

# Dometic 1350 Gas/Elect Installation Manual



## INSTALLATION MANUAL

**RV Cooling Unit Warehouse**

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## Tools needed to do the install:

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



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 RV Cooling Warehouse try to build these units so that they are able to be installed by DIY customers. But please be aware though that our upgrades might not look quite the same. Some brackets, frames, mounting holes might not always line up perfectly as fridge boxes can vary at times. So, some modifications, such as shaving foam or tweaking frames might need to be done at times to install the unit. Something to remember is that these cooling units are built with steel tubes and steel plates so some minor twisting or flexing to get the unit installed will not harm the cooling unit. Feel free to send us a picture along with your question, and we will help you to the best of our ability.

## **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 some differences between this install manual and the install videos on YOUTUBE So, to avoid confusion, follow **only** the instructions in this PDF.
- It a good idea to know where your fridge 12V DC fuse is located just in case you need to get to it in this process.
- Before you take any wires apart it's always a great idea to take pics of how they were. That makes it nice to look back in case something is not quite clear.
- **The most important steps you do not want to get wrong is the thermal mastic, foam, slideout venting and vent fan application**
- **If your fridge has an icemaker or water dispenser make sure to take lots of pics how this is wired in the back, these most times do not have them so we show very limited wiring hook up on this as its really completely separate from the rest of this install anyway.**

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 and so the box can be beat up a bit 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 in a small box to do the install.





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.



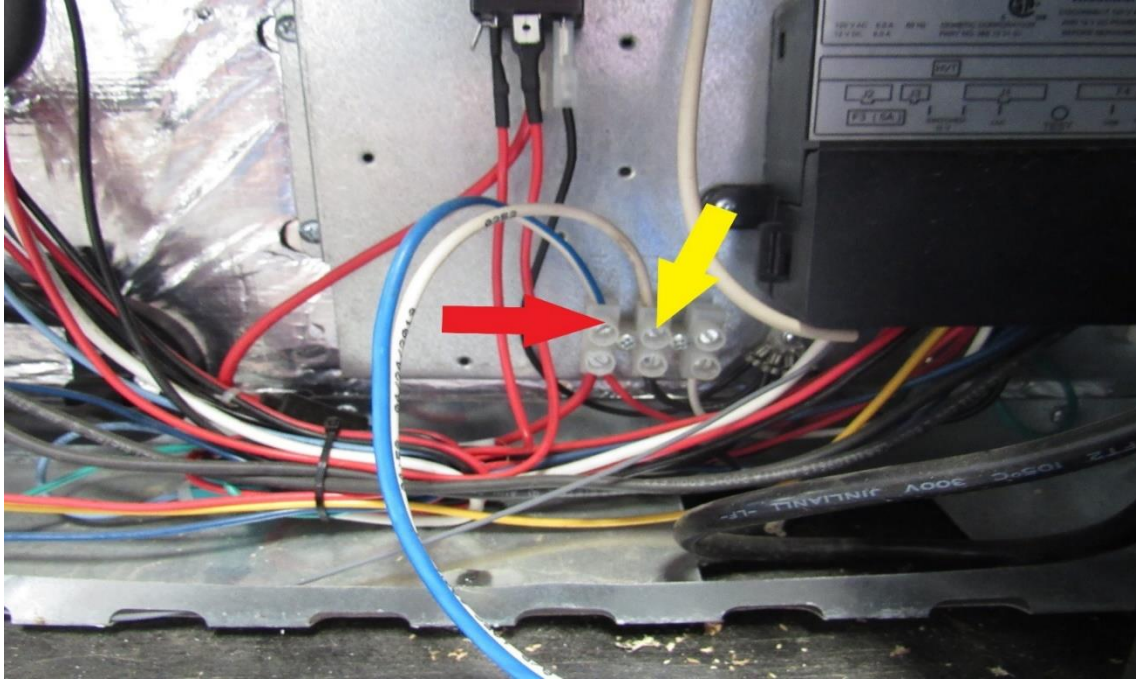
**WARNING:**

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

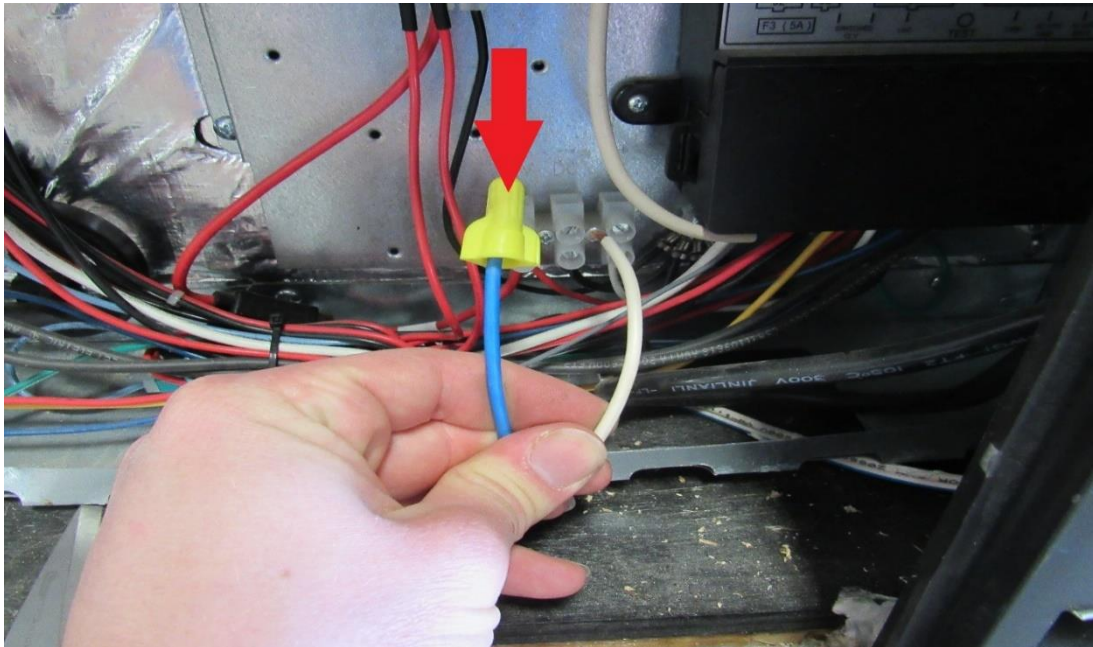


Locate your refrigerator side vent on the outside of your RV. Good idea to take a pic of these wires or label them so you know which goes where when done. These wires can be any color depending on the coach manufacture.

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

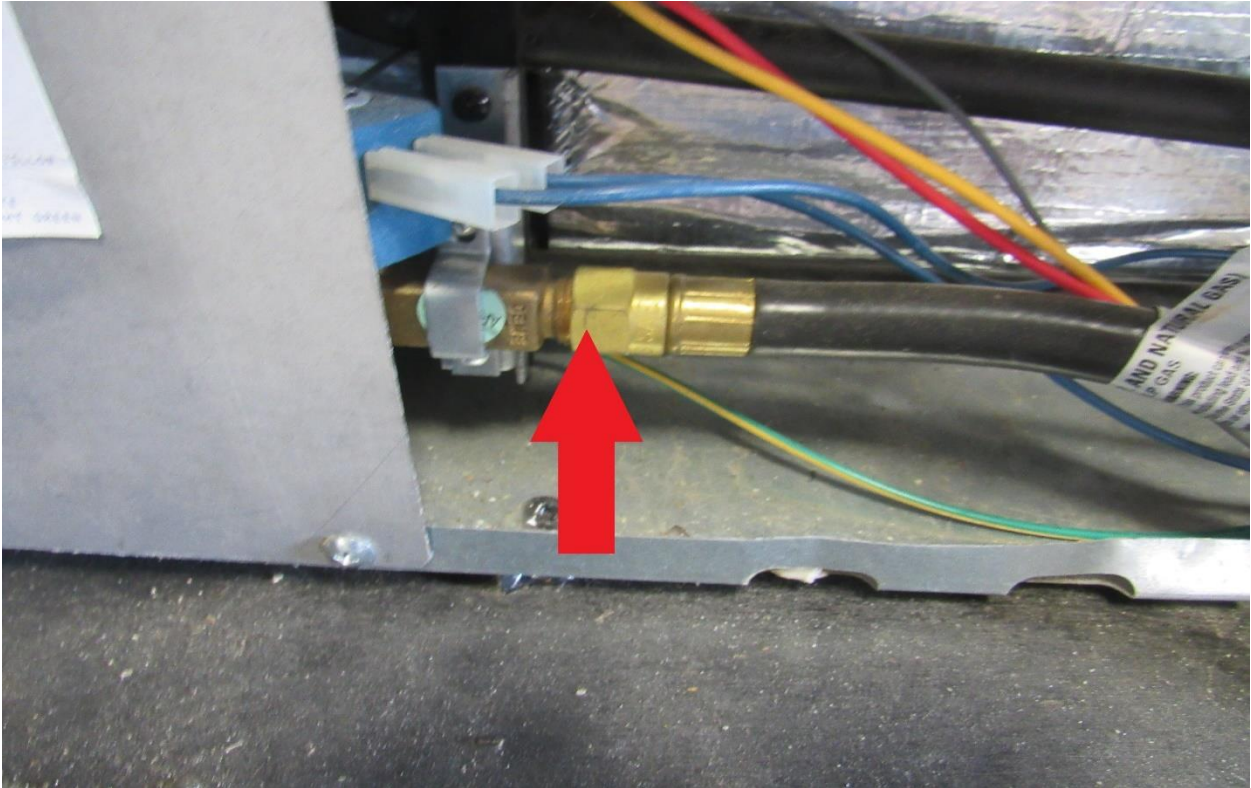


Cap off the 12v positive wire as it is not insulated (RA). These can be stuck to the side out of the way for now. This could be any color wire your RV used for DC +

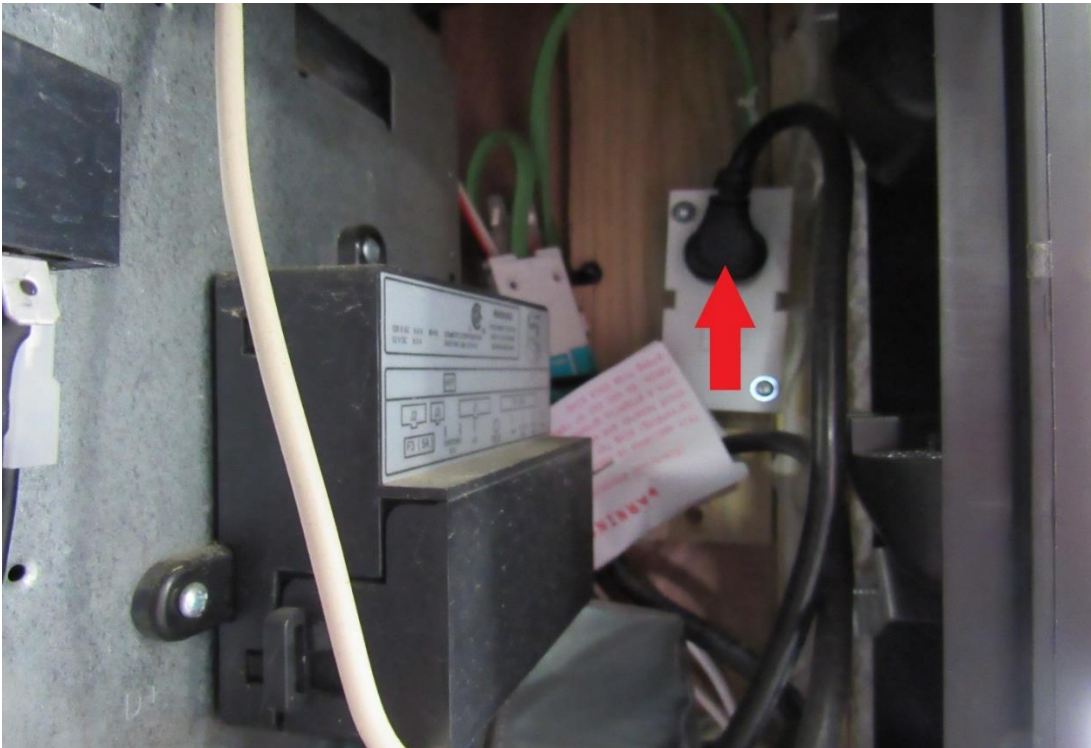




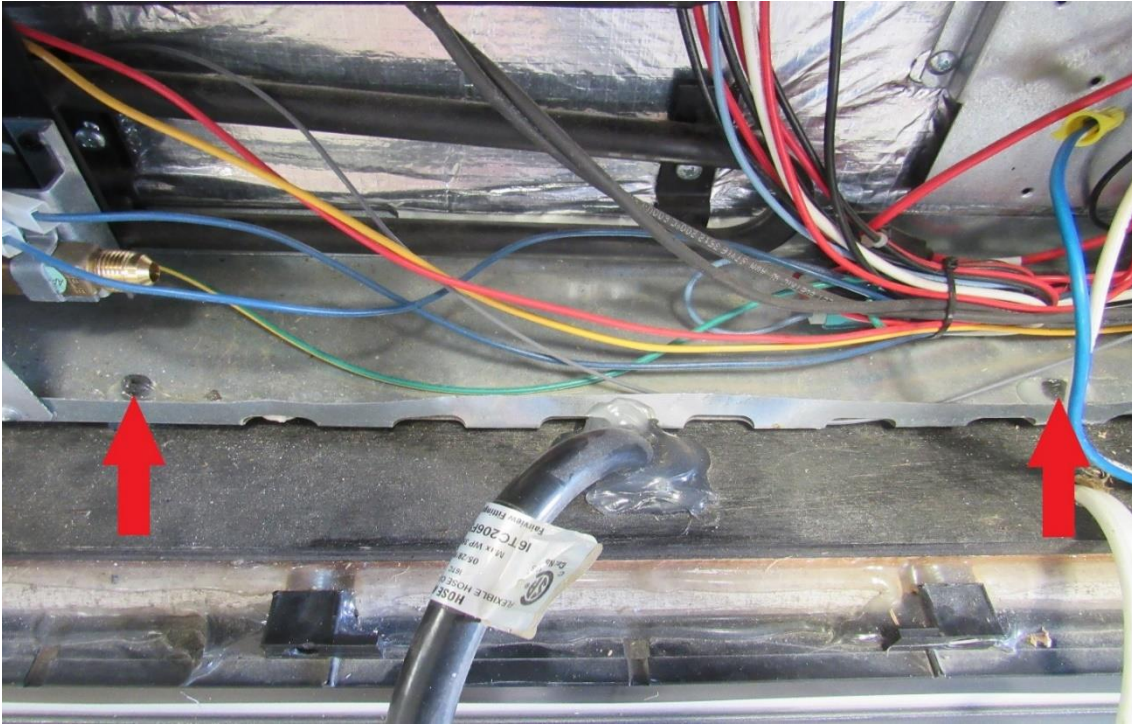
Remove LP gas hose from the gas valve (RA). Make sure your LP is turned off.



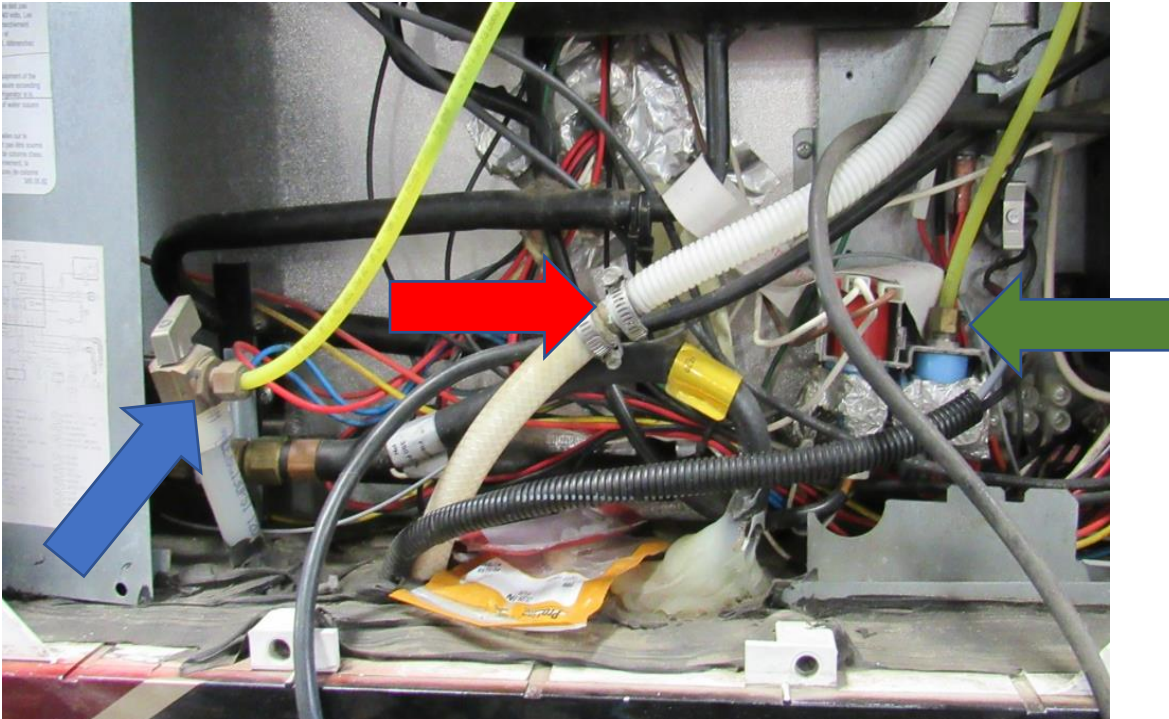
Remove the 120v plug from the wall outlet (RA). Location may vary



Remove the two mounting screws (**RA**). Location or screw size will vary



Make sure your water line is turned off (**BA**), remove the water supply line for the icemaker/water dispenser (**GA**). If your defrost hose is connected to a drain hose disconnect it from the coach line, most times this hose is loose in the back and so no need to loose from coach (**RA**)



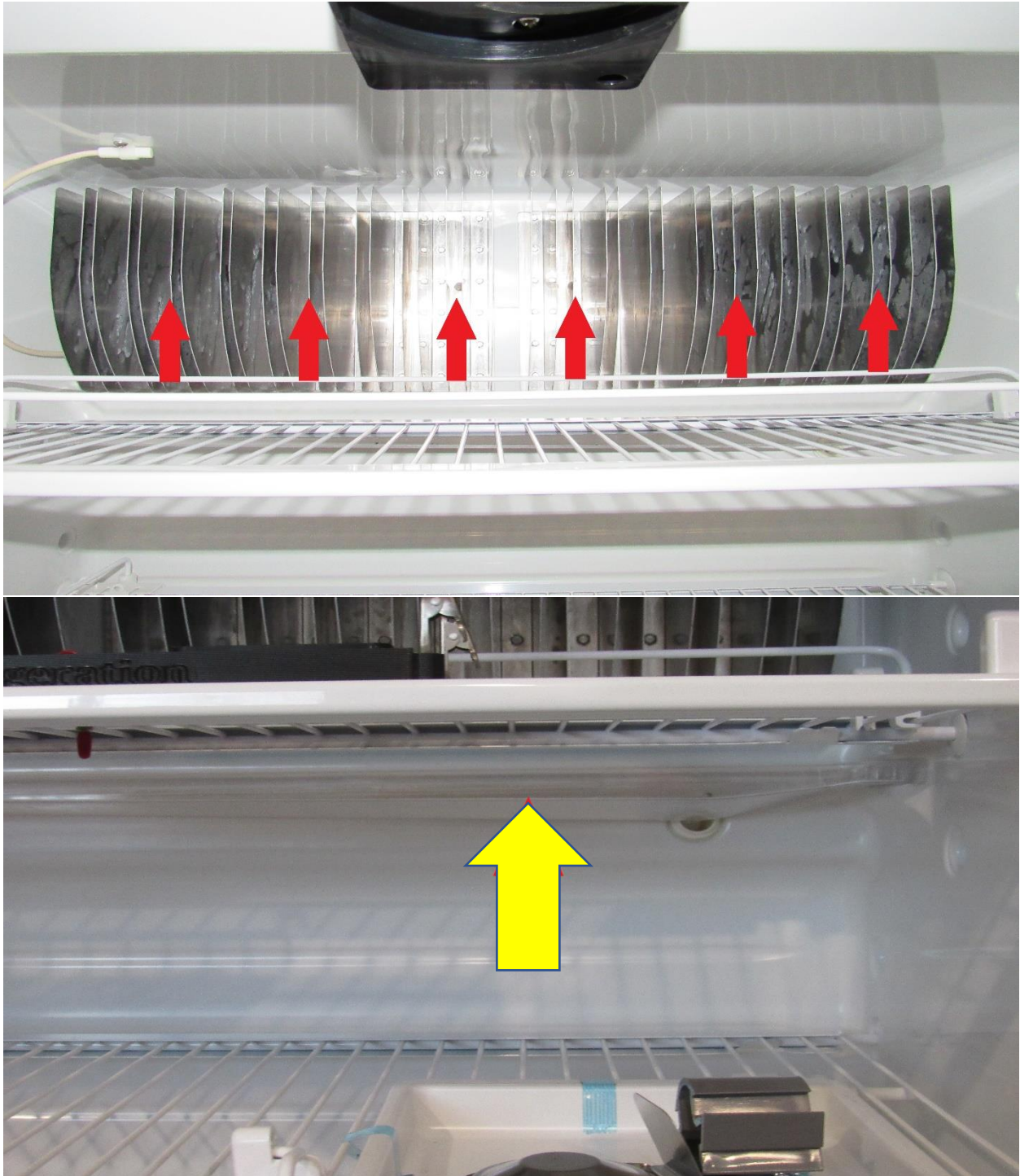


Going inside your RV, remove the freezer screws in the freezer section (RA).





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).

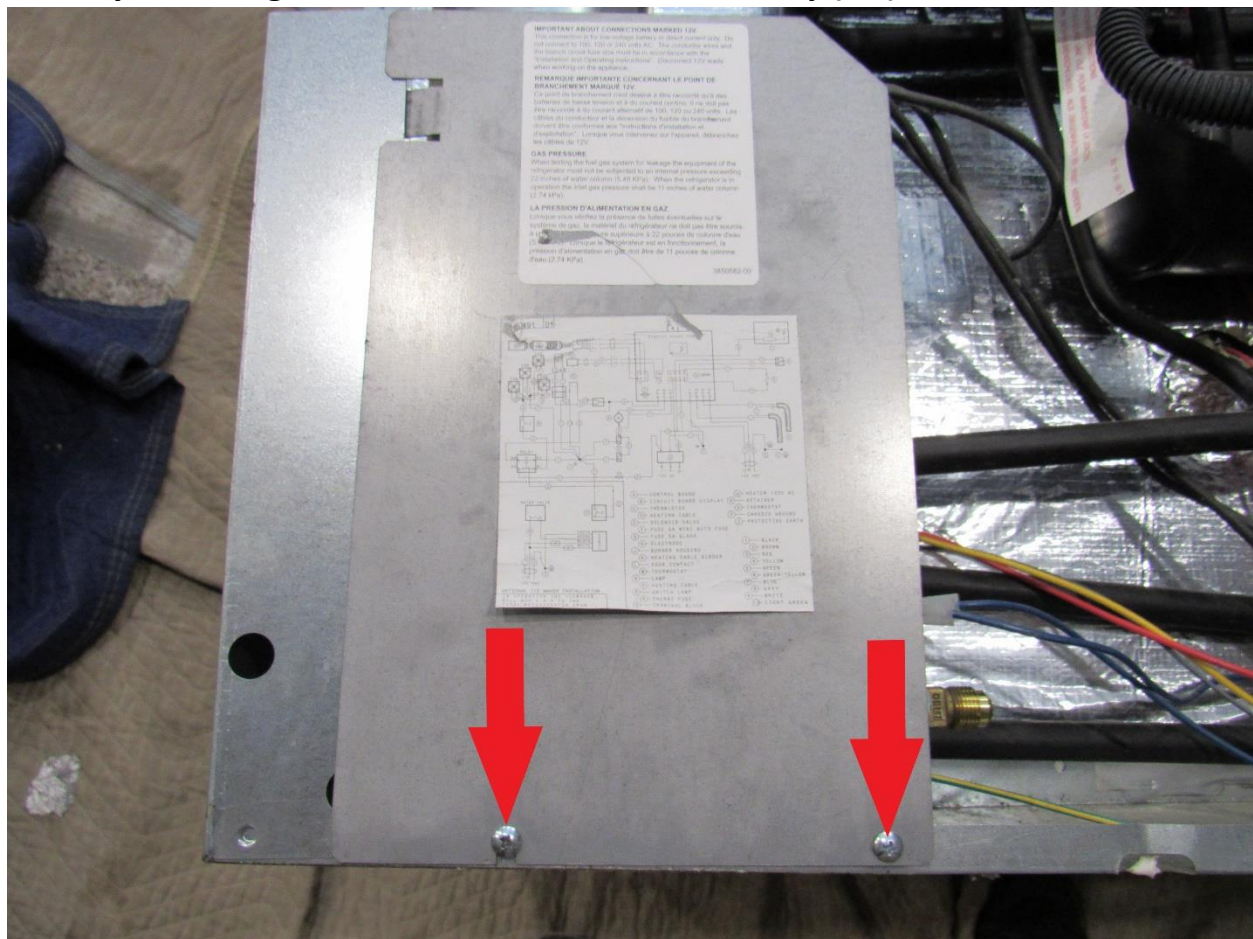


Remove the screws from the bottom plate (RA).



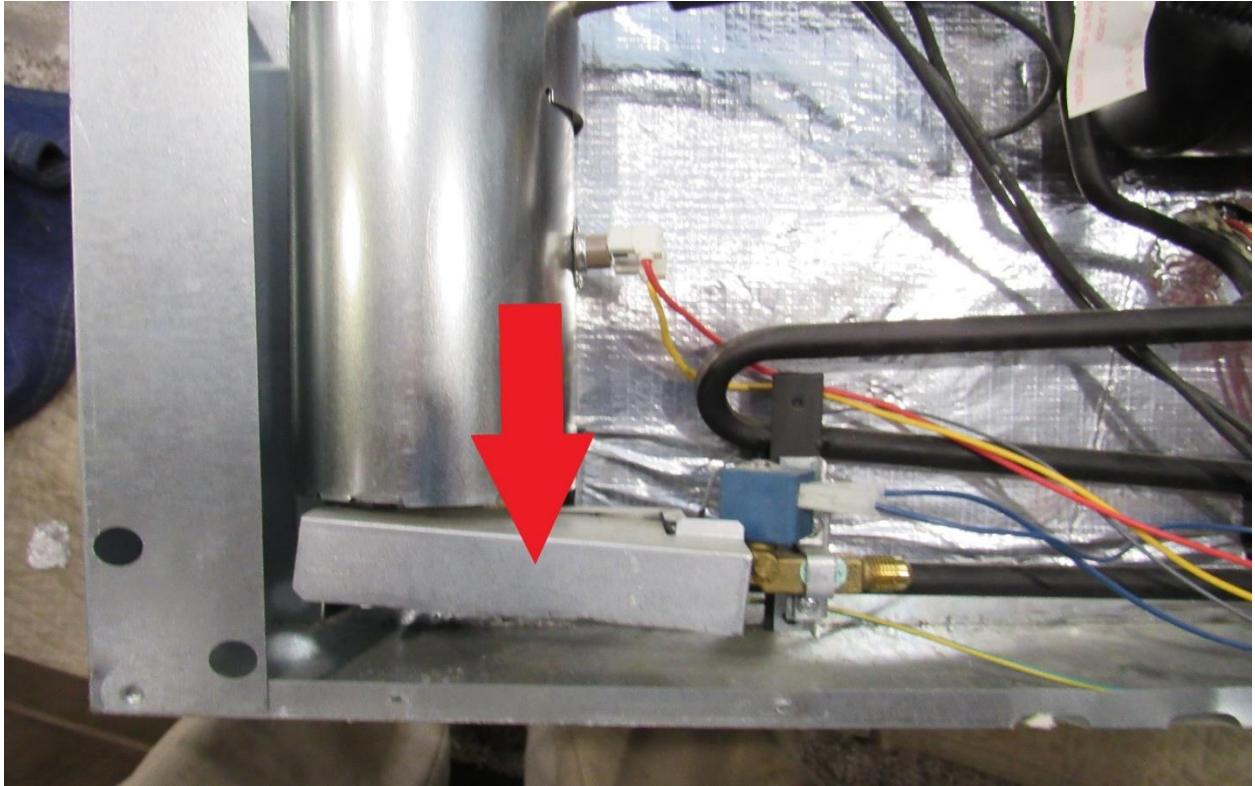
We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits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

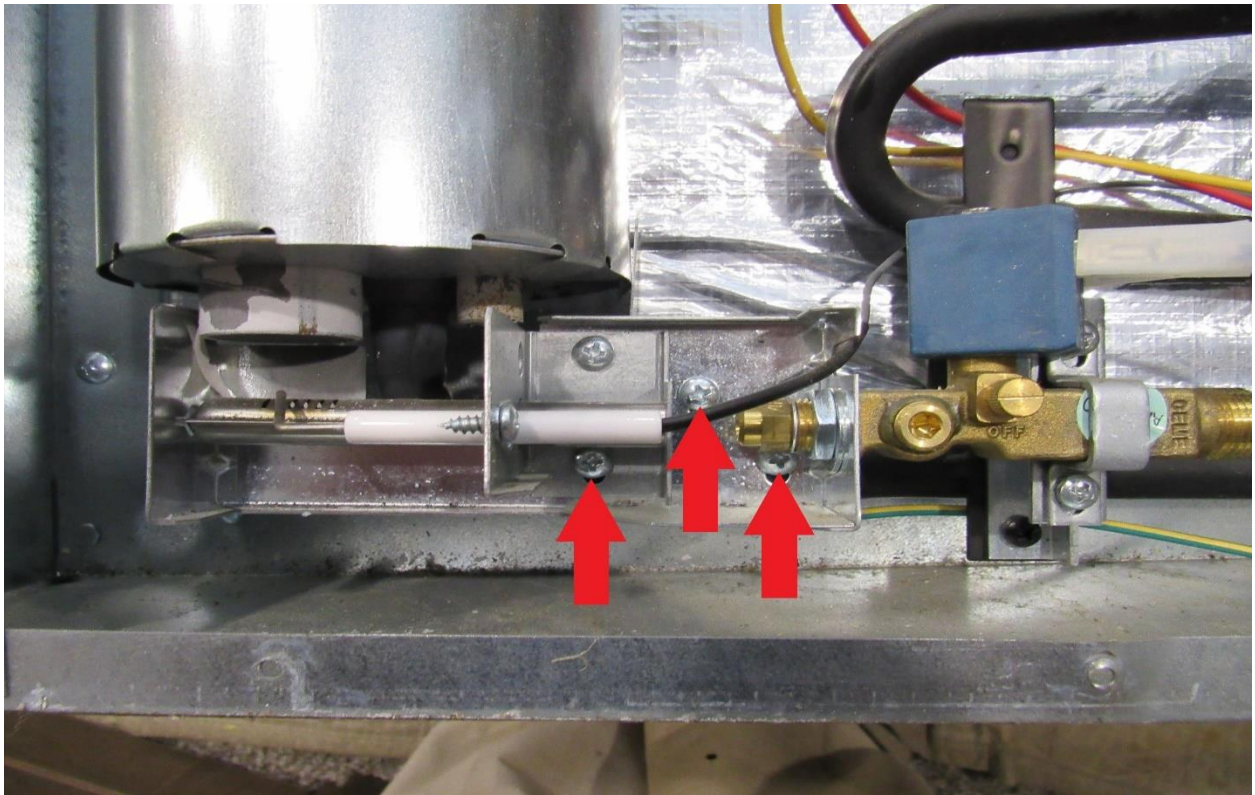




Remove the burner cover (RA).

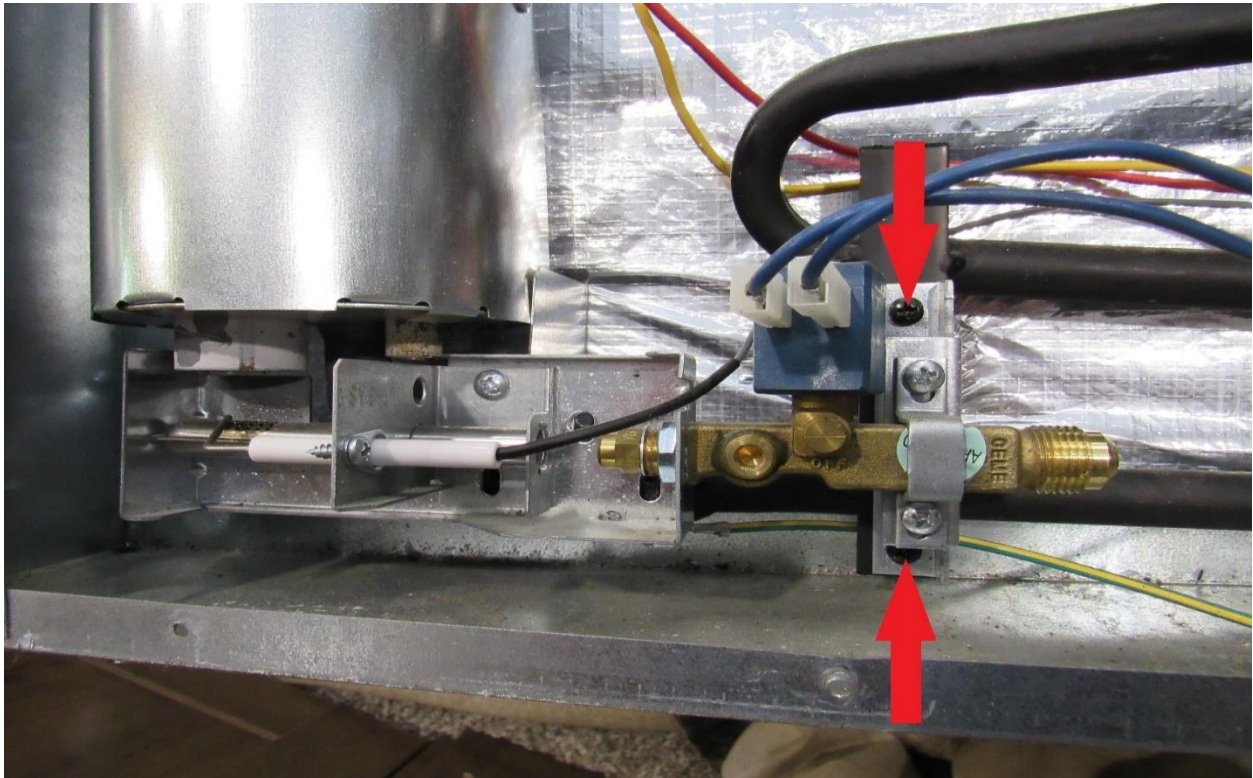


Remove the burner mounting screws (RA).





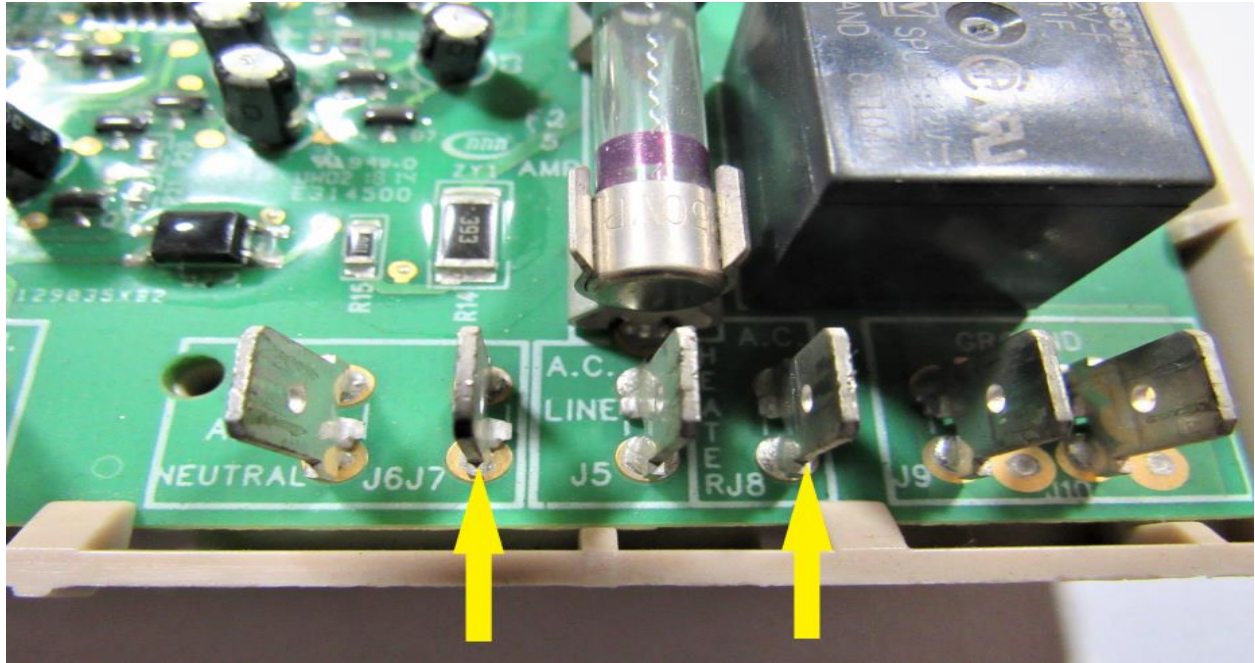
Remove the LP solenoid mounting screws (RA). Lay burner to the side



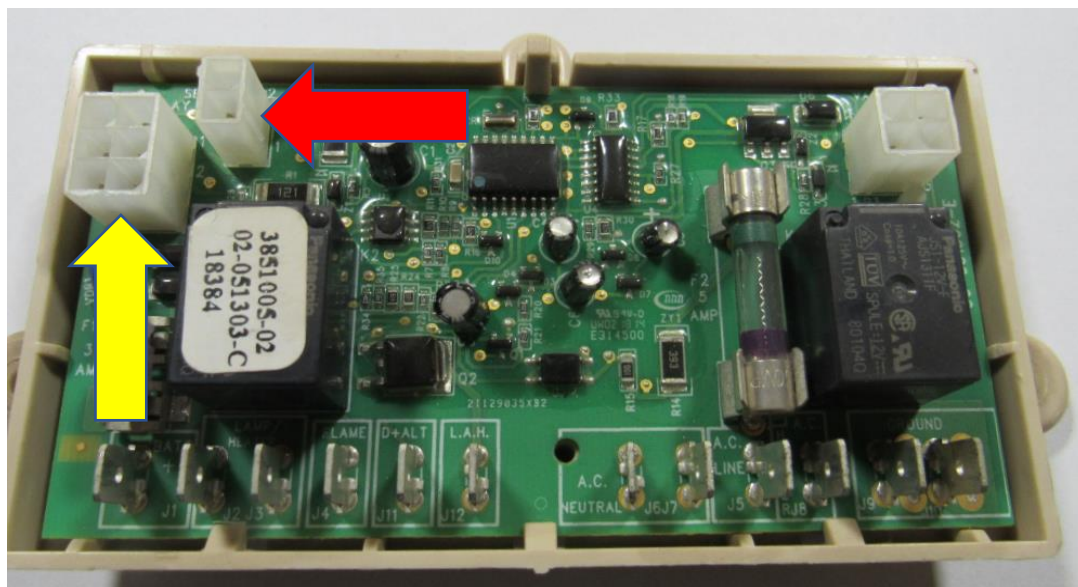
If your board looks like this then you will need to use this diagram to take apart, this board is the early version and we hardly ever see them, so we did not have a box here to show the fine details. If your board does not look like this skip this page.



Remove the heating element wires **(YA)** leave all the other wires on bottom spades/or if you take any other wires off the bottom of this board make sure and take a pic of how it was wired as that's how it will have to be wired back again.

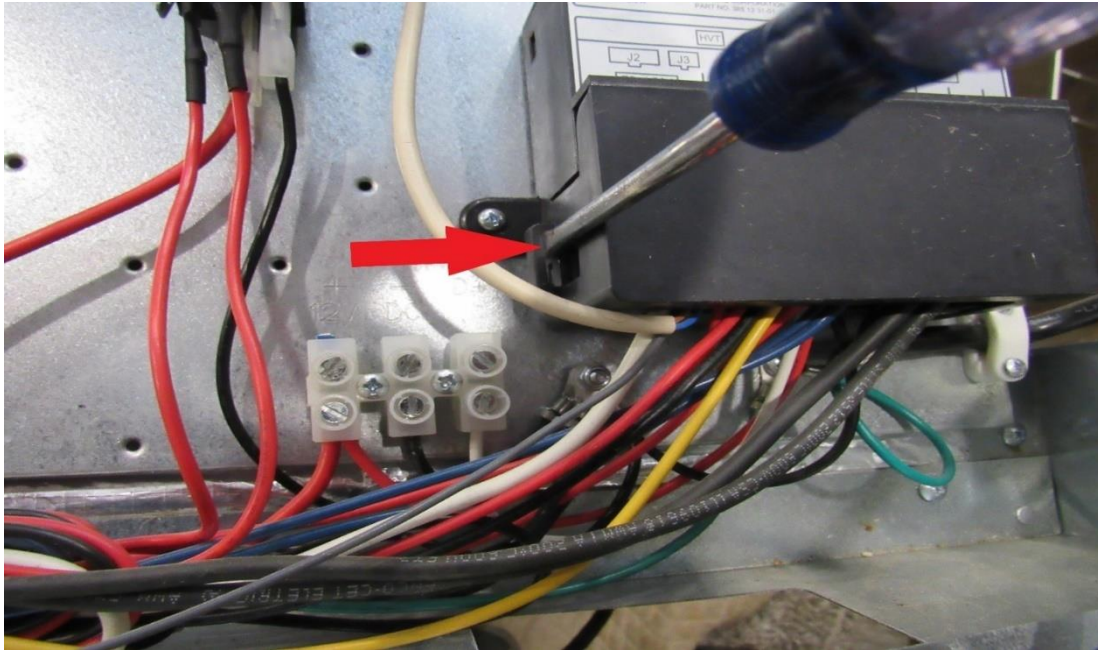


We do not show it with wires connected as this board is rare and we have nothing on hand to get wiring pics off of. Unclip thermistor **(RA)** power plug may need to be taken off to remove unit **(YA)**

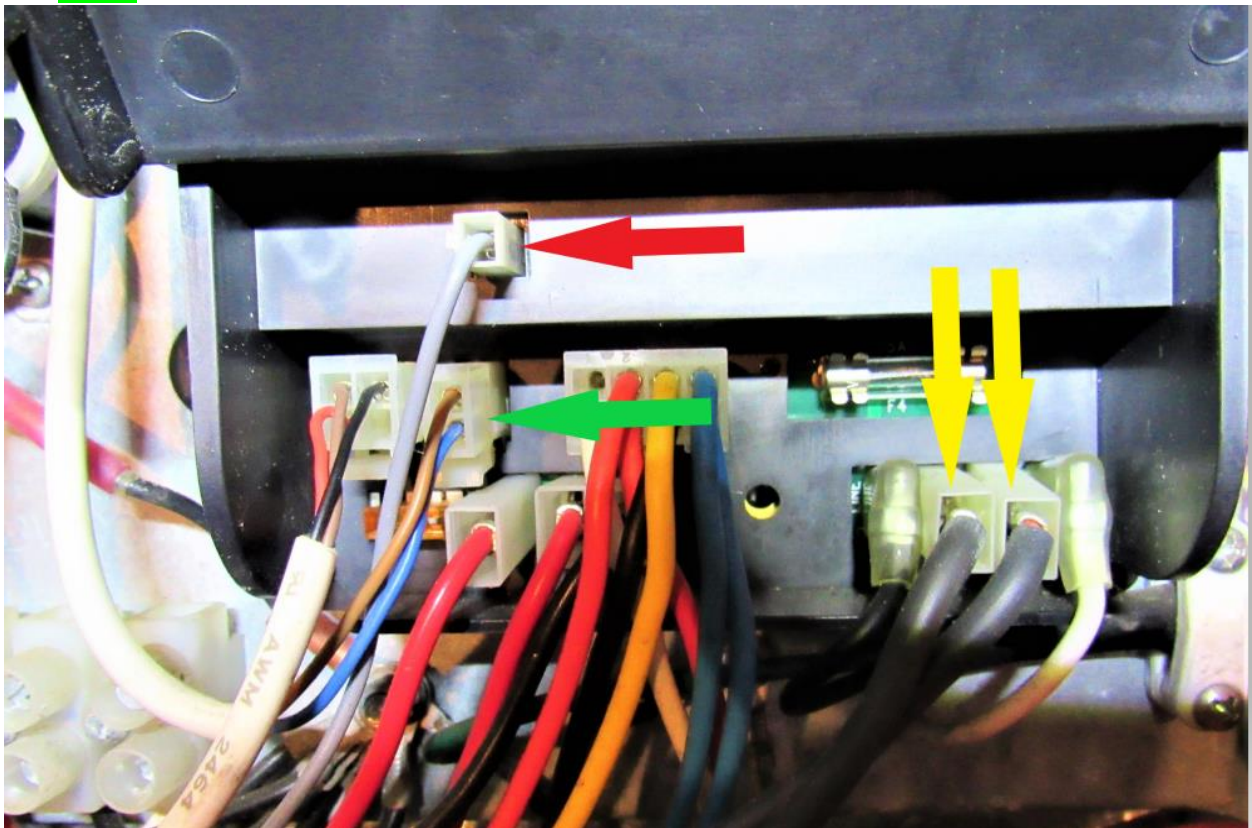




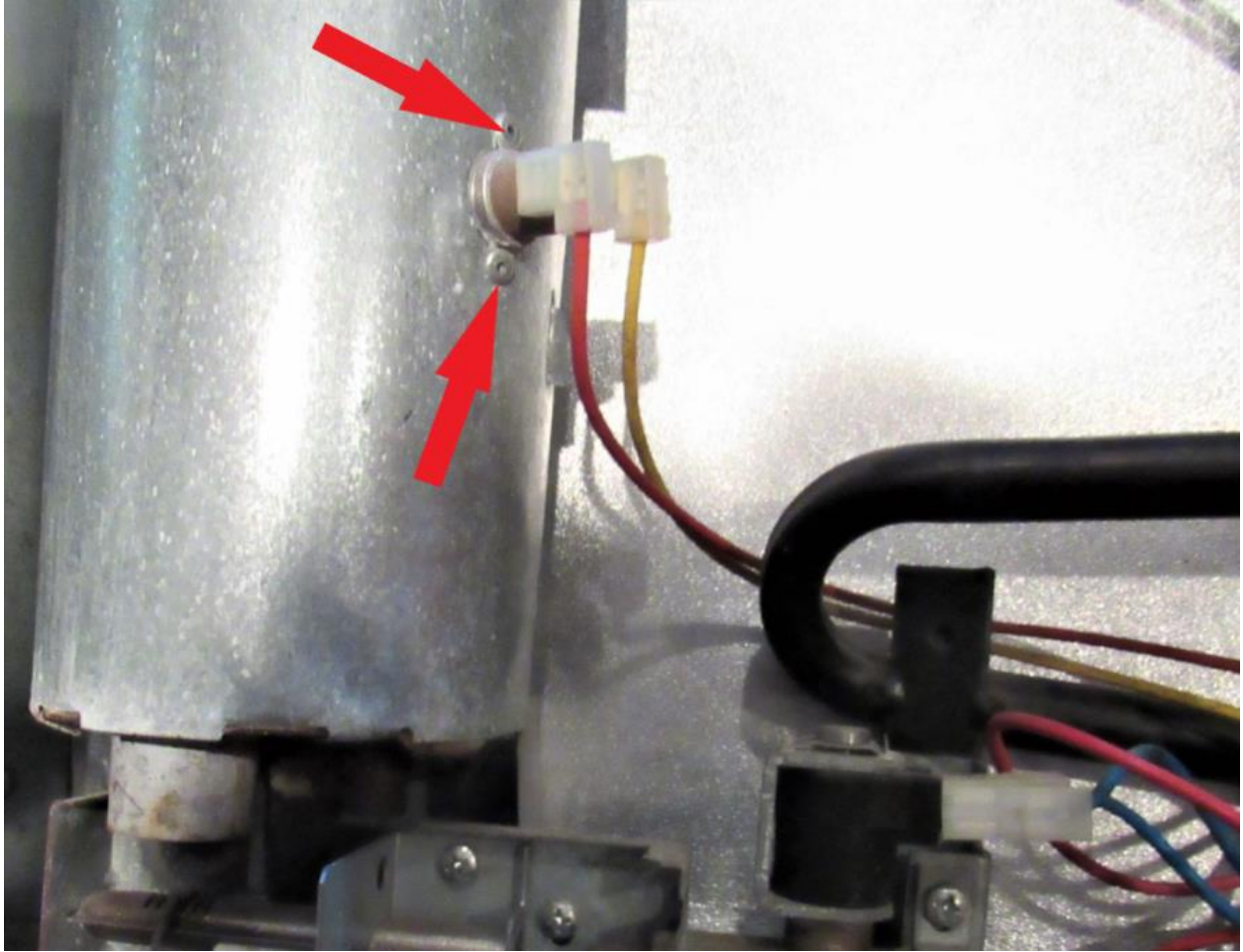
This is the more common board: Take a screwdriver and gently pry out both sides of the board to release the cover (**RA**).



Remove igniter wire (**RA**) 2 black heating element wires (**YA**). Thermister clip (**GA**) do not remove any other wires from the board

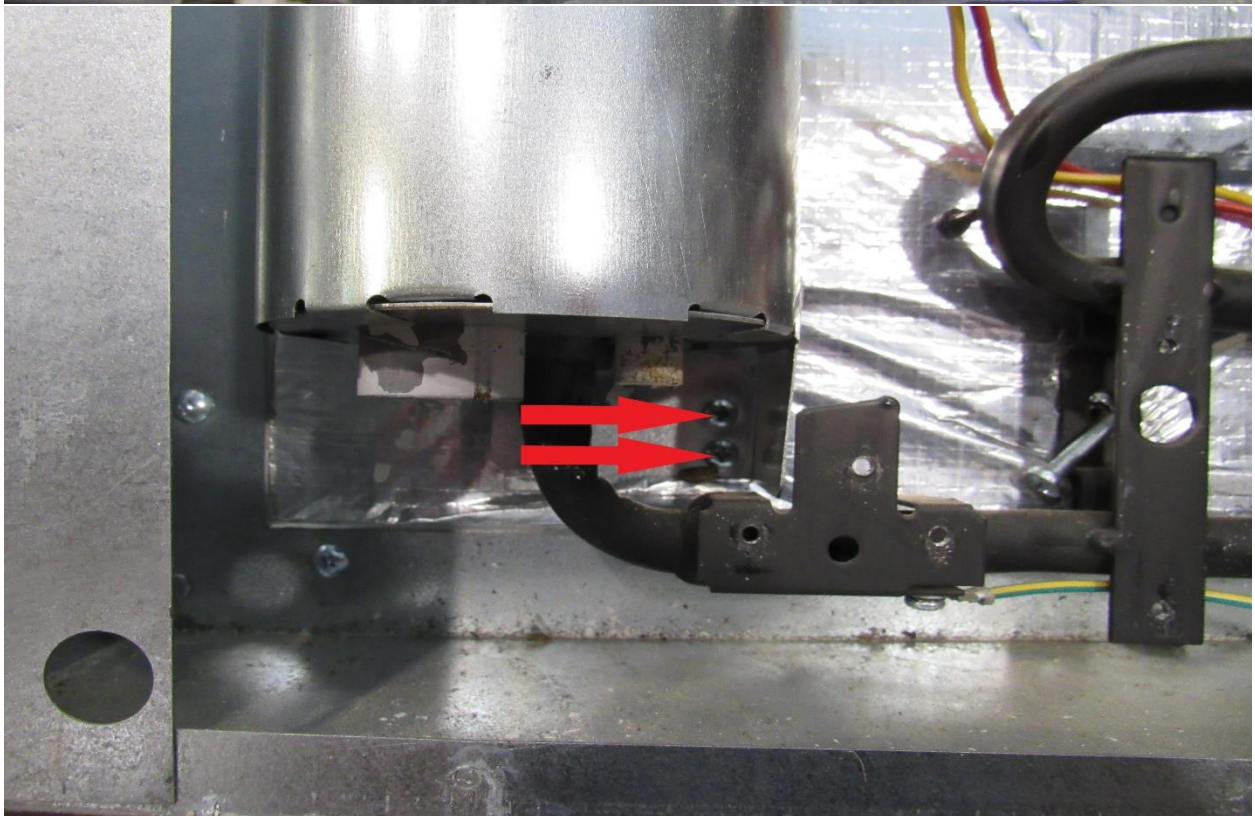
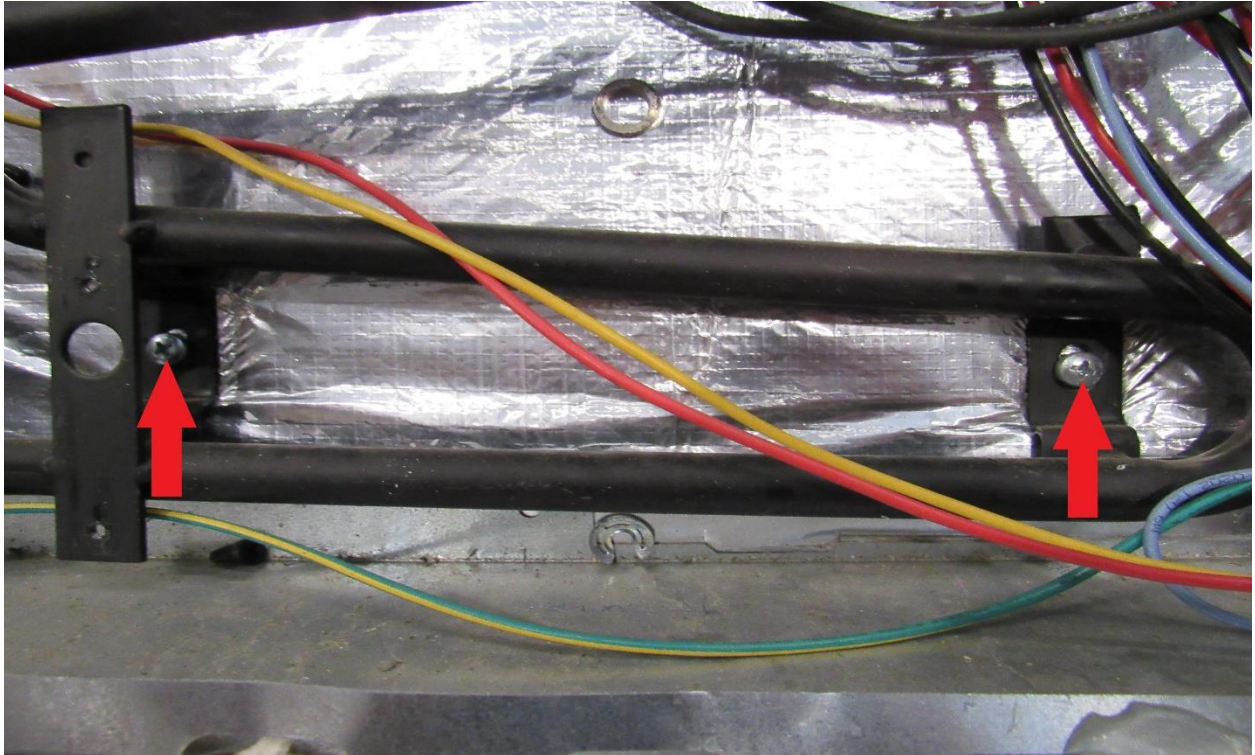


This temp sensor will have to be transferred to the new unit, carefully drill out the 2 pop rivets holding it onto the boiler stack. (RA)



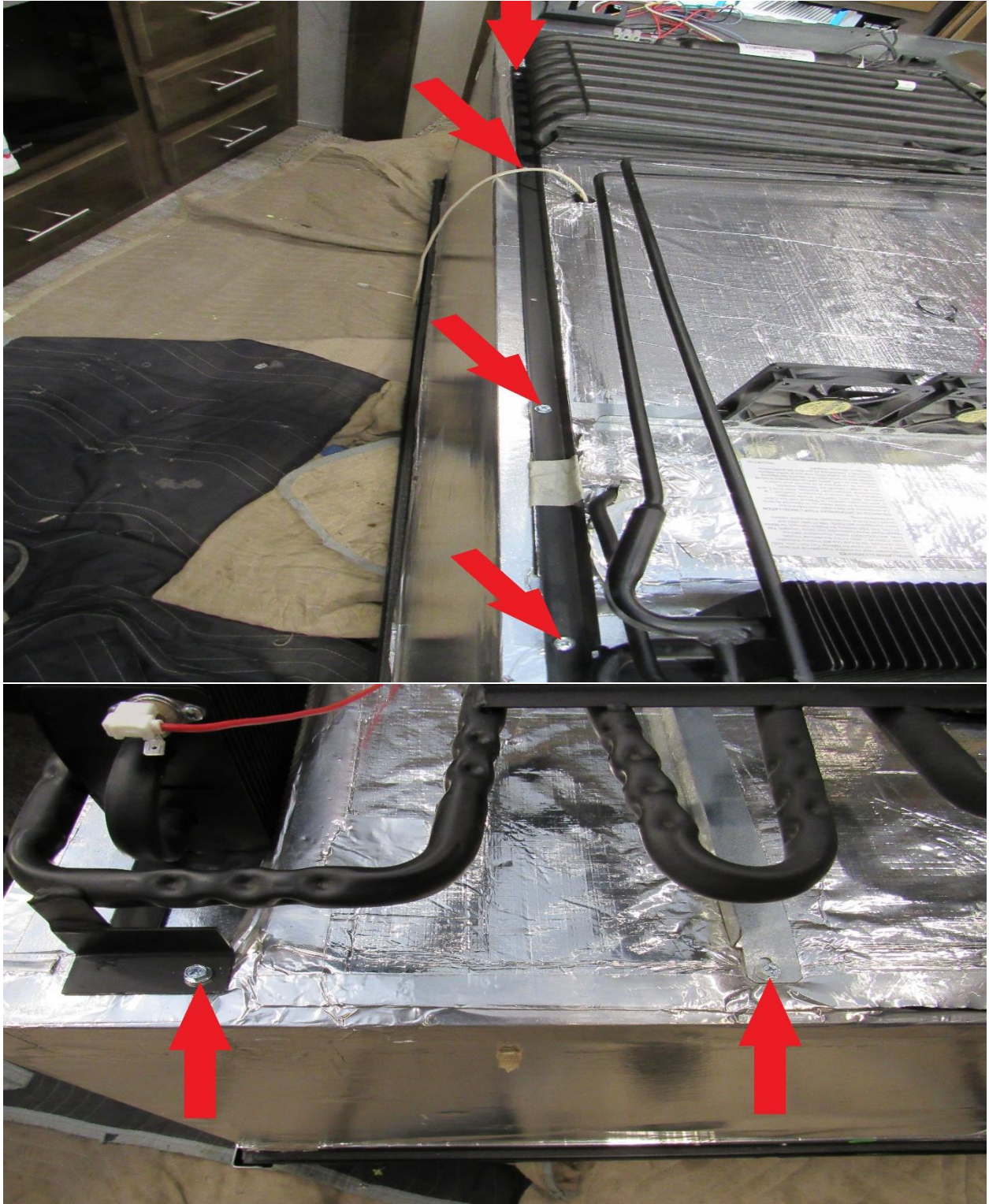


Remove the mounting screws (RA).



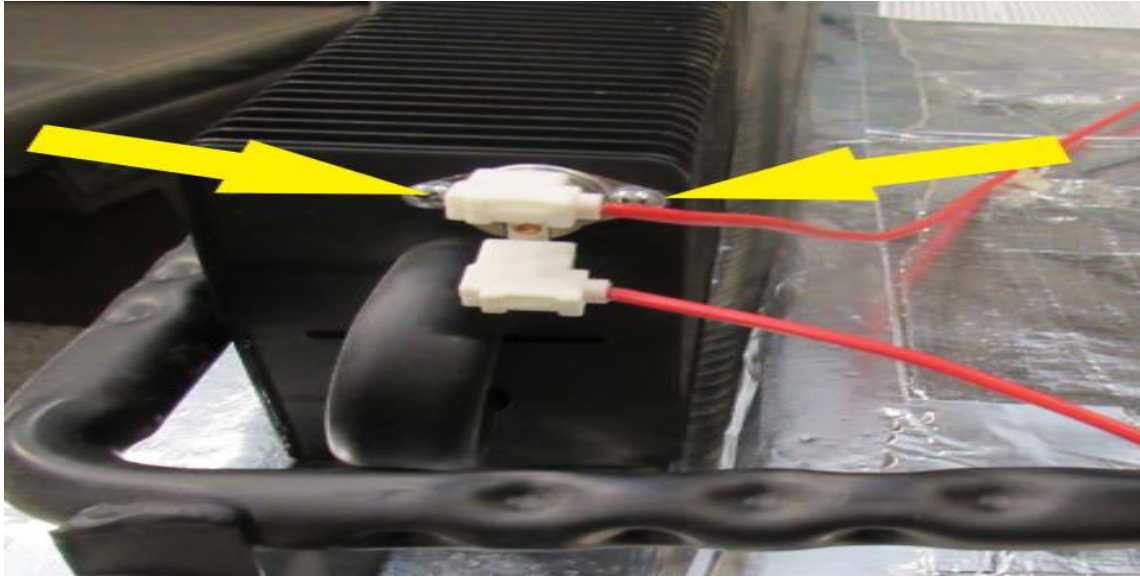


Remove the mounting screws on the side rail (RA). These may vary in location.

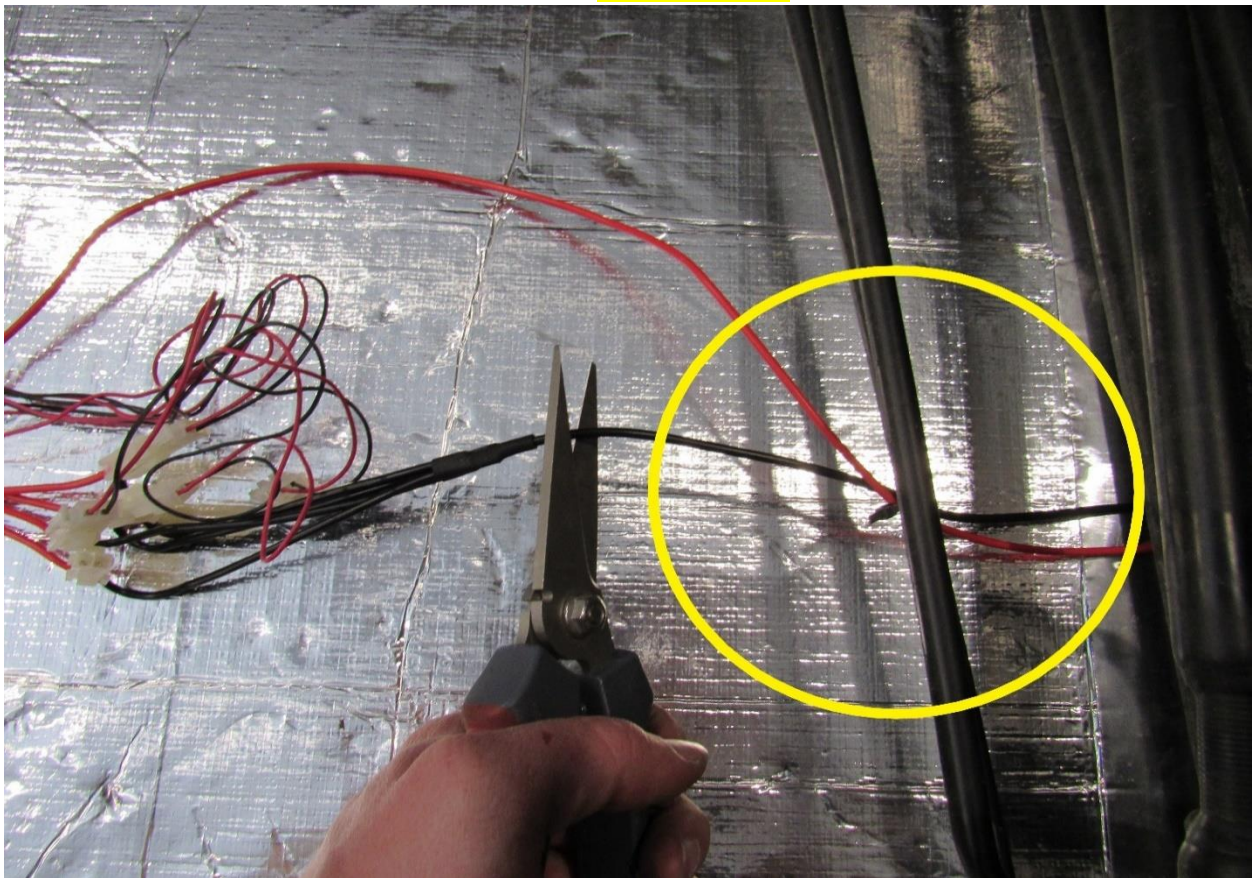




Remove the 2 screws from the fan temp switch (YA). Save them for later

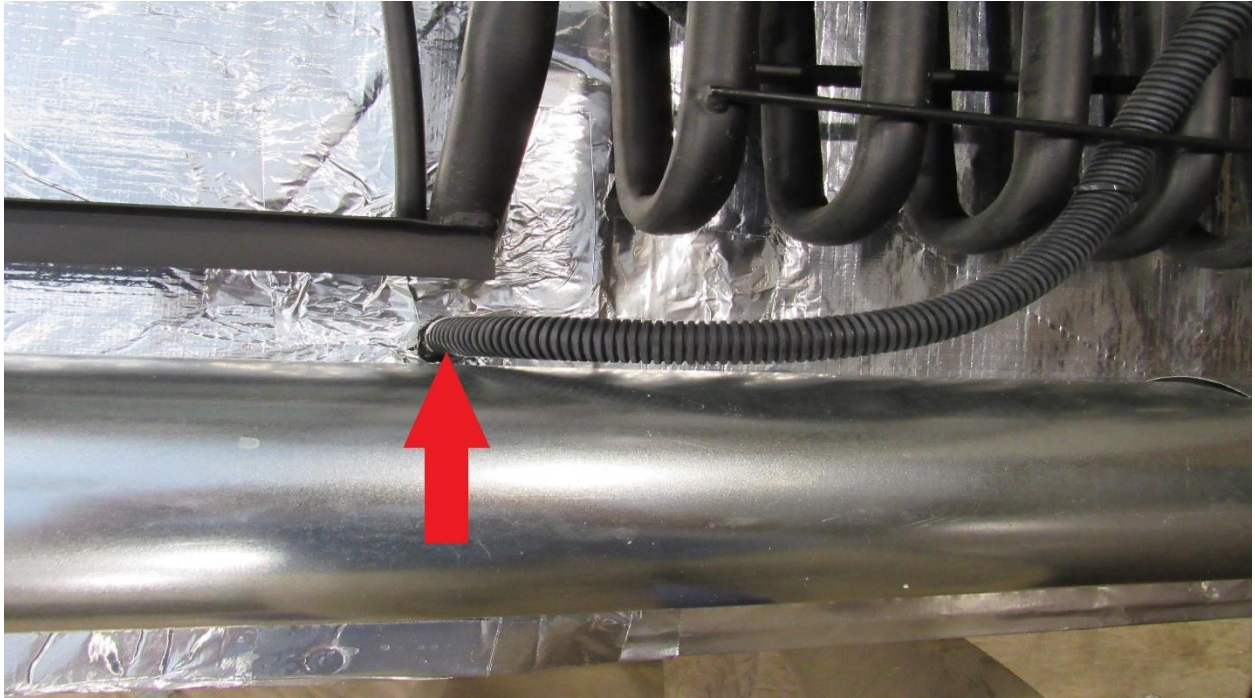


Pull the red and black fan wires in the yellow circle down to the board/relay

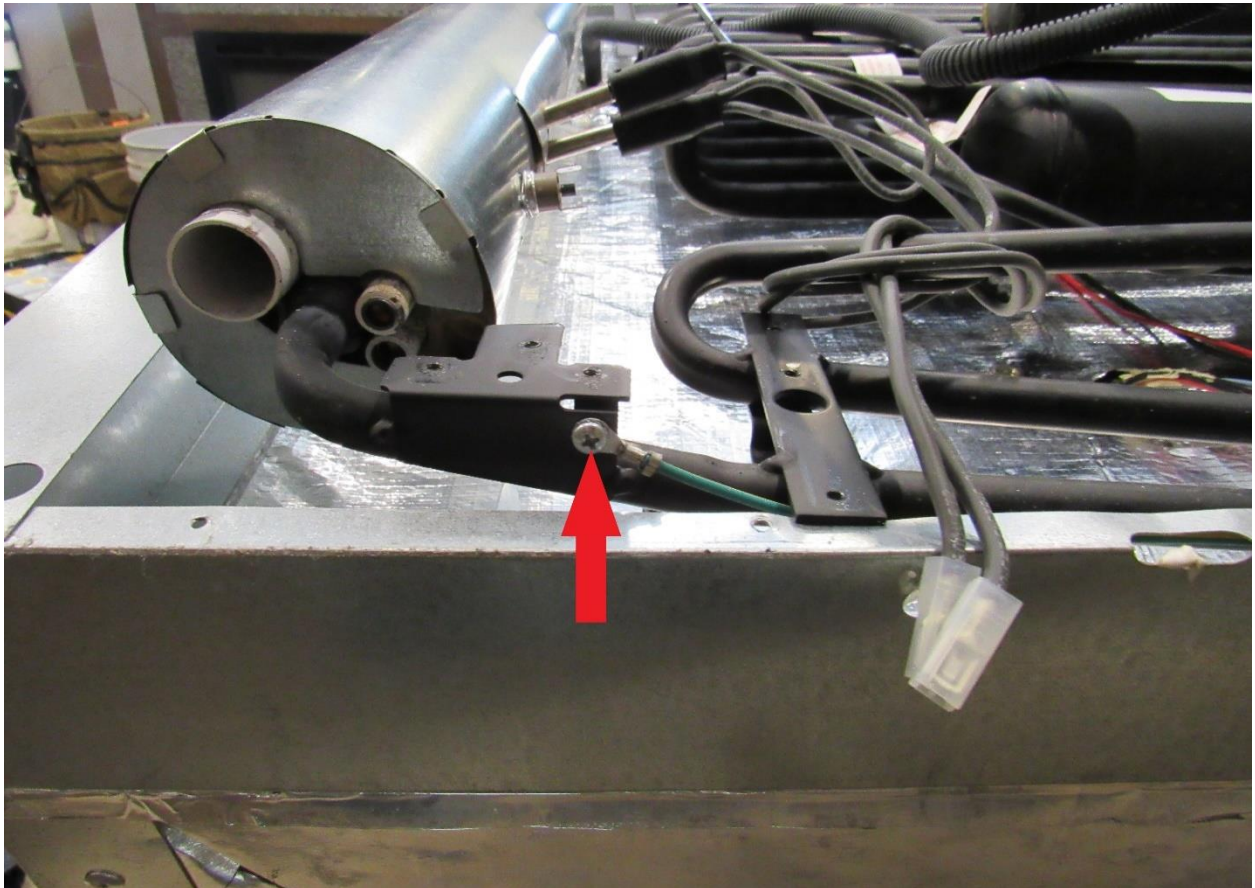




Pull out the defrost hose (RA). Set the defrost hose to the side.

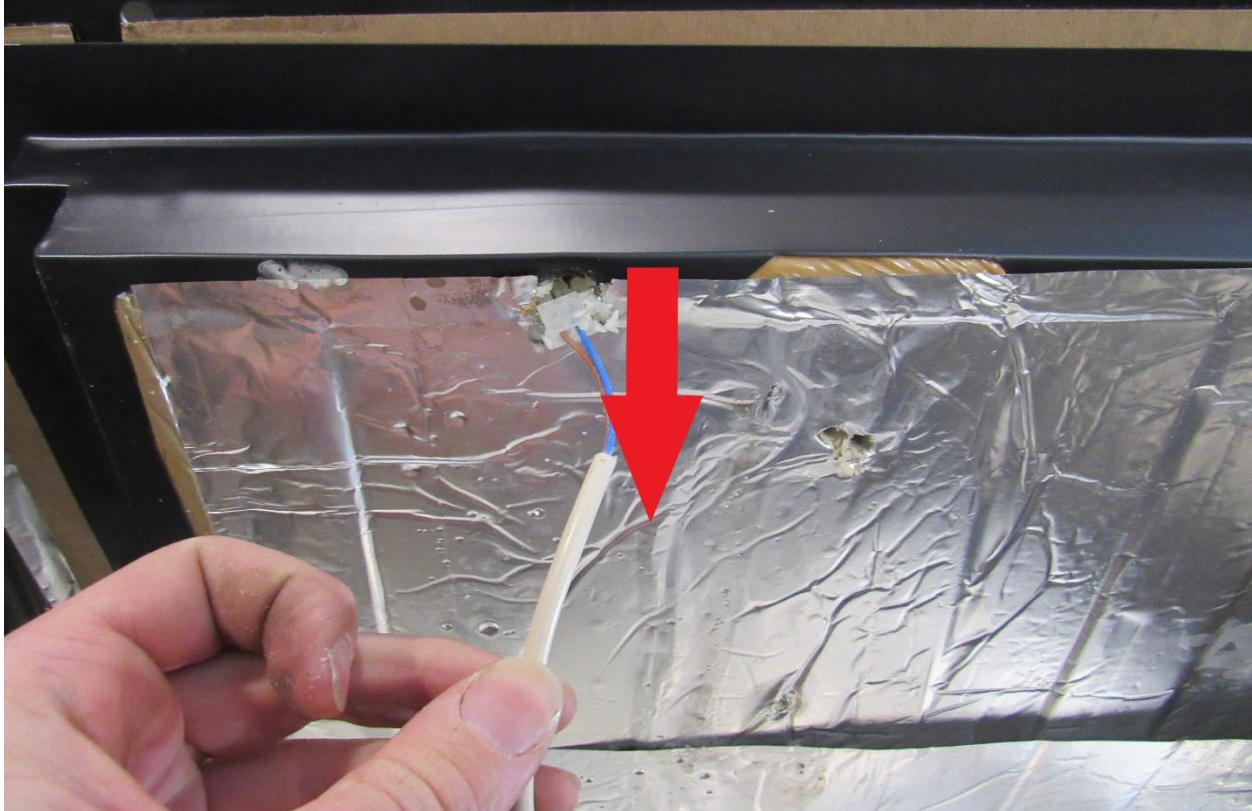
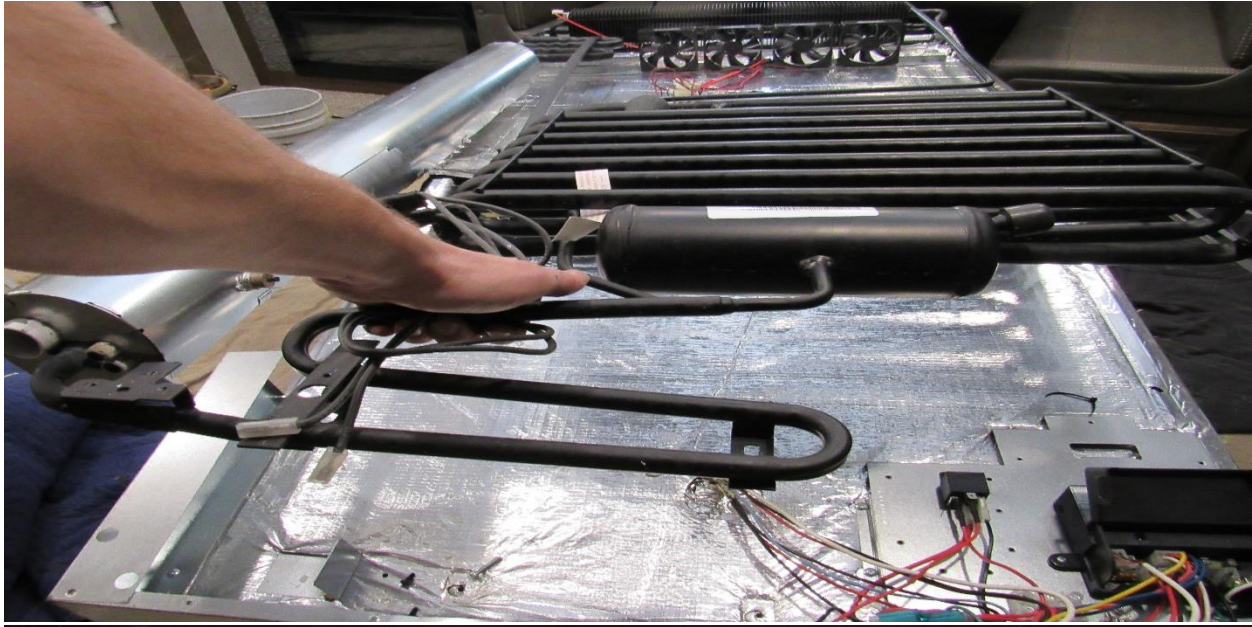


Lift the unit up a little and remove the ground on the bottom plate (RA).



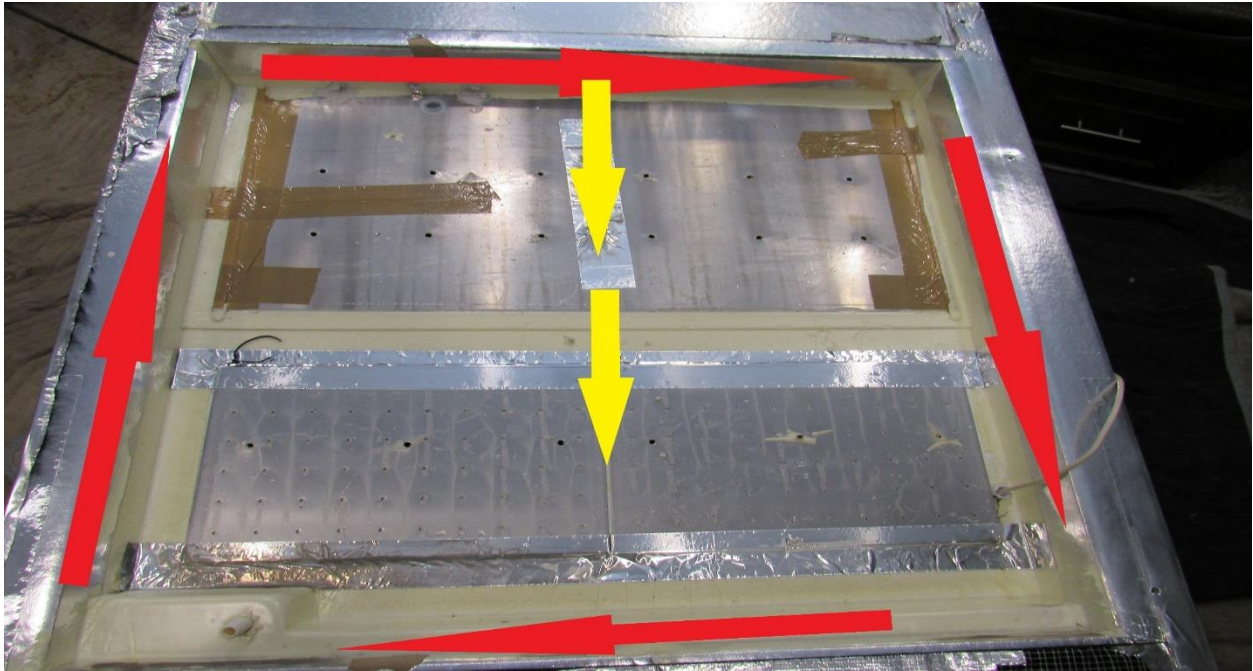


Lift the unit straight up and out. Have someone pull the thermistor wire down through the hole in the unit as the unit is lifted out (**RA**). Thermistor should not be removed from box, but left clipped to the inside of the fridge. If you have a ice maker then the icemaker water spigot/heater wire needs to be pulled thru the unit on top as well when you lift up.

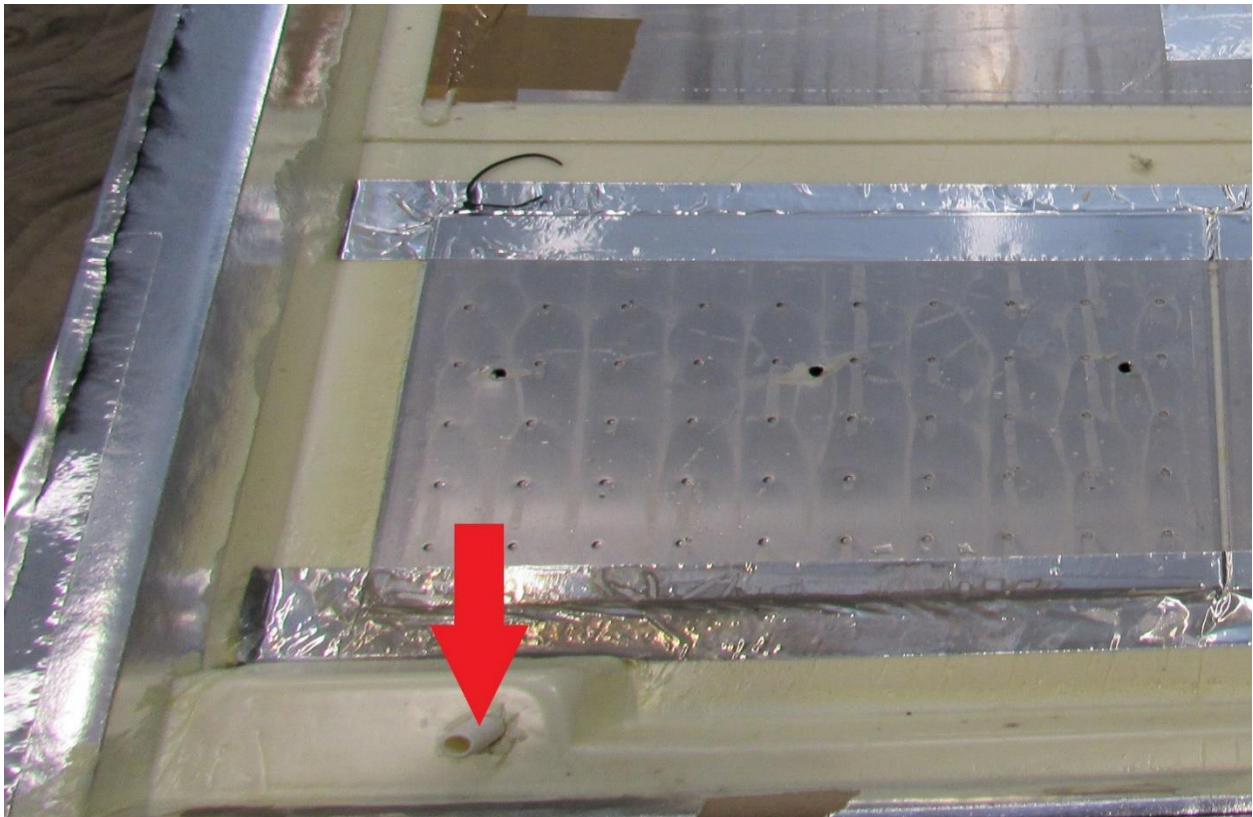




Clean all four sides (RA) and also clean any foam or thermal mastic off of the aluminum plates (YA).

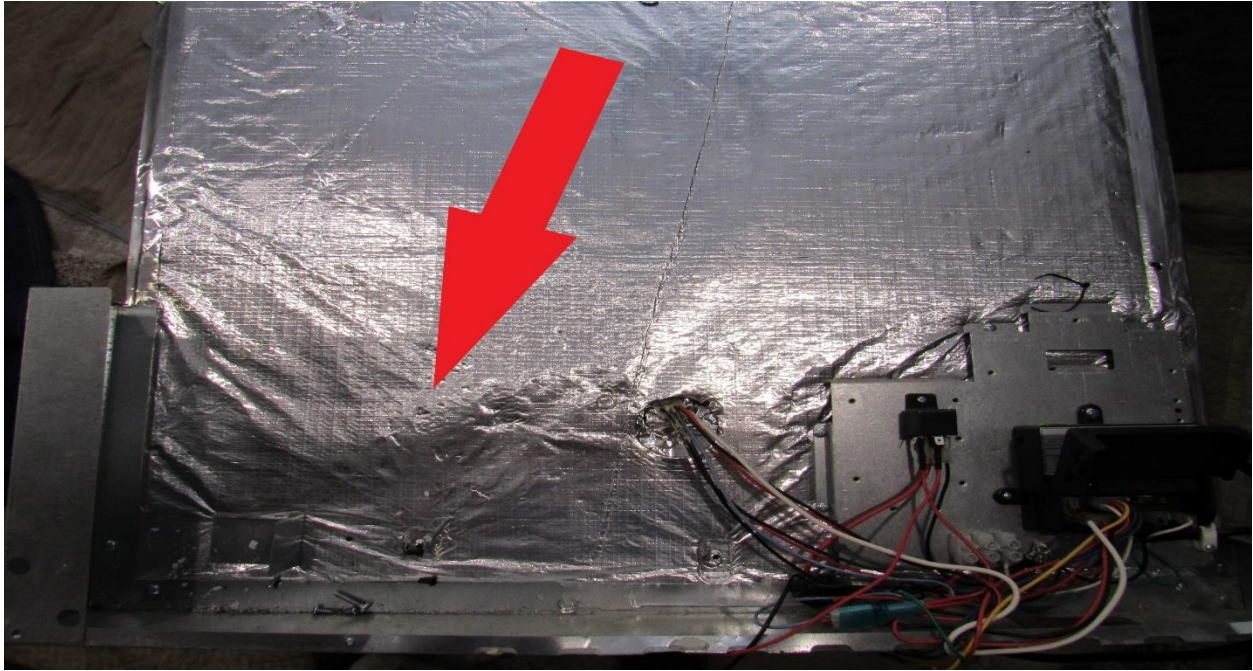


Push defrost spigot down into the refrigerator section (RA) so it doesn't break off when the new unit is set into place.

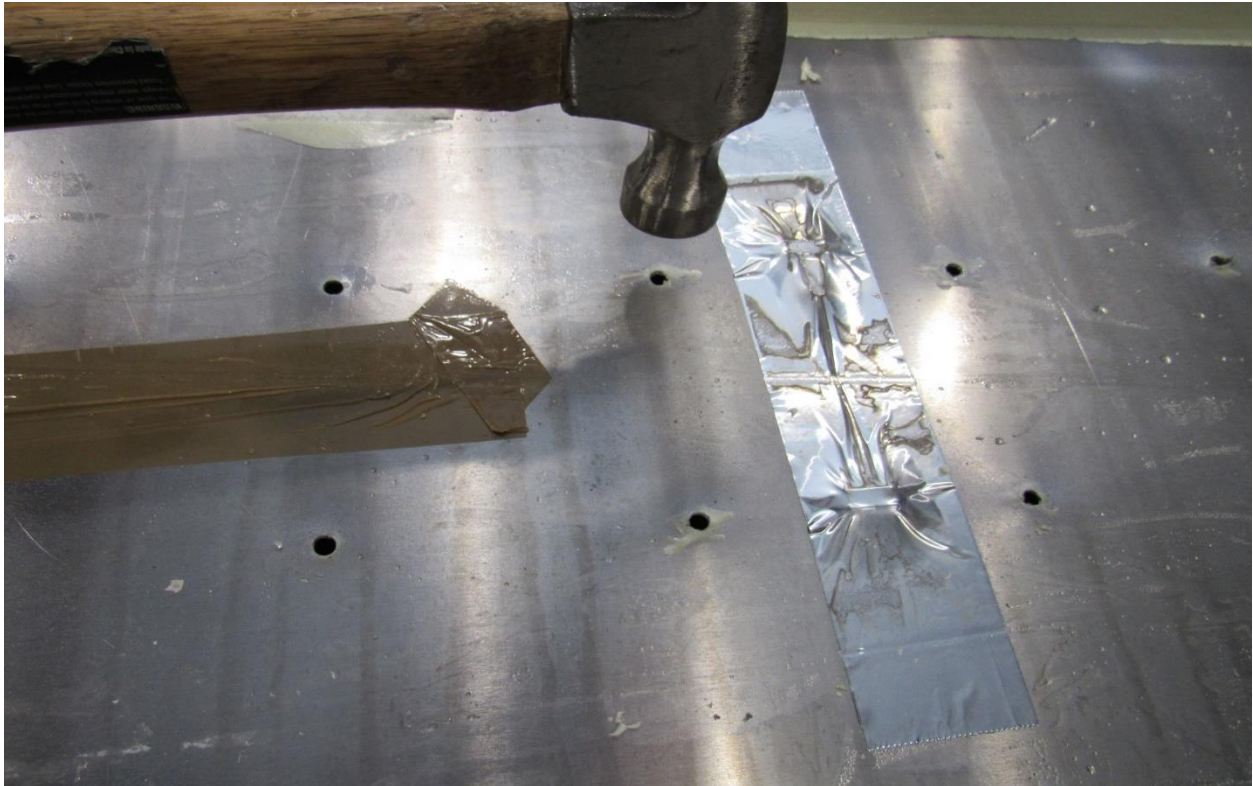




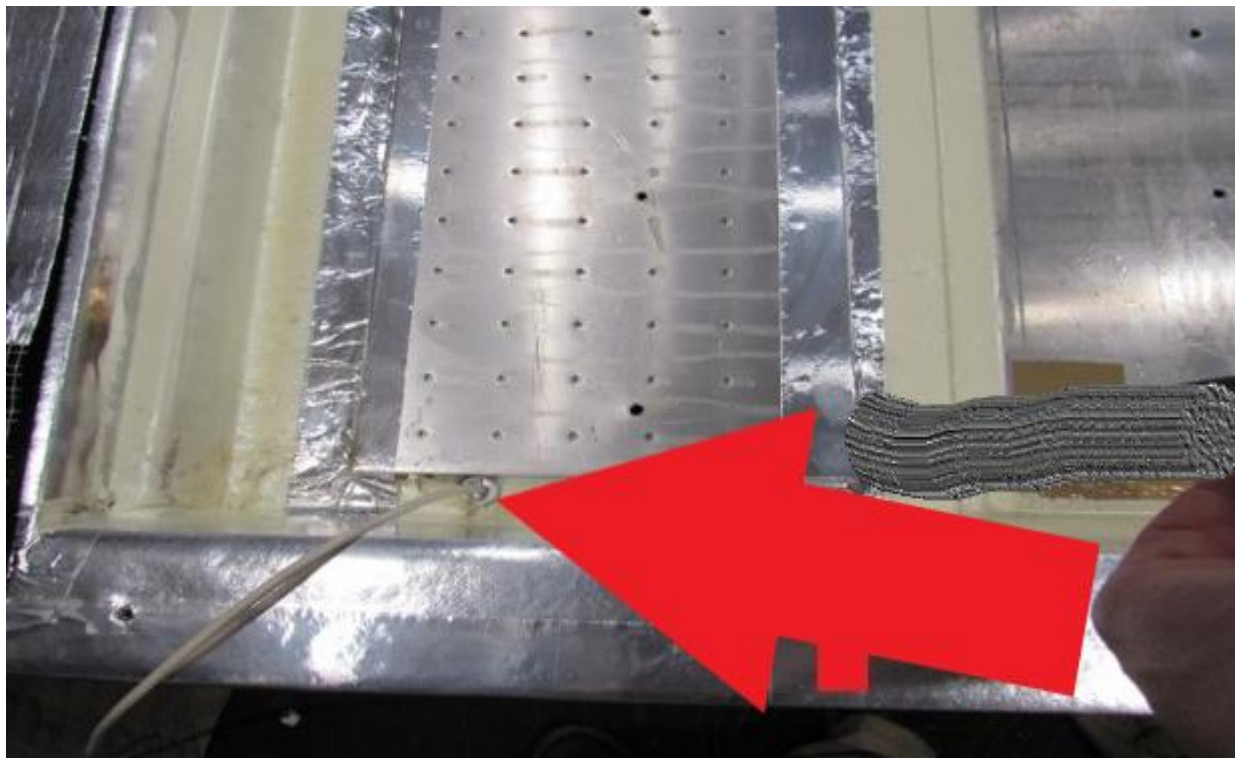
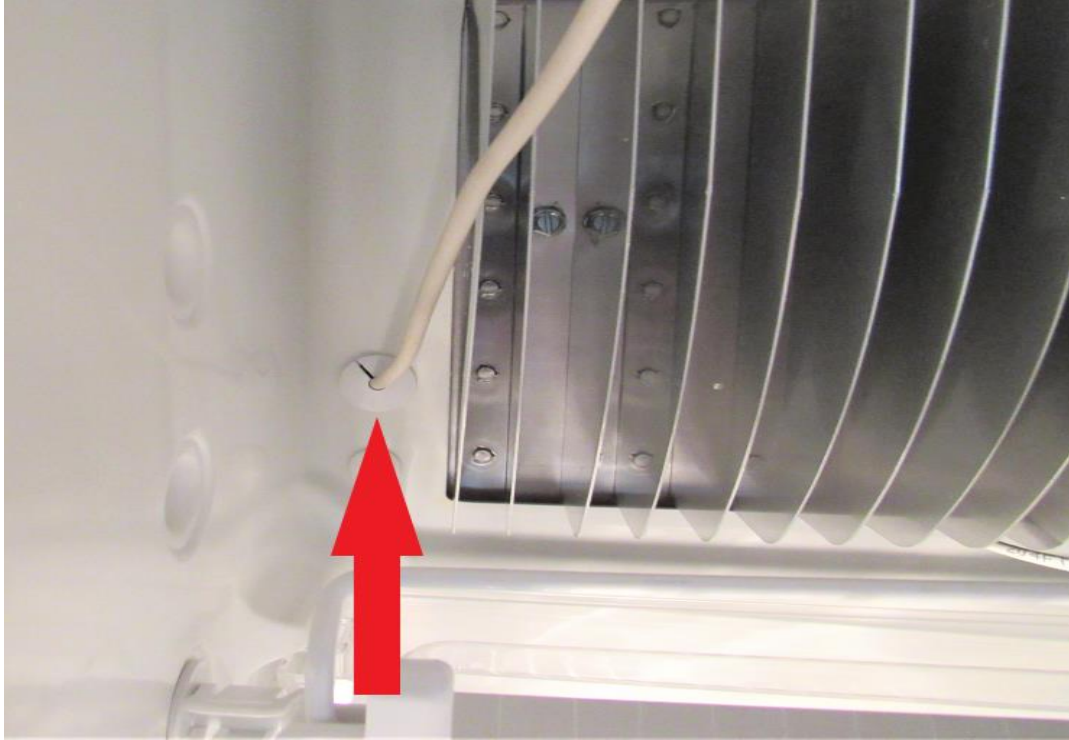
Clean and vacuum and debris on the bottom (RA).



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.

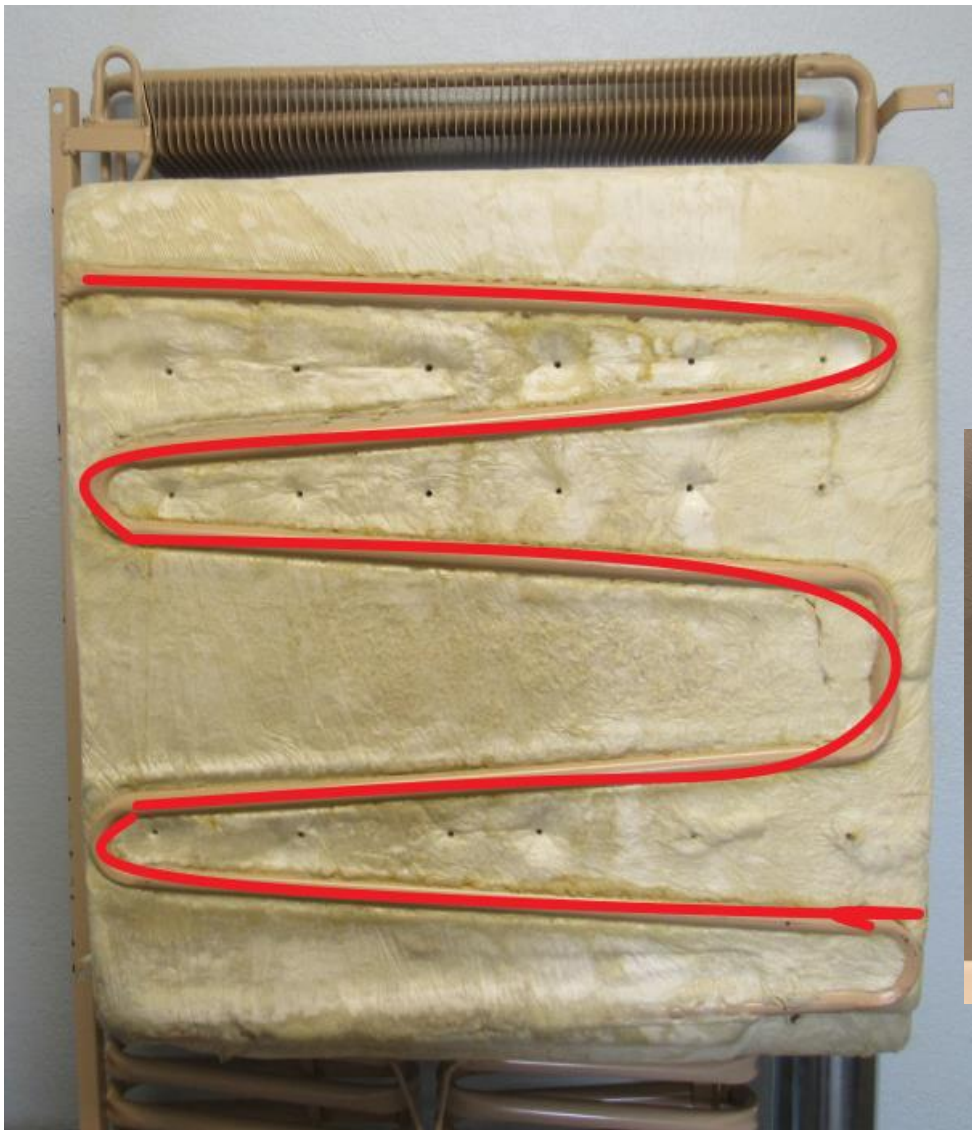


If a new fin fan Like the Frost Guard is being added, now is the time to fish this wire thru the same eyelet hole that the thermistor is fed thru. Make sure to leave enough wire inside so it will reach to the other side of the fin. IF Frost Guard Fan purchased later you slide lead trough drain tube.

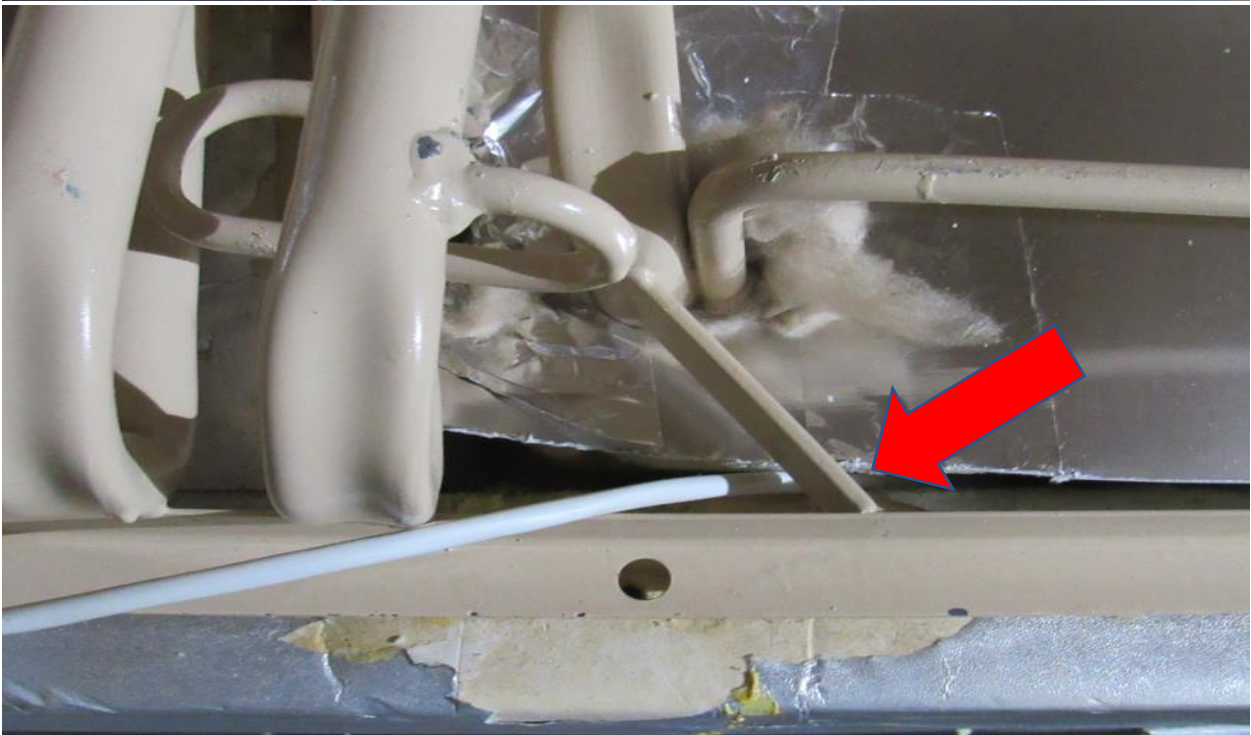




Apply thermal mastic onto to the freezer and refrigerator tubes as shown in red. The whole tube should be used and make sure mastic is on the center of tube so it makes contact with the aluminum plate when laid into place. Thermistor/fin fan wire does not get a new hole in the new unit, but if you have a ice maker new holes will have to be formed into the foam on top same as old unit. **Just be careful to not hit any of the steel lines or tubes when making these holes.**



Now lay unit into box being careful so as not to scrape off any thermal mastic, feed icemaker lines up thru the new holes again, thermistor wire feeds out thru the side between unit and box. (RA)

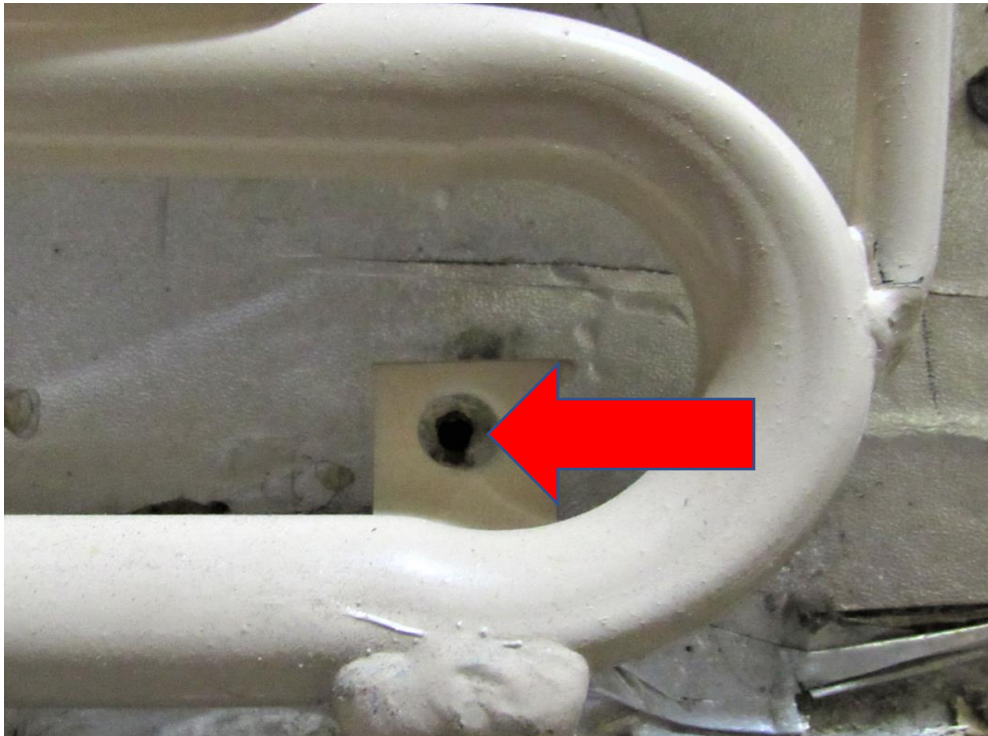






**Warning: The next few steps are very important. If done incorrectly, the cooling unit freezer and fin screws might not line up the best. If possible, have someone to help you with the next steps as it will make everything much easier.**

Install two mounting screws. One on the bottom (**RA**) and one on the right-hand side top as shown **(YA)** Do not be alarmed if the cooling unit does not sit tight with the box at first. After you fasten the mounting screws, the unit will be sucked in tight.



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 to get screws started.

**⚠ 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.

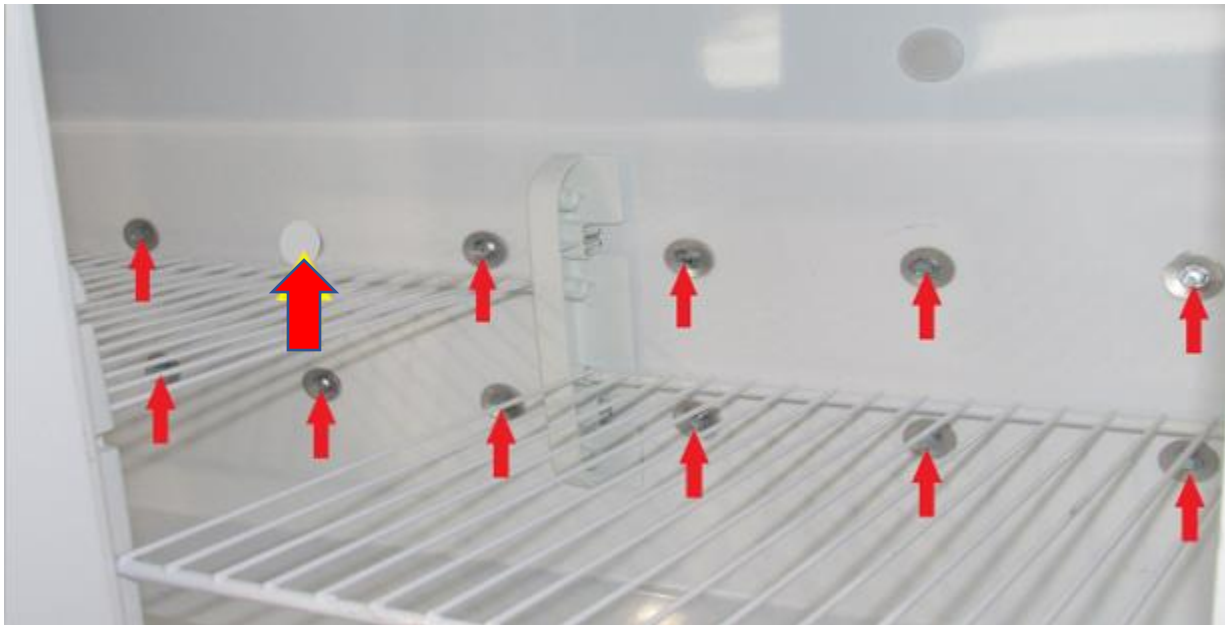




By shifting the unit to one side, you can locate the holes (RA) and screw the unit into place. (YA).



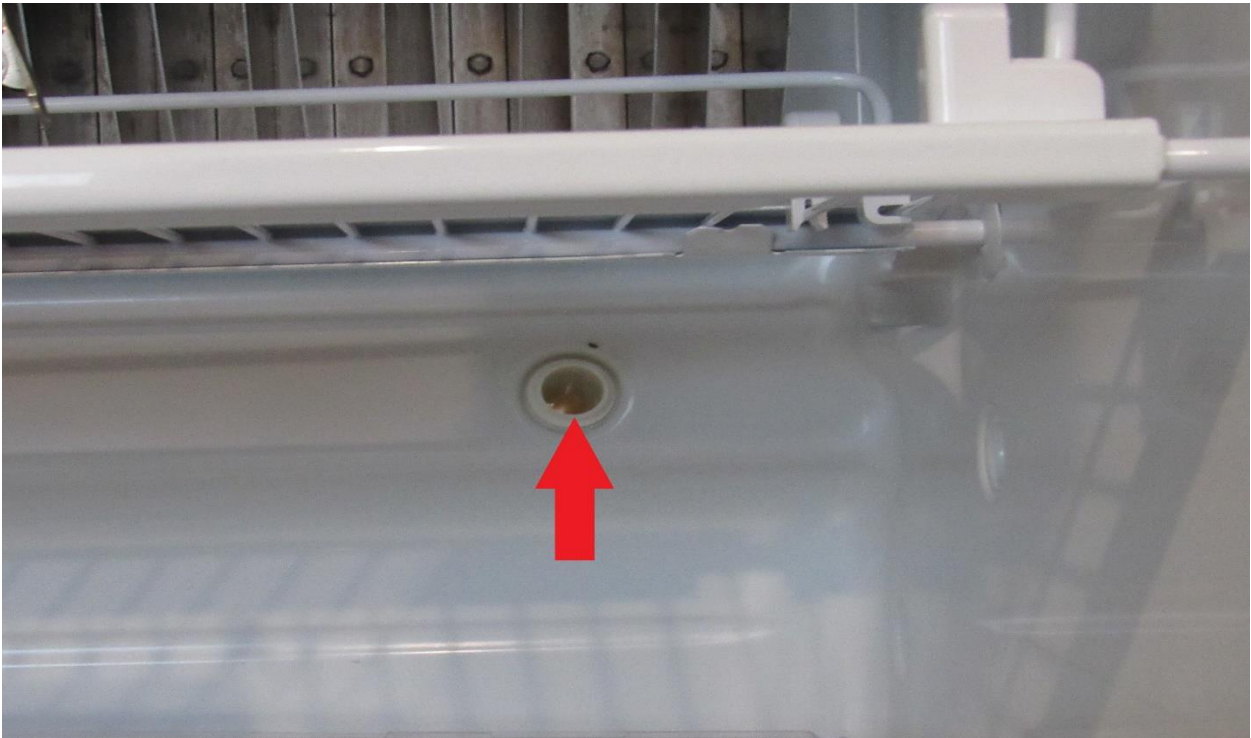
The holes are lasered out so they are always the same. If one is to the side a little, then all are in the same direction. Install all the mounting screws into the freezer (RA).



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

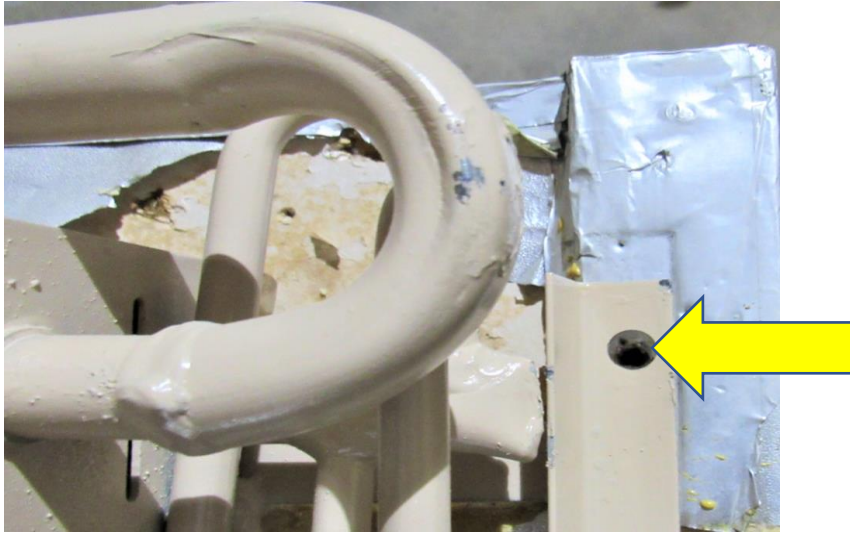


Push the defrost spigot back into place (RA).



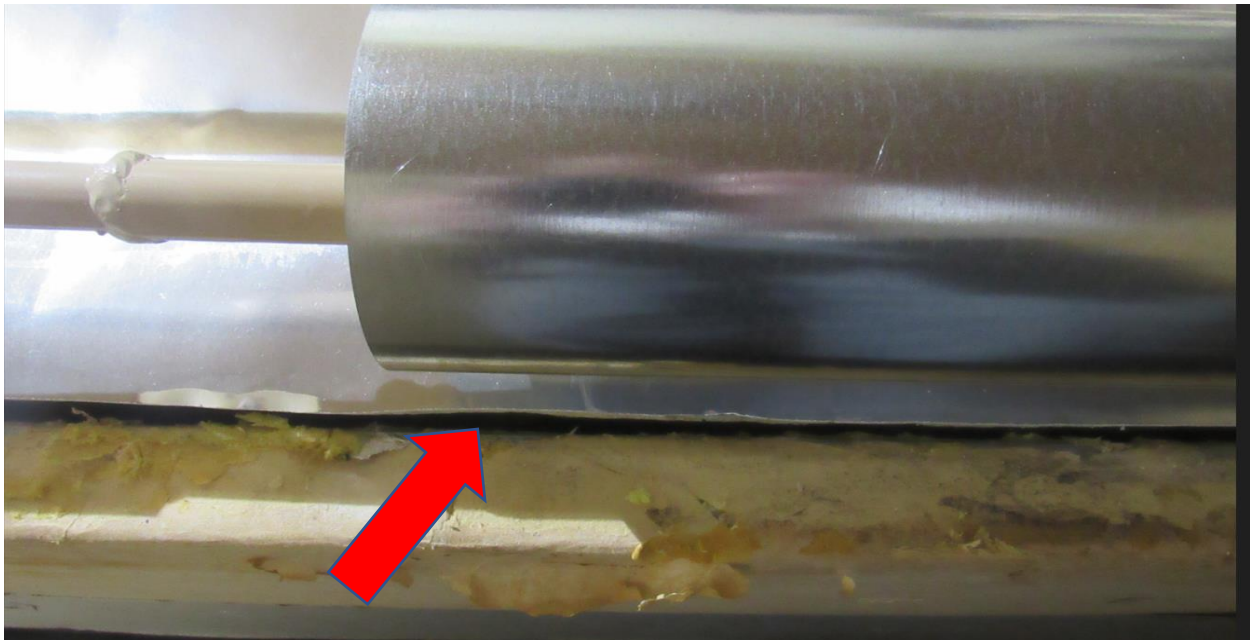


Set the unit back down on its face and remove the top mounting screw (YA).



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

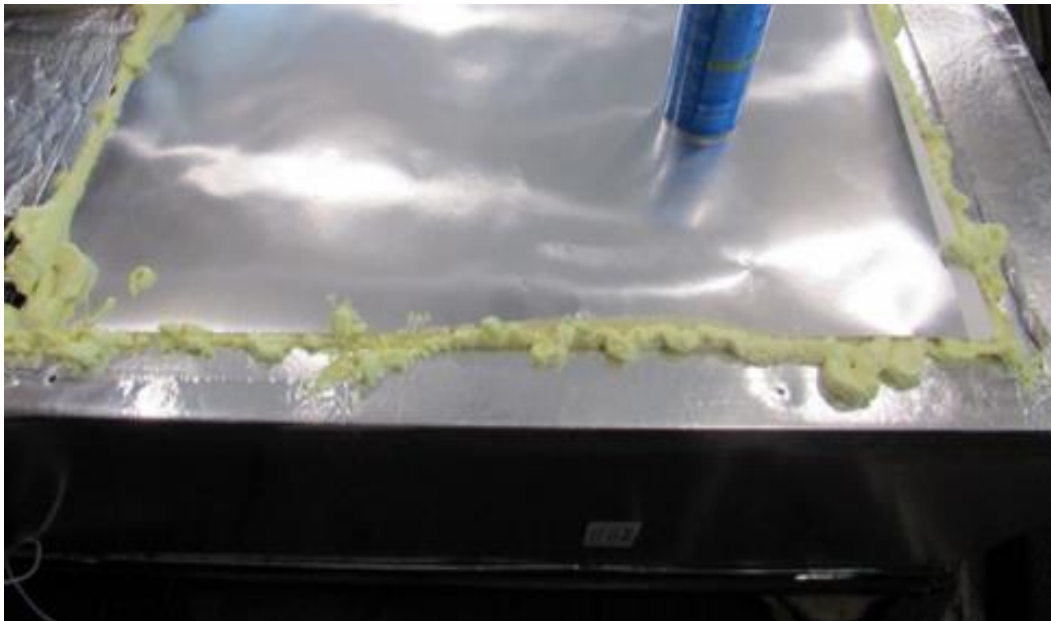
Take the can of foam from the parts box. Shake can for a few seconds and apply a bead of foam around **all four sides** as shown below. Make sure and seal all cracks and gaps. This will help seal all air leaks while traveling down the road. Your cooling unit will not work properly if this step is not done properly. In the hard to get to areas you will still need to insert the foam along this edge.



In some areas it might seem to be tight against the box, and in this area cut back enough foam on a angle to create a small gap off the unit so you can get your foam straw in to fill the void further down. **We cannot stress enough on this step because if even a small 2" gap is left open it will not cool in the fridge like it should.**



**Make sure all 4 sides are completely sealed**

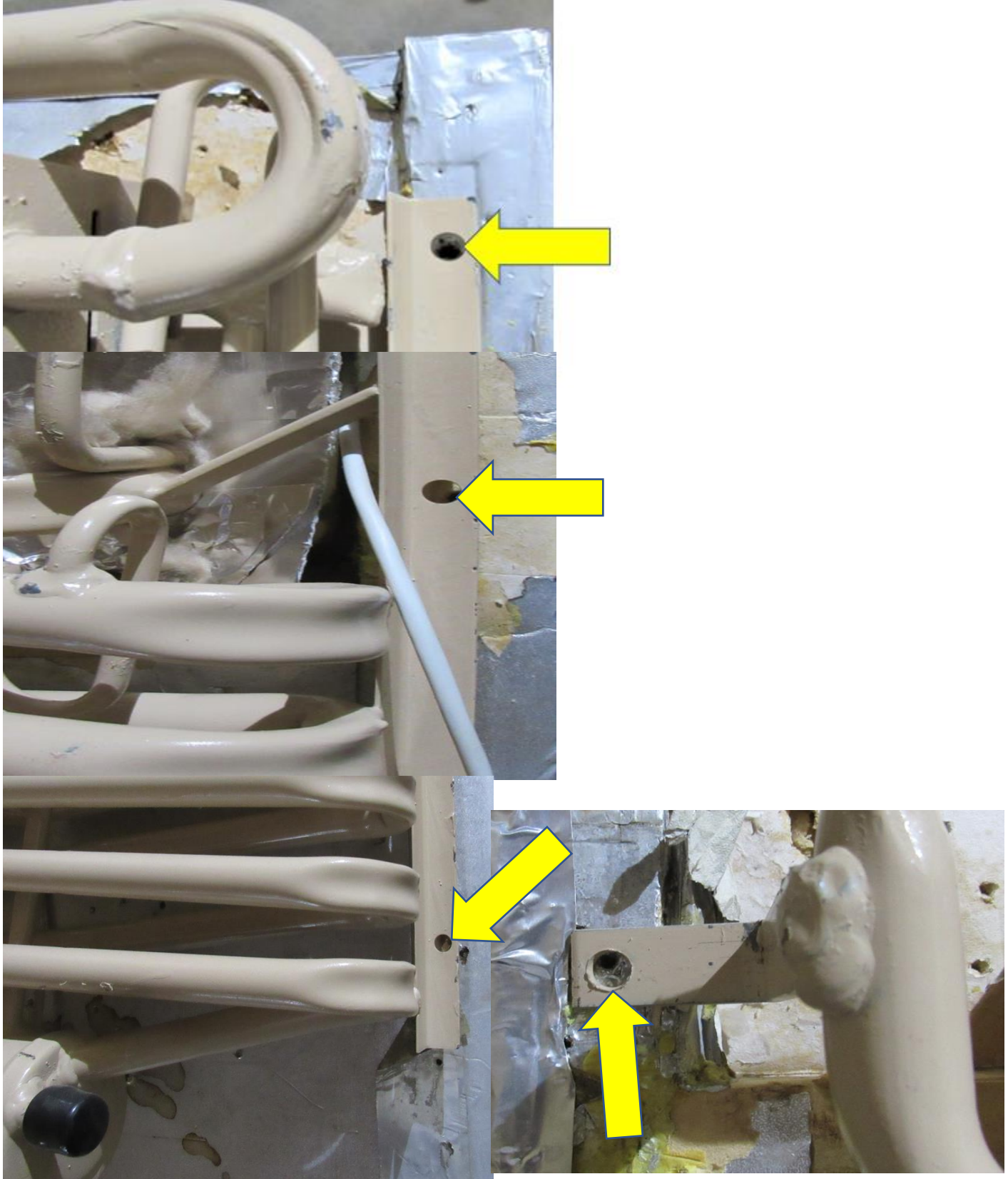




**After filling all gaps with foam, let foam cure some, trim smooth, follow up with covering the edges with the supplied aluminum tape. Tape does not serve as a seal but for cosmetic purposes only.**

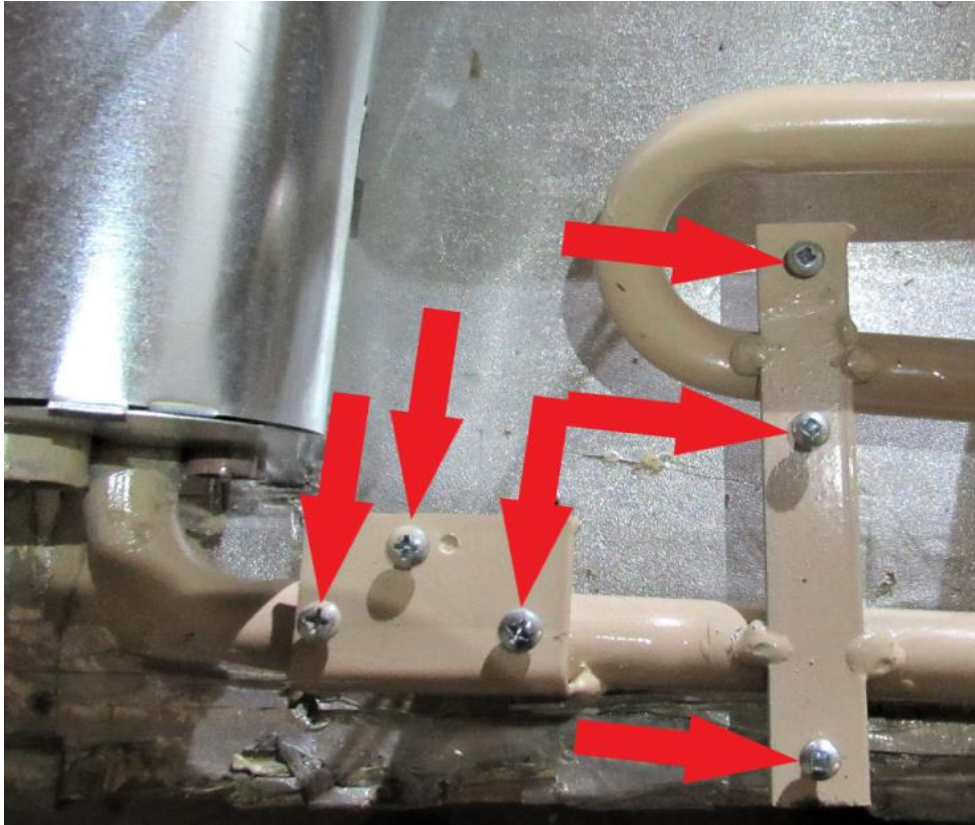


Re-install all rear stabilizing screws, these might not always line up perfect, do not be afraid to push,pull, or flex on the frame to get them in place (YA) if holes do not line up perfect you can use self-drilling screws to attach to the box.

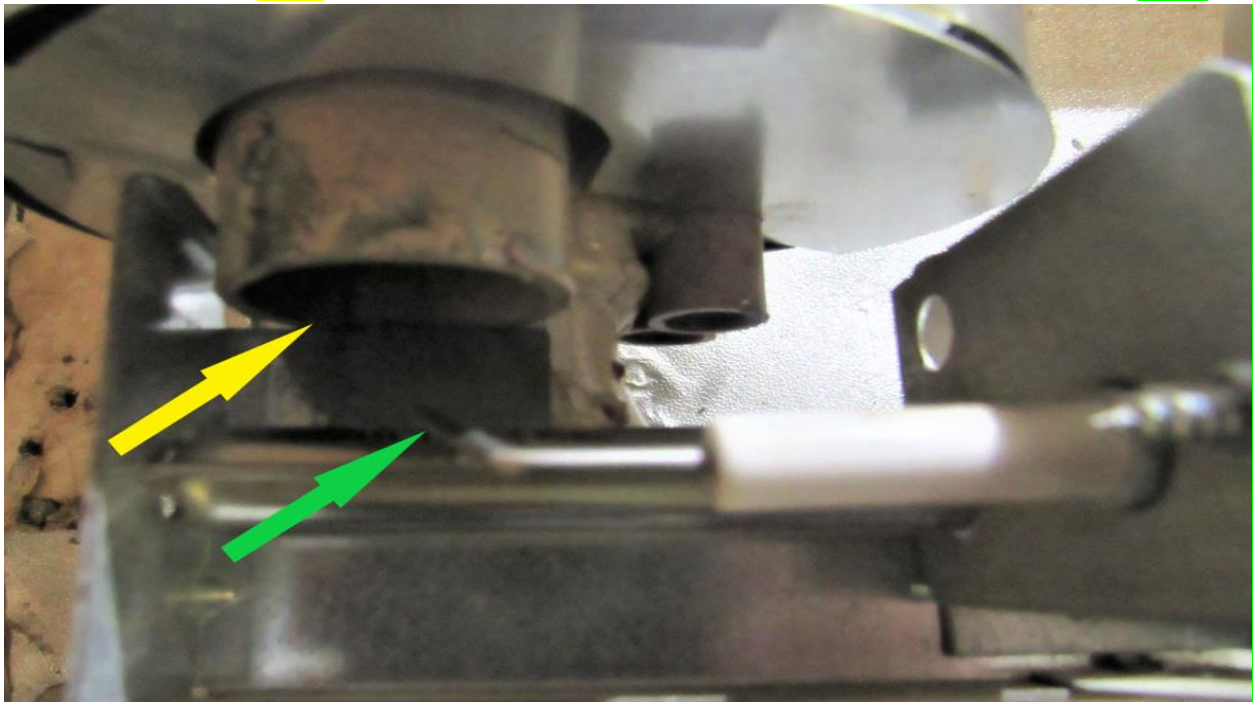




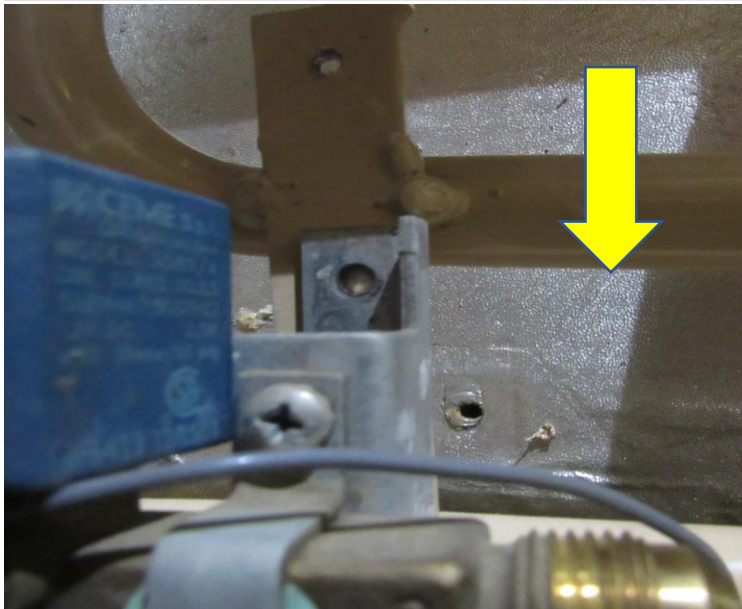
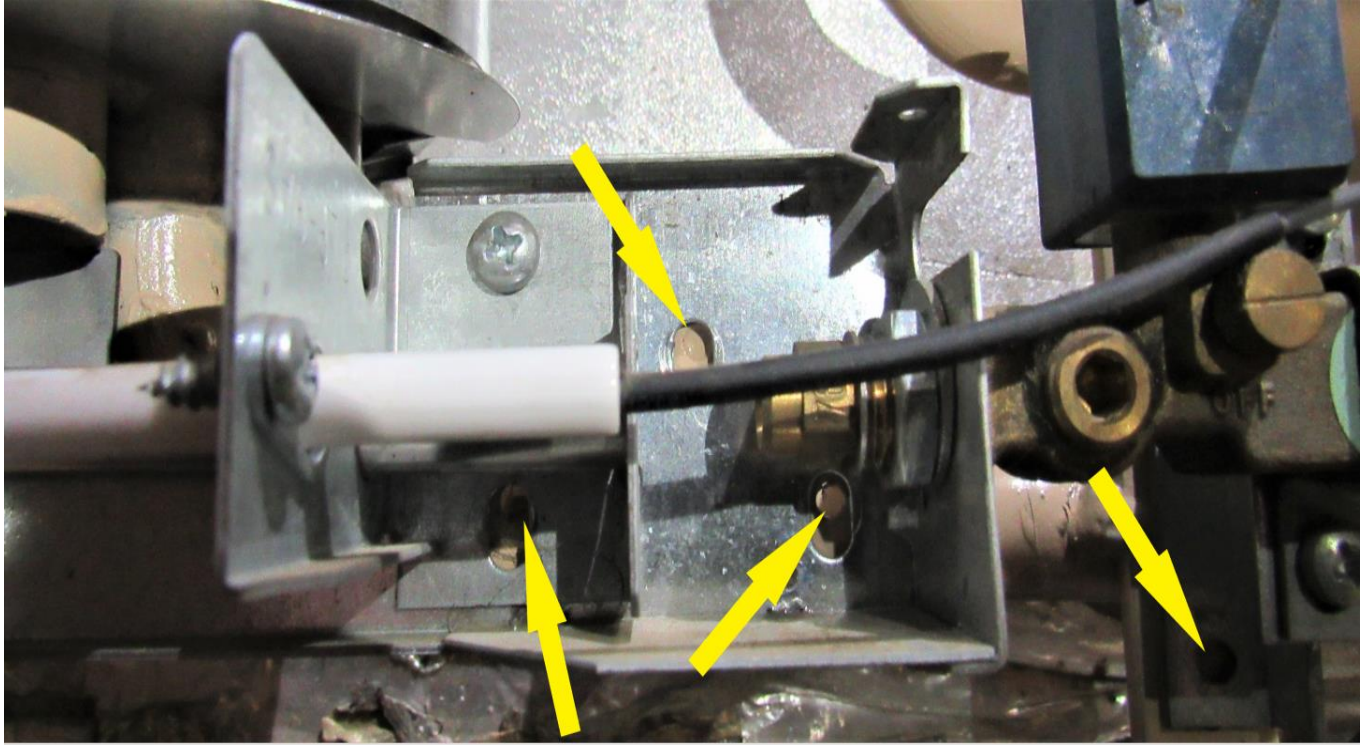
Remove these screws from burner mounting brackets **(RA)**



Lay burner back onto bracket, make sure LP Burner is up against the bottom of the flue tube **(YA)** needs approx. 1/8" gap between burner and igniter **(GA)**

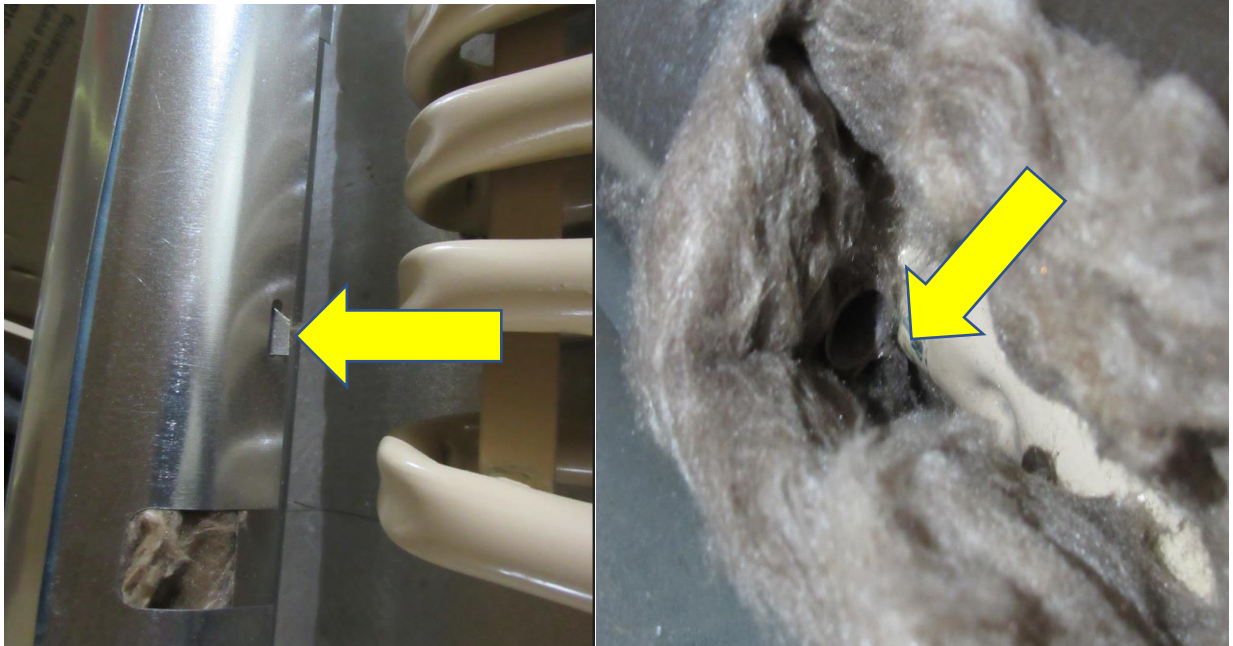


Refasten LP Burner back onto the burner brackets, **(YA)** Make sure to use the short screws back where they were, do not use the **self-drilling screws** where the short screws were. Otherwise, you will puncture the tube beneath.

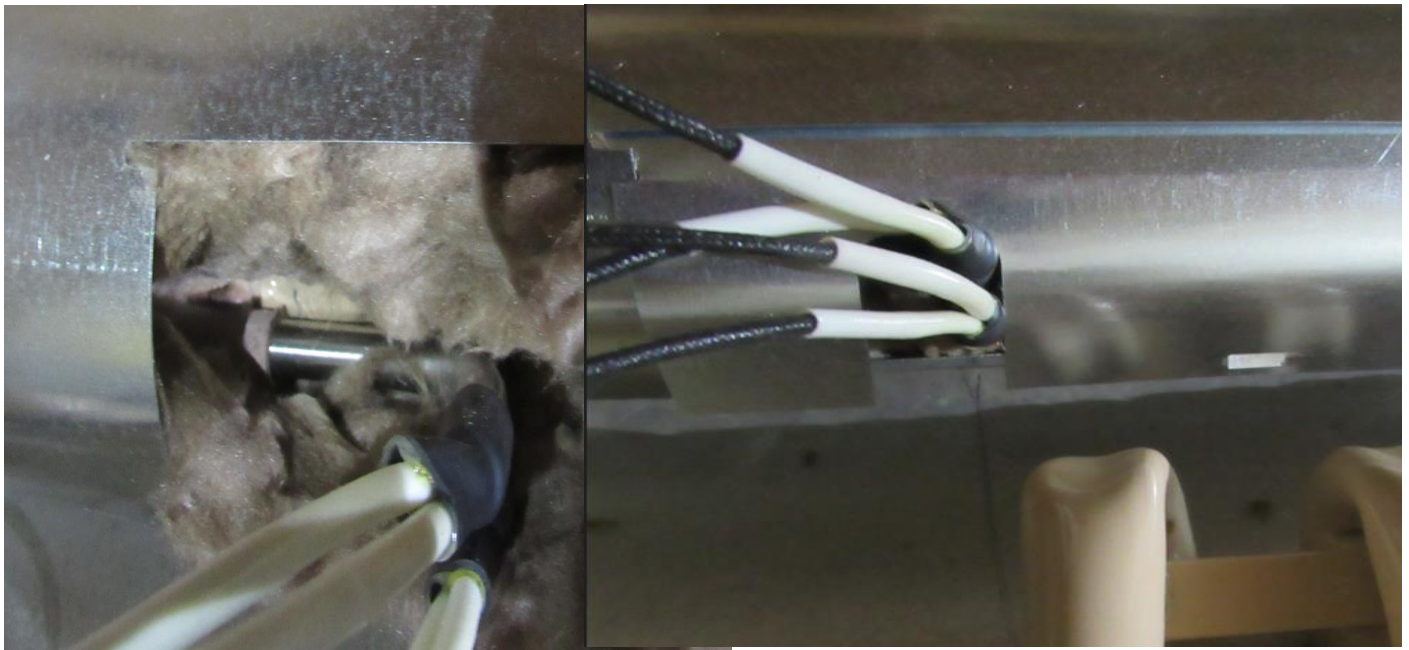




Unsnap Heater flapper and separate the insulation till you find the 2 heater sockets (YA)



Slide the 2 heaters in these sockets making sure they are slid down as far as the heater lets them be slid, now tuck the insulation around the heaters and boiler tube and secure the heater flapper cover again.

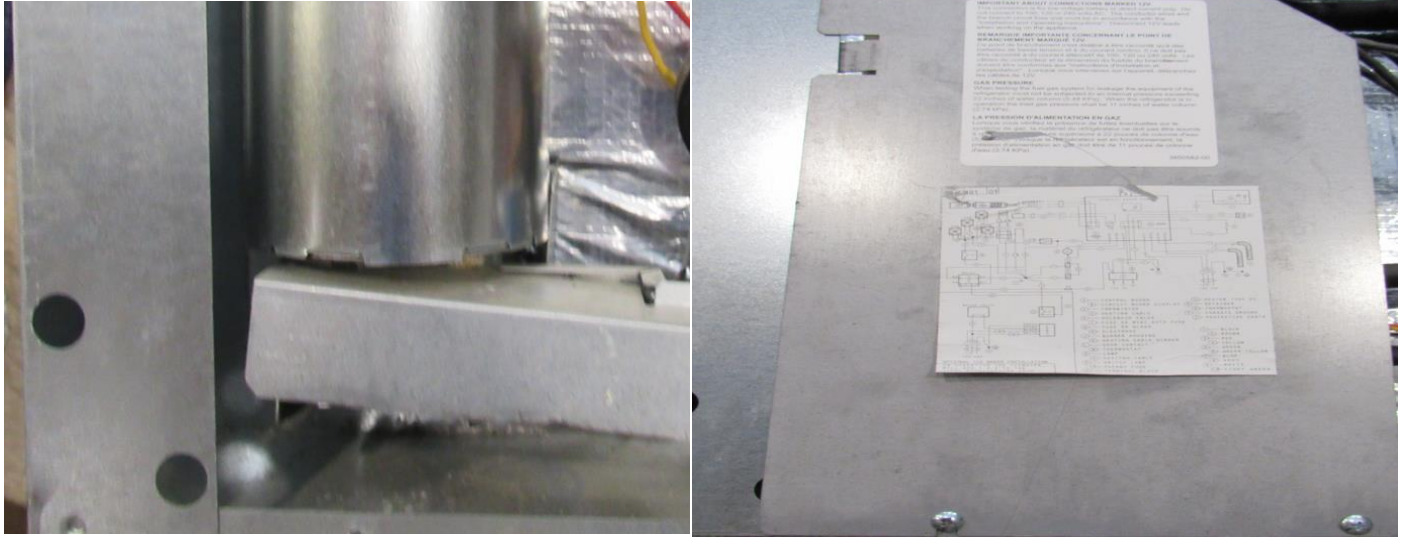


**Reinstall the heat sensor, you will need 2 short screws to secure this to the boiler stack again, make sure to attach boiler tube on the inside, it will just have to be attached to the thin sheet metal stack. It can be located anywhere in the red circle**





## Reinstall the 2 burner covers



Most times Your fridge has 2 or more vent fans on the center of the unit blowing air up, these can be reattached same as they were on the old unit, make sure they are pointed up and the fan switch needs to be located on the plate marked "fan switch" shown later.



**Make sure fan is pointing up blowing air through the condenser fins**



**Fan switch gets attached to the plate marked "fan switch"**

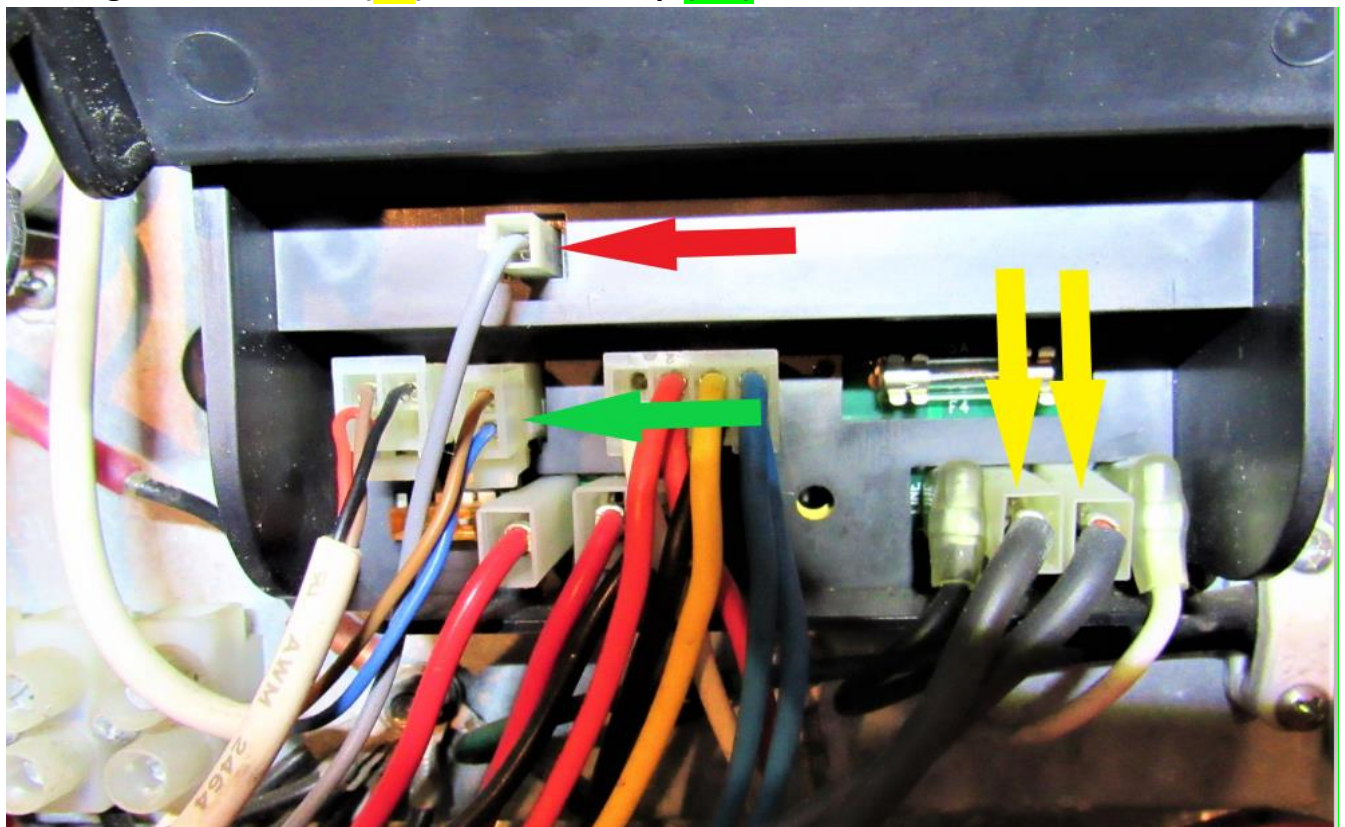




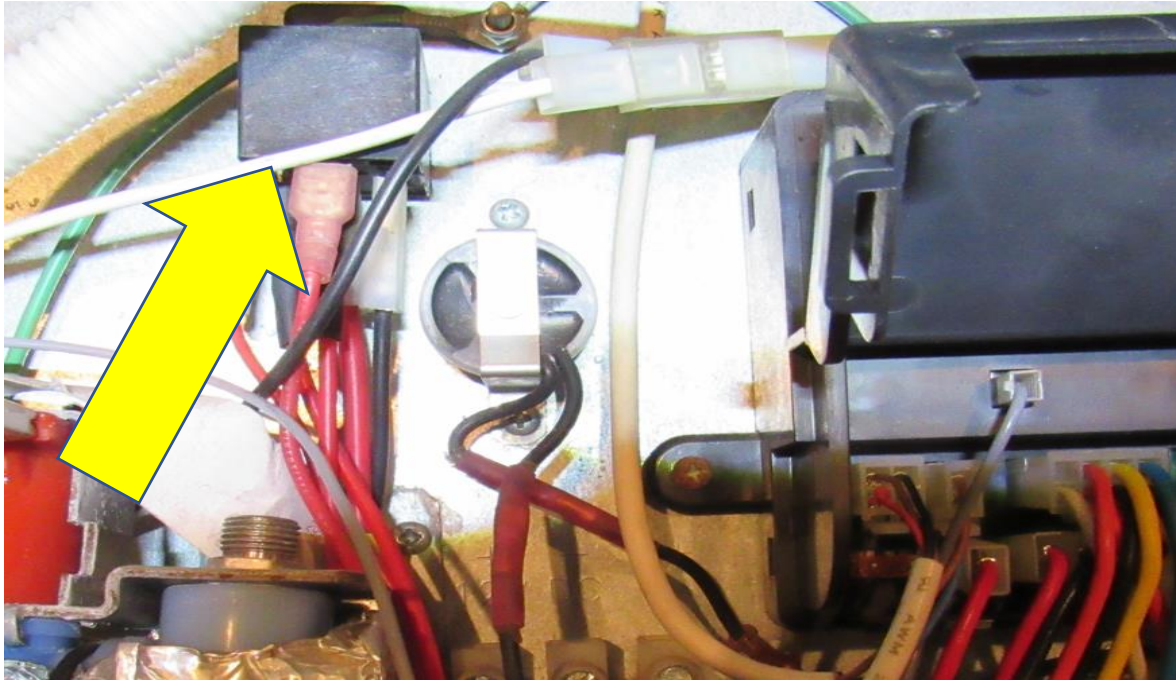
The 12V DC supply wire for the fan needs to be attached to your coach 12V DC wire later.



If you are using the original fans then they are prewired and should not have been taken loose from the board/relay. Reattach: igniter wire (RA) 2 black heating element wires (YA). Thermister clip (GA)



This relay should stay intact like it was originally, **(YA)** if you did remove wires for this then they need to be returned to the same spades as before. This might not resemble yours as these vary with the number of wires to this relay from fridge to fridge. Depending if a icemaker or water dispenser is on the fridge.

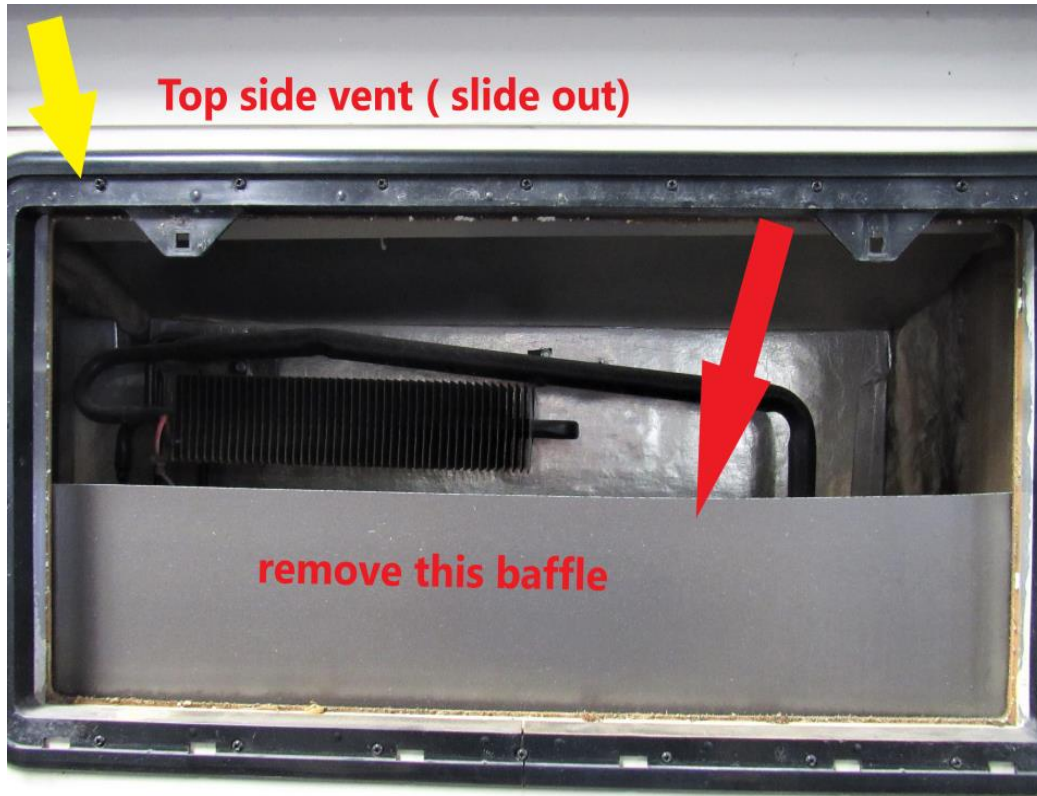


This is the time to rewire your icemaker back to how it was originally, and push your defrost hose onto the spigot **(RA)** You are now ready zip tie all your wires, tuck 120V cord to the side and clean everything up to get ready to slide the fridge back into the cavity





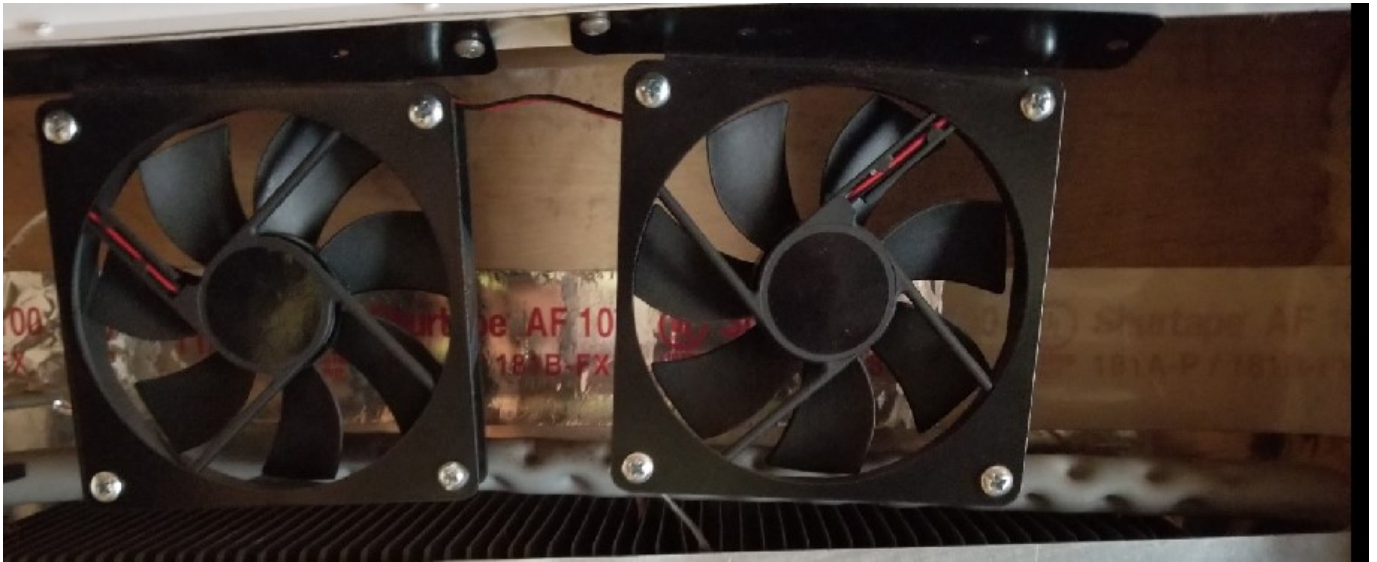
Before installing the fridge back into the cavity, check to make sure wall insulation is secured and this is a good time to sweep or vacuum any loose debris. If this fridge is installed into a slide out then make sure and remove the top side vent (YA) baffling (RA), as you will no longer need this and all it will do is slow air flow.



It needs to look like this to start out before you add your fans, wide open vent



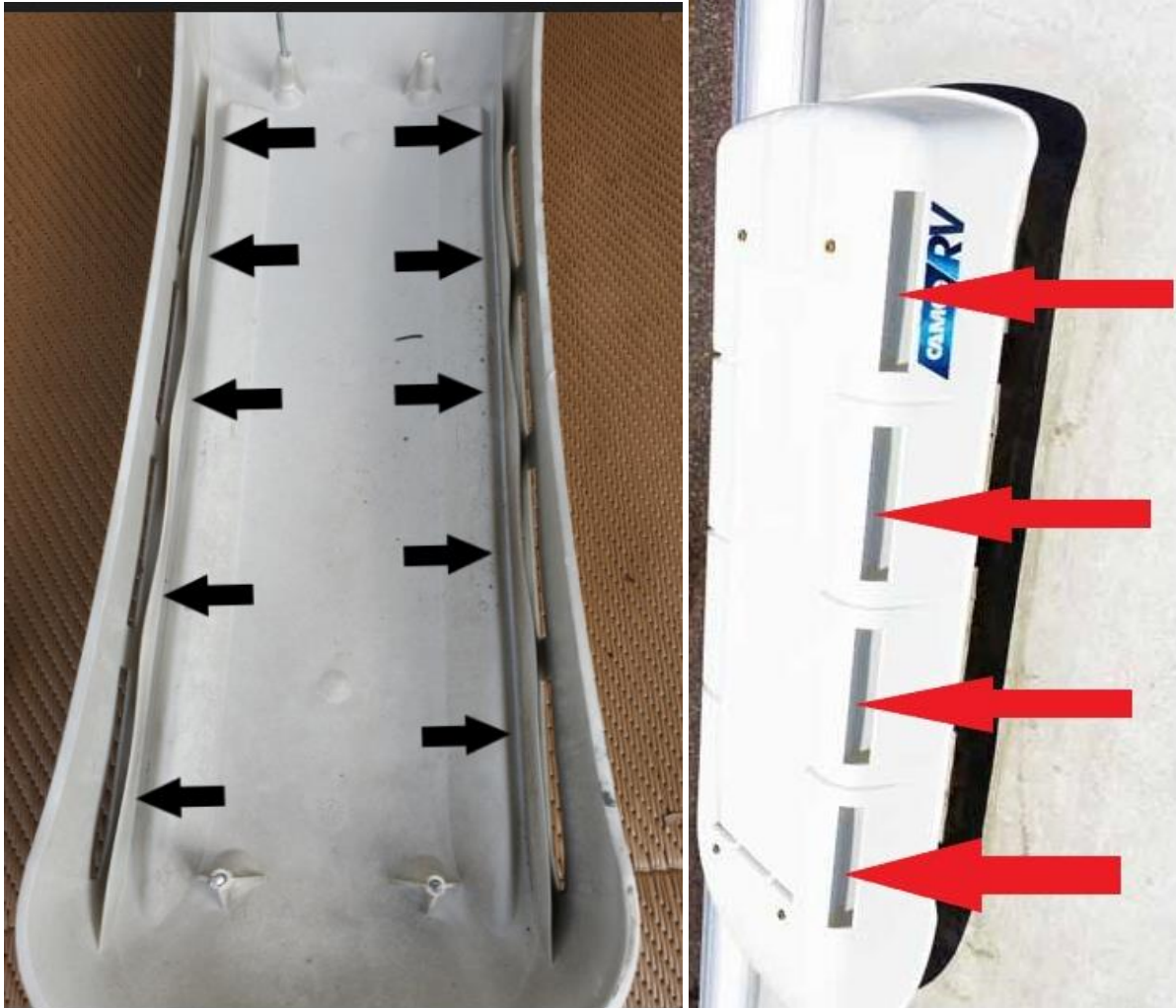
You will then be required to add a slide out fan to your top side vent to pull or force the hot air out that's above the condenser fins to blow out the side vent.  
**(this is required on all slide out models to be covered in our warranty)**



**Above picture is only an example**



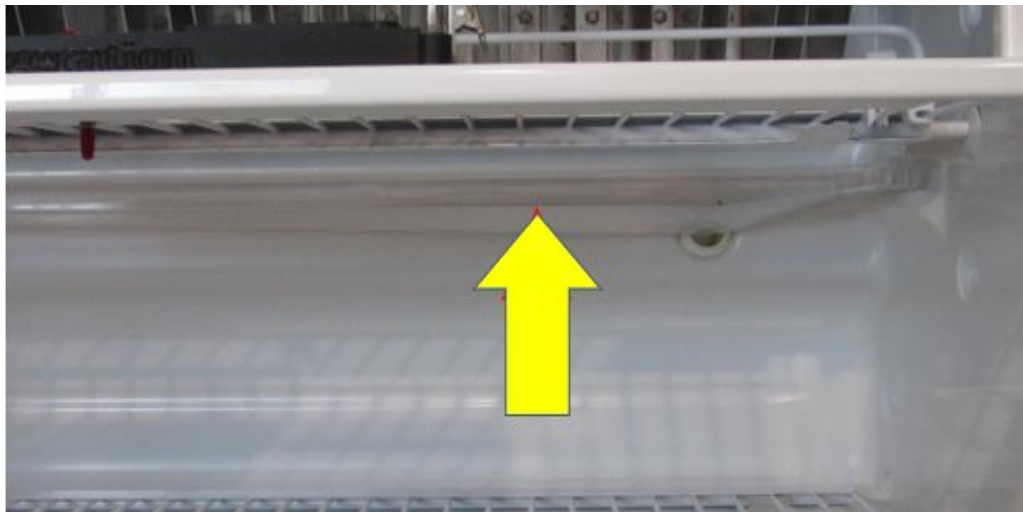
If It's installed into a roof vent style, then it's a good idea to remove the top cap once done to remove any debris or just to make sure its wide open. Also check the top cap rain guards (BA), these can swell out with time and heat and cause serious air flow restriction, you can cut off ½" of these rain guards to give more air flow if they are restricted. If your cap is a aftermarket "Camco" cap then the rain guards have to be cut completely off as these caps are not made for your fridge vent.



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



Slide your defrost tray back in under the fin





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



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



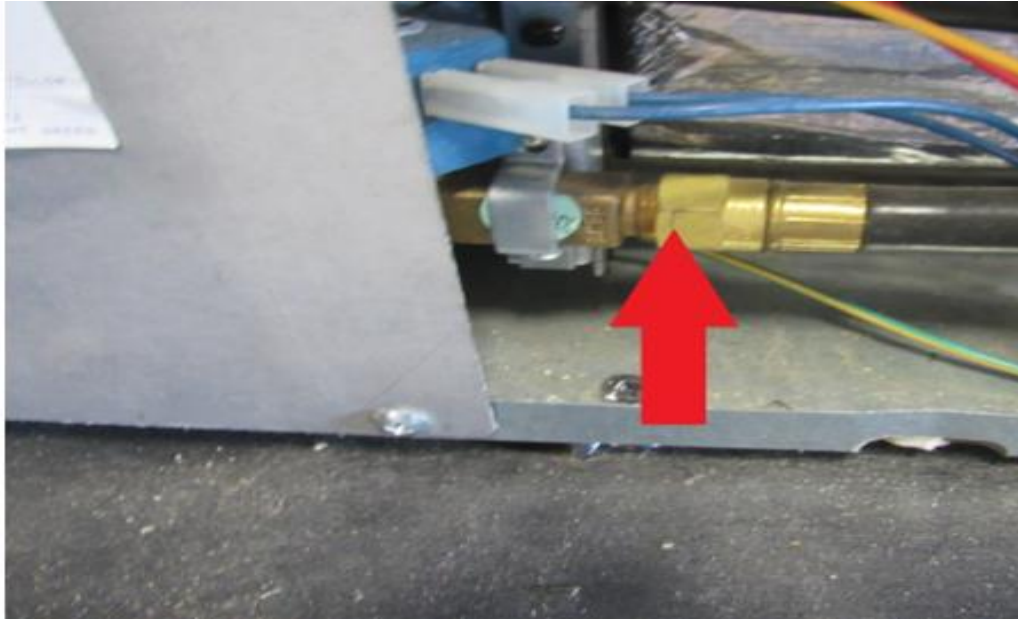




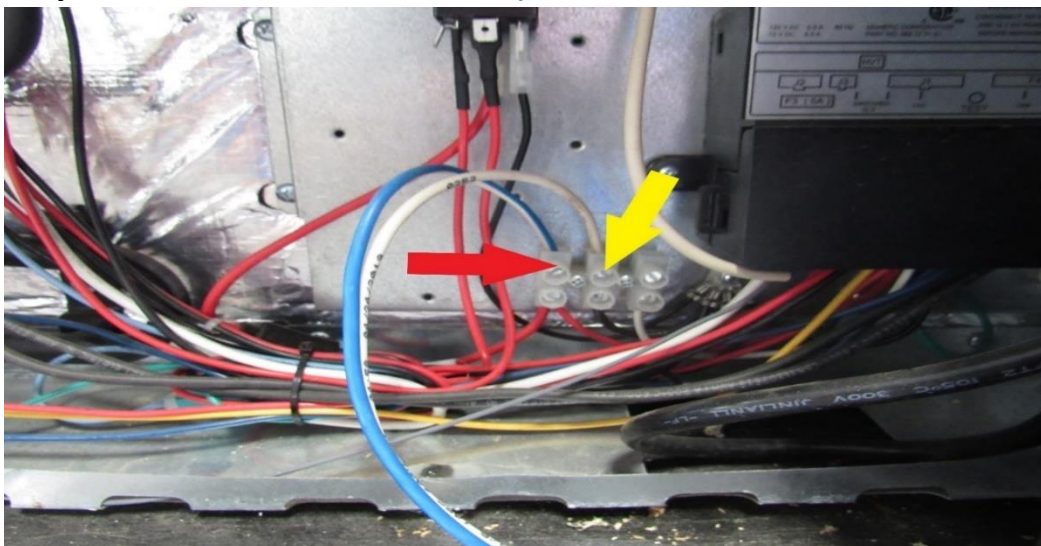


**WARNING: Make sure this step is properly followed and leak checked so you don't have a gas leak.**

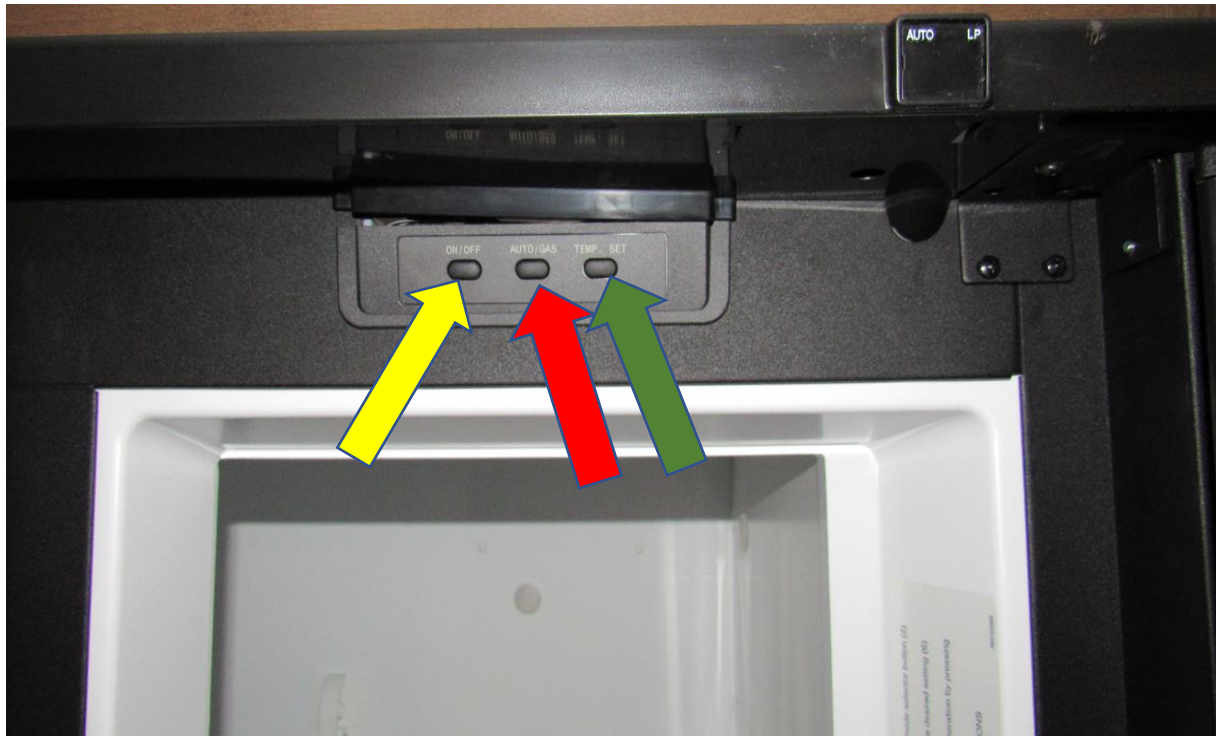
Connect the LP gas line to the LP solenoid, turn on the LP at the tank and leak check with soap and water. MAKE SURE YOU DO NOT HAVE A LEAK before continuing.



Reattach your coach 12V DC wires back onto the power supply block: Left wire is 12V DC Positive right side is 12V DC Negative, make double sure this does not get hooked up wrong, ( this pic show 12V wires being blue/white but they will vary in color from coach to coach)



Your board should now have power, turn eyebrow board on **(YA)** and turn to auto **(RA)** turn to temp set to 5 **(GA)**

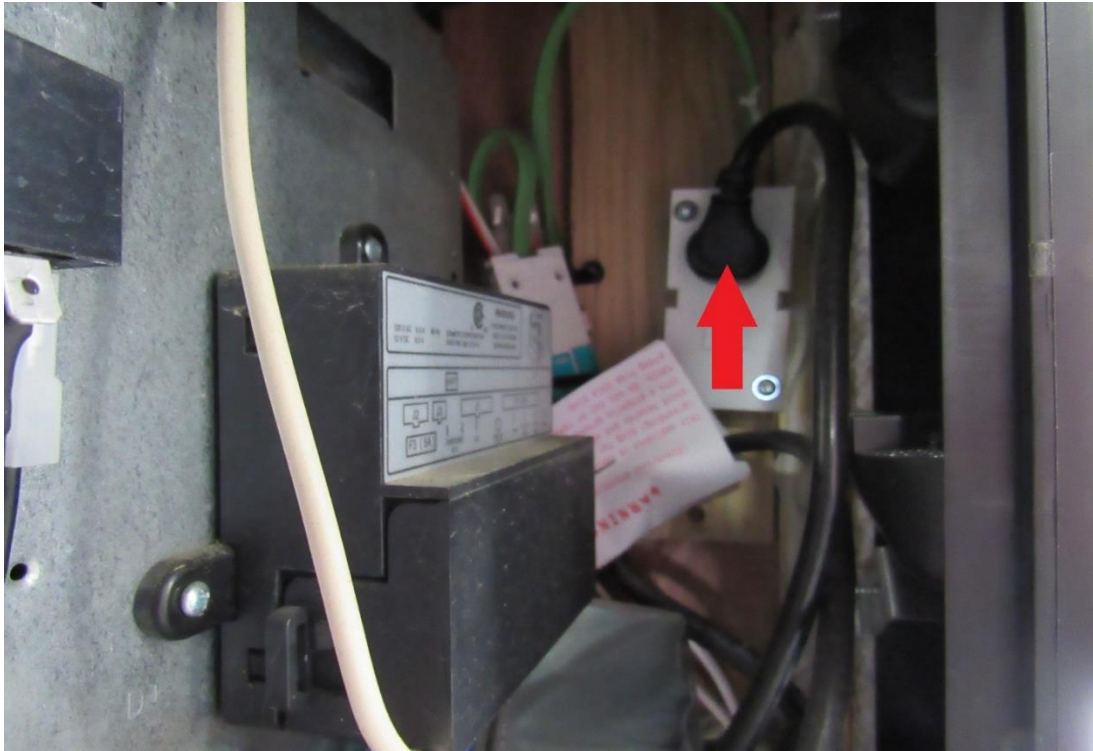


Make sure your eyebrow is now switched to "AUTO LP " the burner should now fire up and it's a good idea to recheck the gas line hook up with soap water.





Now plug your 120V plug back into the wall outlet and make sure you have 120V AC power to this outlet. LP burner should now shut down and board should switch to AC. If you have a amp clamp the total amps on the heaters should be 3.6A to 3.8A. After its been running for ½ to 1 hr you need to make sure you here the rear vent fans turn on. Which can be heard either thru the front fridge door or thru the rear side vent



Defrost hose can be attached to the existing floor drain if available or stuck out the side vent as usual

## Troubleshooting:

**#1 If fridge does not start:** Make sure you have at least 12.3V at the power block, make sure all connections are correct leading to the board

**#2 eyebrow temp shows colder than our digital thermometer inside the fridge:**

This is normal, the eyebrow board is a average temp over time and this temp is always correct, if you think this to be off check the placement of the thermistor

**#3 E3 code:** your red/yellow power wire going to the temp sensor on the boiler stack has been tripped or loose wire

**#4 E0 code:** Communication is lost between eyebrow board and rear control board; rear control board will need to be changed

**#5 E1 Code:** The 2 blue gas valve wires are not attached properly to the magnetic gas valve on the burner, make sure your fridge box is grounded to the unit and if it continues you will need to attach a ground from fridge box to main chassis frame.

**#6 Freezer gets cold enough but fridge is not cold:** upon any start up a 12 hr time frame is needed to drop the fridge temp to the desired temp, this will be prolonged if food is added. #6A Make sure fridge doors are sealed #6B make sure rear vent fans are on and if in a slide out, top vent fan is on.



**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.**



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





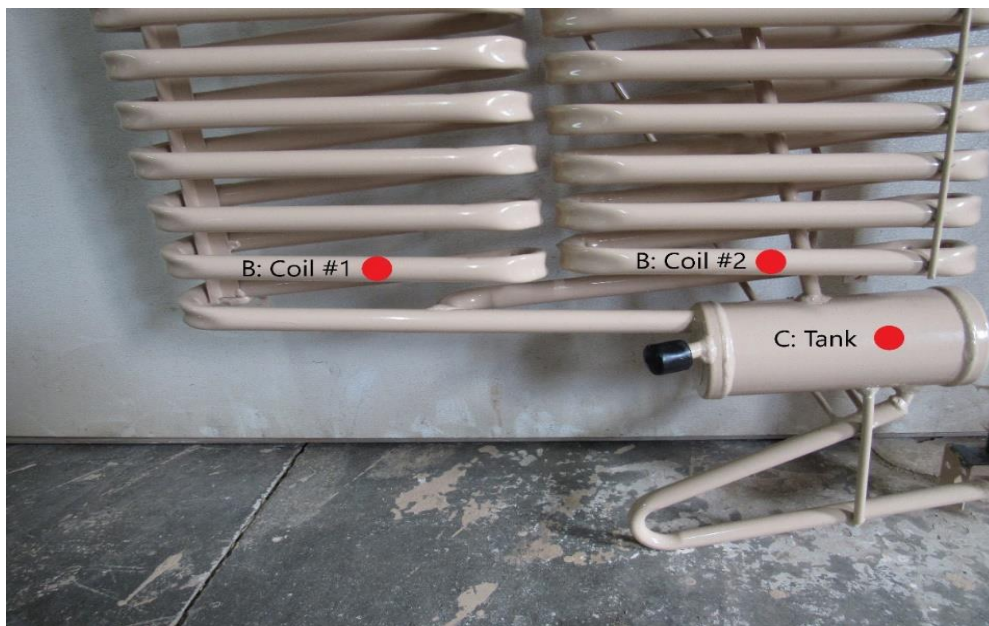
Same with freezer, clip underneath bottom shelves center side to side but have this one more towards the back of the freezer.



### TEMP CHART

To do a diagnostic test on this unit we will need to know temp off of:

**A: ambient temp**    **B: coil #1 & #2 Temp**    **C: Tank Temp**



## FAQs

### **What is covered under warranty?**

Our warranty covers the cooling unit and shipping for 3 years free and labor for 90 days. An additional 3 yrs. can be bought off our website, which can be found on the warranty form attached to the unit. It does not cover any original Norcold 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 burner assembly. This can be done maybe once or twice per year.

**What makes our unit better than the original:** We use much thicker tubing for one and our boilers are all hand welded which will prevent stress cracks (leakers) and we attach another coil which makes it double cooling capacity.

**What is the best method to reach us for questions or concerns:** email will be the fastest responds, a phone call without pictures of what you have will most times only delay the proper answer to your question. Emailing us a picture with the question will get you the fastest answer [info@jc-refrigeration.com](mailto:info@jc-refrigeration.com)

**How long have you been manufacturing these:** we started servicing in 1991 and manufacturing in 1994

**Is it true that these should be perfectly level:** Yes, these can be off by 3 deg max in order to work, if they get off level more than 3 deg they will shut down and the boiler will create damage very quickly by over heat. This is a gravity flow system, so while travelling it's not a problem and it will slosh enough to keep going, it's while parked that it