

Norcold 2118 Double Compressor

HVAC AC 120V

# JC REFRIGERATION INSTALLATION MANUAL



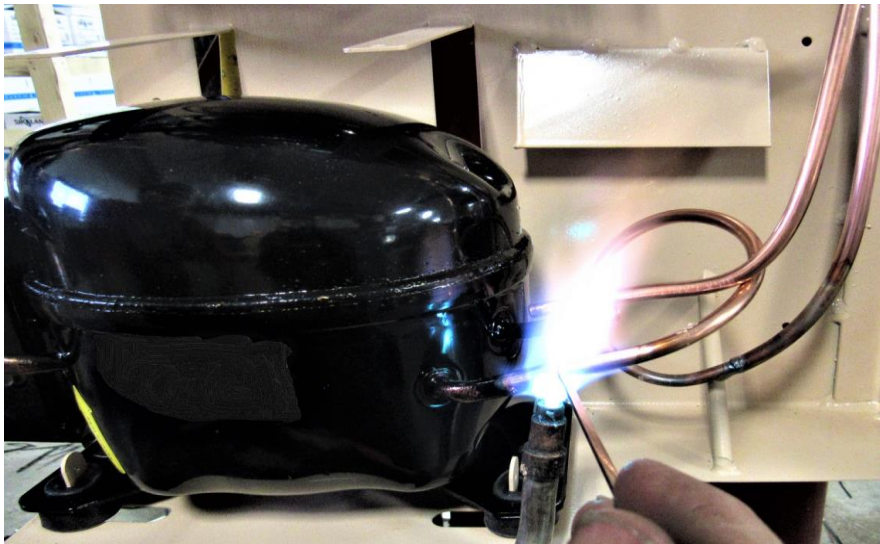
Jr and Jeremy Lambright

JC REFRIGERATION [www.jc-refrigeration.com](http://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



**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!!



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.

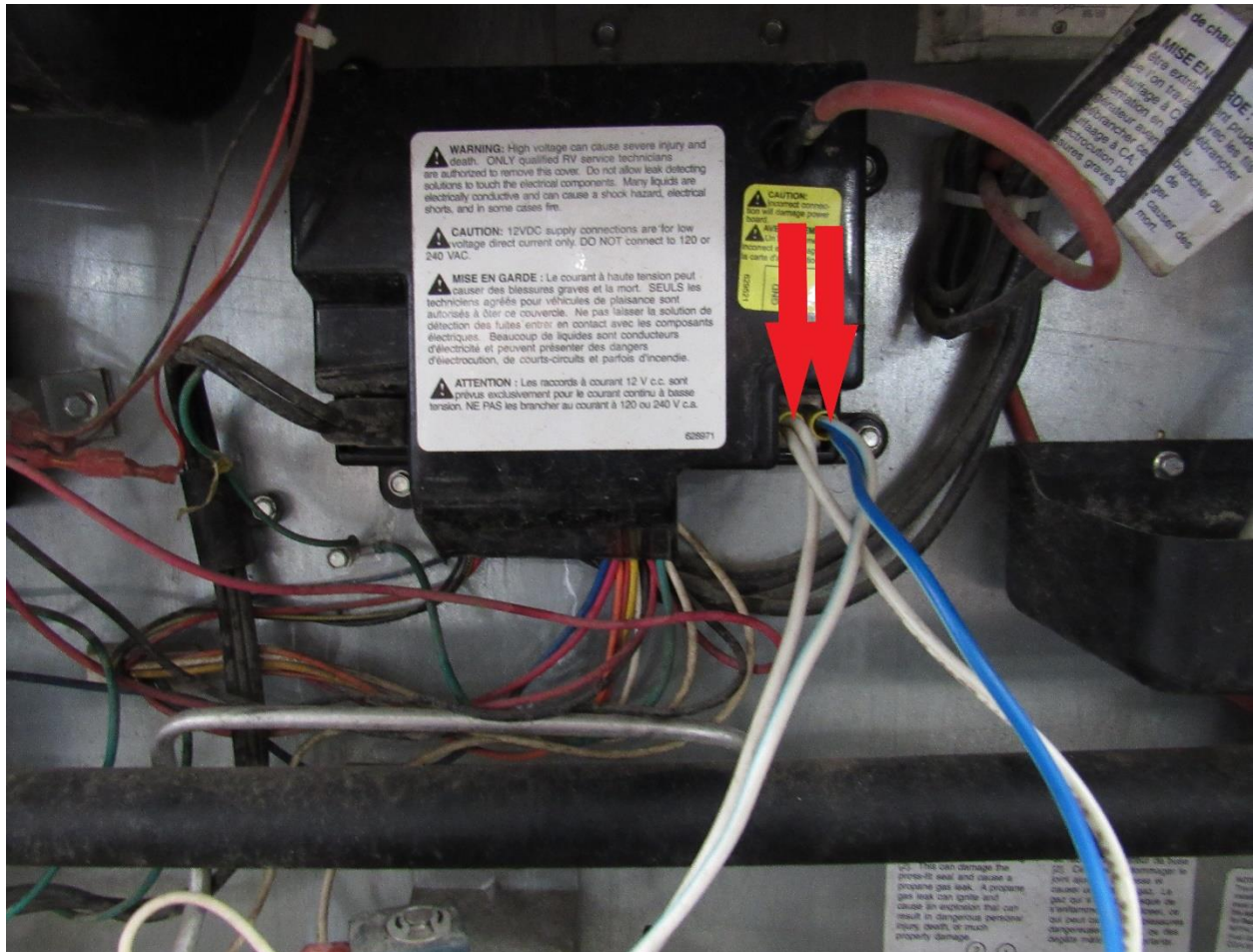


**WARNING:**

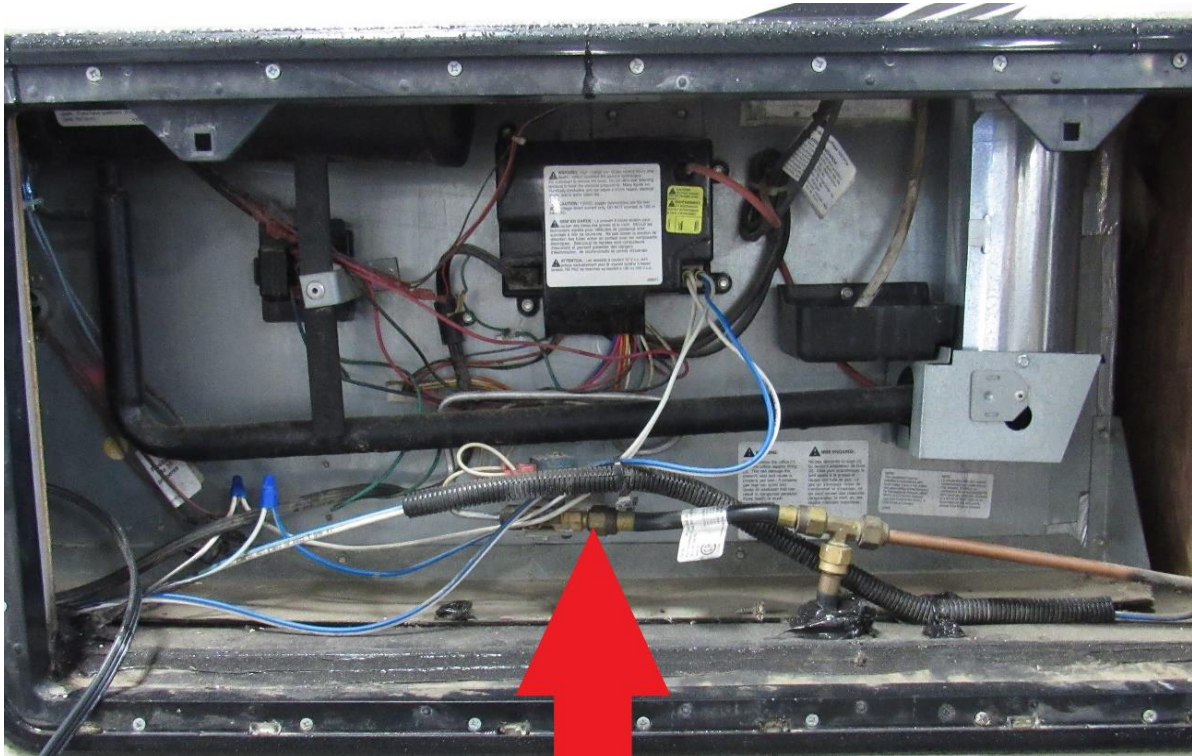
**Make sure to turn off LP gas at the tank before starting the install.**



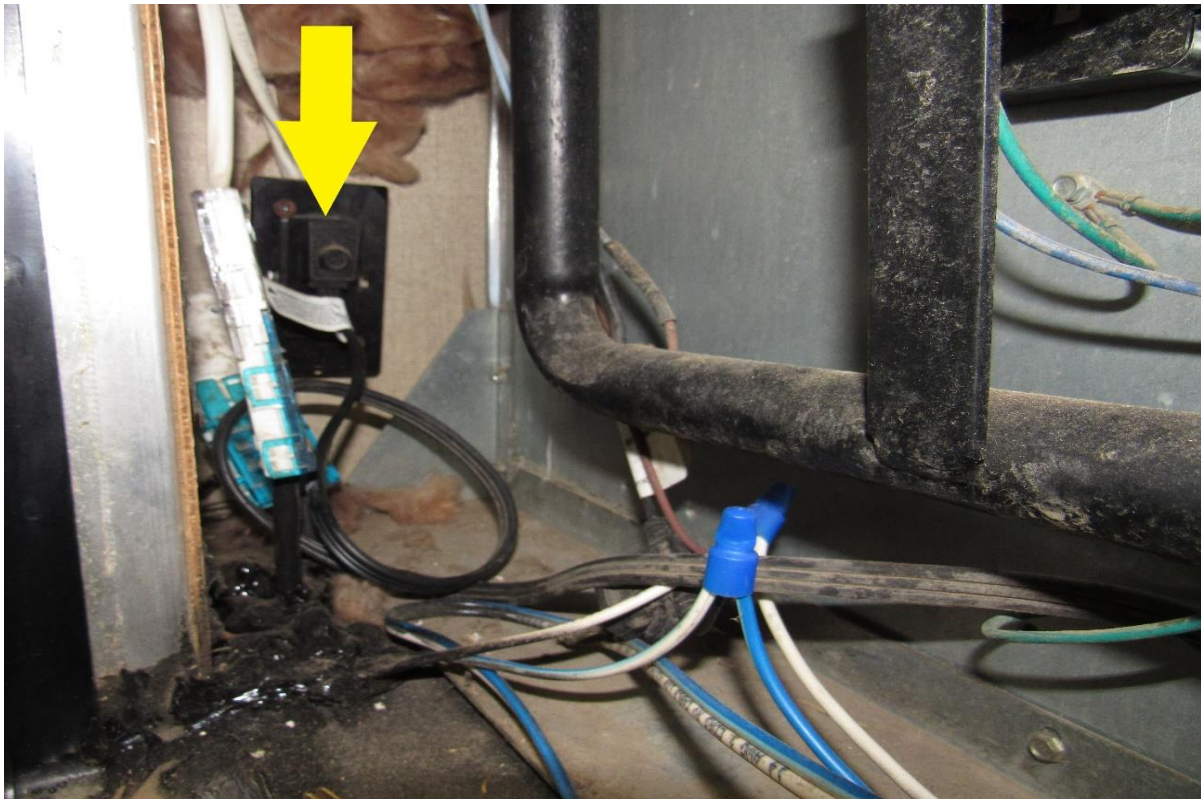
Locate the side vent for the refrigerator on the outside of your RV. Take the 12V wires loose from the board (**RA**). If wire ends are not insulated, wrap the ends with electrical tape so you don't blow the fuse.



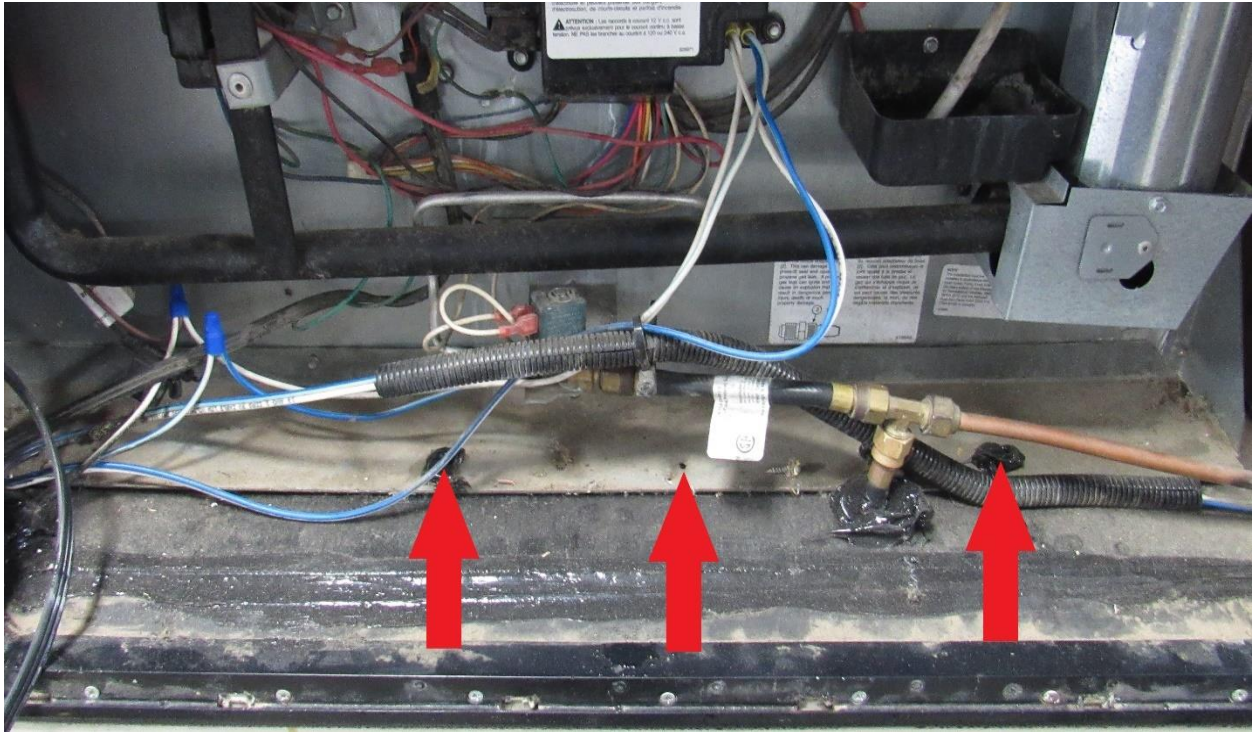
Take you LP gas line off (RA).



Remove the 120v plug from your wall outlet (YA).



There are many different styles out there but most have at least 3 mounting screws (RA) through the back plate holding the fridge to your RV floor. Screw size and bit needed will vary from coach to coach.



Going inside your RV, start by removing the black trim covers on the top and bottom (RA) of fridge.

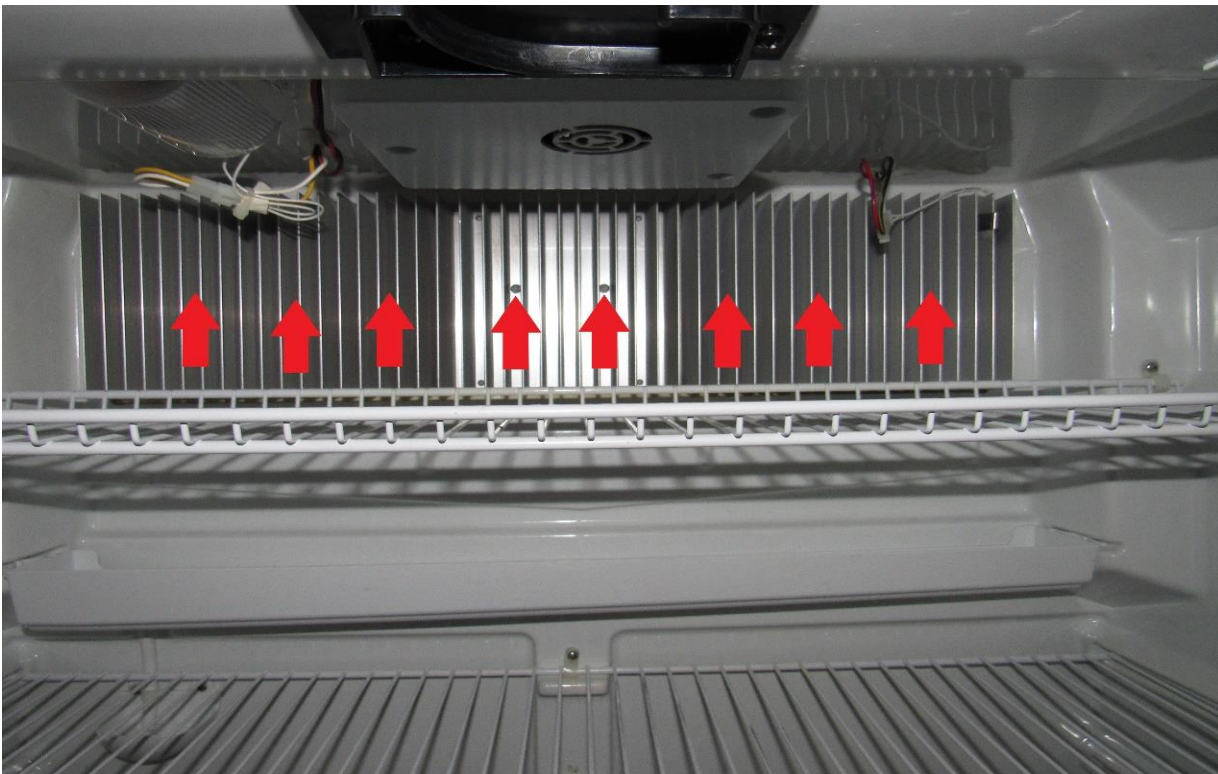




Remove the 4 mounting screws on the top and bottom (RA).

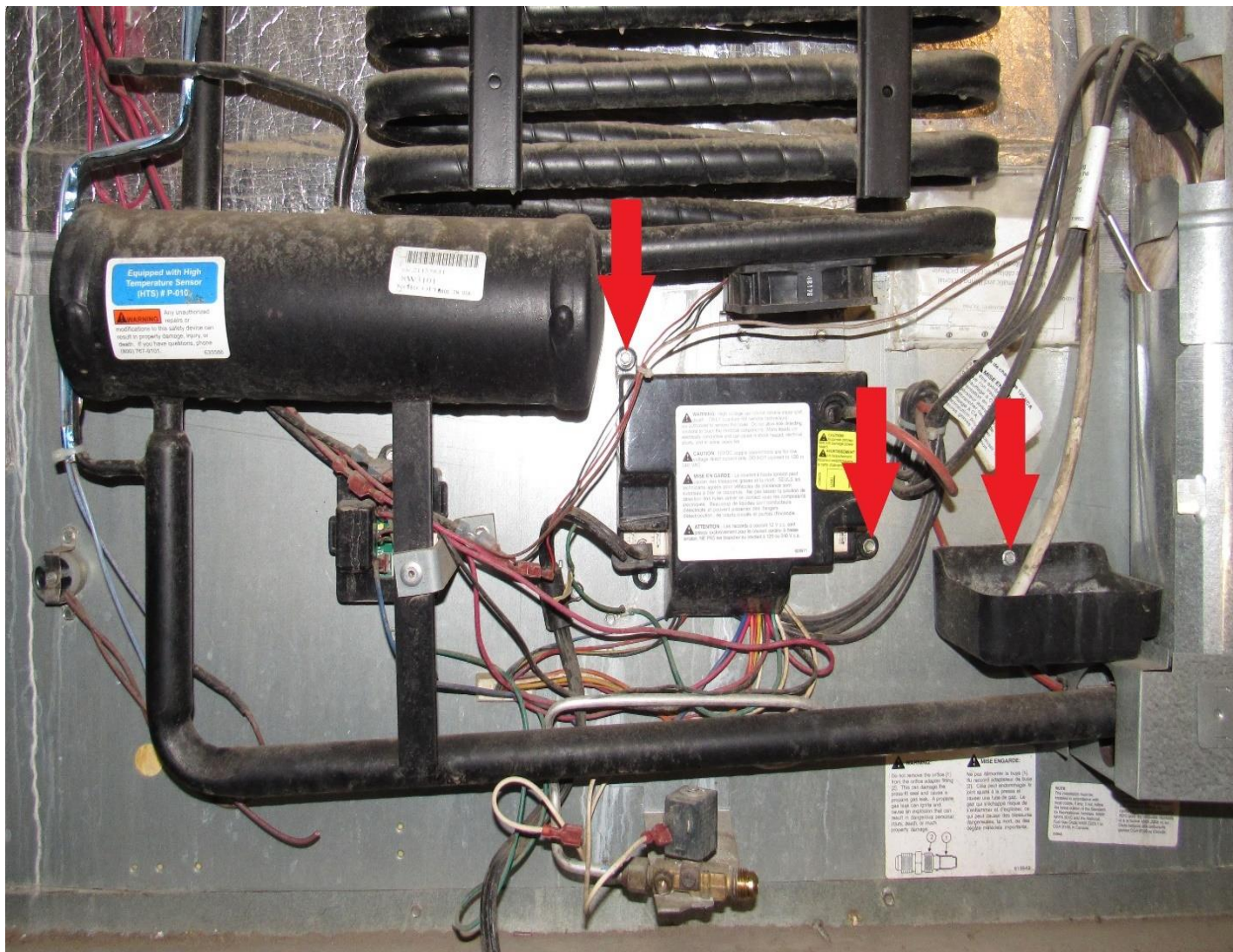


Remove the mounting screws from the freezer and refrigerator (RA) with a 5/16" hex bit.

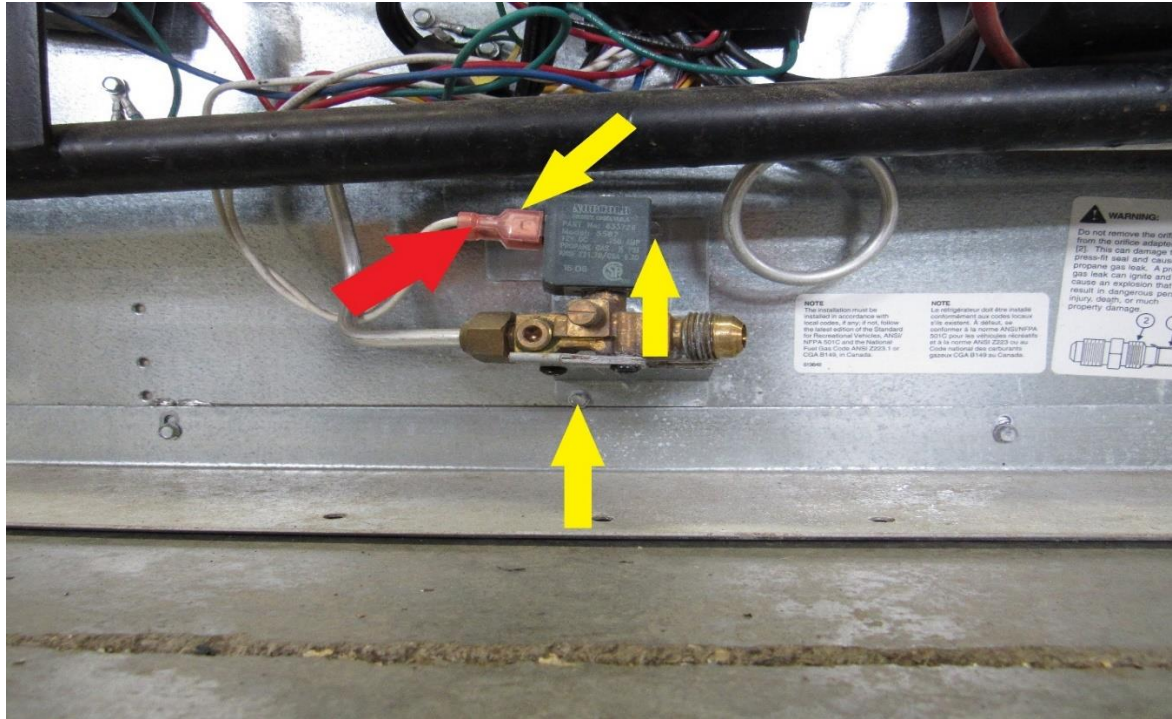


We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits 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. Doors can be removed if this helps on your end, it prevents damage to the doors and helps with weight load.

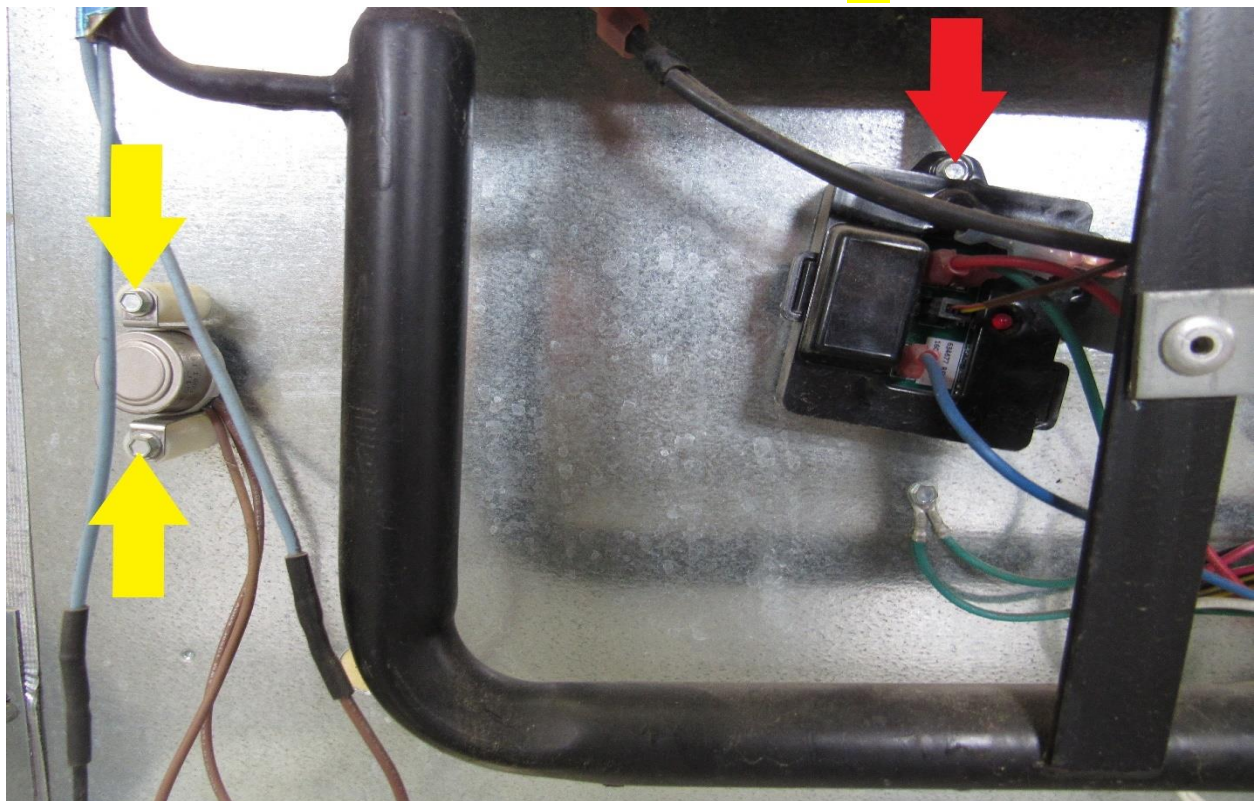
Remove ¼" mounting screws (RA) on board and defrost cup.



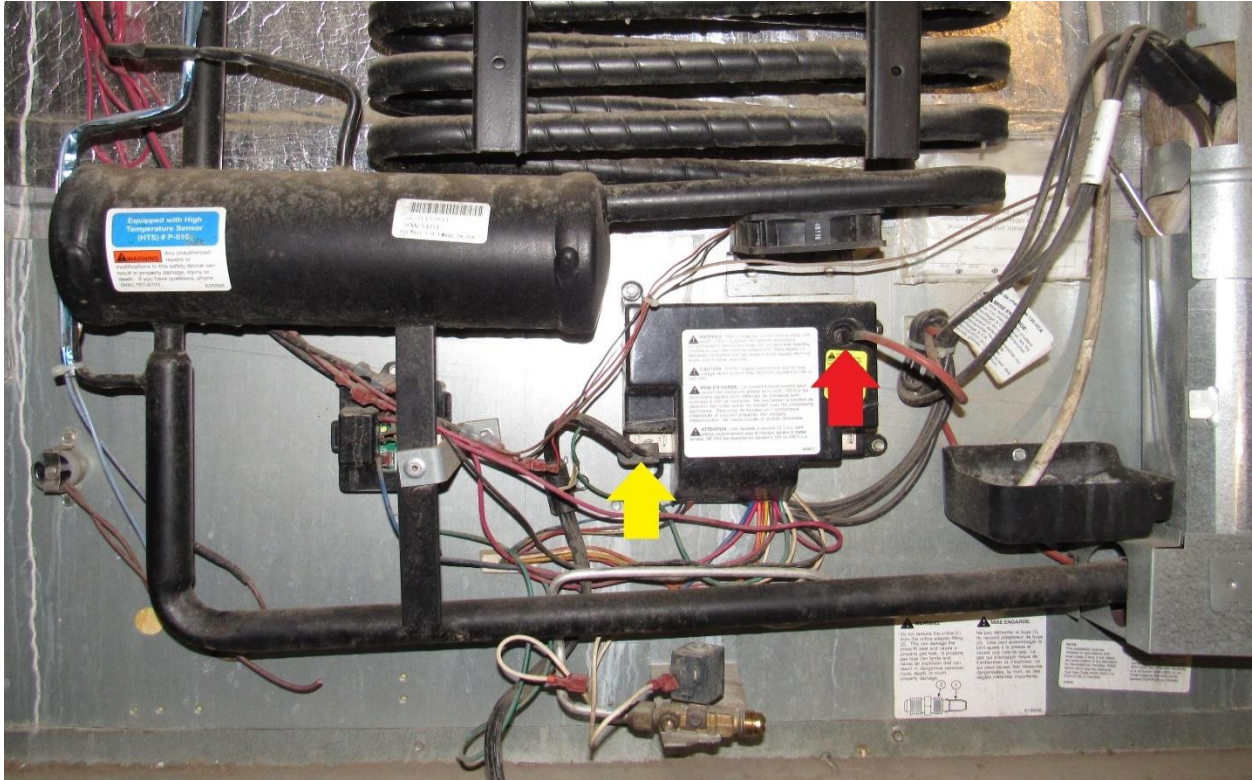
Remove the 2 white LP gas solenoid wires (RA) and the 3 - ¼" hex head (YA) mounting screws.



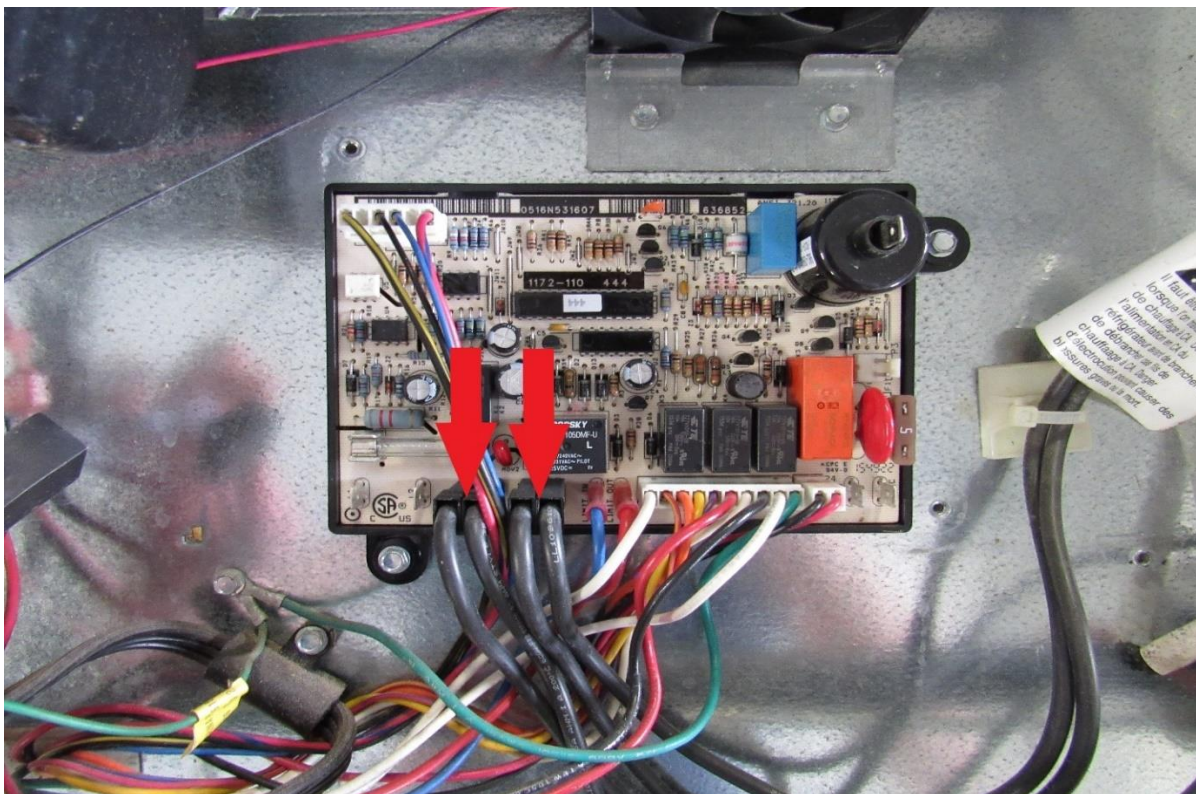
Remove the Norcold recall kit (RA) and wires that are attached to it. Discard the black box. Remove the Low Ambient temperature kit (YA) and discard.



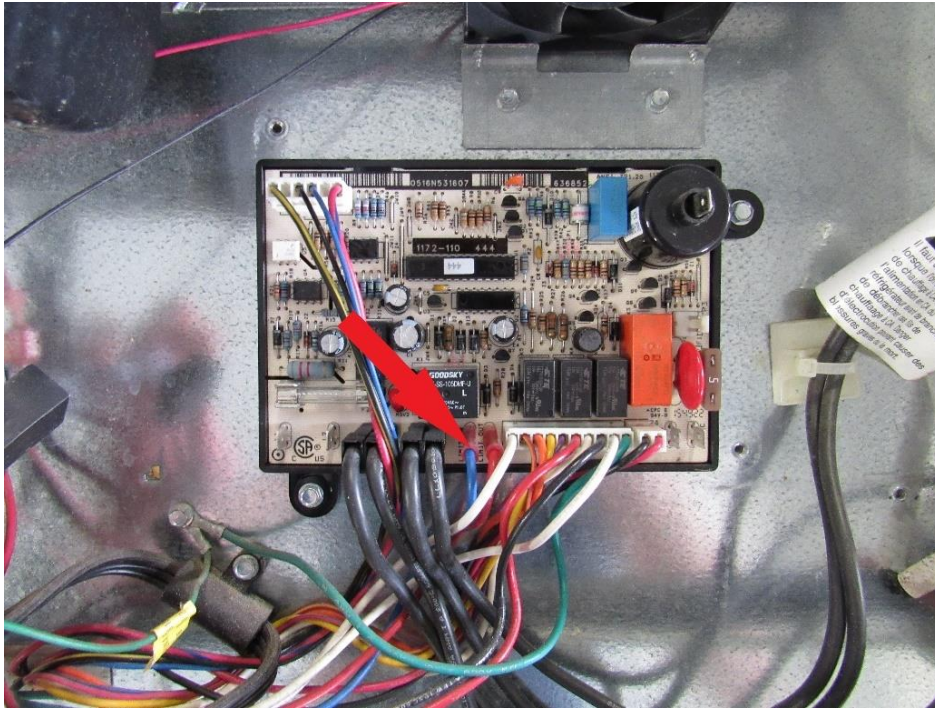
Remove igniter (RA) and the 120v black plug (YA).



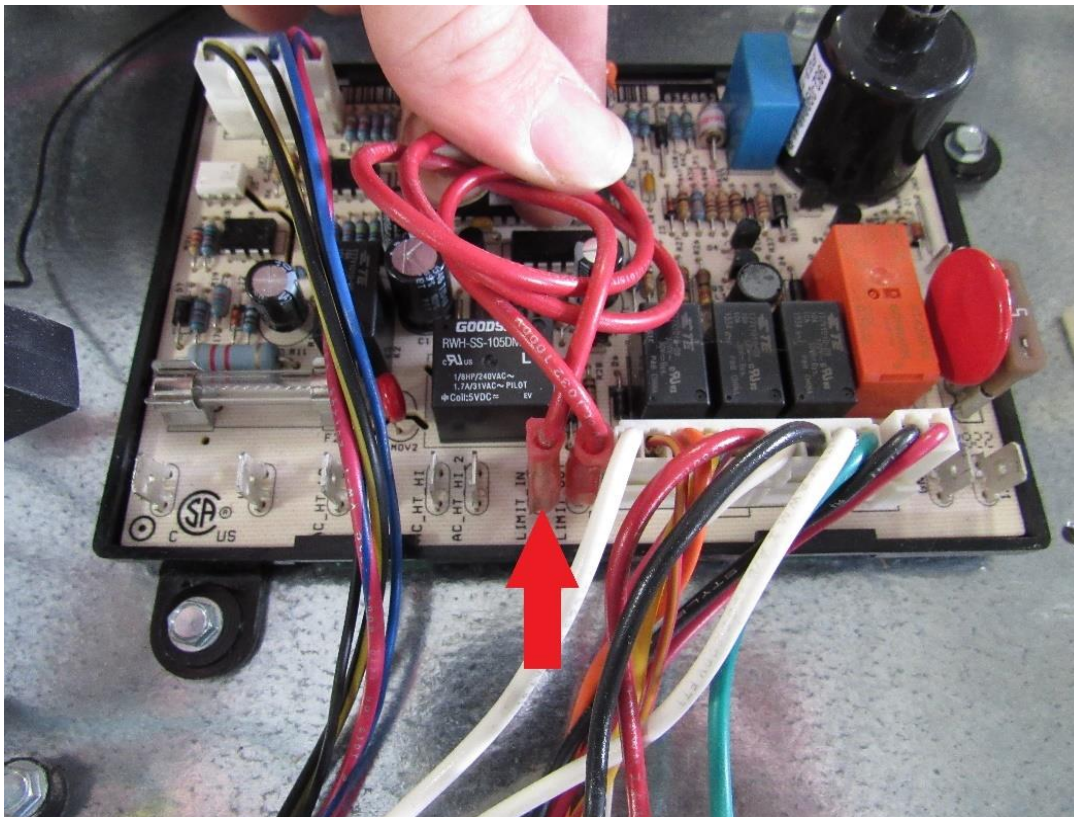
take off board cover and disconnect 4 black heating element wires (RA).



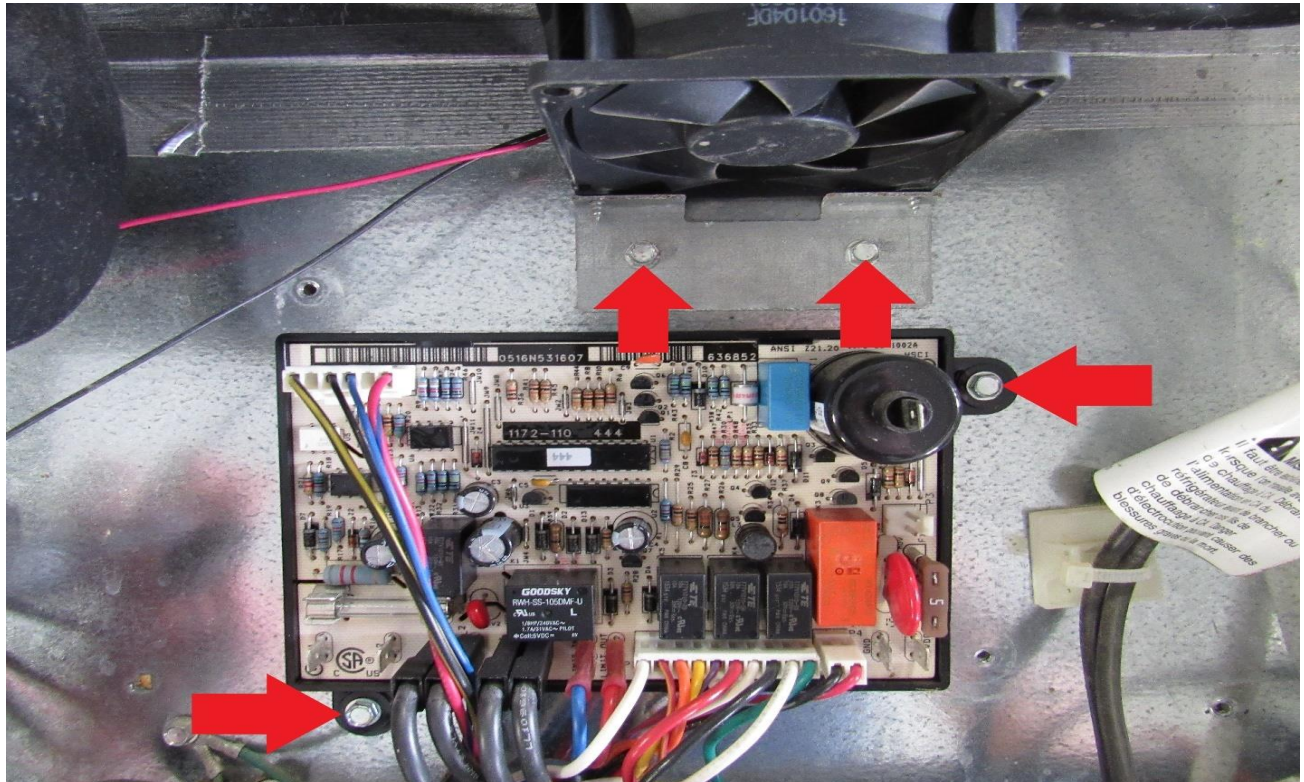
Take blue wire (RA) loose from board and discard



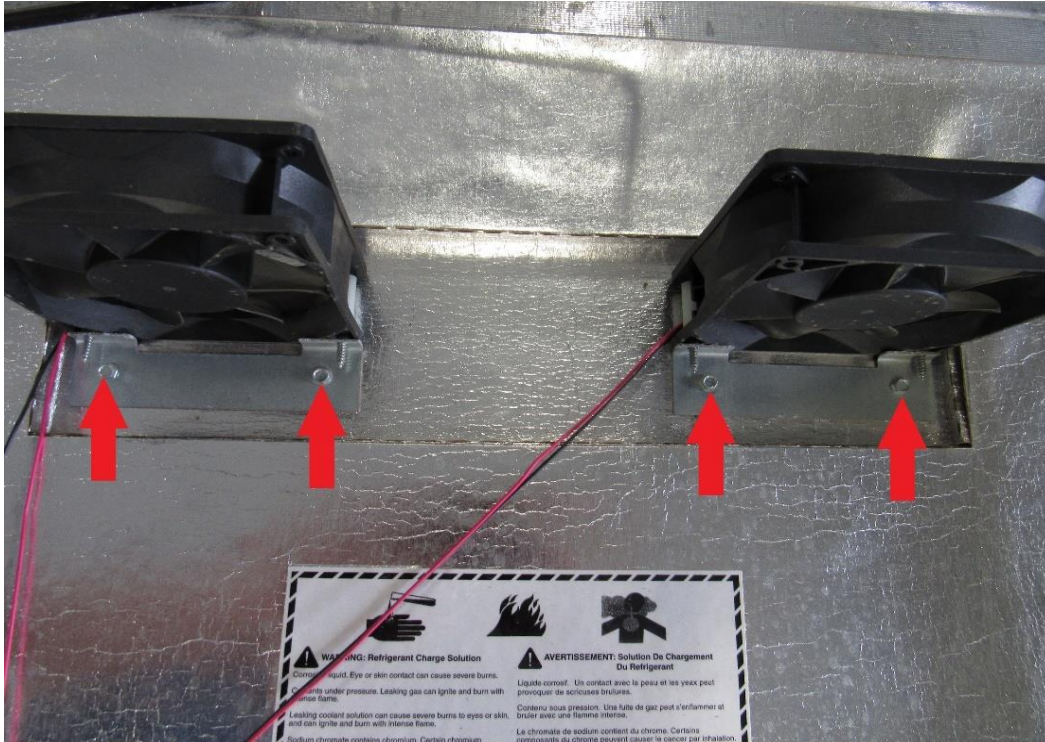
Take the red wire and loop it around, then plug it into the spade where the blue wire was (RA). Spades are labeled "limit in/limit out"



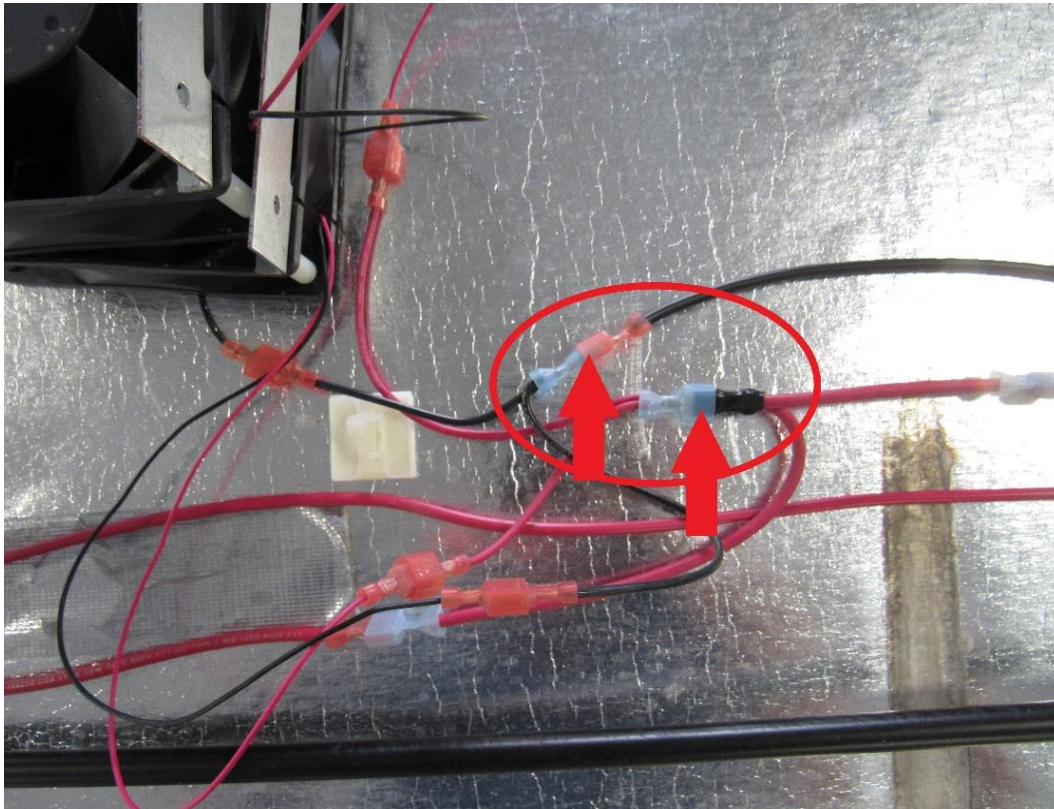
Take the board and fan loose by removing the 2 - ¼" screws (RA). Discard fan.



Remove the 4 fan mounting screws (**RA**) with a ¼" hex bit.

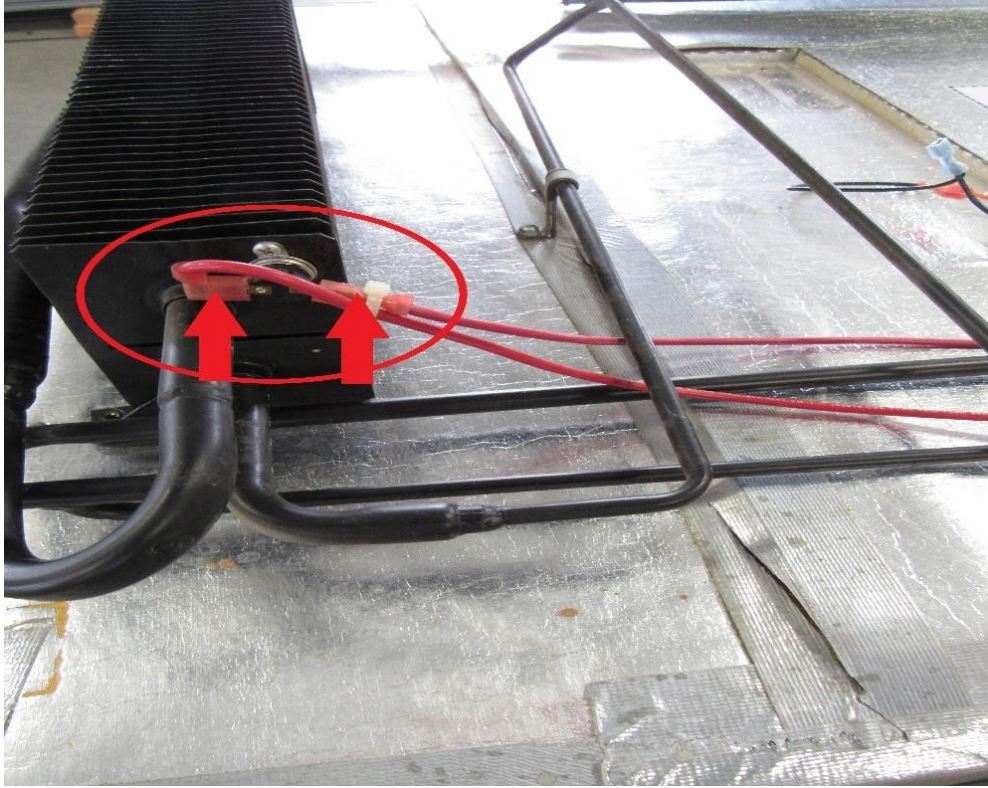


Disconnect the main 12v wires from the fans (**RA**). Discard fans.

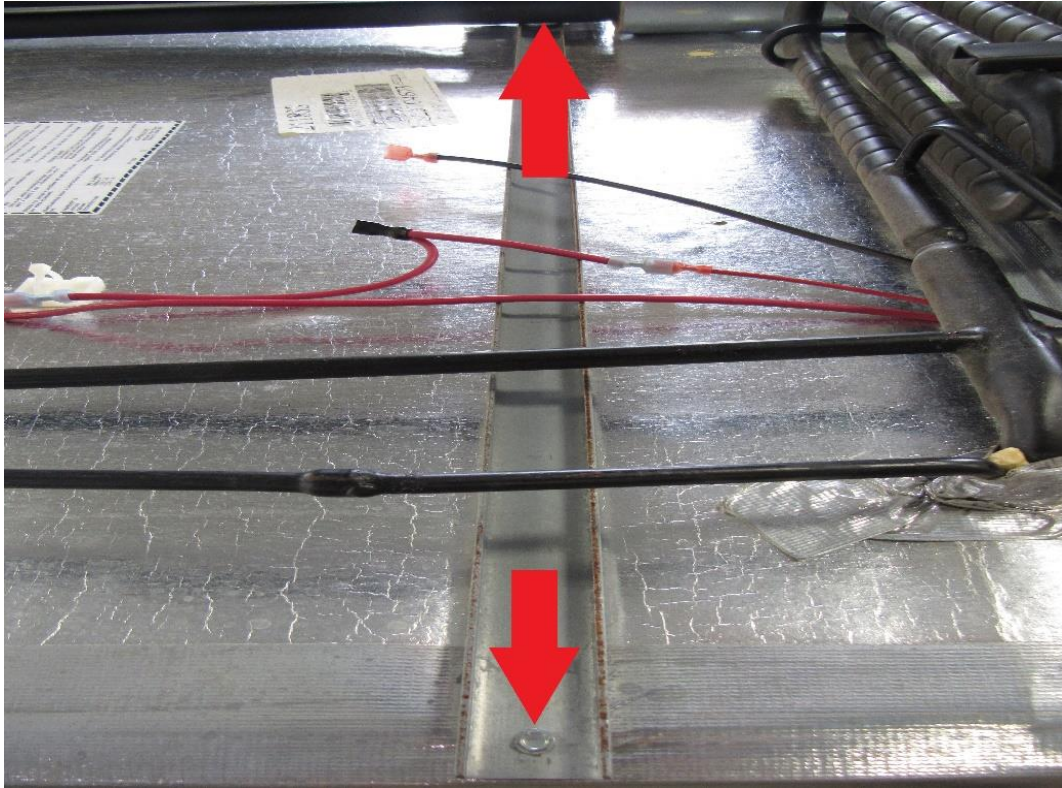




Disconnect 2 red wires from the temperature switch (RA), and pull fan wires down to the bottom of the unit to be used later.



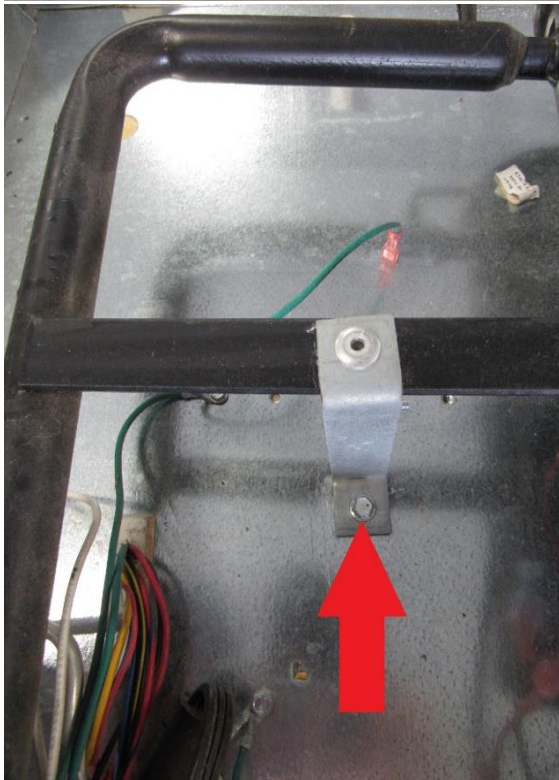
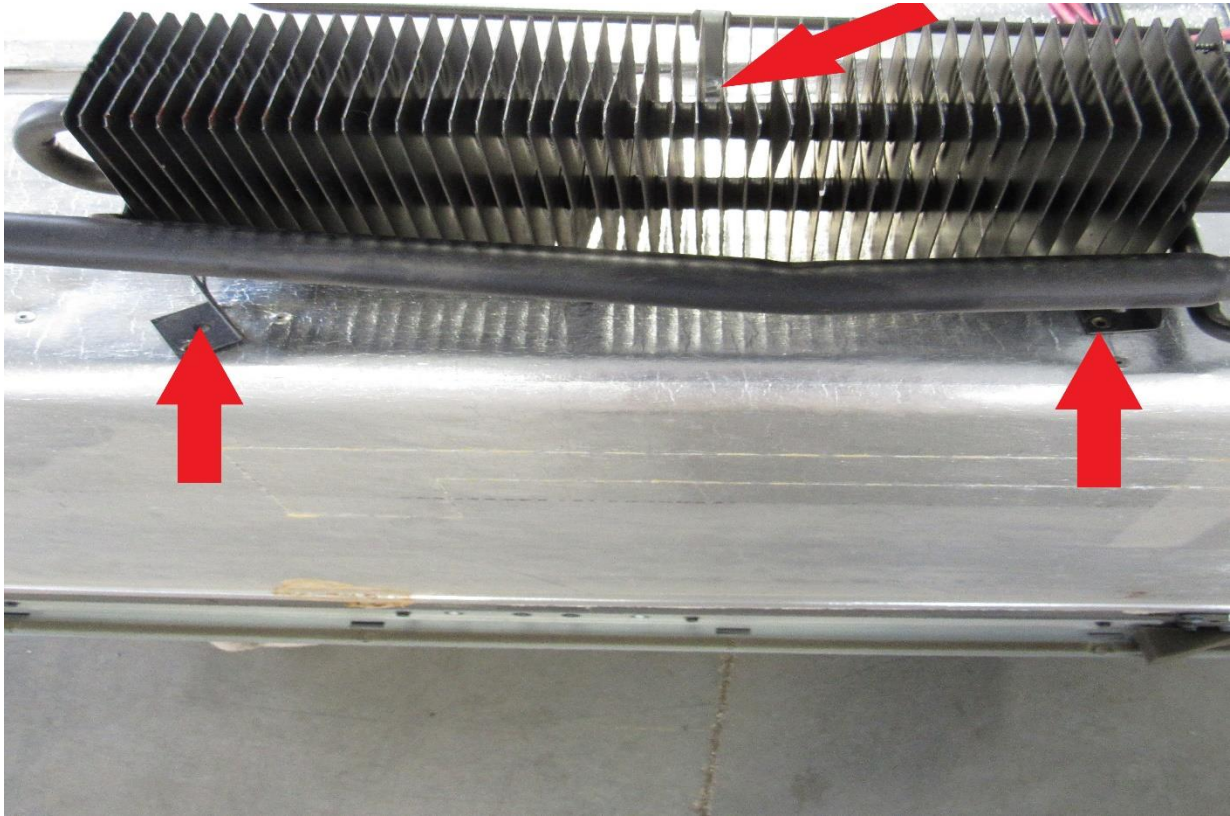
Remove these 2 screws (RA) holding the steel bar and discard.



Cut the tape around all edges, between unit and box



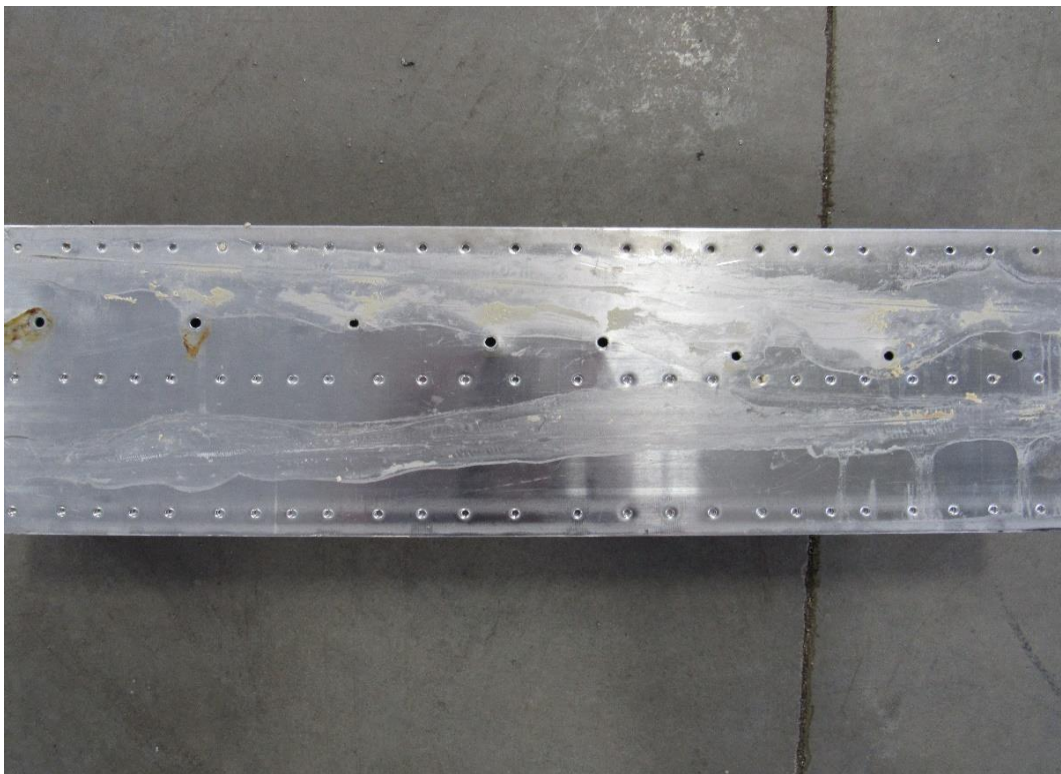
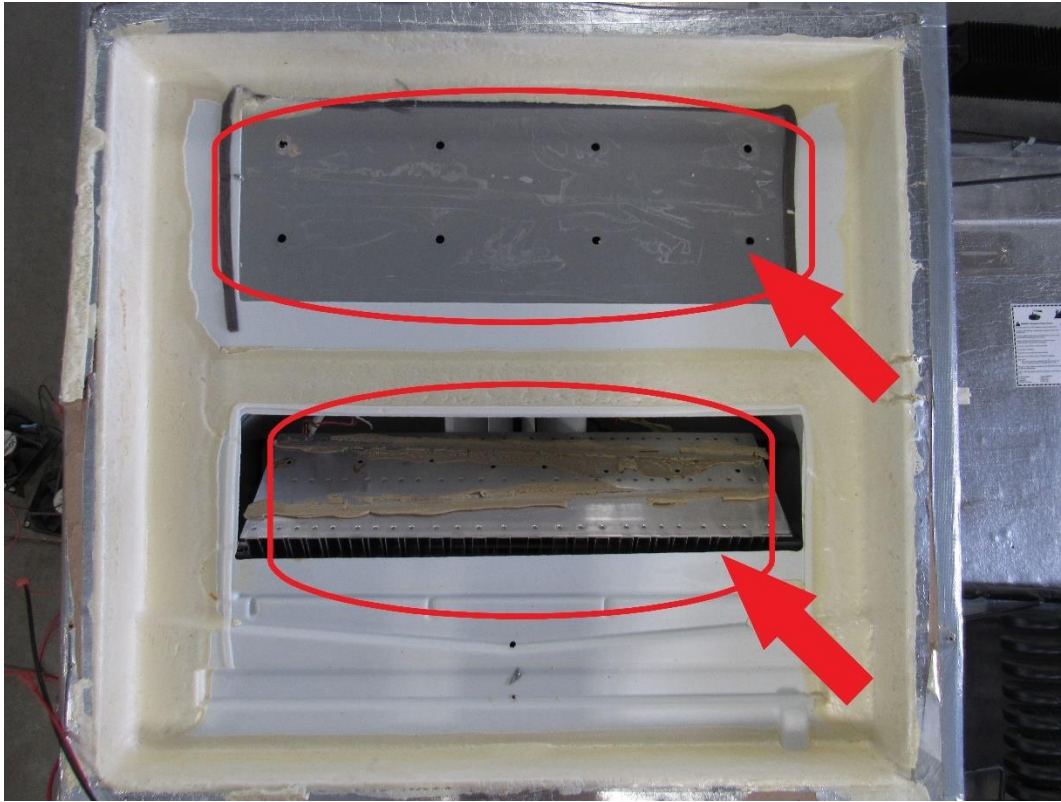
Remove the last 5 mounting screws (RA) with a 5/16" hex bit.



**Lift the cooling unit off the box and discard, normally to a scrap yard or land fill.**



Clean the freezer plate and the refrigerator fin (RA). You can pull the fin up through the plastic cutout to clean.



**Make sure there is no excess foam protruding along the edges of the box. Trim and clean everything so the new unit will sit nice and flush.**



Installing the fin fan has 2 options:

**Option#1** Set the fin fan into the refrigerator fin opening, make sure it's somewhat secured to a shelf for now. Leave enough wire as shown inside and also enough on the bottom to hook up with later. The fin fan wire sits as shown below (RA).



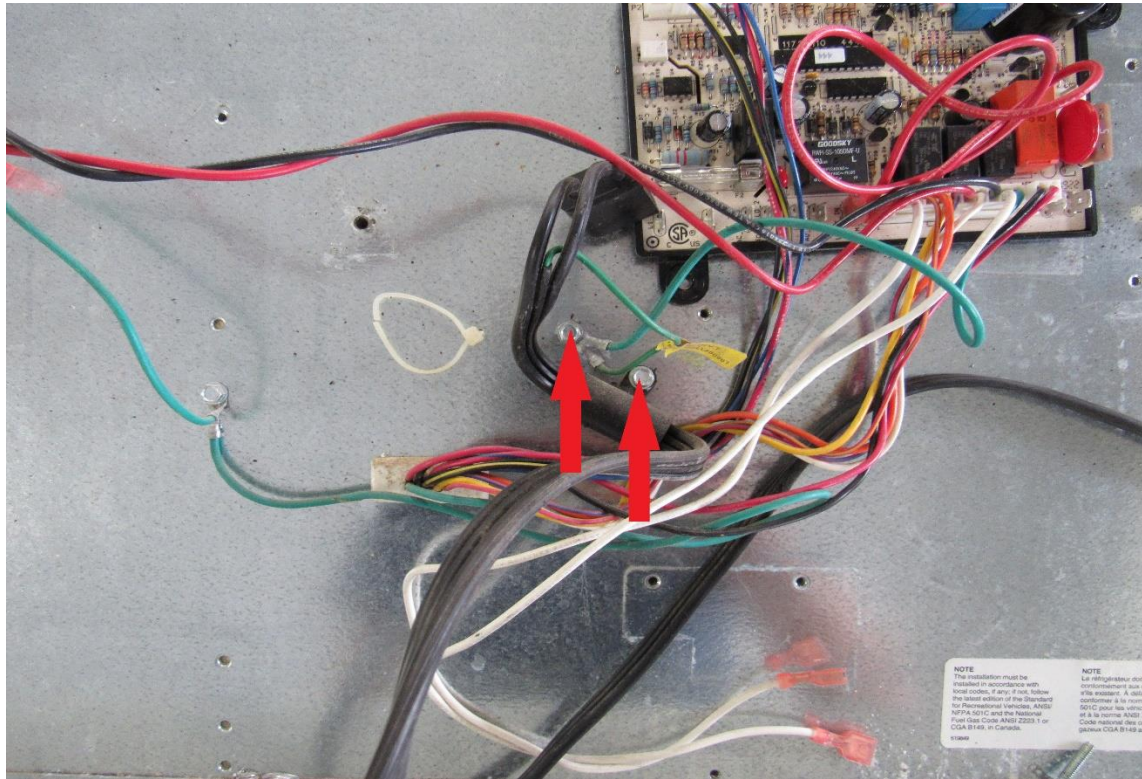
**Option #2**

If you would rather install the fin fan wire thru the defrost hose later, please see our fin fan installation manual at:

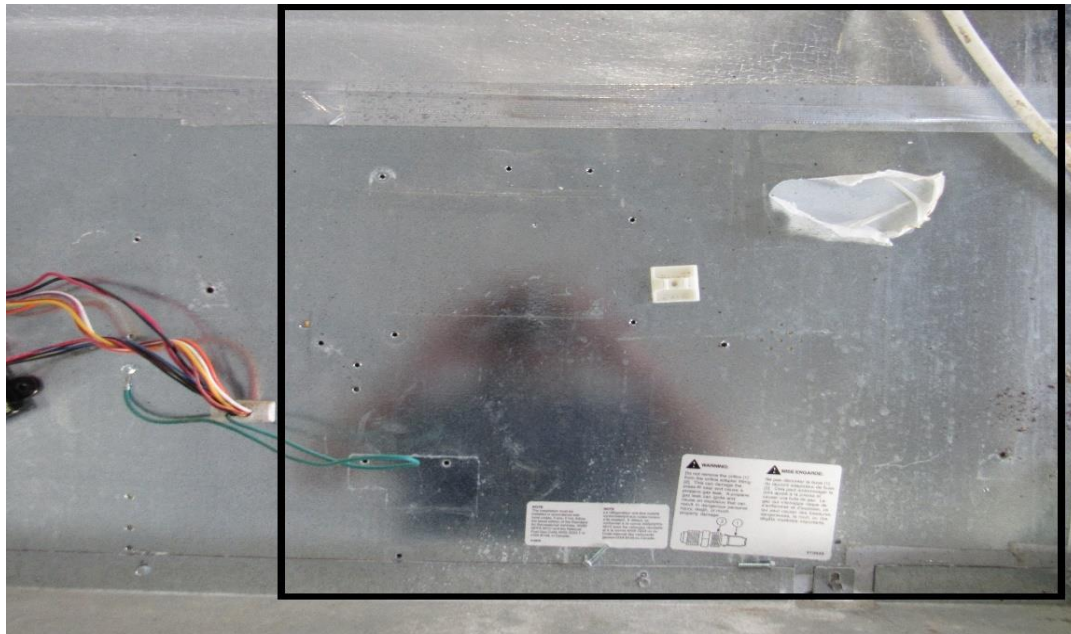
<https://jc-refrigeration.com/wp-content/uploads/2021/04/fin-fan-installation-website.pdf>



Remove these 2 ¼" screws (RA) from the 120v plug and discard black power cord. Shift everything left so we have enough room for the compressor.



Make sure everything is clear where the compressor will sit. Anything in the black square that does not sit flush with the back of the box needs to be removed.

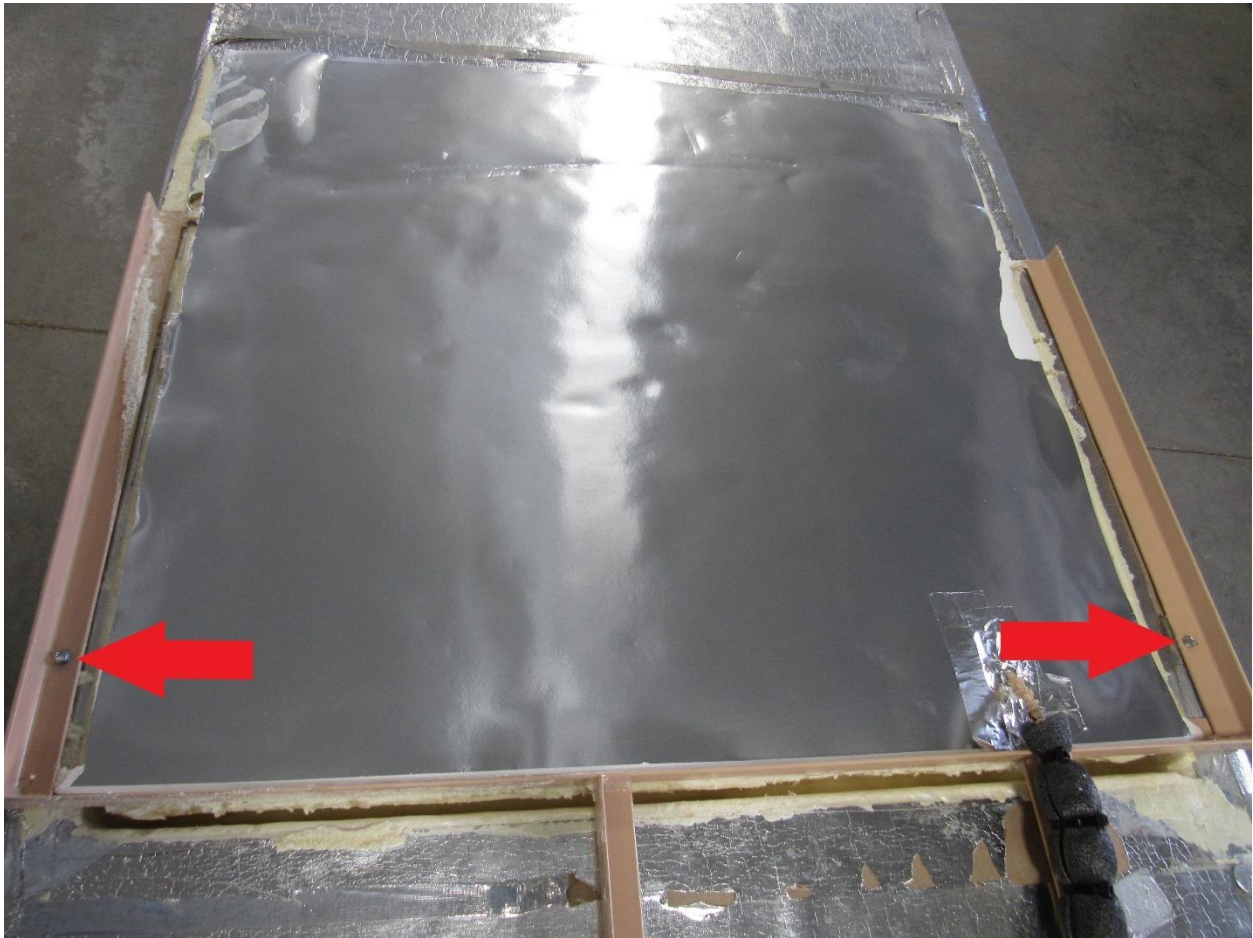






**Warning: The next few steps are very important. If done incorrectly, the cooling unit freezer and fin screws might not line up the best. If possible, have someone to help you with the next steps as it will make everything much easier.**

First, we will do a “dry fit”. Set the unit in the box as shown in picture. Install 2 -5/16” self-taping mounting screws as shown.



Set refrigerator in upright position. If freezer holes are not aligned have the rear person remove the 2 mounting screws and shift the unit side to side or up and down until 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. Don't be afraid to sand or shave foam off the side, top or bottom to let the unit slide the way it needs to go to line up the freezer screws. Pictured below is an example with the holes just visible.

**⚠ Warning: The fridge 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 hole is visible outside of the washer, you can either leave them as is since unit will be sealed in the back or you can use white silicone caulk to cover the holes.**



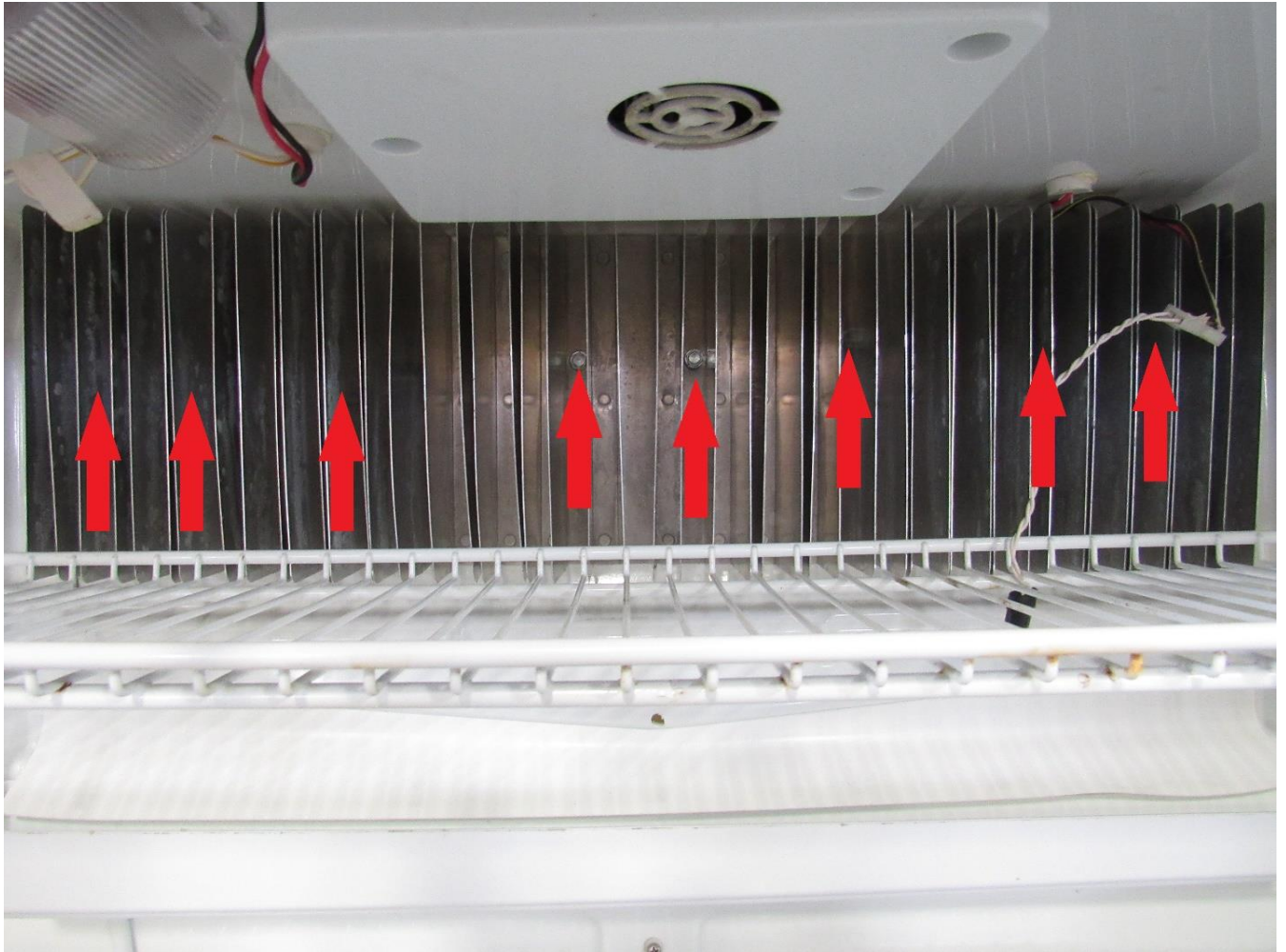
Mark on box where unit was laying so you can put it back in the same location once ready. Remove the unit again and apply the thermal mastic onto the fridge and freezer plates as shown.



**Set the cooling unit back into the box being careful not to scrape off any thermal mastic on the box in the process. Install the 2 rear mounting screws in again and set fridge upright, install all 8 of the freezers mounting screws with new self-taping screws (included).**



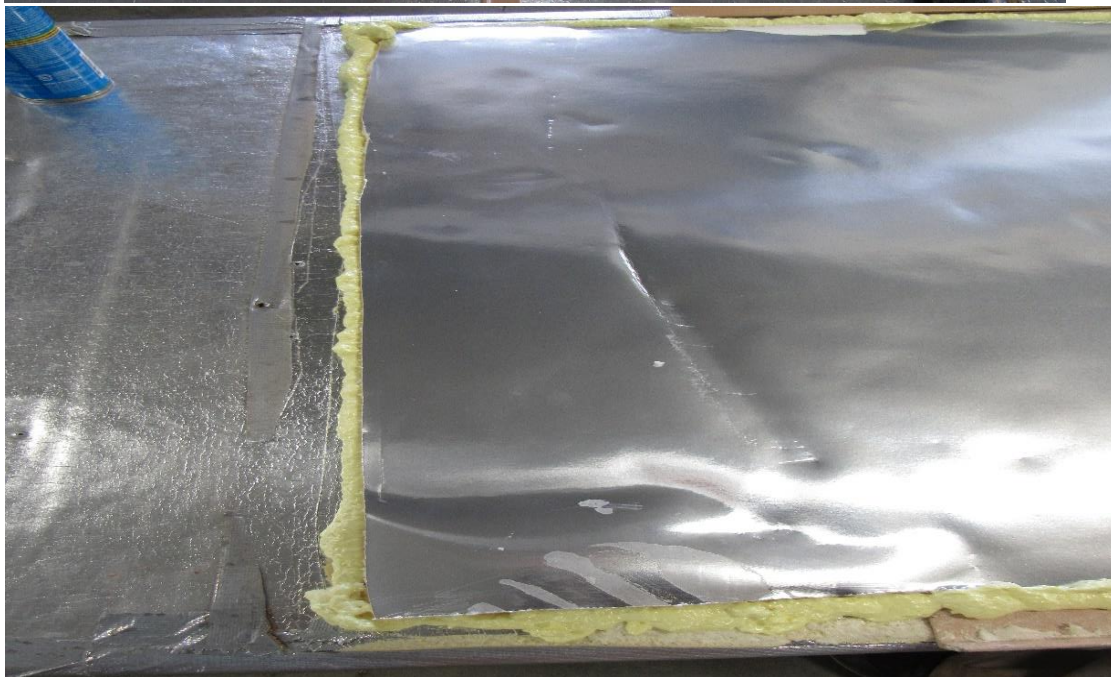
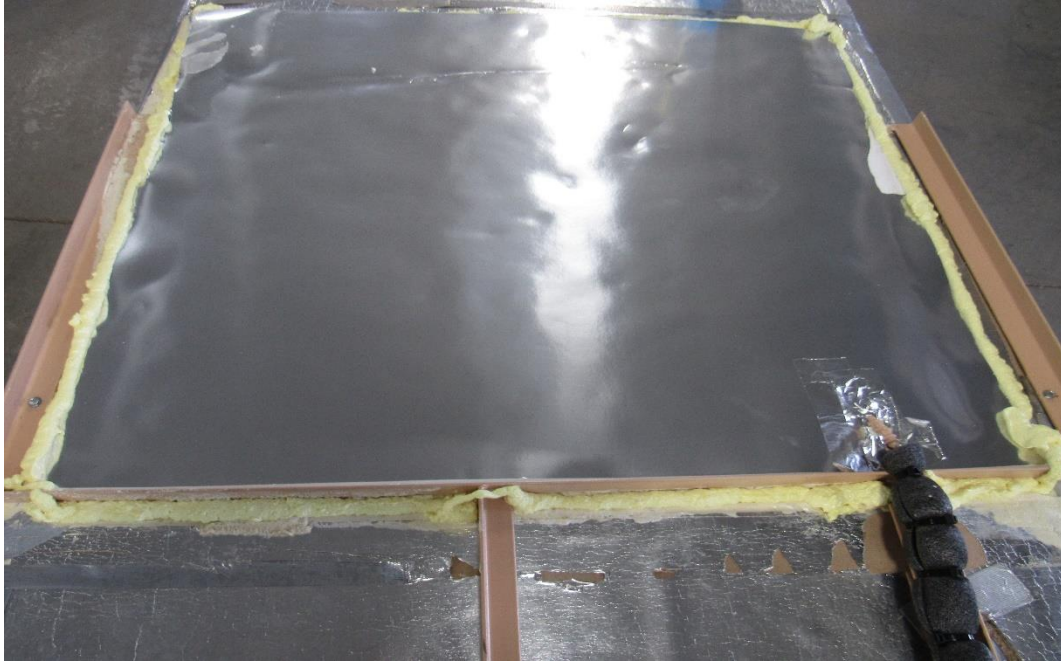
Install the refrigerator fin with new 5/16" self-taping screws (RA). Included



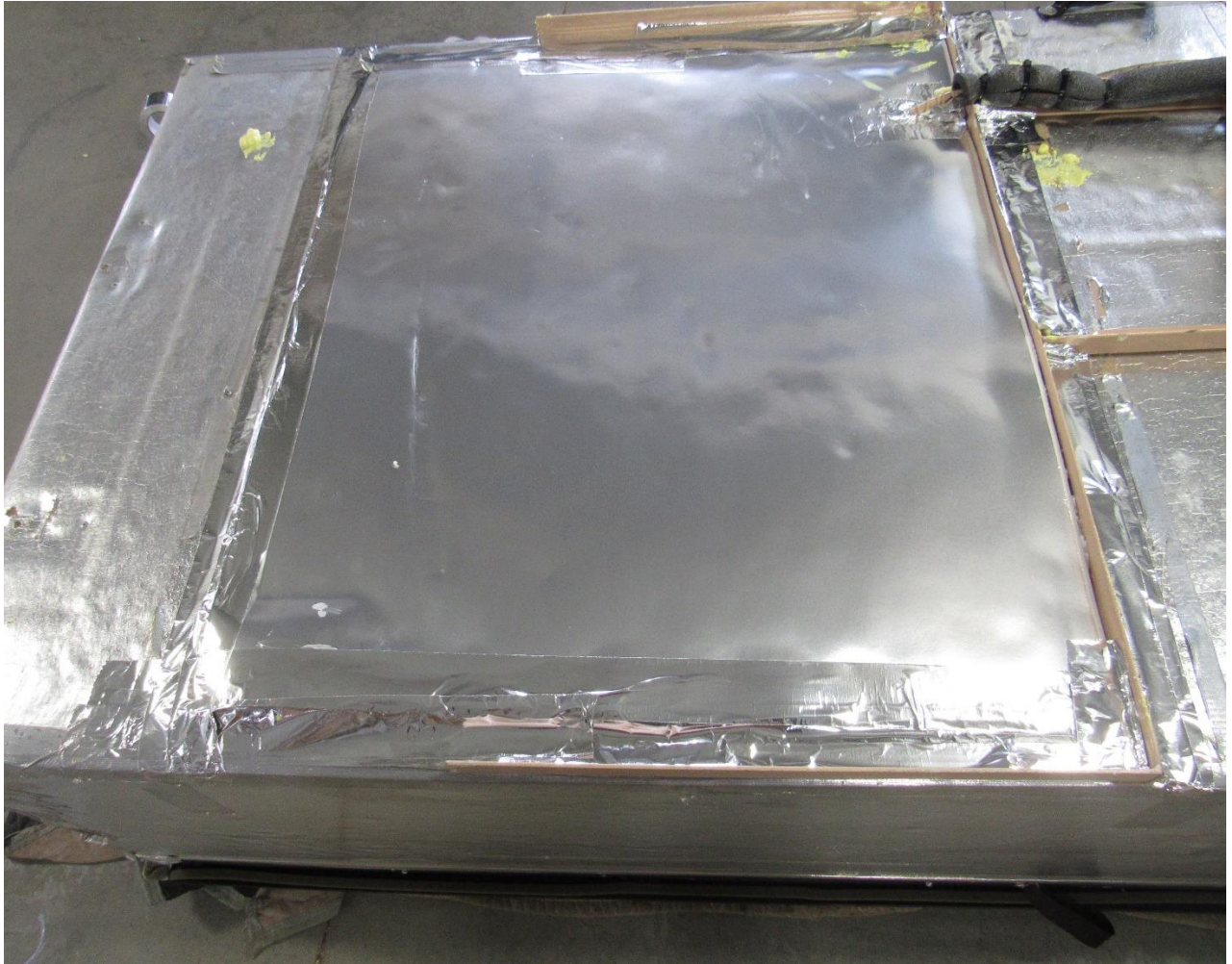


**Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly**

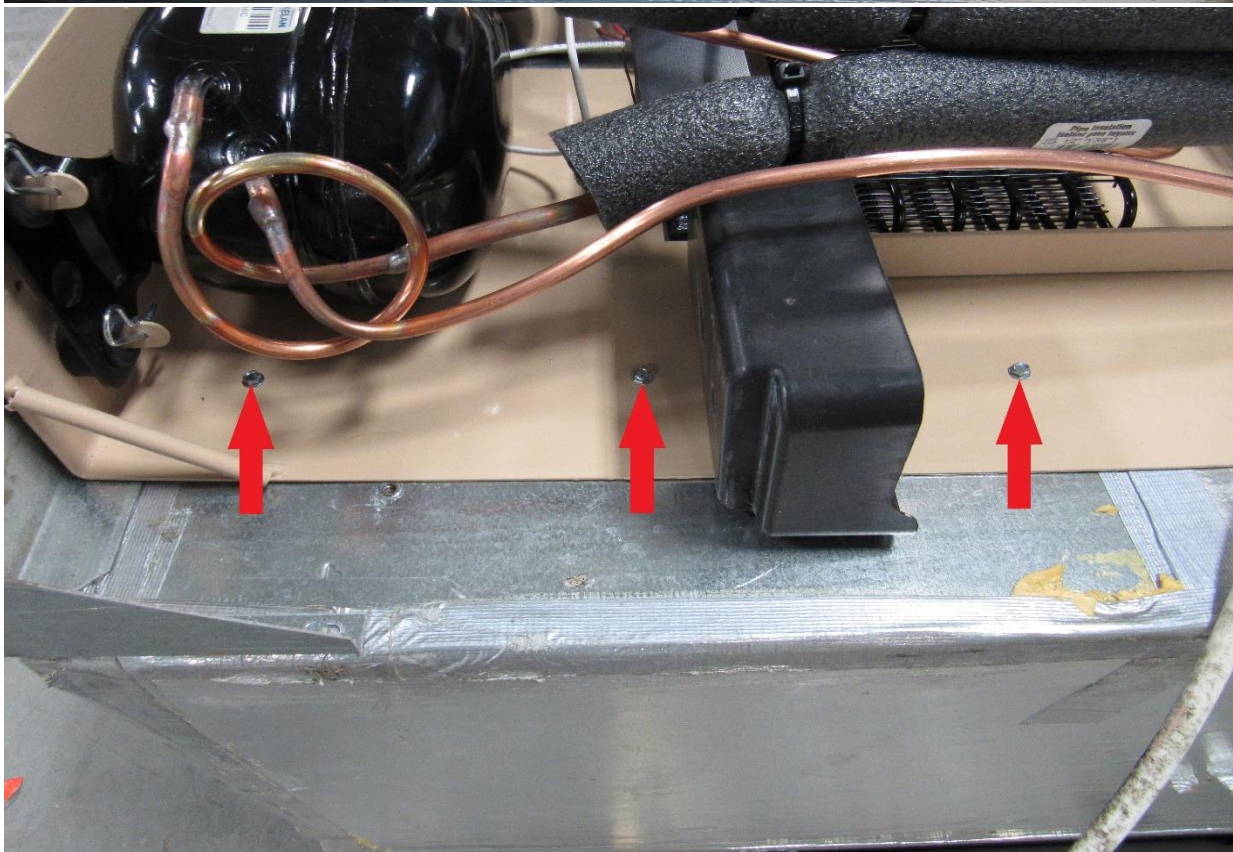
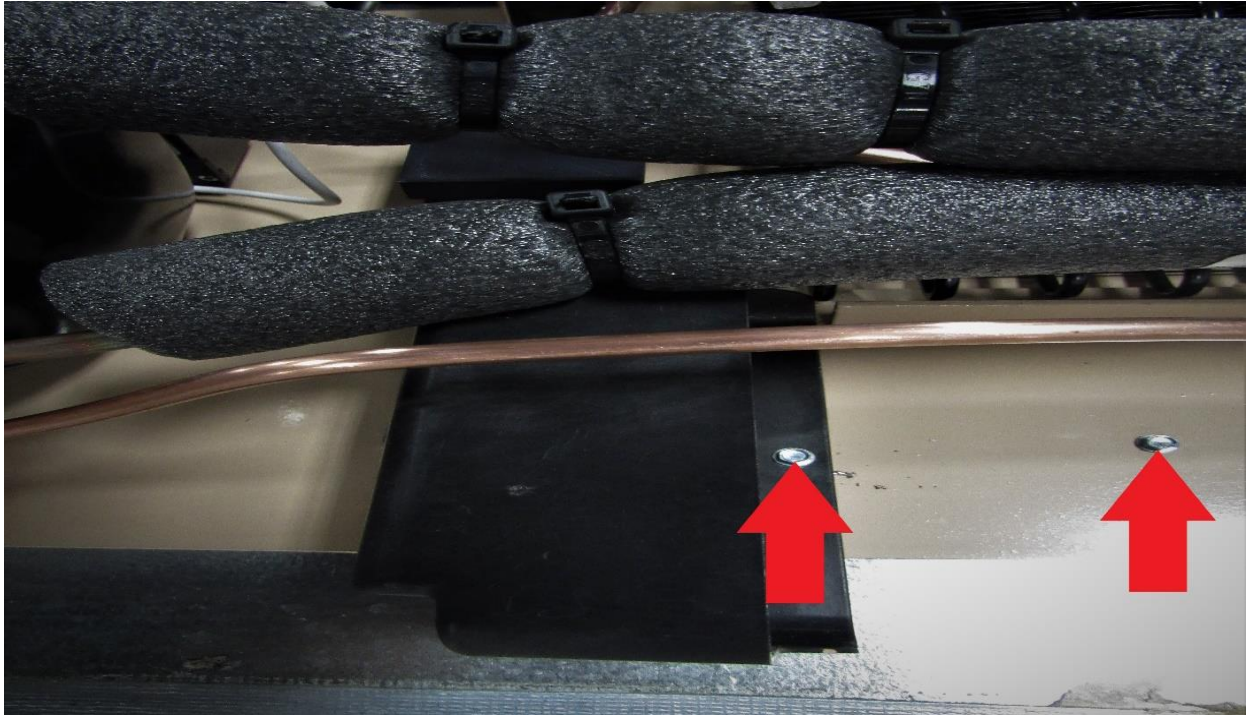
Lay fridge back down, take the can of Great Stuff foam (shake can for a few seconds) and apply a bead of foam around all four sides as shown below. Make sure and seal all cracks and gaps. This will help seal all air leaks while travelling down the road.



**After filling all gaps with foam, follow up with the supplied aluminum tape as shown. This tape is for cosmetic purposes only, do not depend on this tape as a sealant.**

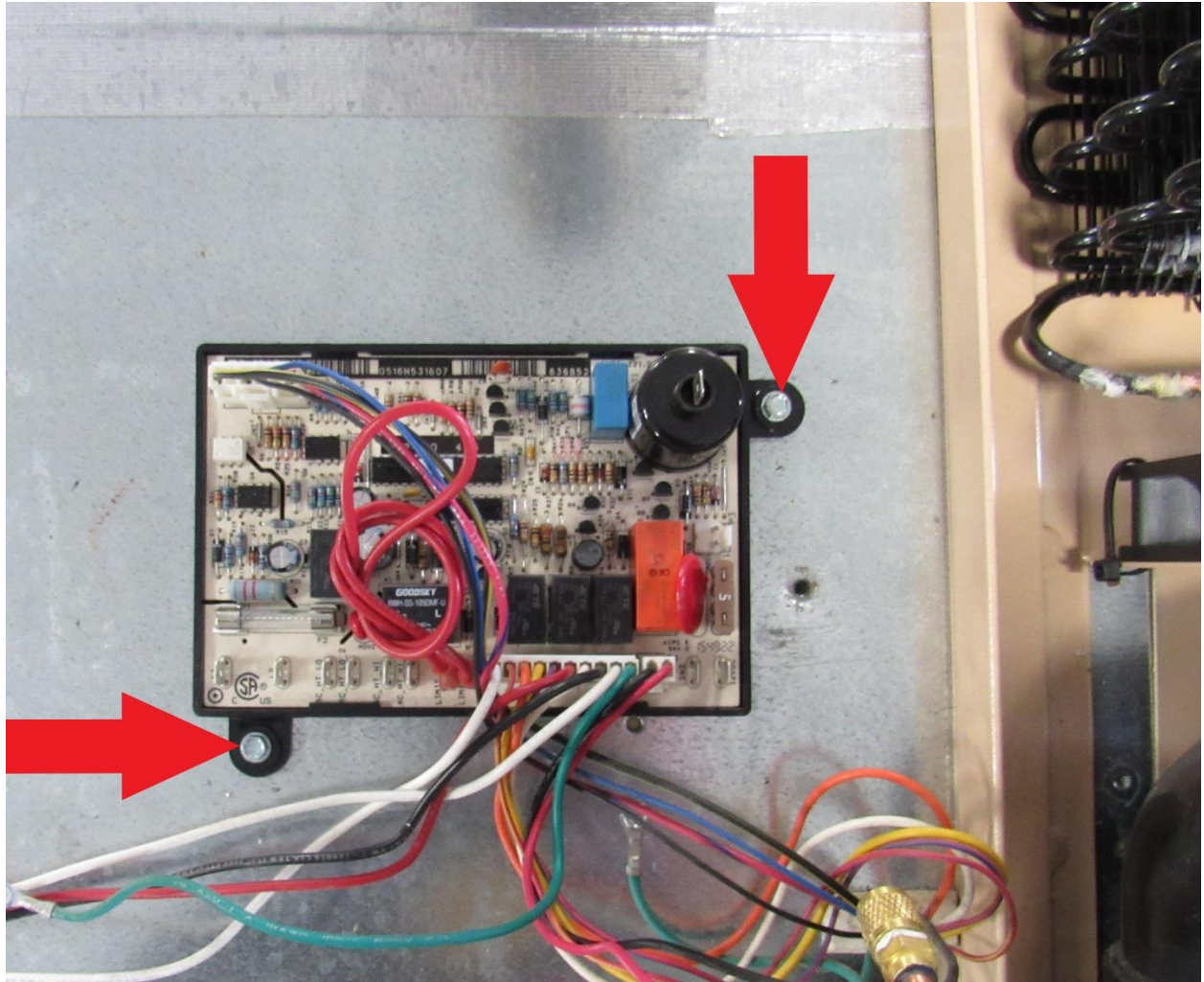


Fasten the defrost tray and the rest of the mounting screws using 5/16" self-tapping screws as shown below (RA).

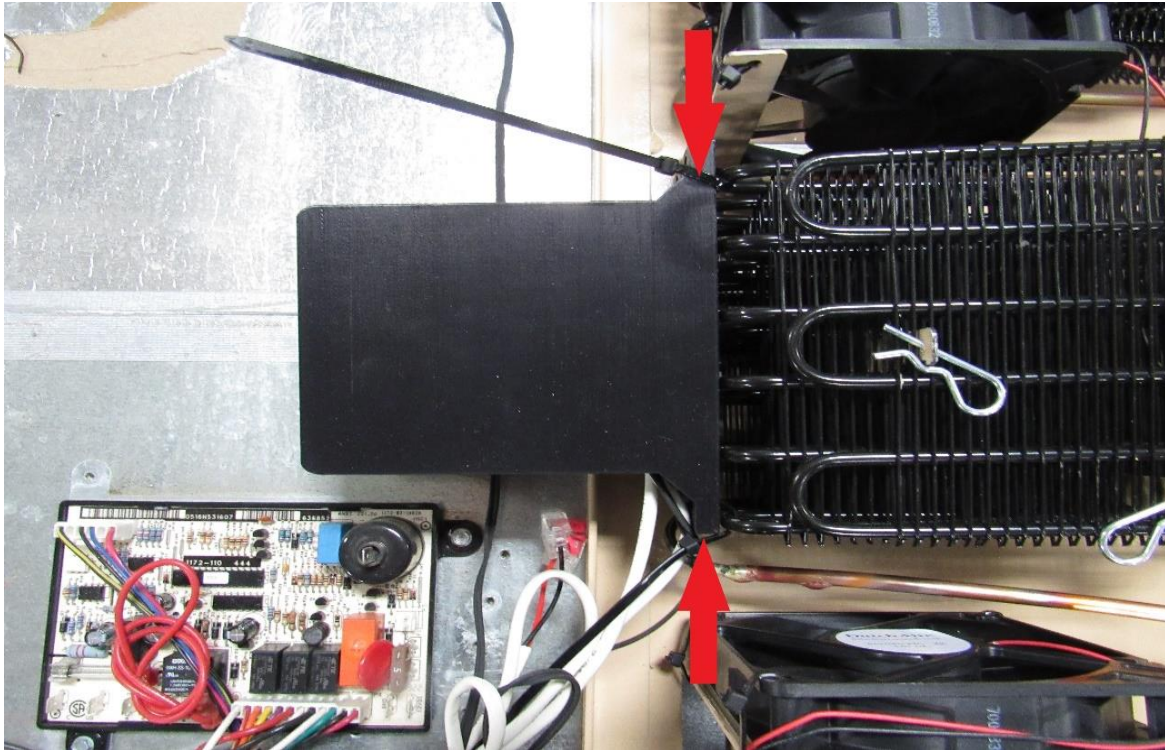




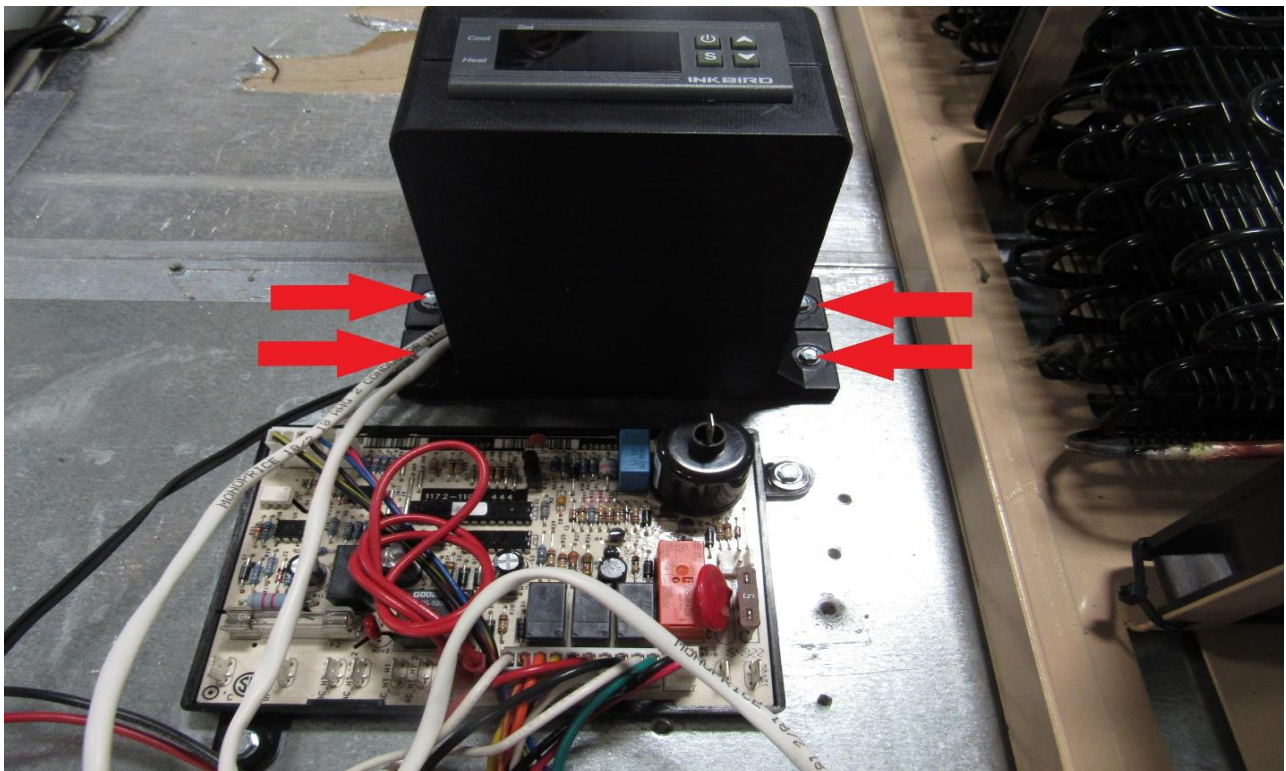
Fasten the board using the supplied self-tapping screws (RA).



Snip the zip ties that hold the compressor controller (RA).



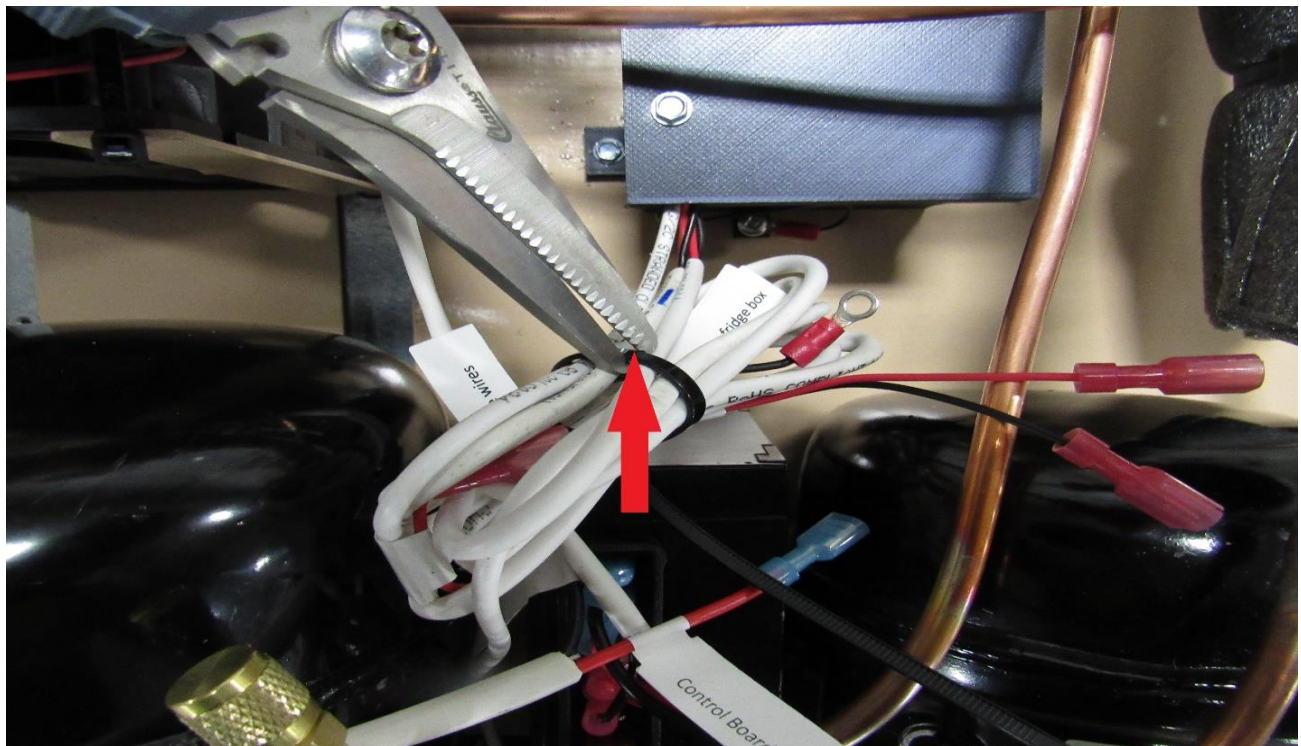
Mount the controller as shown, using the self-taping screws, this might have to be located at a different place as the side vent placement varies (RA).



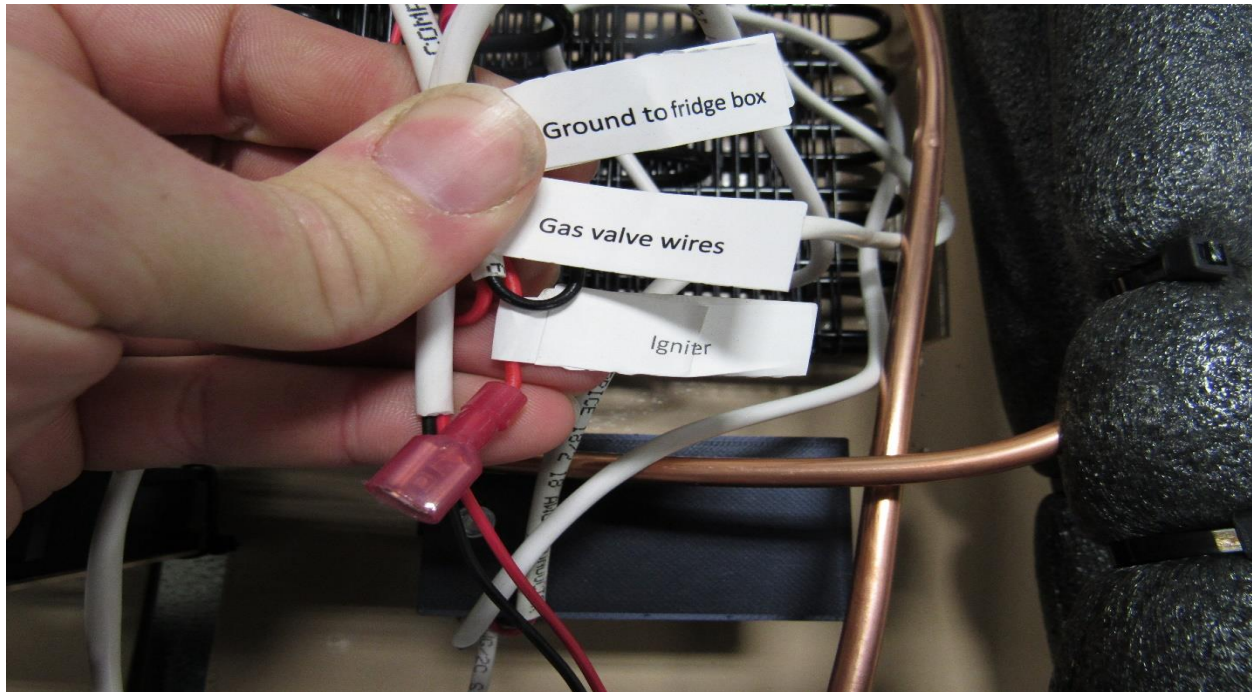
Fasten the board cover into place using the self-taping screws (RA).



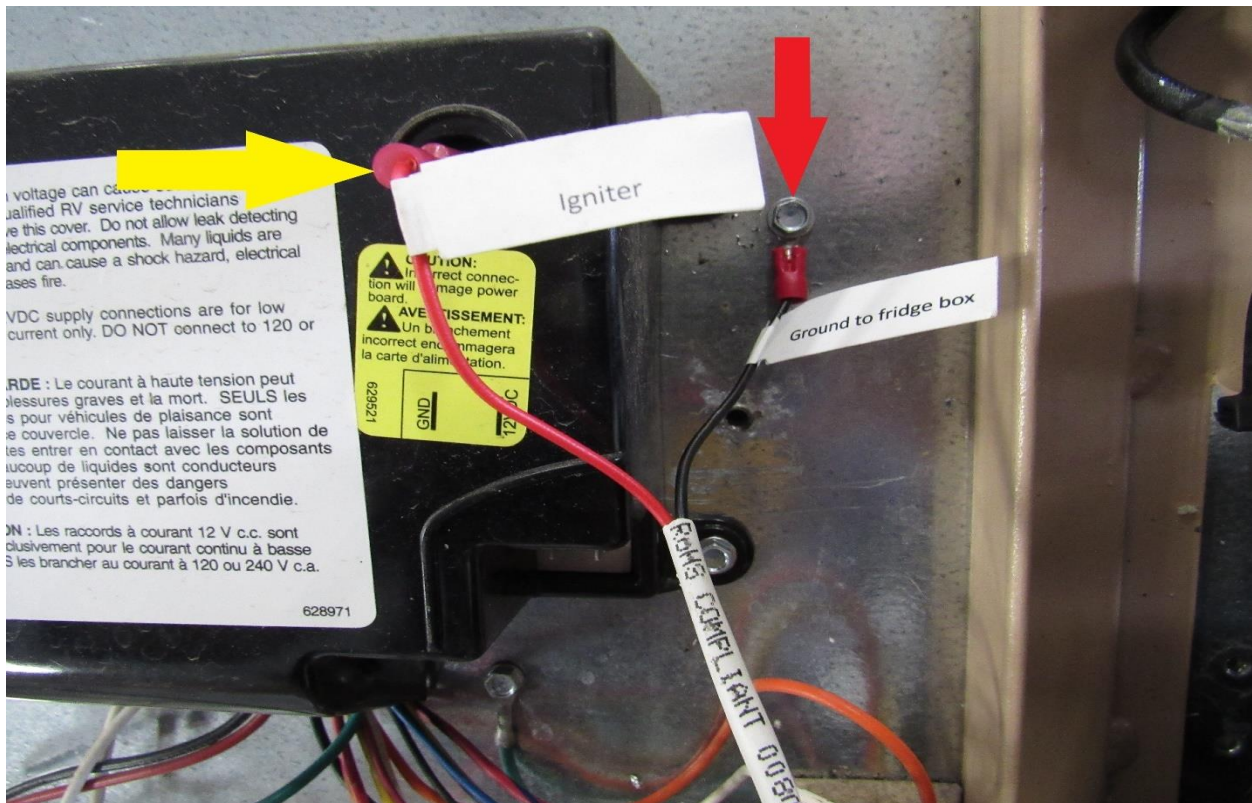
Snip the zip tie holding the other compressor controller wires together (RA).



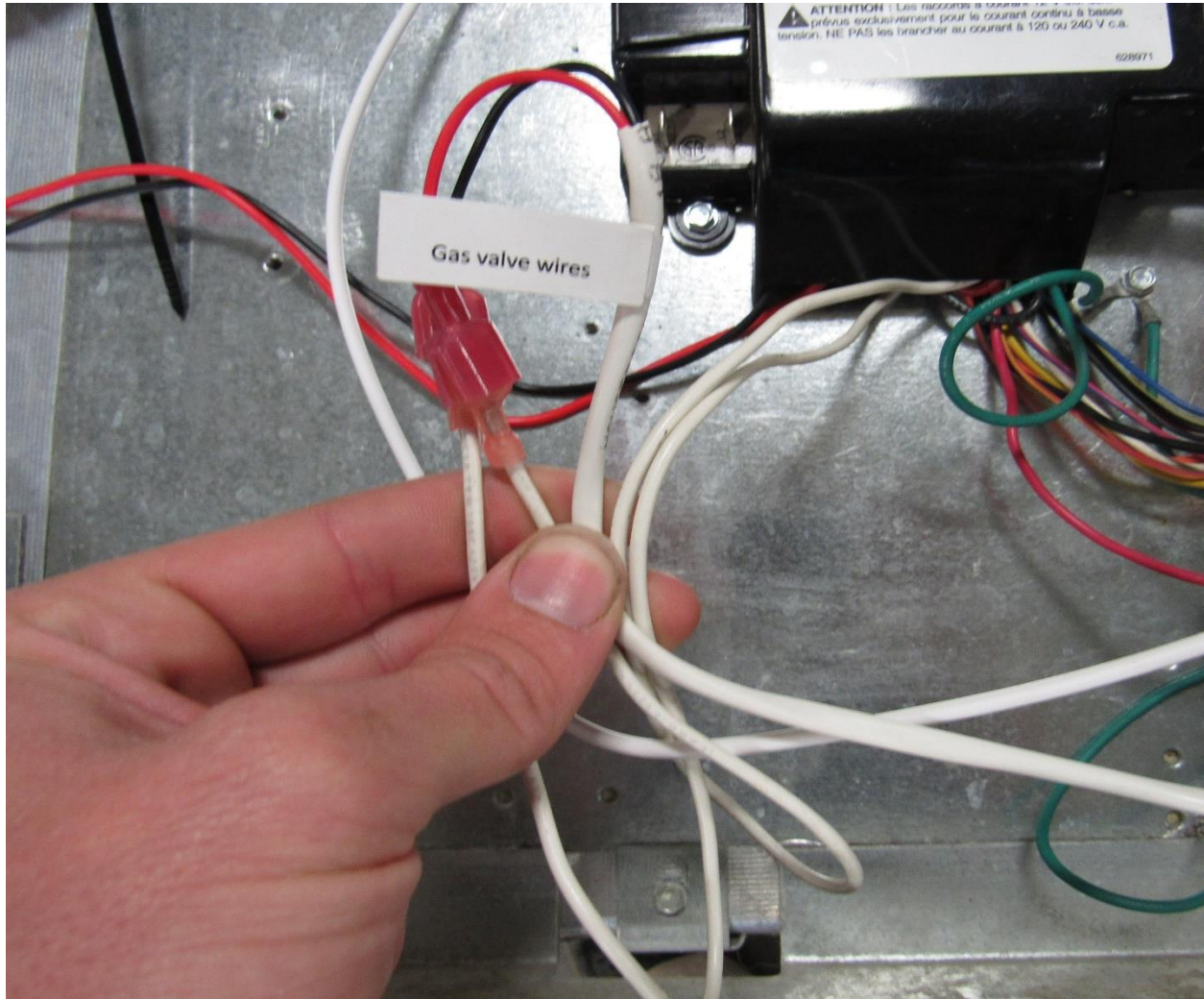
You have 2 main wires with 3 labels as shown.



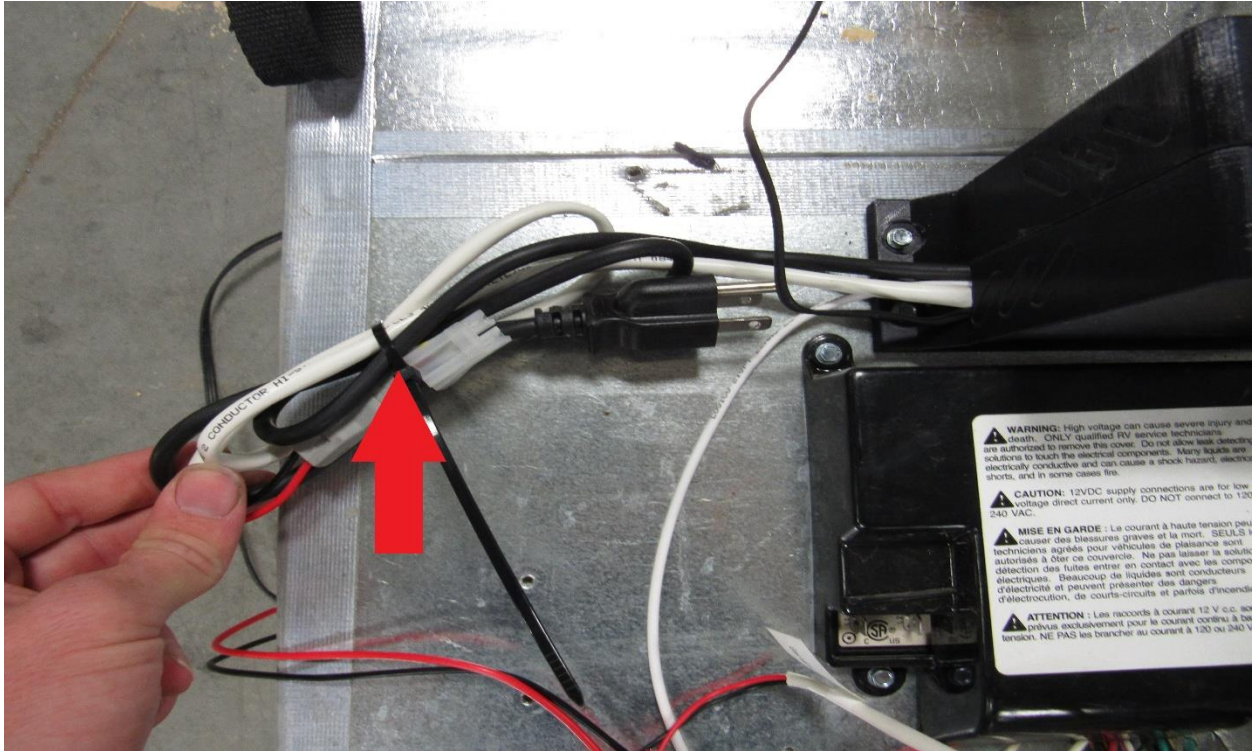
Igniter (YA) simply plugs into the igniter terminal on the main control board. The black wire with a ground terminal (RA) gets grounded out to the box using a 1/4" self-taping screw.



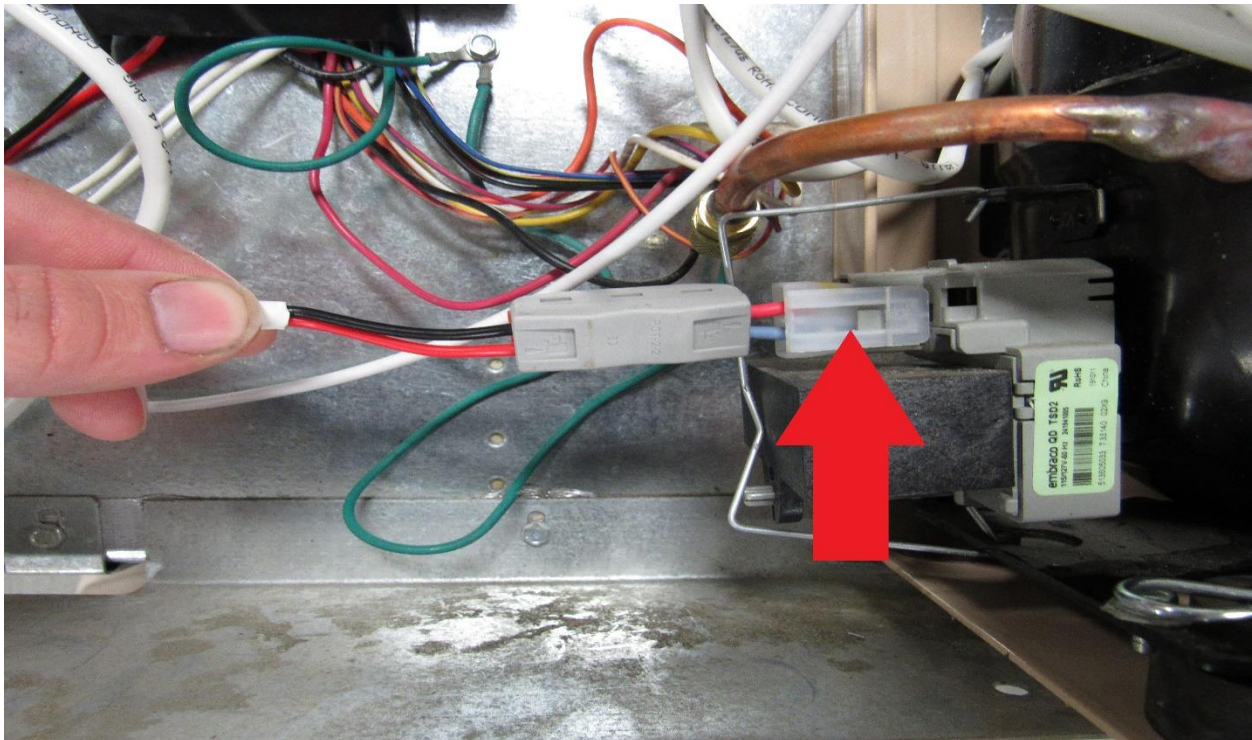
The two white wires coming from the bottom center of the main control board need to be plugged into the wires labeled “Gas valve wires” These 2 white wires used to go to the gas safety valve on the old unit (Female Ends). Our controller gas valve wires have male ends. Make double sure the female inserts into the male connector.



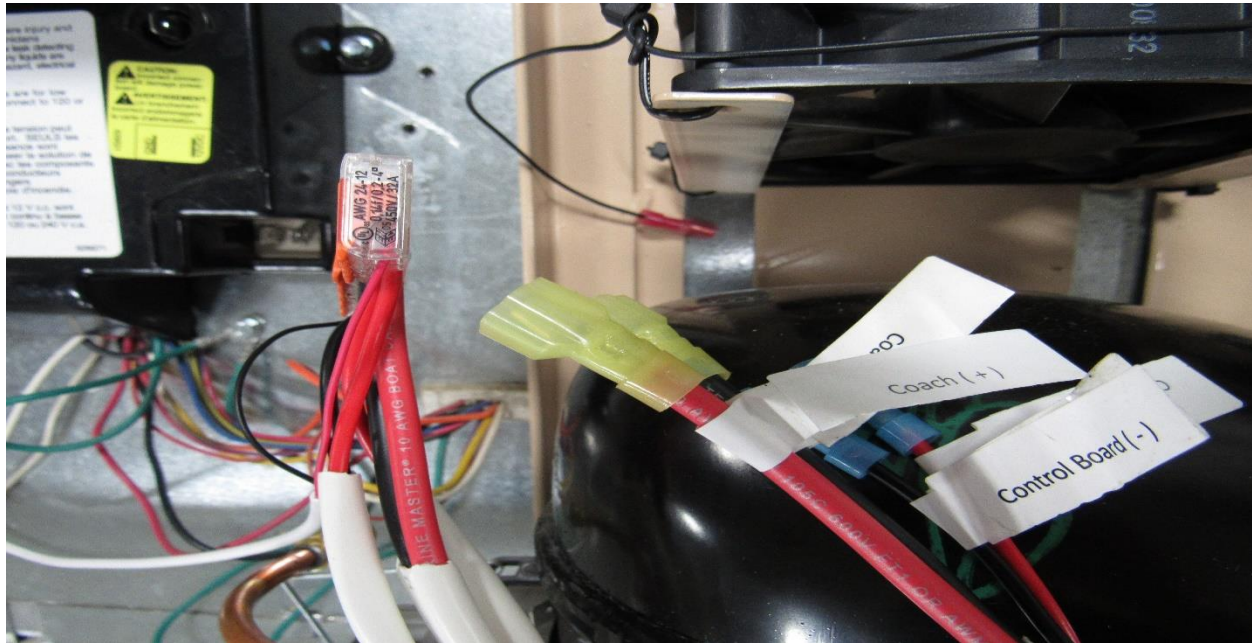
Cut the zip tie as shown (RA). The black 120v power cord goes to the receptacle when the refrigerator is pushed back into place. The wire with the white plug gets plugged into the compressor.



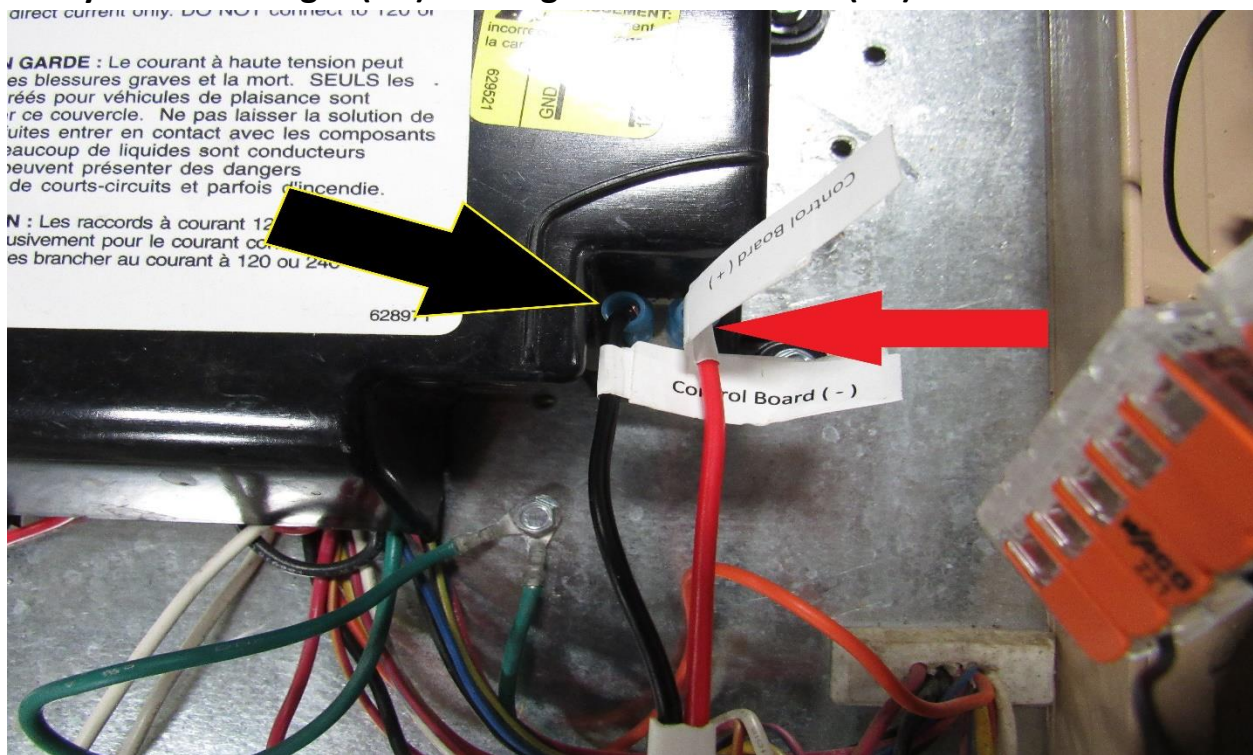
Plug into compressor as shown (RA).



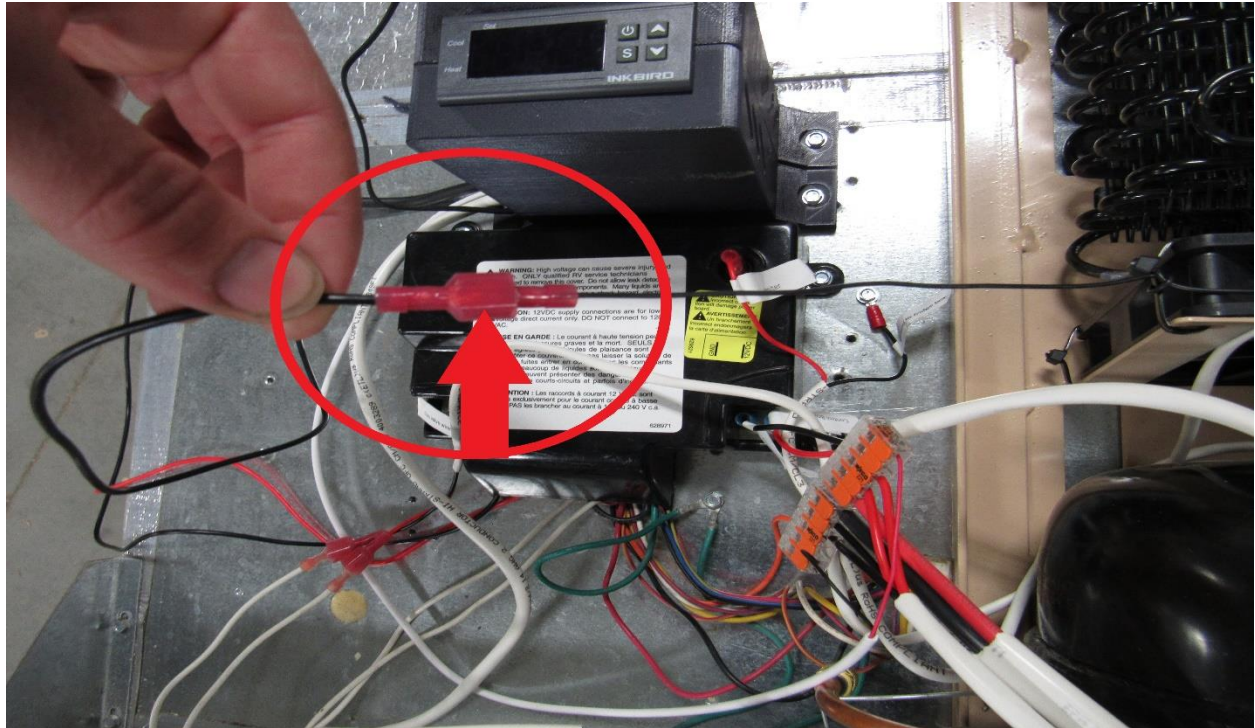
Zip tied to the large compressor are these two main wires. The thicker wire labeled “Coach” goes to your coach 12V wires when the refrigerator is pushed back into the cabinet. The “Control Board” wires plug into the board.



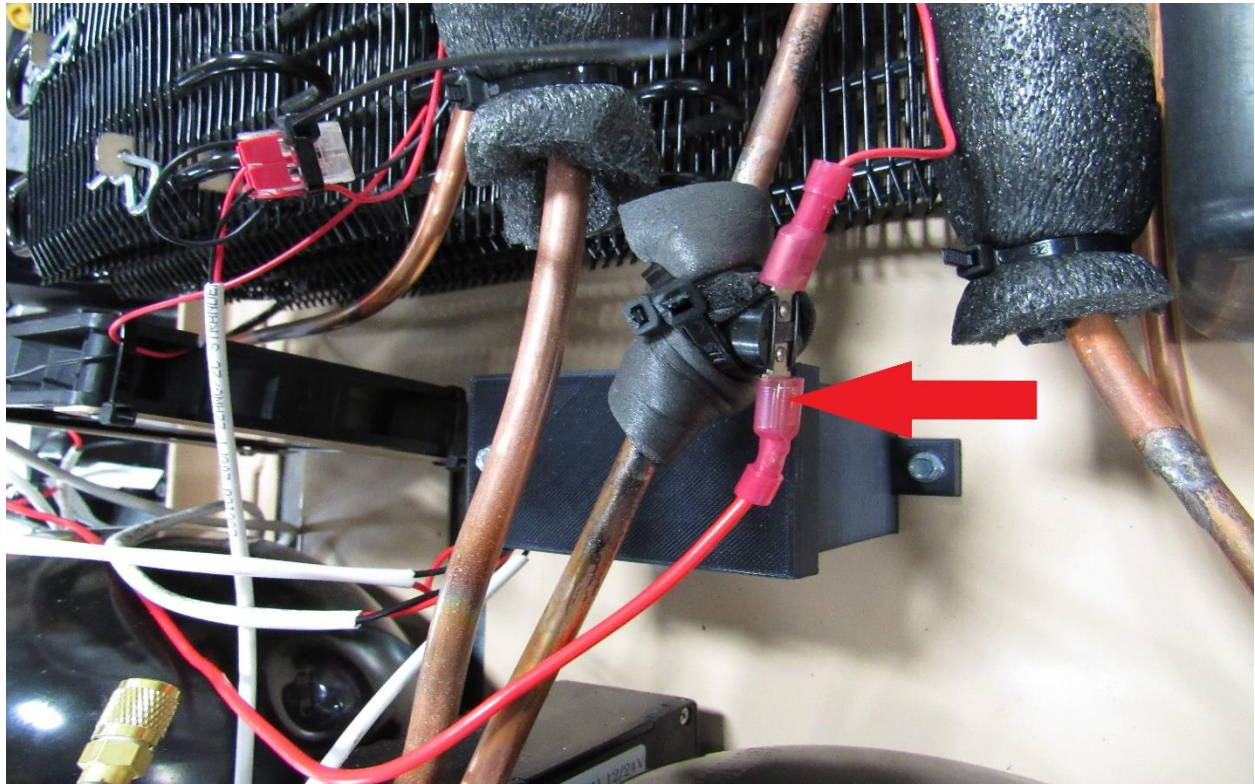
Plug the “Control Board” wires into the board as shown below. 12V positive will always be on the right (RA) and negative is on the left (BA).



Locate the original red and black fan wires as seen on page #15 and plug the black wire into the compressor fan black wire as shown (RA).

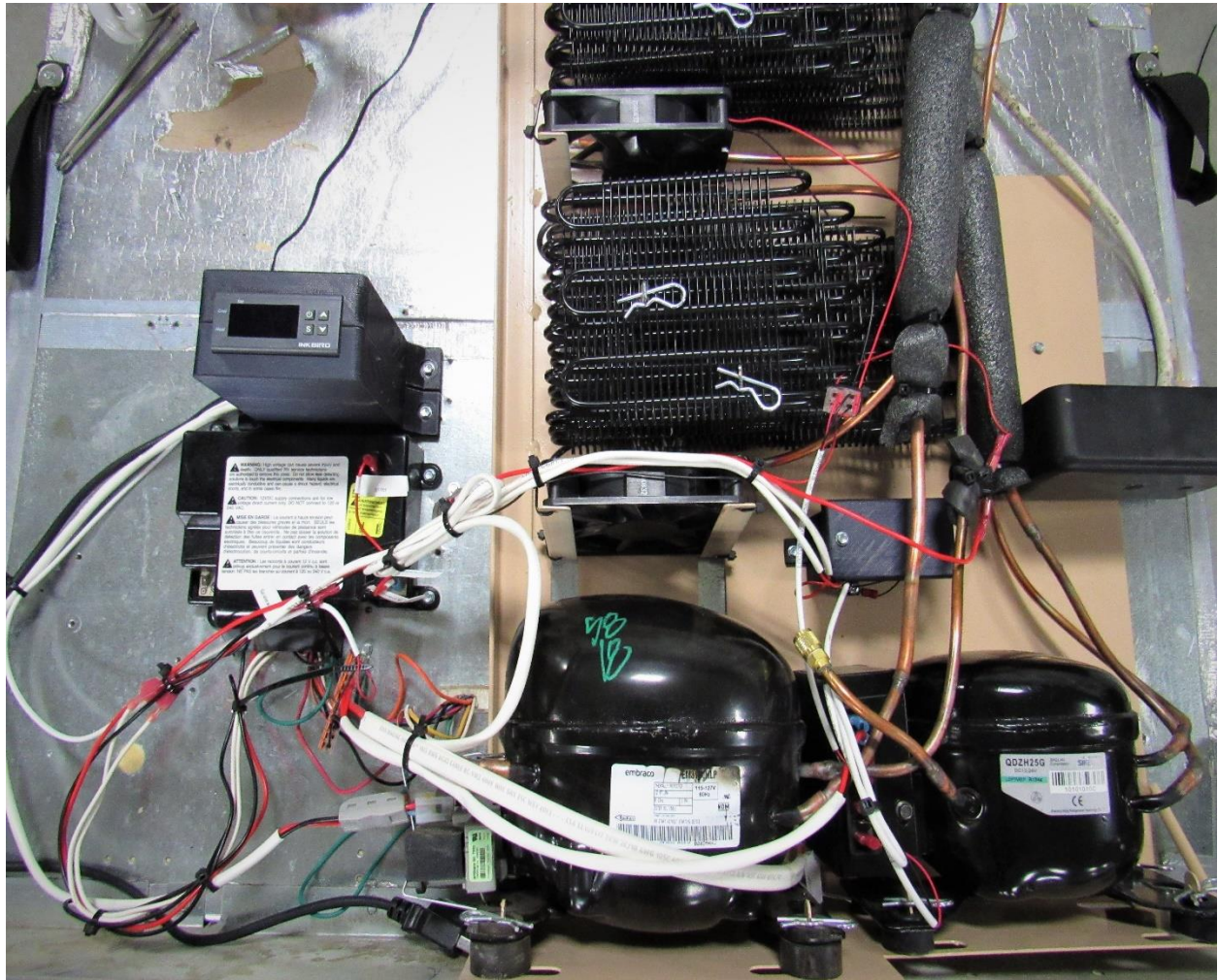


Plug the original red fan wire into the temperature sensor as shown (RA).





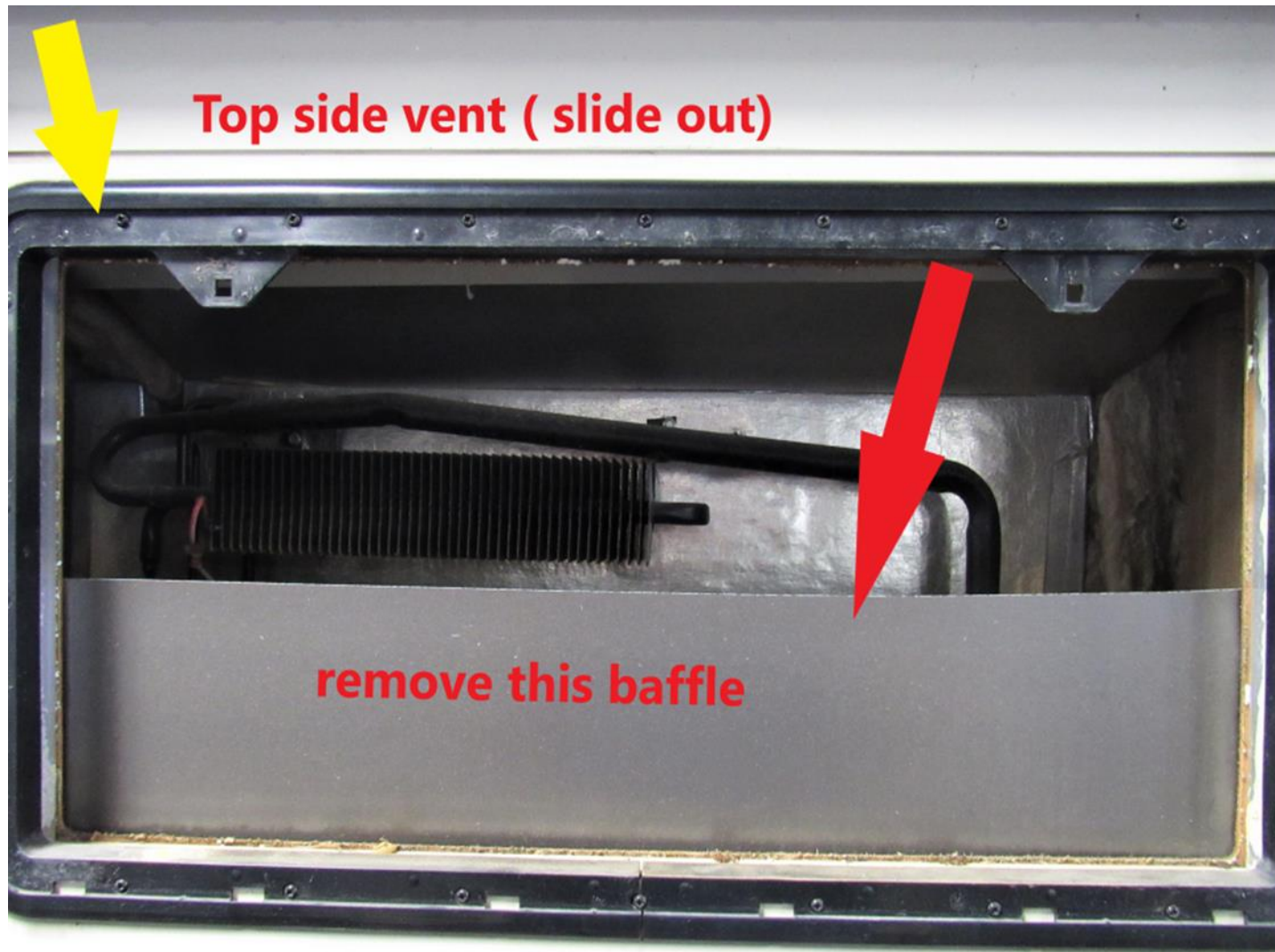
Neatly zip tie all wiring away from the compressor and fan as shown below.





**Warning: Please make sure and follow thru this step, otherwise unit could over heat 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.



Now you're ready to slide the refrigerator back into the cavity. 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.

Install mounting screws (**RA**) on the top and bottom first before finishing outside.

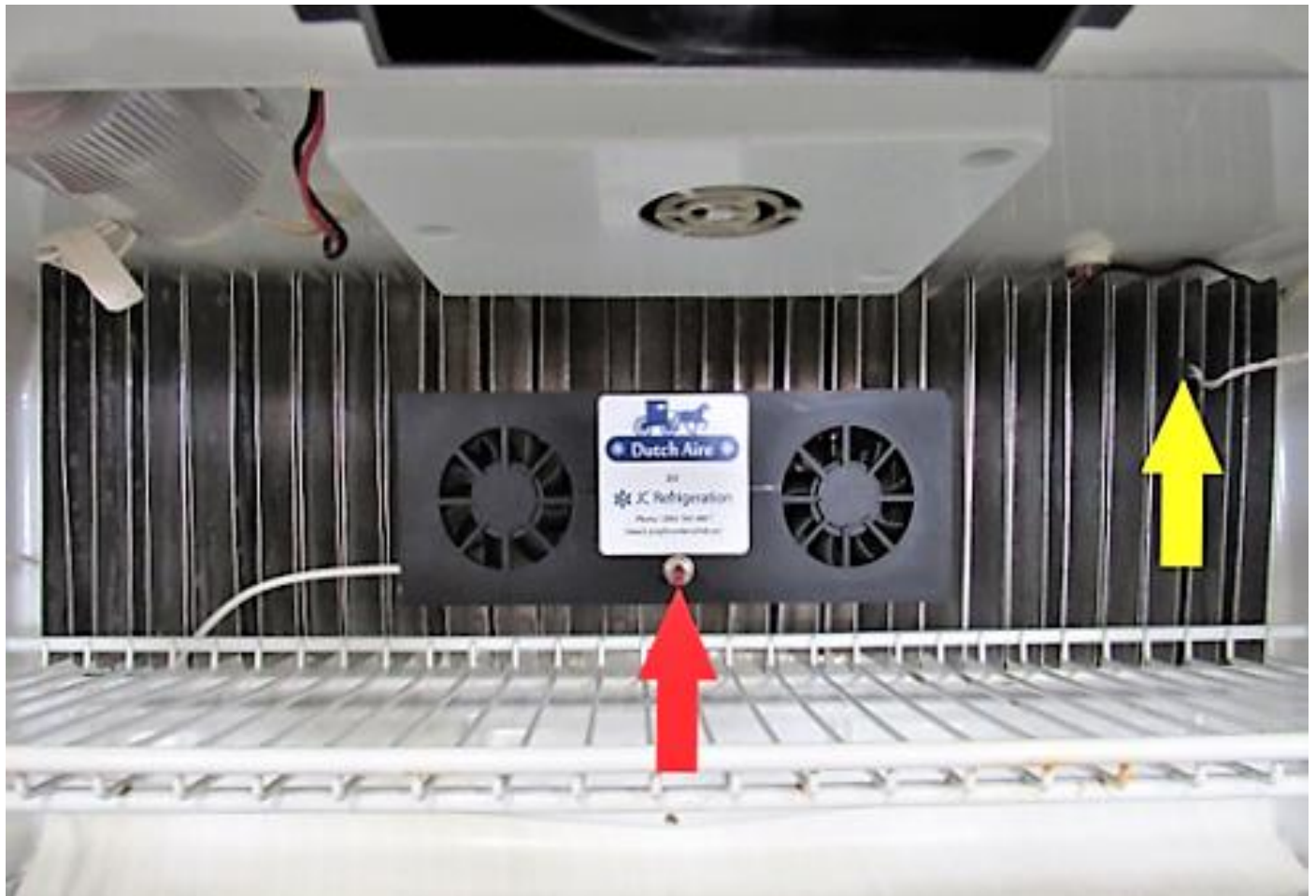


**Attach black trim pieces on top and bottom.**

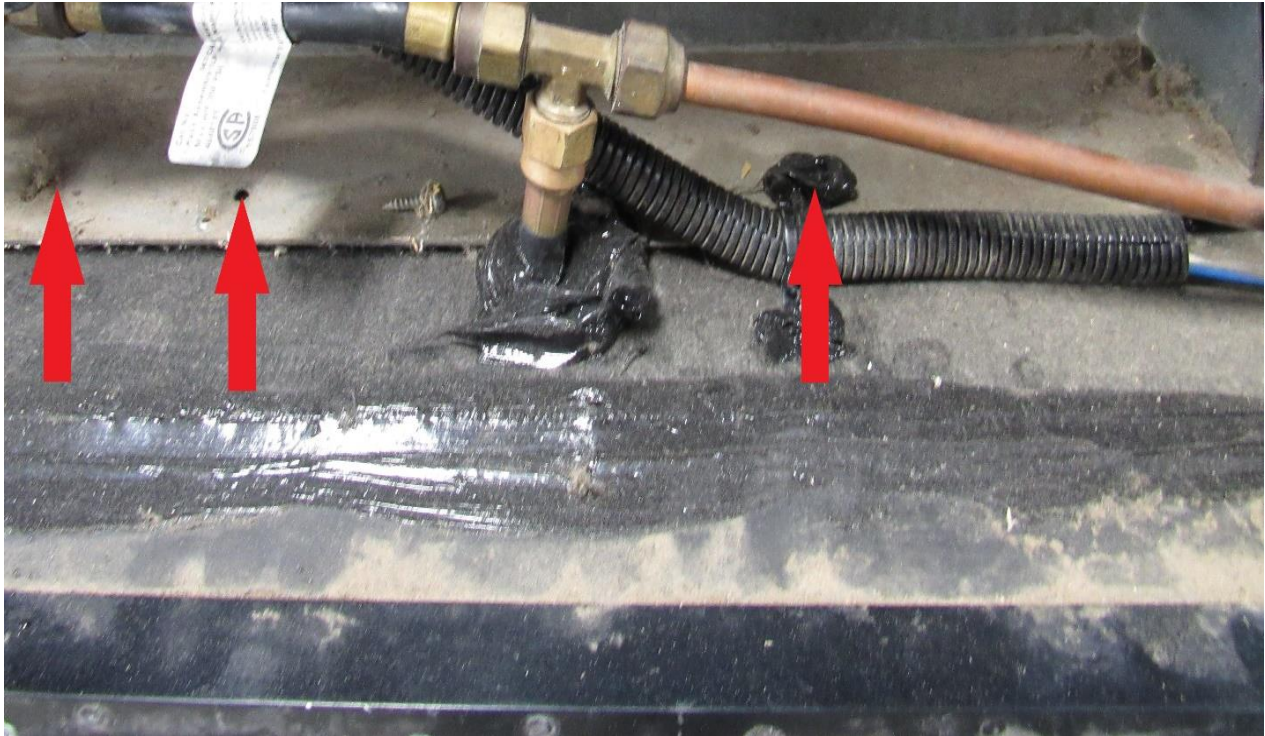



Clip the thermistor onto the right-hand side of the fin (YA), this placement is not so crucial as long as its towards the right and close to center up and down. The fin fan can be attached towards the center of the fins.

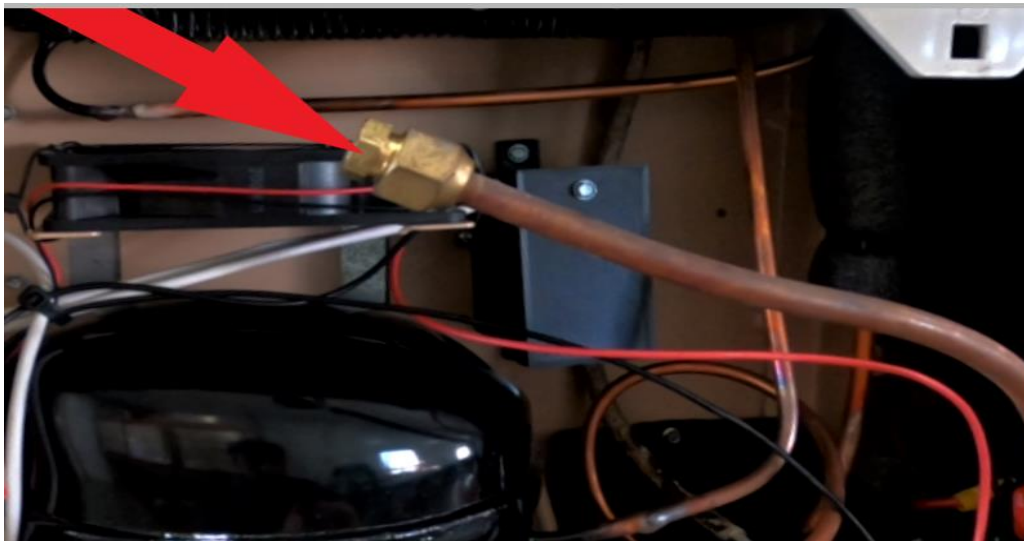
The fin fan has a simple on/off switch in the center (RA). Your unit will run more efficiently, and ice will not form on the fins with the fans running at all times when using the fridge.



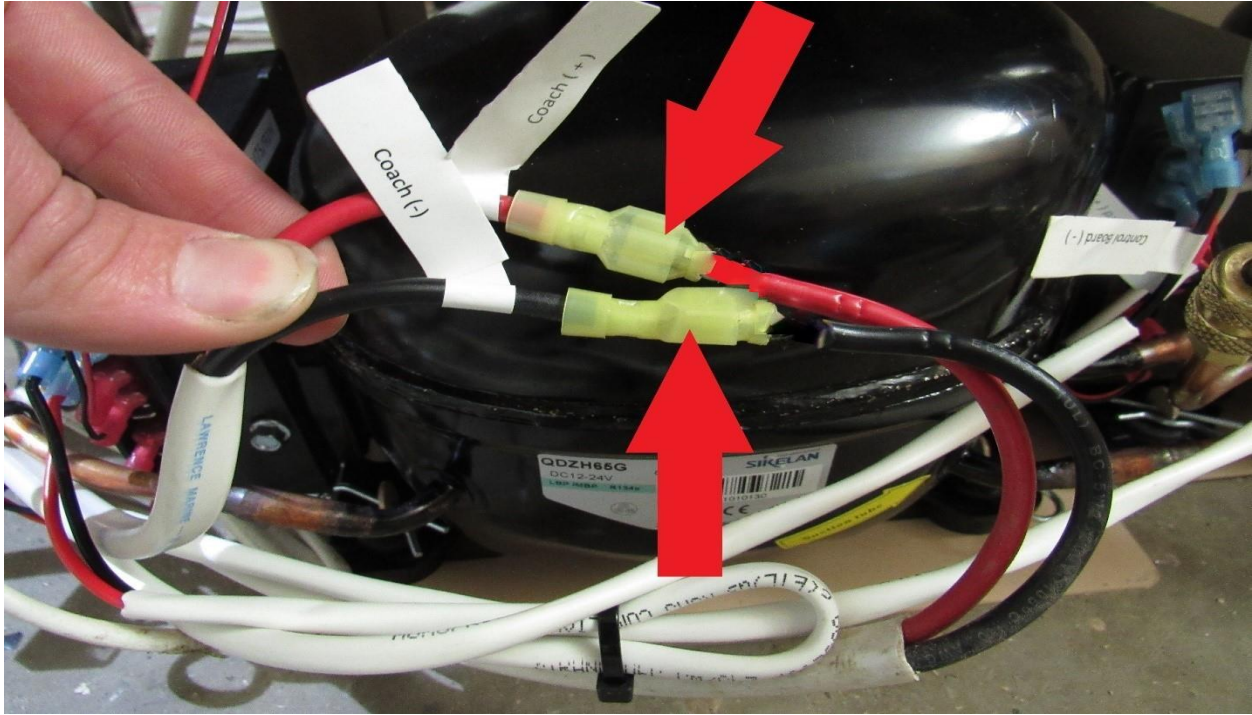
Now we are ready to finish the outside. Install the mounting screws back into place (RA).



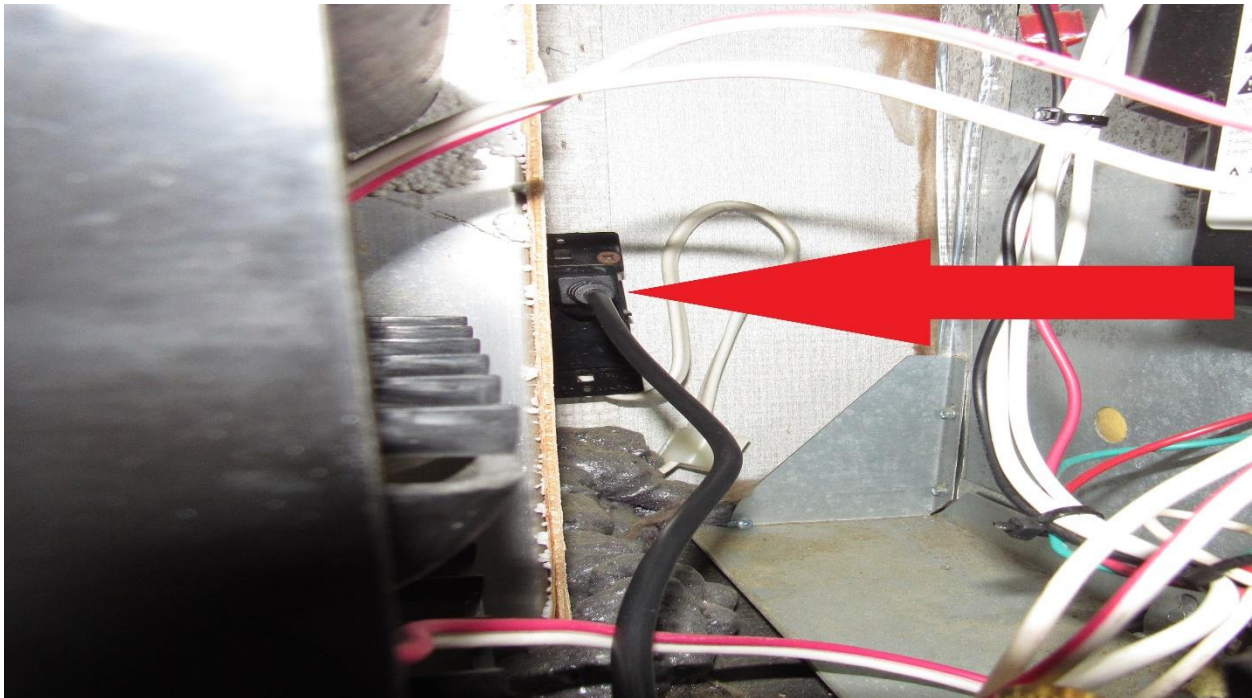
 **WARNING: Make sure this step is properly followed and leak checked so you don't have a gas leak.** Thread gas plug into gas line (plug included) use wrenches to tighten in, after its tight, gas tank is ready to turn back on and using a soap water mixture check for leaks. (RA) this copper tube can be bent carefully and tucked out of the way once the fridge is back in place



Hook up the positive 12V wire that comes from your RV to the wire labeled “Coach +”, and the negative wire to “Coach – “. The color of the wire coming from your coach will vary from one RV to the next.



Plug the black 120V power cord to your receptacle (RA). Placement may vary






Go to the inside of your RV and turn your refrigerator control "ON" now push the mode button and set it onto LP mode. After a few seconds your fridge compressor should start up and run, you can now adjust your temp setting to your desired temp, we recommend setting it onto 4 and then after approx. 6 hrs adjust up or down to your desired temp inside the fridge. A thing to remember is food zone is 38F to 42F, and in the freezer 0F to 10F. The smaller of the 2 compressors (12V) is what cools the fridge side. Another thing to remember is, make sure your 12V coach wire connecting to our 12V DC wires that run the system is big enough to handle this load, how to determine if the wire is to small is once the compressor tries to start it will only run for 10 seconds or so then it will shut down again, take your DC voltage meter and hold them on your wires and then start it again, the voltage cannot drop below 10.4V as this compressor has a built in low voltage battery saver. If voltage drops below this a new 10ga wire will have to be run from the battery to the fridge.








Now go to the back again and make sure your Freezer control has lit up, this will operate your freezer.

If your freezer temp needs to be adjusted colder or warmer then follow these instructions, your fridge temps will still work off your existing front eyebrow board

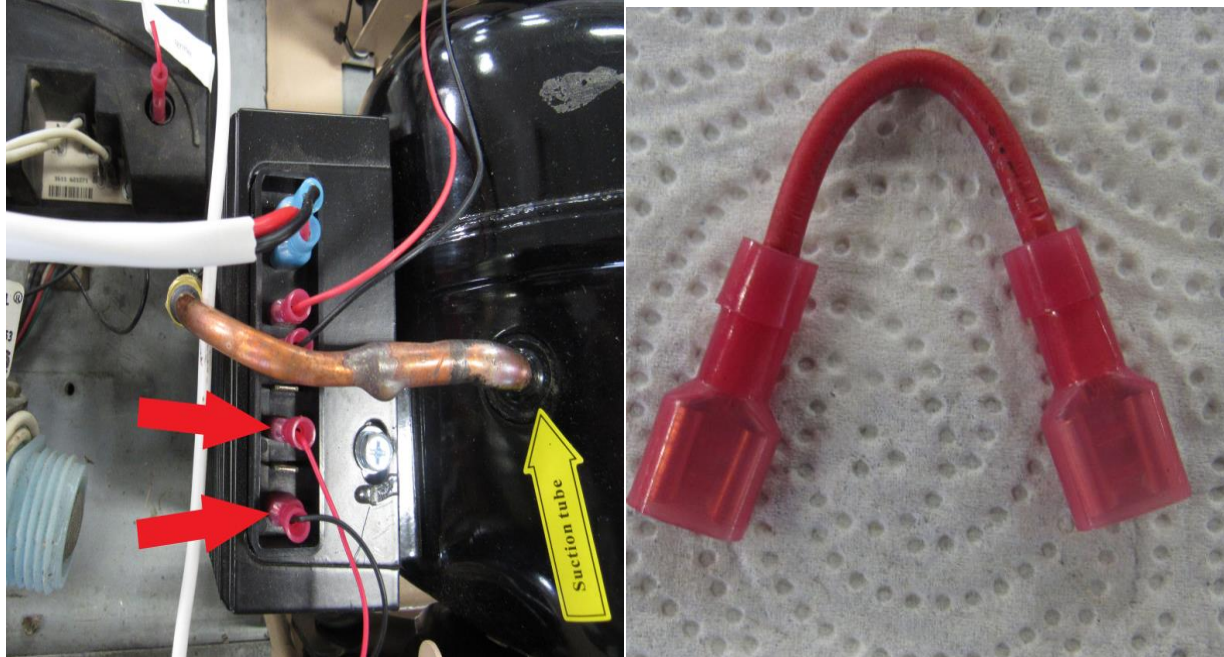
**Celsius to Fahrenheit-** press  for 3 seconds until screen shows tS then scroll down arrow to CF push  again briefly, then press up arrow to change from C to F briefly push the  to save setting.

**Change temp setting up or down:** follow above directions and go to tS set temp up or down to your desired temp then tap  again to save setting.

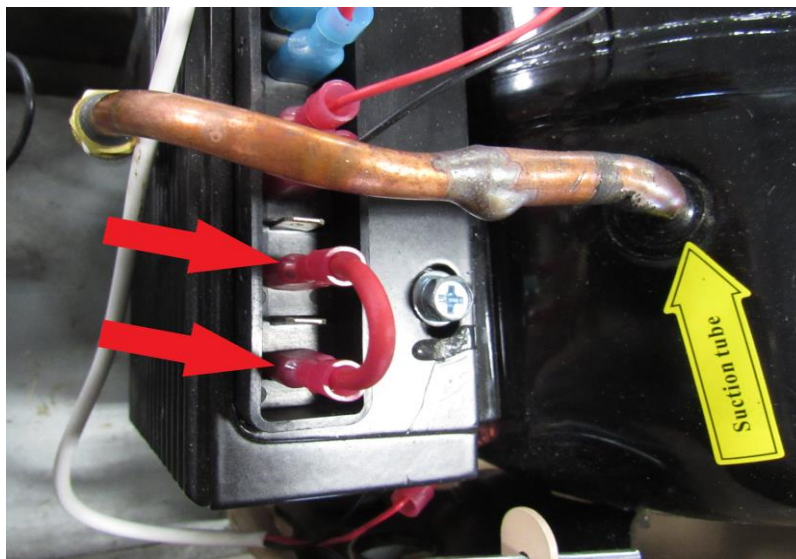
**Change differential temp:** press  for 3 seconds until screen shows tS then scroll down arrow to DS then briefly push  again, then set temp differential to the desired value, if the freezer swings in temp more then 10F set this onto 1 then briefly push  to save value.



If your fridge control is not working right, this diagram will show you how to wire the smaller of the 2 (12V) compressors direct till the control issue can be resolved. Disconnect these 2 wires (RA) from the compressor controller, these will come from the controller on the right side of the compressor make up a small wire with female ends (any gauge)



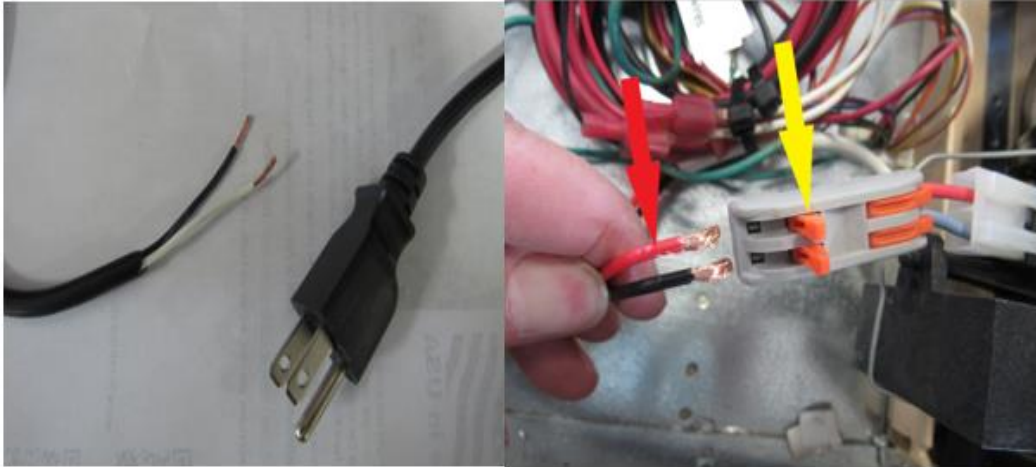
Insert small wire into place where black and red wire were located, this will now run direct, if your board will give a beeping alarm, you can unplug your power going to the board. Just make sure you still have 12V going to the compressor fan and interior fin fan.



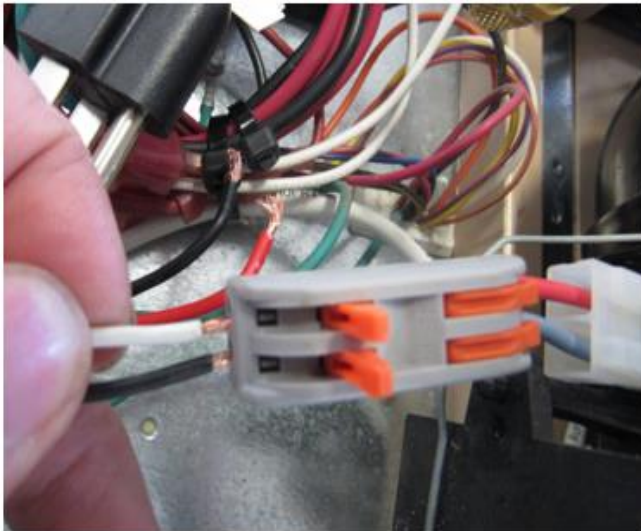
## If your inkbird controller for the freezer is not functioning right then here is a way to wire direct until this can be resolved.

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:

#1 Unplug 120V plug from coach, make a short 120V pigtail, strip the wire ends back approx. 1/4", on left side of compressor open Wago levers (YA) and slide out 120V wires leading to compressor (RA)



#2 Insert your 120V pigtail wires into Wago and close levers again to lock wires in again, it does not matter which wire goes into which slot. Plug your made-up pigtail that is now attached to the compressor into your 120V power outlet. This is now wired direct and will run as long as this cord is plugged in, and this will not harm the unit in any way, and it gives you a cold fridge till your board or other issue gets resolved.



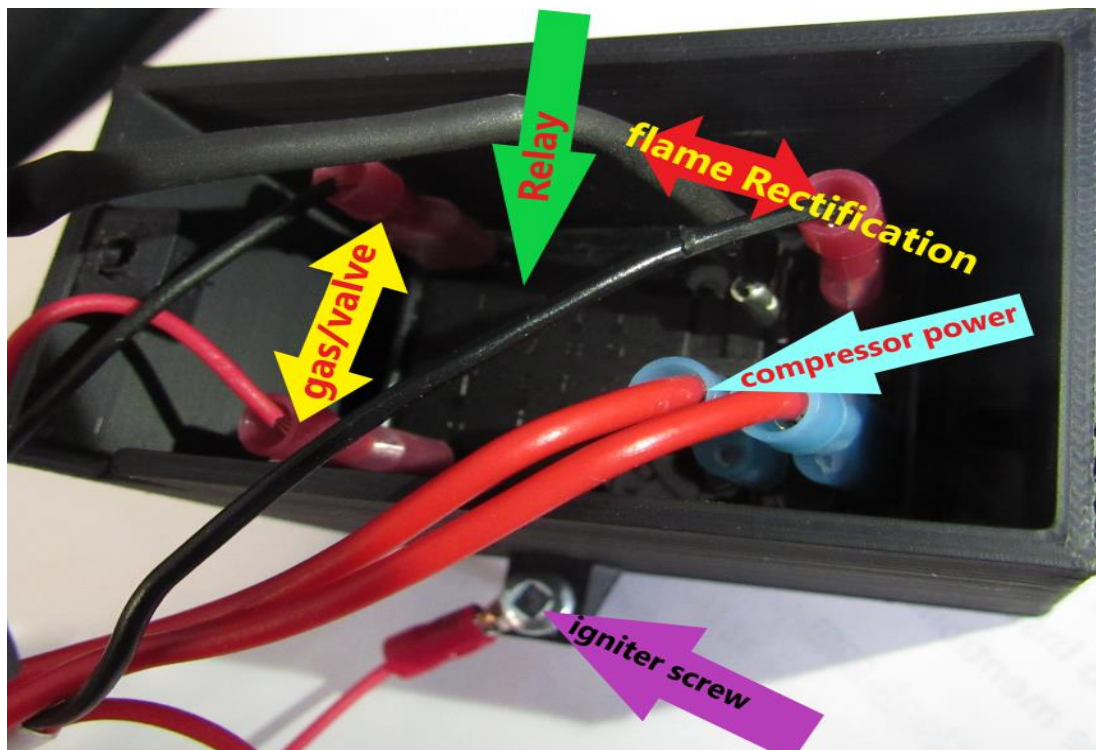
**\*Troubleshooting \***

**Warning Codes:**

**“SR”:** Check your fridge ground wires and try grounding a wire from the fridge box to your gas line.

**“NO FLO”** #1 Check fridge ground wires. #2 Open controller cover and make sure wires are all intact and not broken #3 make sure the relay makes a “CLICK” after it’s turned on. #4 Make sure igniter screw is not touching ground or wet, turn out 1 full round. #5 Flame rectification wire may need to be changed. See Controller below.

If compressor starts but shuts back down after 15 seconds, check your voltage at the compressor at the time it tries to start. Compressor has a built-in low voltage shut off set at 10.4V, so when the compressor starts is when it will use the most amp draw, if voltage drops below 10.4V it cannot start and a new 10ga wire will have to be run from the fridge to the battery. The higher the voltage the lower the amperage, or vice versus, so in order to have compressor running the most efficient the voltage needs to stay above 12V while running.



**“NO CO “**Code

This code will shut down the control board and a restart is needed, see diagram below how to restart

Make sure your thermistor has been moved to the proper location on the fin as shown in Page 44

Make sure left hand door flapper is swinging shut and sealing to the right-hand door

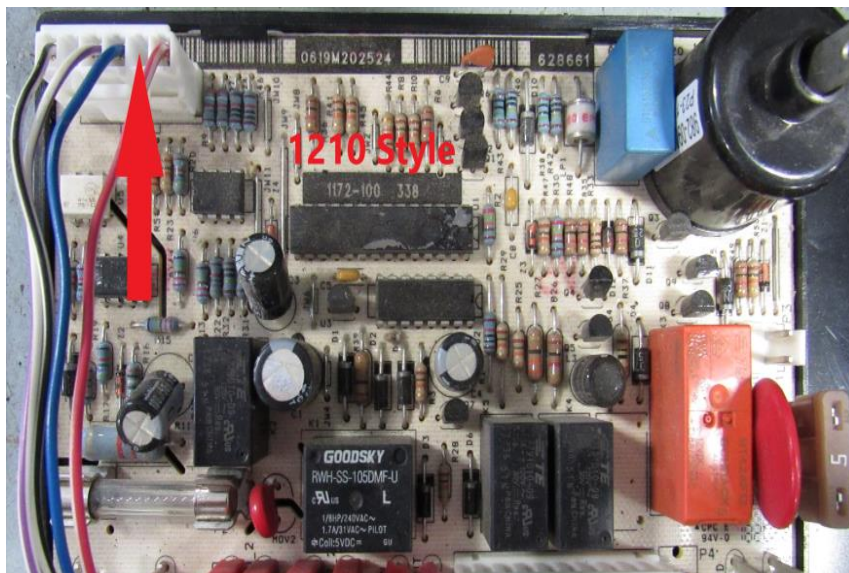
Makes sure fin fan is running at all times, and compressor fan is running while the compressor is running

If this code continues to come back wire compressor direct as seen in earlier page, this will bypass all controls, if the fridge cools down in bypass mode the rear control needs to be changed, if it still does not cool in the bypass mode other compressor diagnostics will have to be done.

### Restart control board

Remove board cover and remove all wires except the 12V power wires and the gas valve wires going to the controller.

Take a 18ga or smaller wire and strip back both ends at least 1 “, make sure 12V power and gas valve wires are hooked up, then push one end of wire in empty slot (**RA**) and hold other end of wire onto a ground, either back of fridge box or ground from coach, after approx. 5 seconds you will hear a click and you can take wire back out and put cover back on as well as other wires and your fridge should function as normal again.



## Thermistor check

Push and hold the “set temp” and “mode” button in at the same time after 5 seconds you will see a 1 or 88, now push the “mode” and scroll up to 3 this will then flash you your thermistor temp, this temp should be 25 – 28 for normal food zone depending where it located on the fin, but it’s very important that the door has been closed for at least 1 hr. before doing this test. To come back out of this mode turn fridge off and then back on again. If you want to check the accuracy of your thermistor or vice versus, unclip the thermistor from the fin and leave it hang into the box for approx. 1 hr with the door closed, then do this test and the thermistor and your thermometer should match up or be close the same.

**If your controls are not operating correctly or the eyebrow seems to not be giving fits, do this to reset all codes and this will refresh both rear and front board.**

Push and hold the “set temp” and “mode” button in at the same time after 5 seconds you will see a 1 or 88, now push the “mode” and scroll up to 6 this will then show a “ER”, then push and hold the mode button in till a “CL” shows, let it set like this for a least 5 minutes, then shut fridge off and turn back on and the fridge should be ready to operate again.

**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 shelf 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 install cooling units every day, we get blind at times to things that should be mentioned or be made clear.

[dahvac@outlook.com](mailto:dahvac@outlook.com) **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.**

