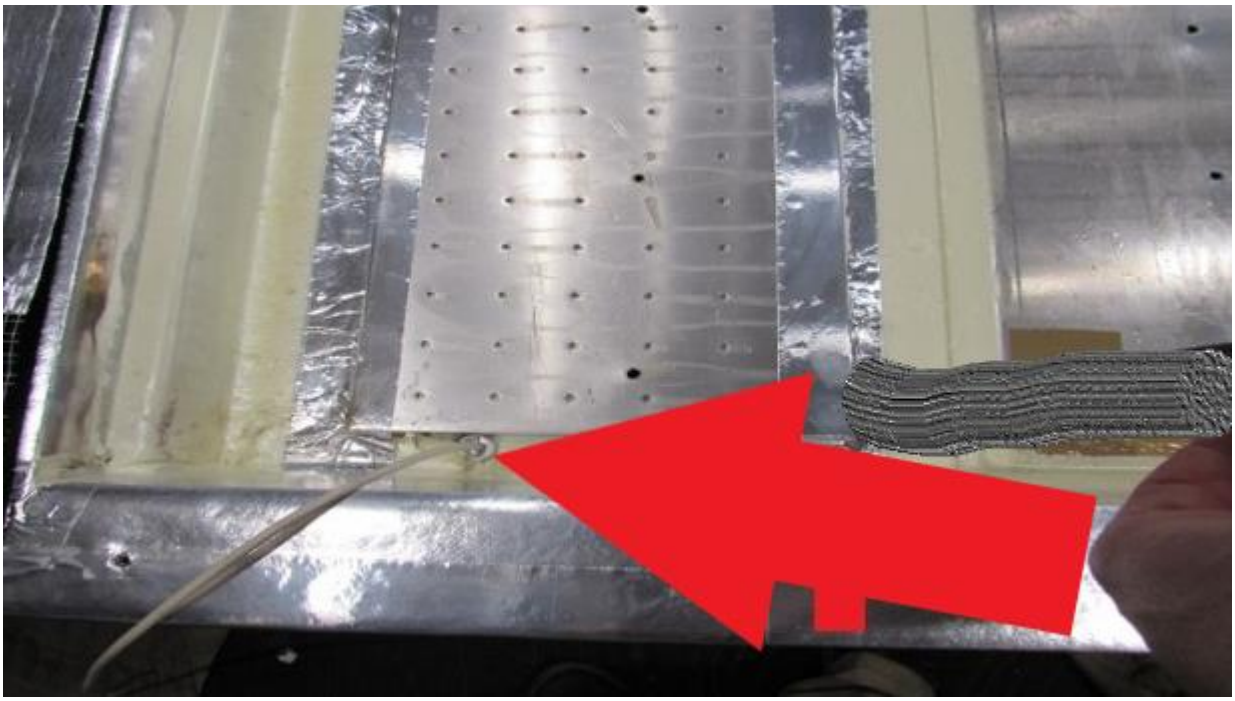


**Take a hammer and tap down the holes in the freezer section as these tend to buckle in from the factory, thus creating a gap when the new unit is pulled into place.**

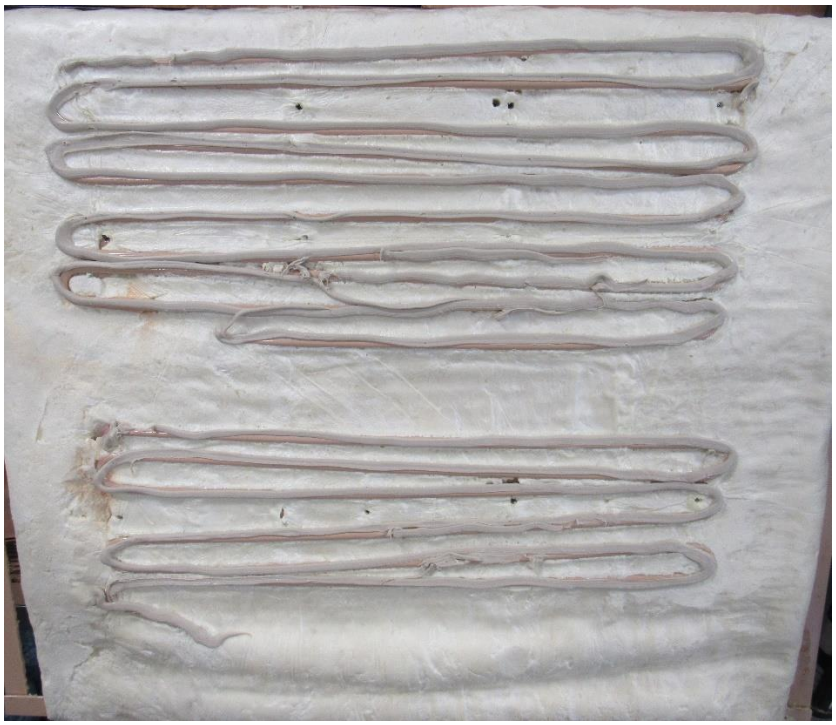


**You will want to feed the new controller wire out thru this access hole where your thermistor went thru, the controller can just be clipped to the inside shelf or fin till all done installing the unit, make sure to leave enough wire inside so it will reach to the other side of the fin.**

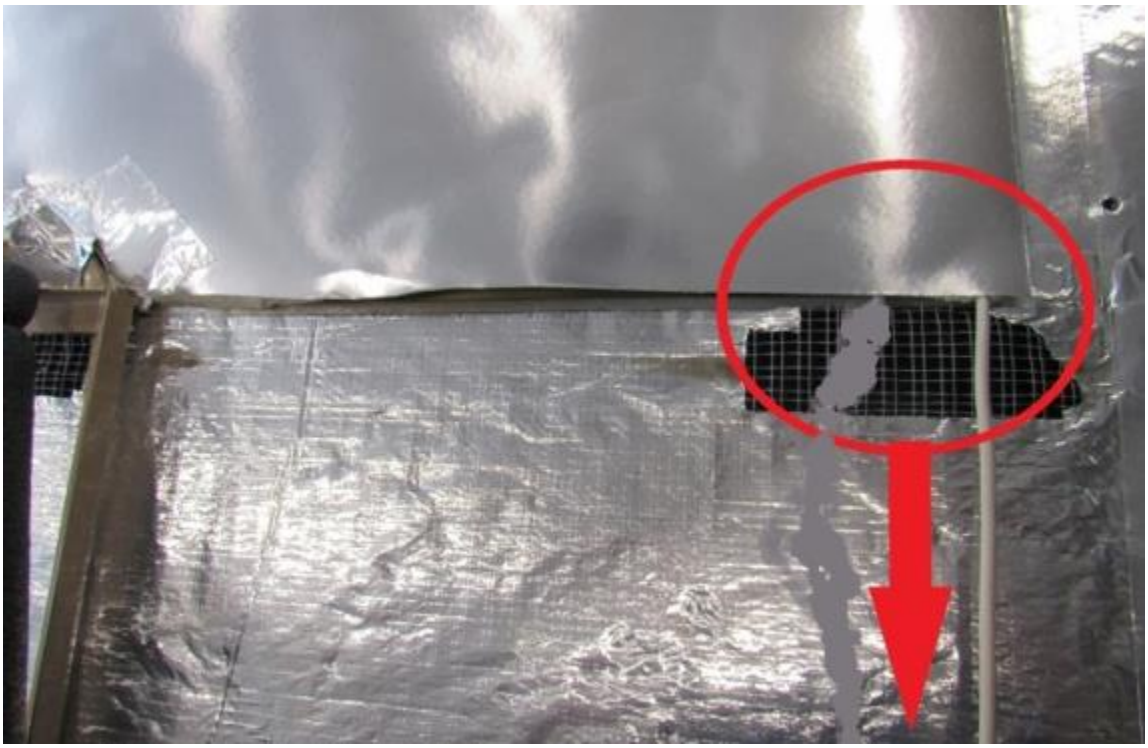




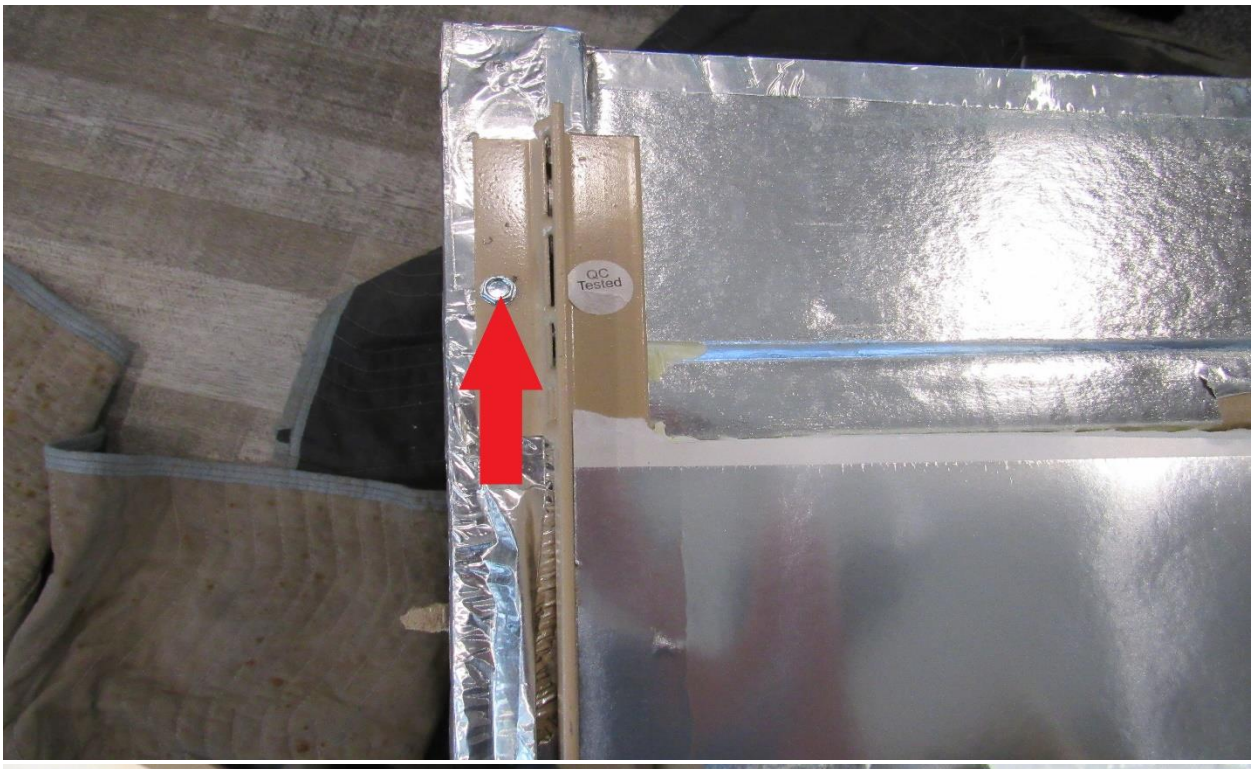
**Apply thermal mastic onto the cooling unit tubes as shown.**

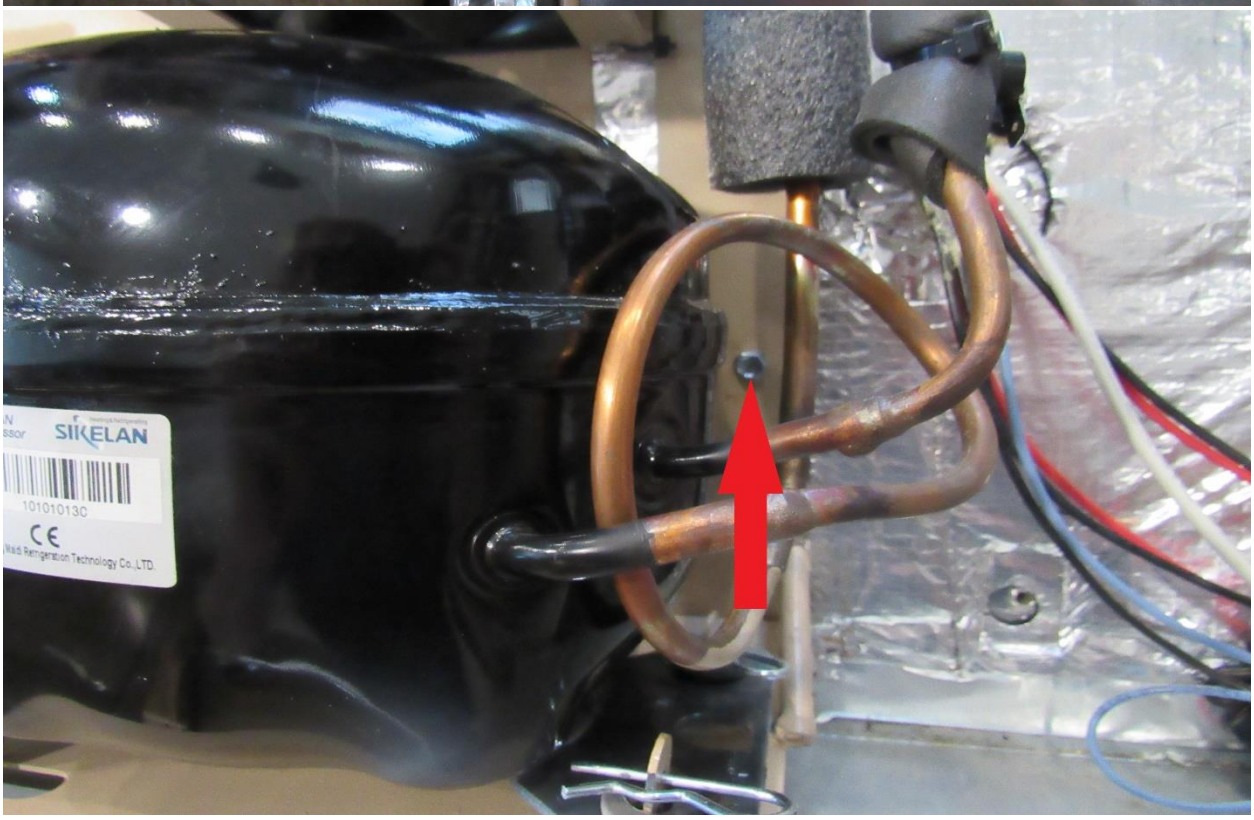


**Lay unit into box being careful so as not to scrape off any thermal mastic. Position controller wire into the corner.**



**Screw the unit into place using the supplied #10X1”self-taping screws. One on top and one on the bottom as shown (RA). Holes are not predrilled**



**Set refrigerator upright and open the freezer doors. If holes are not aligned have the rear person lift the unit up or down or side to side till holes are aligned, or if alone you have to set fridge back down, take out mounting screws and adjust the unit to where the holes line up. It does not have to be perfect, just close enough where you can see the edge of them.**

**Warning: The box holes can be redrilled or enlarged to make holes line up and then the washers can cover the hole, but do not *ever* drill new holes into the cooling unit plates as you will hit the cooling tubes causing a rupture. If part of holes are visible you can either leave them as is since unit will be sealed in the back.**

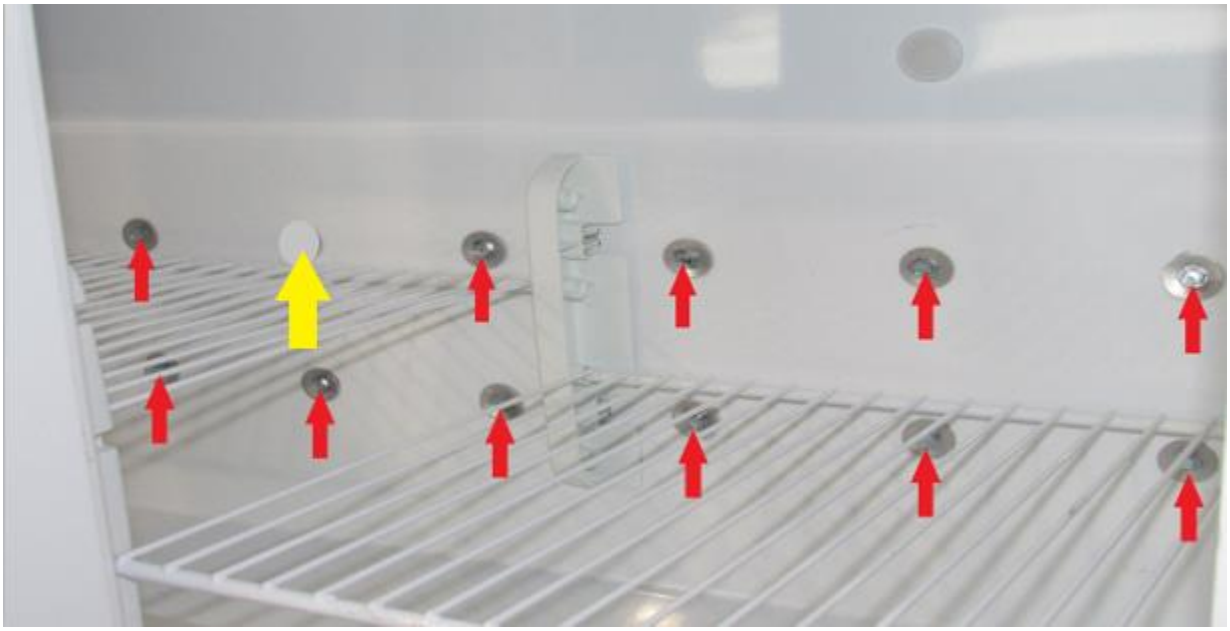
**Here is a picture with the holes not lined up at all.**



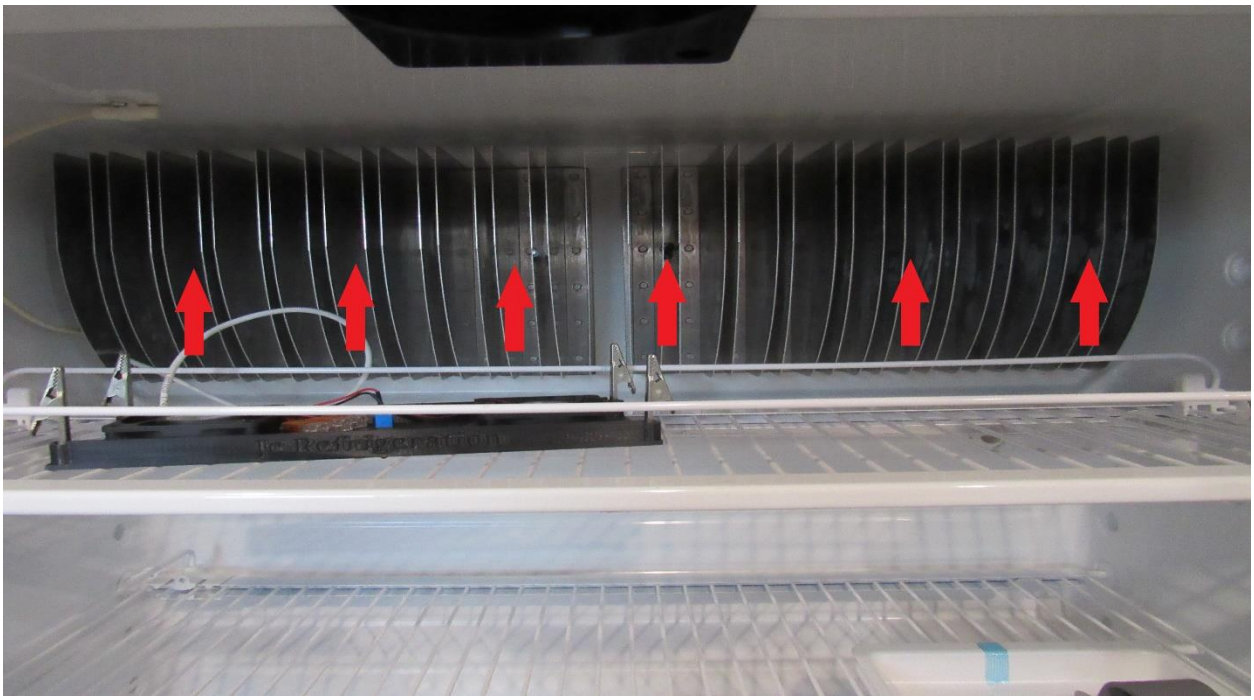
**By shifting the unit to one side, you can locate the holes (RA) and screw the unit into place using #10X2" (YA).**



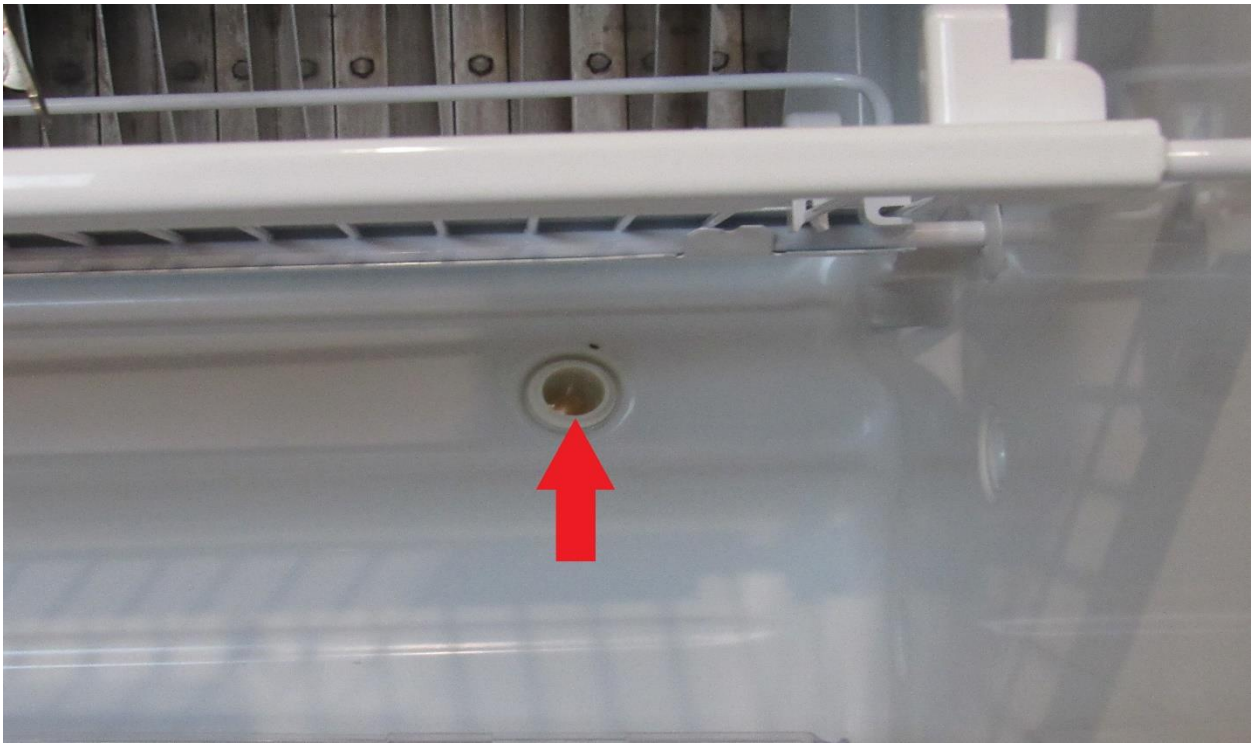
**The holes are lasered out so they are always the same. If one is to the side a little, then all are in the same direction. Install all the mounting screws into the freezer (RA). The top row, second from left screw (YA) will not be re installed as that is where the sensor for the controller will be inserted through.**



**Install all the screws into the refrigerator fin (RA).**

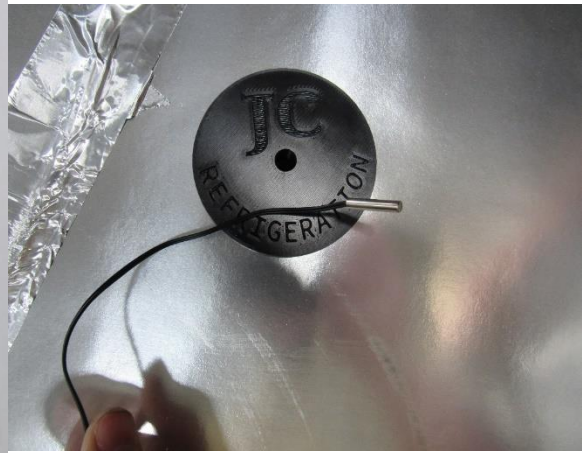


**Push the defrost spigot back into place (RA).**



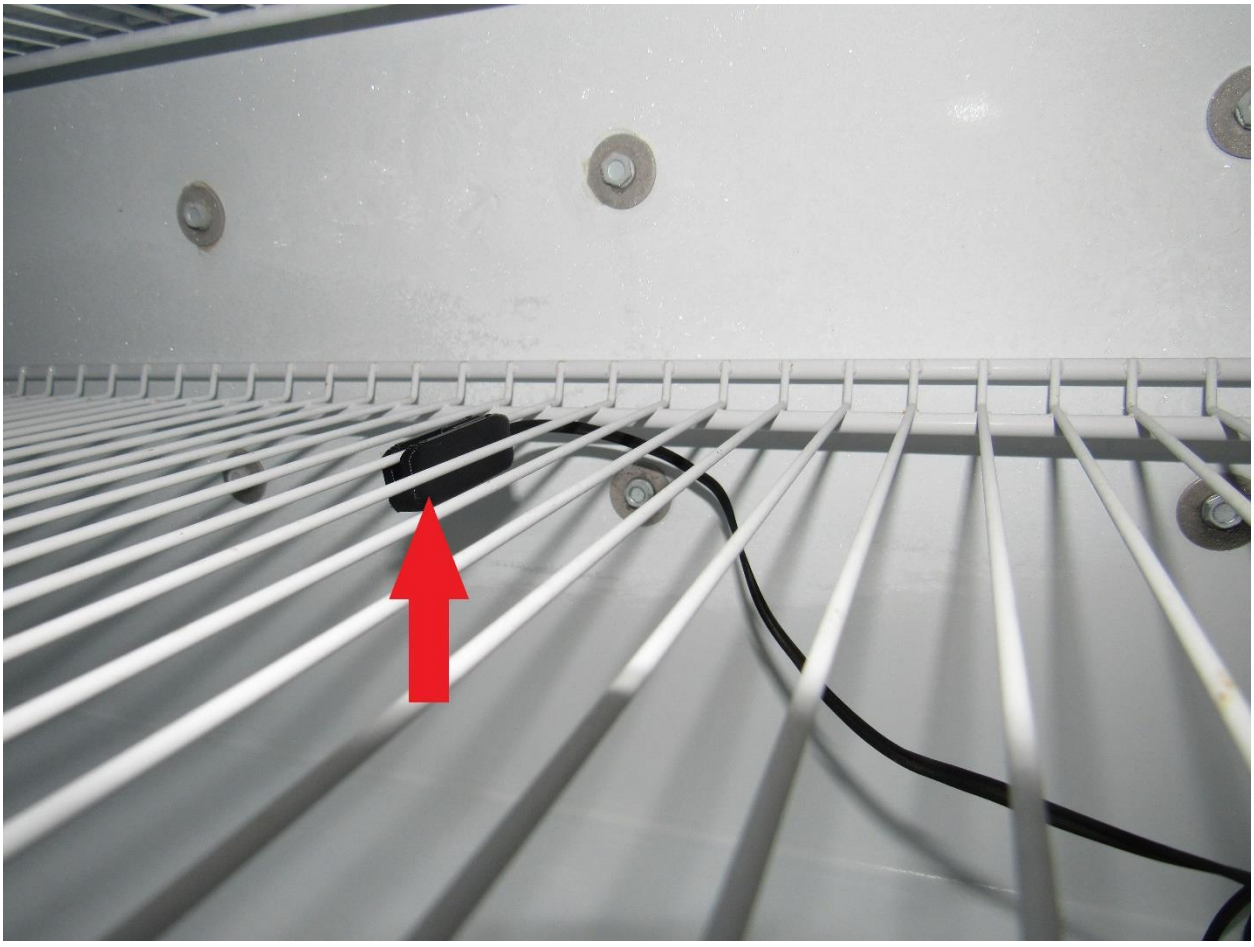
**Before laying the fridge back down on its face, insert the sensor for the freezer in through the hole in the plastic bracket. This sensor wire is in a small bag with the controller.**



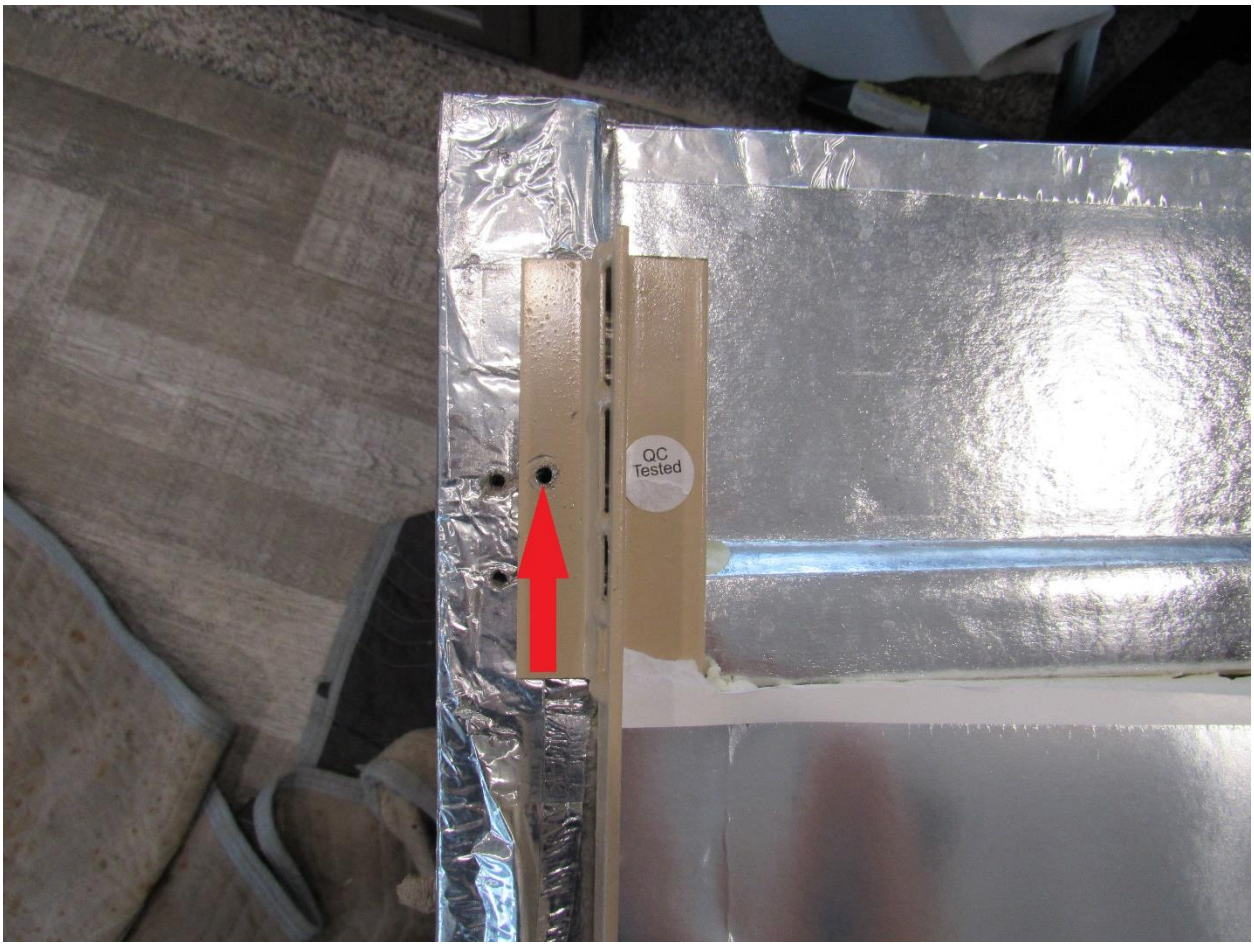





**Once you have the sensor inside the freezer, attach it to your top shelf using the supplied sensor clip (RA). Place the clip a few inches from the back of the freezer to avoid slight variations in temps.**

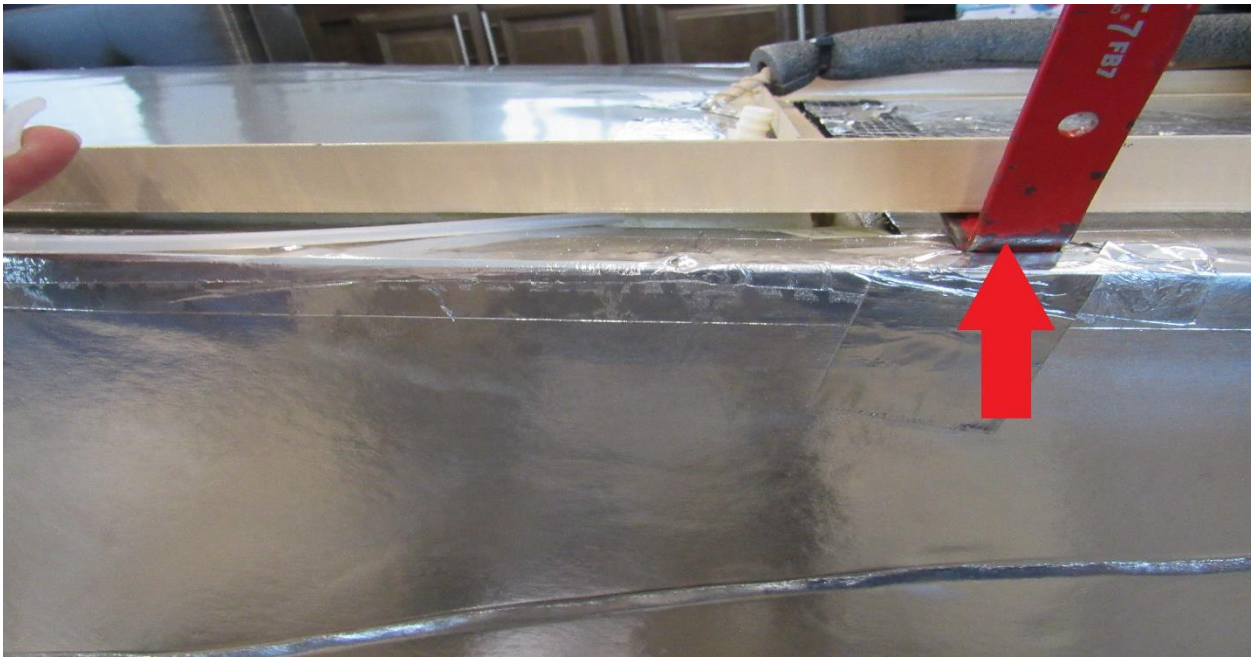


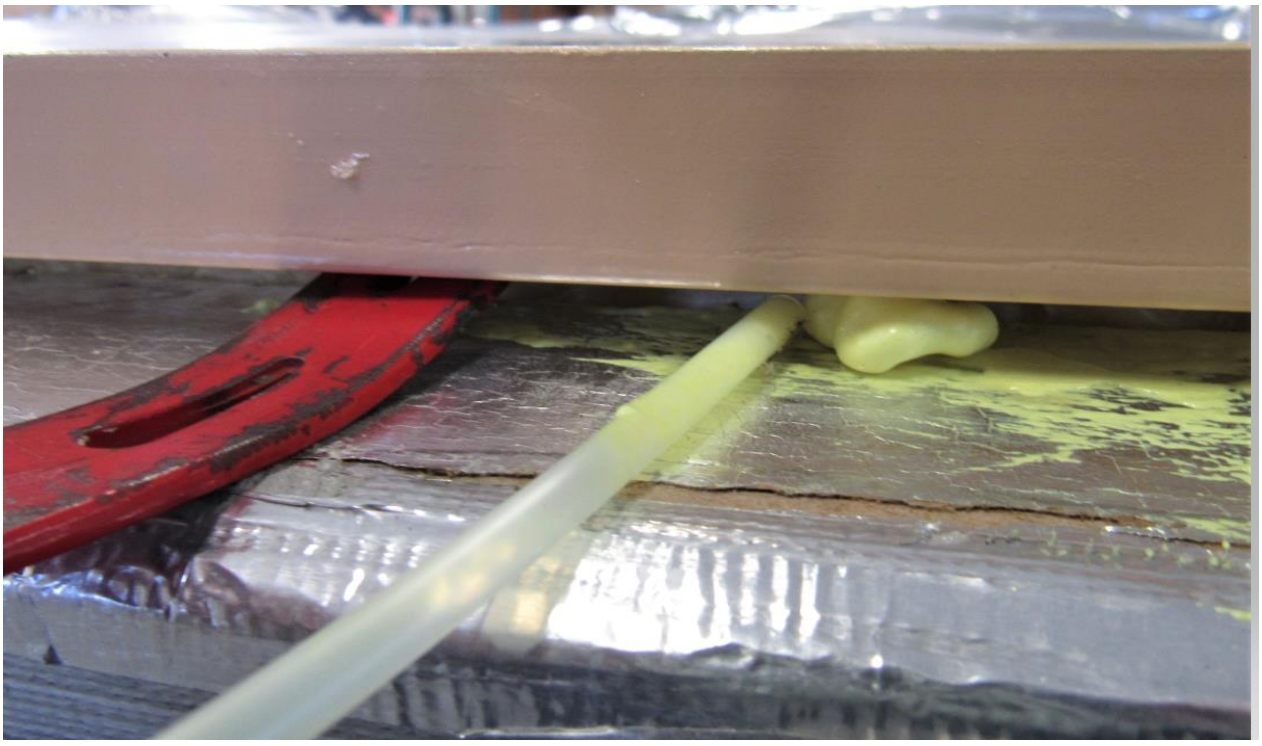
**Set the unit back down on its face and remove the top mounting screw (RA).**



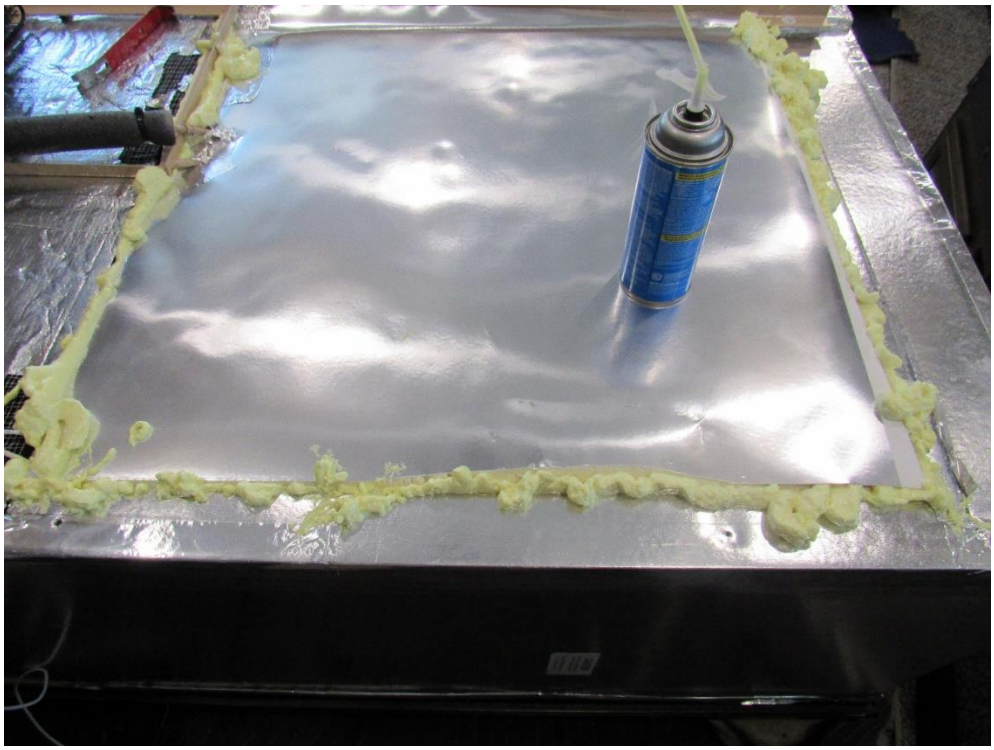
**Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly.**

**Next shake the can of Great Stuff Foam and lift the corner using a flat bar as shown (RA).**





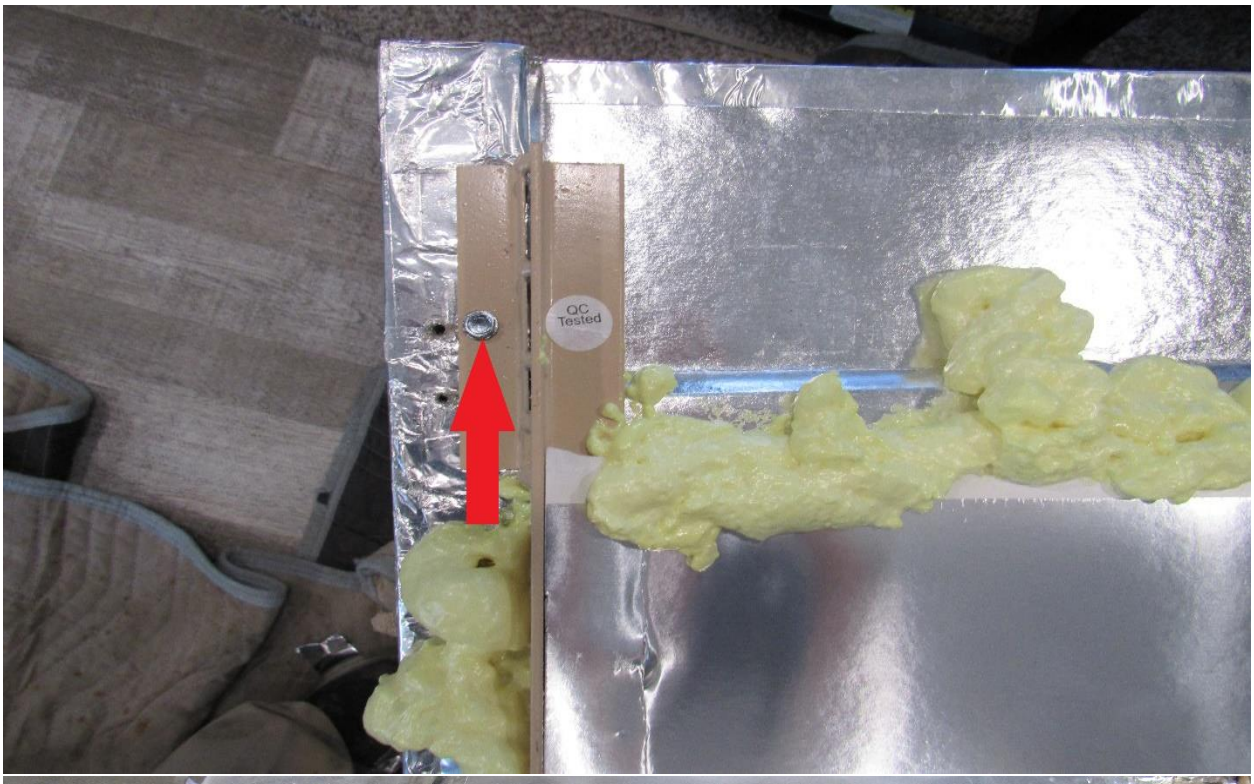
**Make sure and fill any and all gaps around all four edges and corners.**



**Make sure that you also spray a little bit of foam into the hole where the sensor for the freezer goes through to make sure that it is sealed off from the outside.**



**Re-install the top mounting screw (RA) and tape all four edges as shown.**






**You are now ready to wire the controller to the compressors**

# Package Contents:

(4) Female wire connectors, (2) 3-slot Wago wire connectors, (1) Freezer Sensor

# Installation:

***Step #1:*** Strip about 12 inches of the white coating off of the wire from the controller. Inside you will see 8 different colors of wires. Then strip ½ inch off the end of each individual wire. Below is a rundown of where the wires will get plugged in to.

# Overview wiring hookup

**Red Wire:** 12V + to power the controller

**Black Wire:** 12V – to power the controller

**Purple Wire:** Freezer sensor

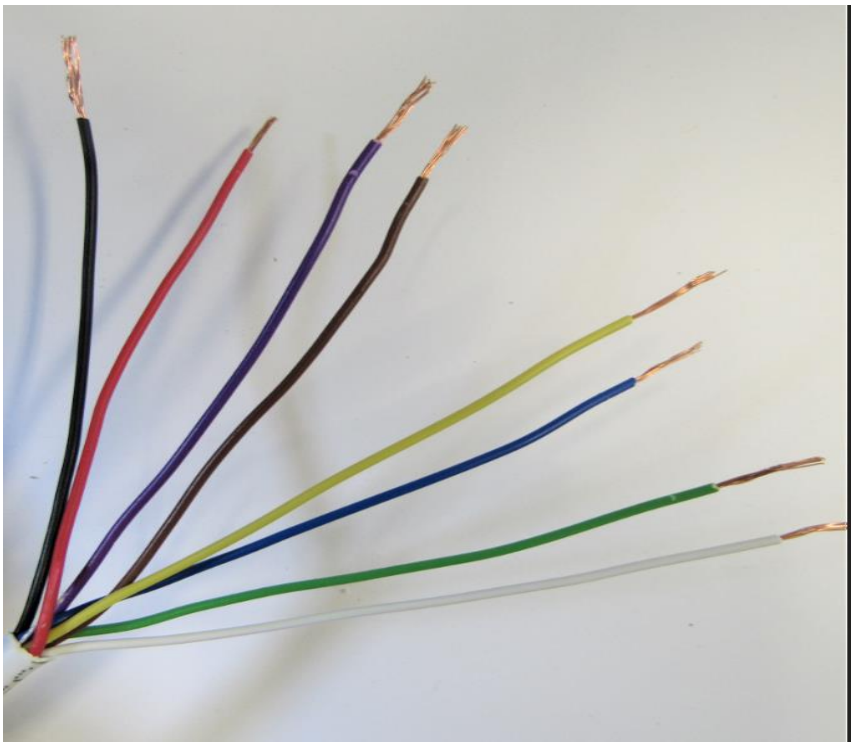
**Brown Wire:** Freezer sensor

**Green Wire:** Fridge (Small) compressor

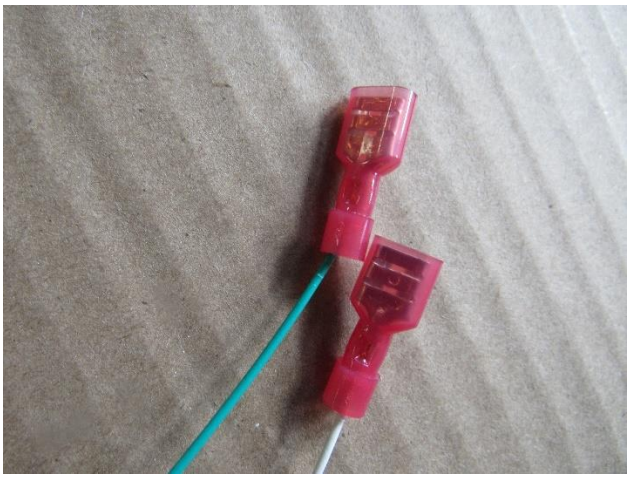
**White Wire:** Fridge (Small) compressor

**Blue Wire:** Freezer (Large) compressor

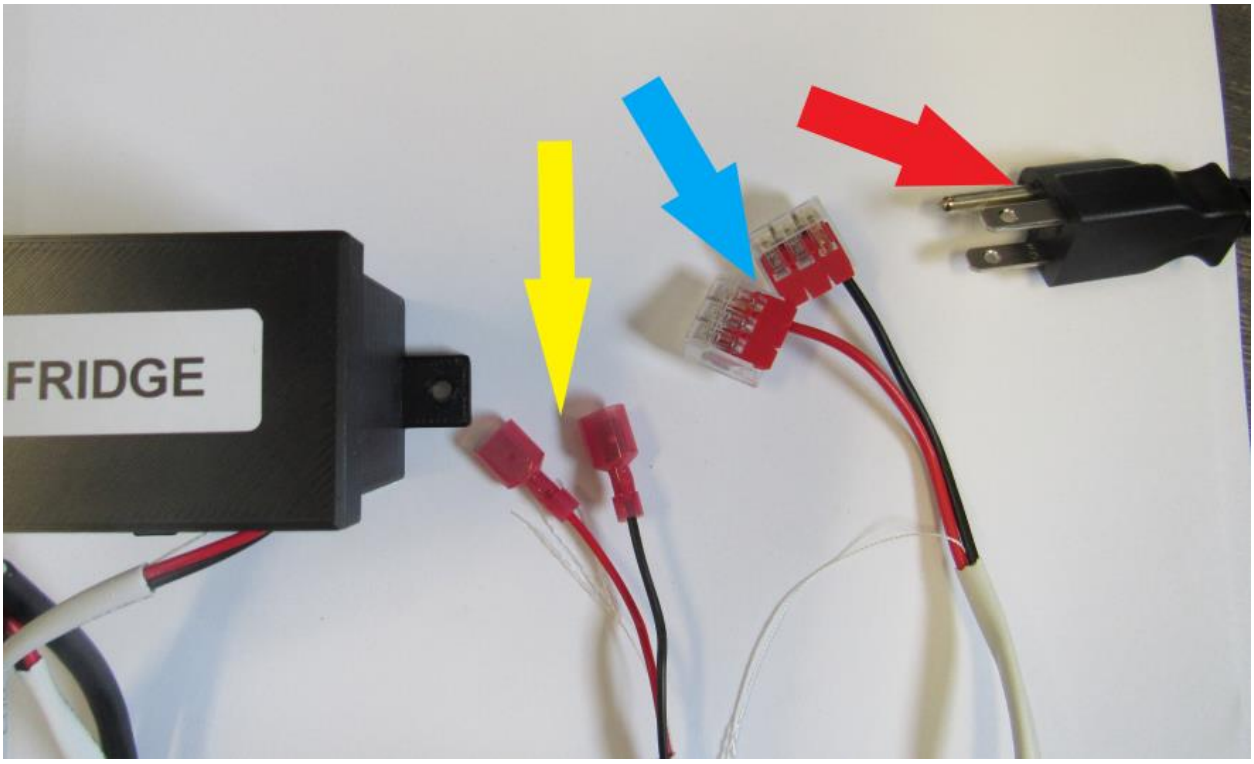
**Yellow Wire:** Freezer (Large) compressor



***Step #2:*** **Take the white/green wires from the controller and crimp red female connectors onto the end.**



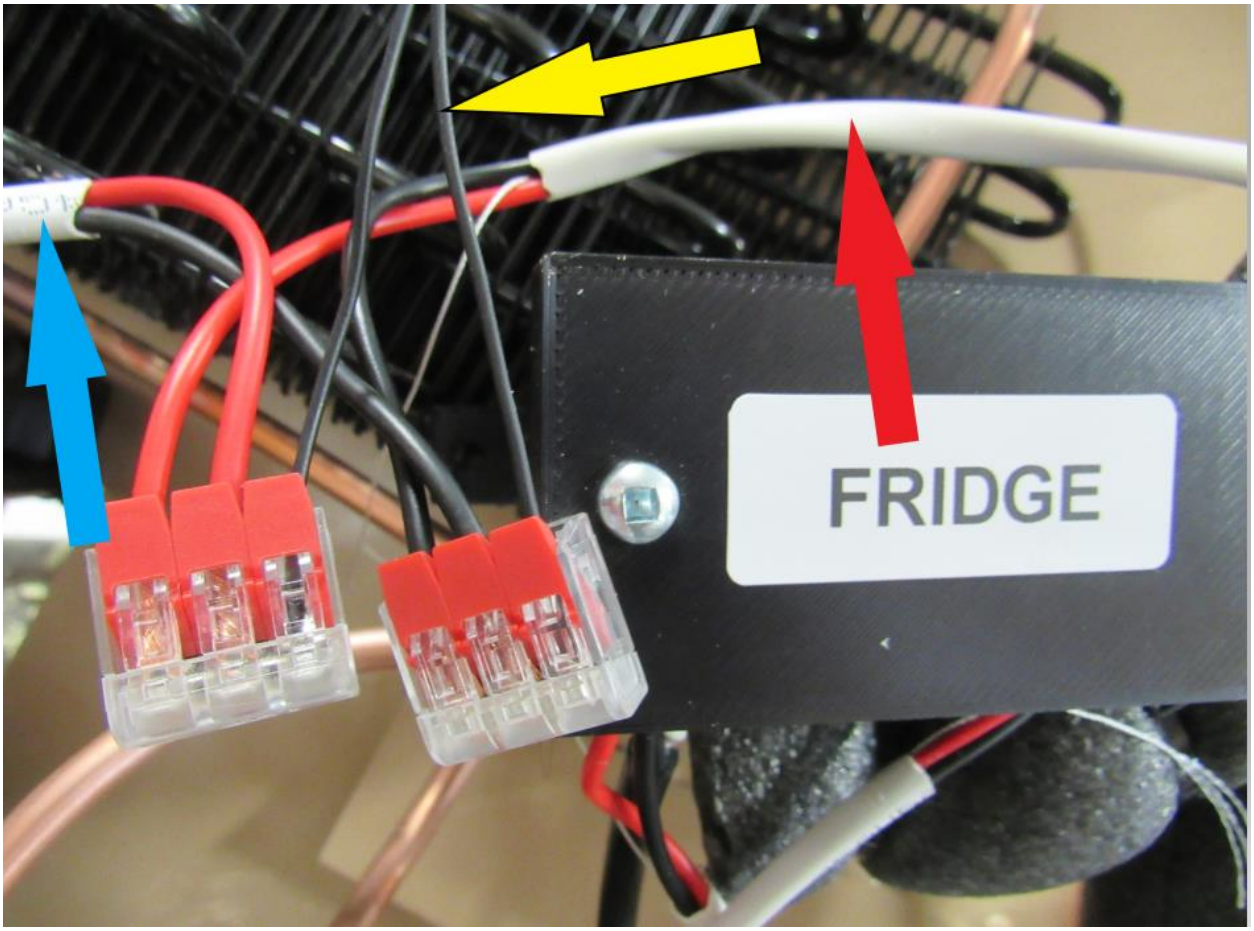
**Plug white/green wires into red male connectors coming from the relay box for the fridge (small) compressor (YA) (does not matter what sequence) the 120V plug in will be plugged into your power outlet behind the fridge later. (RA) The (BA) wago should be connected to the small compressor with the bottom fan wires included, these should be prewired but will show later in case a wire comes loose.**



**Bottom fan wires (YA)**

**Fridge controller wires (RA)**

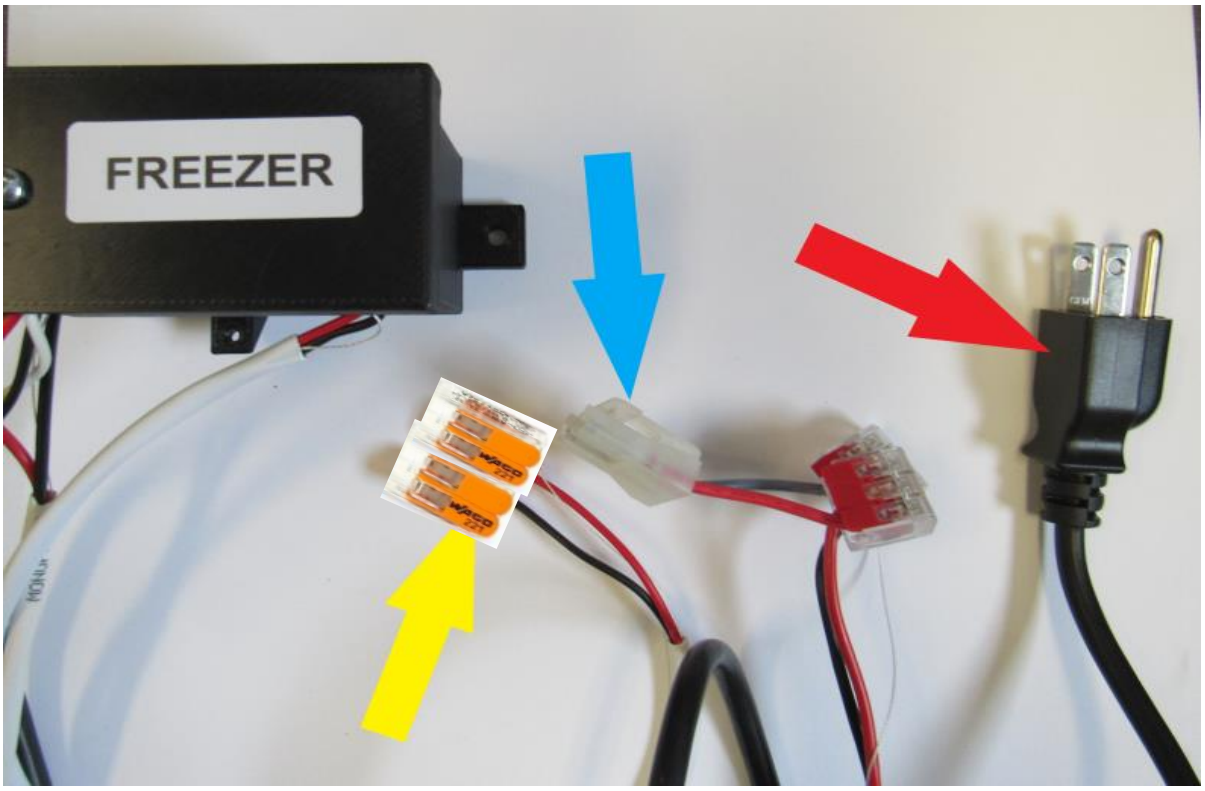
**Small compressor wires (BA)**



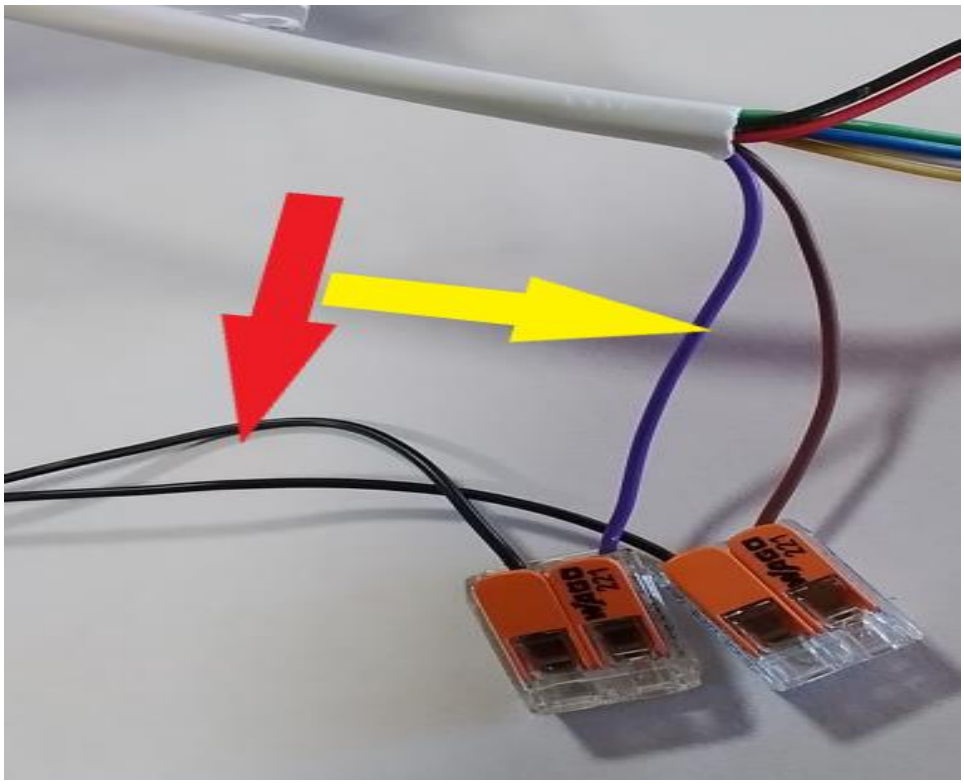
**Step #3:** Take the blue/yellow wires & strip back the ends as shown



**Plug it into the wago connectors (YA) from the freezer relay box for the (large) compressor (wire sequence does matter) Blue to red /Yellow to black, these should have the top fans clipped to them as well. The (RA) plugin will be plugged into your 120V power later, your (BA) should be clipped to the large compressor, these should be prewired from the factory**



***Step #4:*** **Take the purple/brown wires from controller (YA)and insert them into the wago connectors from the freezer temp sensor (RA). (Color of wago may vary)**

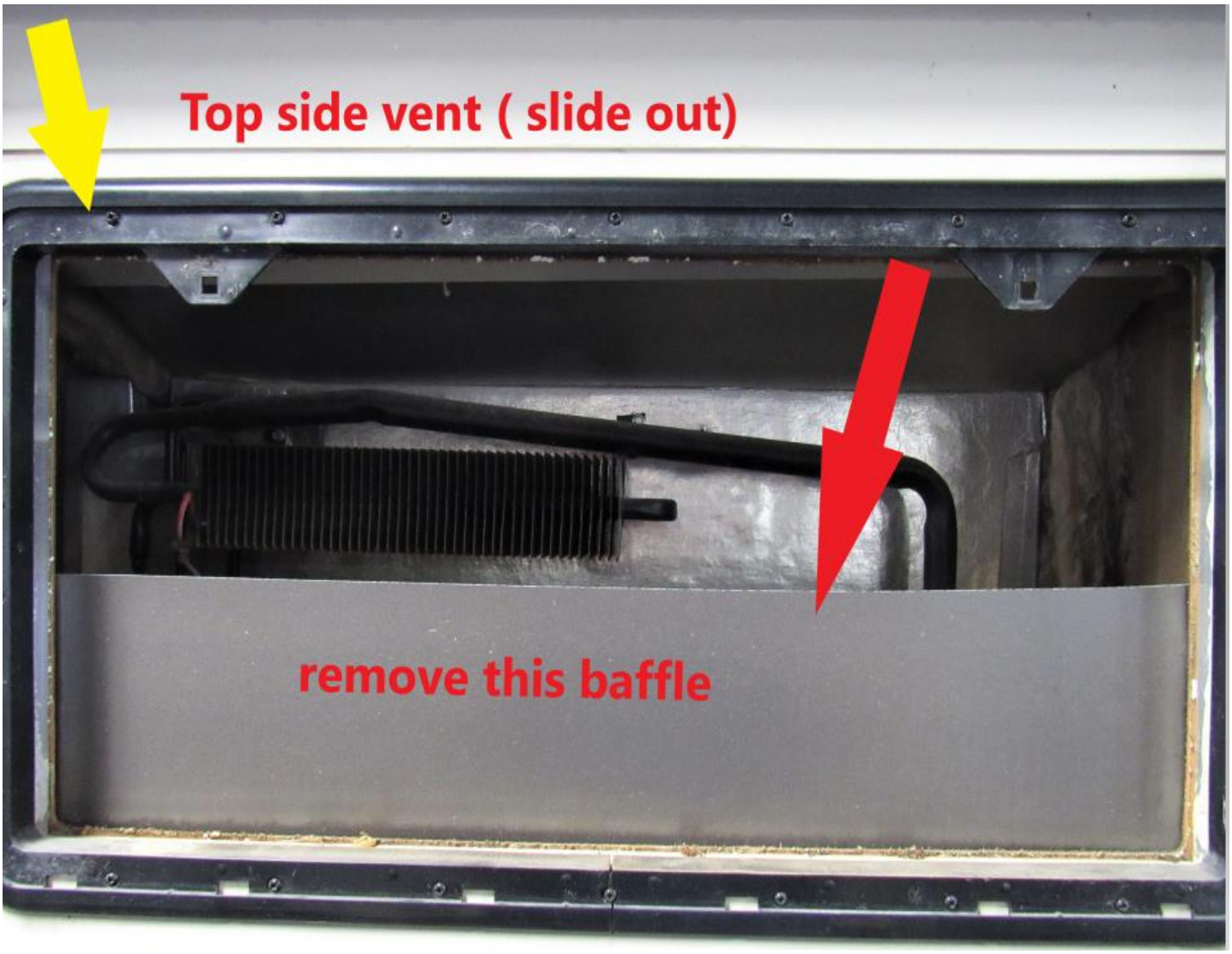


**Note: the red and black controller wires will be hooked up after the fridge is back in the cabinet.**

**Zip-tie all loose wires together, more screws can be added to the compressor plate area to secure to the compressor area to the box, now stand the fridge back up and slide the refrigerator back into the cabinet.**

**Warning: please make sure and follow thru this step, otherwise unit could overheat causing damage to the unit.**

**Before installing the fridge back into the cavity, check to make sure wall insulation is secured and this is a good time to sweep or vacuum any loose debris. If this fridge is installed into a slide out then make sure and remove the top side vent (YA) baffling (RA), as you will no longer need this and all it will do is slow air flow. If It's installed into a roof vent style then nothing has to be changed, but make sure and leave both vents open, as this unit will still have to breathe.**



**Once it's started it helps to have someone outside to watch as you slowly push the fridge back into place, making sure the gas line is out of the way.**

**Fasten the mounting screws on the bottom using the same screws you took out earlier.**



**Remove the screws from the front control panel (RA).**

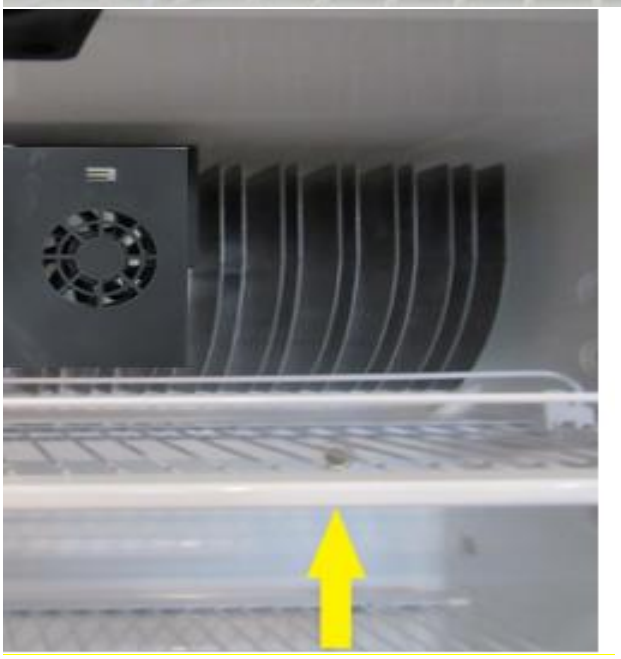



**Fasten the two mounting screws back into place (RA).**

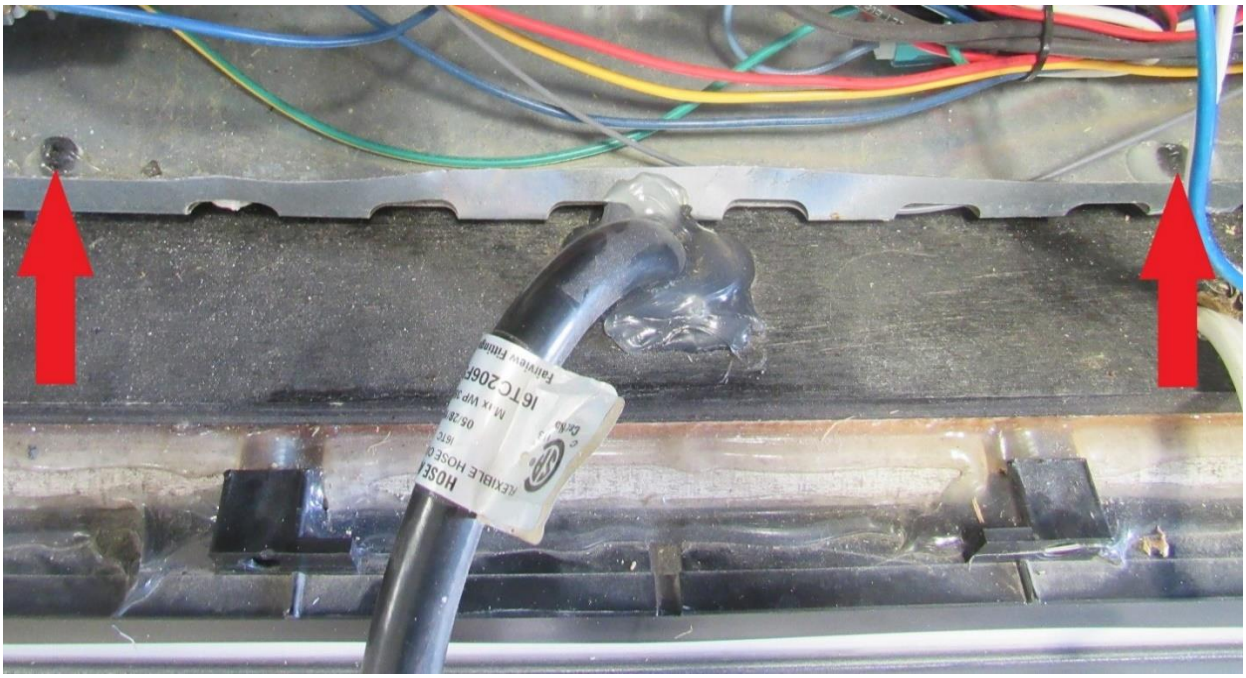


**Finish up on the inside by clipping the controller onto the fins close to center left/right and sliding the defrost tray back into place (YA)**



**Fasten the mounting screws back into place using the same screws you took out earlier (RA). Reseal holes with silicone if you wish to do so.**

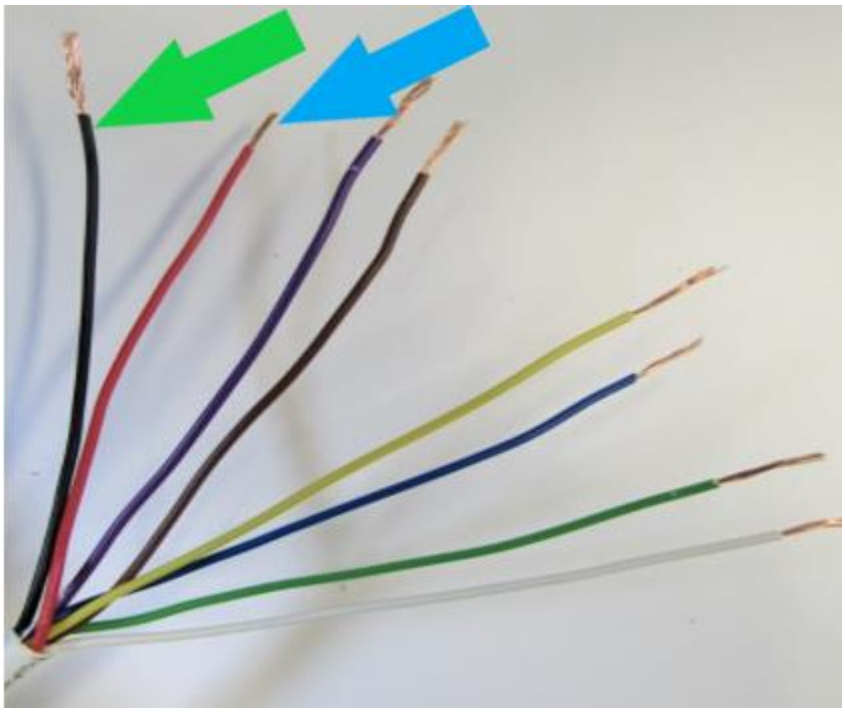


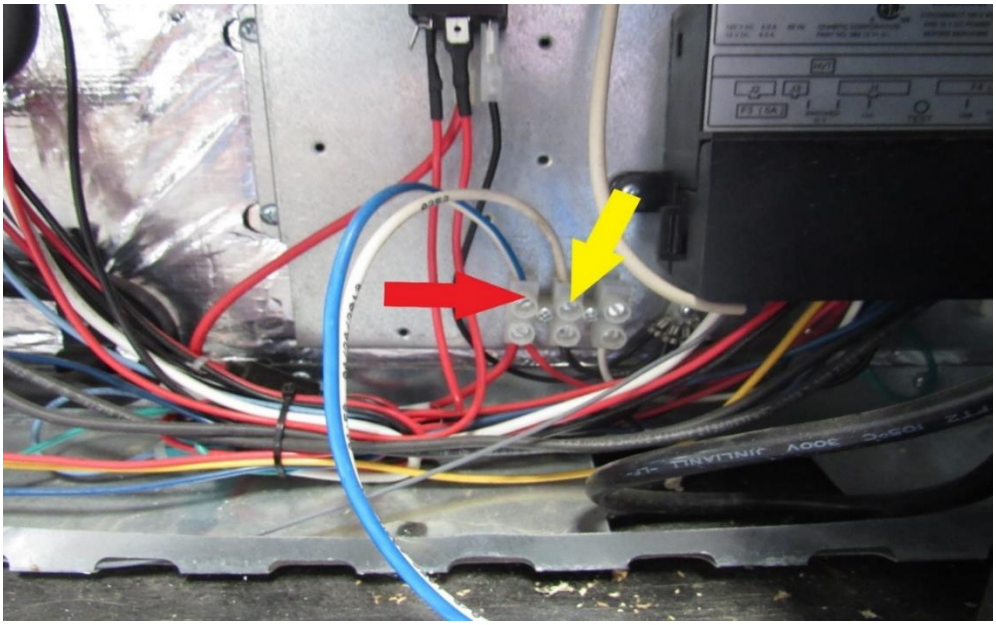
**Now you are ready to plug the 2-120V power cords from the small black fridge/freezer controllers into the outlet. (YA)**

**If your coach has an inverter you will want to plug the 120V power cords into the inverter power outlet**

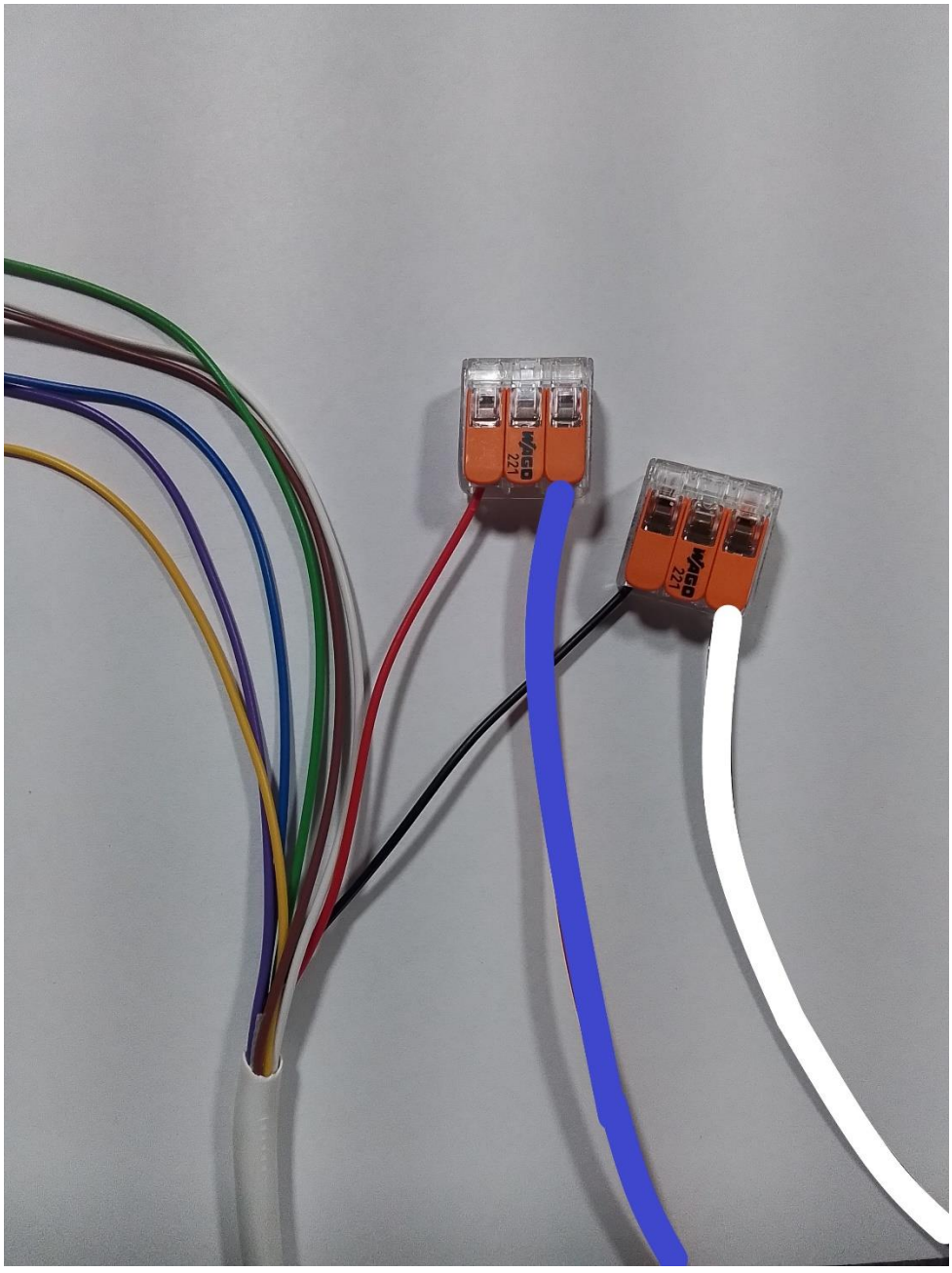


**Connect 12V DC red/black wires from the controller (GA) (BA) to your Coach 12V power wires using the 3-slot wago connectors that were included with the universal controller. Make sure you connect positive from your coach to red from controller, and negative from coach to black from controller.**





**The Coach power wire color will very, but the Positive wire needs to be connected to the red from the controller.**



**Trouble Shooting:**

**Light bulb comes on but nothing else:** You have your 12V + (red) and 12V – (black) wires for the controller switched around.

**The freezer temp controller is showing 3 red L on screen:** You have a bad connection with the temp sensor for the freezer. (Purple and brown wires)

# Manual for Universal Hvac Dual Controller

This controller eliminates all of your existing Norcold or Dometic controls. So that means that your front display panel, your interior light, and your rear control board will no longer work. This new controller has its own temp control devices and thermostats, as well as a light bulb that is motion activated. It also features two built in fans that blow air towards the fins which forces the cold air off the fins and into the fridge box, giving you a more even temp throughout as well as keeping frost from building up on the fins. The switch on the front is what you will use to turn the entire refrigerator on/off the fridge. The switch should be in the up position to turn the fridge on and down position to turn the fridge off.

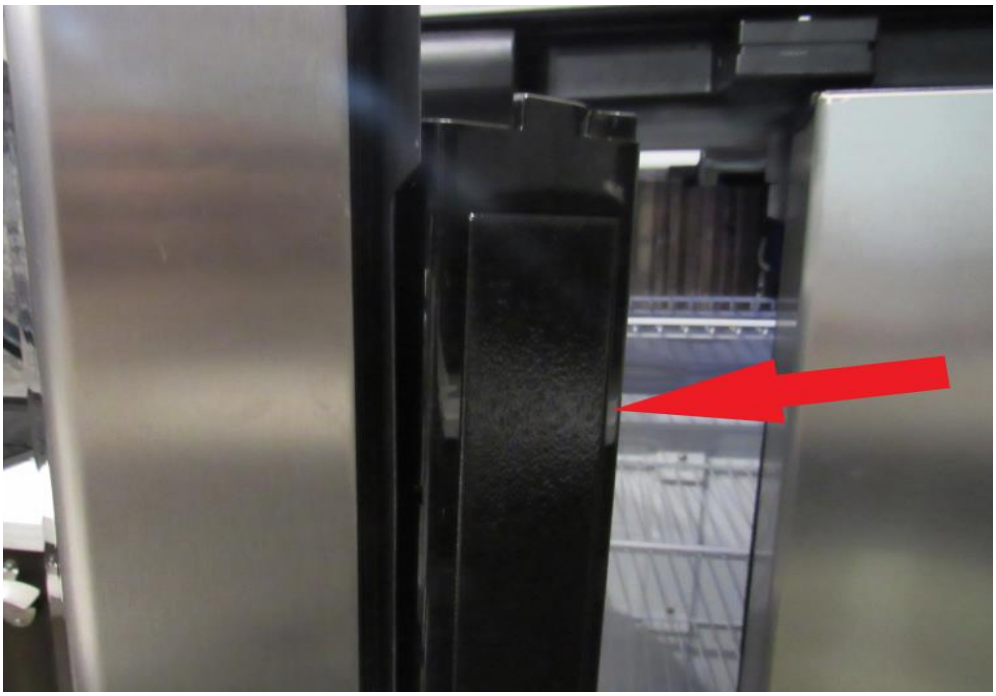


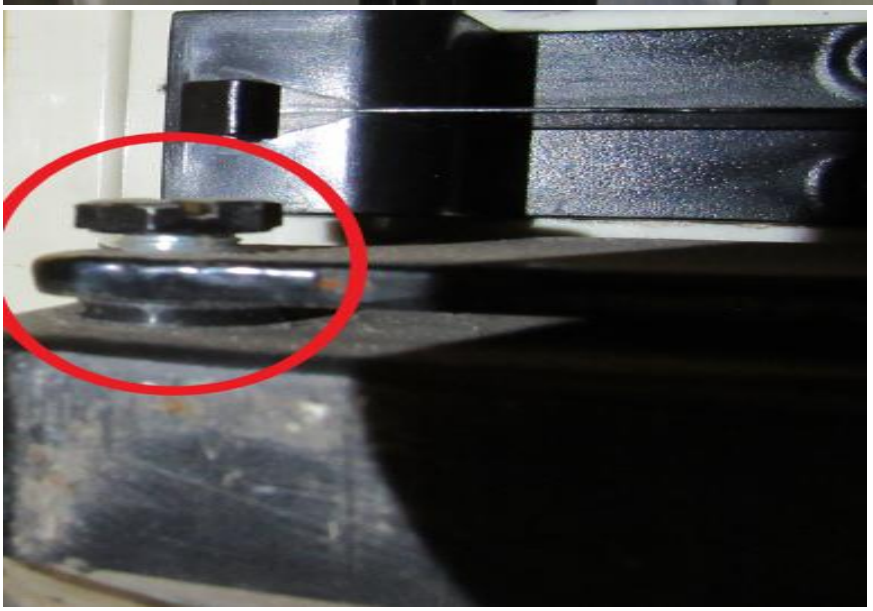
# Operating the Controller:




Once you flip the switch to the on position to turn on the fridge, the temp controllers will light up, the fans will turn on and the light will turn on as the motion sensor will detect your movement. (After 30 seconds of no movement, the motion sensor will shut the light off.) The blue number (bottom) on the temp controllers is what the temp is set to and the red number (top) is the actual temp that the sensors inside the fridge section and the freezer section are reading. The temps are preset to 0F & 34F to 38F These temps may need to be tweaked to your desired temps. Food zone is 0F to 10F Freezer/38F to 41F fridge. But you can adjust it up or down using the directions on the next page. After you have the temp controller set to your desired settings, there is nothing more you need to do as this controller will tell the compressors when to turn on or off.

**Check your left-hand door flapper, this can get shifted in this new unit installation process and may need to be readjusted. There normally are 2 or 3 pivot points that should be lubricated with silicone or WD-40, and make sure it swings freely by hand, with the right-hand door open watch as you slowly close the left-hand door, this flapper should freely snap shut all the way closed. If it drags on the top you need to take out the top hinge pin and take out the lift washer out of the bottom hinge pin, if it drags on the bottom you need to add a small washer to lift the door slightly.**








## Set Temp

Press “SET” (top button) briefly, bottom blue number starts flashing. While it is flashing you can adjust temp up using top (SET) button or down using bottom (*C/*F) button.

## Enter Diagnostic and Mode settings:

Press and hold top (SET) button for approx. 4 seconds. P0 will flash first. You can then scroll through code settings to the desired one needed. Once the desired code is reached, hold both buttons in for 3 secs or until bottom blue letter or number will start to flash. Then use top or bottom button to adjust up or down in order to achieve desired setting. Once reaching desired setting, let sit for approx. 3 seconds and number will stop flashing and the setting will be saved.

## Code meaning:

P0 = Lets you switch between heating (H) or cooling (C). You want to make sure it is set to cooling (C)

P1 = This setting determines how far above the set temp the actual temp in the fridge can rise to before the compressor turns on, preset for 2.5

P2= Not needed or used

P3 = Not needed or used

P4 = If actual temp inside the fridge box does not match the top number on the thermostat, this setting can be used to calibrate up or down to make the thermostat temp match your actual box temp. This setting rarely needs adjusting.

P5 = This setting can be used to set a delay for turning on the compressor. This setting should not need to be adjusted.

P6 = This setting can be used to set a high temp alarm.

P7 = This setting is used to switch between Celsius (CH) or Fahrenheit (FH). It is preset to Fahrenheit.

P8 = This setting can be used to reset the controller to factory settings. Not recommended to use this setting.

**We highly recommend using a digital wireless thermometer to monitor your inside fridge temps, many phone calls or temp misleading's can be avoided by making sure the thermometers you are using are accurate, you do not have to use our brand but we do recommend using something like this type.**

https://jc-refrigeration.com/product/refrigerator-freezer-digital-wireless-thermometer-free-shipping/

**Use digital wireless**




DO NOT USE




**Clip fridge sensor underneath second shelf down or first shelve beneath the fin, place it center front to back and center side to side (RA), if its clipped underneath it will be out of food containers way**



**Same with freezer, clip underneath bottom shelves center side to side but have this one more towards the back of the freezer.**



## You are all done and ready to hit the road and do some serious camping 😊

Let us know if you see any areas we missed or that should be made clearer, since we do installs practically every day, we get blind at times to things that should be mentioned or be made clear.

**Thanks for hanging in there to the end, give yourself a fair pat on the back and enjoy your cold fridge for many years on your travels**.

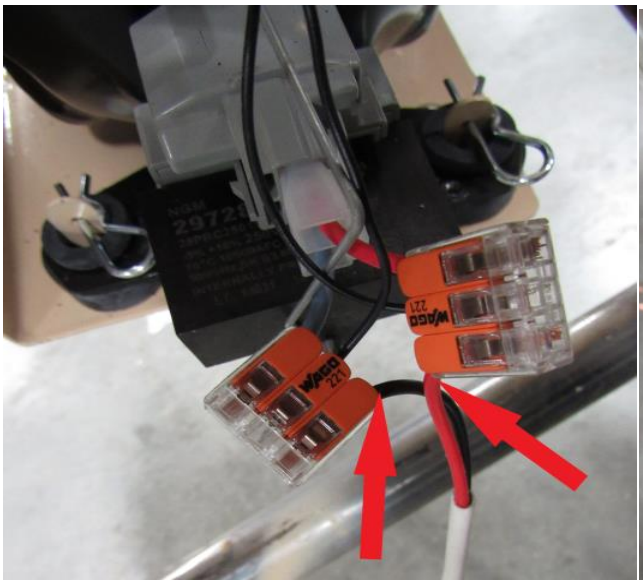


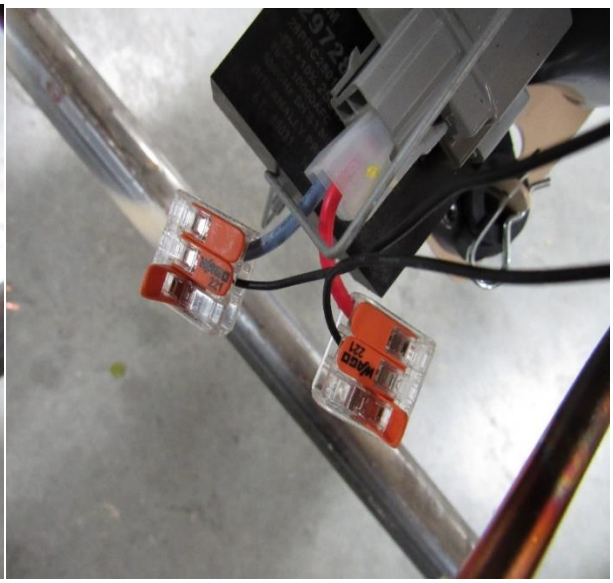


If your controls ever go bad or some other issue arises that the fridge is not working you can always wire this compressor direct to make it work till the other issue gets resolved, follow these directions:

## HVAC Direct Wire 120V – This method works with either compressor

**Step 1:** Unplug the 120V cord from the outlet. Then pull up the orange tab on the Wago in order to remove the red and black power wire from the Wago connector.





**Step 2:** Make a 120V pigtail and plug the wires into the empty slot on the Wago where the red and black wires used to be. Then plug the pigtail into a 120V outlet. The cooling unit will now run continuously until the cord is unplugged or the power to the outlet is cut.

