Dometic SXS 1292 1282 1492 7732 7832 7130 7030

HVAC DC 12V with universal controller



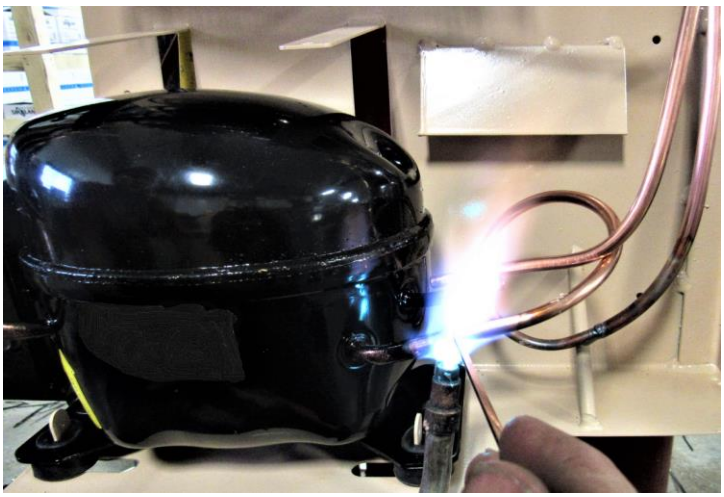
Jr & Jeremy Lambright

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 wrench putty knife knife caulk gun zip ties Channel Lock





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 installation 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.

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 will have the cooling unit, and parts needed to do the install (RA).





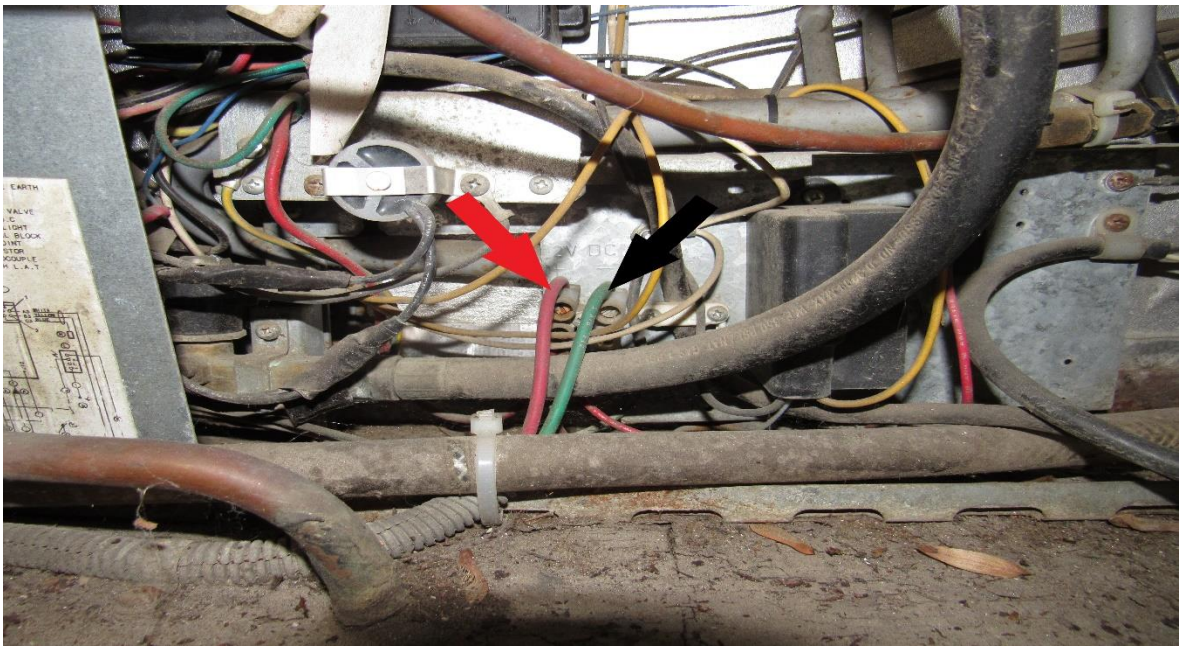
Cover up your floor with blankets and removing any door handles or smoke alarms that might hinder the exit of your refrigerator from your cabinet. Turn off the water pump (if you have an ice maker in your fridge) and the refrigerator control panel.

WARNING:

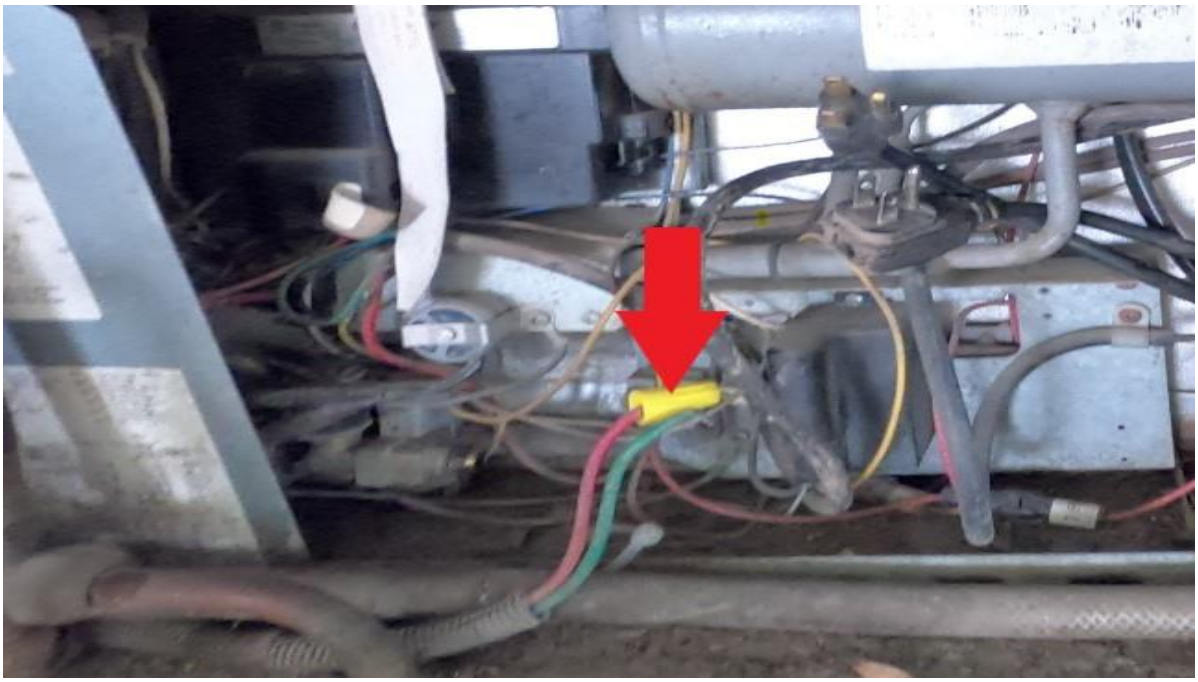
Make sure to turn off LP gas at the tank before starting the install.



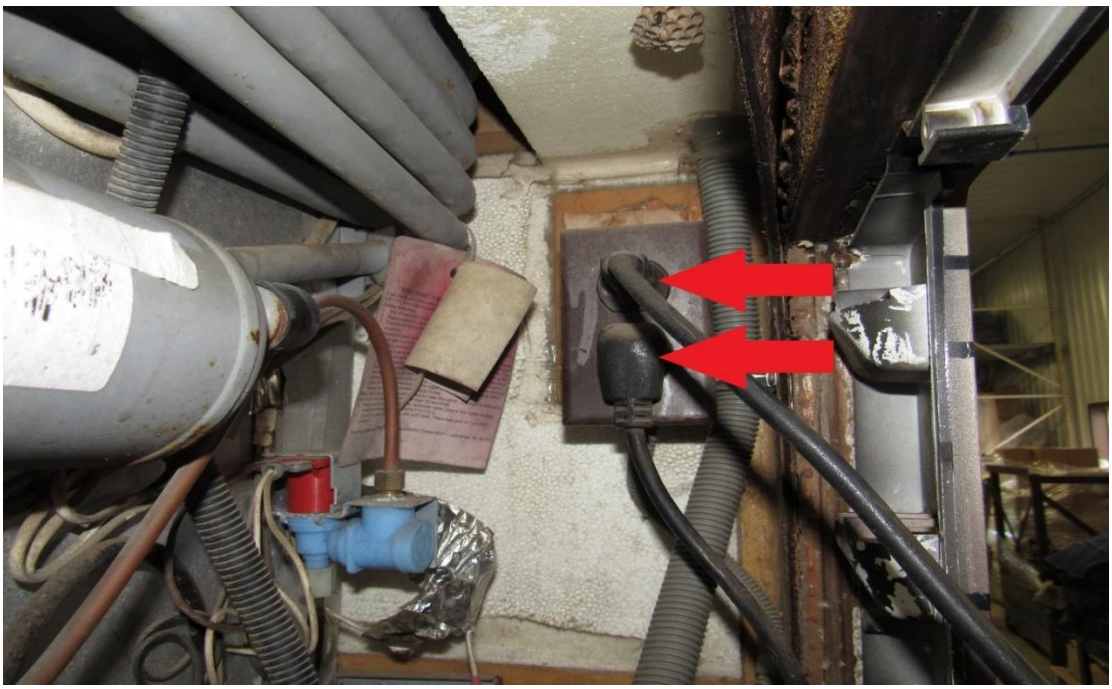
Locate your refrigerator side vent on the outside of your RV. Using a flathead screwsdriver, loosen the 12v wires (RA). Remember which wire is positive



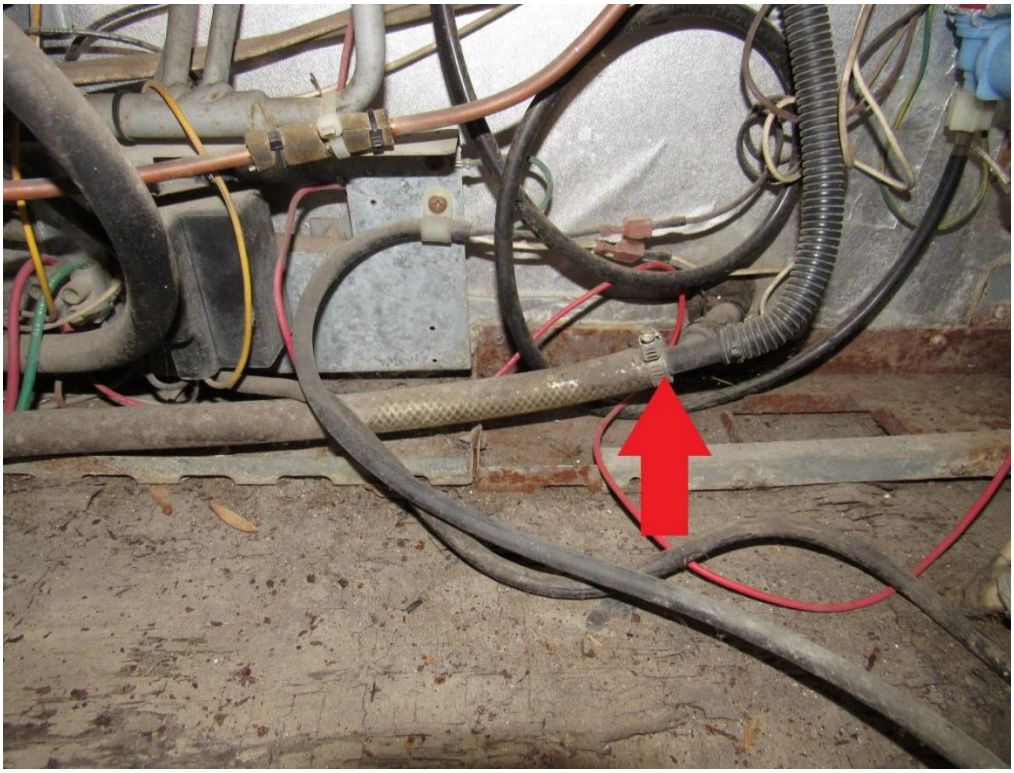
The color of the wires will vary but the 12V positive wire (RA)is always on the left and the 12v negative wire is on the right. Wires are not insulated so you will need to put a piece of tape or a twist cap on the 12V positive side (RA).



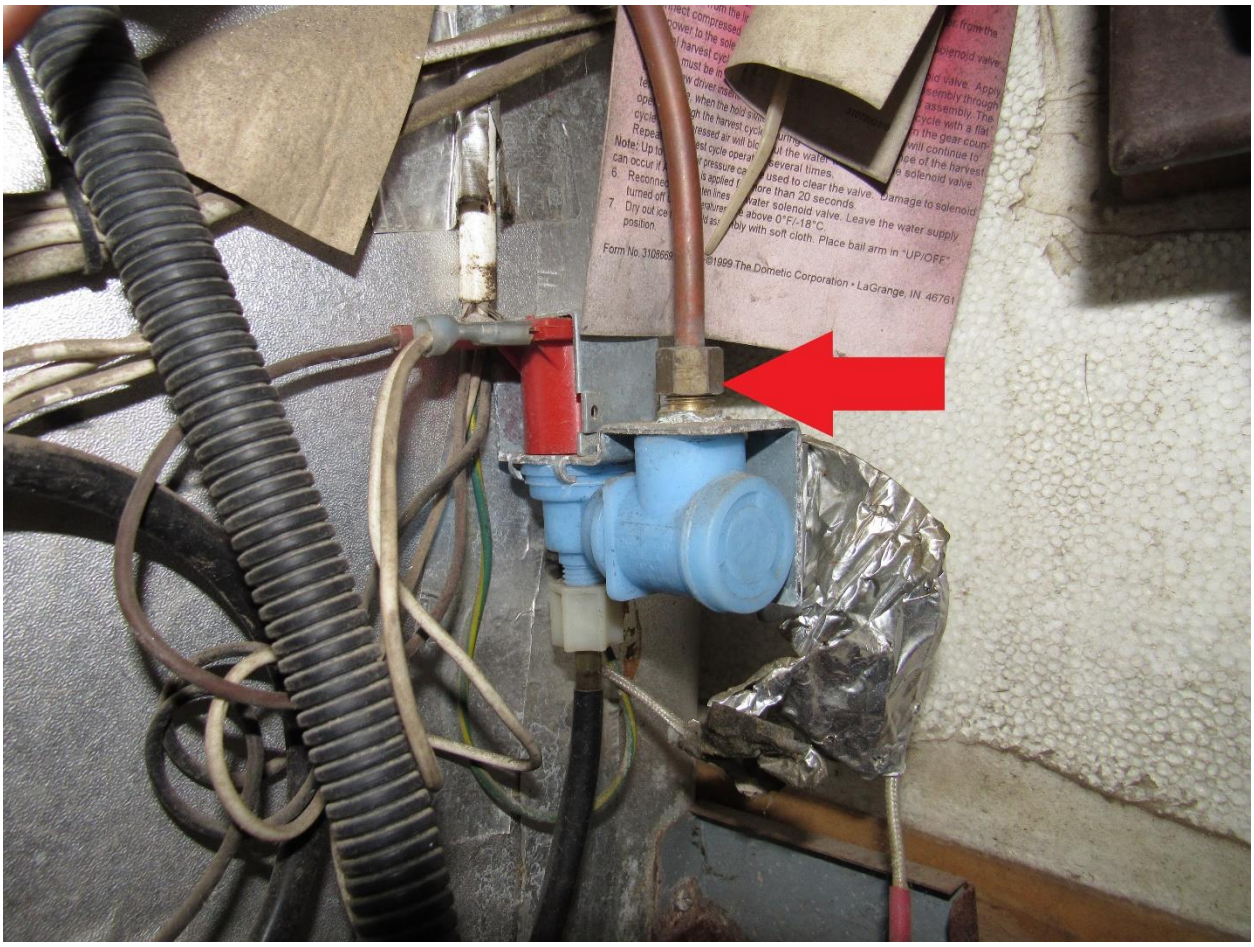
Remove the 120v plugs from the wall outlet (RA). One of these is your icemaker 120V plug in so you will want to follow this back to the fridge and take pics of this hook up for later use



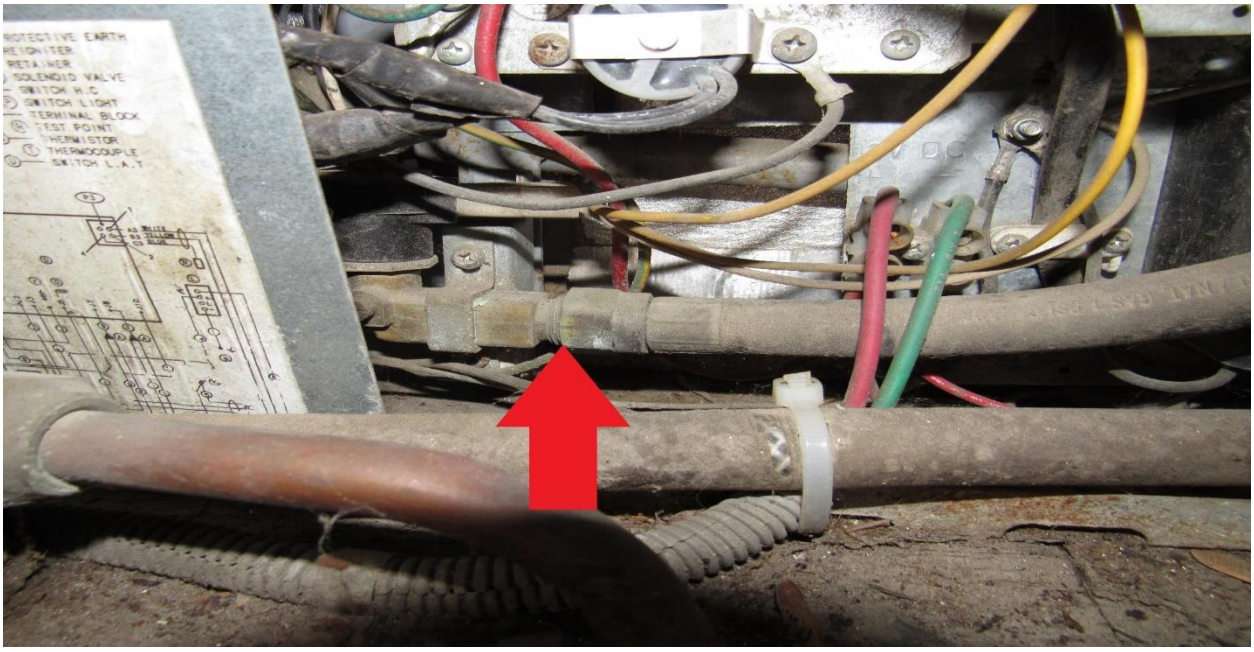
Remove defrost hose from the "T" (RA). Placement could vary.



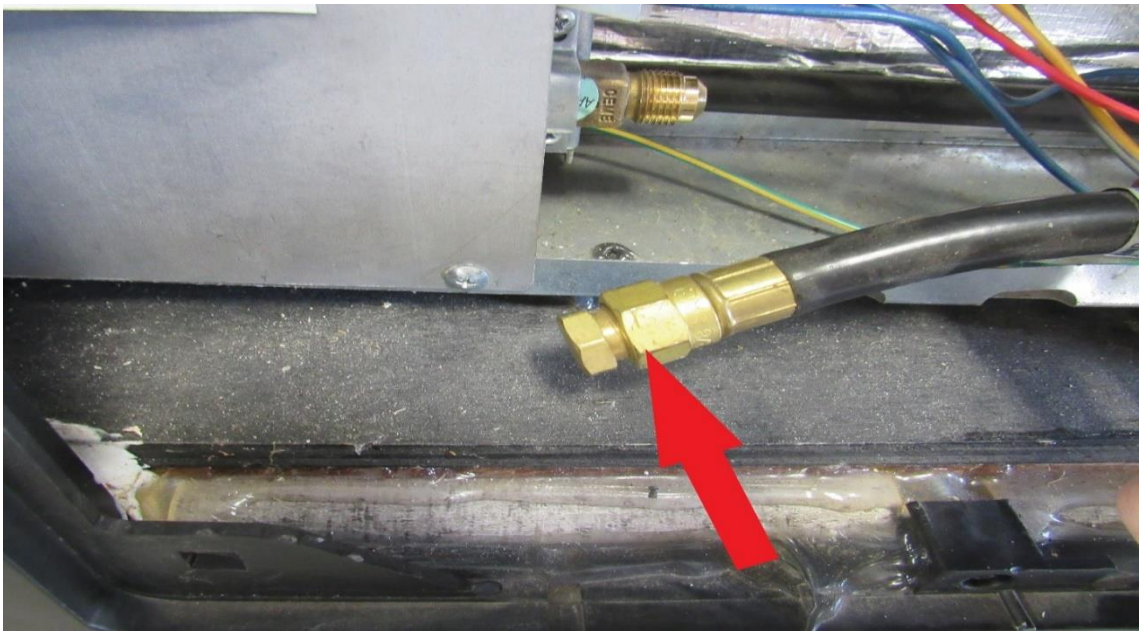
Turn water pump off, remove water supply line from the ice maker valve (RA).



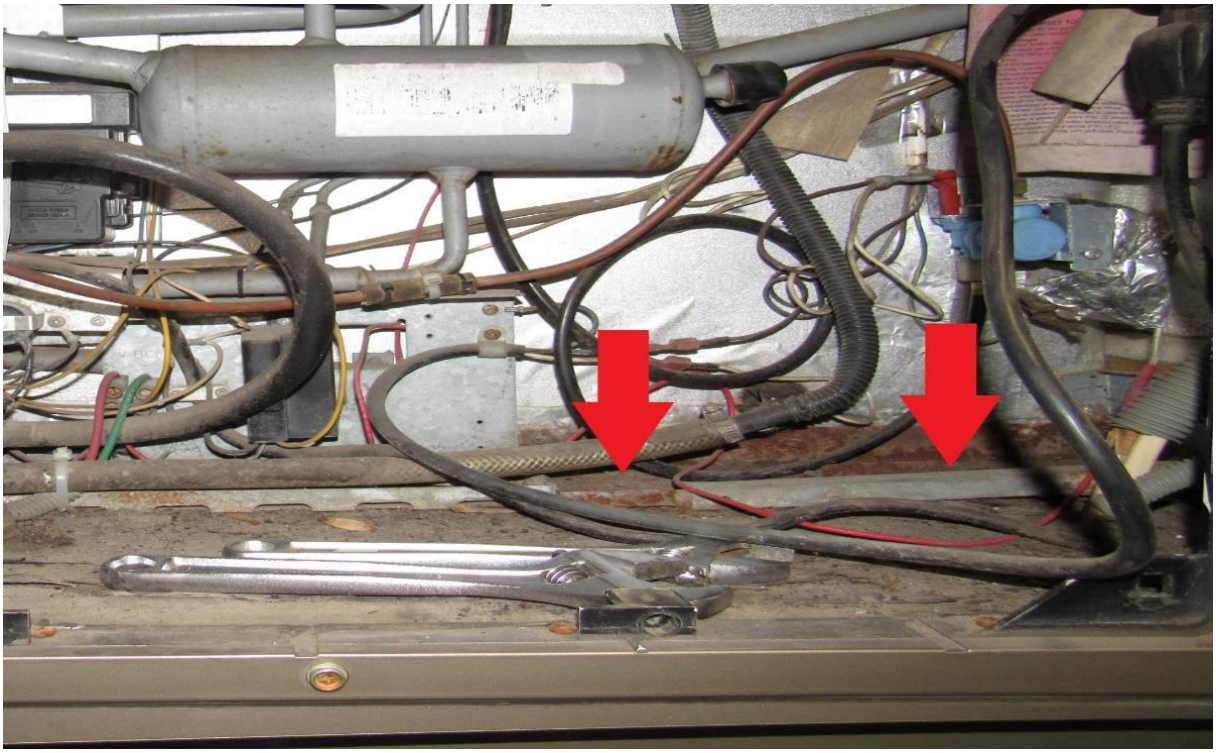
Make sure your LP gas off. Remove the LP gas line from the solenoid (RA).



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



Remove the mounting screws (RA). Placement and size screw can vary.



Remove top mounting screws (RA). It's a good idea to place all loose screws in a bin as you will need these later.



Remove two top mounting screws (RA).



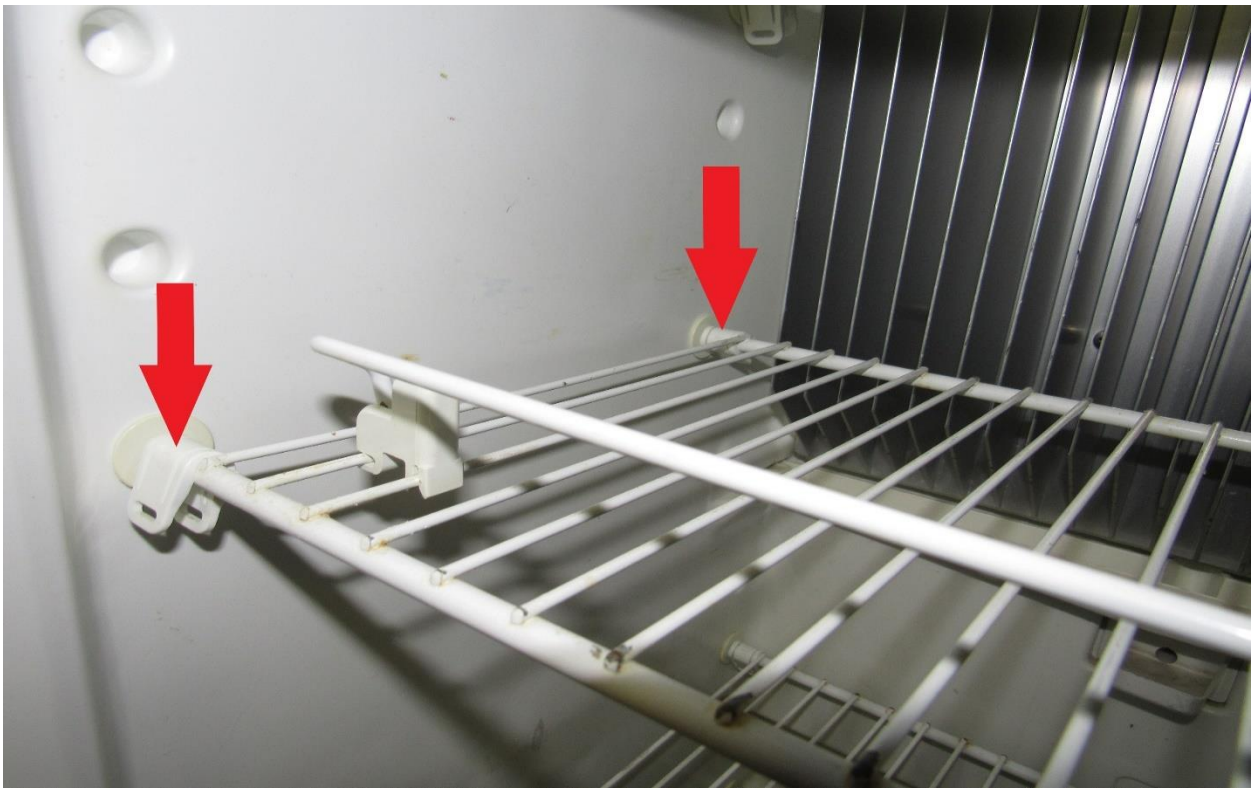
Secure the top control panel again with the two screws to hold in place (RA).



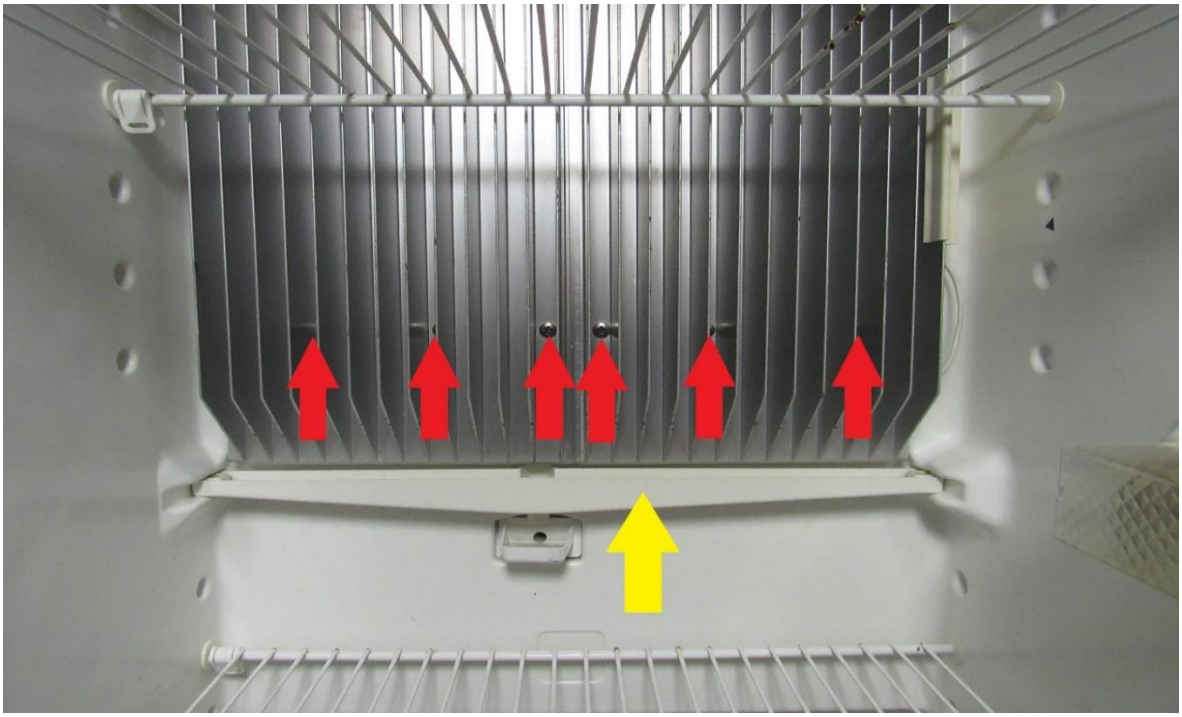
Remove the two bottom mounting screws (RA).



Unclip the shelve holders (RA) and remove shelf that's in front of fin.



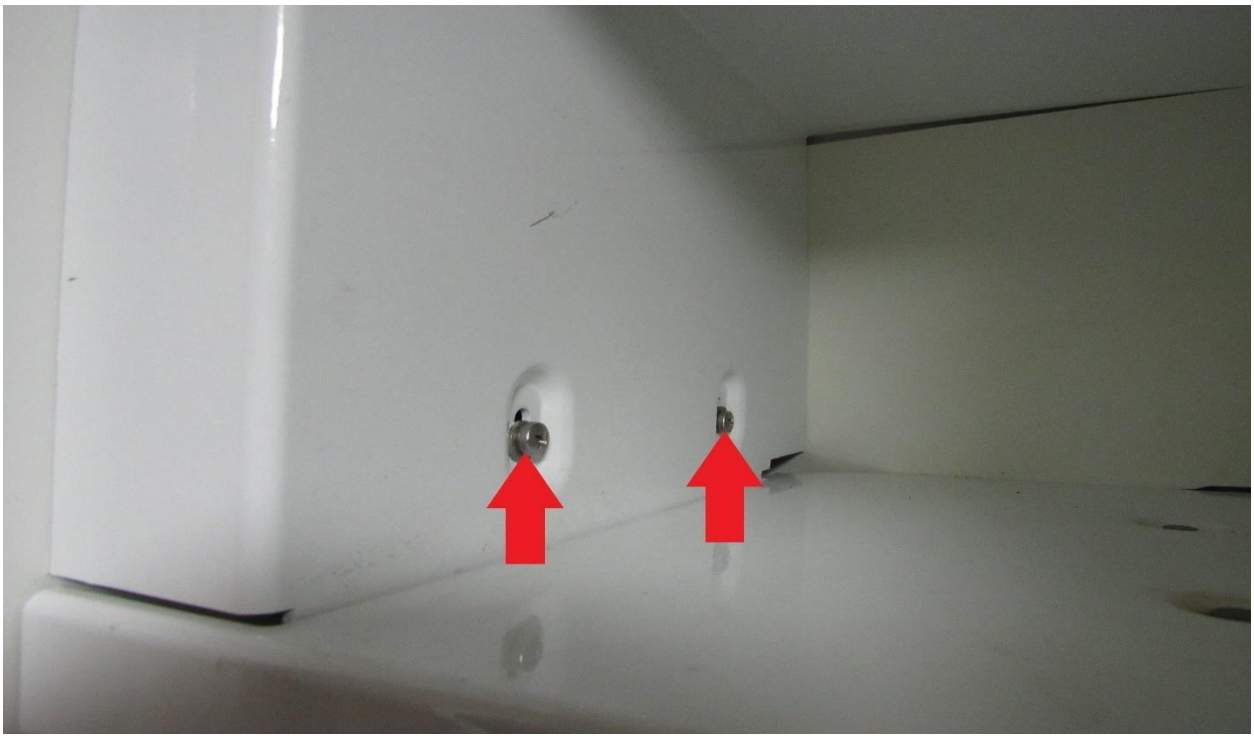
Remove the fin mounting screws (RA). Slide the defrost tray out (YA) and lay it aside until later.



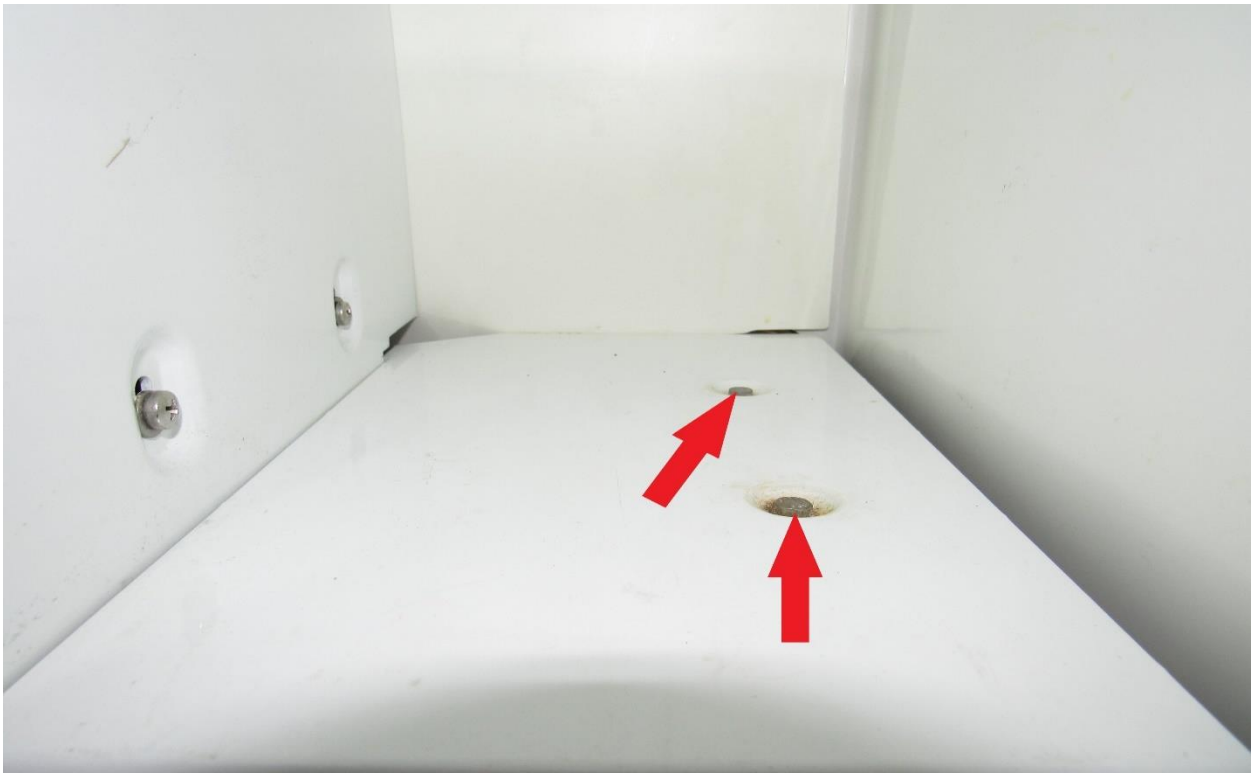
Remove the top plate mounting screws in freezer (RA).



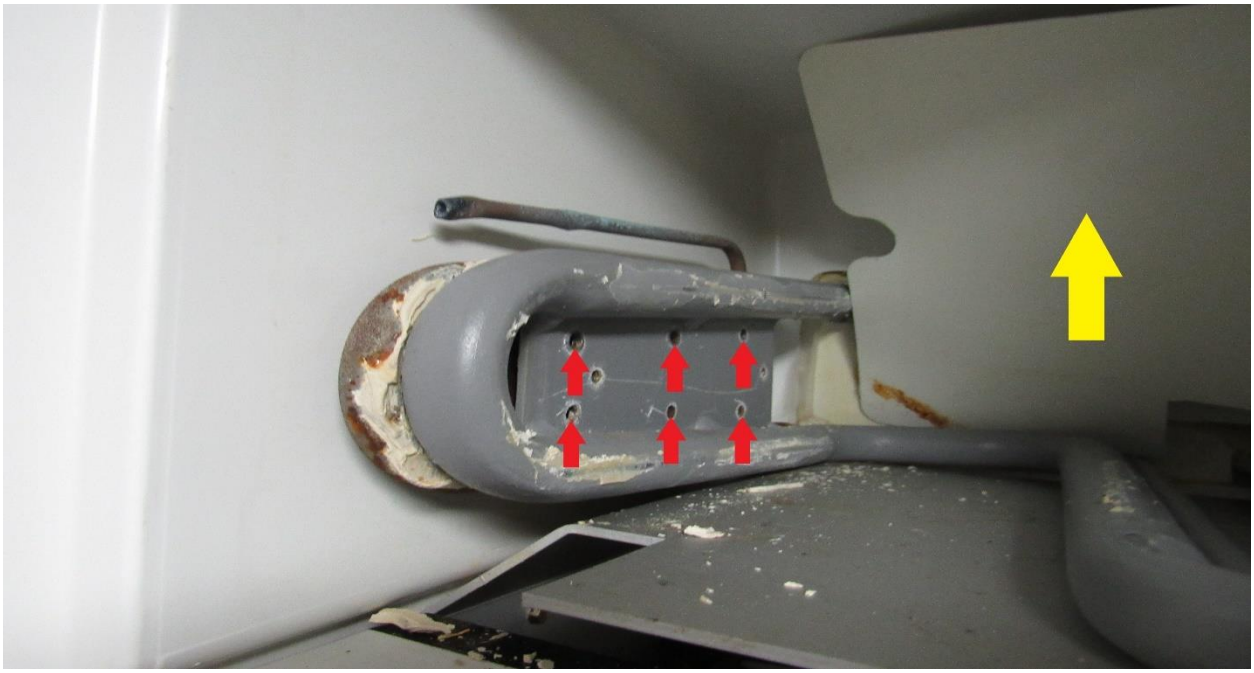
Remove the side plate mounting screws in freezer (RA).



Remove the two mounting bolts on bottom plate (5/16 socket) (RA).



Remove the six mounting screws on side plate (RA). Remove the plastic piece (YA) and lay it aside for later.

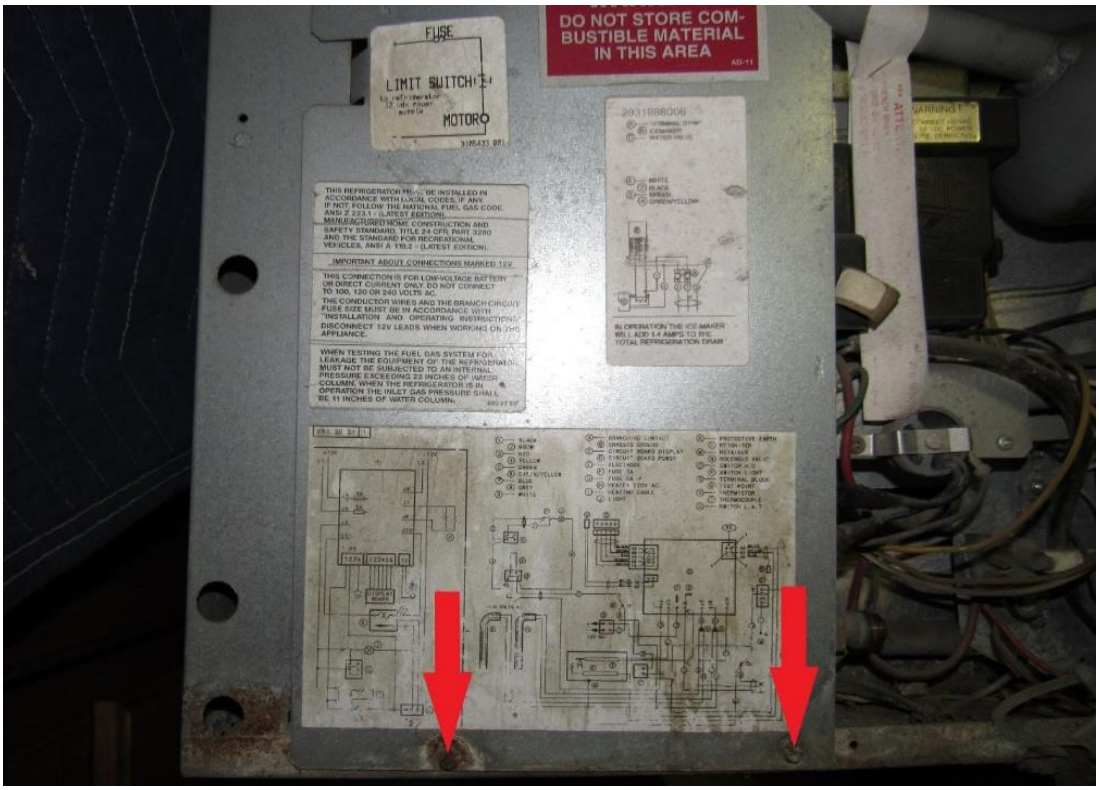


Remove door handles (RA). We do not show doors being taken off, but they can be taken off if this would be a better option for you.

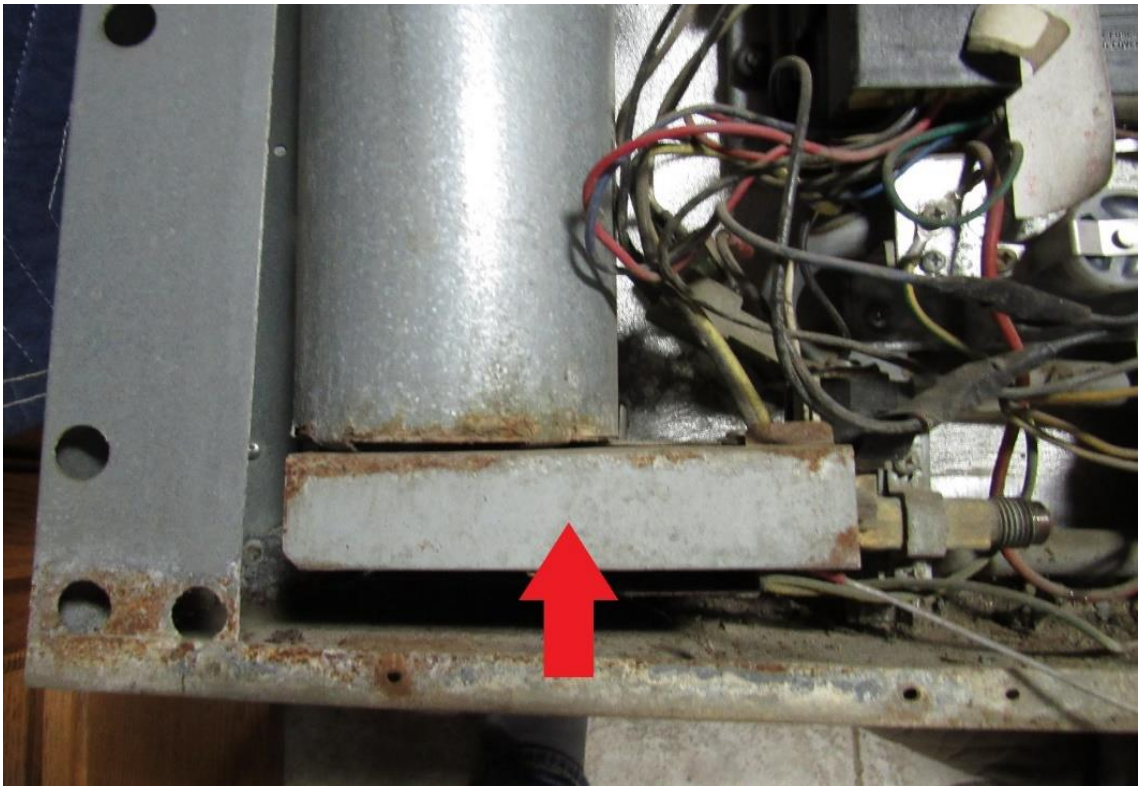


We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits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

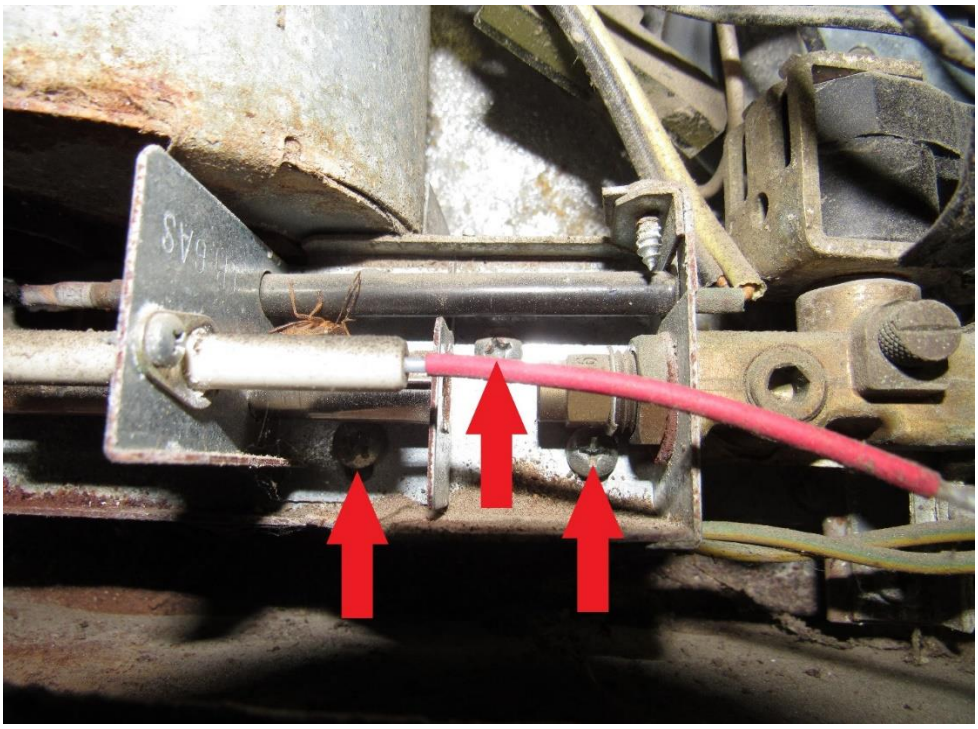
Remove burner plate mount screws (RA) and throw away.



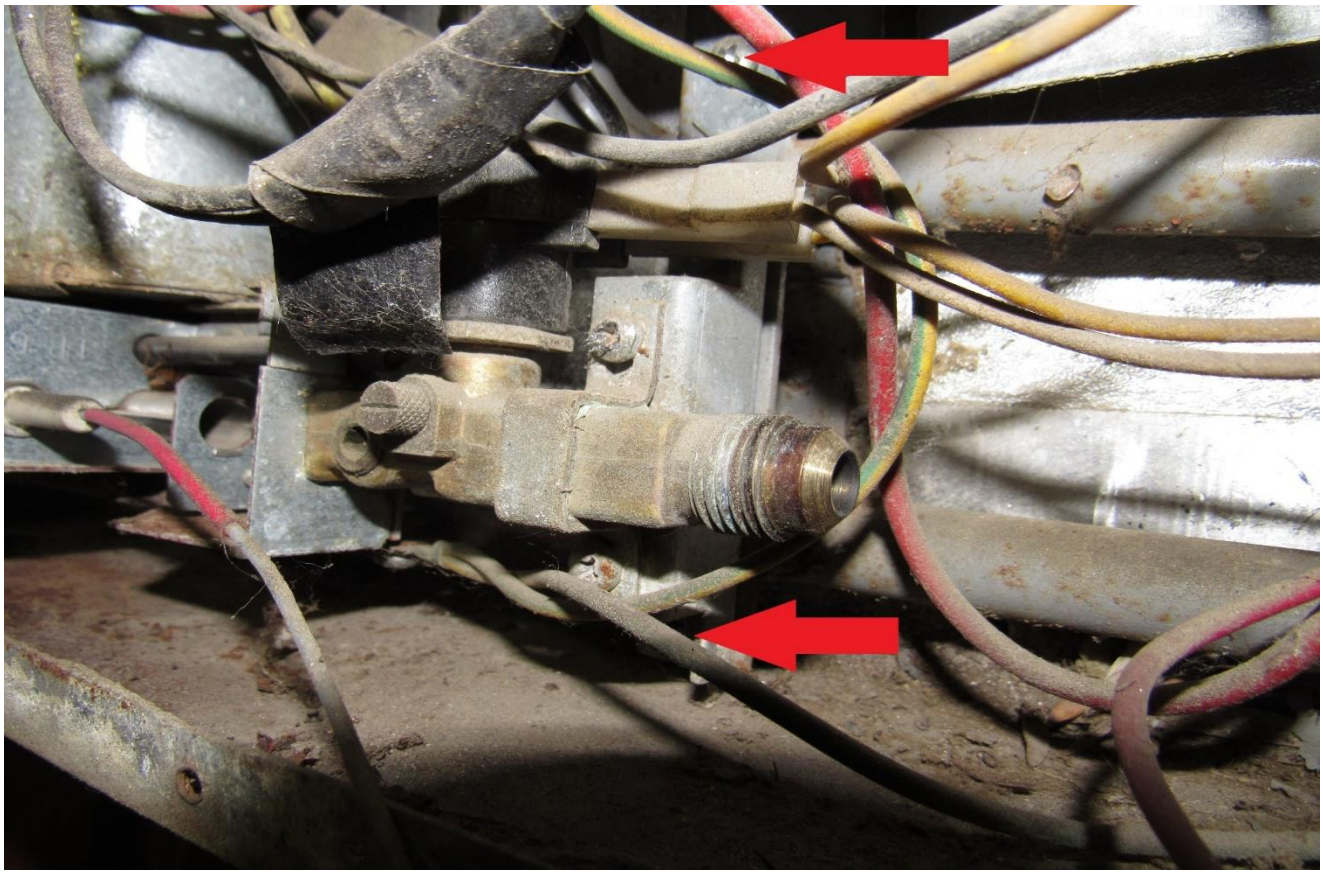
Remove burner cover (RA) and throw away.



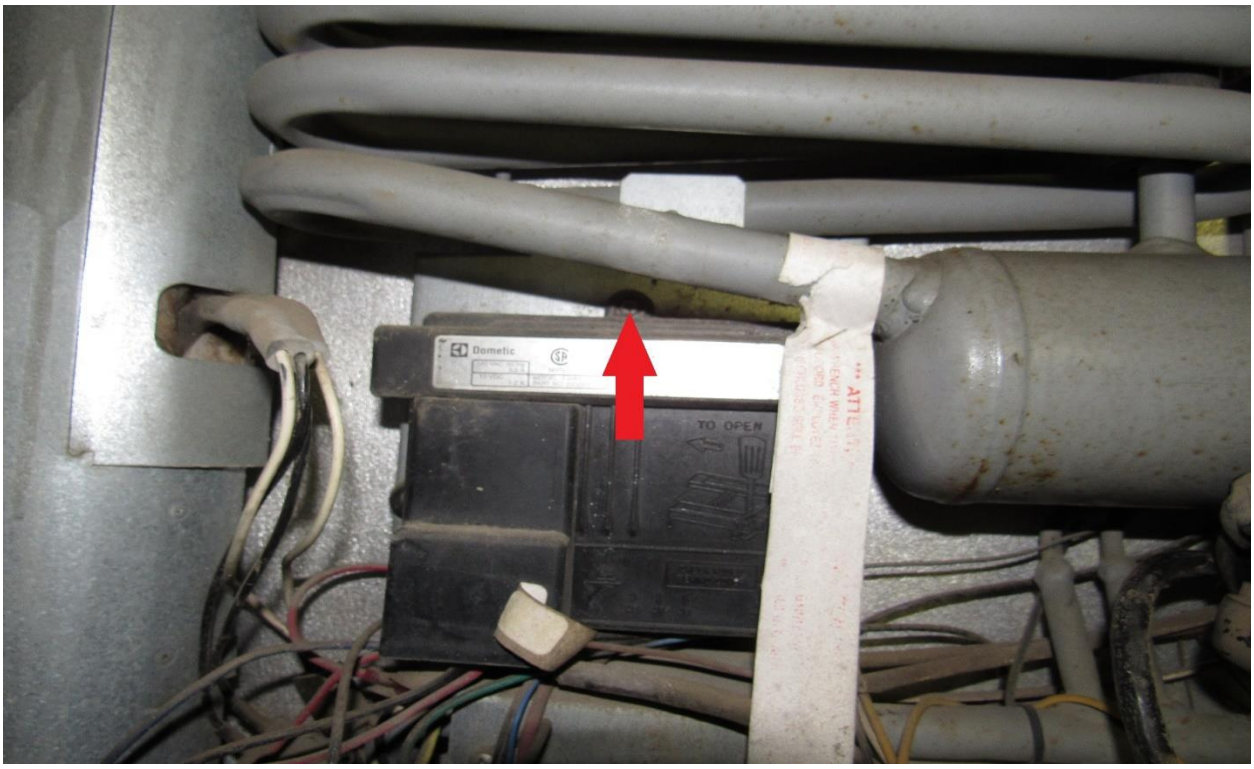
Remove the three burner mounting screws (RA).



Remove two LP bracket mounting screws (RA).

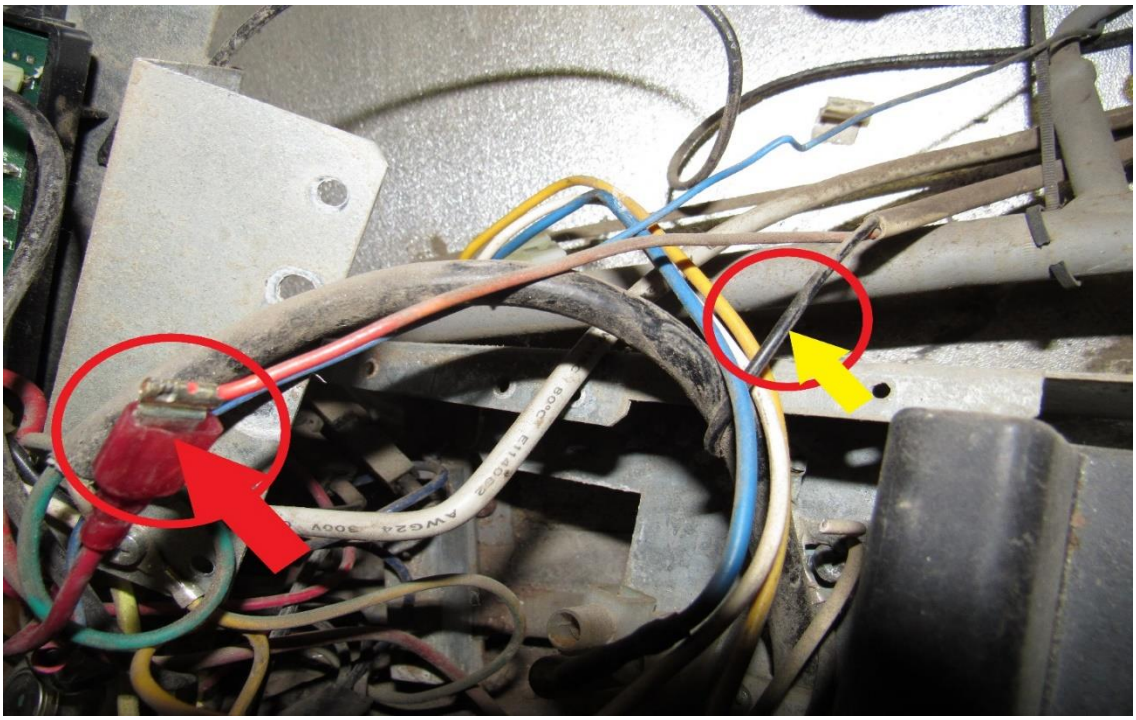


Remove board mounting screw (RA). This could vary some as Board styles vary.

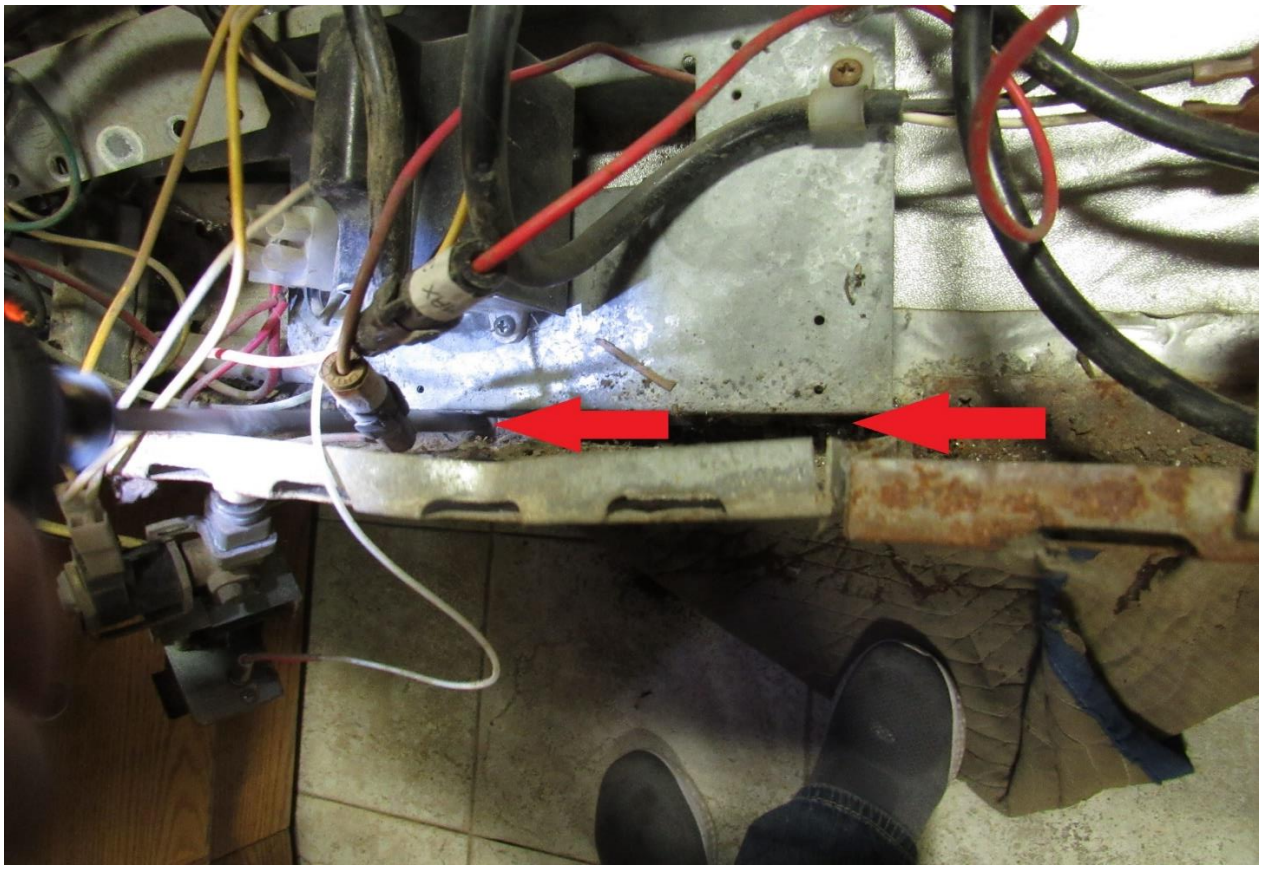


Remove all the wiring from the control board, none of these wires will be reused. The control board can be reused at this time as well.

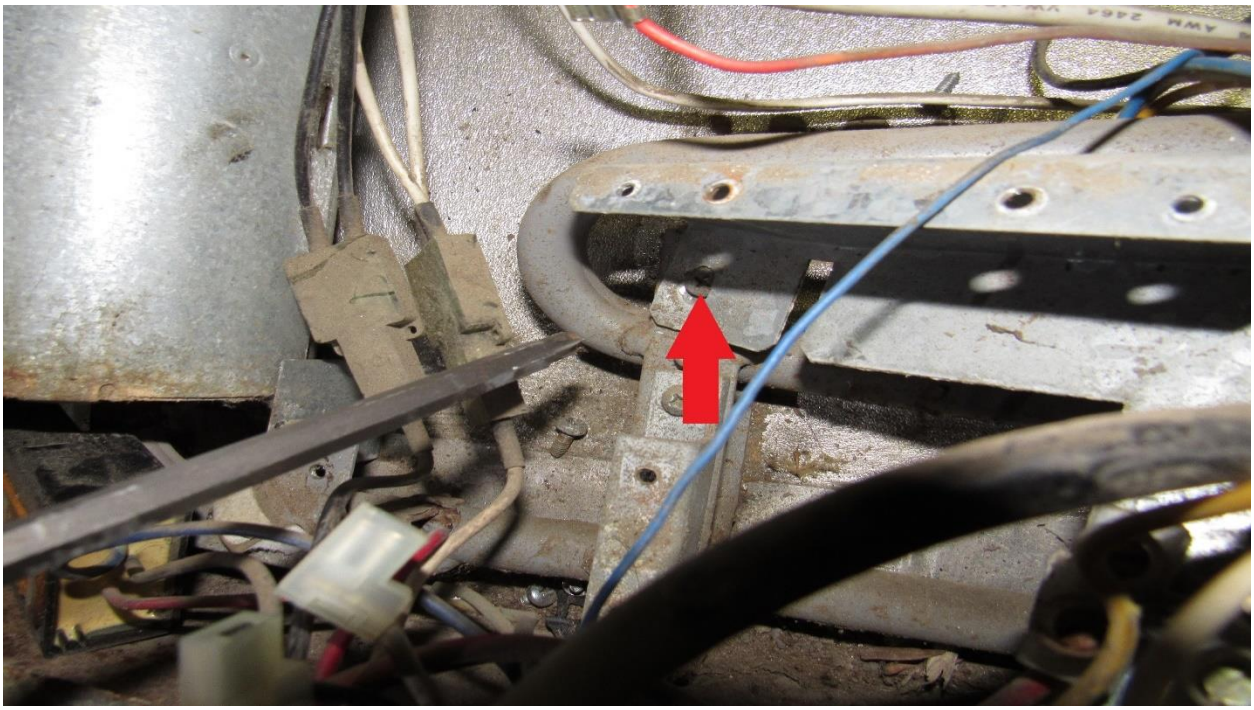
Disconnect red wire (RA) and cut the black ground wire (YA). This is your interior light wire, which will no longer be used



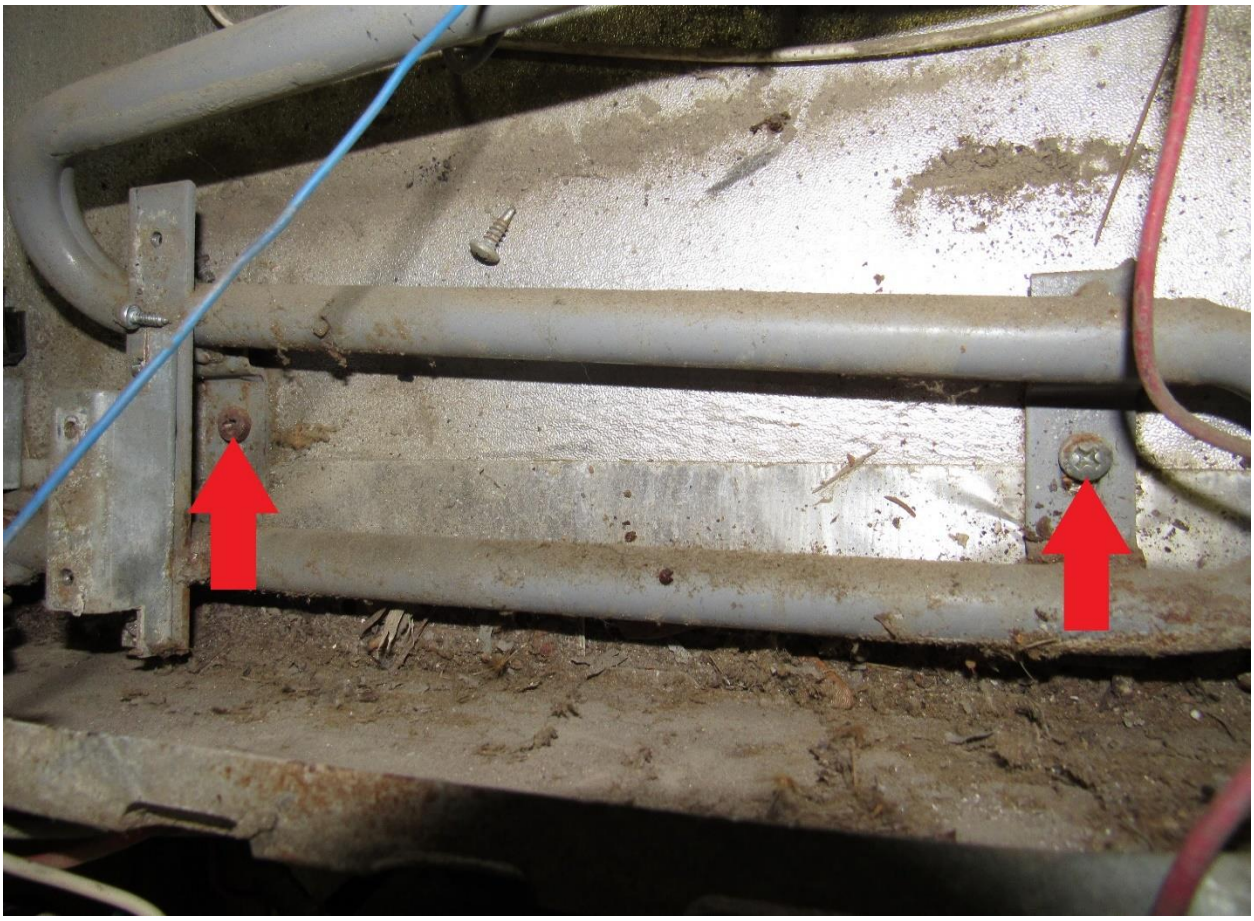
Remove the two plate mounting screws (RA).



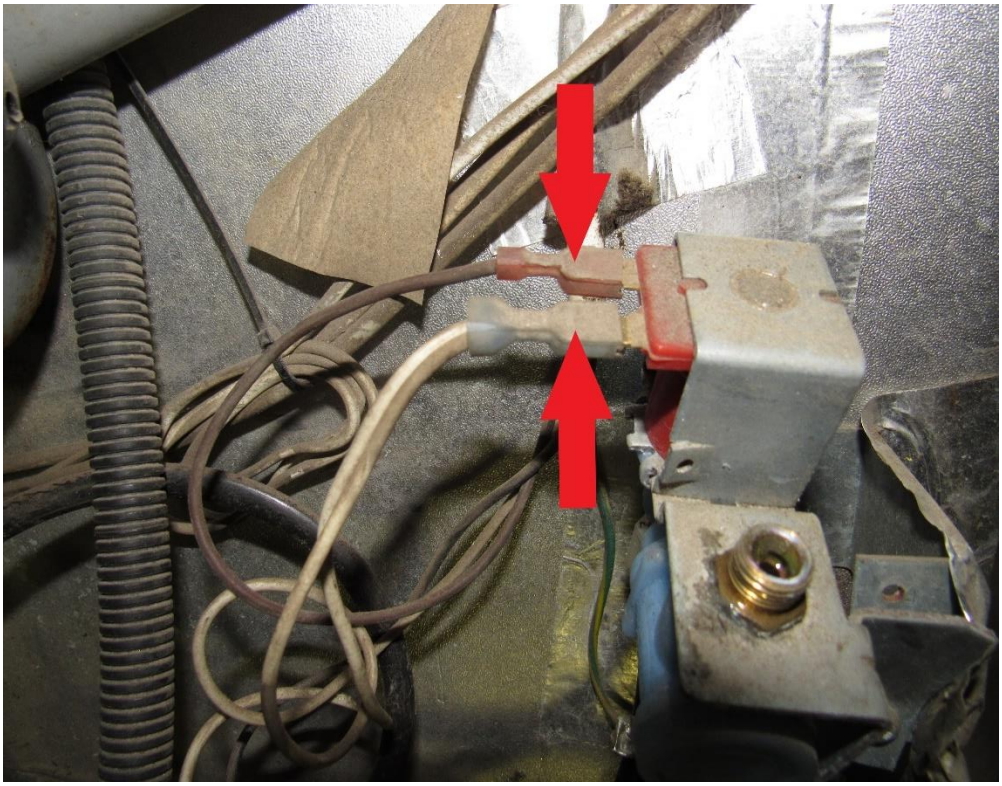
Remove the top plate mounting screw (RA).



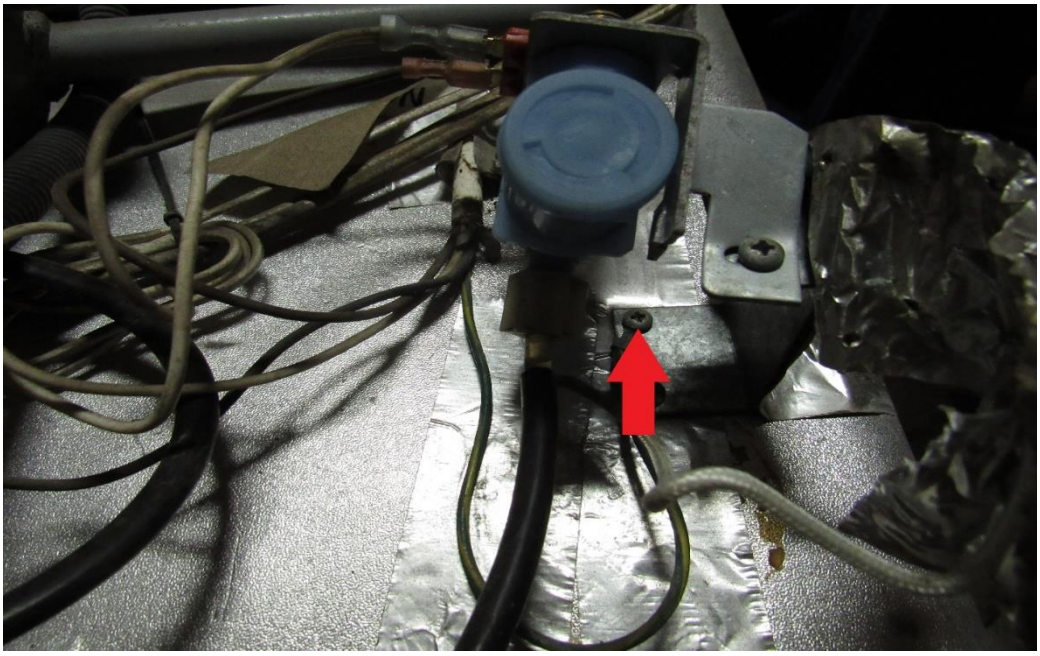
Remove these two mounting screws (RA).



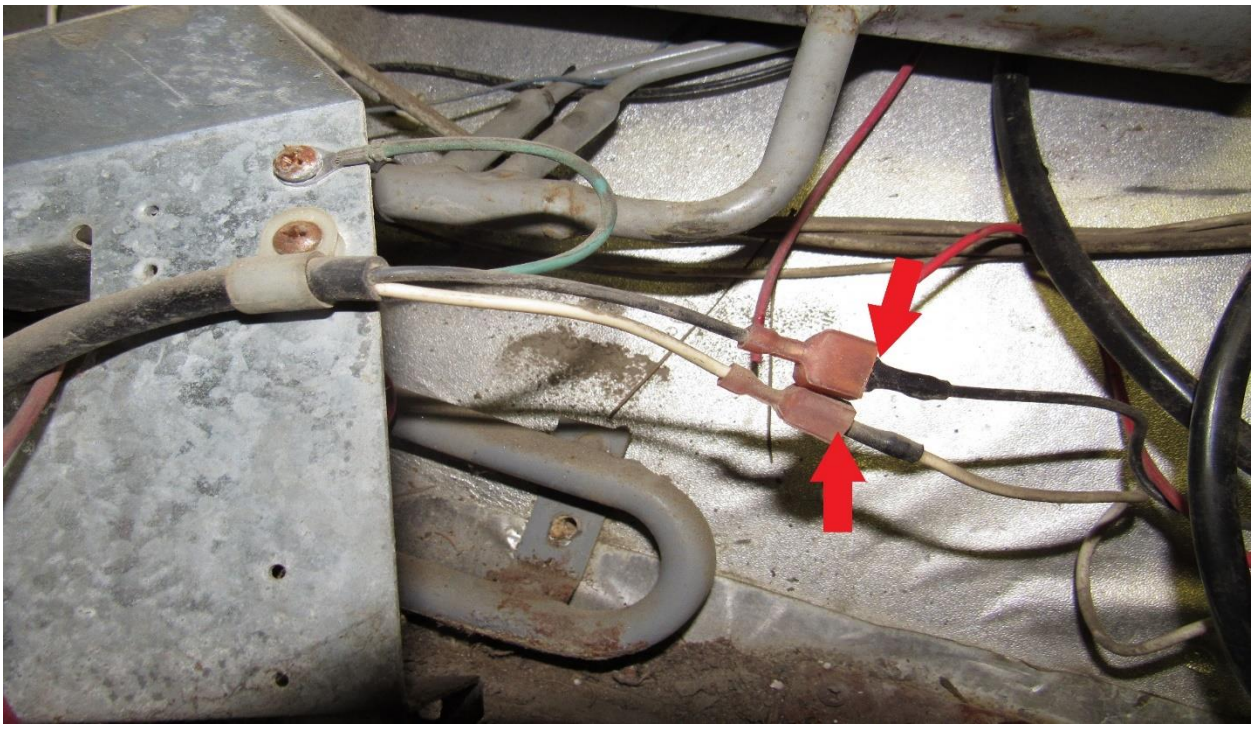
Remove white and brown ice maker wires (RA). If ice maker is being removed the following steps can be followed but ice maker parts and wiring can be thrown away. If you are reusing the ice maker, take pictures of the wiring before removing anything to help you on reinstallation.



Remove ice maker ground screw (RA).



Remove the 120v wires from ice maker cord (RA).



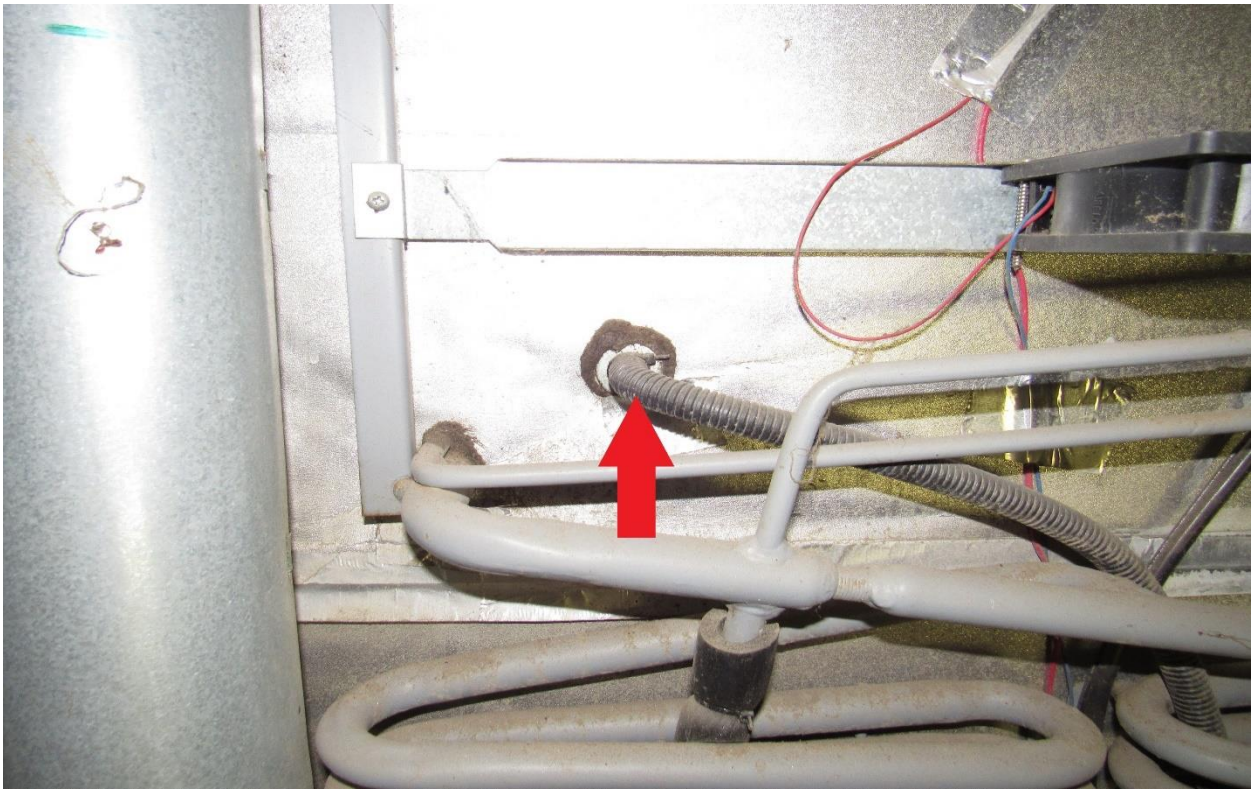
Remove the board and plates away from the unit. It should look like this.



Lift the bottom of the unit up and remove the main ground wire (RA).



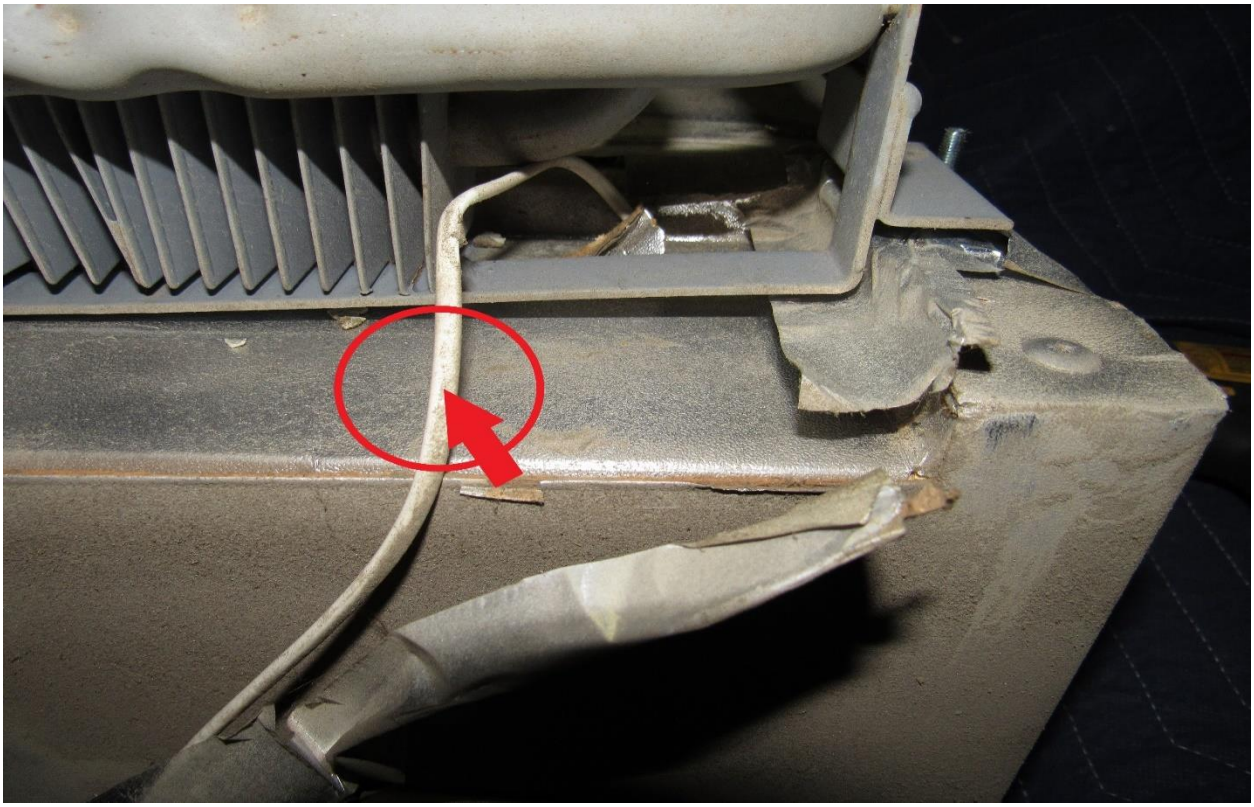
Remove the defrost tube (RA).



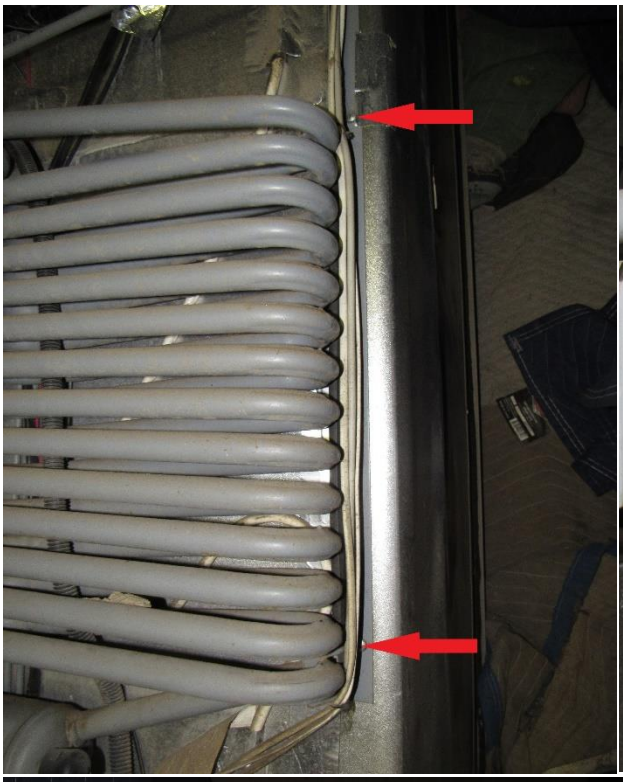
Remove wires from the temp switch (RA). Some models do not have this feature.

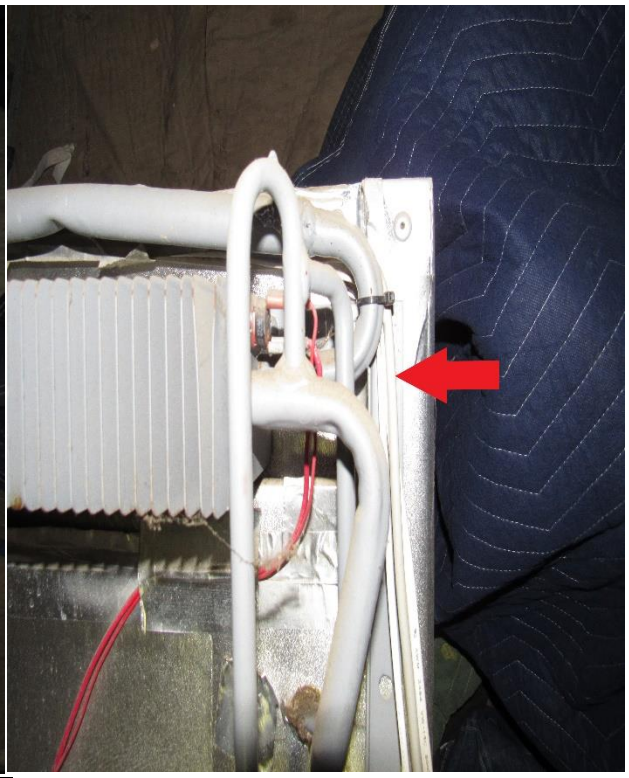


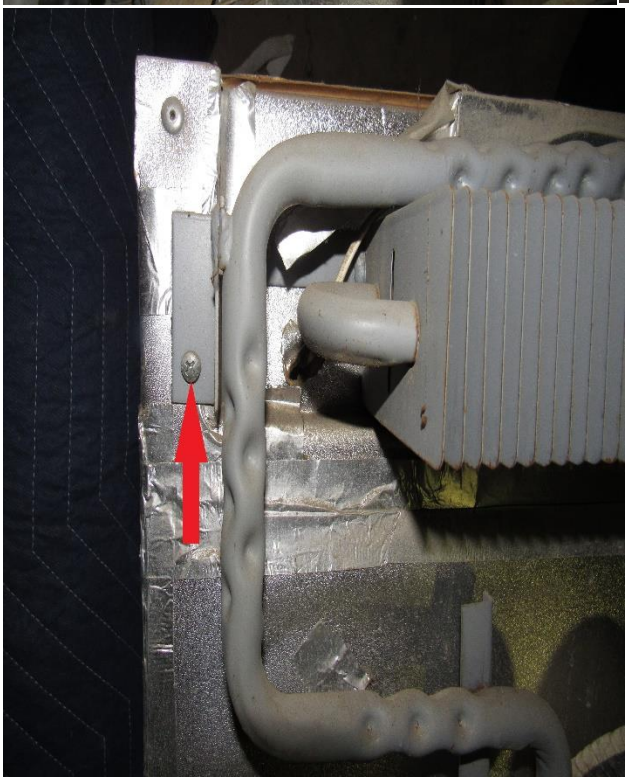
Untangle the thermistor wire from the unit as shown (RA). Otherwise, it might get caught on unit as you lift it out



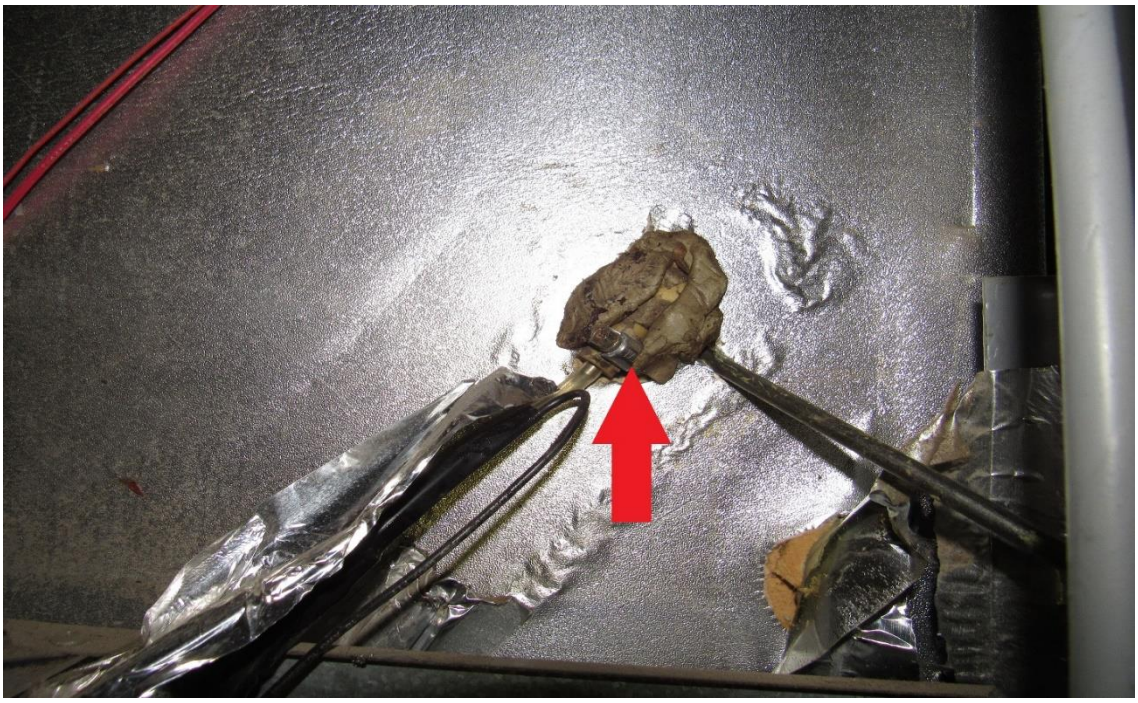
Remove side and top mounting screws (RA).



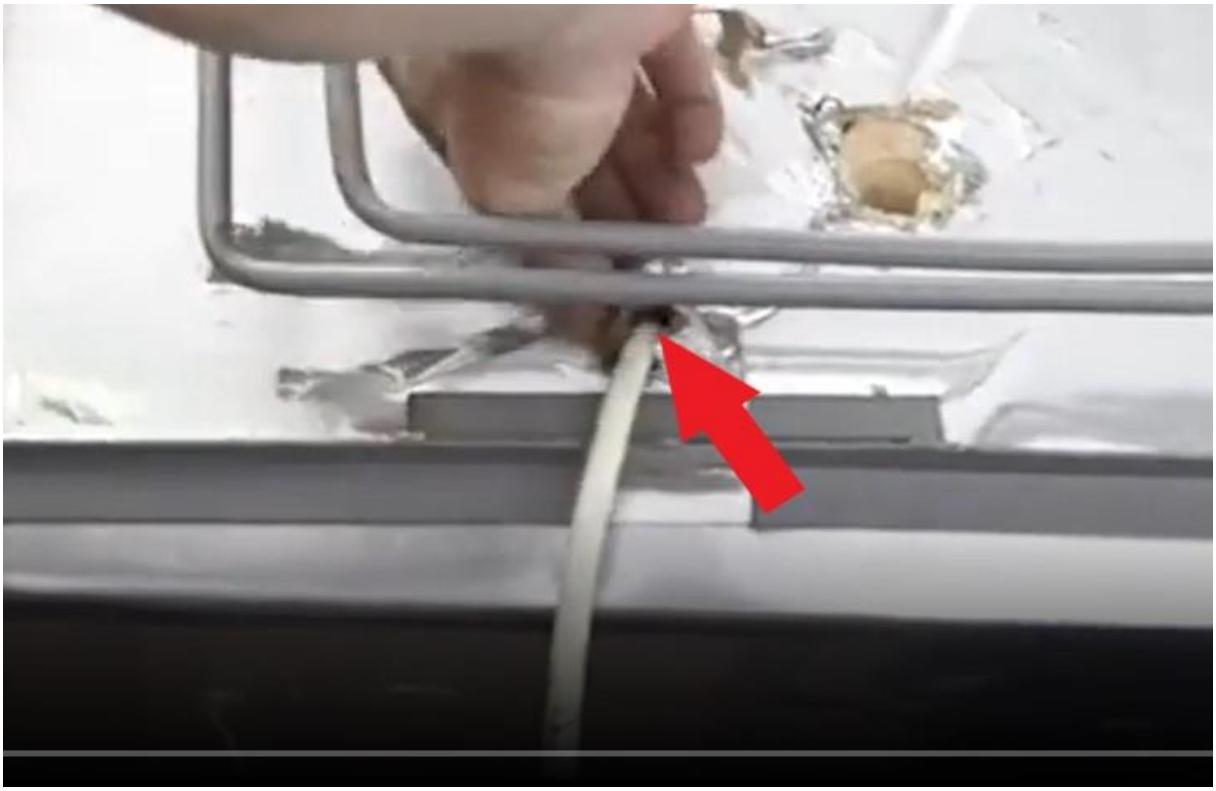




Remove water line spigot (RA) and feed water line to the bottom and swing it away from the unit.



Ice maker wires need to be fed thru the unit as it is lifted up so make sure all is loose and able to slide thru (RA).



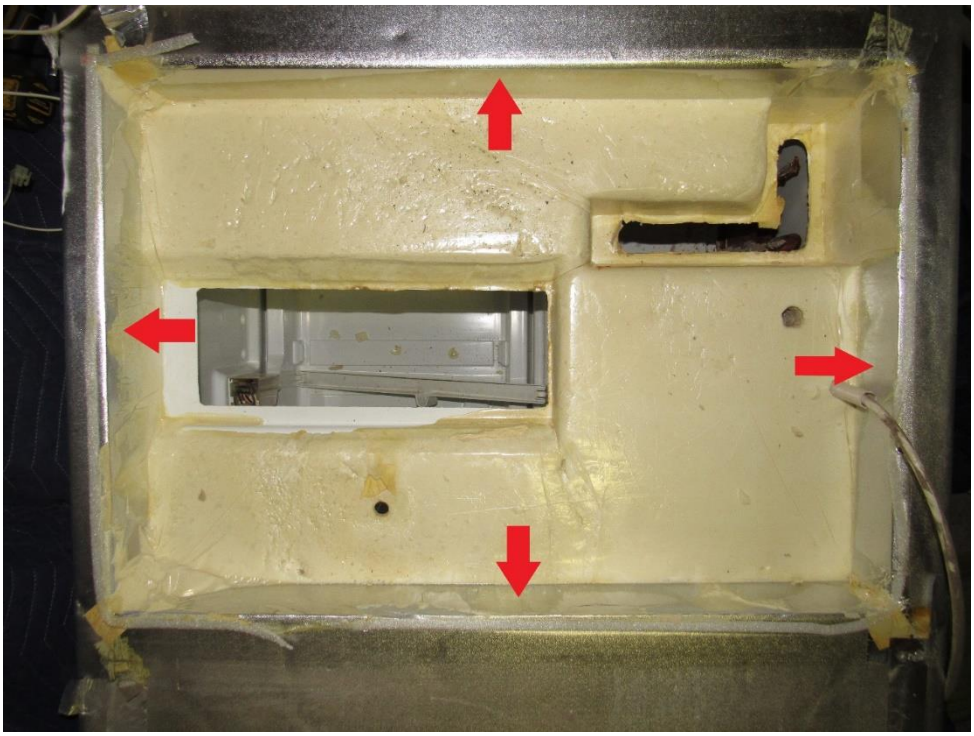
Lift unit straight up and out of box. This can be very tight as some of the older ones are really sealed in tight. Use a crow bar (RA) and a piece of steel (YA) for a backer to break the seal on the unit.



Remove the small angle plate where the LP burner was located (RA). Clean bottom of unit with a vacuum getting rid of all dust and rust.



Clean foam and debris on all four sides, make sure all excess foam is removed, check corners as well (RA).



Cut a ¾" 'V' notch into the freezer bar area to get the freezer temperature sensor into the freezer area. The freezer sensor is in a small bag with the controller

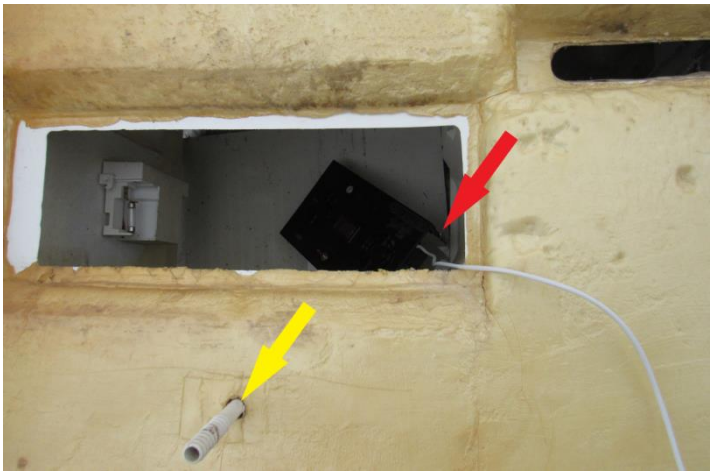




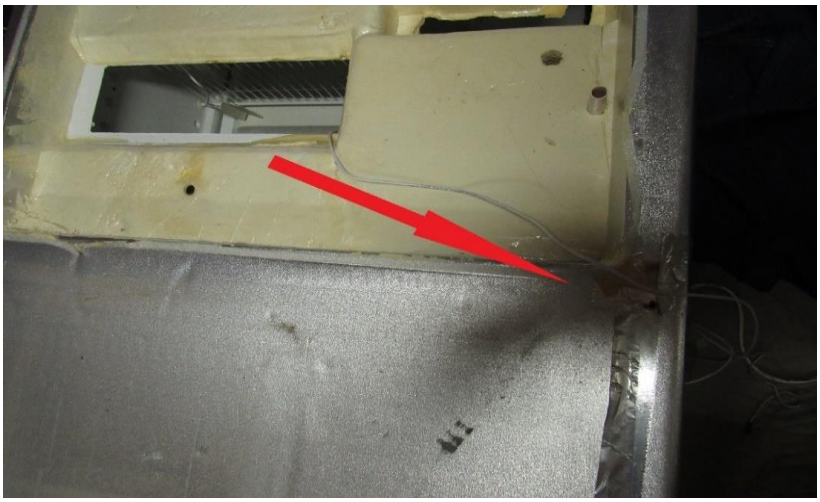
Then lay the sensor into the notch and out the right side of the foam cavity. Tape the sensor wire down if needed to keep it in place, until the cooling unit is in. Let 16" of the sensor wire hanging on the inside of the freezer.



Insert the controller into the fridge box through the fin opening (RA) push the defrost cup spigot into the box so it does not break off when new unit is installed (YA)

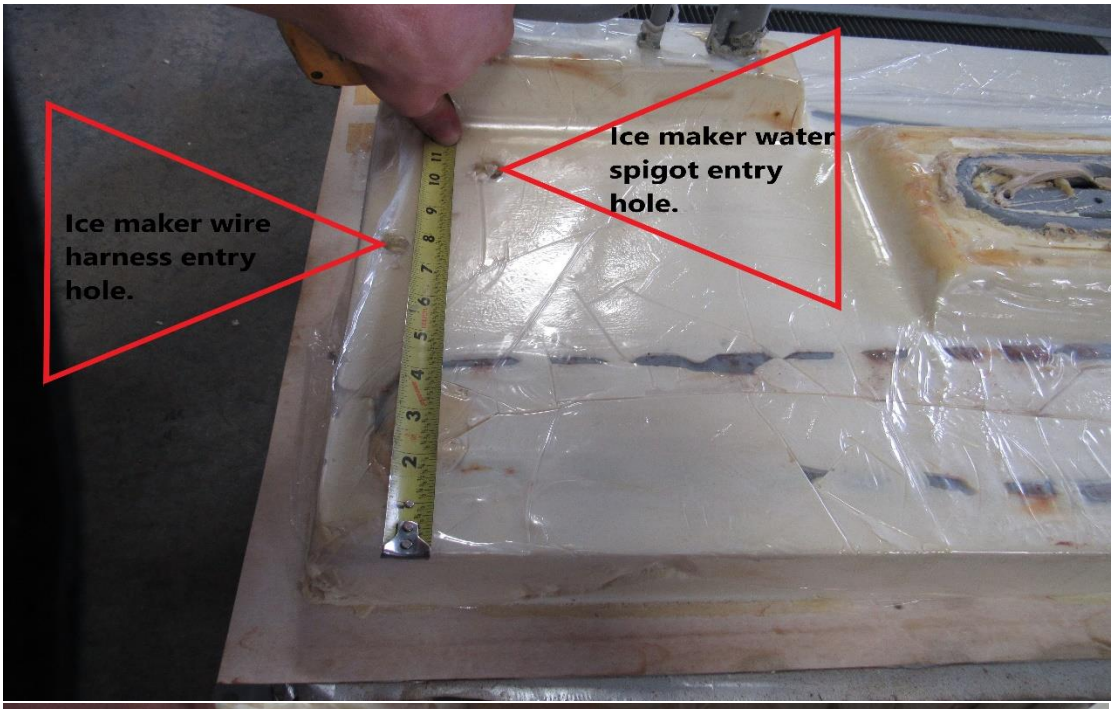


Controller wire should exit towards the lower right corner of the foam insert (RA)



If you don’t plan on putting your ice maker back in, skip this step.

Measure the ice maker holes on your old unit and drill new holes on the new unit.

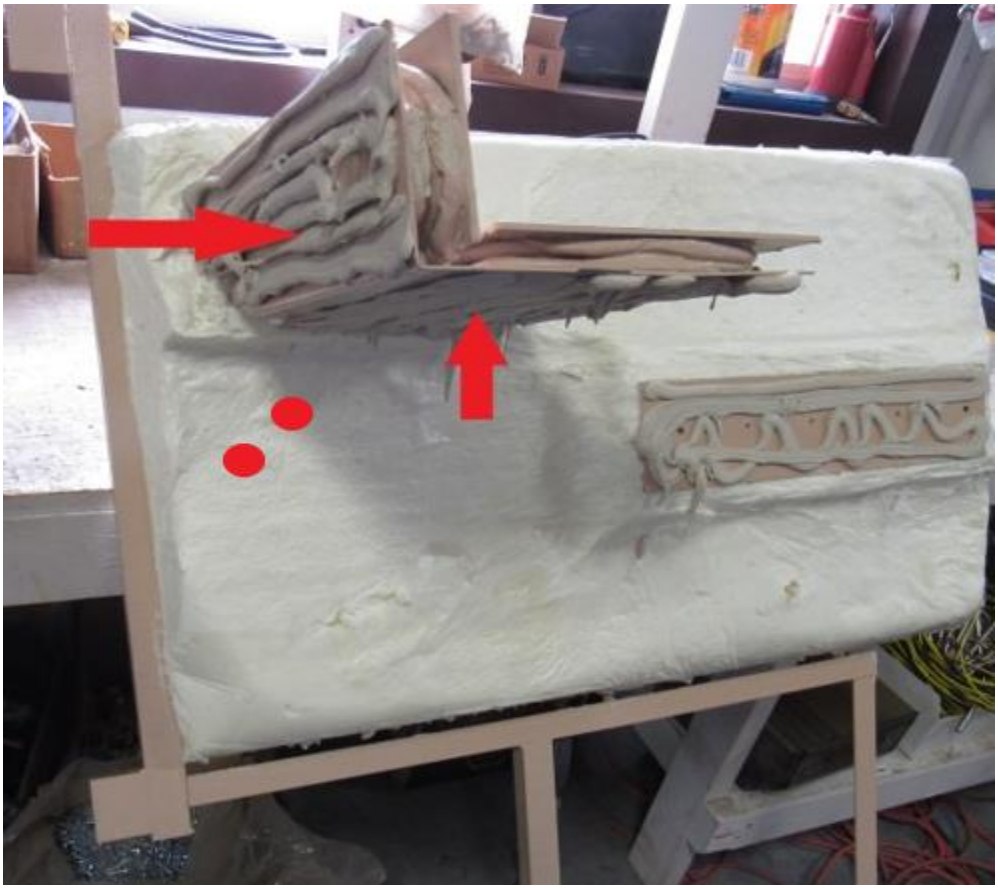




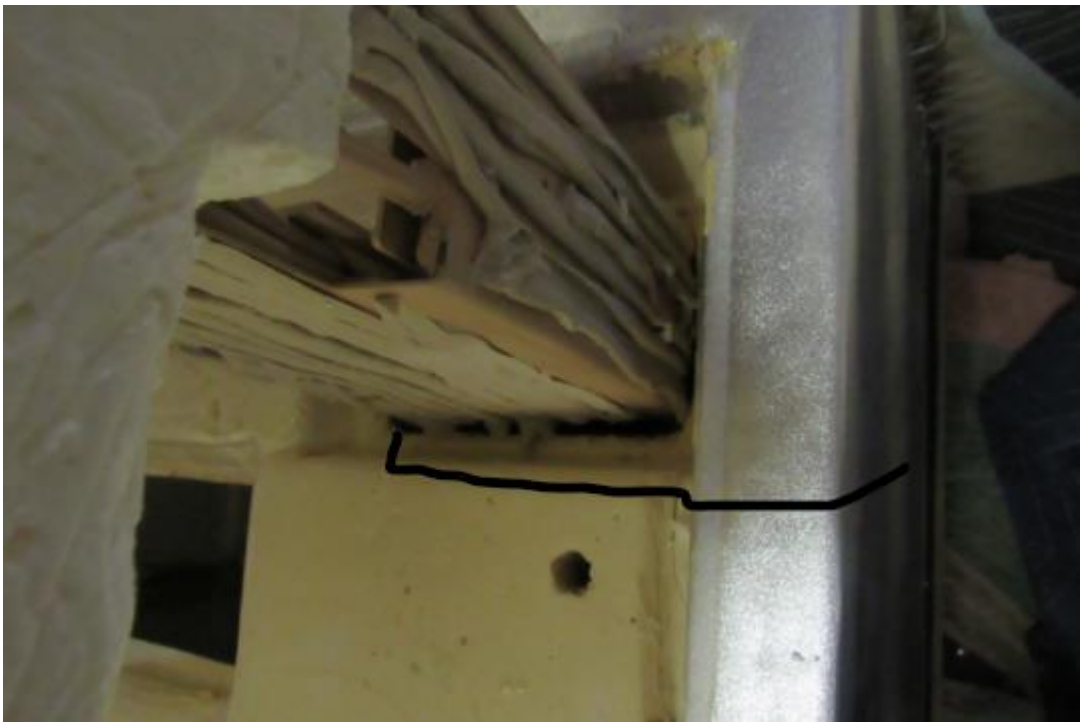
Apply 310 thermal mastic to the fin and freezer bar sections as shown (RA).



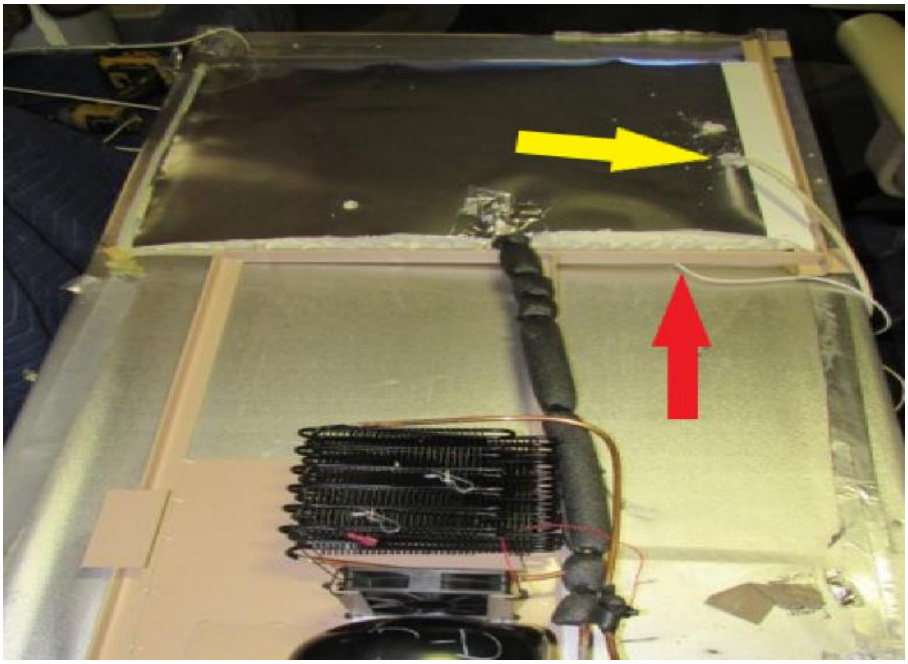
If ice maker is going back in you will want to measure the holes off the old unit, take a ¾" hole saw or drill and make the holes in the same place old unit had them so they line up when new unit is installed (red dots)



Now lay the unit down into the cavity of the fridge box being careful not to scrape off the thermal mastic on the freezer section. Feed your ice maker wires thru holes you made for these wires (if icemaker is being put back in). Make sure the sensor wire does not get pinched while installing the unit.

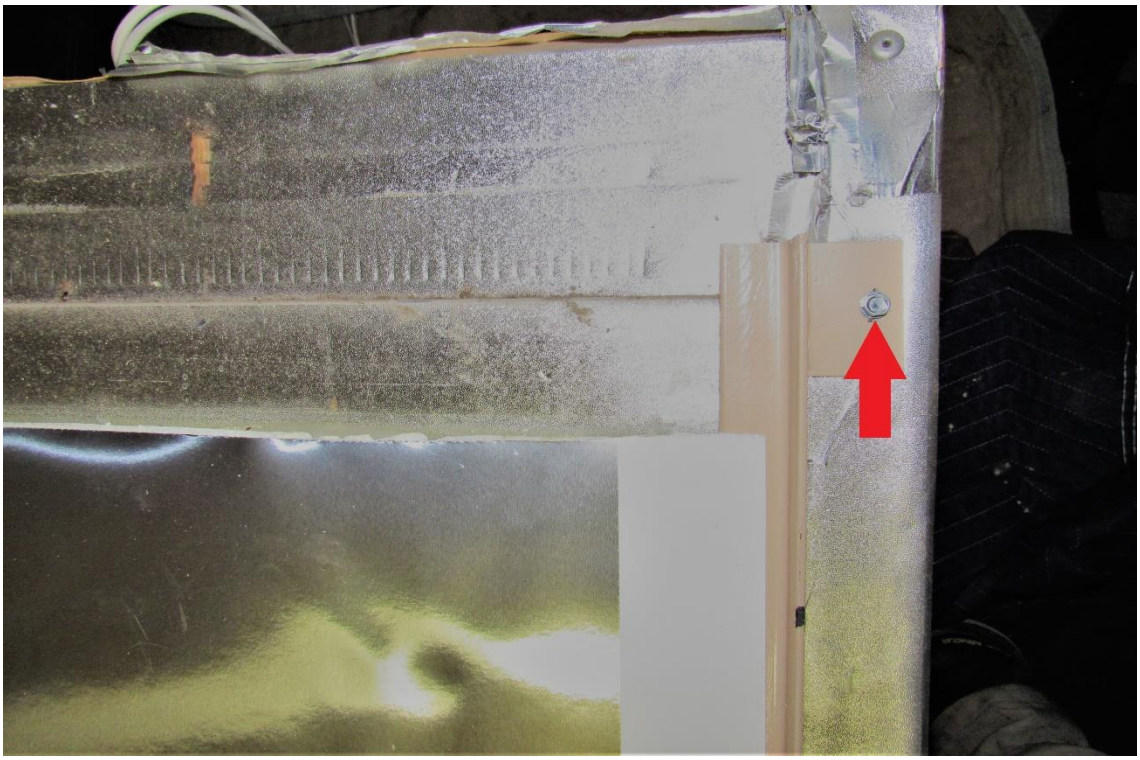


Ice maker power wire (YA) Controller wire (RA)

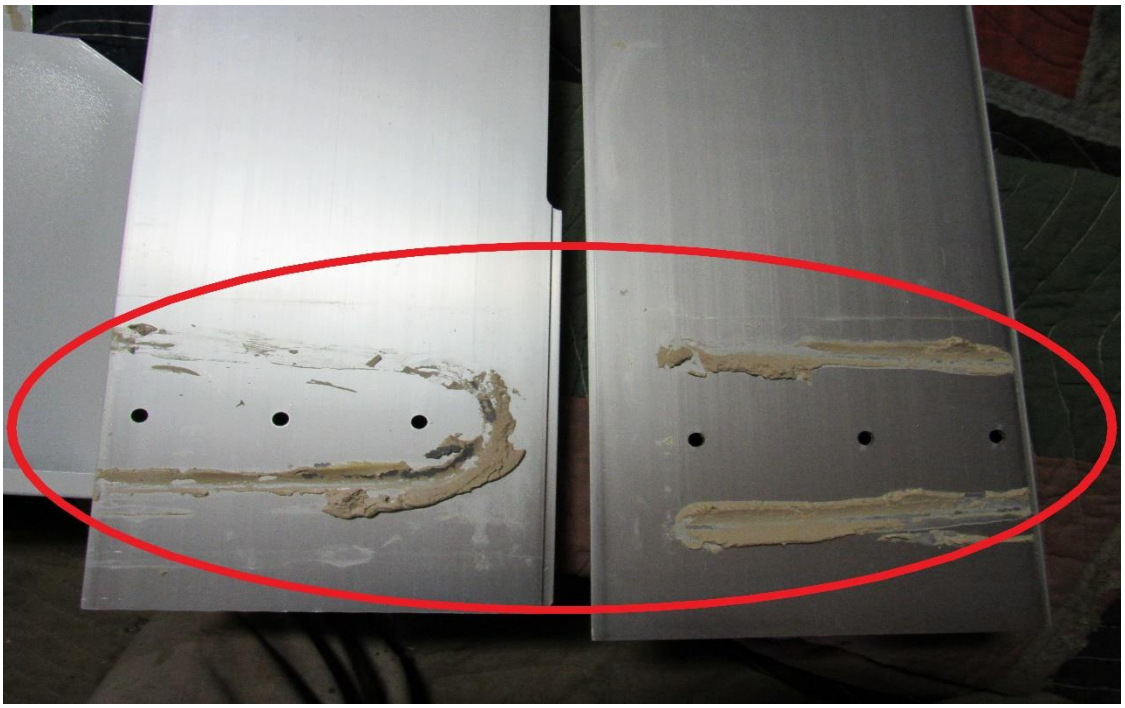


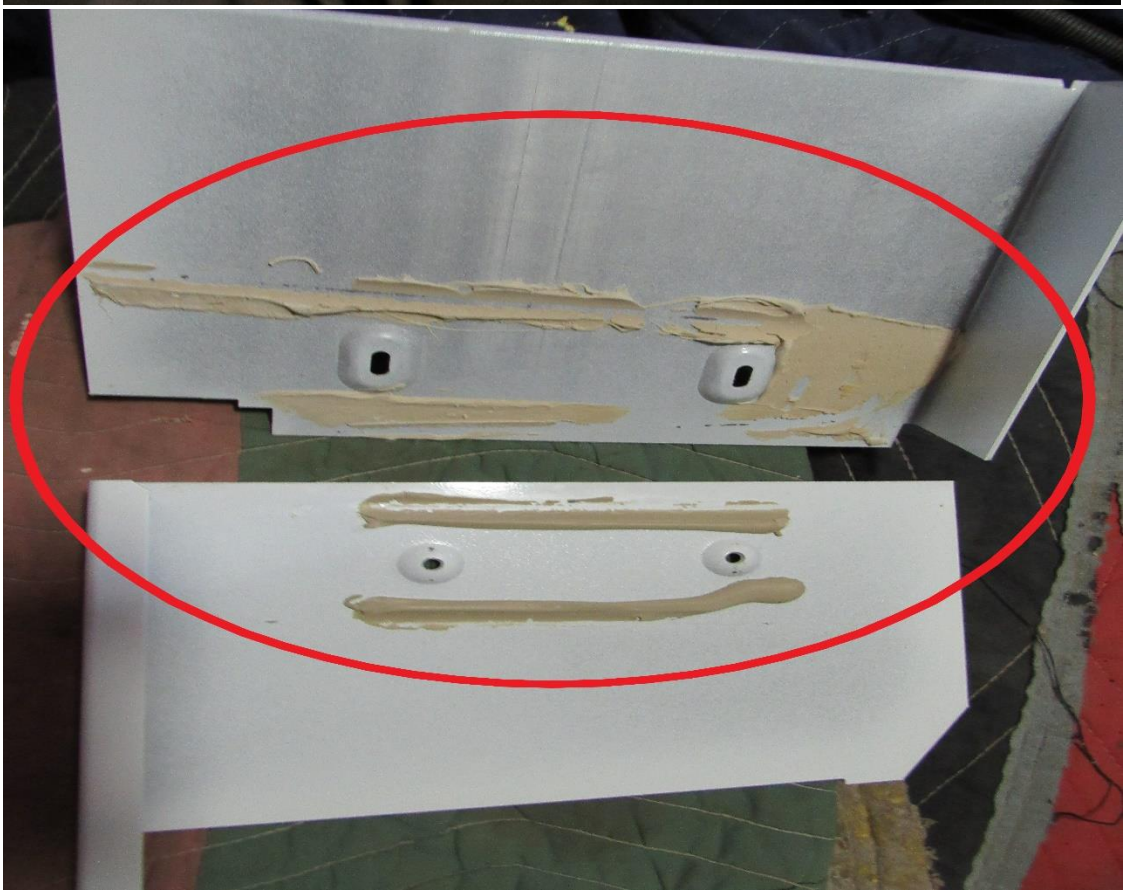
After unit is pushed all the way down, install two mounting screws on the bottom and one on top (RA) to hold the unit in place. None of these holes are predrilled, so use the hex head #12x 1 1/4" self-drilling screws (included).





Clean old thermal mastic off of the refrigerator fins and freezer plates.

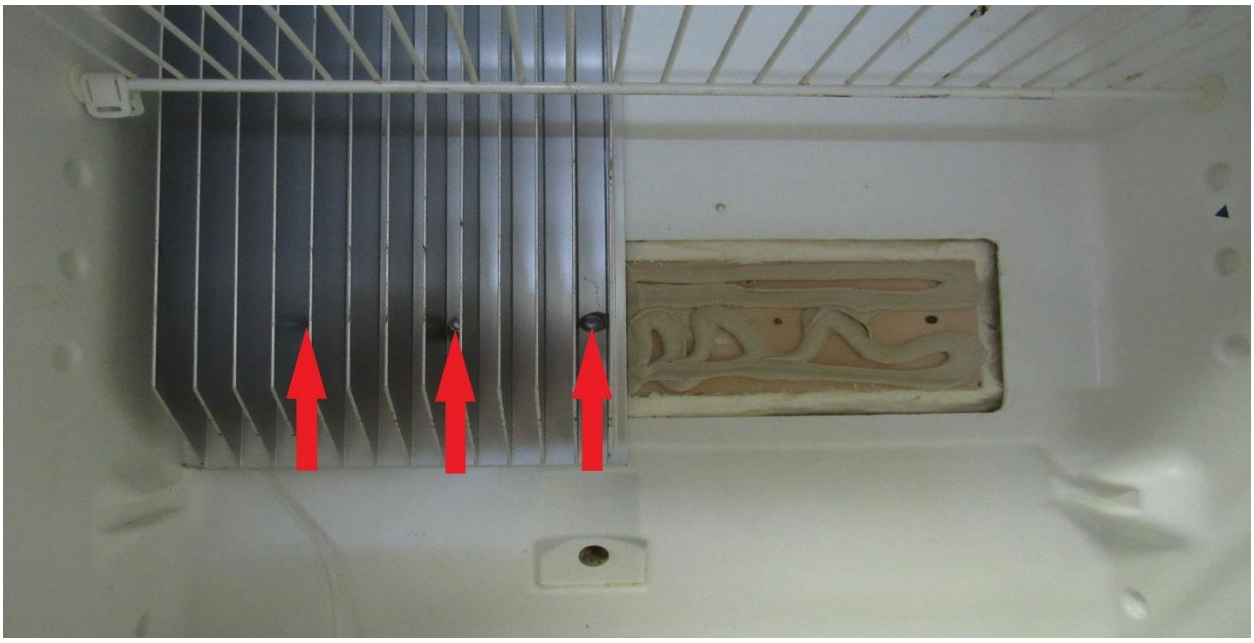




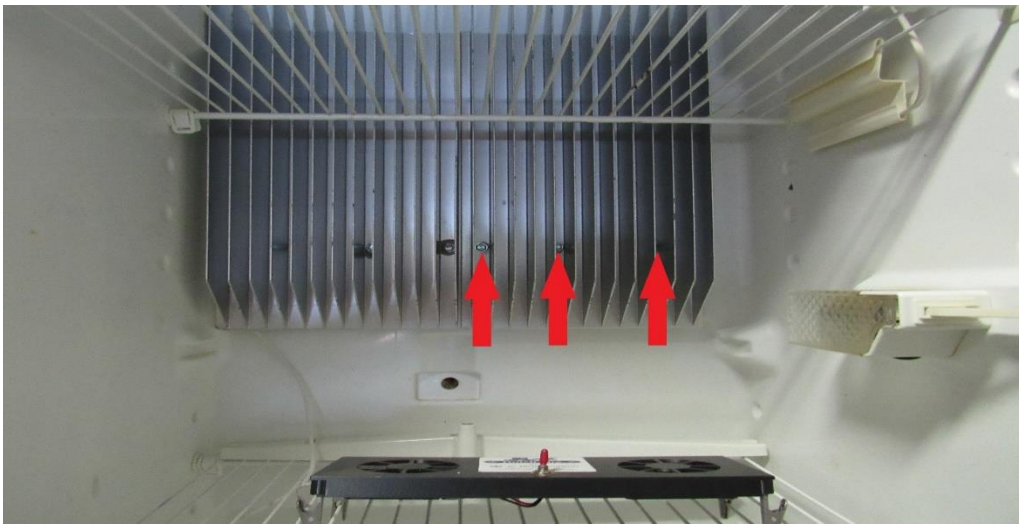
Set the refrigerator in the upright position. Notice: a gap between unit plate and plastic is normal, this will pull in tight as fin is installed. Cut a small notch in the plastic (RA) for the controller wire.



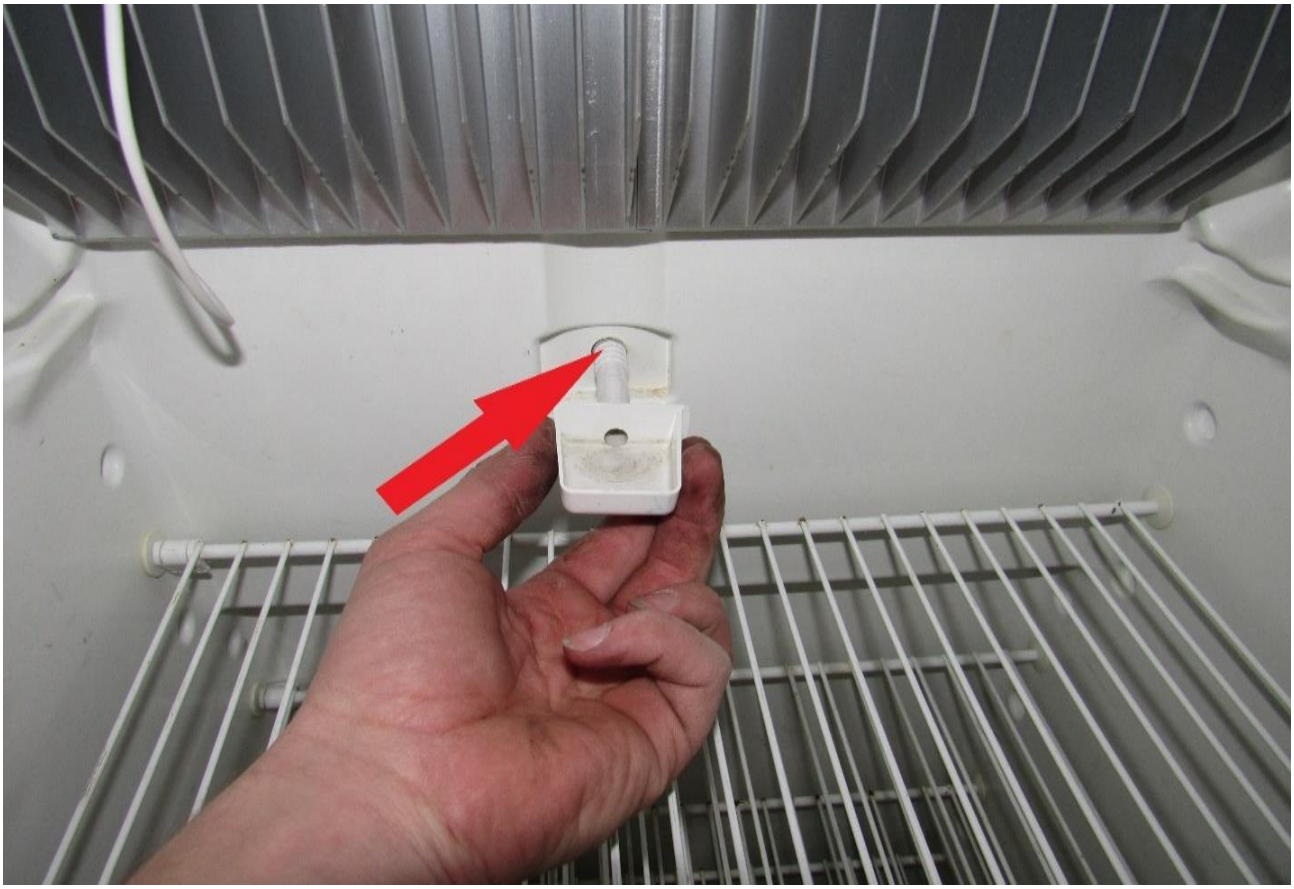
Warning: Do not at any time drill new holes into the cooling unit you will hit a line and ruin the unit> Using the hex head #12 x 1 1/4" self-drilling screws, included, mount the left-hand side fin first (RA). Pull the screws in tight.



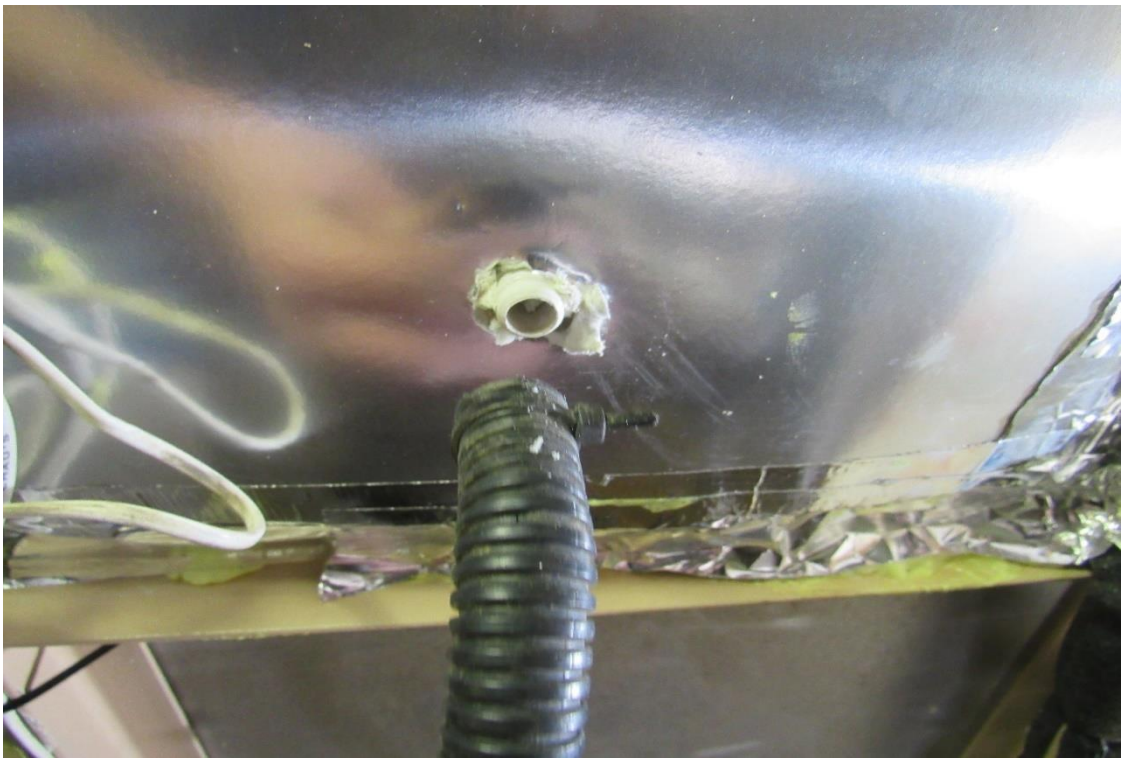
Do the same with the right side (RA).



Insert the defrost cup into the hole (RA)



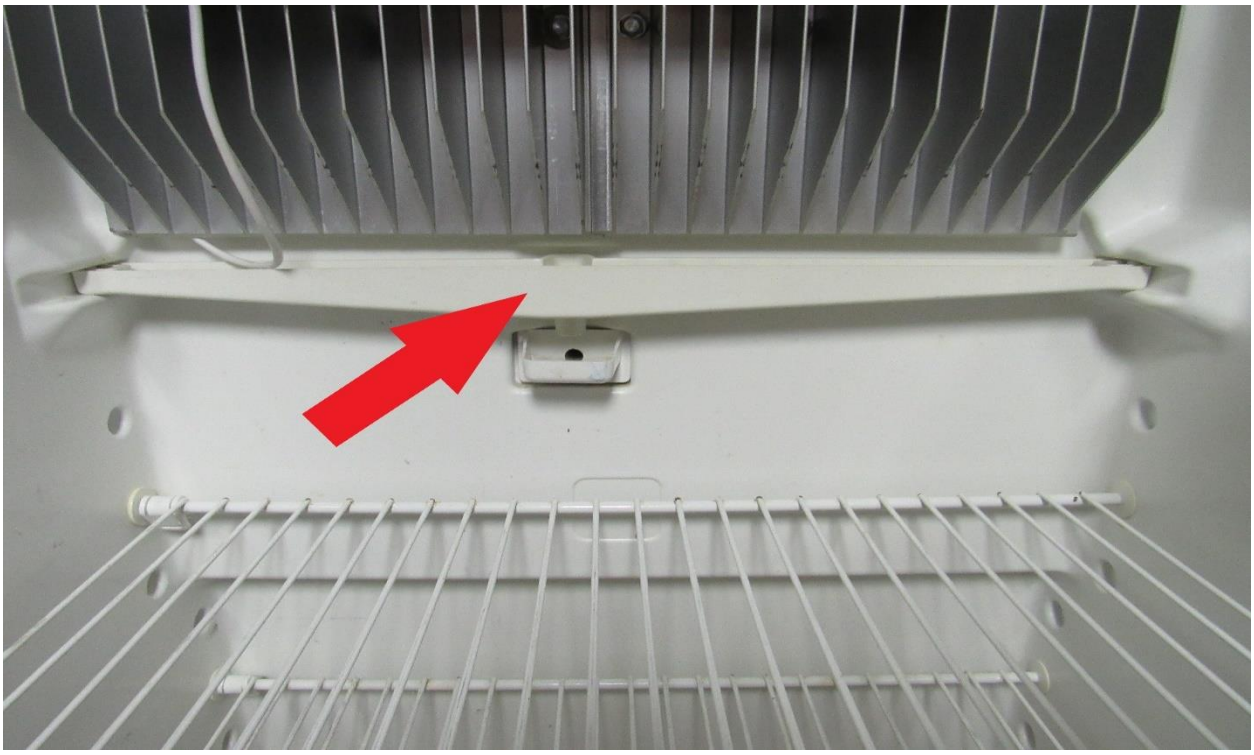
Have someone connect the defrost hose on the outside. You might need to enlarge the hole in the foam a tad to let the hose slide in over the spigot



Make sure defrost hose is pushed tight into the cup spigot.



Push defrost tray back into place (RA).



Secure wire shelf into place (OA). Clip the controller as shown (RA). The thermistor on the right side of the fin (YA) will no longer be needed so you can leave it clipped to the fins or you can remove it. Fridge door can now be closed



Using the lasered holes on the new unit (RA), fasten the freezer plate onto the secondary system using the hex #12 x 1 1/4" self-drilling screws supplied, pulling it in tight against each other.

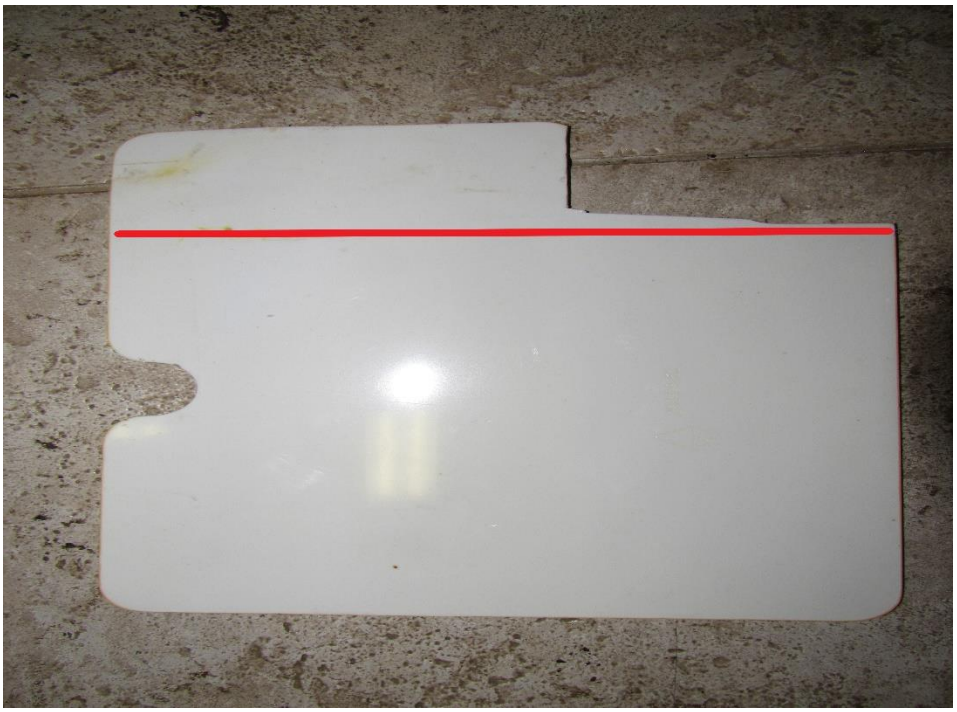




This is how it should look after fastening both screws. If this freezer plate is tipped up or down, it can easily be pushed up or down by hand or using a pry bar. If it's angled to the side this can be corrected once you screw the top aluminum piece into the box shown later



Cut the plastic trim piece on the red line and insert against the back of the freezer.





Apply a layer of thermal mastic to side of the freezer plate as shown.



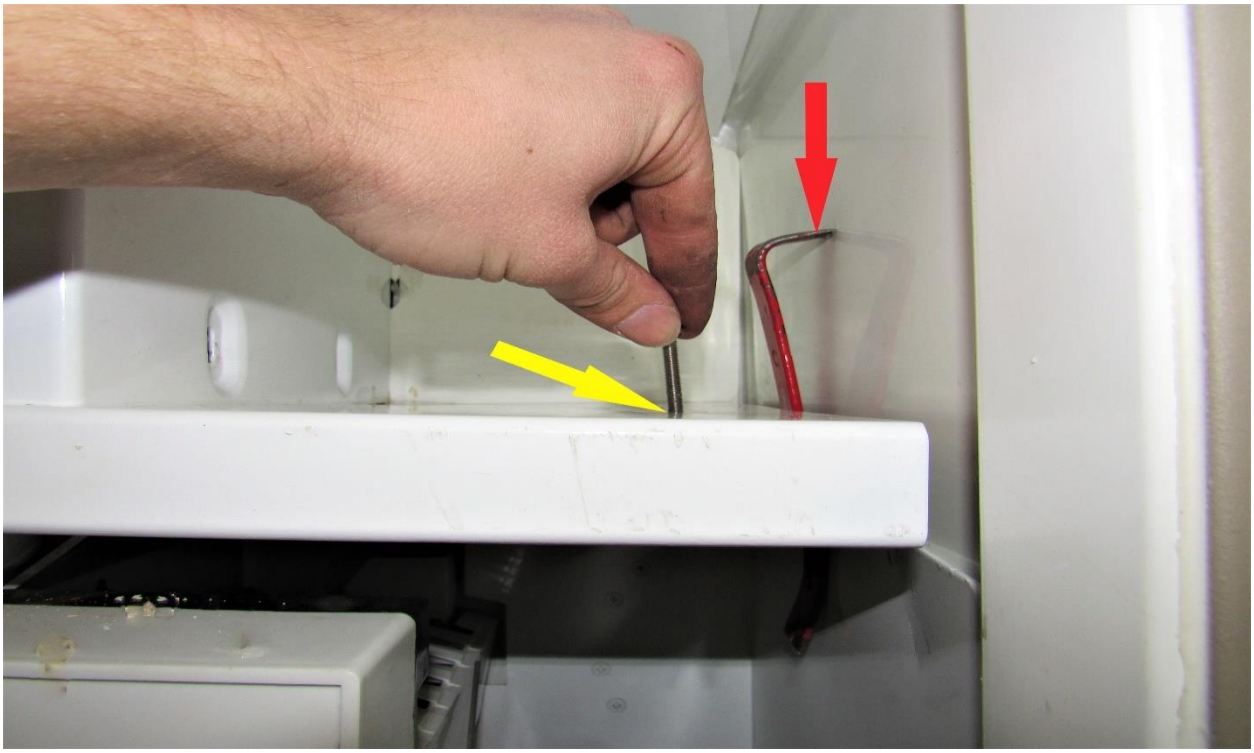
Fasten the screws into the top original mounting holes. (RA)



Apply a layer of thermal mastic to bottom of the freezer plate as shown.



Insert the bolts into the bottom freezer plate (YA). Using a small pry bar works very well by inserting it between the freezer sidewall and plate as shown providing pressure against side plate to eliminate gaps (RA).



Thread the nuts onto the bolts (YA). Make sure to apply enough pressure to shift the plates left using the pry bar (RA).

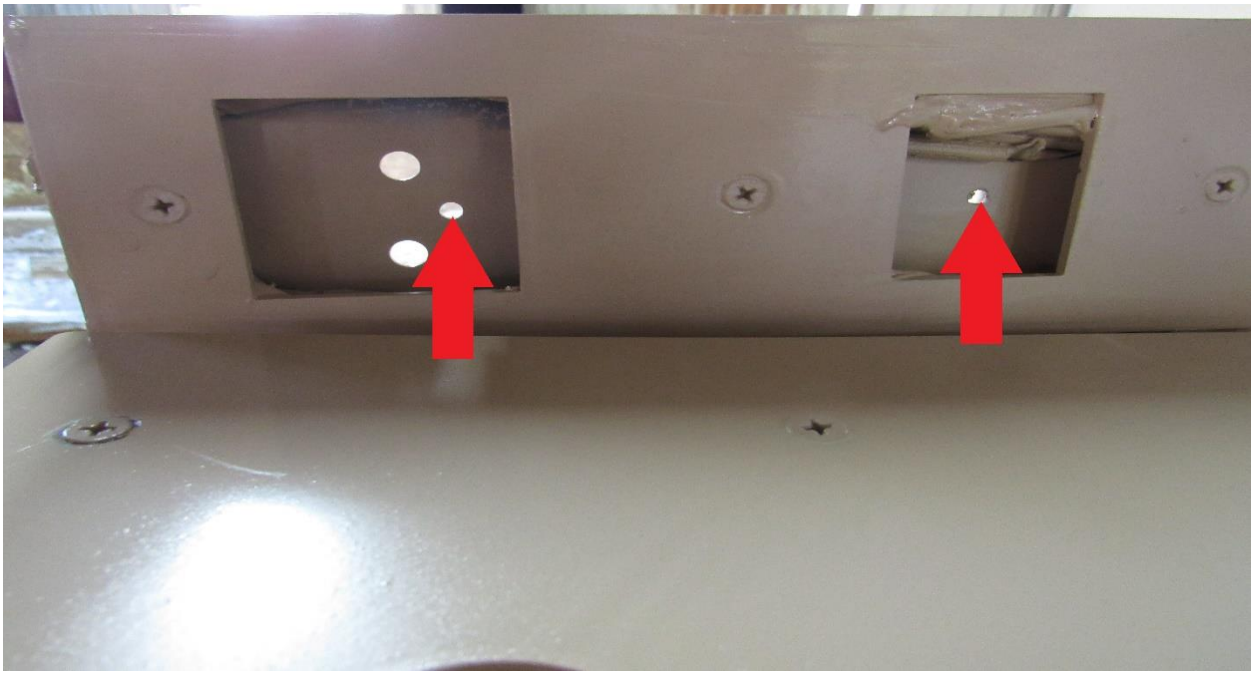


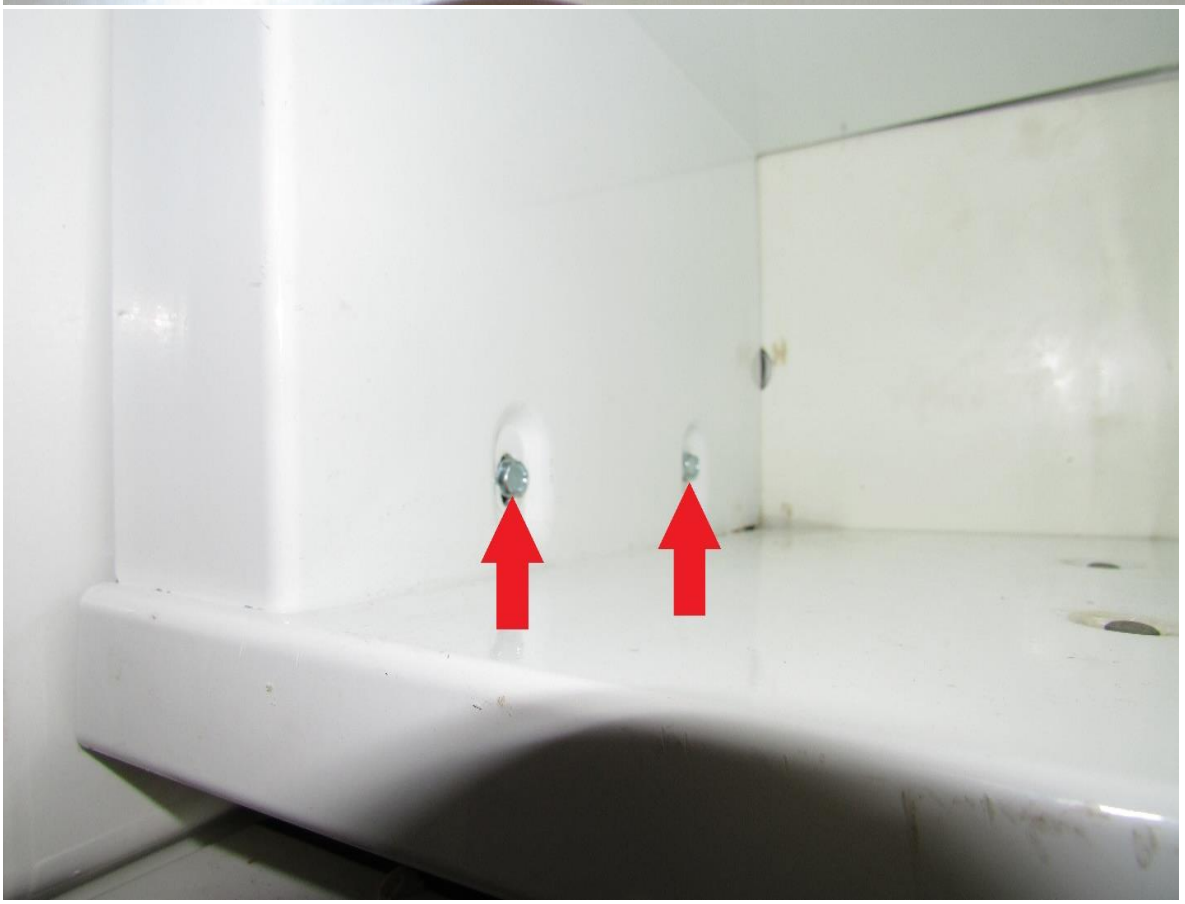
Then secure the freezer sensor probe by screwing the black mounting clip to the freezer side wall around 8" below the freezer bar, towards the back of the freezer using the #8 x ¾" hex screws that are included. If you have wire shelves you can use the included shelf clip instead.





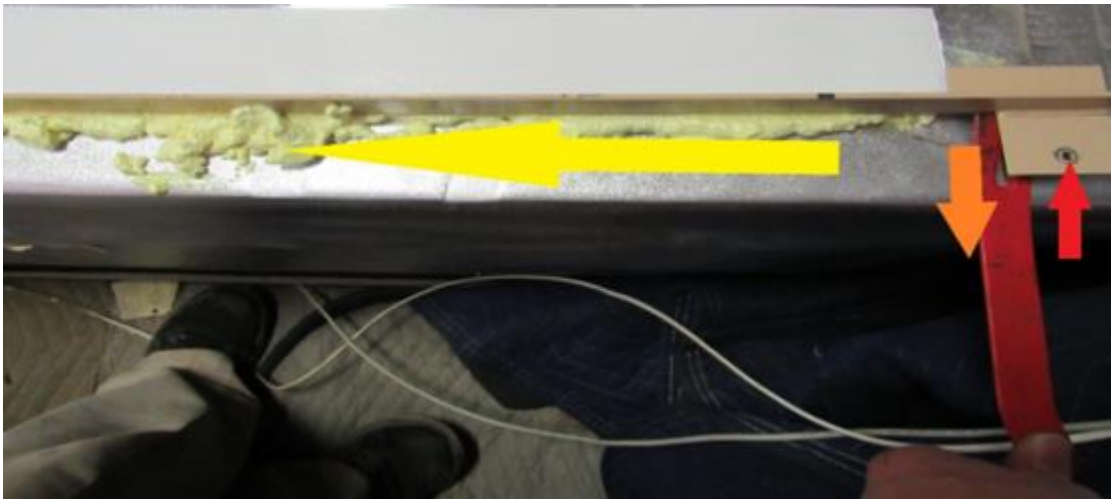
Fasten the side plate to the freezer bar using the 2 supplied #12 X 1 ¼" screws into the holes (RA).



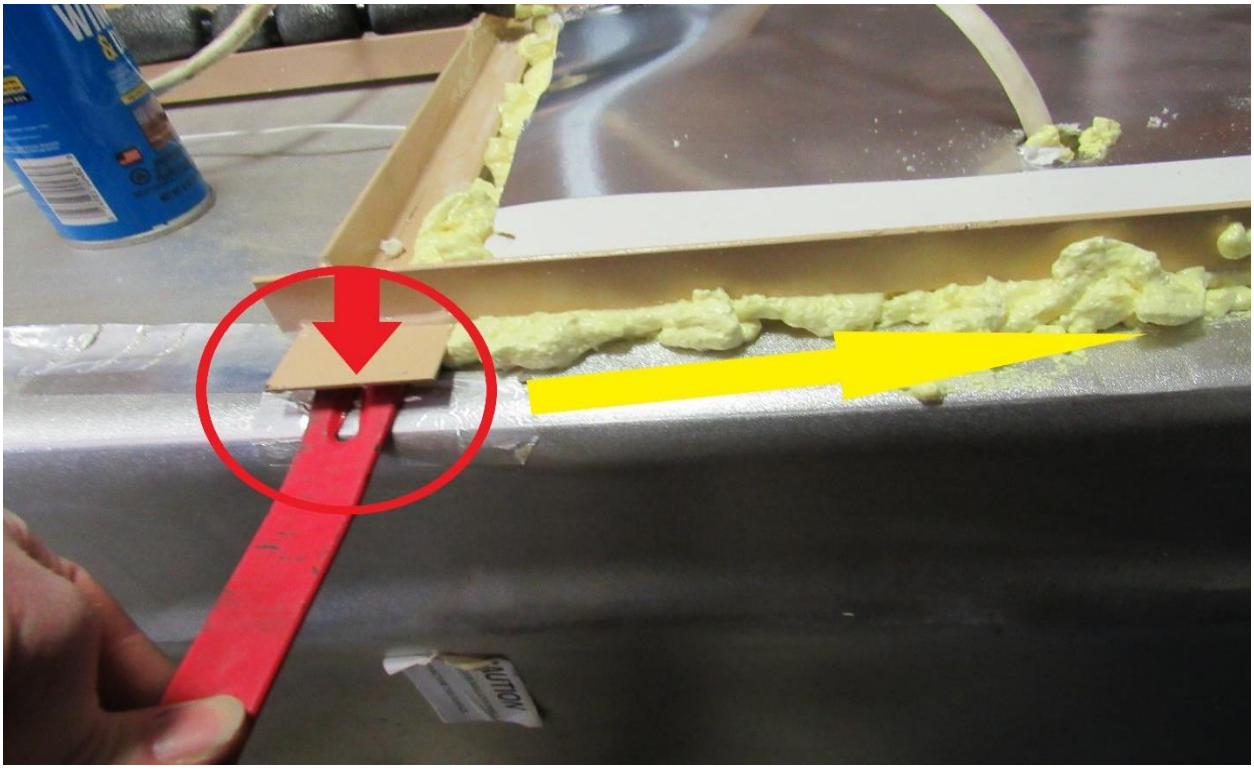


Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly.

Set the unit back down on its face. Take the can of great stuff foam and shake for a minute, then proceed to fill the gap around all four edges. Remove mounting screw (RA), pry the brace away from the box (OA), and fill in the gap (YA) with foam.

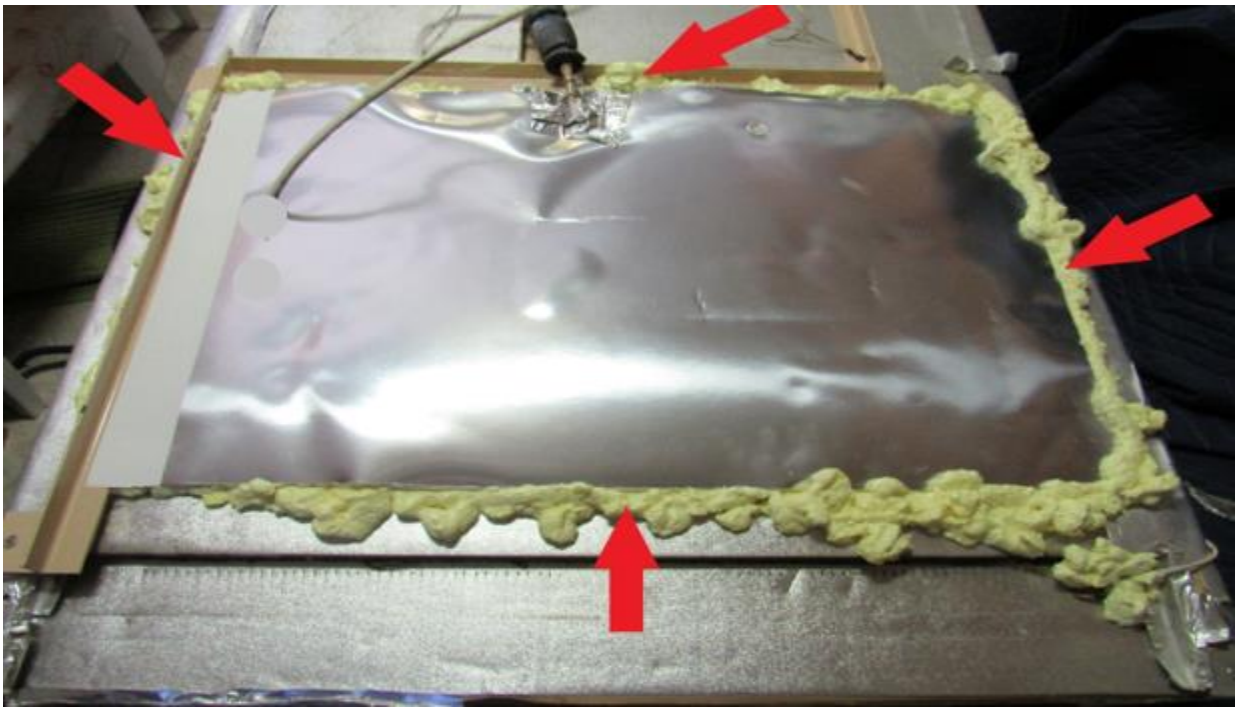


Repeat on left side. Pry away the brace and fill in all gaps with foam (RA).

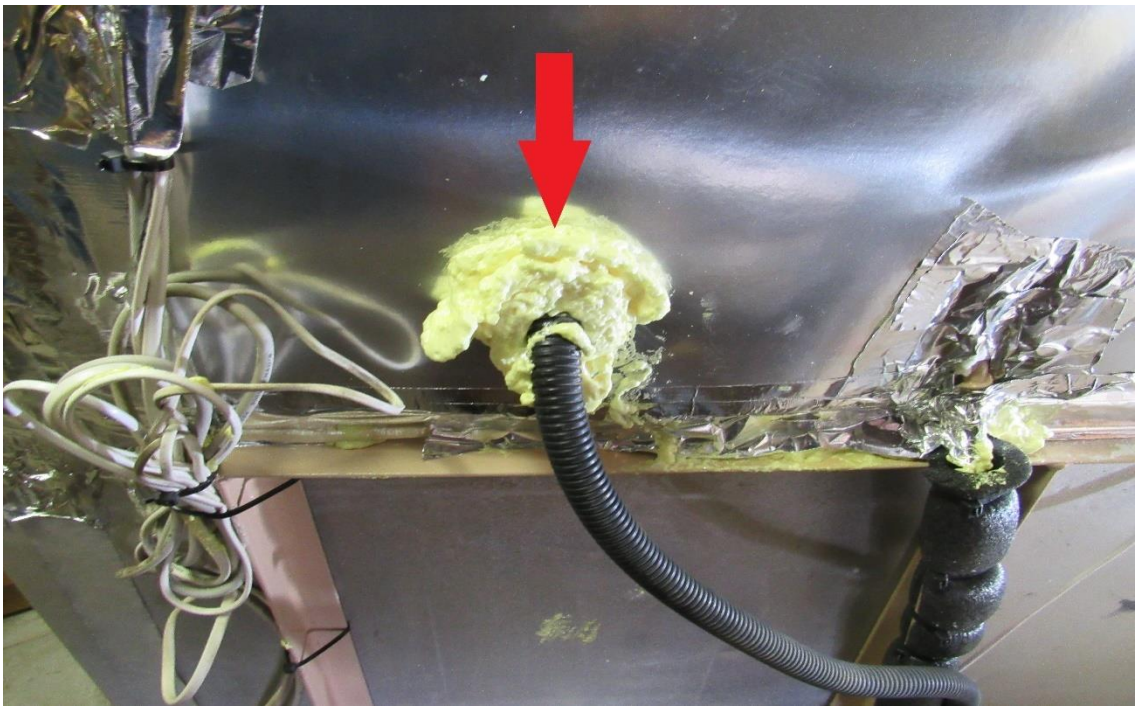


Fill all gaps around all four corners with foam (RA).

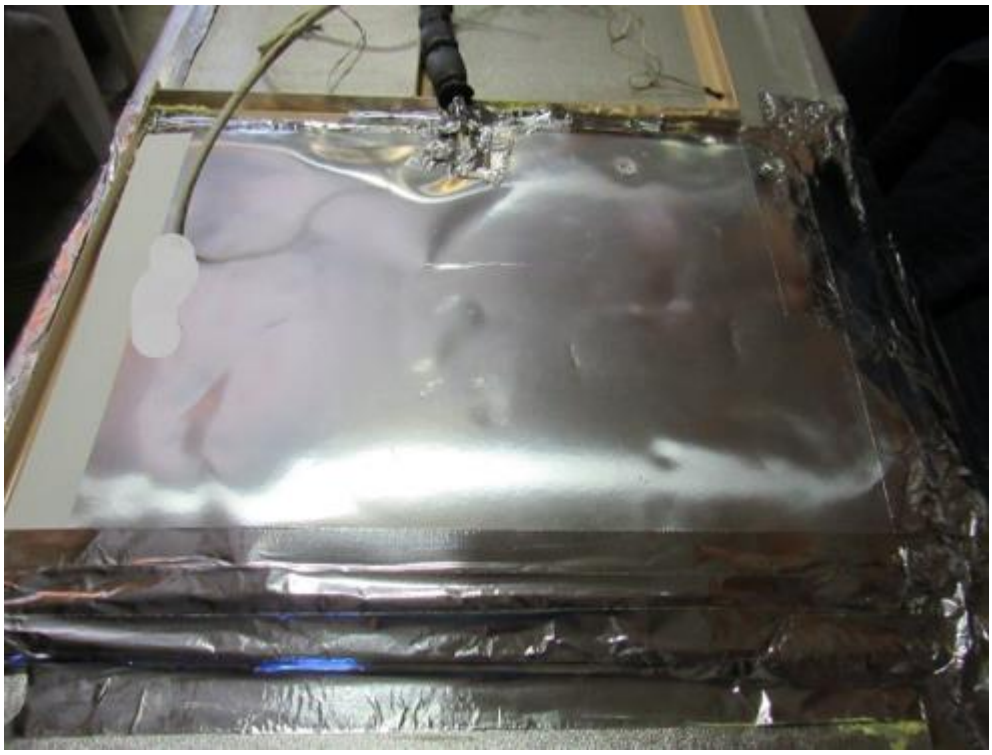
<u>Make sure all gaps are filled!!</u> If unit foam is not down even flush with box this is not a problem as long as its sealed. Leaving even a small gap will result in your fridge not getting cold enough

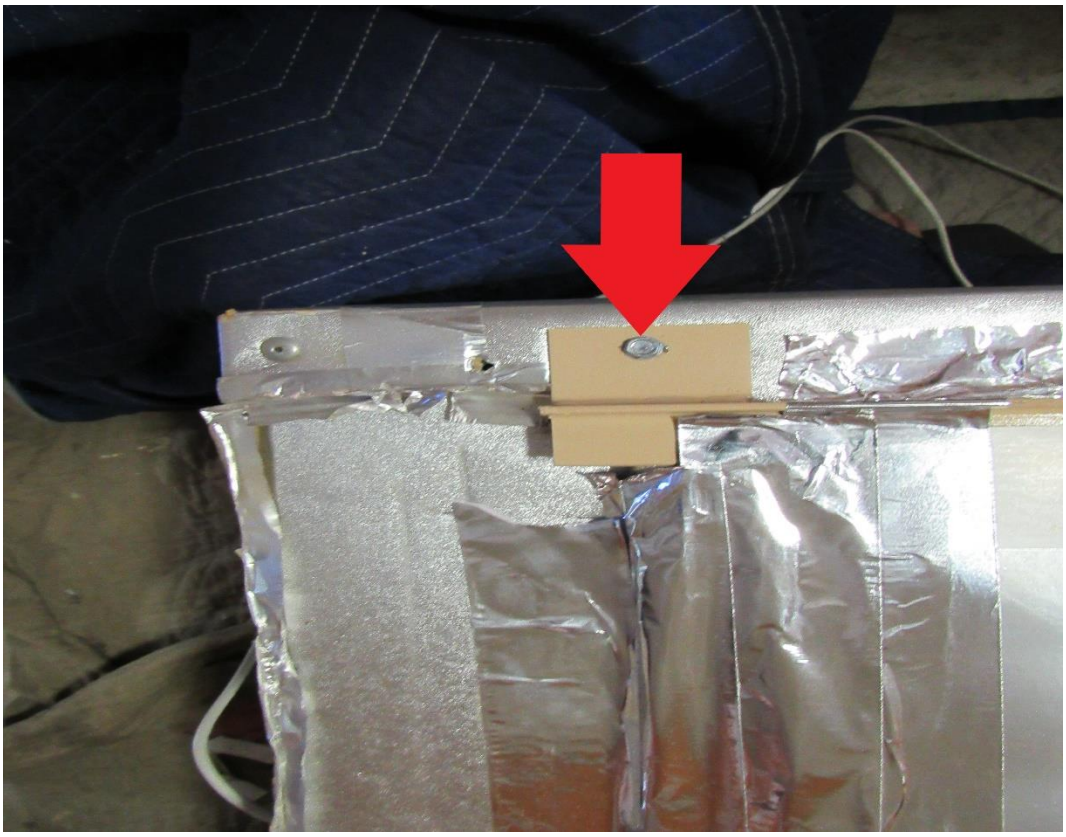


Fill all gaps with foam (RA).



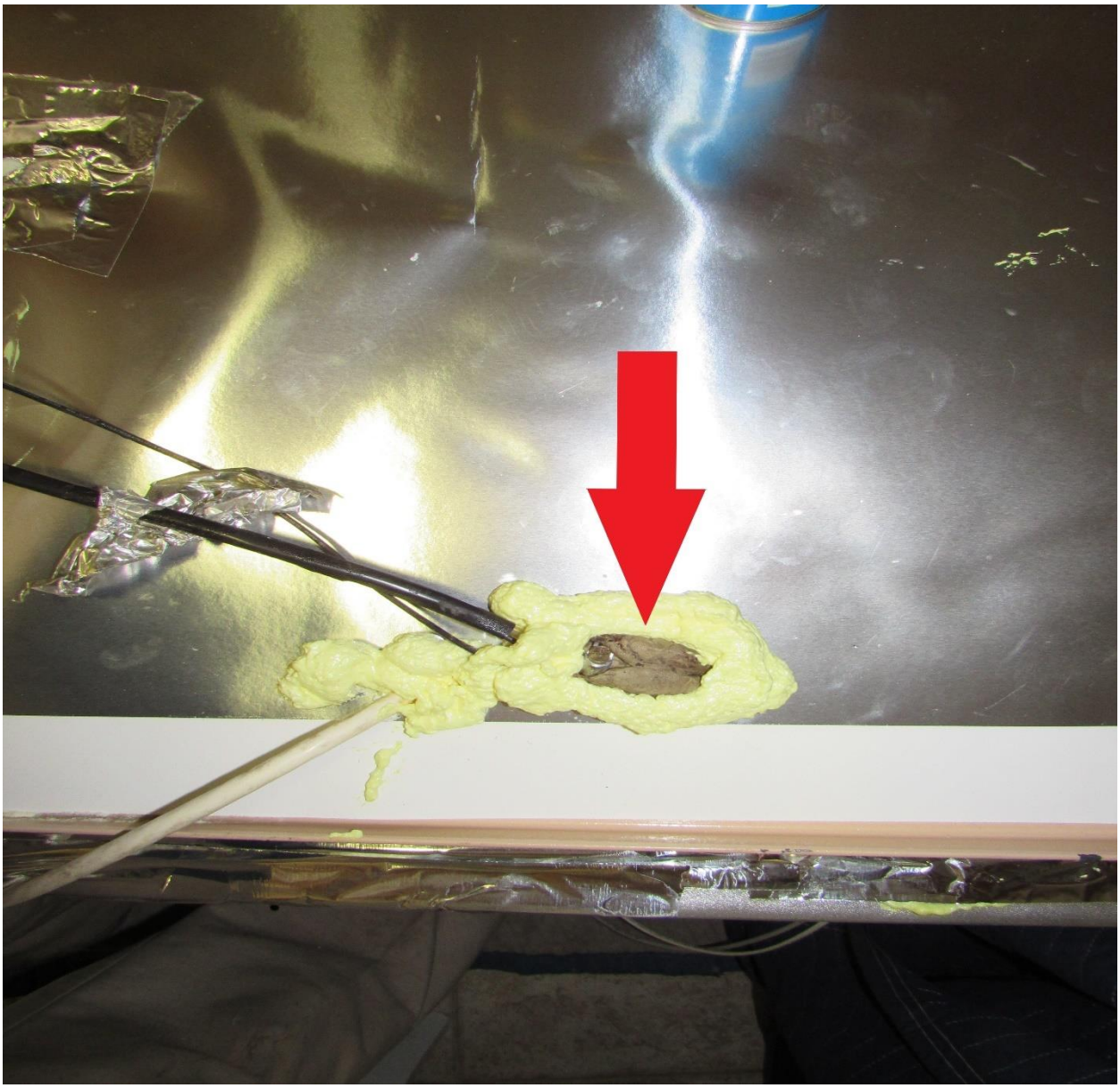
Tape all four corners with the supplied tape and re-install mounting screws (RA).



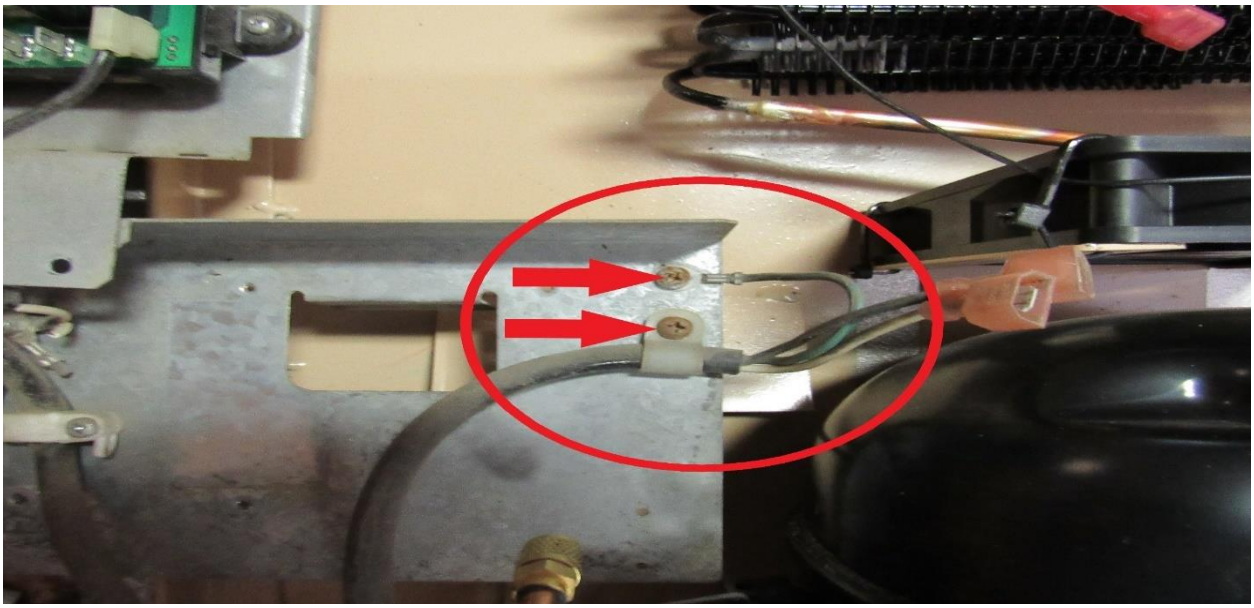


Line up the ice maker spigot with the ice maker hole and insert water line (RA).

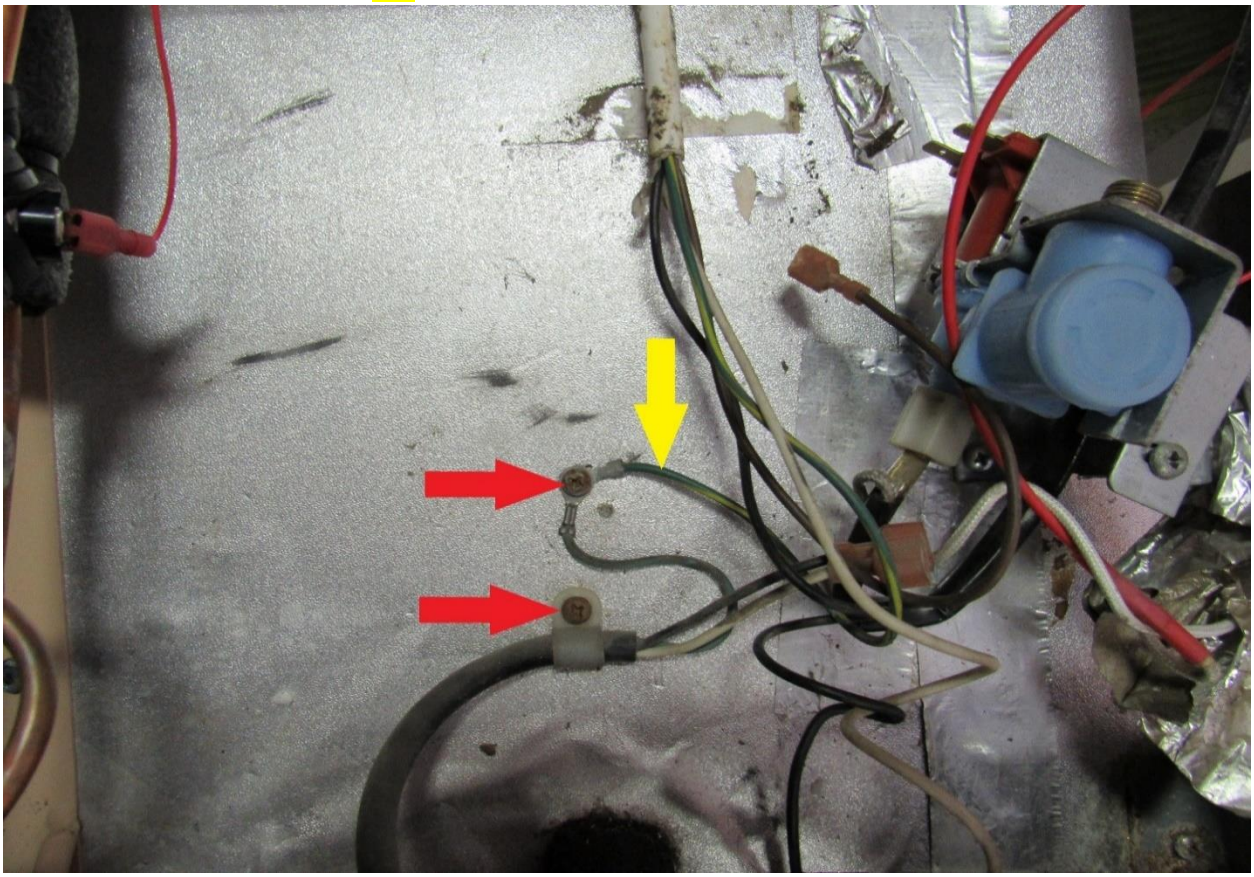
Foam around hole to fill any gaps.



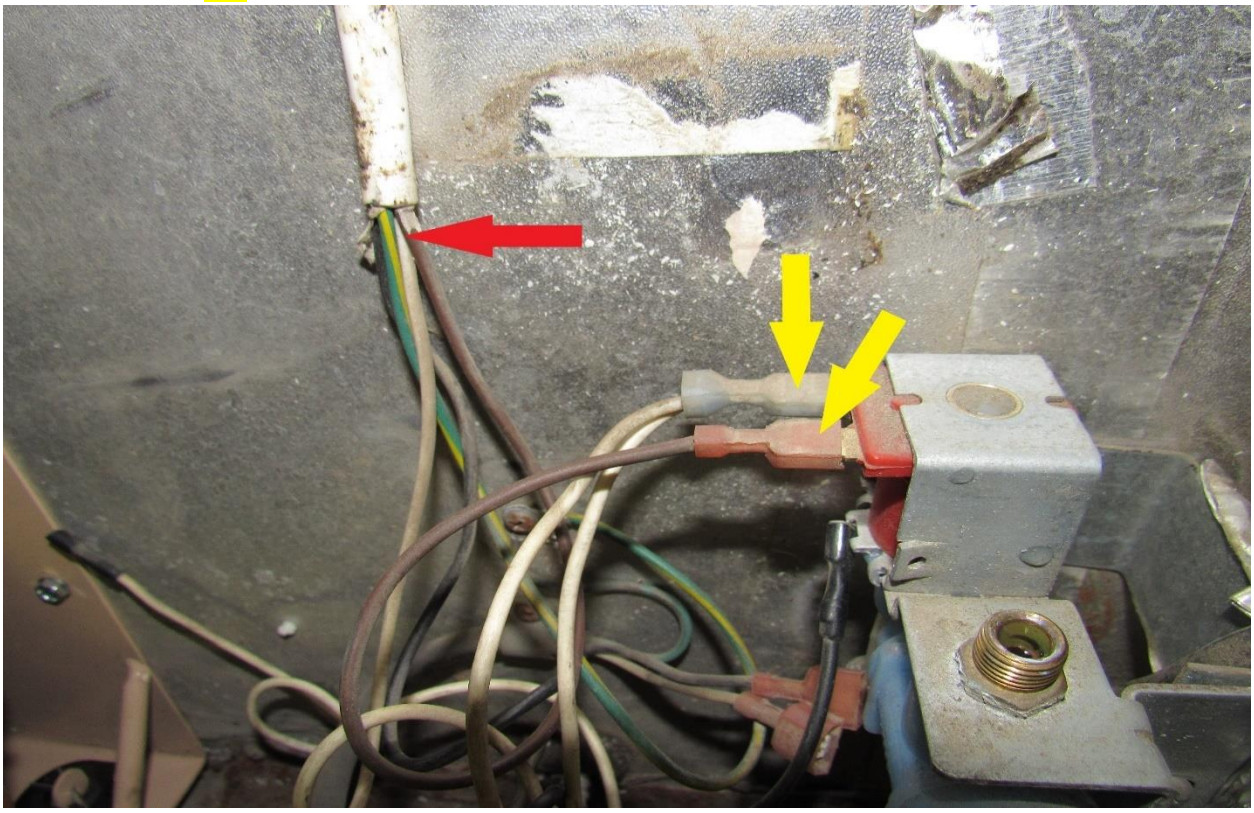
If your reinstalling the icemaker, take the 120V ice maker cord off the old removed plate(RA) skip this part if icemaker has been discarded



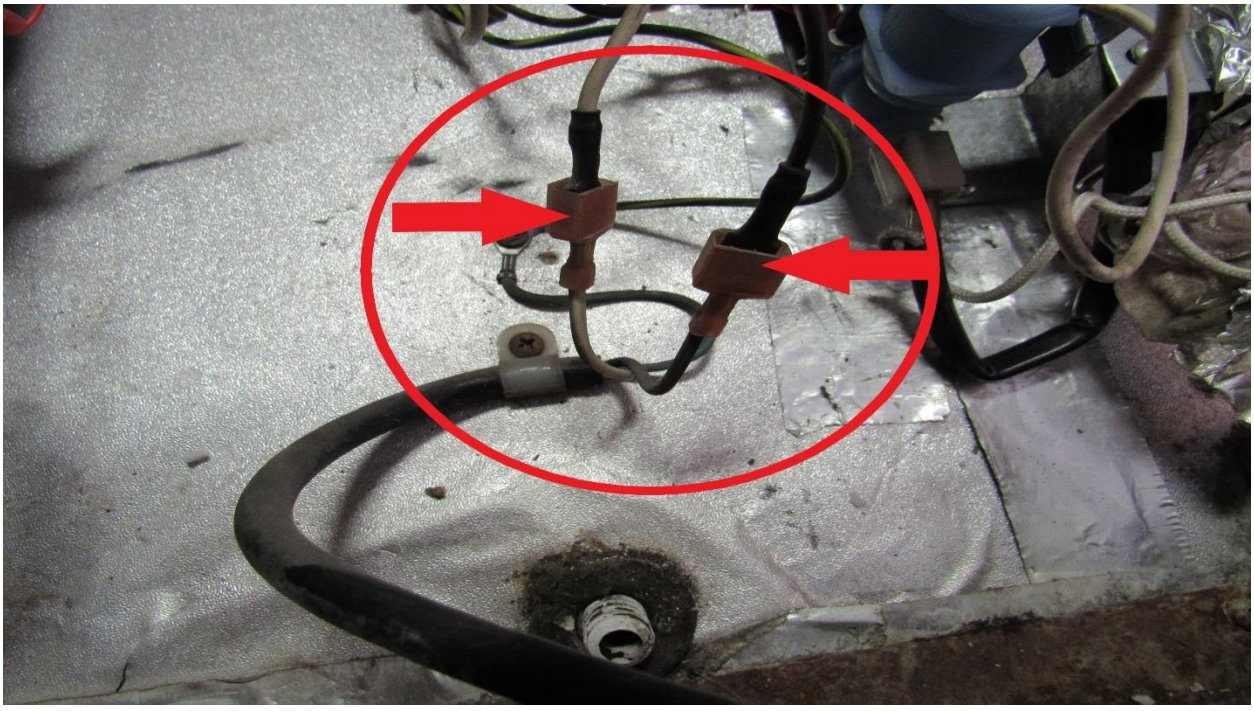
Re-attach the cord to the box as shown (RA). Also include the ground from the ice maker wire harness(YA).



From the ice maker wire harness (RA), connect the white and brown to the water valve (YA).



From the ice maker wire harness, connect the black and white to the 120V cord(RA).



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

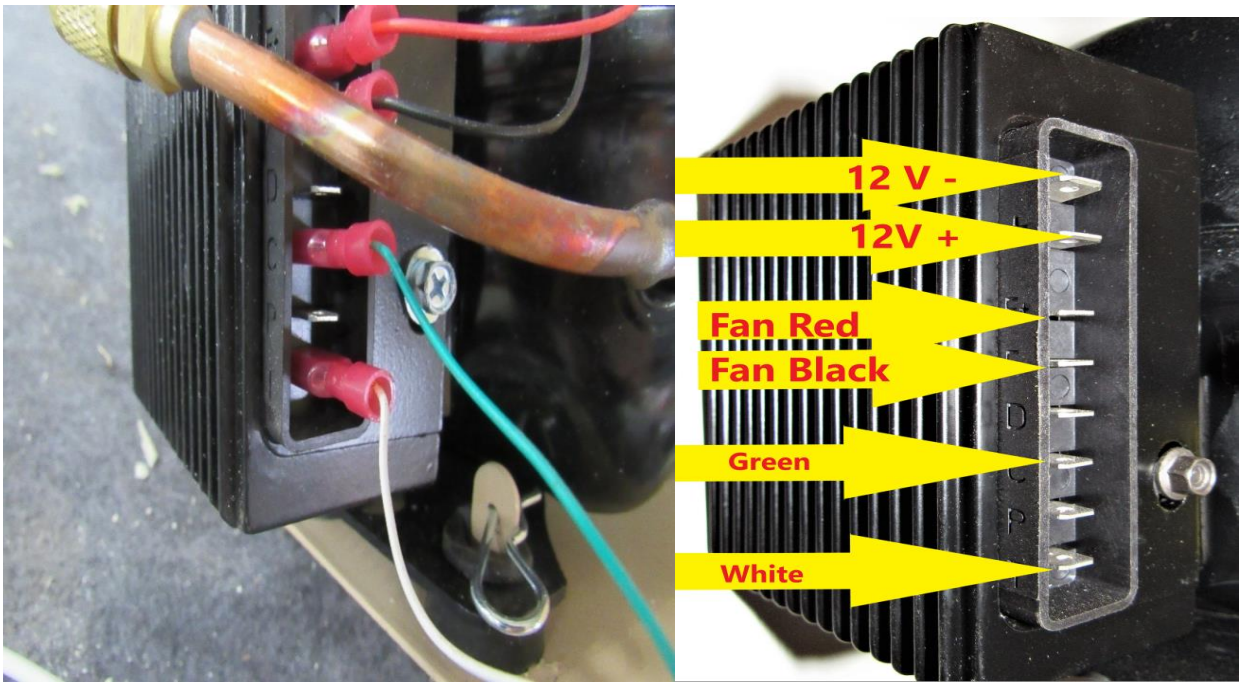
Green Wire: Fridge (Small) compressor

White Wire: Fridge (Small) compressor

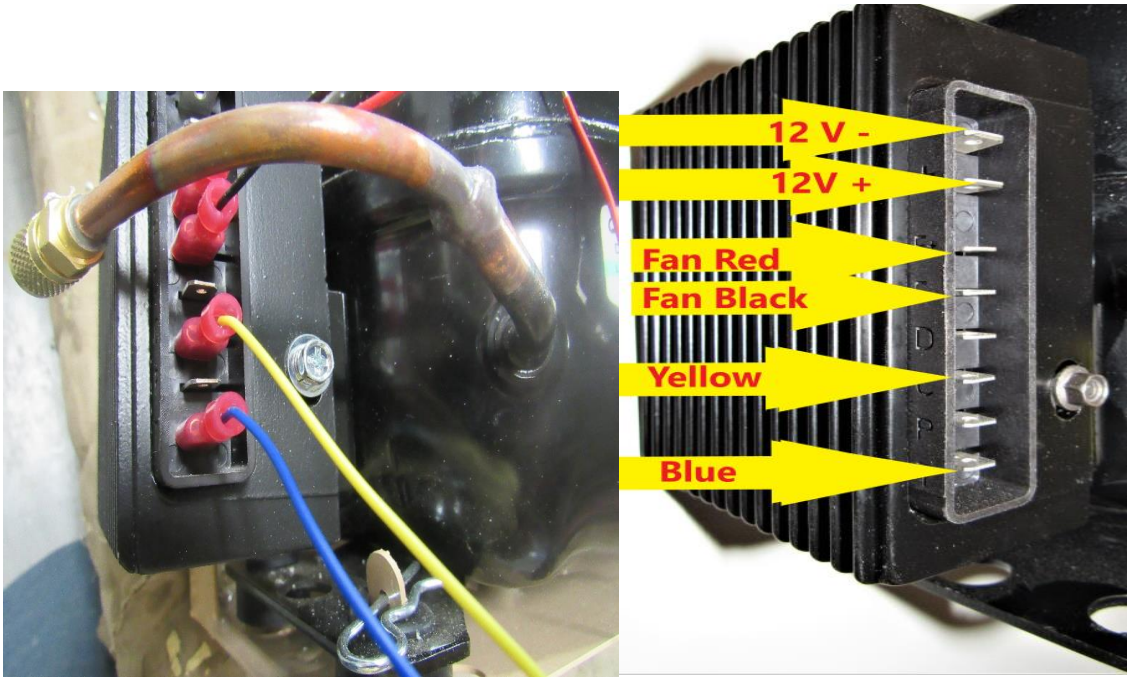
Blue Wire: Freezer (Large) compressor

Yellow Wire: Freezer (Large) compressor

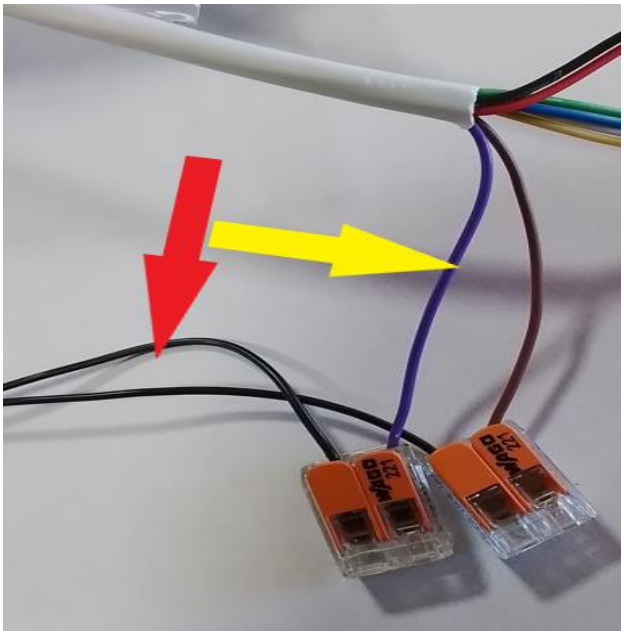
Step #2: Take the white and green wire and crimp a red female connector onto the ends and plug it into the bottom and 3rd up spade on the side of the small compressor.



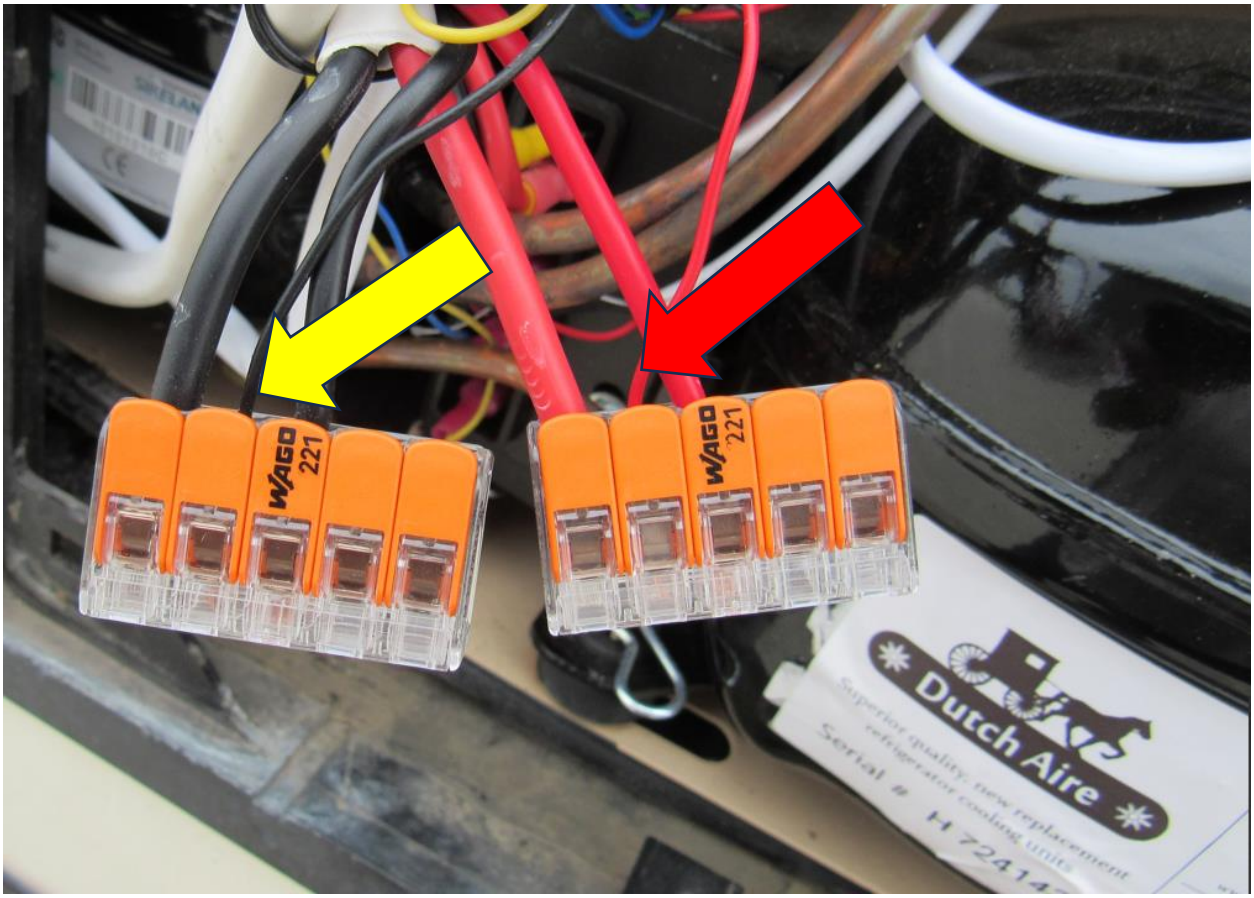
Step #3: Take the blue and yellow wire and crimp red female connectors onto the end and plug it into the bottom and 3rd up spade on the side of the large compressor.



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



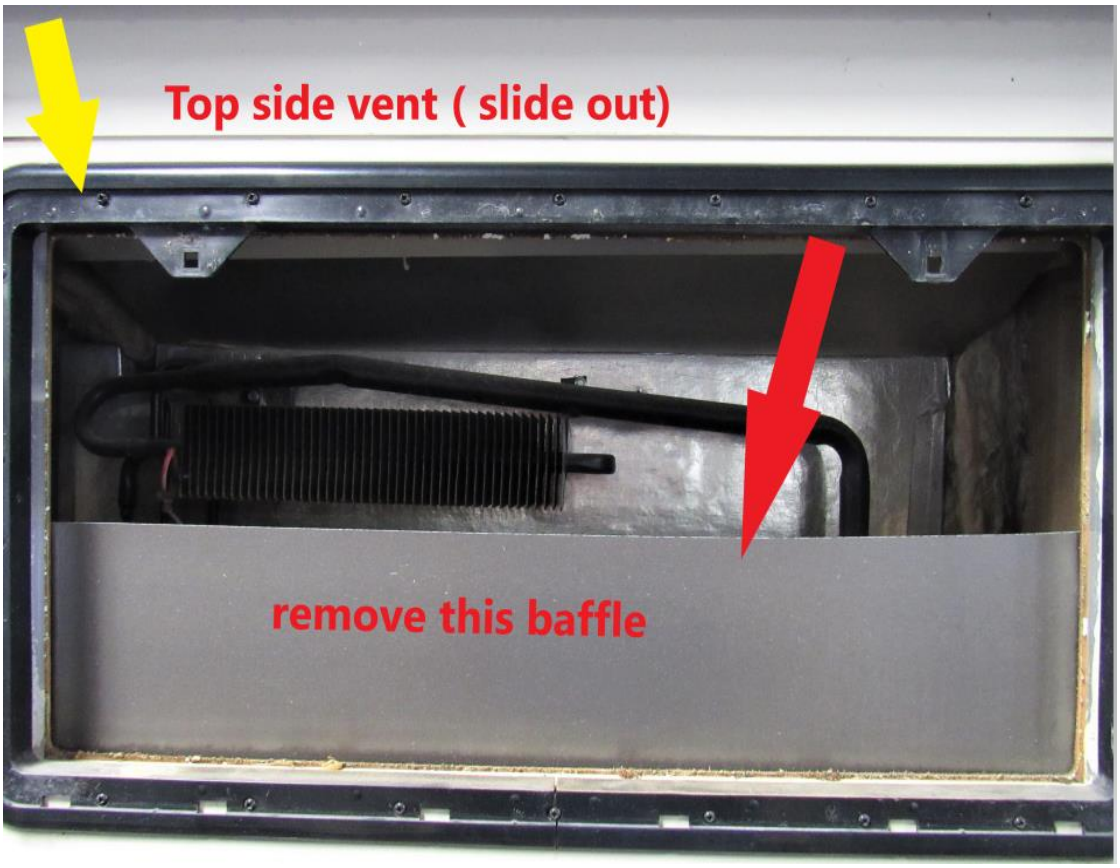
Step #5: Take the red wire from the controller and insert it into the wago connector from the compressors splitter harness. (RA) Make sure that you insert it into the wago with the red power wires for the compressors. Repeat this process with the black wire and make sure that it is inserted into the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



Refasten the door handles.



Remove the top control panel and fasten the top mounting screws back into place (RA).



Fasten the screws that hold the top control panel into place (RA).



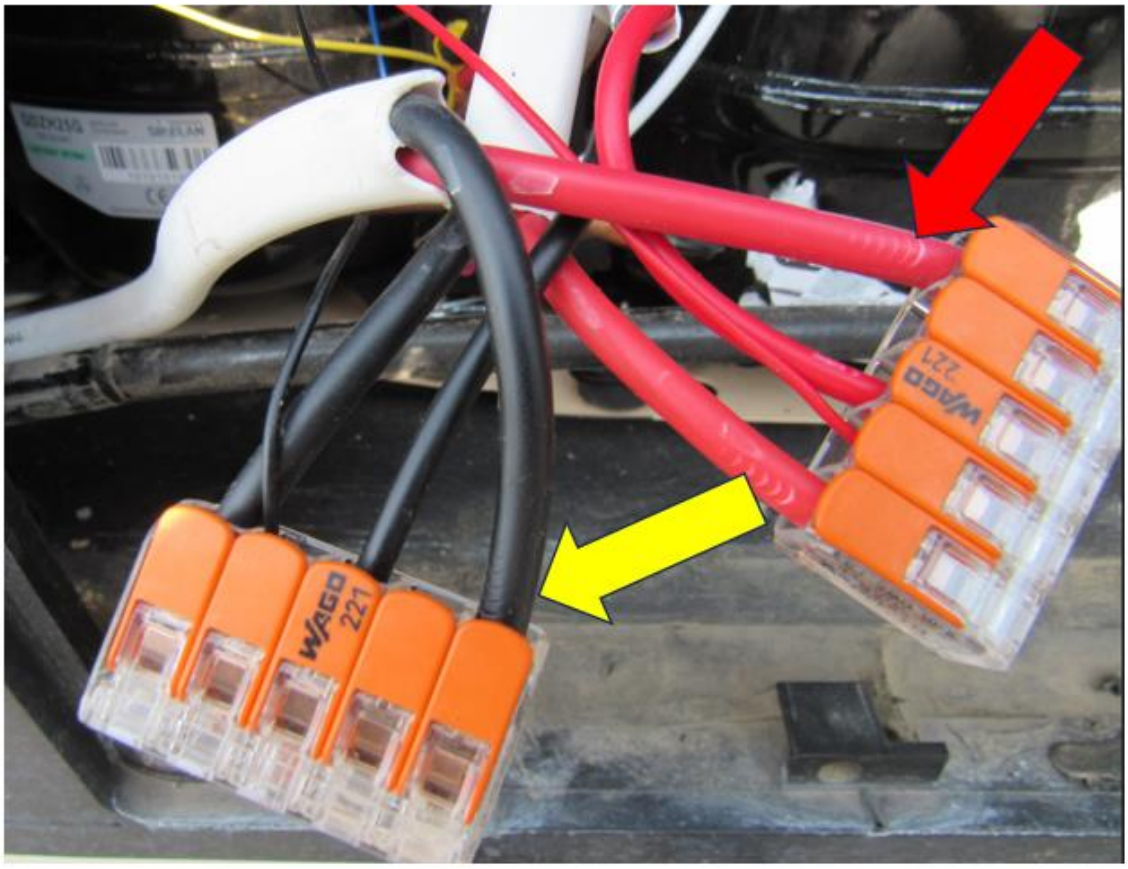
Fasten the bottom mounting screws (RA).



Re-install the rear mounting screws (RA). Refasten your defrost hose how it was prior



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.

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

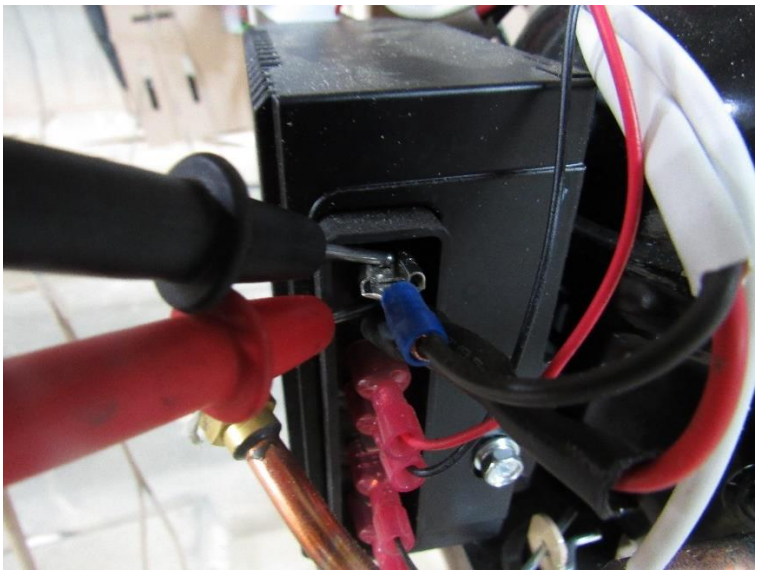


Same with freezer, clip underneath bottom shelves center side to side but have this one more towards the back of the freezer.



Troubleshooting

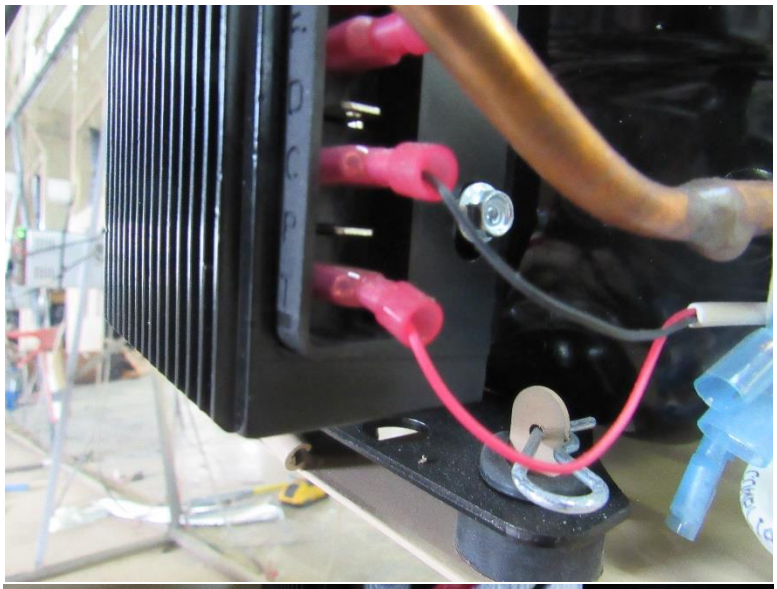
If compressors start but shut back down after about 15 seconds or so, check your voltage at the compressors at the time it tries to start. Compressors have a built-in low voltage shut off set at 10.4V. On startup is when the compressors draw the most amperage. If voltage drops below 10.4V the compressors 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





FAQs

How much will the compressor actually run?

From our testing in 80 degrees, with the fridge and freezer empty, and the doors remaining closed for a 24-hour period, the 120V AC compressor will run approx. 56% of the time and the 12V DC compressor runs approx. 67% of the time. However, keep in mind that this can be very easily affected by a number of variables such as ambient temp, how often the doors are opened, and how much food is in the fridge/freezer.

What is covered under warranty?

Our warranty covers the cooling unit and any of our controls that came with the cooling unit. It does not cover any original Dometic parts such as the control board, the front display, thermistor, etc.

What if the cooling unit needs to be worked on and I'm not close to your location (Shipshewana, IN)?

Contact us first and we will try to help you get the issue resolved. Most problems can be fixed by us through email or phone but if more work, or hands on work is needed, we have a list of dealers/service centers in almost every state that have purchased cooling units from us before and could possibly help you out.

Is there any regular maintenance to perform on these cooling units?

The only thing that needs to be done on these cooling units is to take compressed air and blow any dust or debris out of the condenser fin. This can be done maybe once or twice per year.

