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Dometic 1350 Hvac 12V Installation Manual

With Universal Controller

JC REFRIGERATION INSTALLATION MANUAL



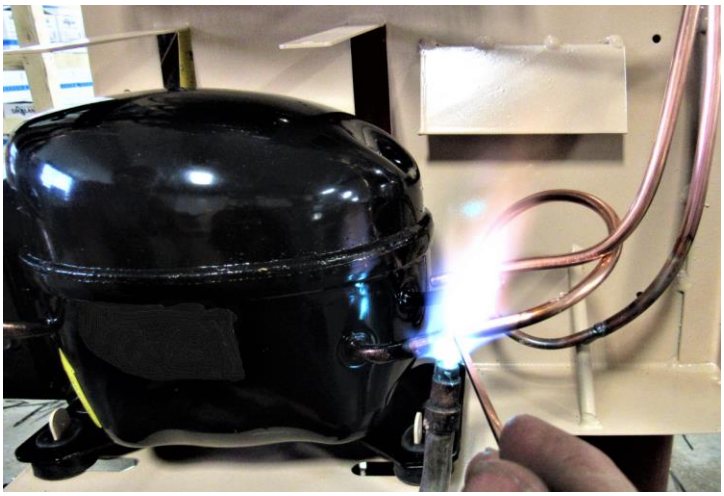
JR & Jeremy Lambright

INFO@JC-REFRIGERATION.COM 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, foam shaving or tweaking might need to be done at times to install it. A thing to remember is these are made out of thick steel tube and plates so some twisting or pushing into place is very normal and nothing to be alarmed about. We offer install manuals for the Hvac units 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 12V dual compressor cooling unit, unless you already have 10ga wire already there you will need to run a new 10ga wire from the house batteries to the back of the fridge. Adding a 30-amp fuse/breaker by the batteries for the new fridge wire.
- 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.

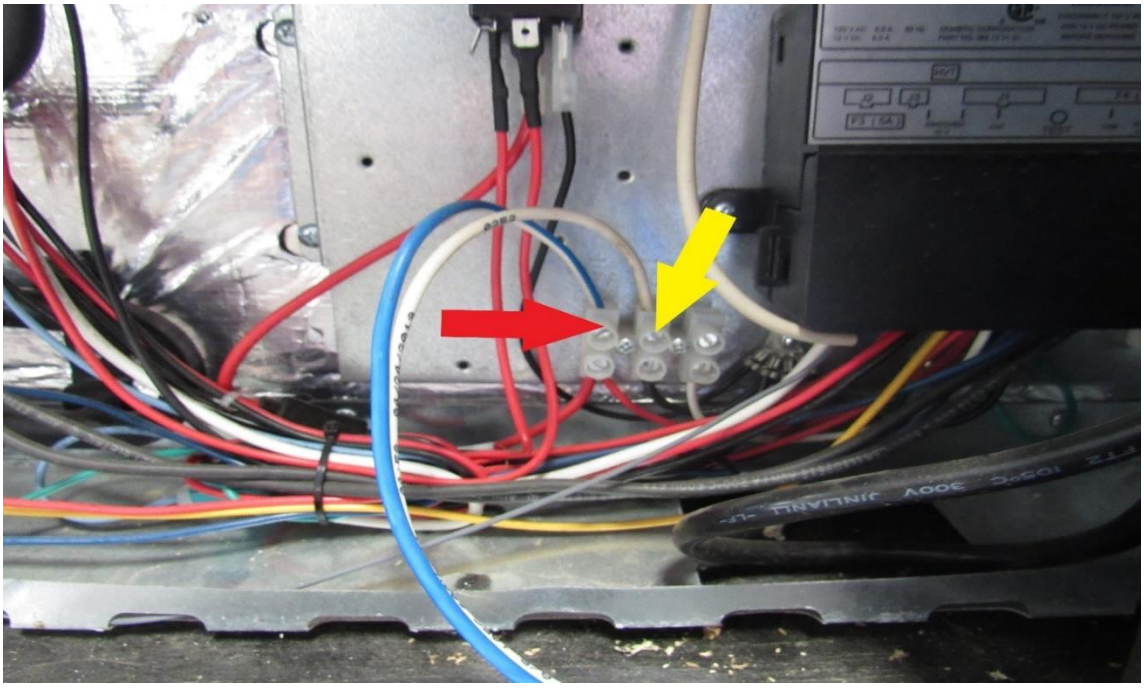
WARNING:

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

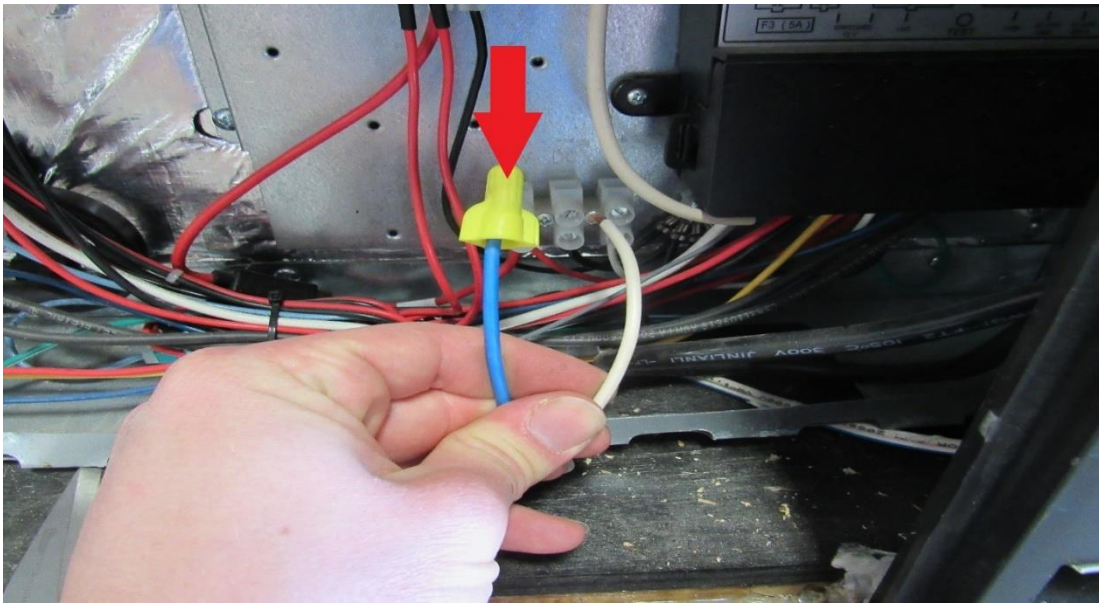


Locate your refrigerator side vent on the outside of your RV. Good idea to take a pic of these wires or label them so you know which goes where when done. These wires can be any color depending on the coach manufacture.

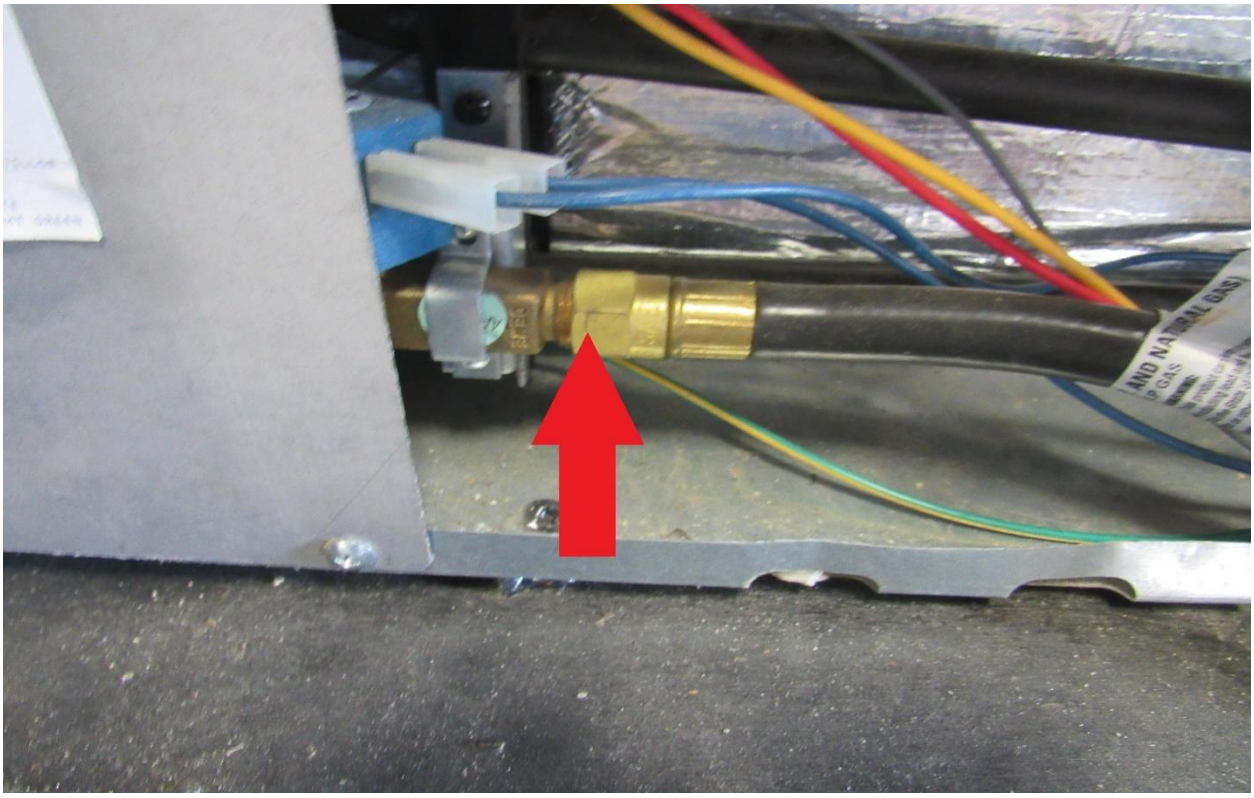
Loosen the set screws on the positive (RA) and negative (YA) wires. Be careful and don't ground out the positve wire as it will blow your Refer fuse.



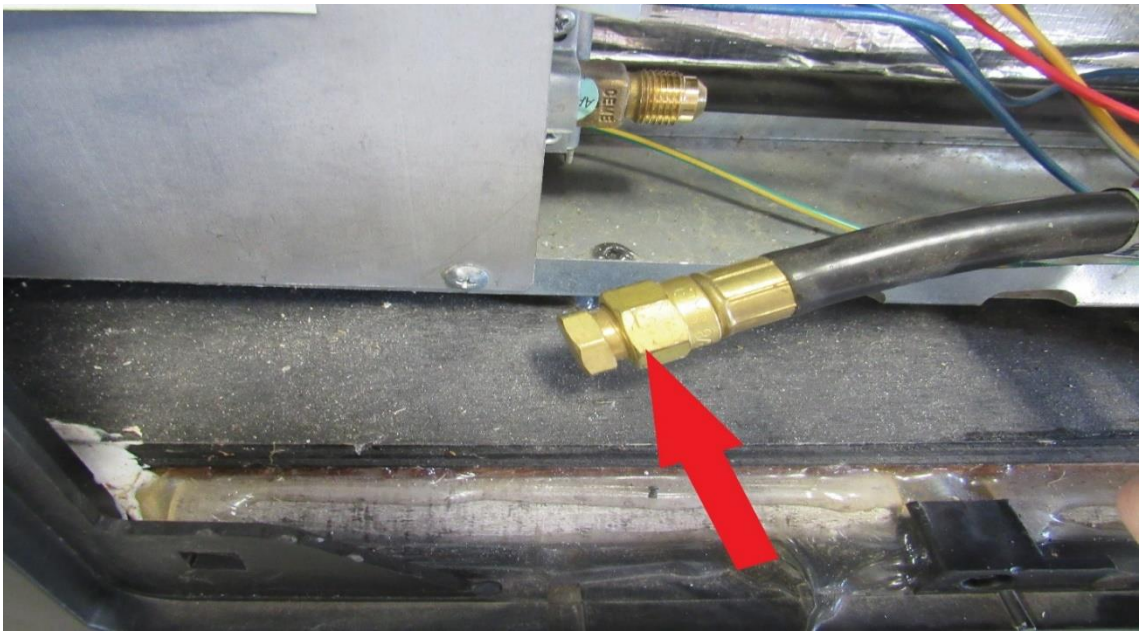
Cap off the 12v positive wire as it is not insulated (RA). These can be zip tied to side as you will no longer use these as a new 10ga wire will have to be run from fridge to battery which will be used to power the fridge going forward.



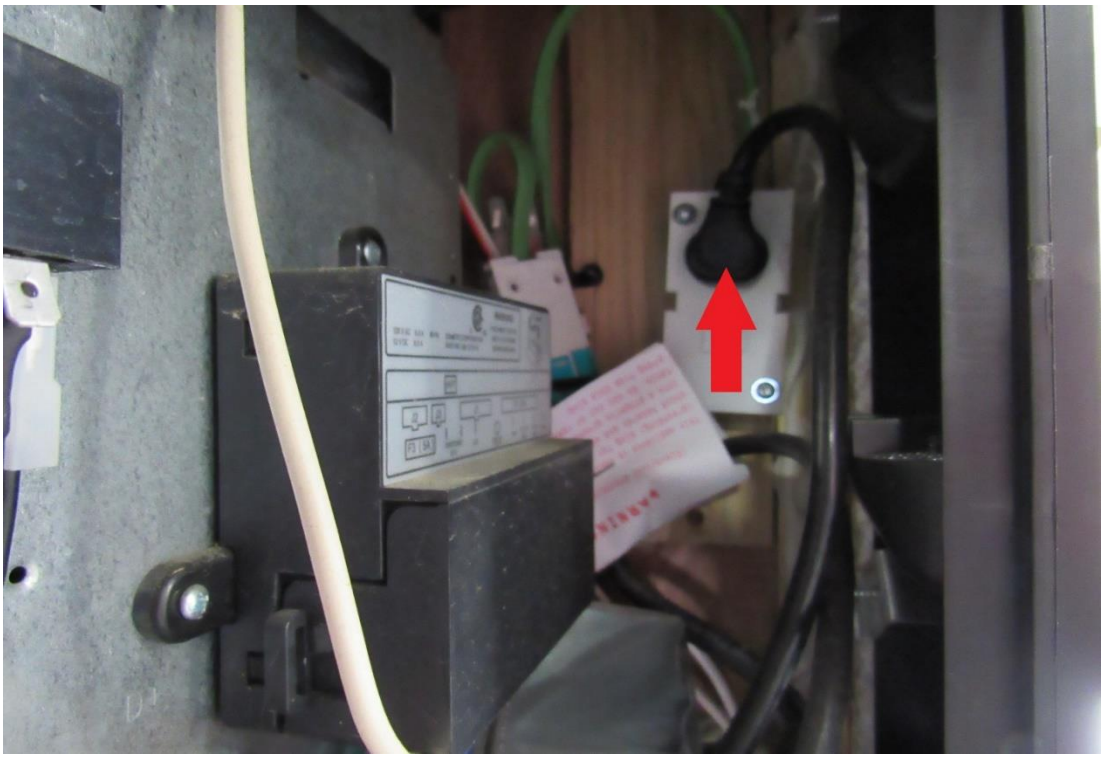
Remove LP gas hose from the gas valve (RA). Make sure your LP is turned off.



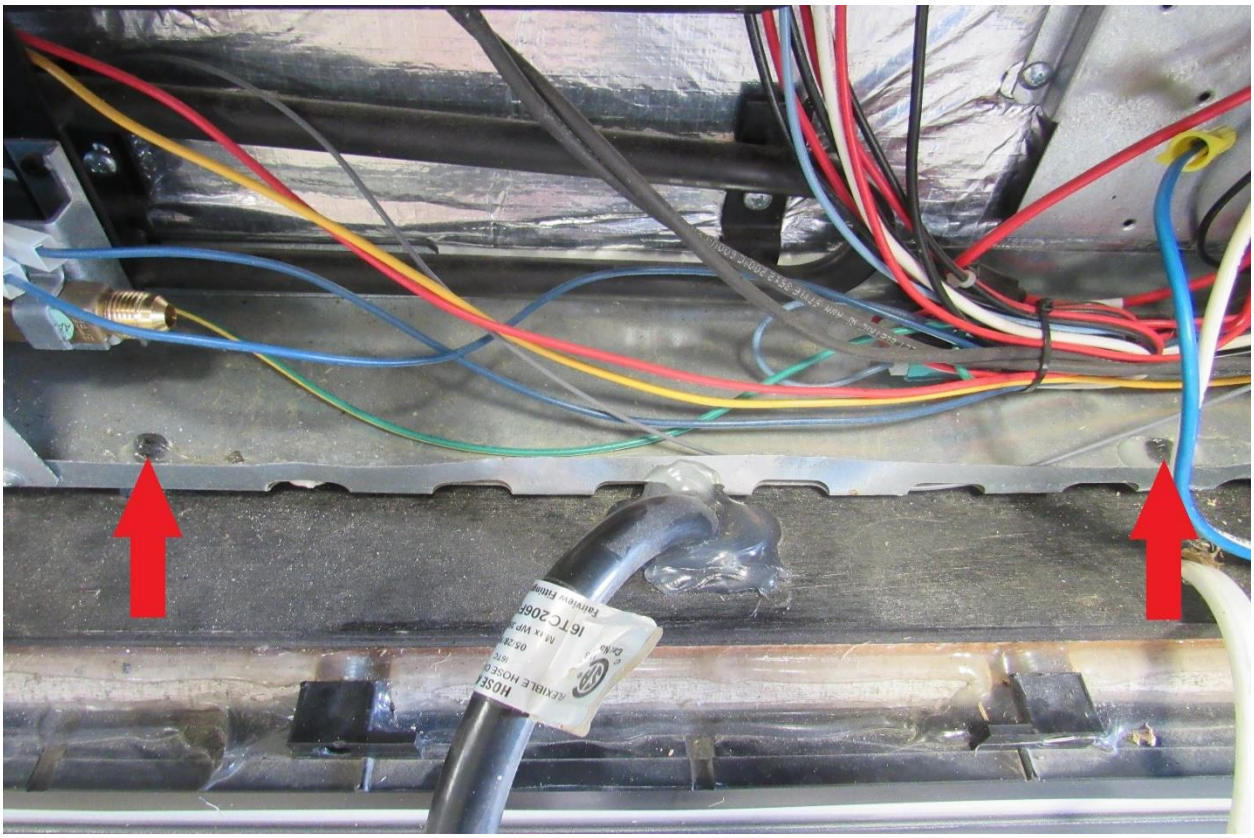
Cap off the LP line with the supplied cap in the parts bag (RA). Leak check this joint with soap and water once has been turned back on.



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



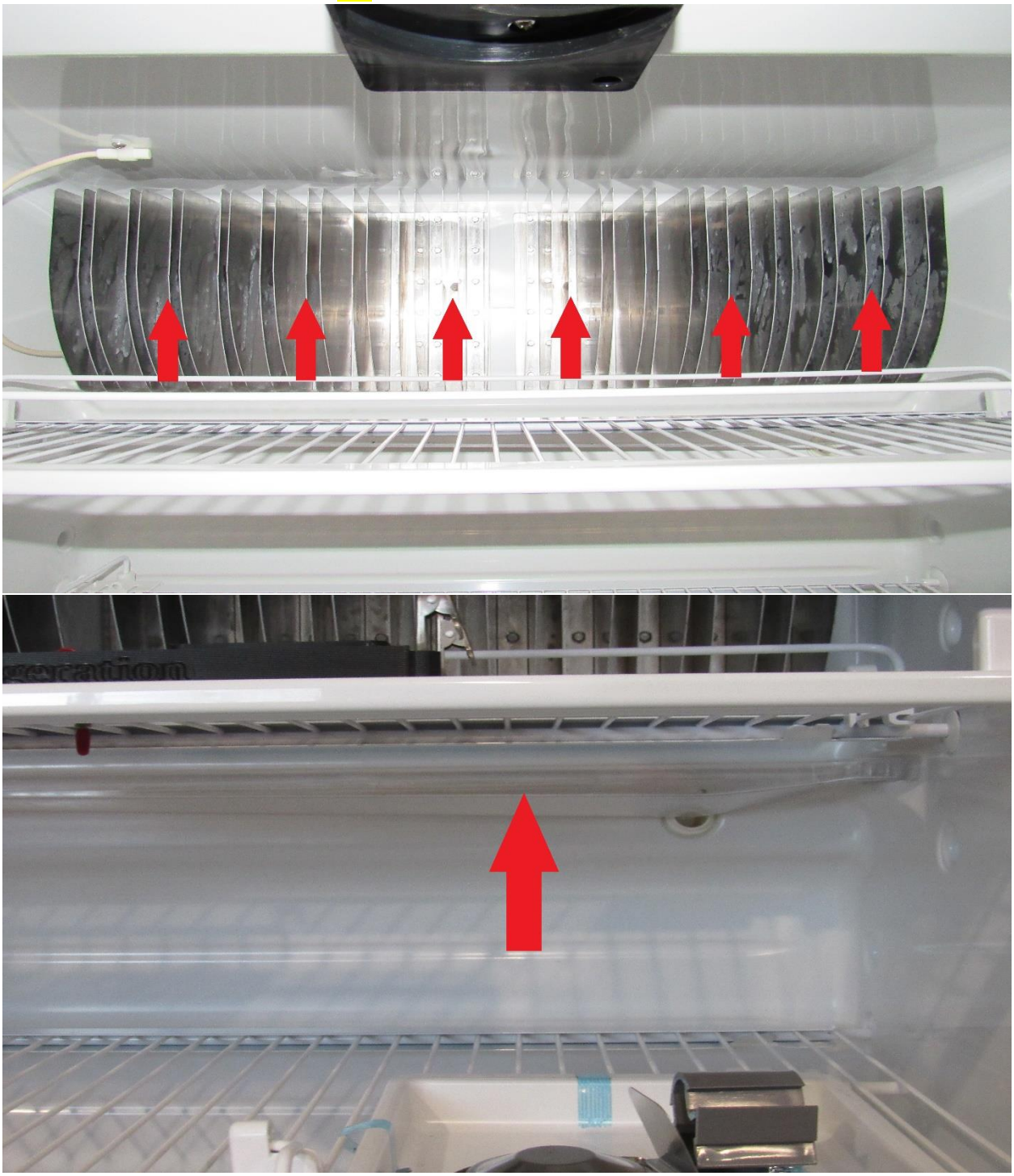
Remove the two mounting screws (RA).



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).

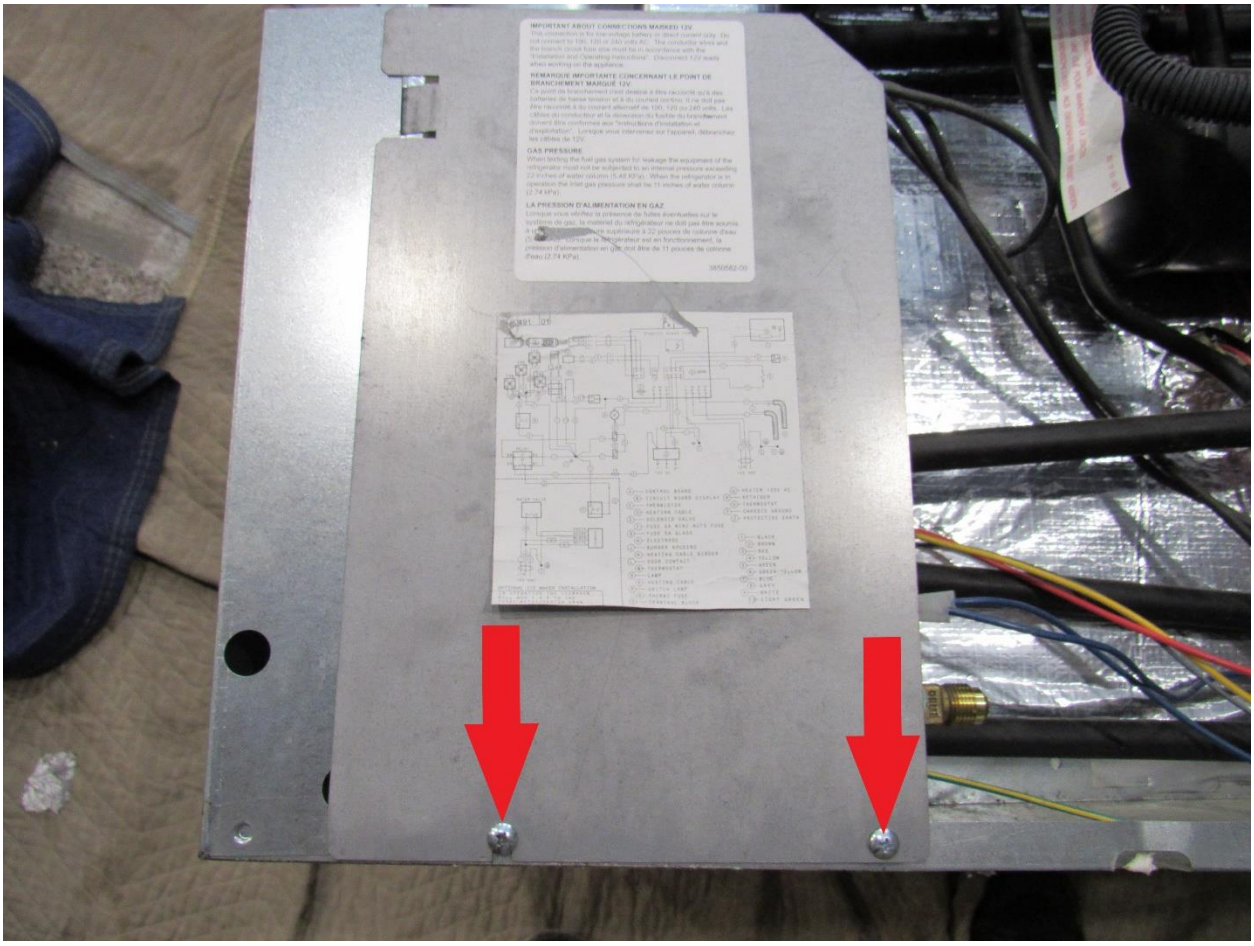


Remove the screws from the bottom plate (RA).

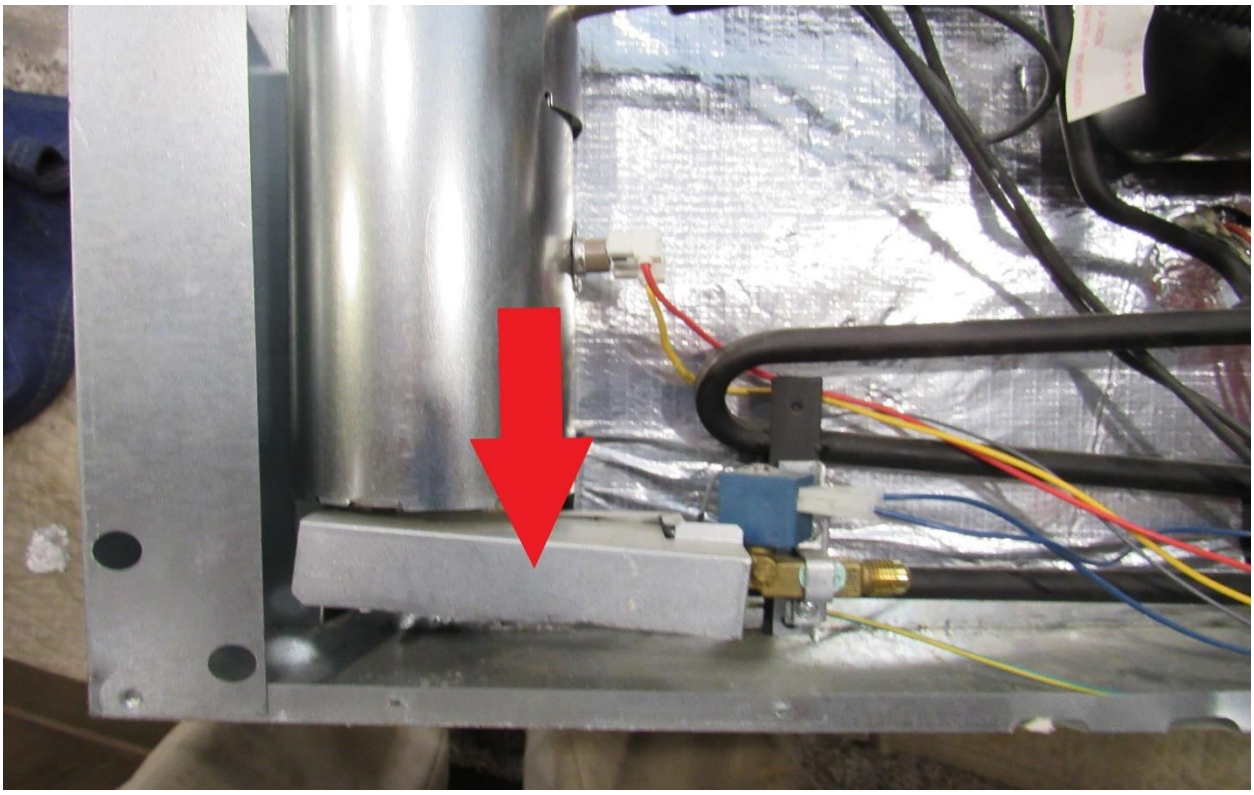


We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits 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.

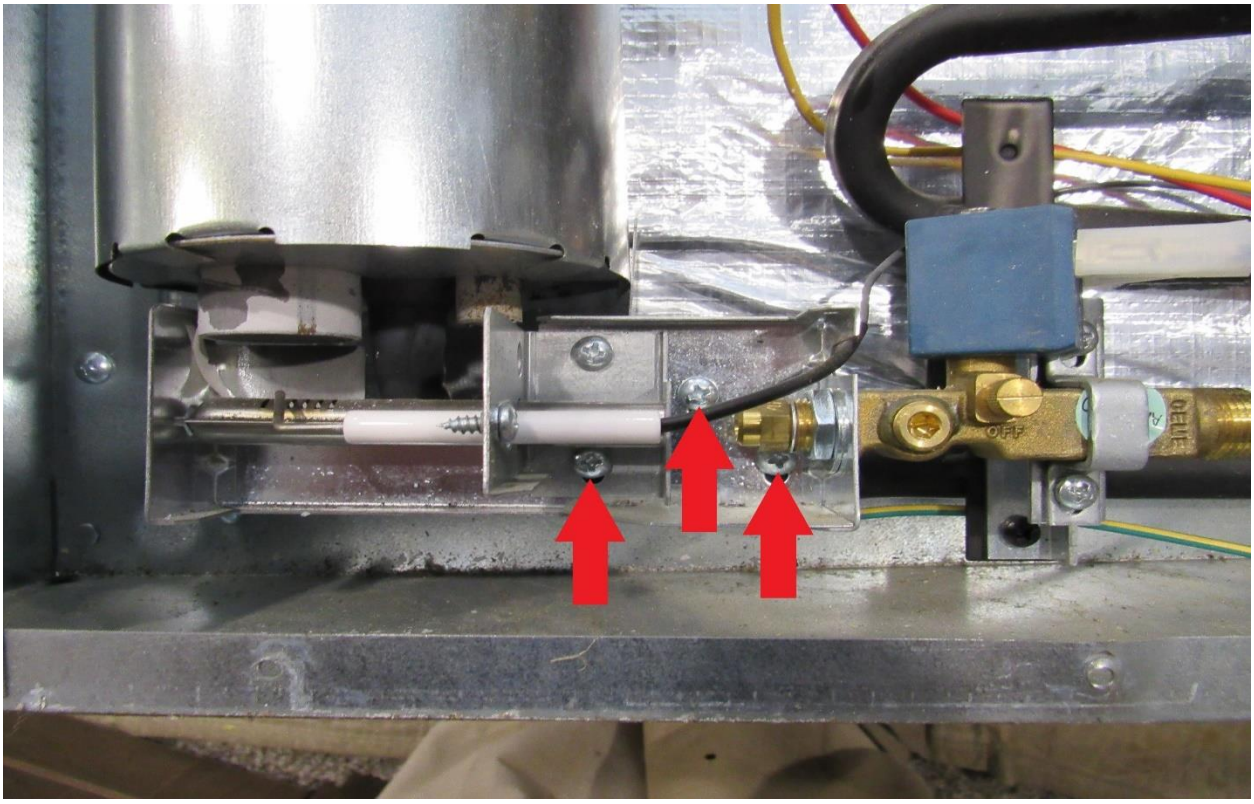
Start by removing the screws in the burner assembly (RA).



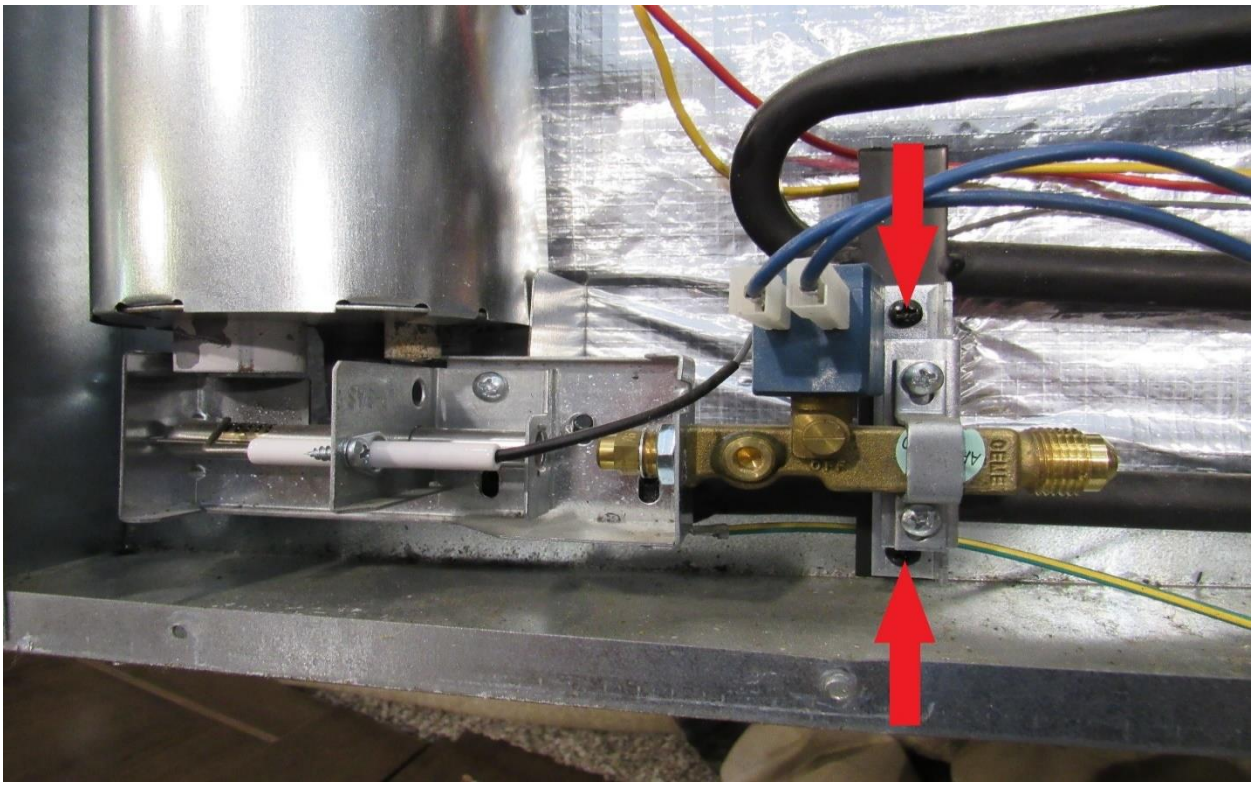
Remove the burner cover (RA).



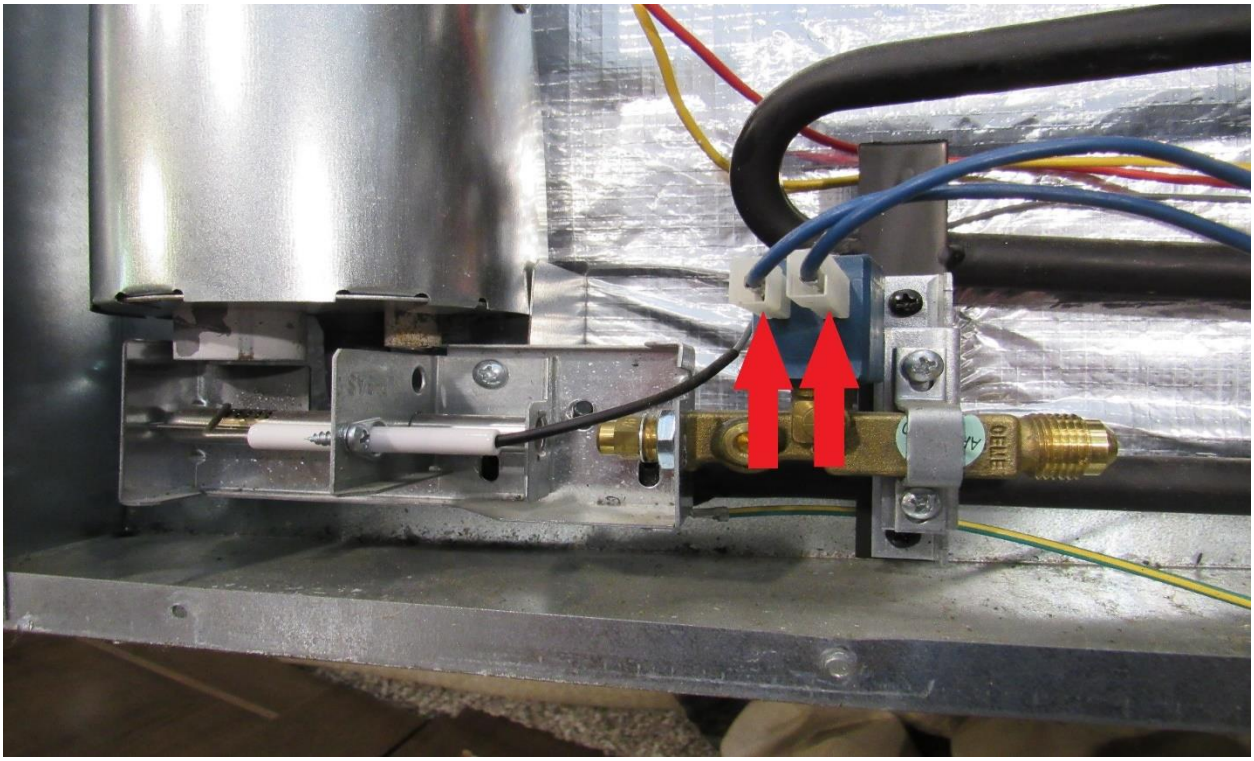
Remove the burner mounting screws (RA).



Remove the LP solenoid mounting screws (RA).



Remove the two blue wires from the LP solenoid (RA).

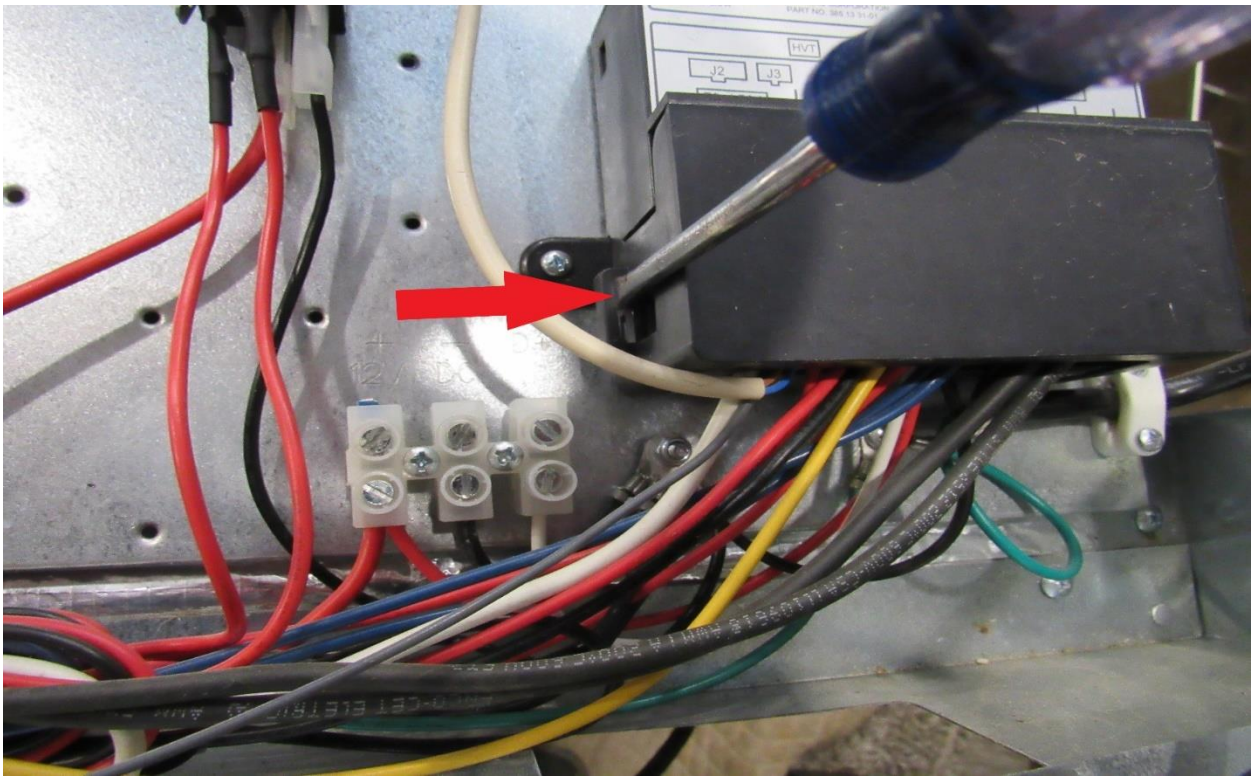


Remove all the wiring from the control board, none of this wiring will be reused.

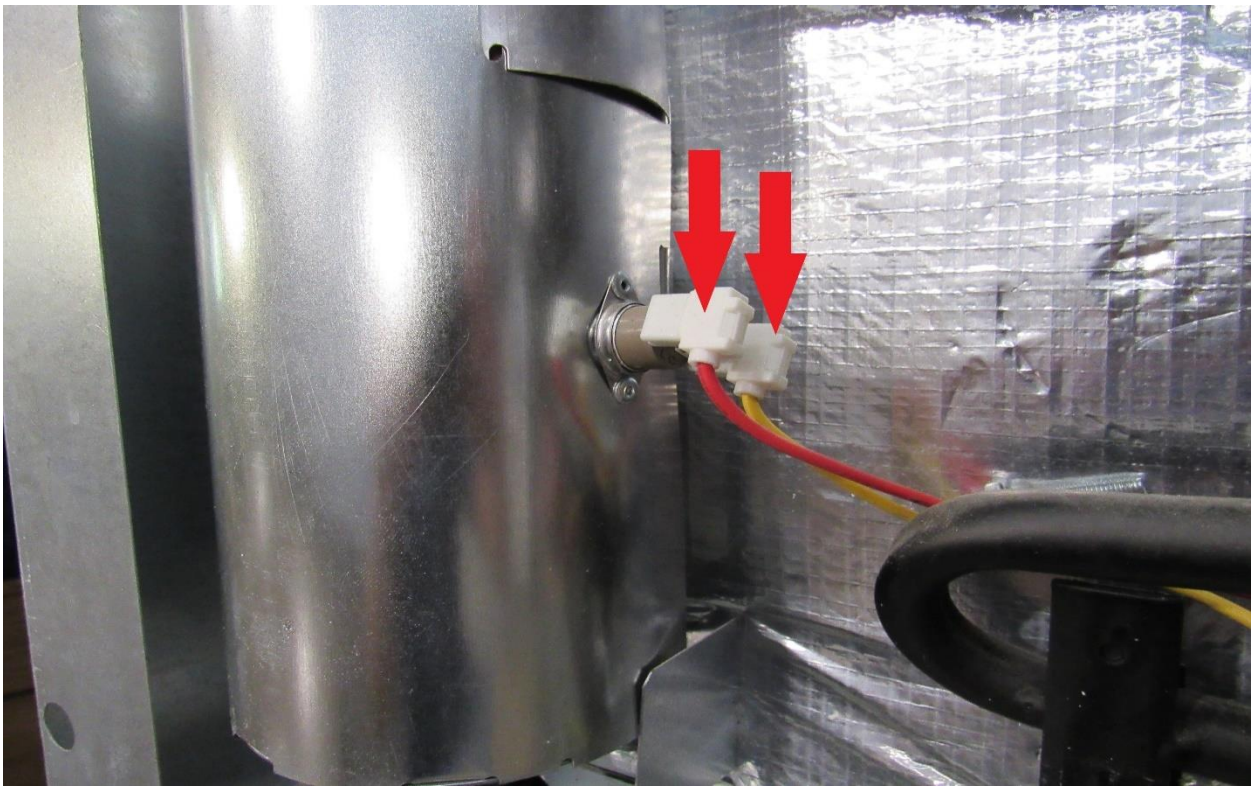
The control board itself can be removed as well and discarded.



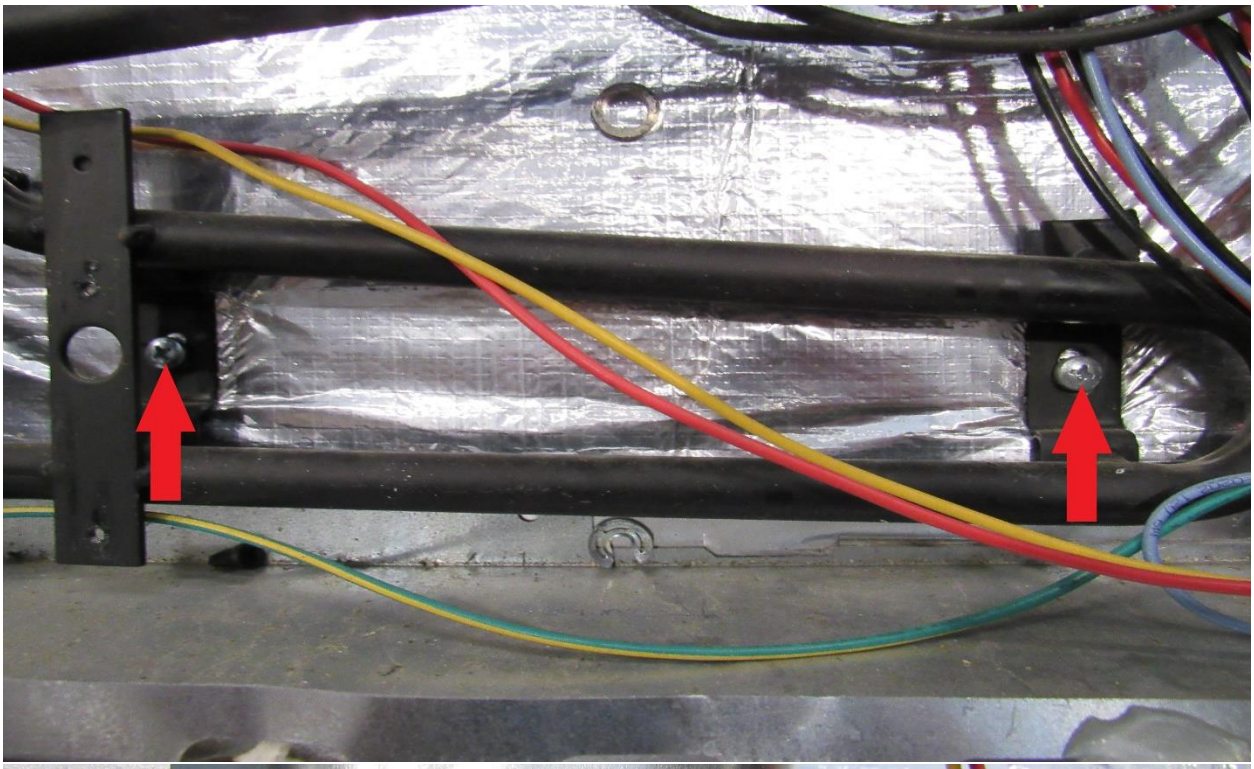
Take a screwdriver and gently pry out the side of the board to release it (RA).

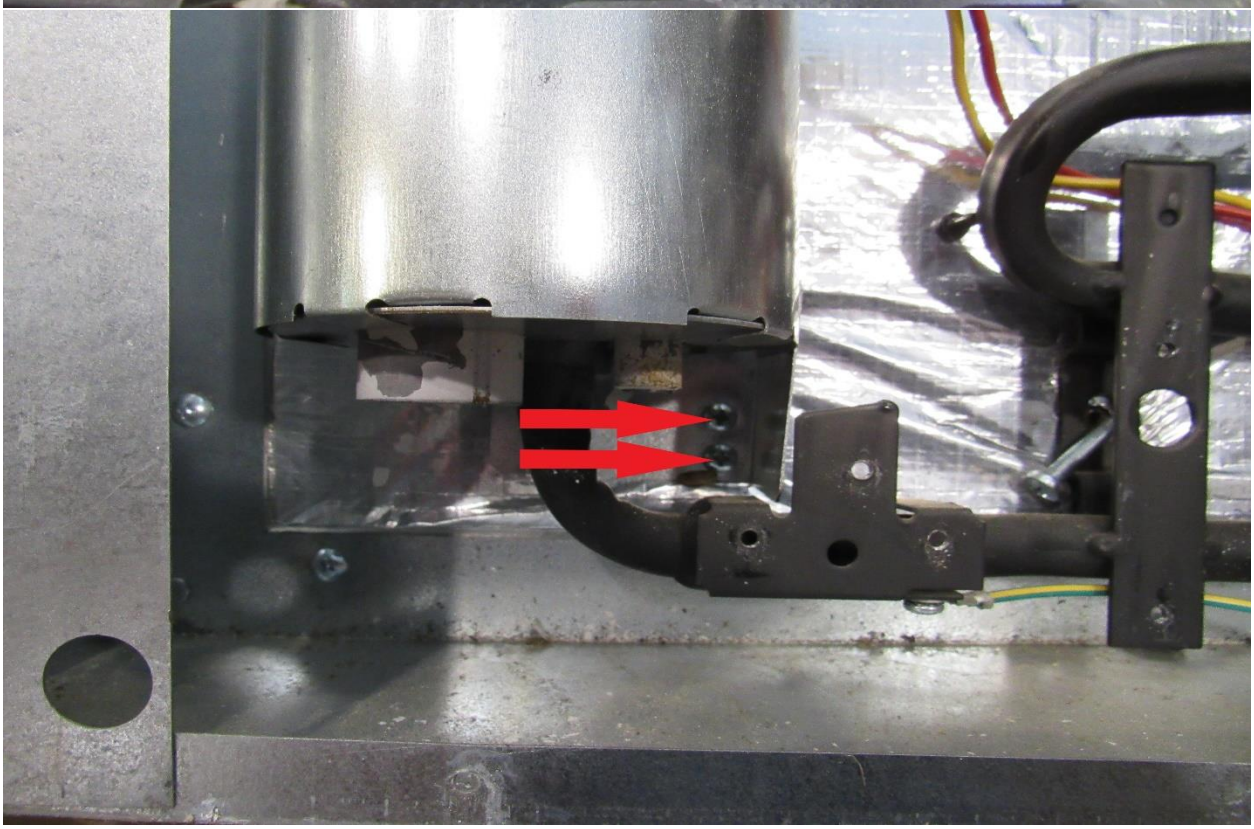


Remove the yellow and red wire off of the temp switch (RA).

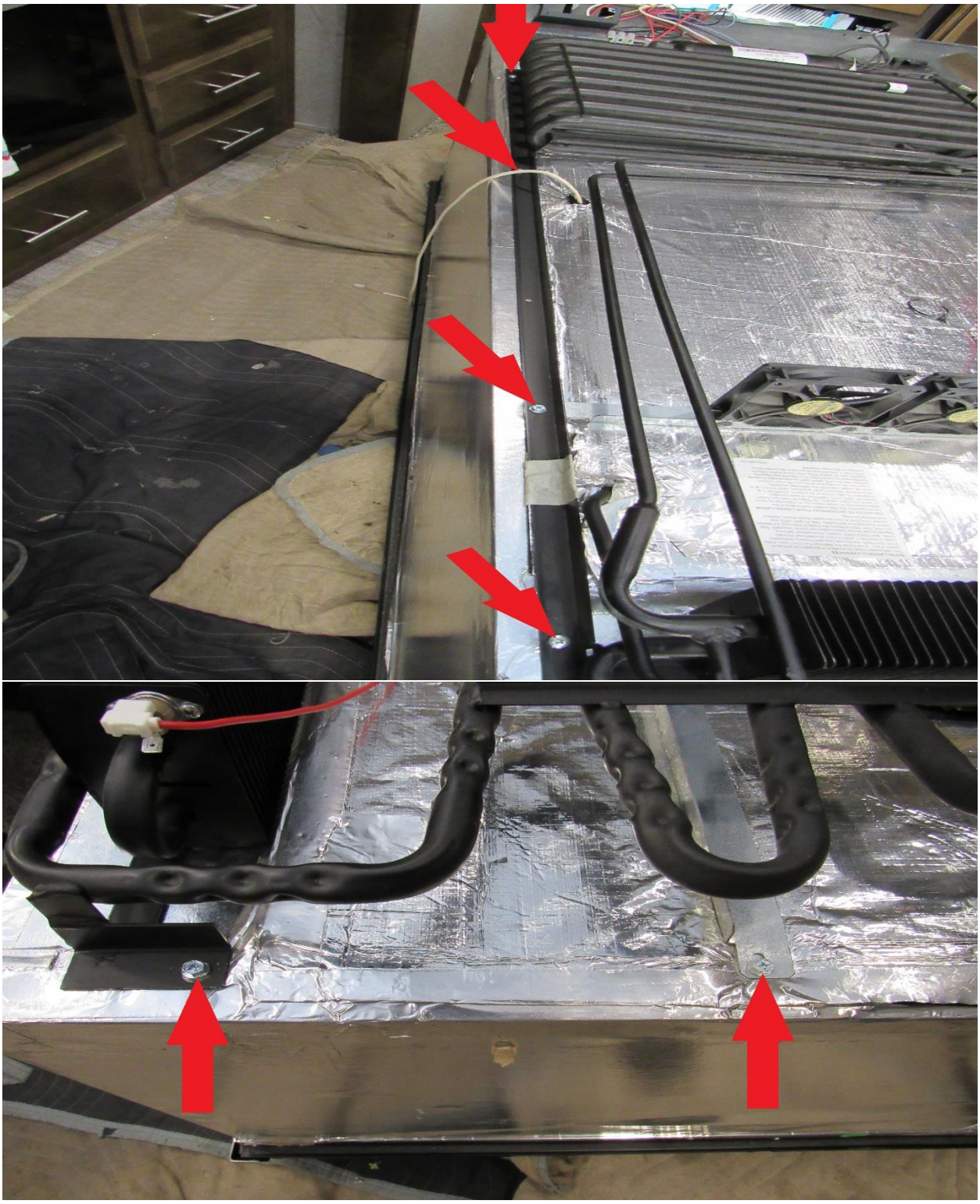


Remove the mounting screws (RA).

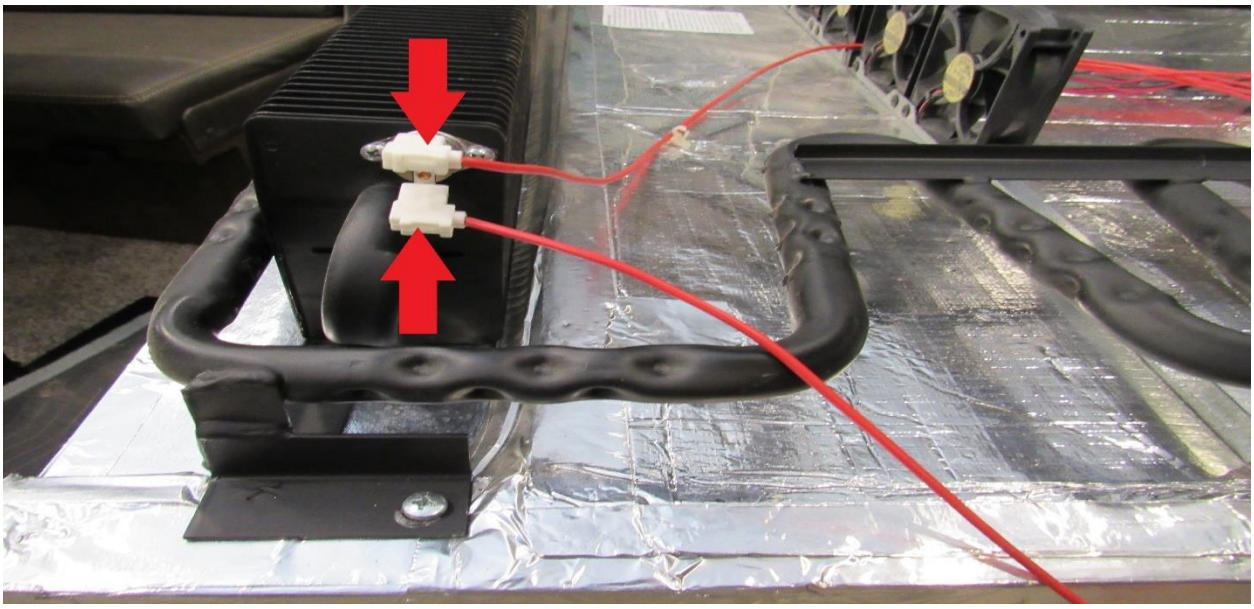




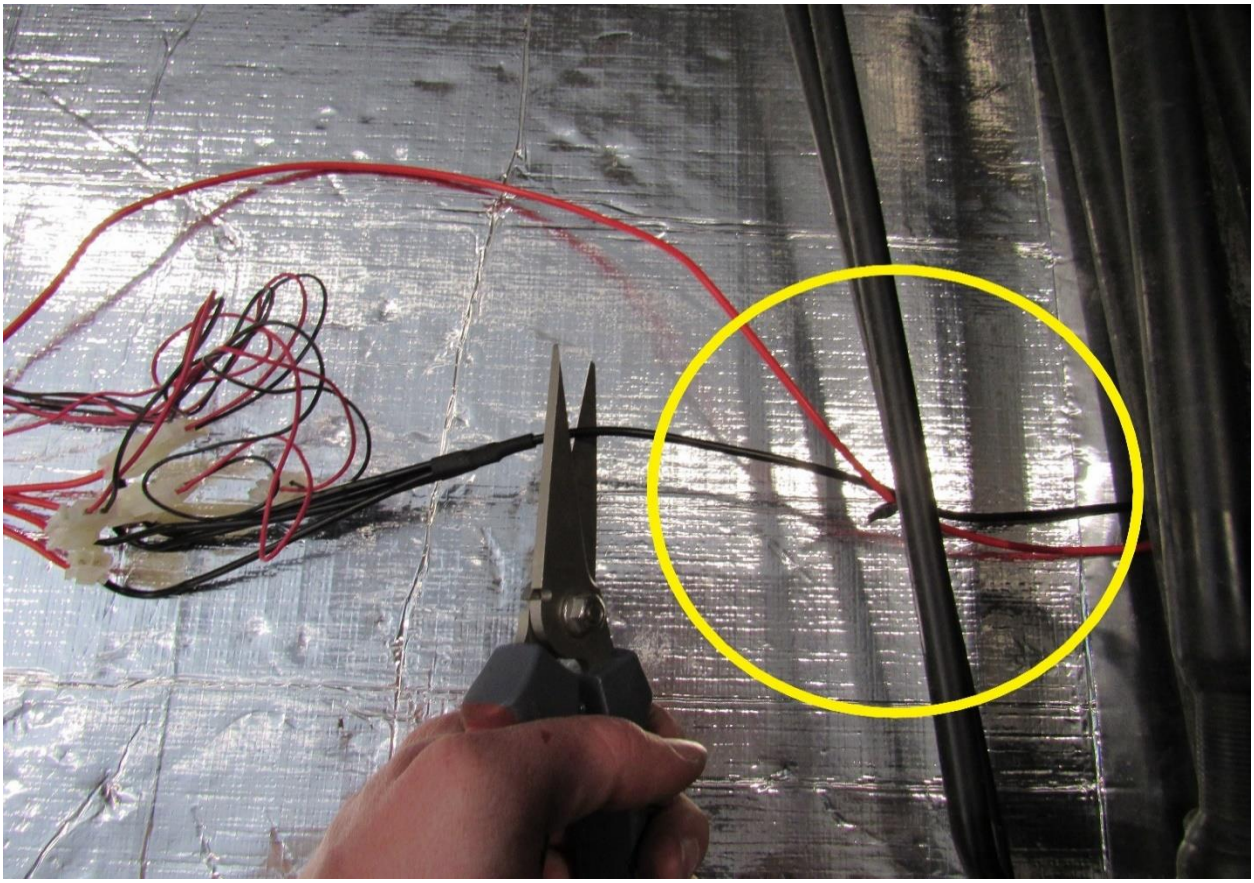
Remove the mounting screws on the side rail (RA). These may vary in location.



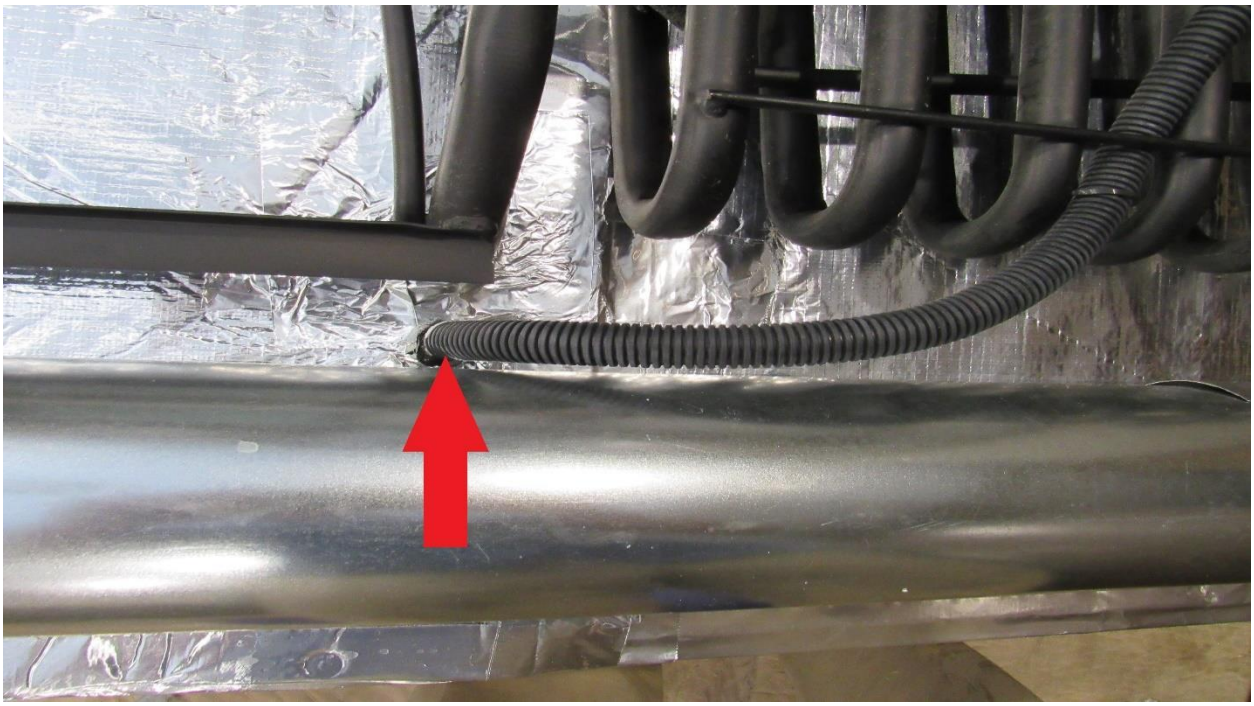
Remove the wires from the fan temp switch (RA).



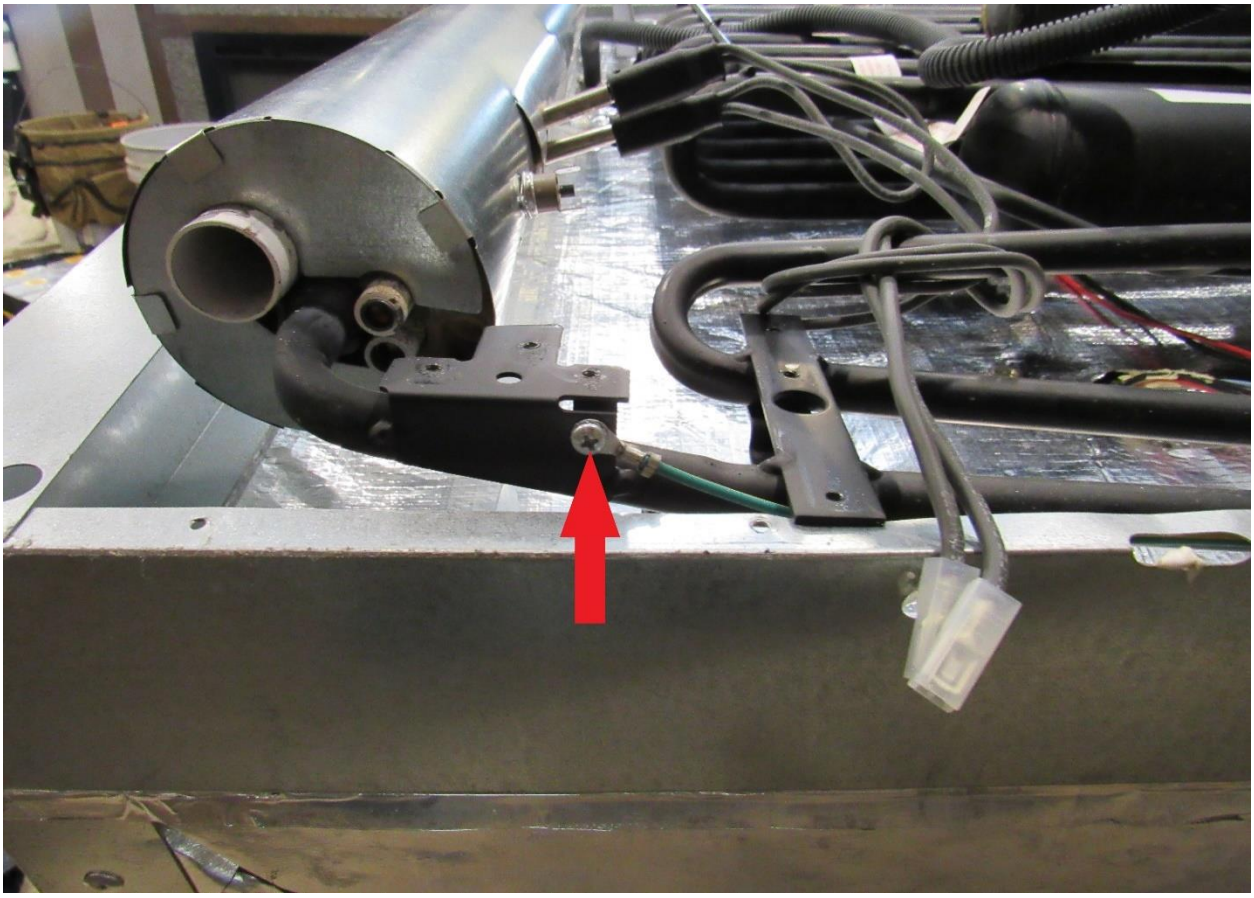
Cut the black fan wire underneath the connections. Pull the red and black wire in the yellow circle down to the board, these can just be zipped tied to the side as you will not use these.



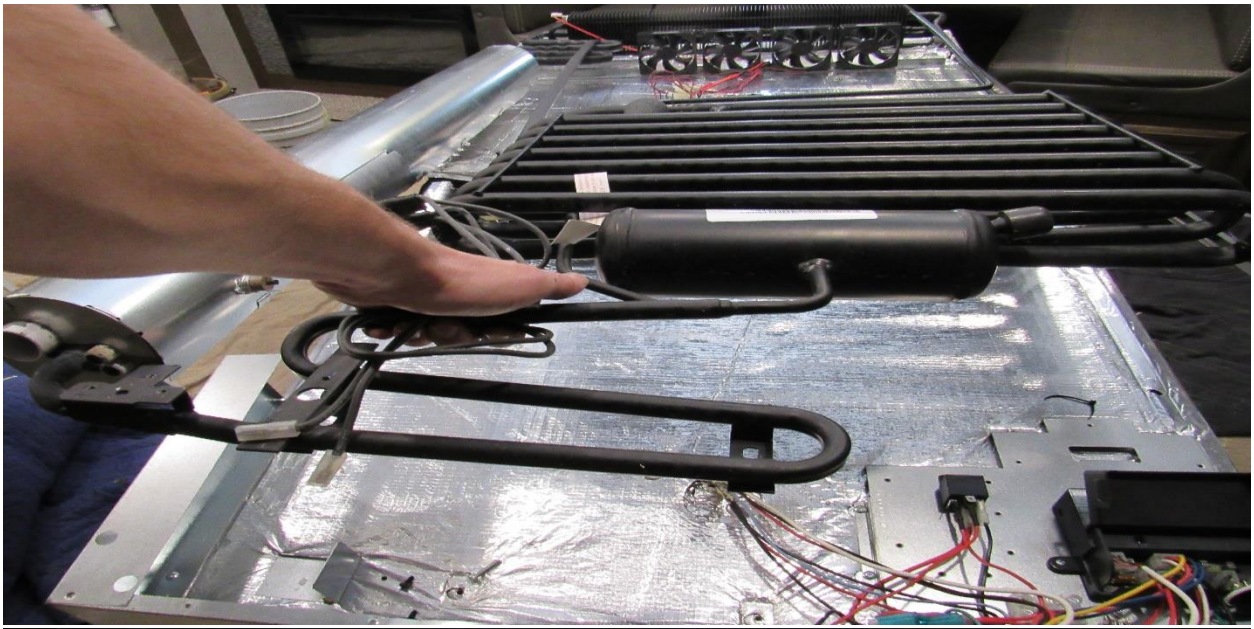
Pull out the defrost hose (RA). Set the defrost hose to the side.

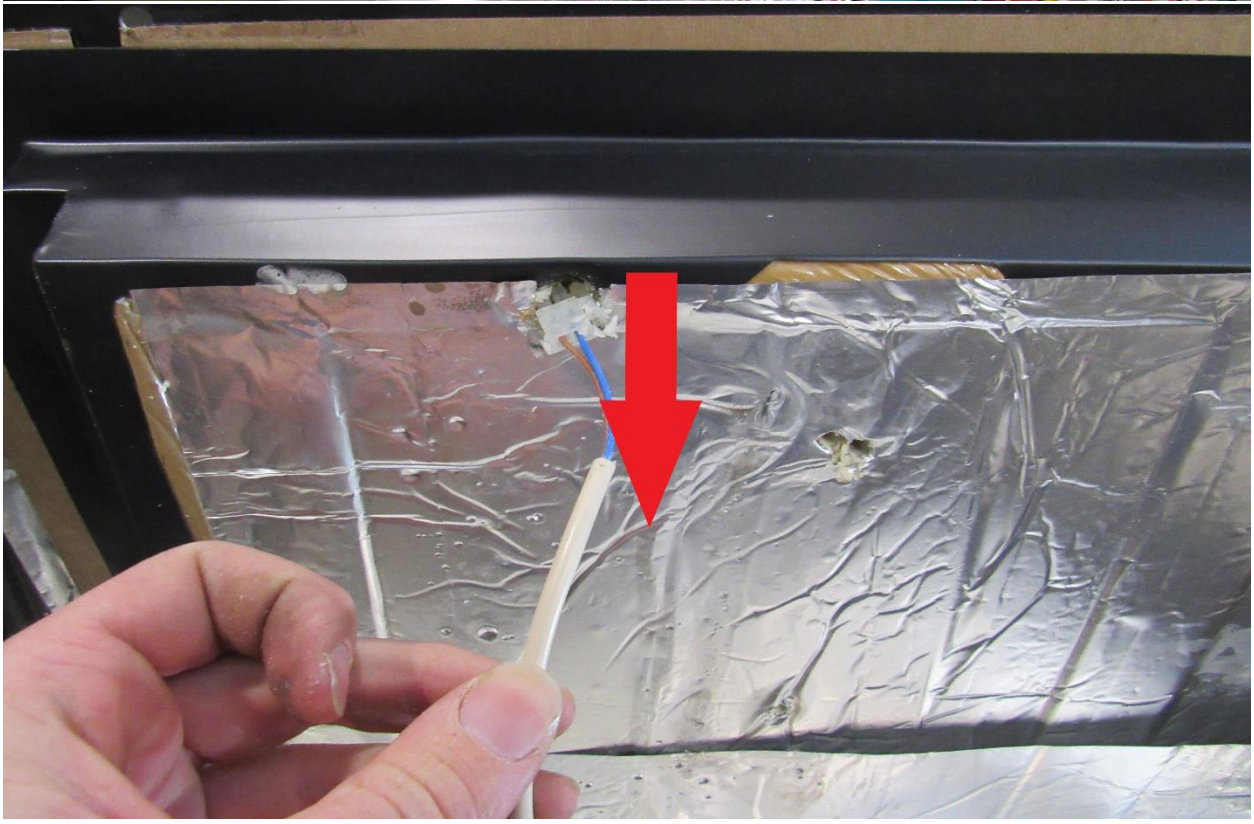


Lift the unit up a little and remove the ground on the bottom plate (RA).

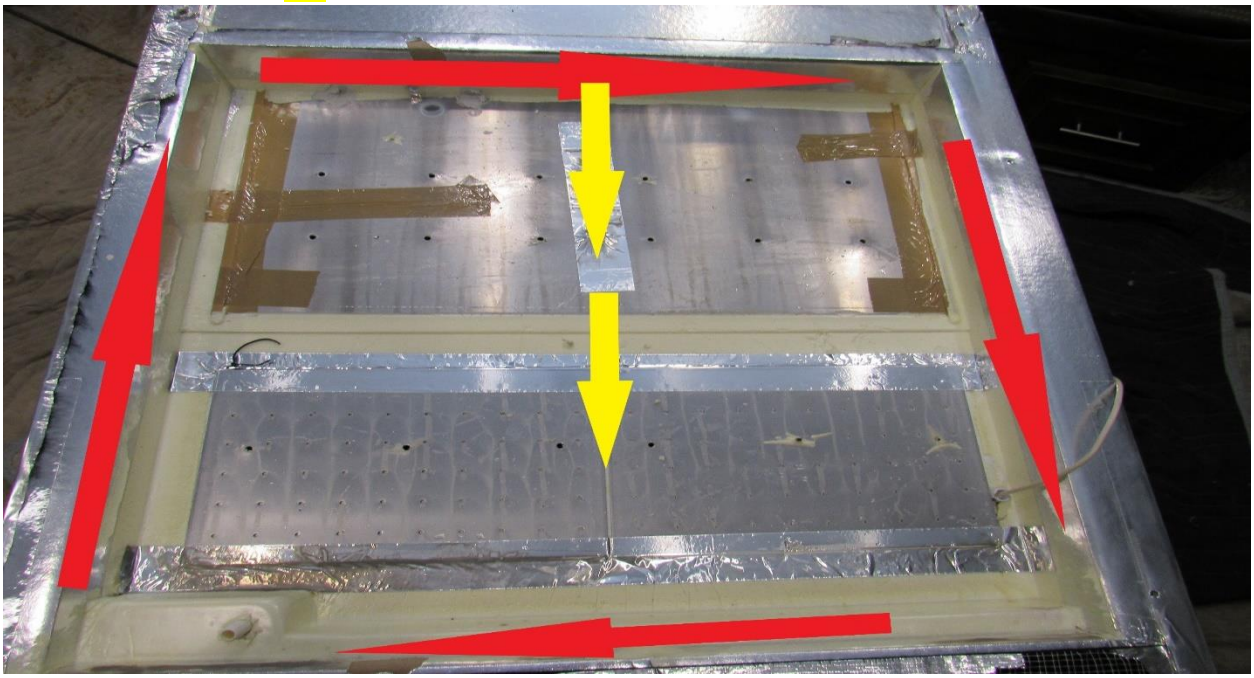


Lift the unit straight up and out. Have someone pull the thermistor wire down through the hole in the unit as the unit is lifted out (RA). Thermistor can be taken completely out or just zip ties to the side if you choose to leave it in

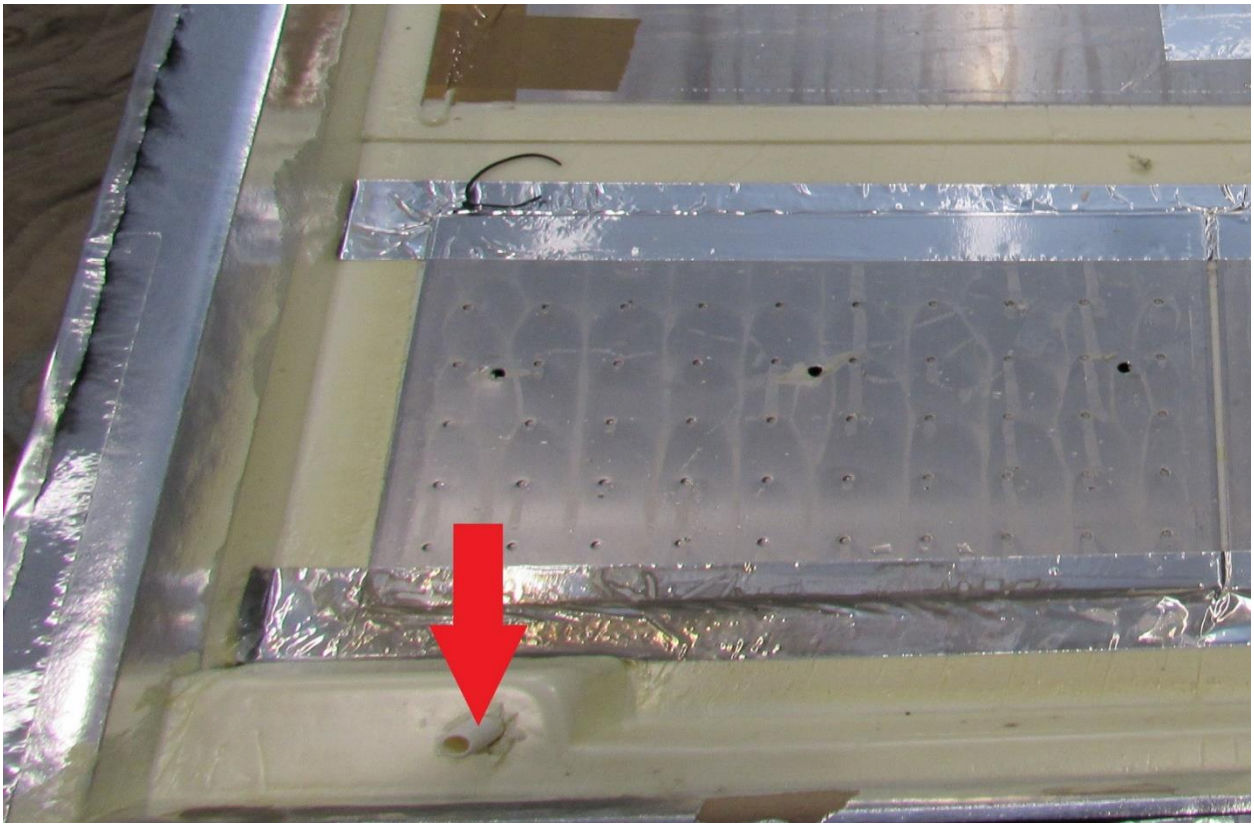




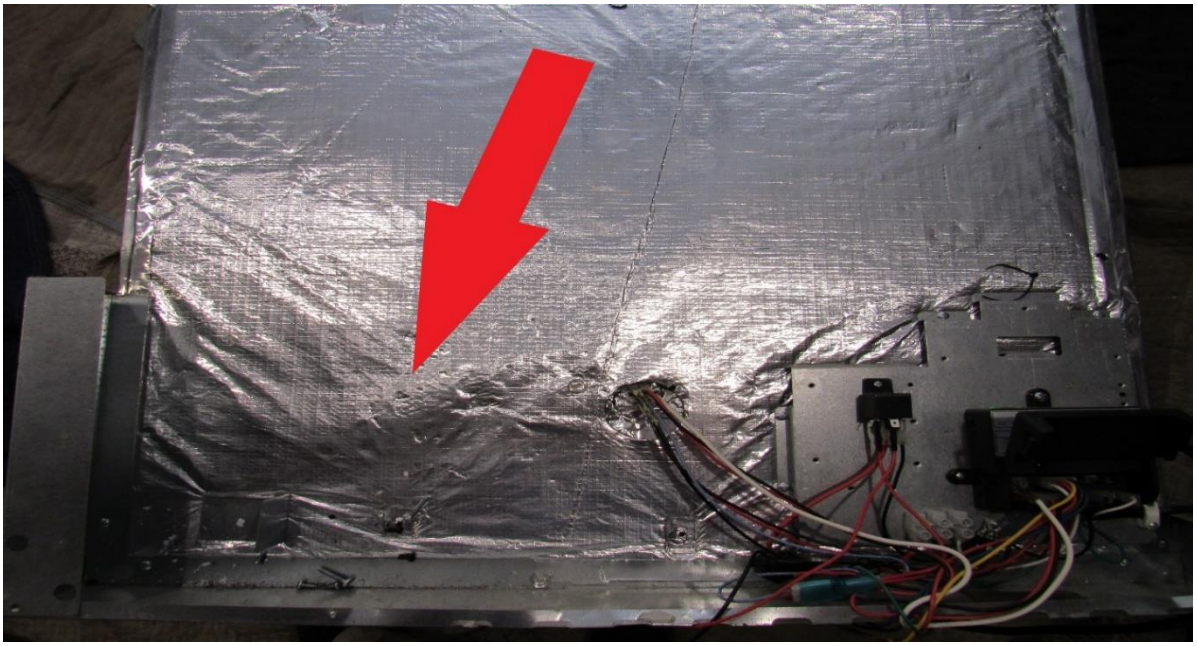
Clean all four sides (RA) and also clean any foam or thermal mastic off of the aluminum plates (YA).



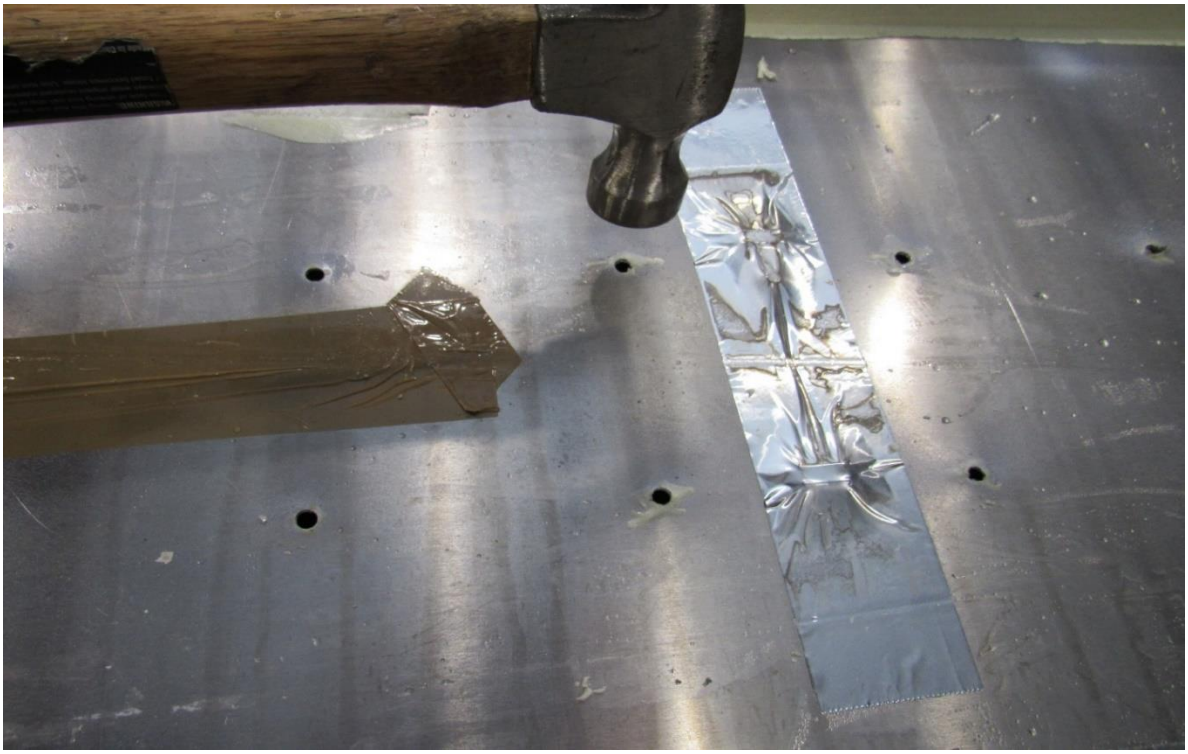
Push defrost spigot down into the refrigerator section (RA) so it doesn't break off when the new unit is set into place.



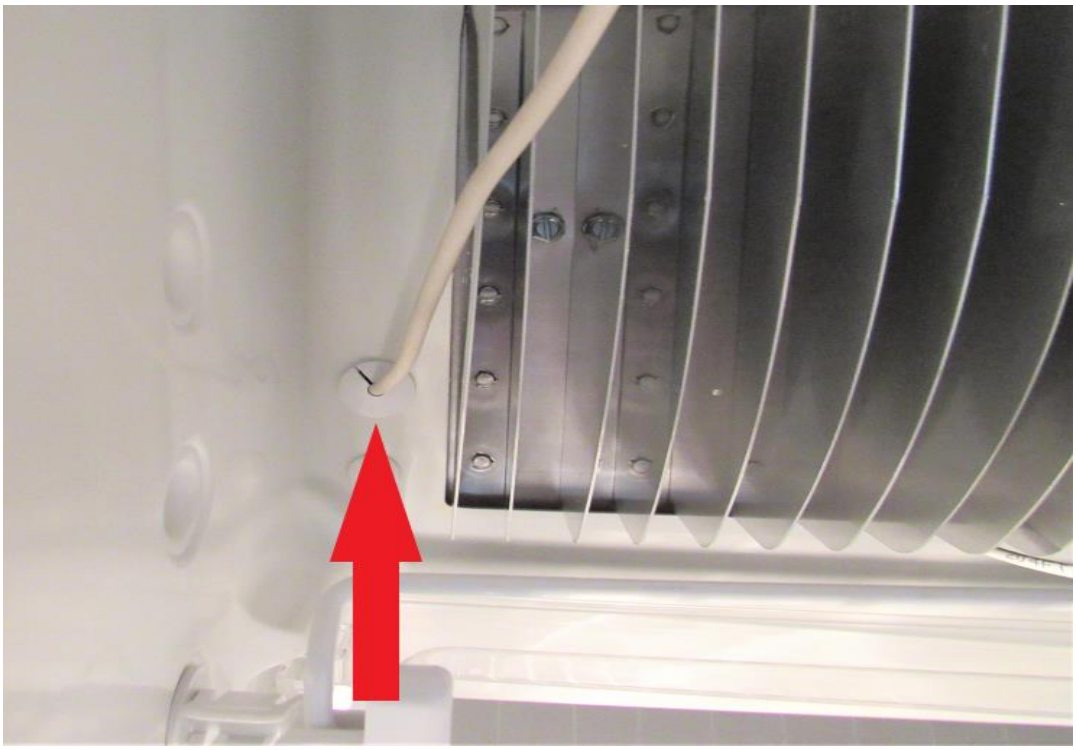
Clean and vacuum the debris on the bottom (RA). All the original wiring and controls can be removed at this time. The bottom left hand burner protector shield needs to be removed as well. The new unit will lay better.

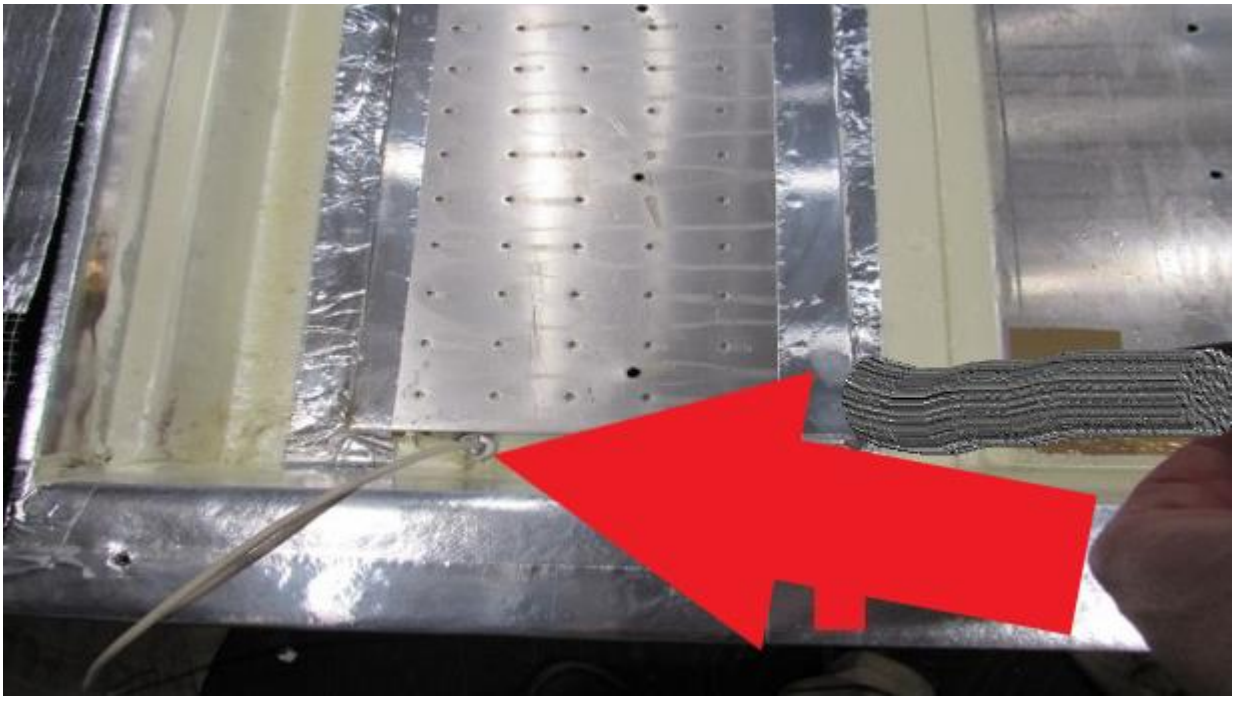


Take a hammer and tap down the holes in the freezer section as these tend to buckle in from the factory, thus creating a gap when the new unit is pulled into place.

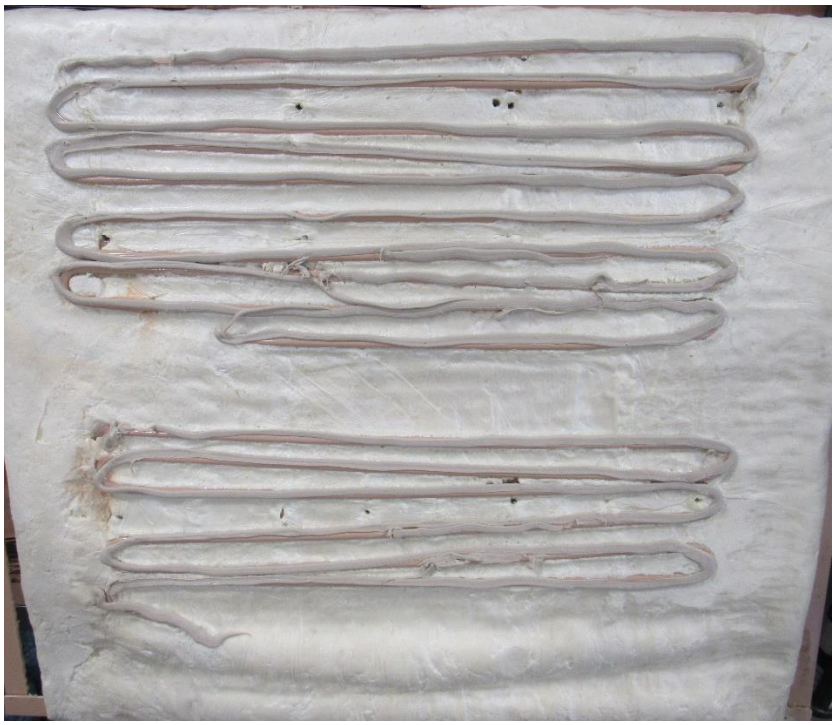


You will want to feed the new controller wire out thru this access hole where your thermistor went thru, the controller can just be clipped to the inside shelf or fin till all done installing the unit, make sure to leave enough wire inside so it will reach to the other side of the fin.

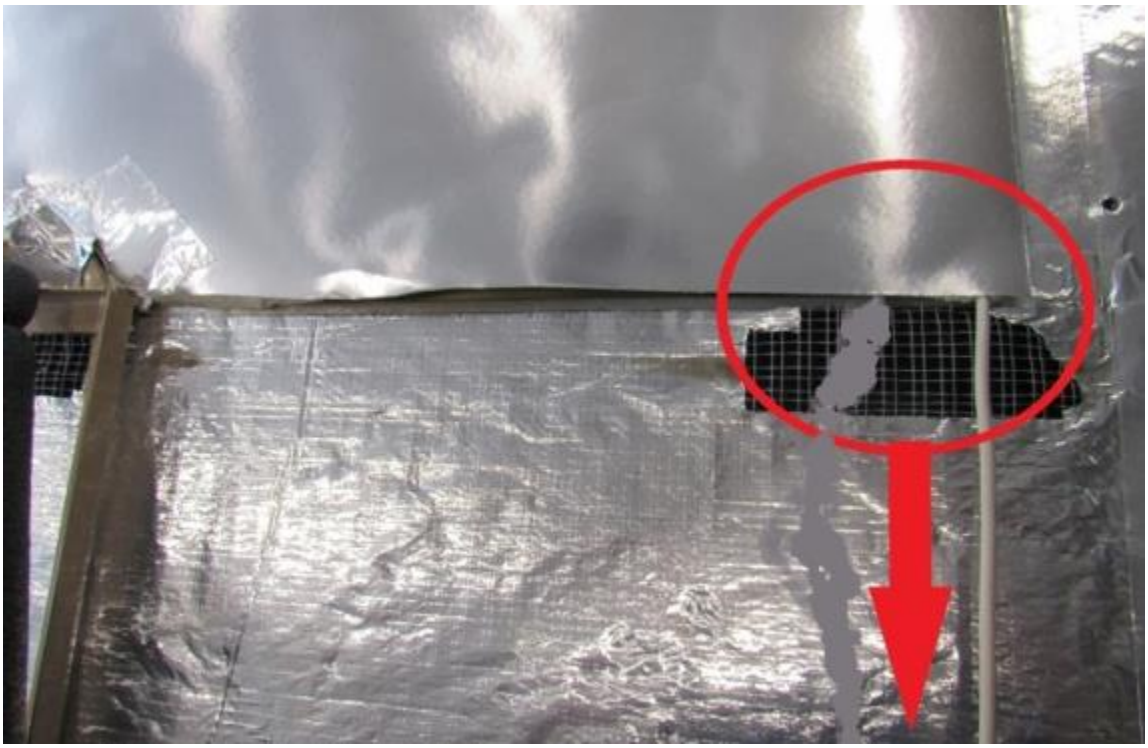




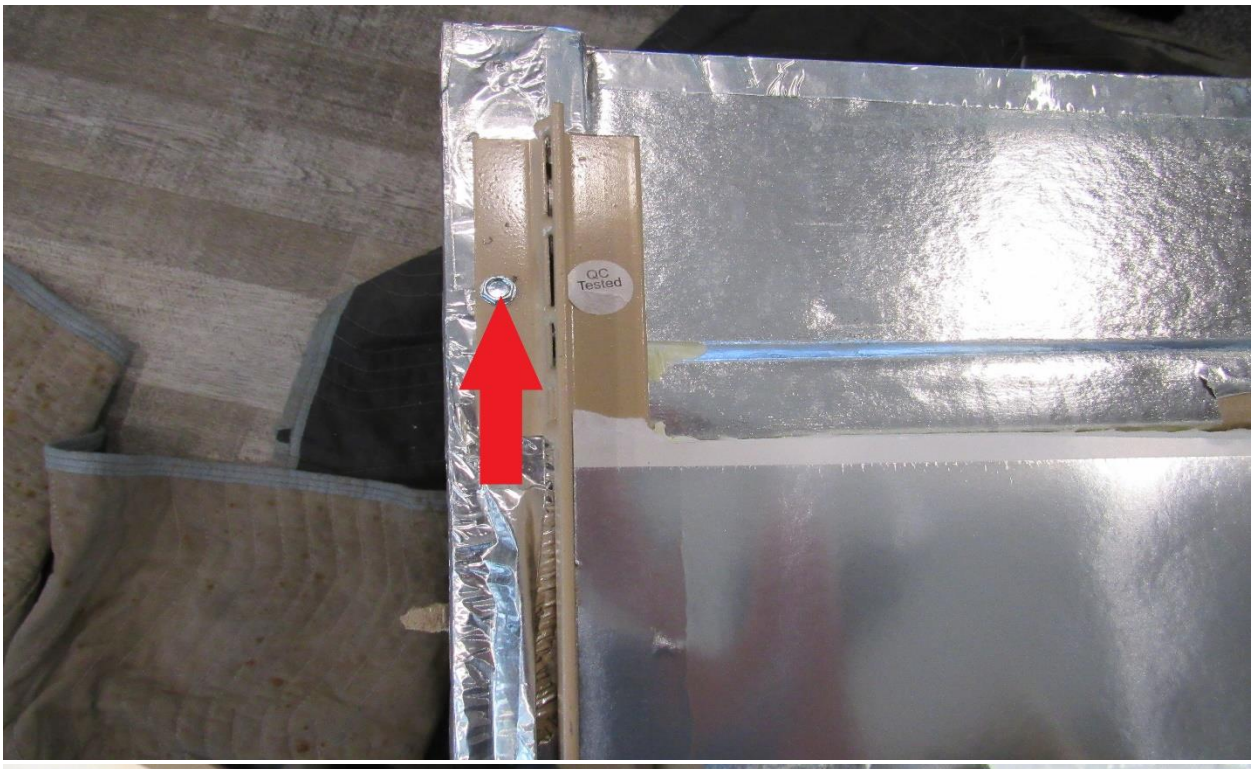
Apply thermal mastic onto the cooling unit tubes as shown.

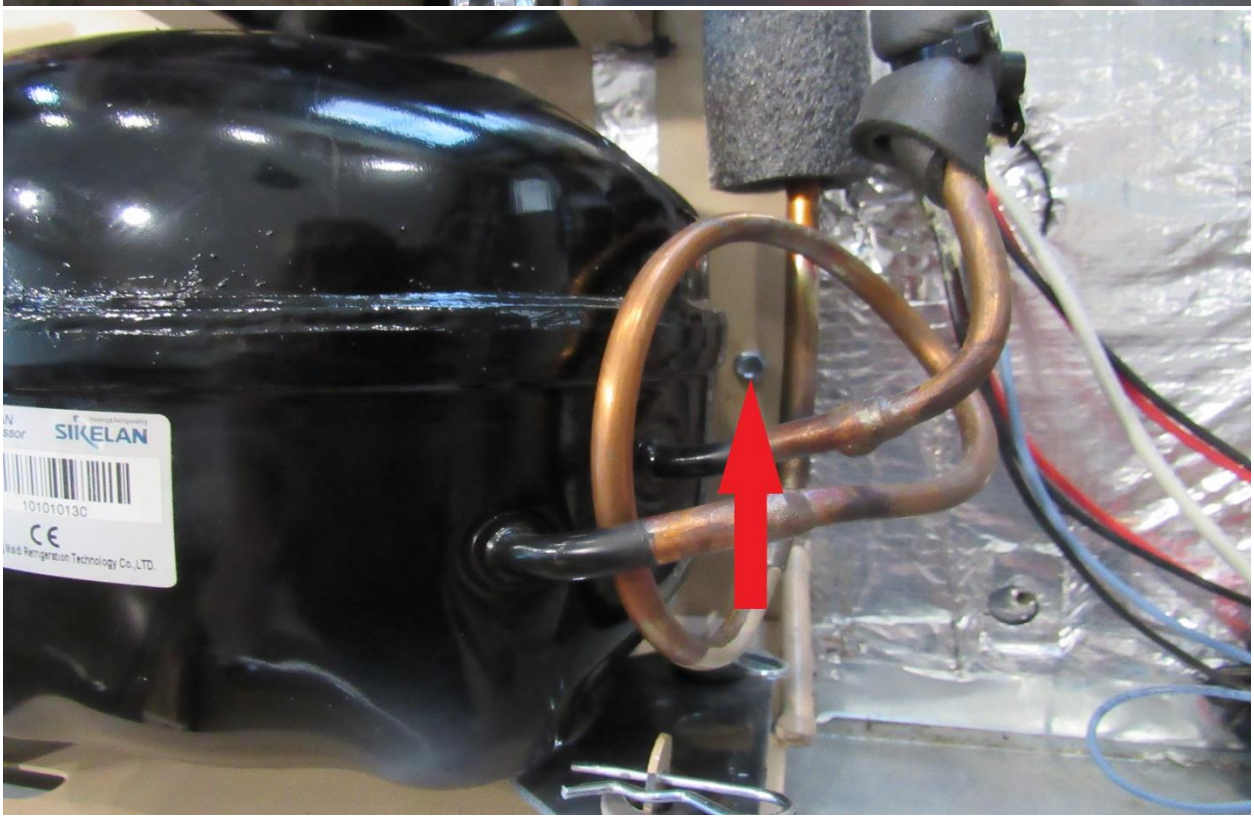


Lay unit into box being careful so as not to scrape off any thermal mastic. Position controller wire into the corner.



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.

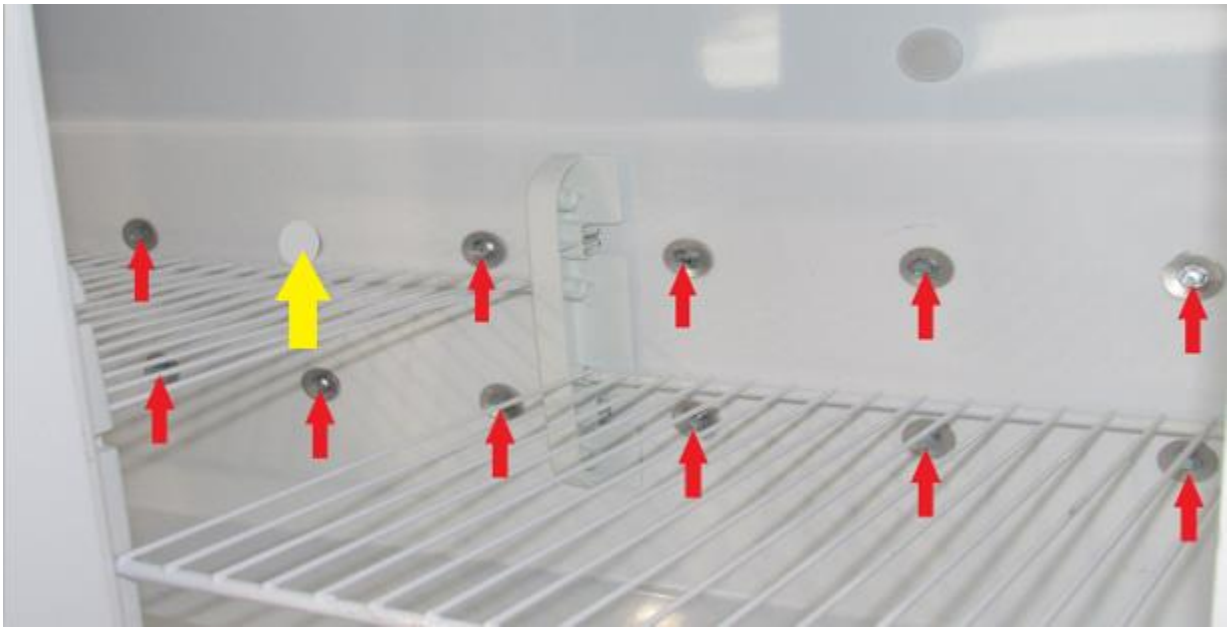
Here is a picture with the holes not lined up at all.



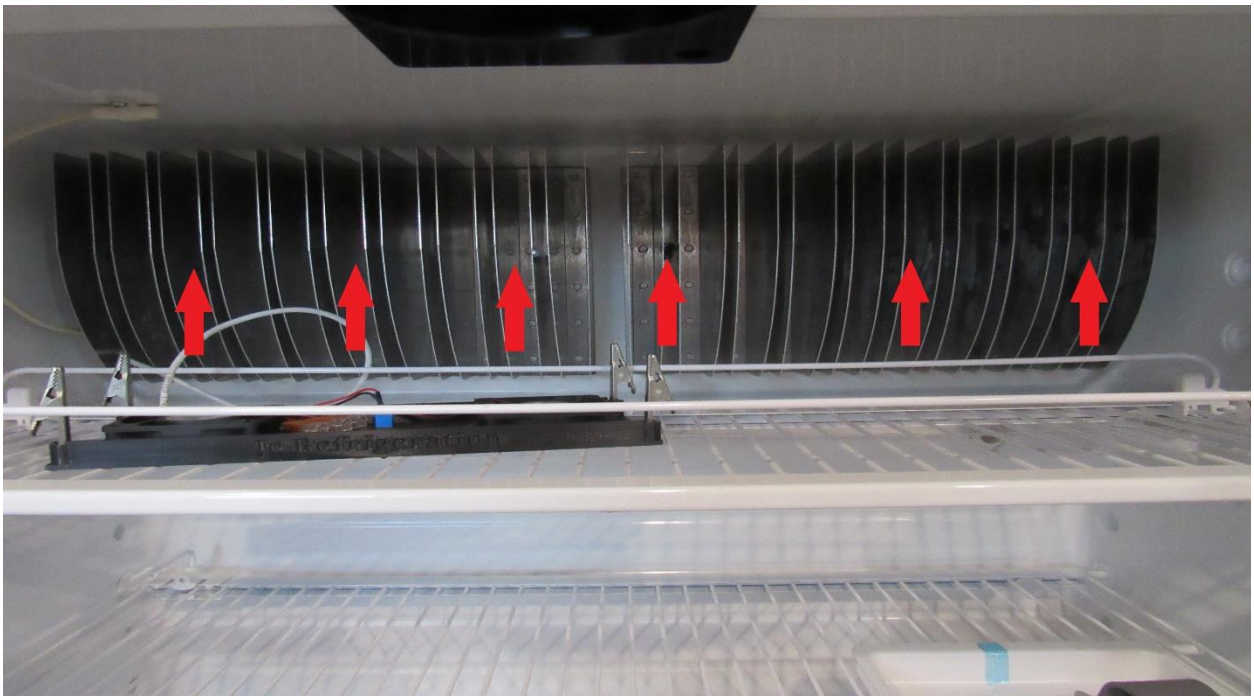
By shifting the unit to one side, you can locate the holes (RA) and screw the unit into place using #10X2" screws (YA).



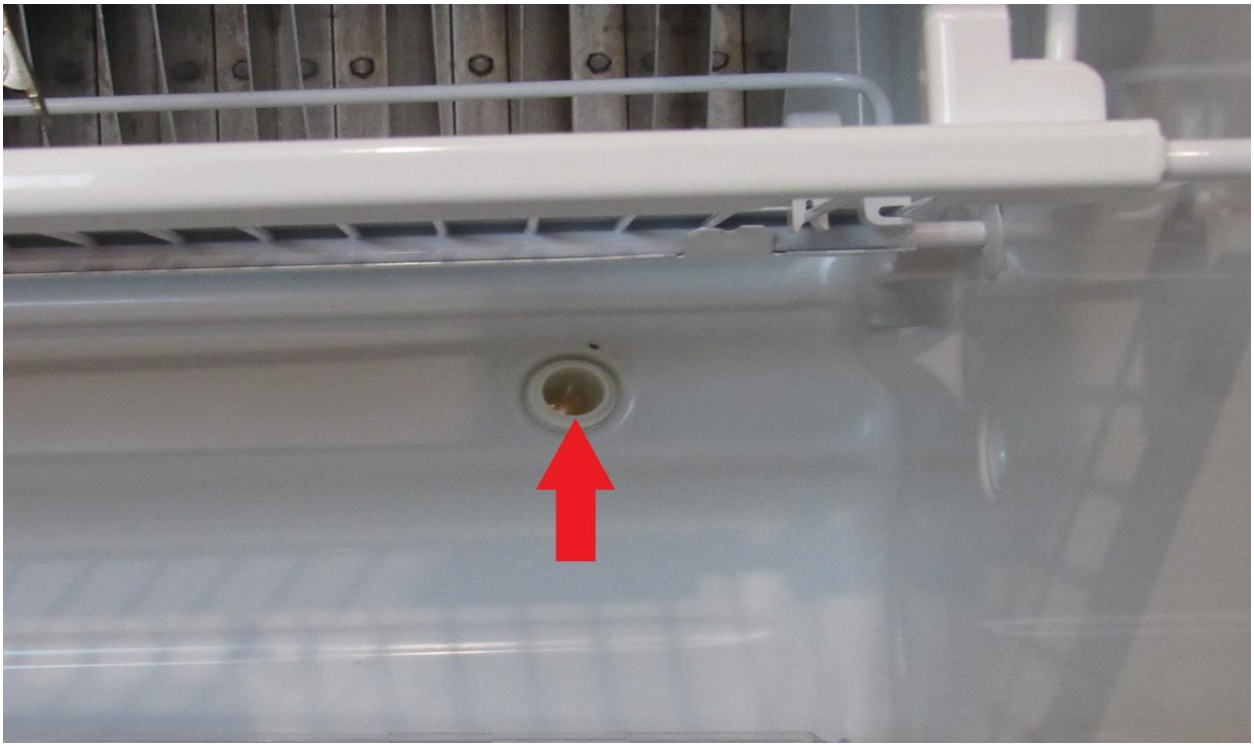
The holes are lasered out so they are always the same. If one is to the side a little, then all are in the same direction. Install all the mounting screws into the freezer (RA). The top row, second from left screw (YA) will not be re installed as that is where the sensor for the controller will be inserted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



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



Push the defrost spigot back into place (RA).



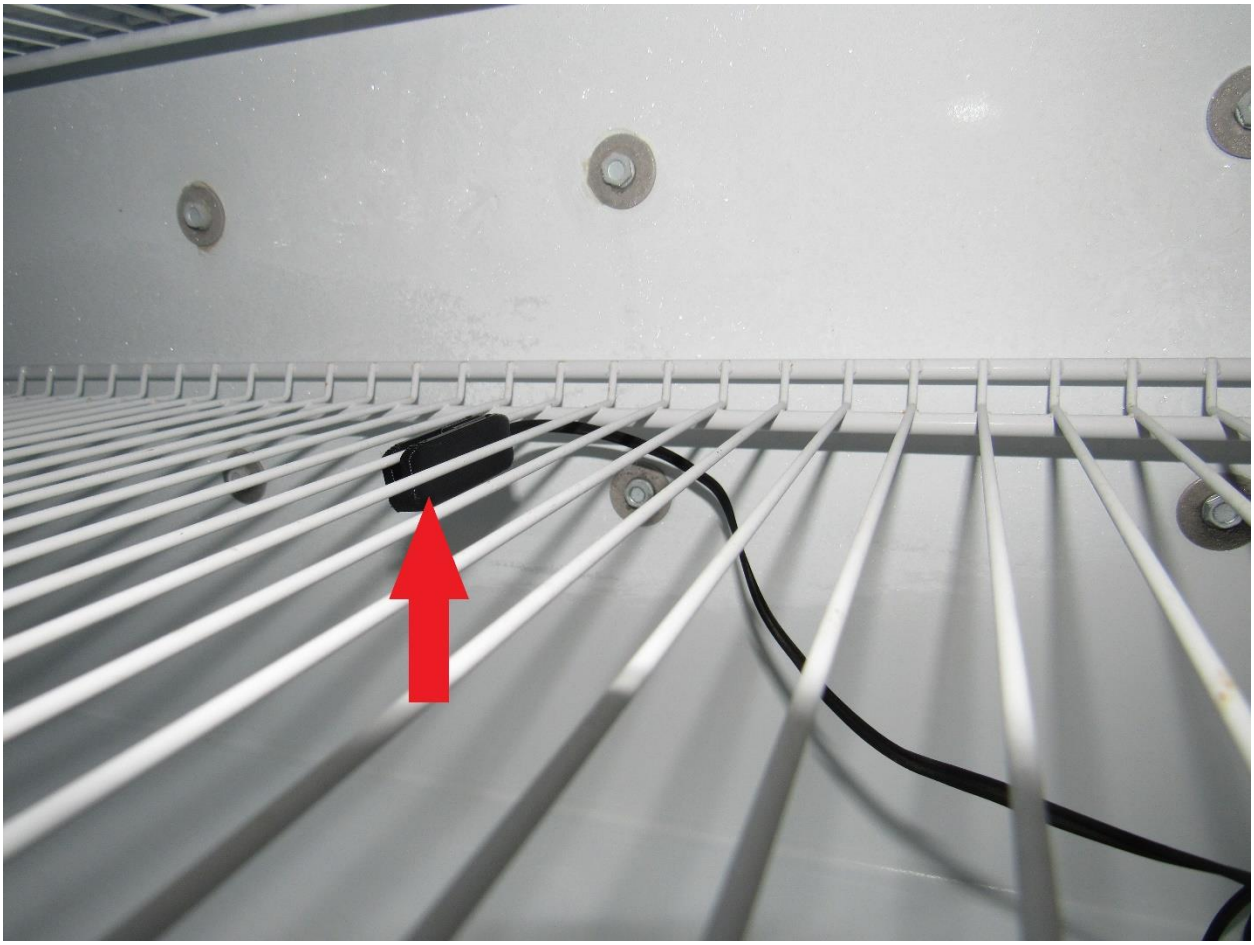
Before laying the fridge back down on its face, insert the sensor for the freezer in through the hole in the plastic bracket. This wire is in a bag with the controller.



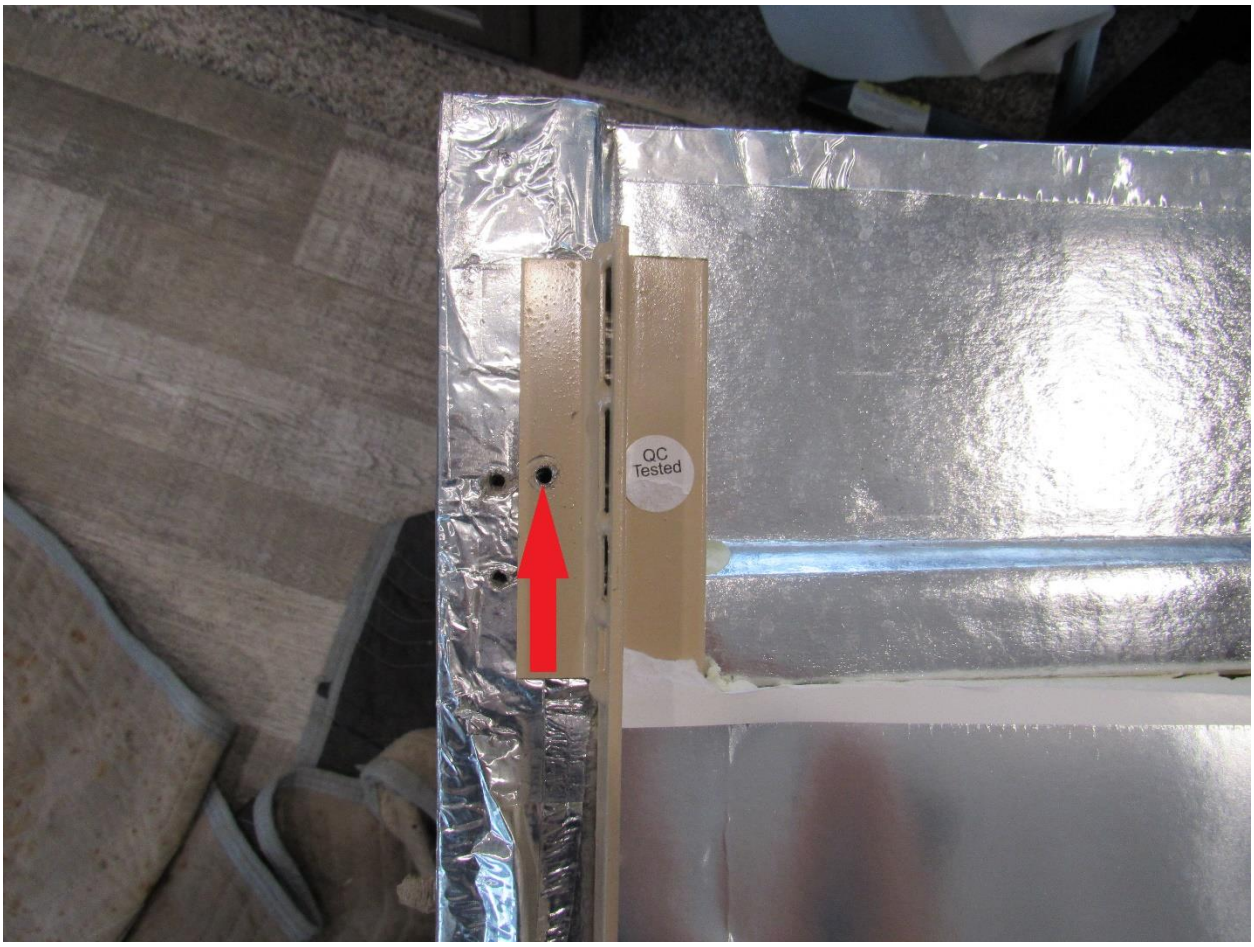




Once you have the sensor inside the freezer, attach it to your top shelf using the supplied sensor clip (RA) or a zip tie will work to. Place the clip a few inches from the back of the freezer to avoid slight variations in temps.

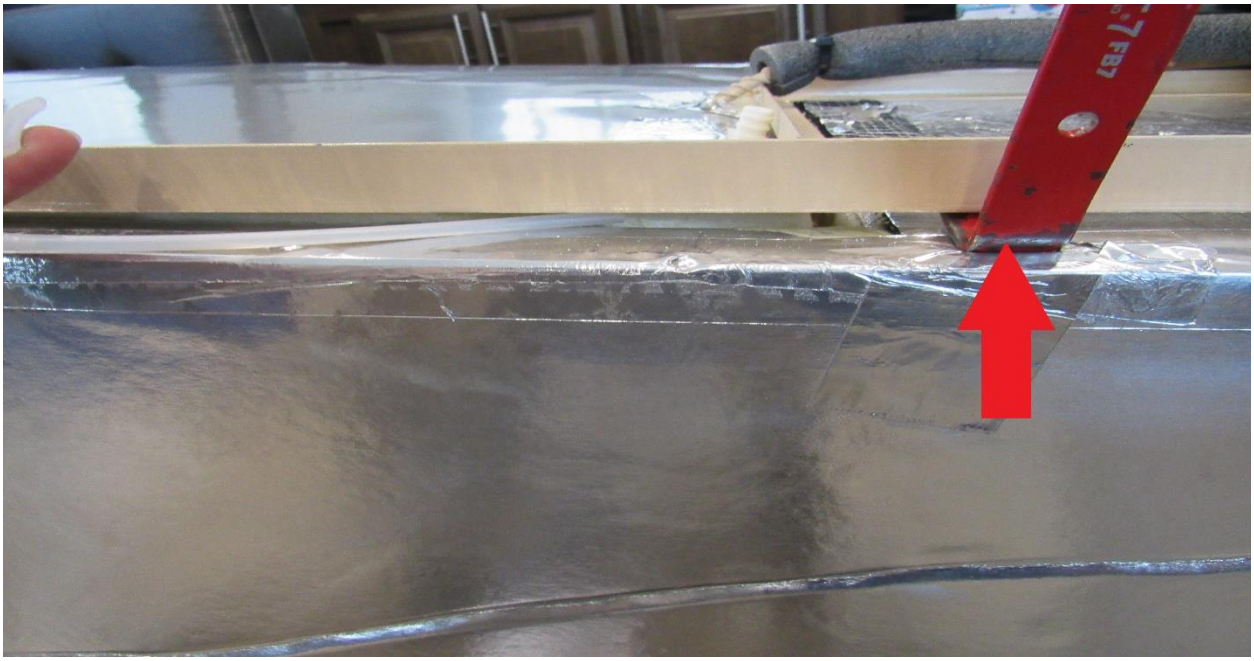


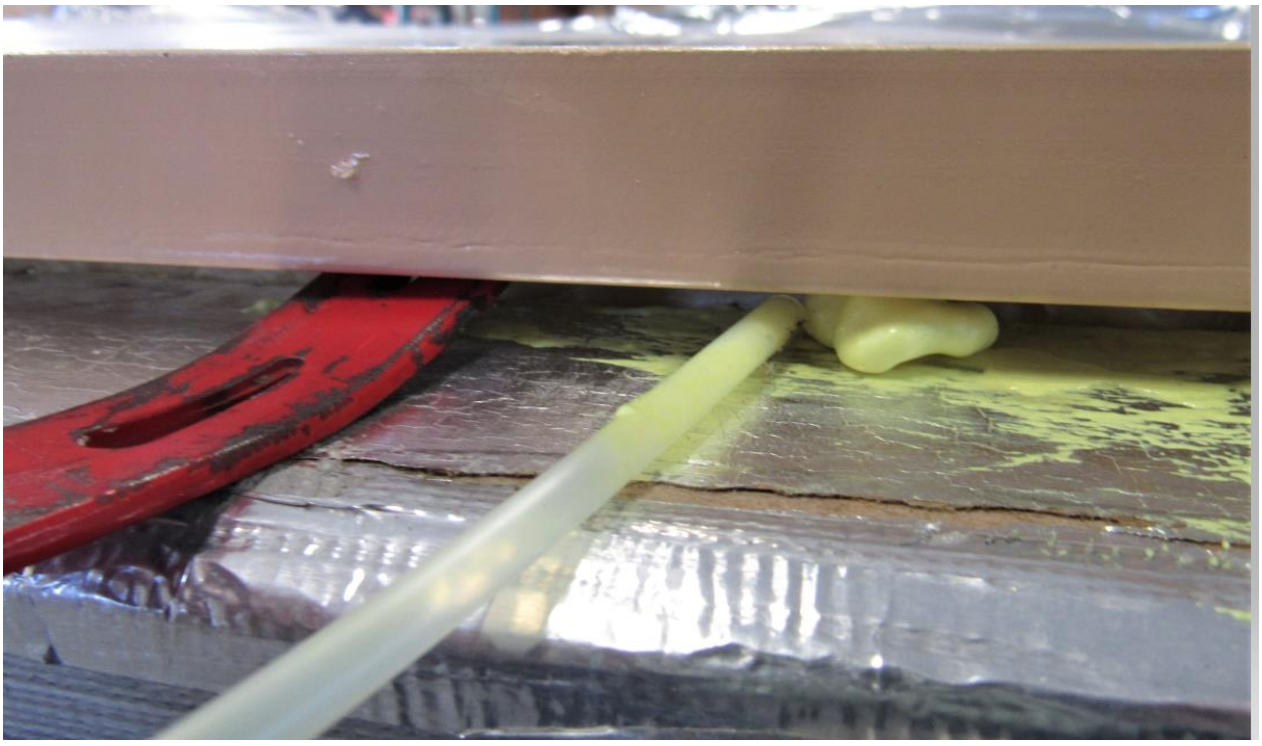
Set the unit back down on its face and remove the top mounting screw (RA).



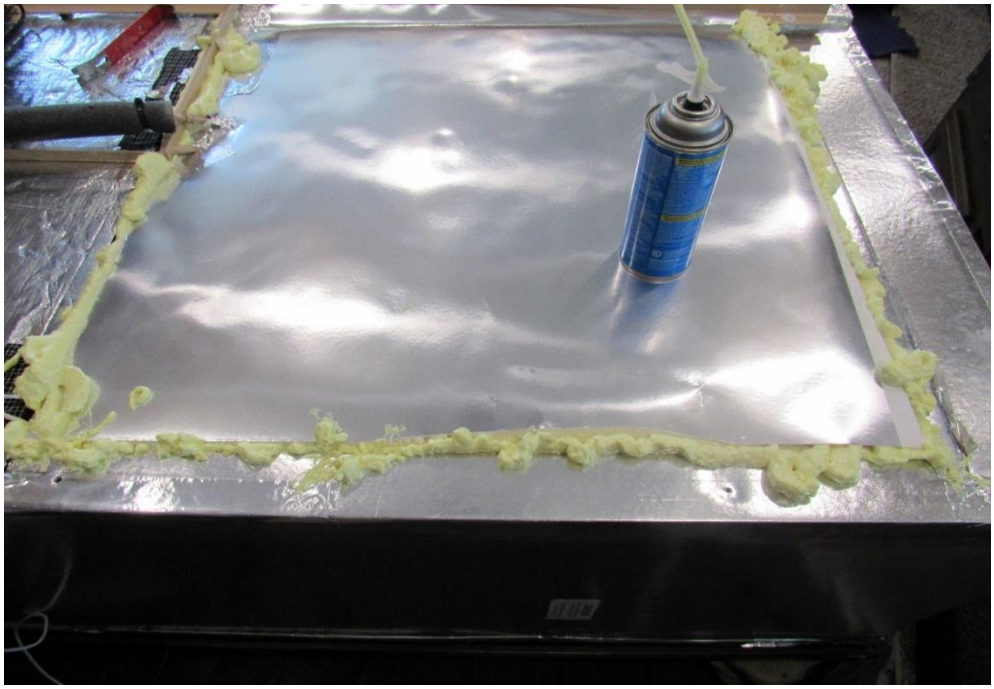
Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly.

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





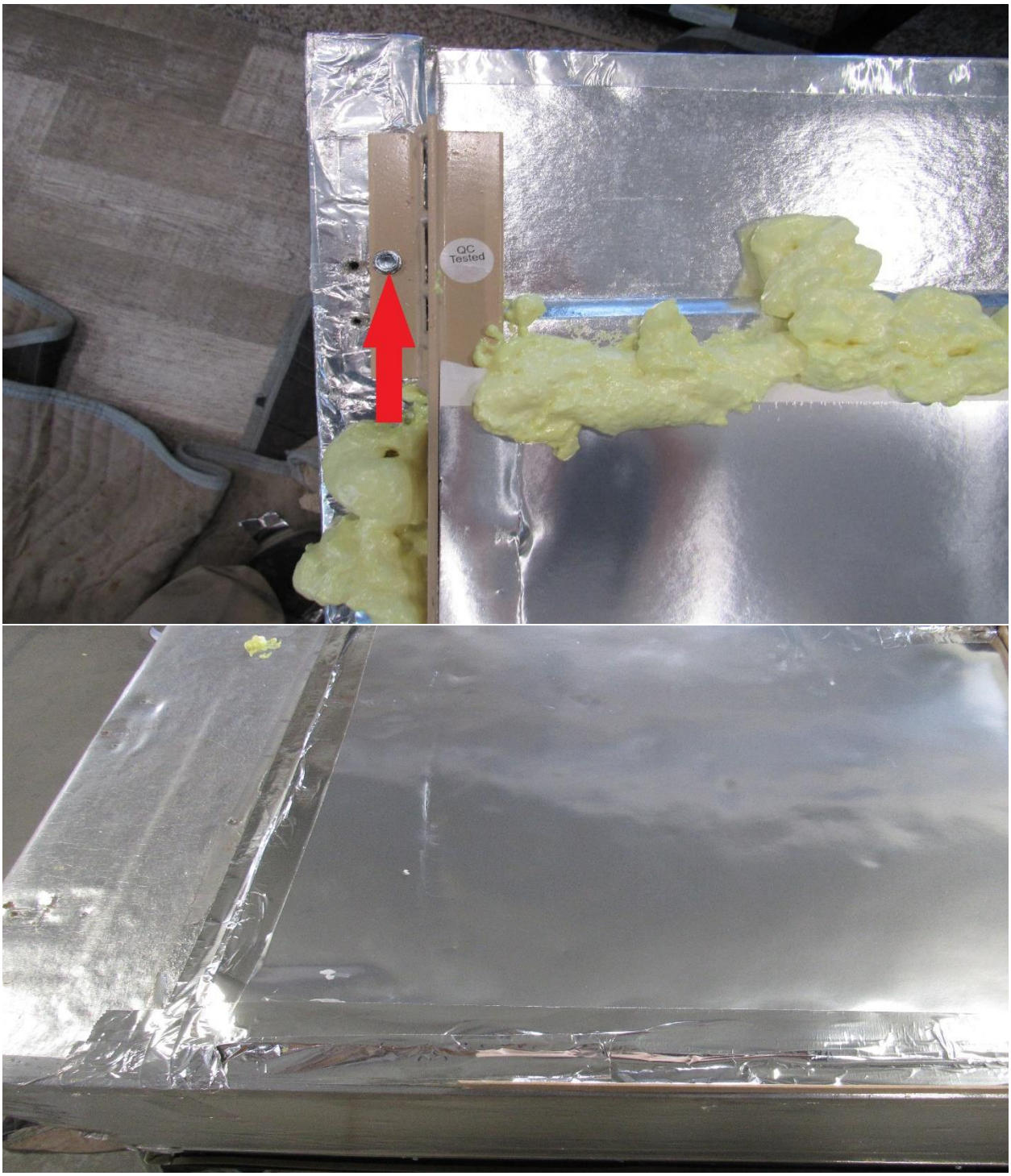
Make sure and fill any and all gaps around all four edges and corners. Even a small gap will let warm air be sucked inside when the fridge is cold thus making it run very inefficient.



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. This tape is for cosmetic looks only, so the tape is not there to create a seal.



We are now ready to wire the compressors and hook up the controller wires

(4) Red female wire connectors

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.

Red Wire: 12V + to power the controller

Black Wire: 12V – to power the controller

Purple Wire: Freezer sensor

Brown Wire: Freezer sensor

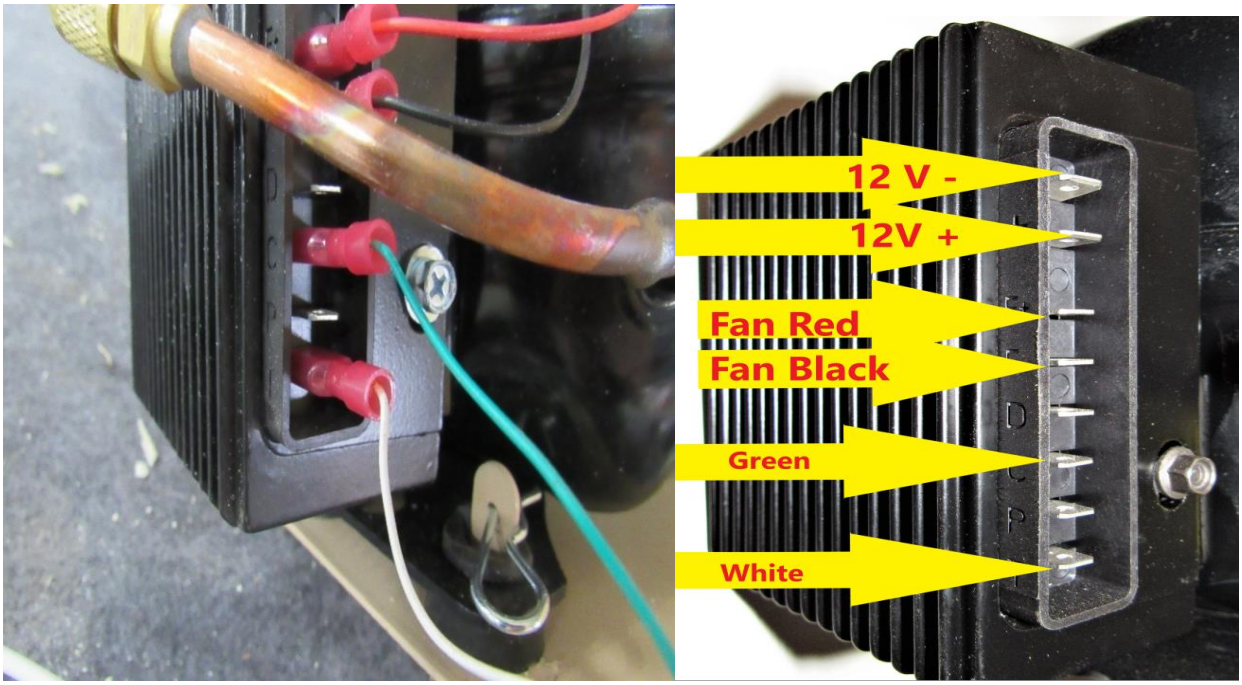
Green Wire: Fridge (Small) compressor

White Wire: Fridge (Small) compressor

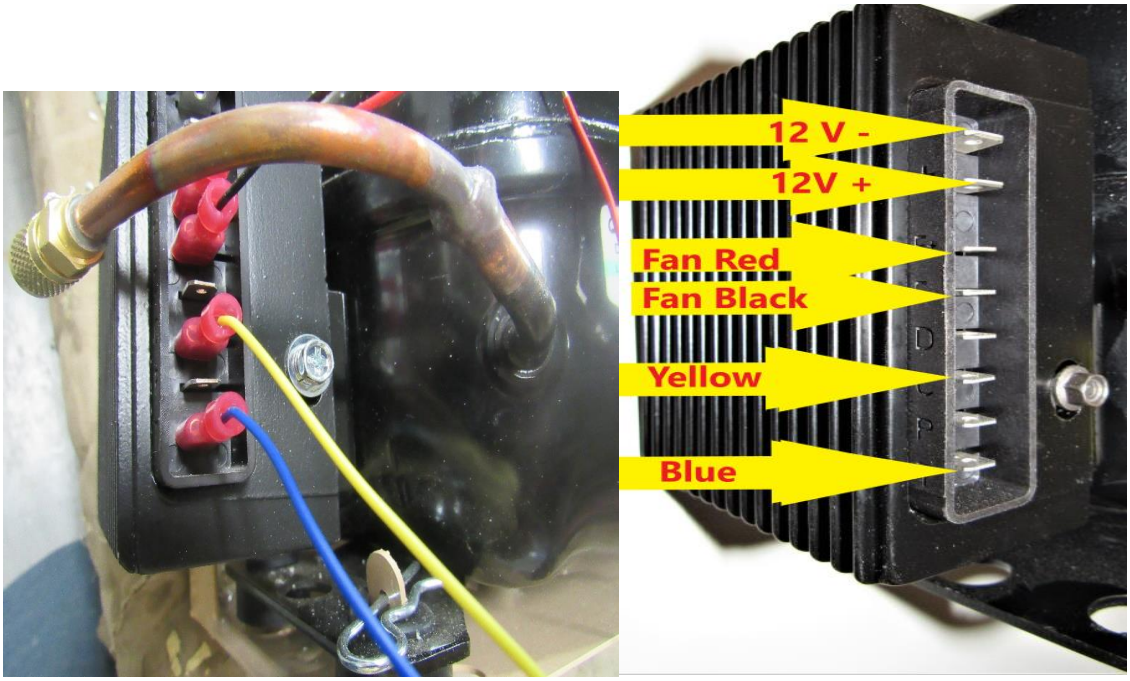
Blue Wire: Freezer (Large) compressor

Yellow Wire: Freezer (Large) compressor

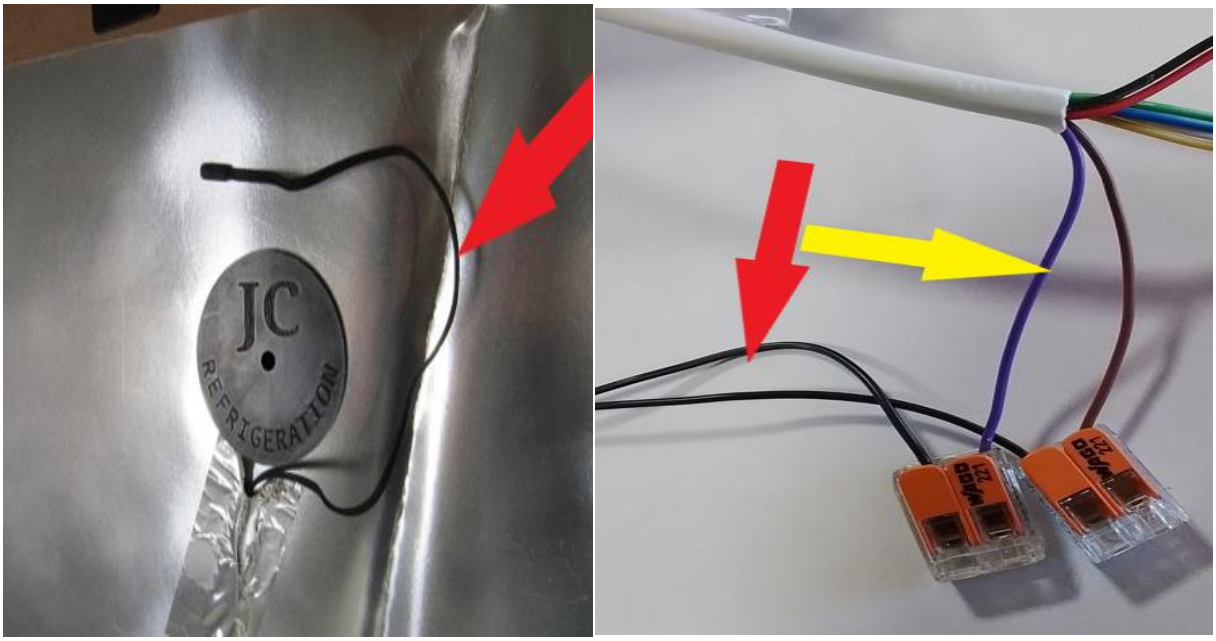
Step #2: Take the white and green wire and crimp a red female connector onto the ends and plug it into the bottom and 3rd up spade on the side of the small compressor.



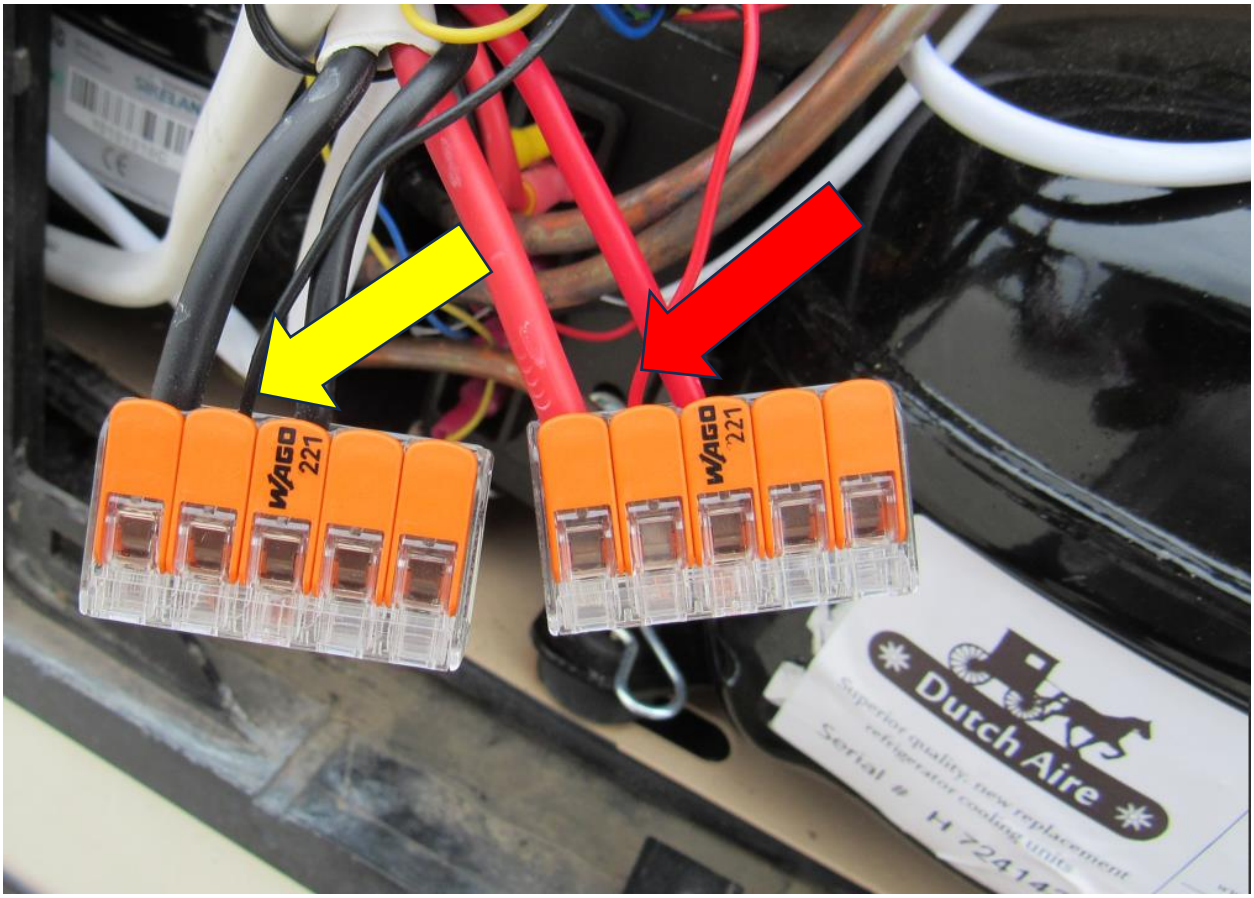
Step #3: Take the blue and yellow wire and crimp red female connectors onto the end and plug it into the bottom and 3rd up spade on the side of the large compressor.



Step #4: Follow the freezer temp sensor wire **(RA)** and connect to the purple and brown wire from the controller (YA) by inserting it into the wago connector from the freezer temp sensor. (Color of Wago may vary)



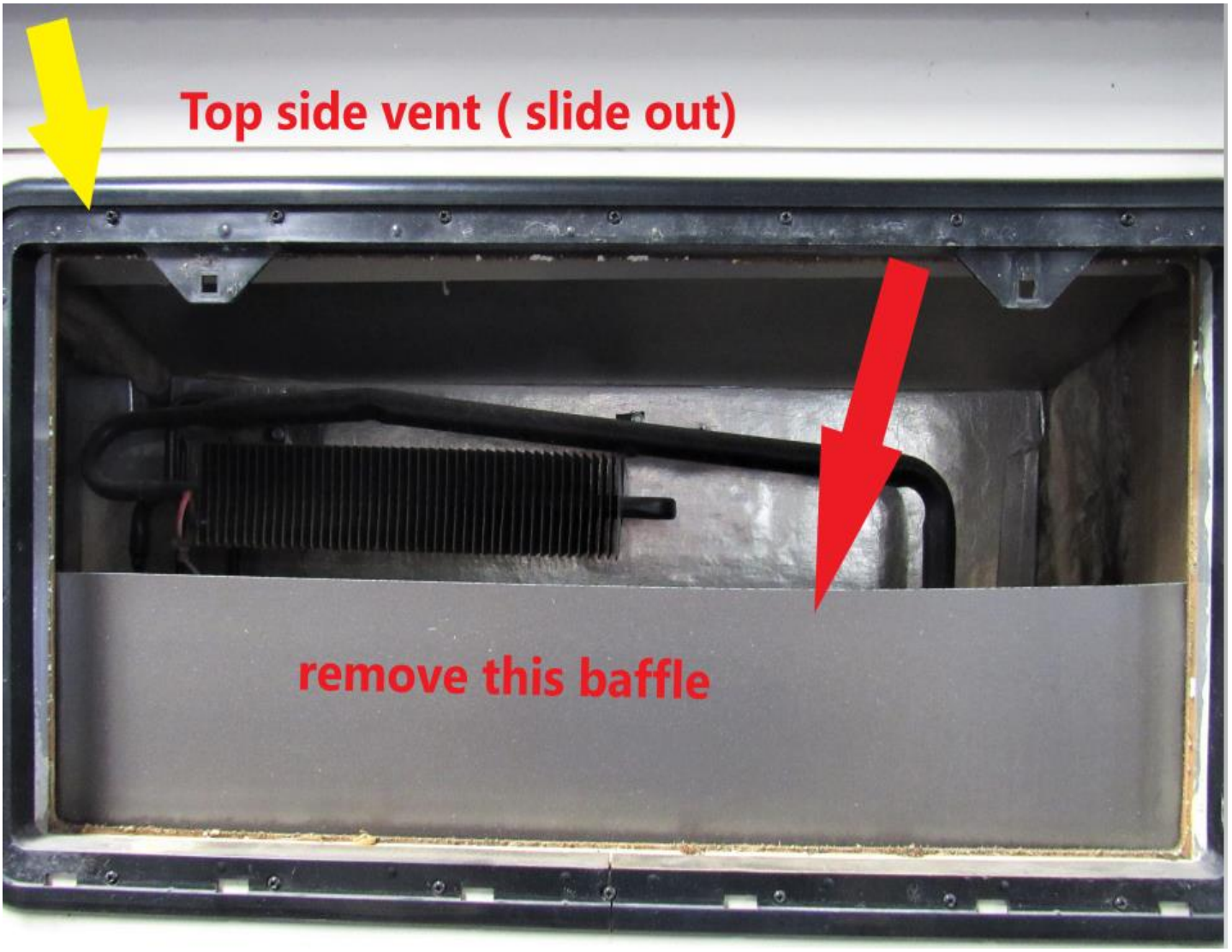
Step #5: Take the red wire from the controller and insert it into the wago connector from the compressor's splitter harness. (RA) Make sure that you insert it into the Wago with the red power wires for the compressors. Repeat this process with the black wire and make sure that it is inserted into the Wago connector with the black power wires from the compressor. (YA) (Color of wago may vary)



You can now zip tie all the wires together to clean it up and then the fridge can be stood up to get ready to insert into the cavity. Here is a good time to run the new 10ga wire to the battery as needed. We do not show this as the floor lay out the procedure needed will vary a lot from coach to coach. But the ending result should be a new 10ga wire from your coach battery to the fridge with a 30A breaker/fuse located at the battery to protect this wire

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.



Slide the refrigerator back into the cabinet. Fasten the mounting screws on the bottom using the same screws you took out earlier.



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

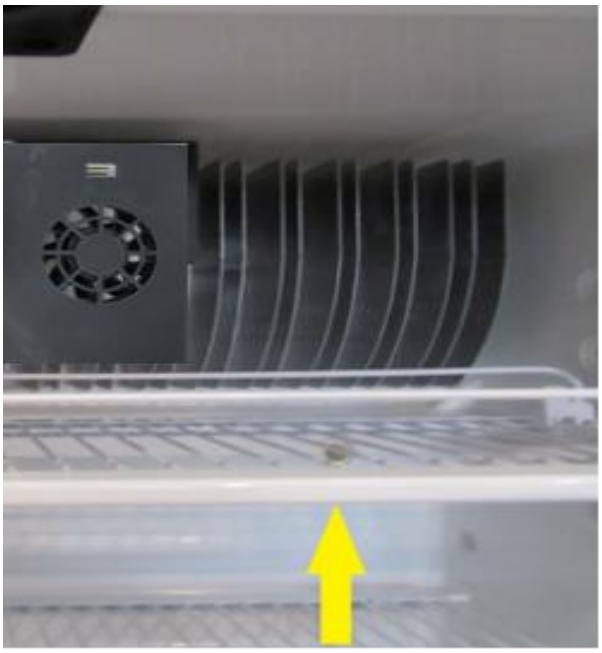


Fasten the two mounting screws back into place (RA).

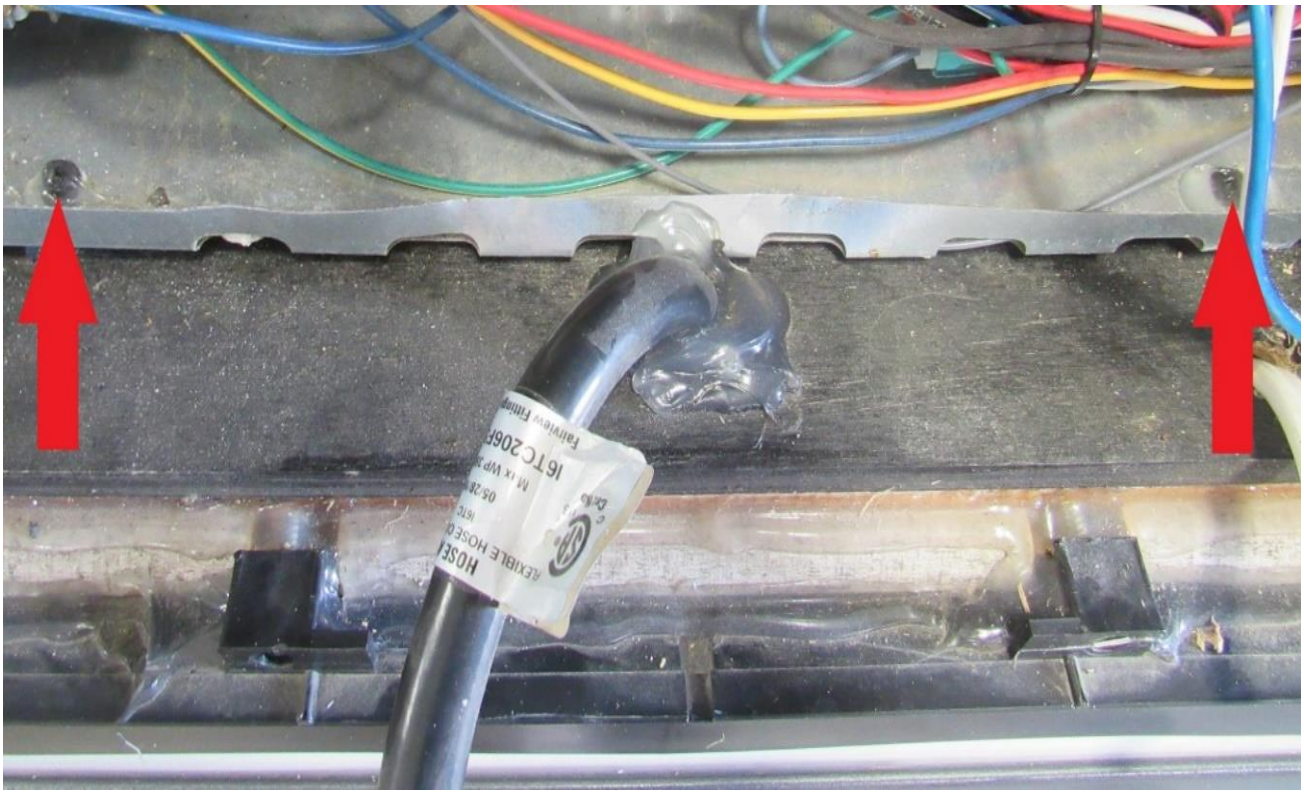


Finish up on the inside by clipping the controller onto the fins close to center left/right and sliding the defrost tray back into place (YA)

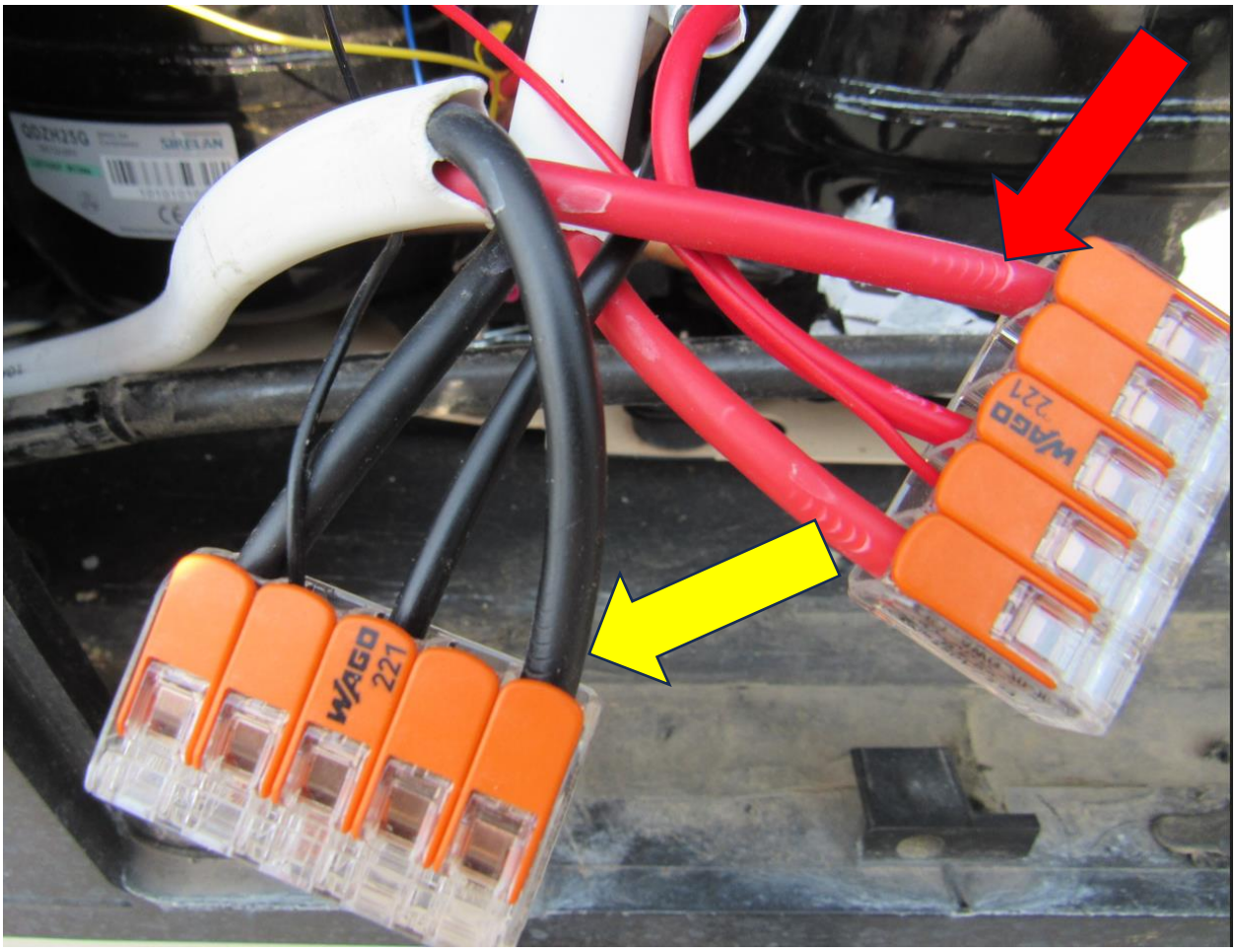




Fasten the mounting screws back into place using the same screws you took out earlier (RA). Reseal holes with silicone if you wish to do so.



You are now ready to wire the splitter power harness from the compressors to your 12VDC. The wires marked are the new 12VDC wire you ran from the battery, if a new 12VDC wire was not run then it's the wire you're using to bring power to the unit. (RA) is the 12VDC positive (YA) is the negative ground



Manual for Universal Hvac Dual Controller

This controller eliminates all of your existing 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.

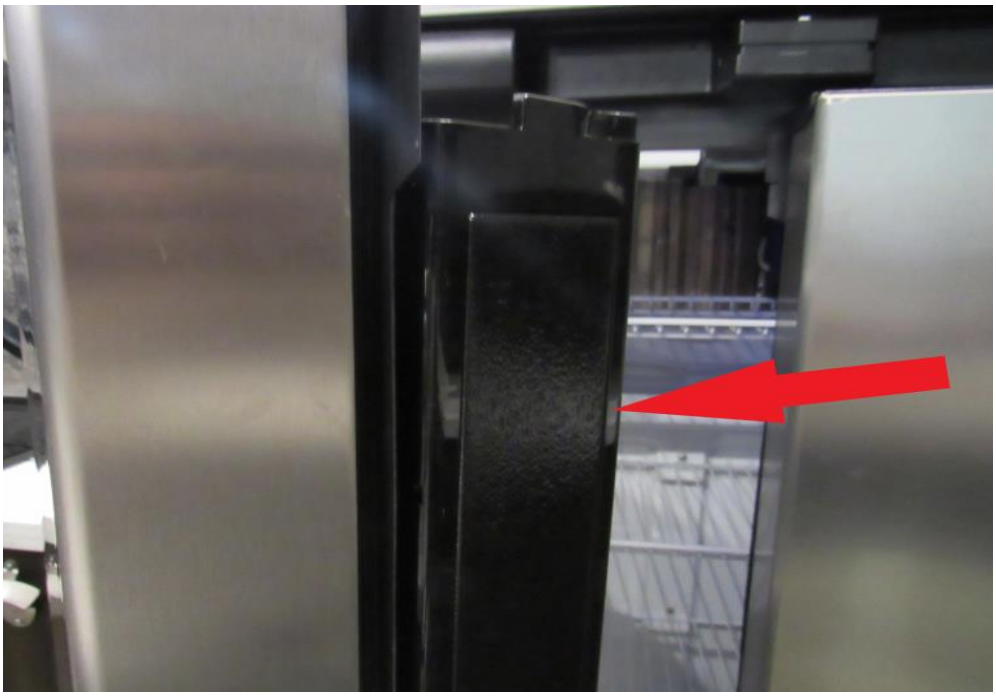


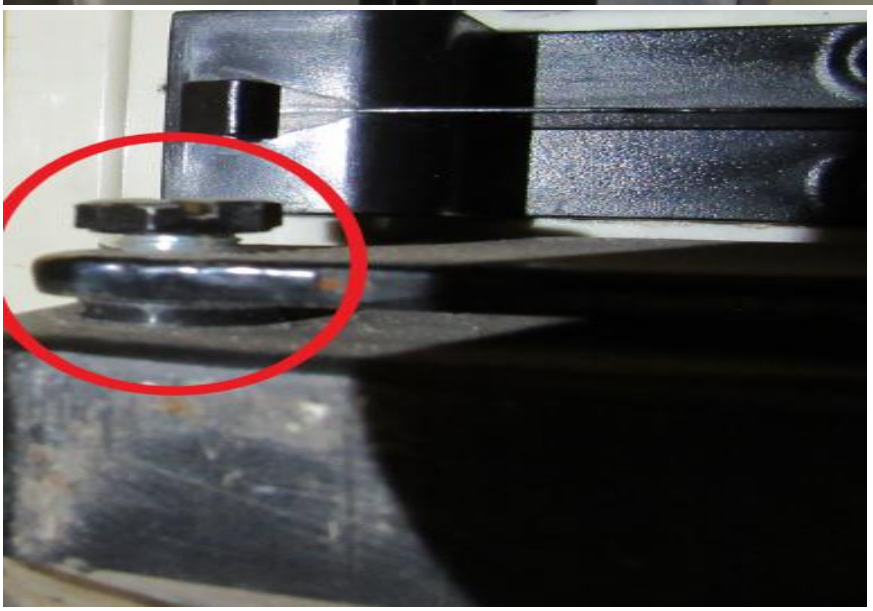
Operating the Controller:



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 adjusted to your desired temp, food zone is 0F to 10F Freezer/38F to 41F fridge, and if you are using another source to check your inside temp do not be alarmed if yours and this new controller are not always the same. 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.





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)



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.

This will show you how to get into the settings etc but we highly discourage to get into these because if you change one you might change the settings of another if not careful

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

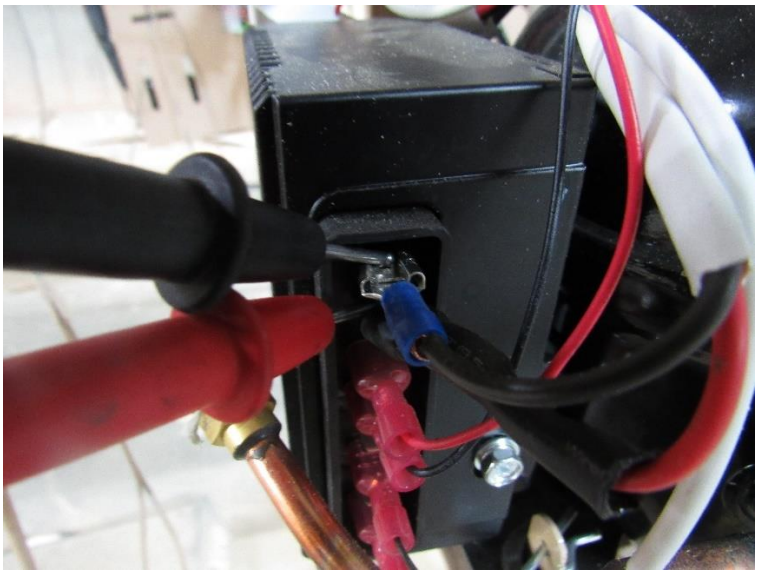


Same with freezer, clip underneath bottom shelves center side to side but have this one more towards the back of the freezer.



Troubleshooting

If compressors start but shut back down after about 15 seconds or so, check your voltage at the compressors at the time it tries to start. Compressors have a built-in low voltage shut off set at 10.4V. On startup is when the compressors draw the most amperage. If voltage drops below 10.4V the compressors will shut back down. Keep in mind, the higher the voltage the lower the amperage, or vice versa. So, in order to have compressors running their most efficient, the voltage needs to stay above 12V while running. So, make sure that your batteries are not too low.



***See next page on how to wire the compressors directly in case you have an issue and want to keep the fridge cold until you get in contact with us.**

HVAC Direct Wire

All you have to do to direct wire the compressor is unhook the green/white or blue/yellow from the compressor you are wanting to run direct and make your own short wire as seen below and plug this jumper in where the other 2 were and if your voltage is good this will make the compressor run full time

