Norcold 1210 1211

Gas/Electric

INSTALLATION MANUAL

RV Cooling Unit Warehouse

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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!!

We at RV Cooling Unit 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 pushing to get the unit installed will not harm the cooling unit. We offer videos for the gas/electric versions and install manuals for the HVAC units to help you through this install. Feel free to send us a picture along with your question, and we will help you to the best of our ability.

David Force

Please read through these notes before starting:

- **Pages #5 thru 25:** cooling unit removal and unhooking board from box
- **Pages #26 & 27:** Fin fan installation
- **Pages #28 thru 33:** LP burner & heating element removal, new installation
- **Pages #34:** Thermal Mastic installation
- **Pages #35 thru 38:** New cooling unit installation into box
- **Pages #39 thru 41:** Apply foam and tape
- **Pages #42 thru 44:** Board etc. hookup,
- **Pages #45 thru 49:** Ice maker hook up
- **Pages #50 thru 52:** Vent fan position, and unit leveling
- **Pages # 53 thru 55:** Slideout fan and top vent cap info
- **Pages 56 thru 61:** final installation info
- **Page #62 to the end:** Trouble Shooting info
- Check your rear control board to make sure it matches up to this board in this manual, if it does not then a good chance you have the 1200 Style Norcold which has a longer and more narrow board then this 1210 style
- 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 DIY install videos on YouTube. So, to avoid confusion, follow **only** the instructions in this manual.
- 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 its 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.

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 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.

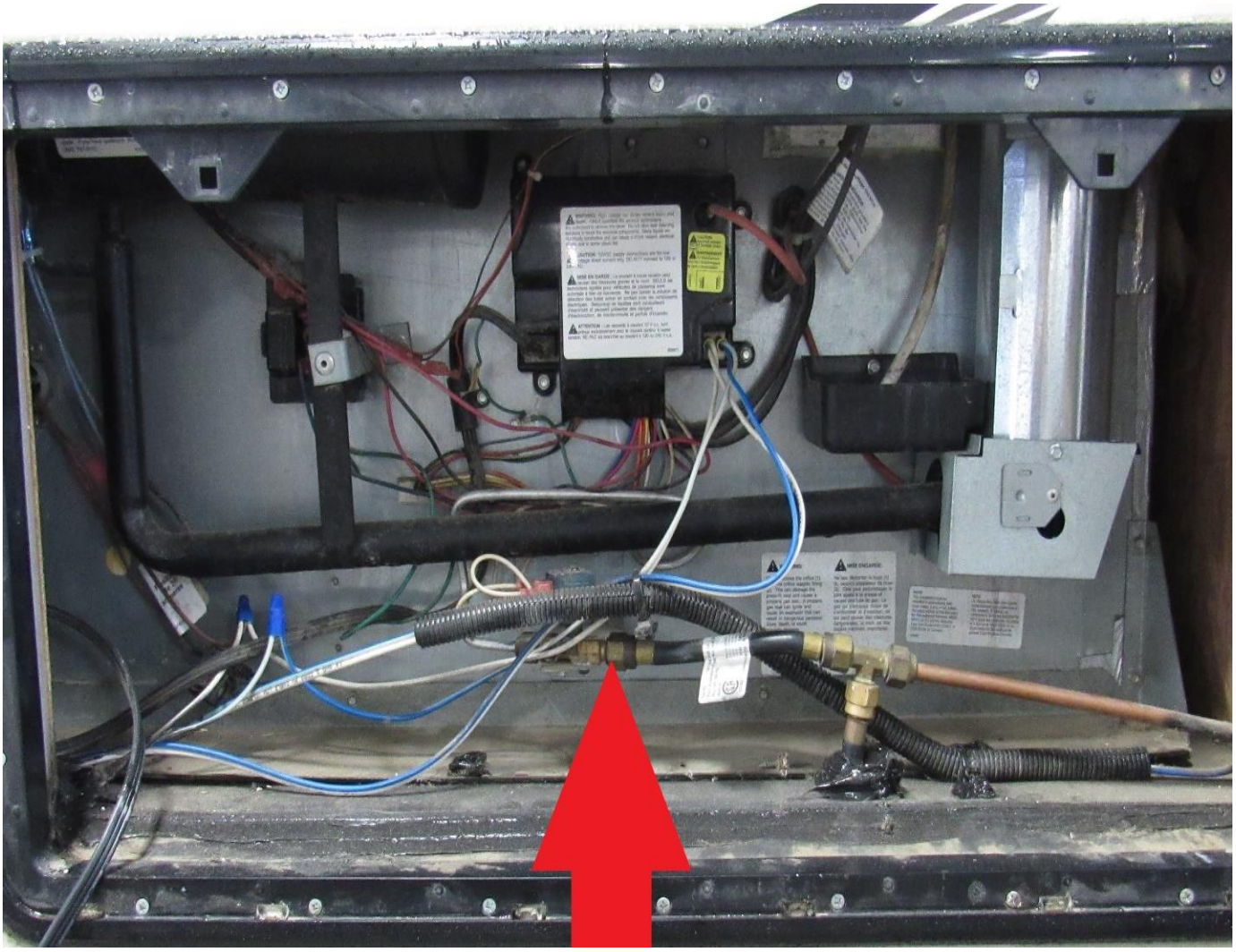
WARNING:

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

Locate the side vent to your refrigerator.Take the main 12V wires (RA) loose from your board. The wire colors will vary from coach to coach. Note: If your wire ends are not insulated, wrap the end in electrical tape so you don't blow the fridge fuse.

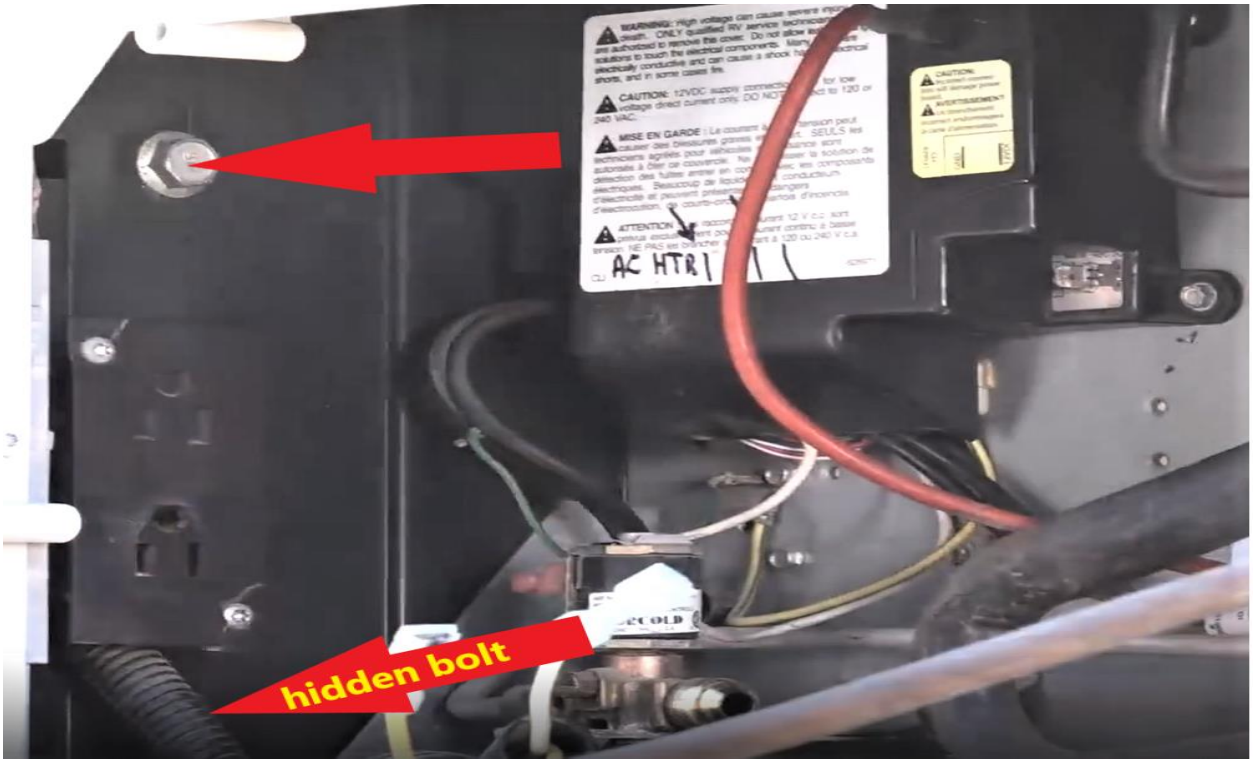
Unplug your 120v plug (RA) from your RV. Location will vary from coach to coach, if you have an icemaker unplug its cord from wall socket, making sure water pump is turned off unscrew water supply line from solenoid (RA).

Using 2 wrenches remove the LP line (RA) off of the LP solenoid valve. Make sure LP gas is turned off.

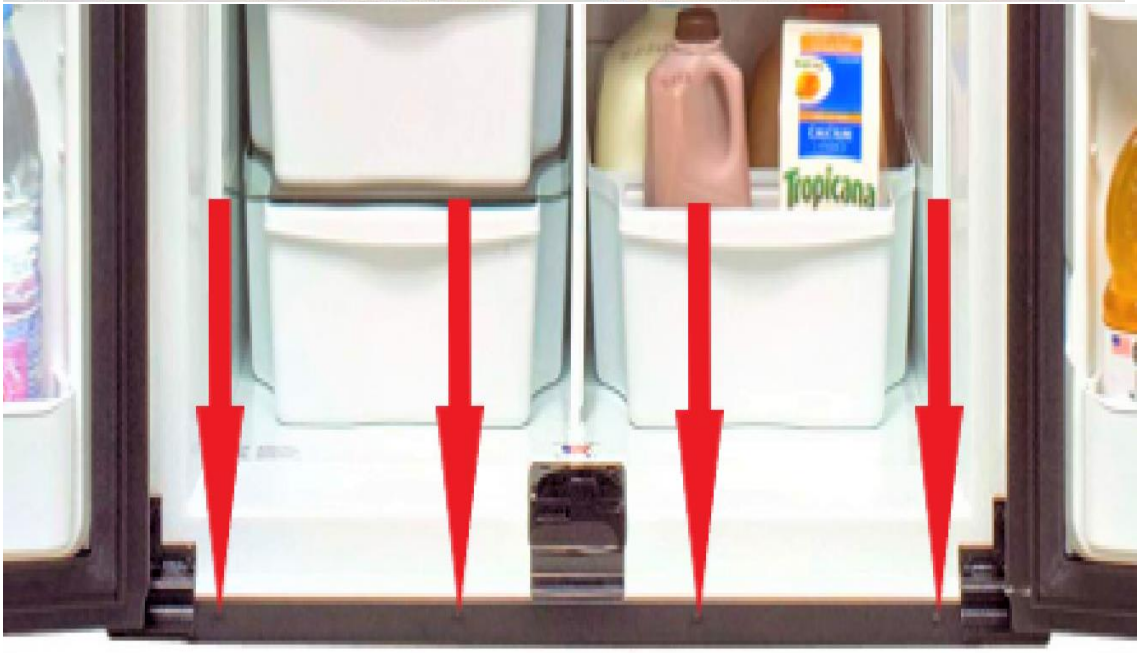


There are many different styles out there but most have at least 2 mounting screws through the back plate holding the fridge to your RV floor. Screw size and bit needed will vary from coach to coach. Remove these screws or bolts (RA).

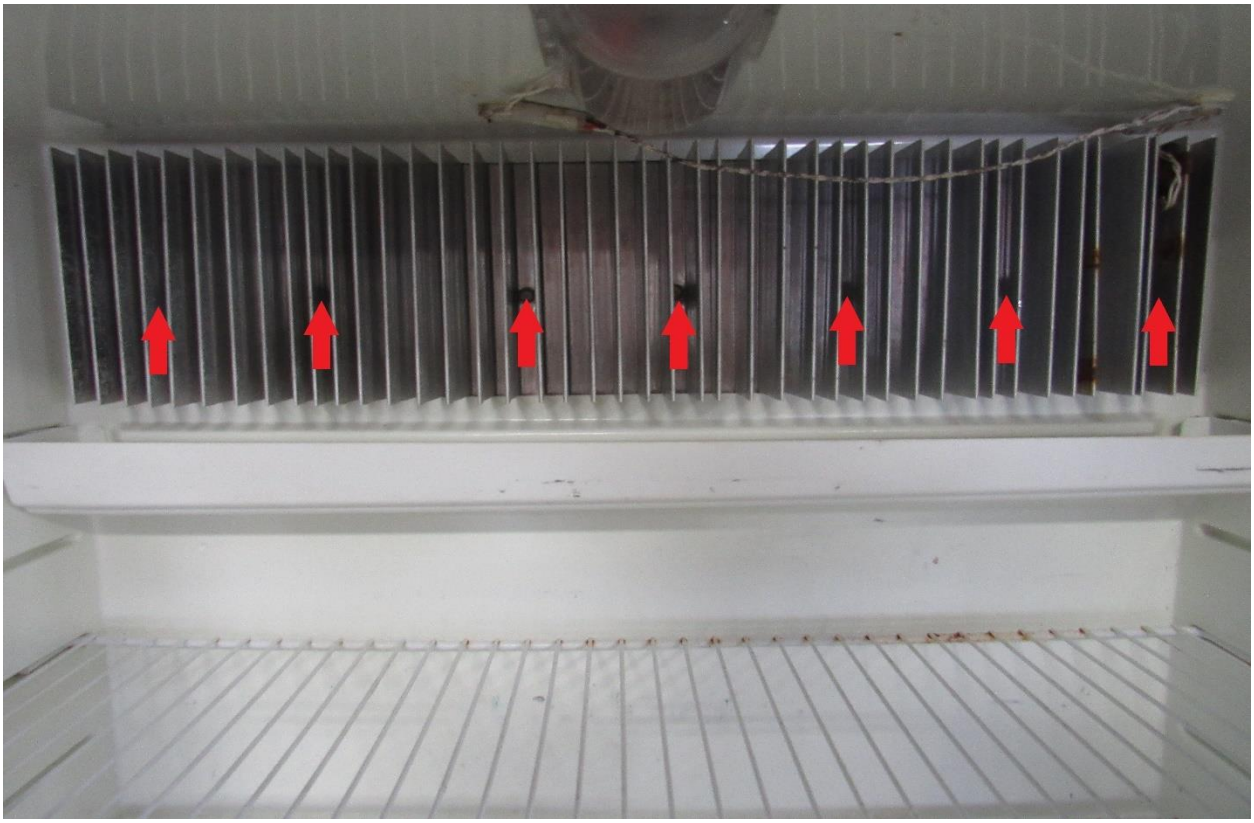
On Winnabago coachs you will have 4- 9/16" bolts lagged to a steel side plate, 2 on each side of the fridge, also the top roof vent cap needs to be removed and 2 to 4 philips screws need to be loosend from the top of the fridge.



Going inside, remove all food items and start by removing the 4 black button covers on the top and bottom. (RA) Remove the 4 mounting screws on top and bottom (RA). Older style fridge trim might not have the external screw buttons but screws will still be underneath the trim after trim is removed. Screw size and bit needed will vary from coach to coach.

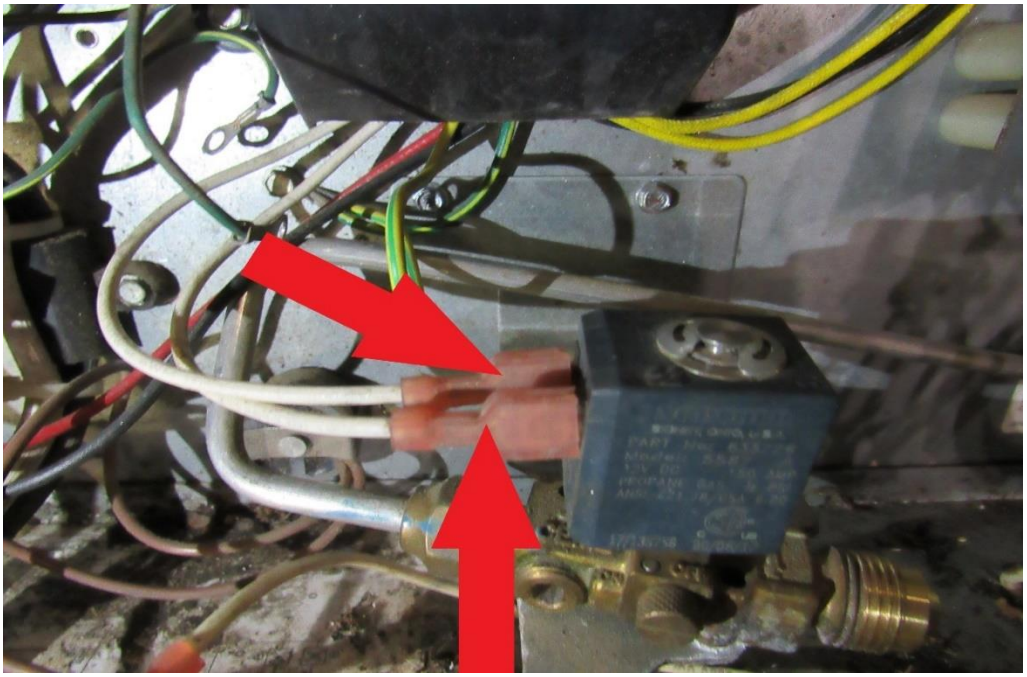


Take a 5/16” hex bit and cordless impact driver and proceed to remove all the screws (RA) in the freezer and the refrigerator.

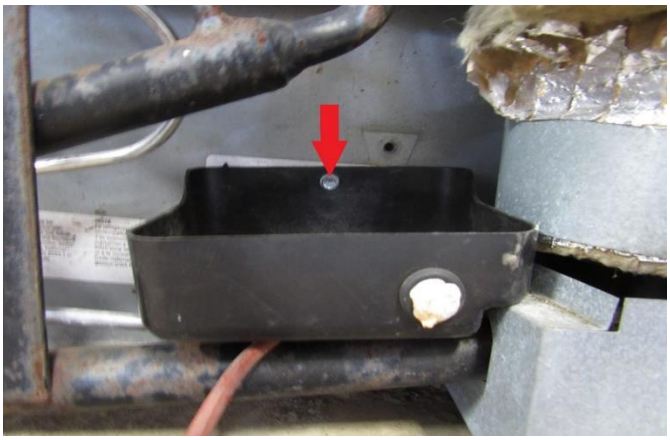


We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits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

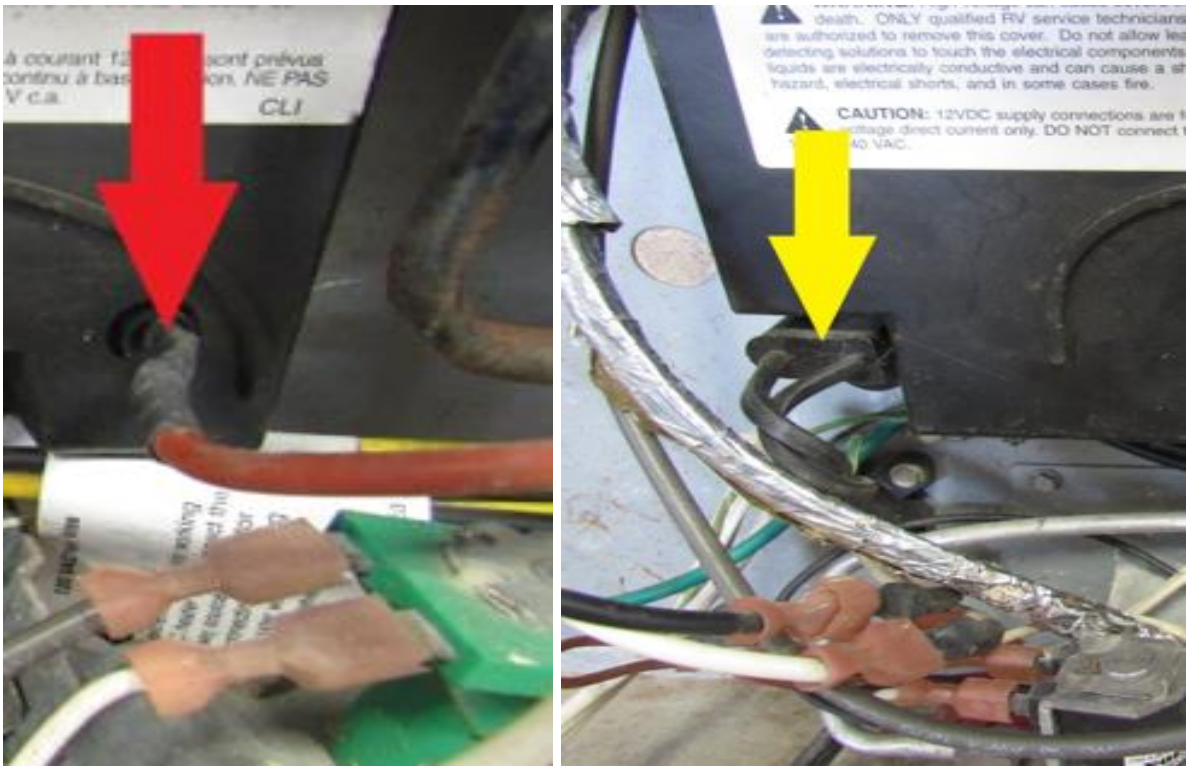
Start by taking the LP solenoid wires loose (RA).



Remove ¼" defrost cup screw (RA) and set cup to the side.

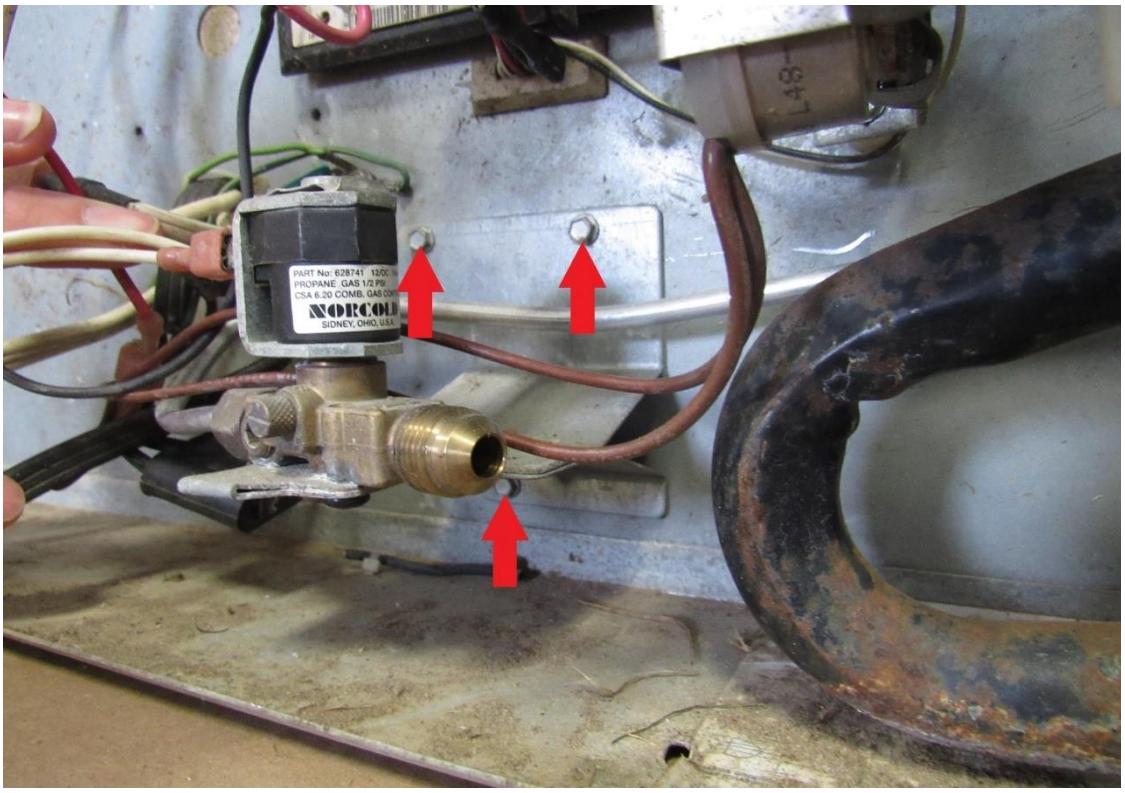


Take the igniter (RA) and the 120v plug (YA) loose from the board.

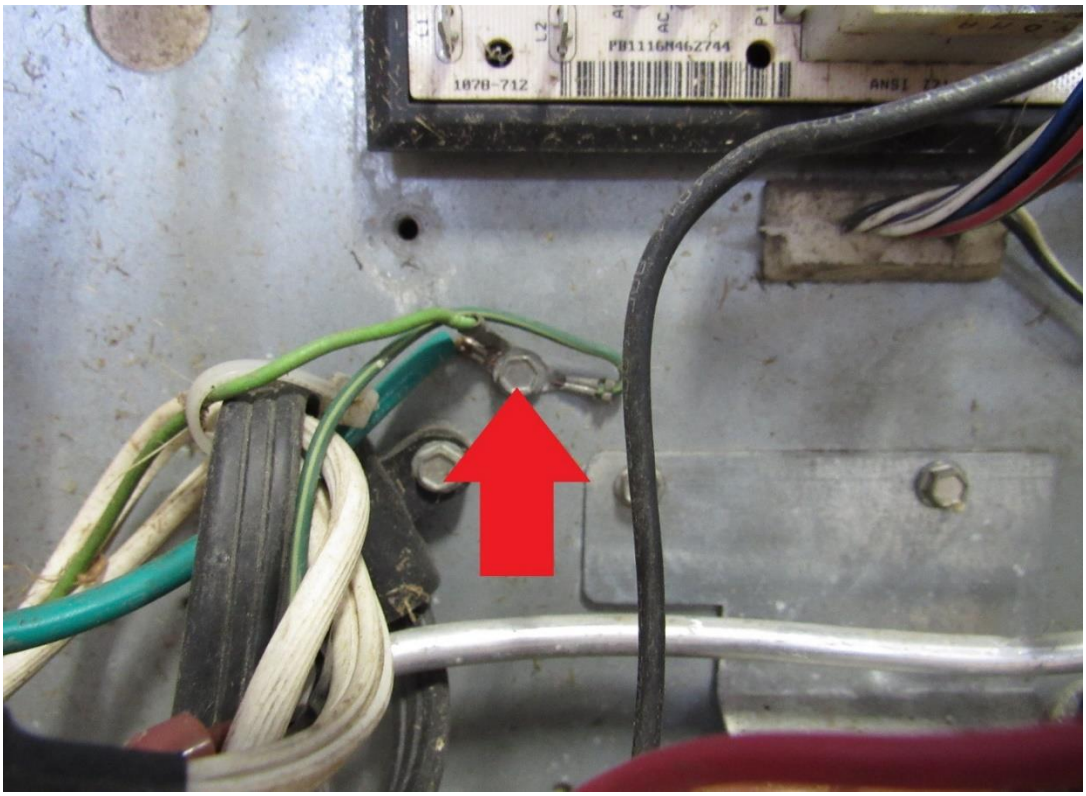


Remove ¼" Hex mounting screws on board (RA).

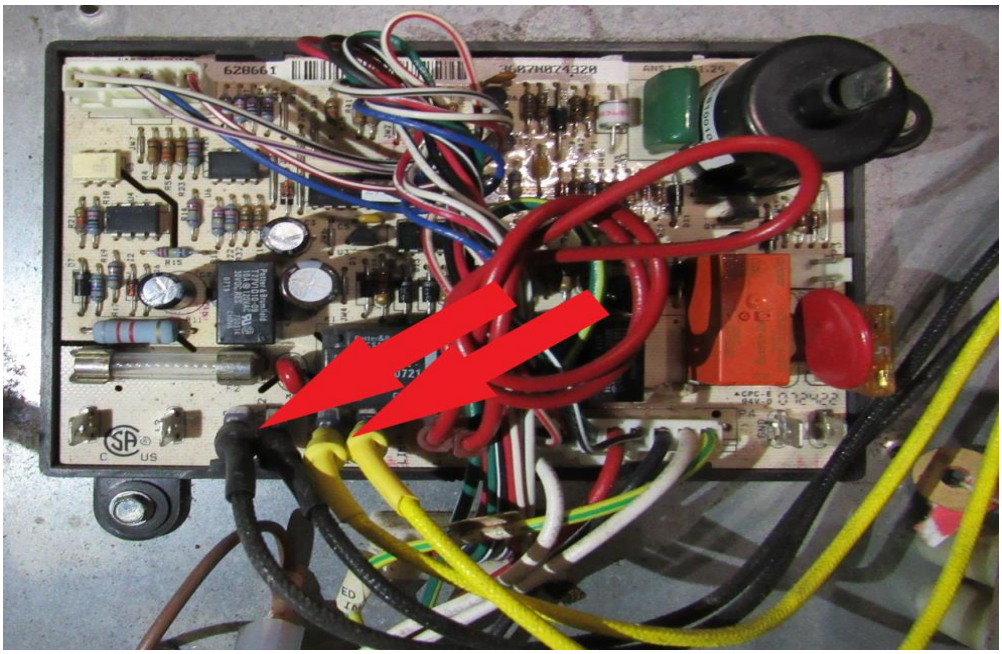
Remove ¼" mounting screws on LP bracket (RA).



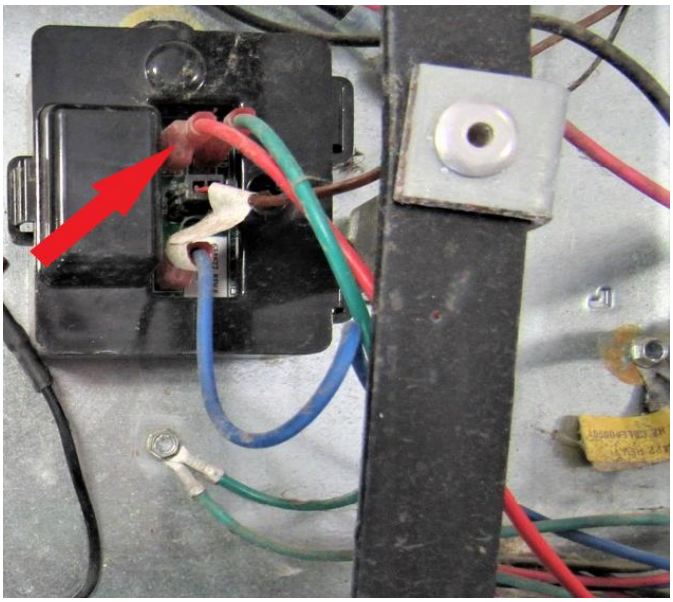
Remove ¼" ground screw (RA).



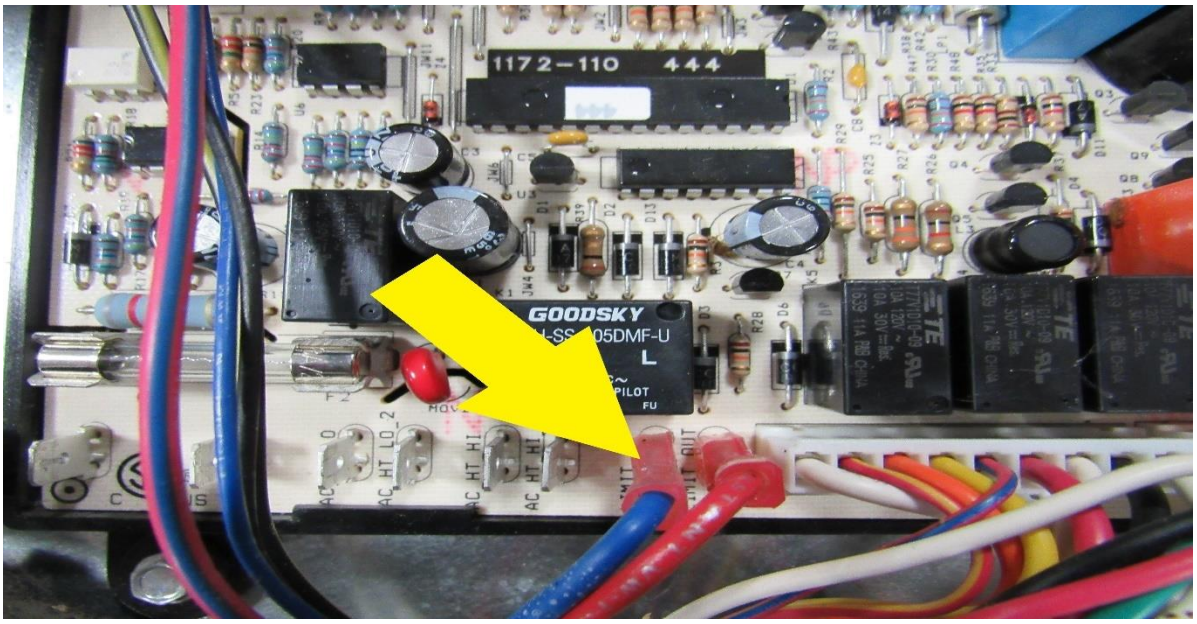
Remove the 4 heating element wires from board (RA). 2 yellow/2 black

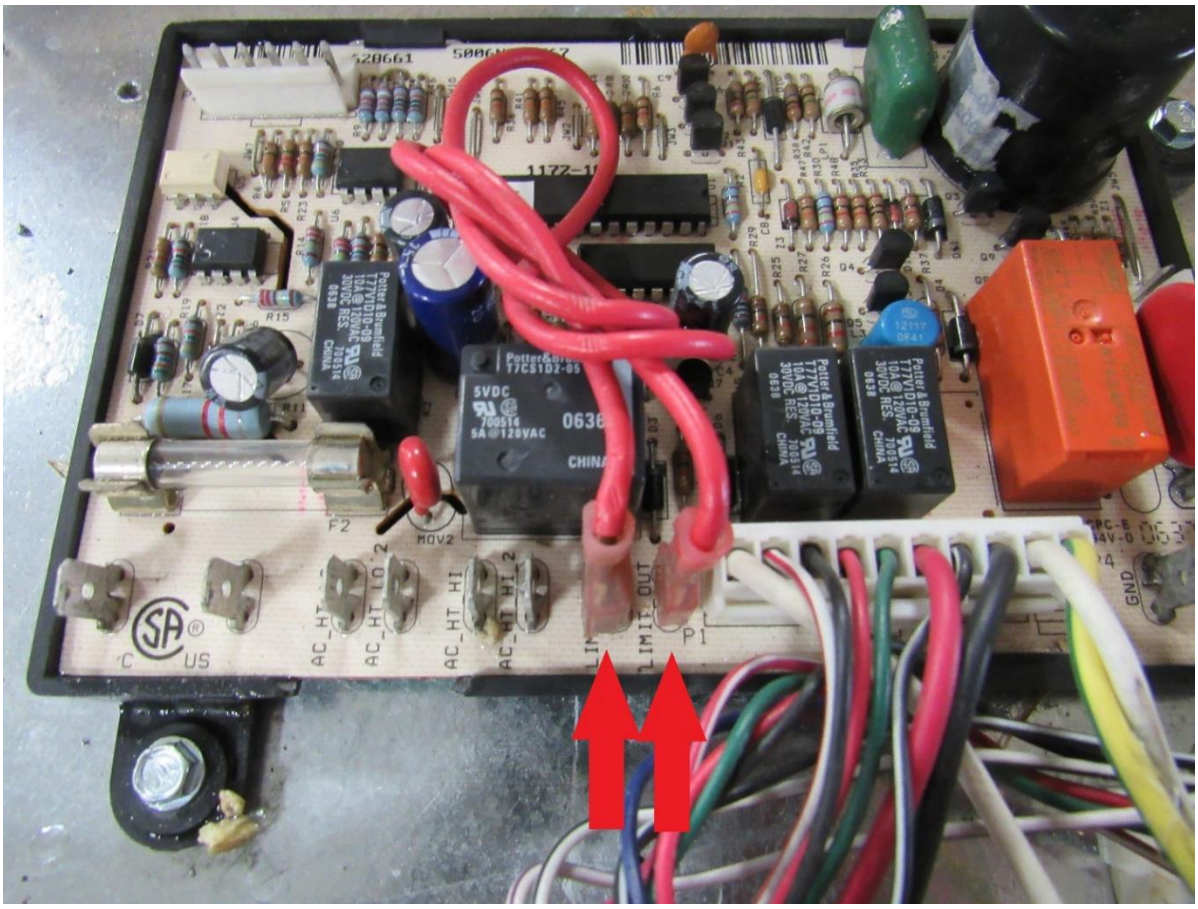


Remove the red wire from the safety recall kit (RA) this recall kit can be reattached to the new cooling unit or left off, we leave this up to you, it's a kit Norcold designed for their unit and will still work on our new unit but we do not require it or show how to install it as these can vary from one to the next. If you do want a safety device, you have 3 options, #1 the original device shown here #2 a Halon Fire extinguisher w/h a solder fuse #3 ARP fridge defend. We do not sell any of these 3 but just a suggestion and whatever you use has to be installed and worked with the manufacture of the product.

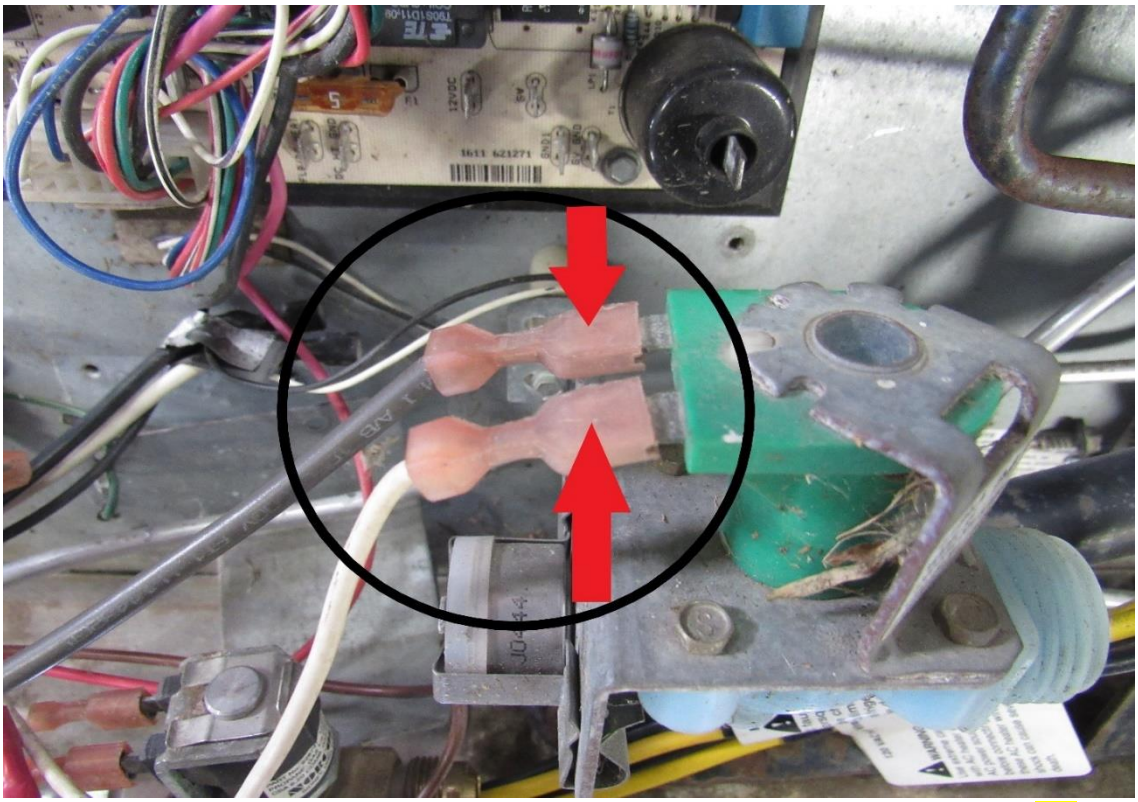


If the recall device is to be taken out, remove the blue wire (YA). Loop red wire as shown creating a “jumper” (RA). The 2 spades “limit in & limit out” should be looped together as seen (RA)

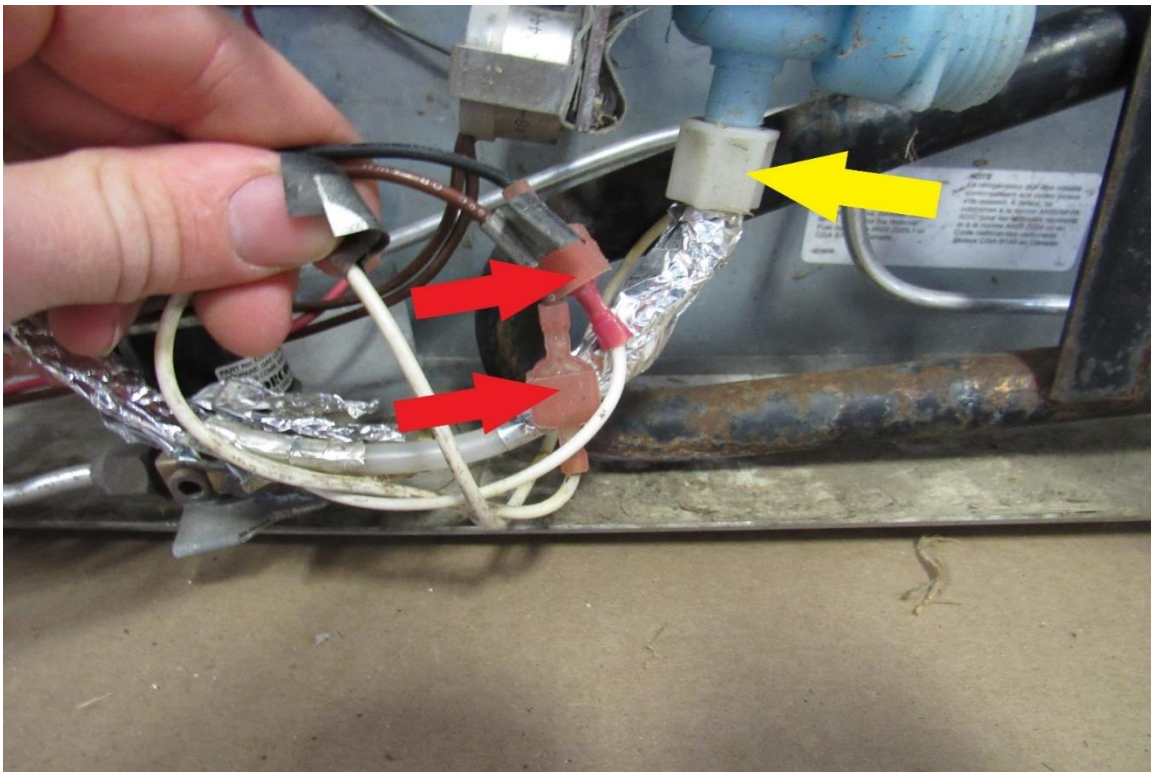




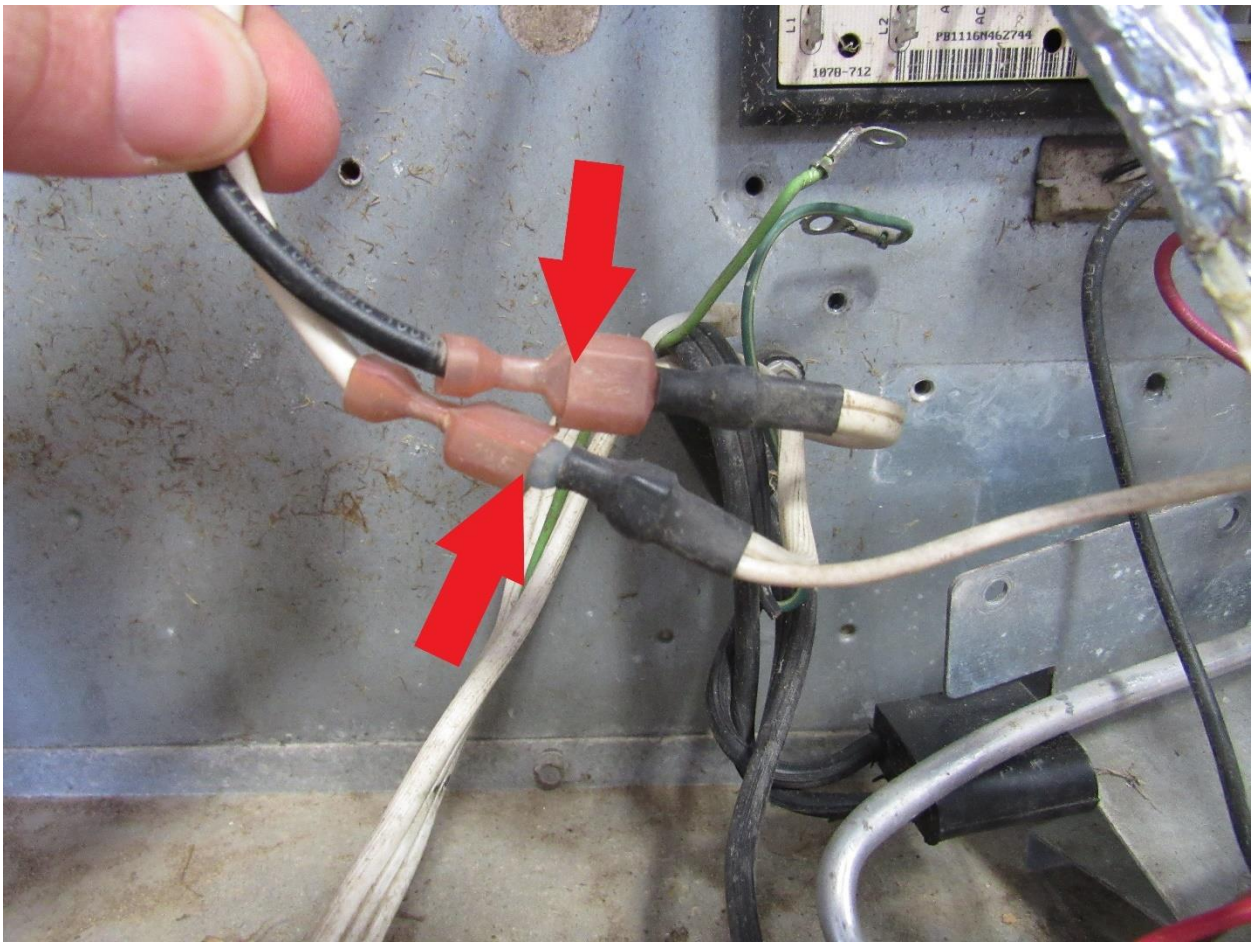
Remove the ice maker solenoid brown and white wires (RA).



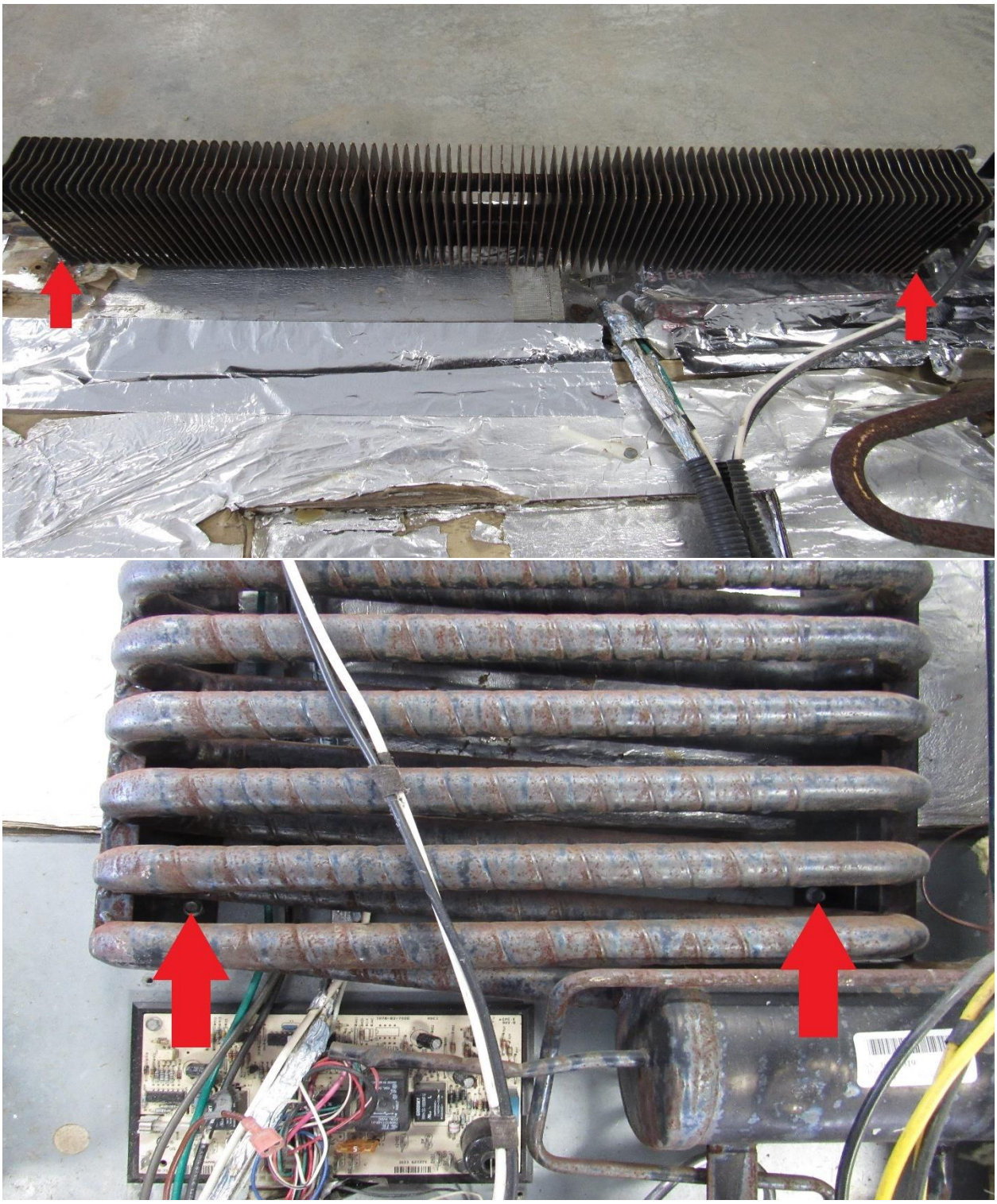
Disconnect the ice maker heater wires (RA) and water supply line (YA).



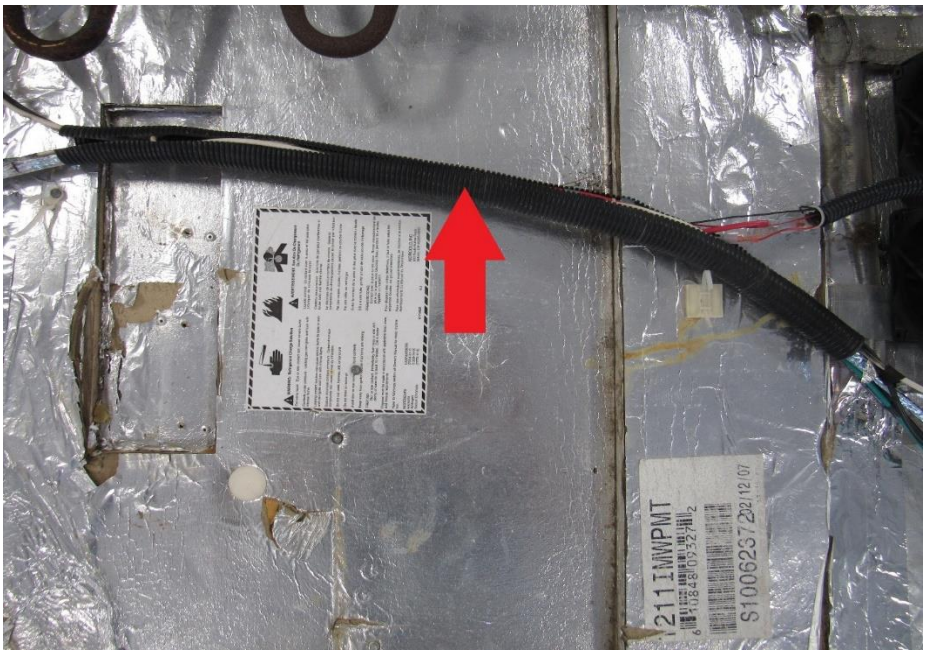
Disconnect the 120V ice maker wires, mark these to make sure you know which ones they are later, because these can be confused with the 12V fan wires (RA).



Remove the 5/16” mounting screws (RA) on the top and bottom of the unit.

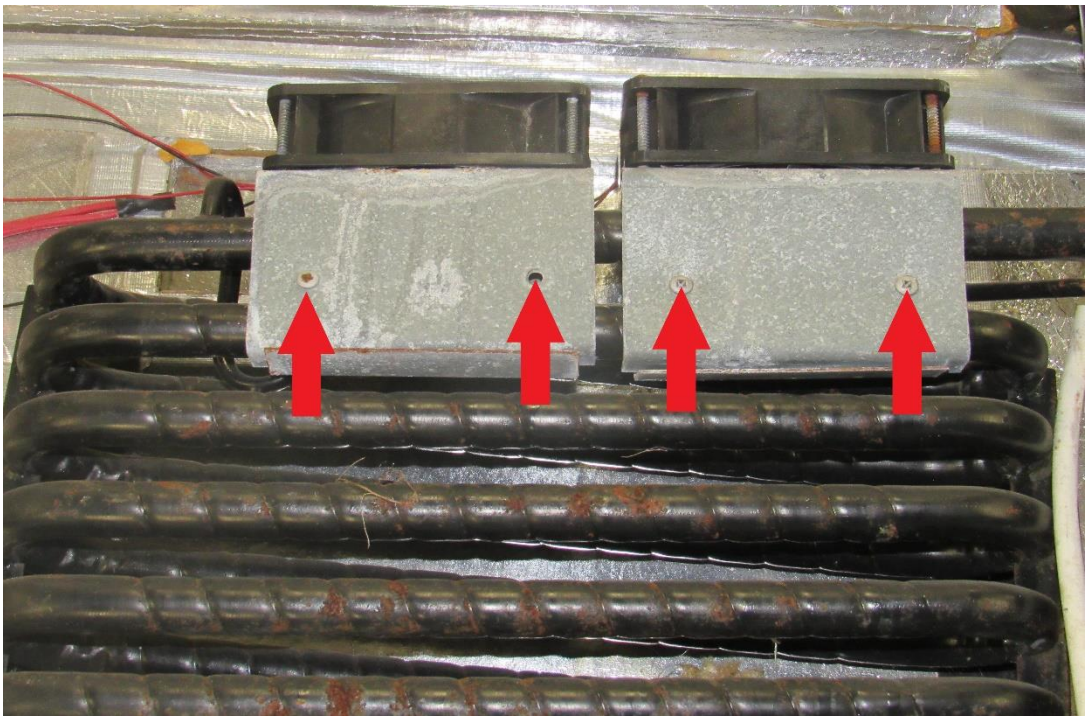


Remove the black wire loom (RA) and cut all zip ties holding the bundle of wires together.

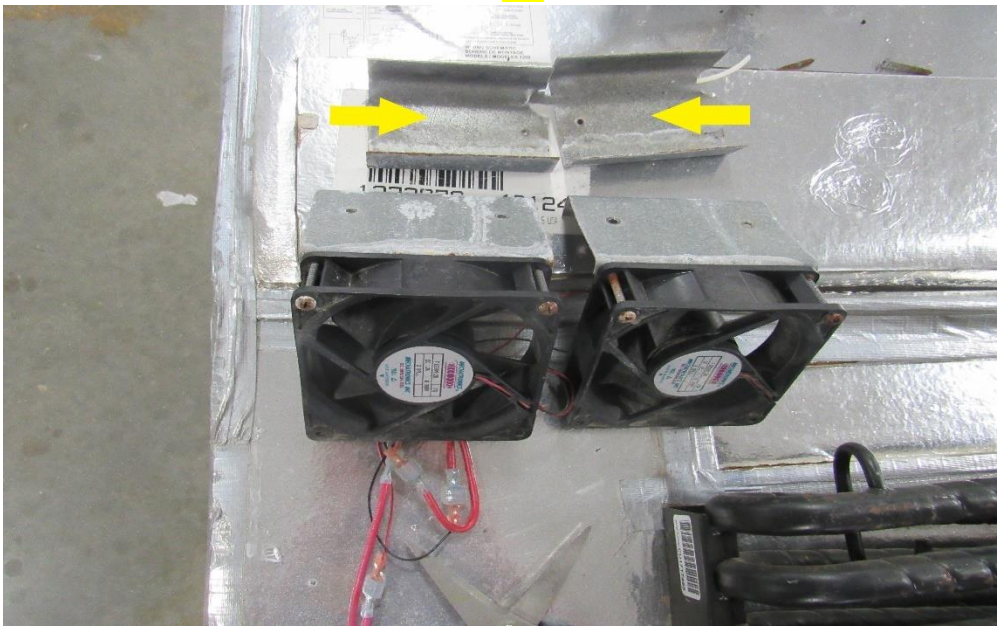


Using a Phillips bit, remove the 2 screws holding the fan temperature switch. We will use those screws again later on the new unit.

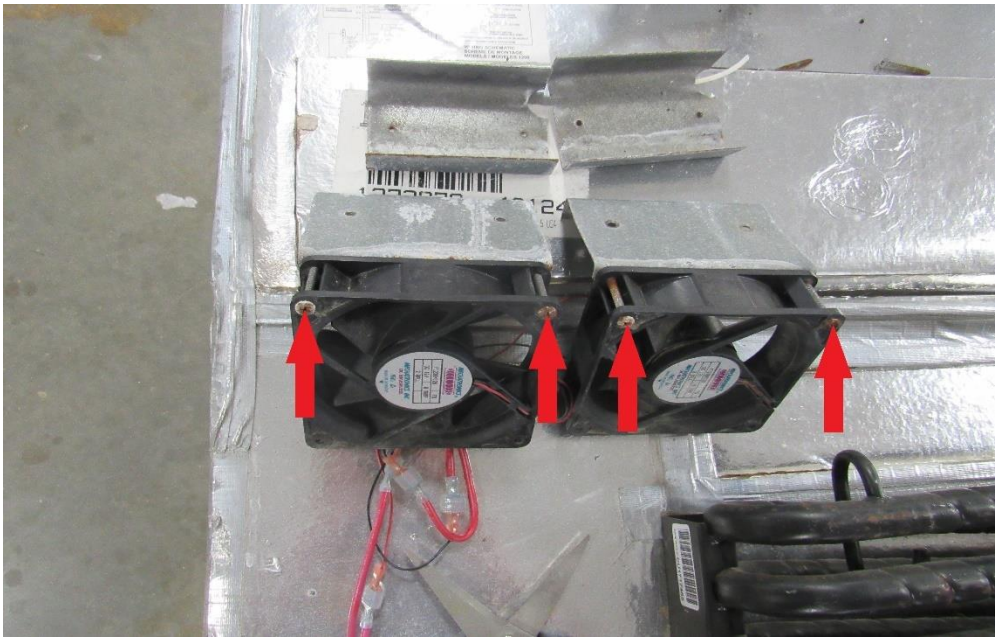
Remove the 4 fan bracket screws (RA).



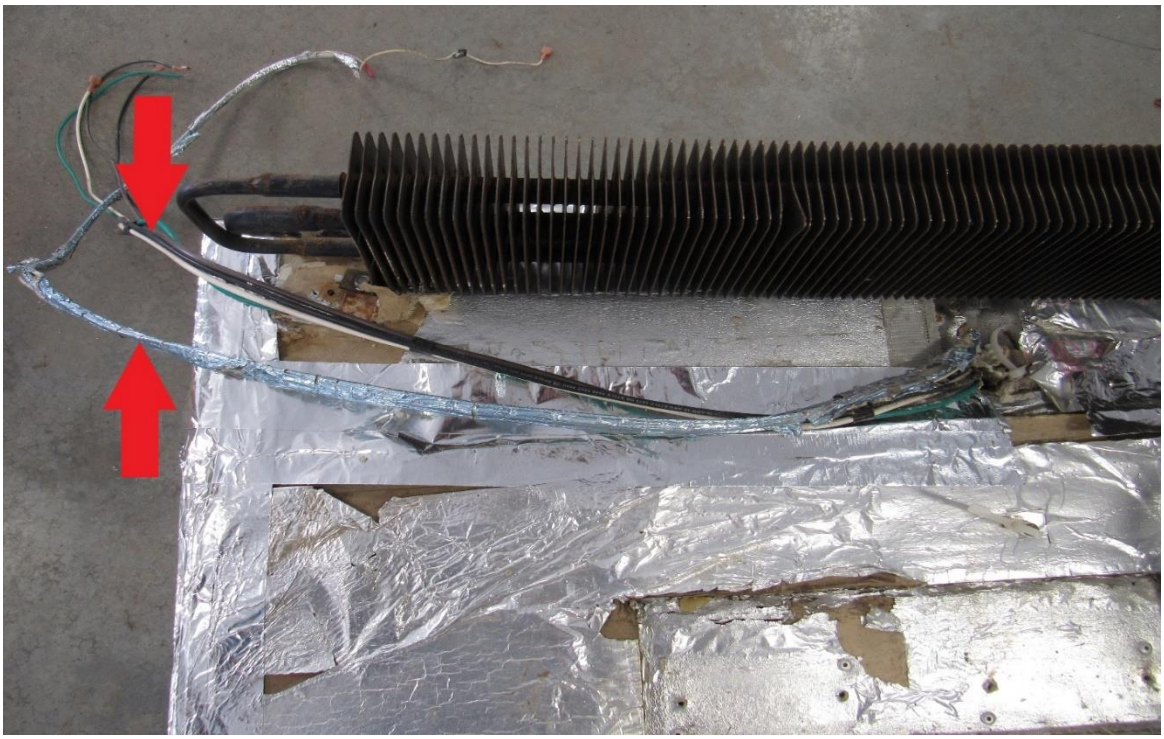
Throw away the clamp bracket (YA).



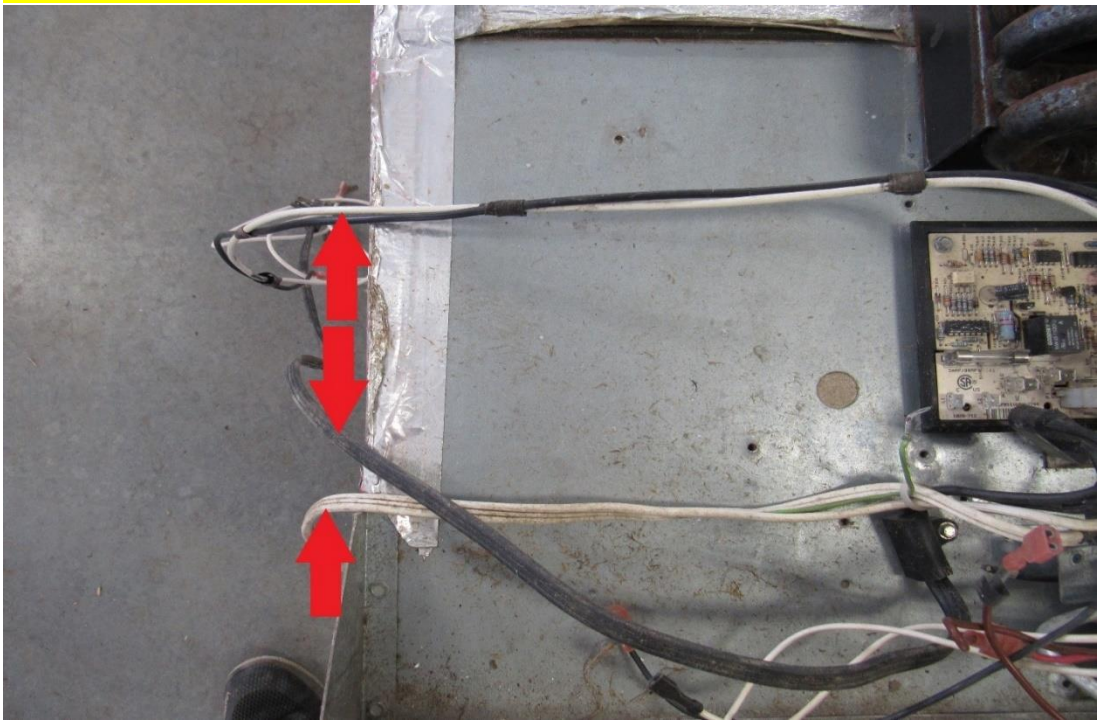
If you are replacing your ventilation fans, which we recommend, now is the time to do so. Start by removing the 4 screws (RA). Assemble the new fans in the same orientation as the old fans. Set the fans aside for now.



Pull icemaker wires and water line up and to the side as shown (RA). Be careful with the water line as it gets brittle with age. If you are removing the ice maker, these can be cut and completely eliminated.

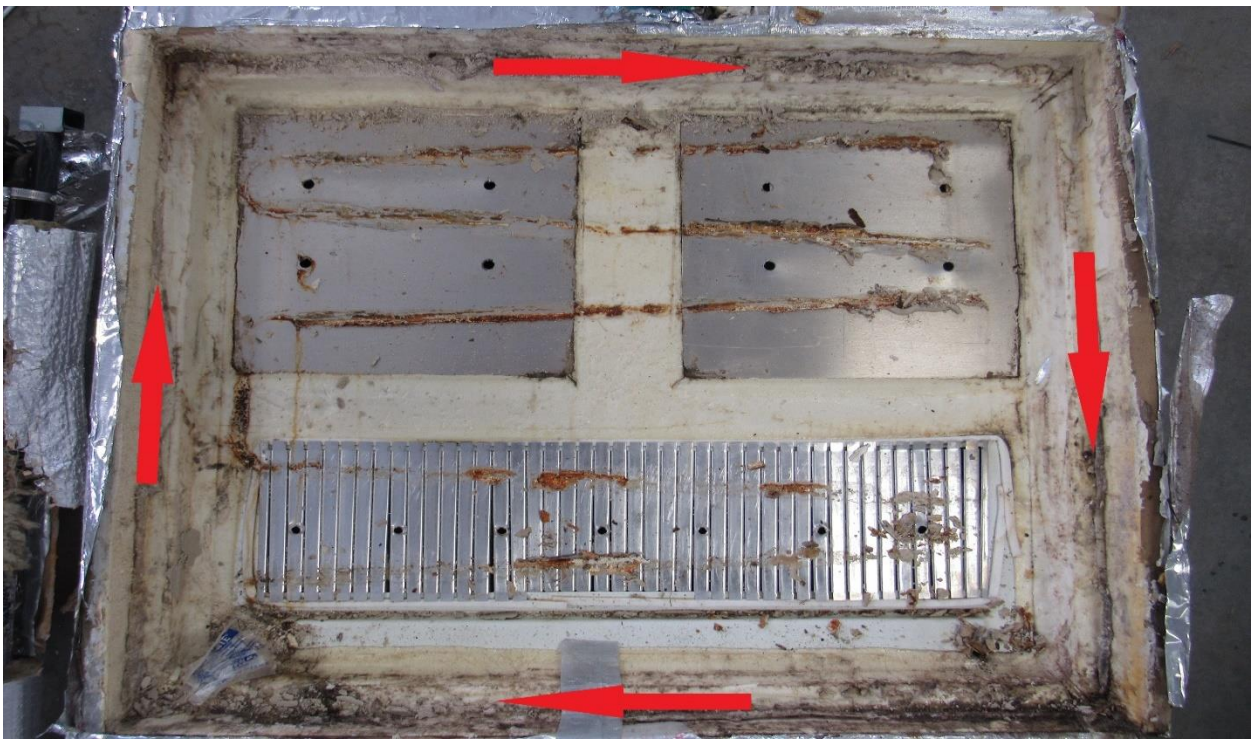


Leave fan wires with the temperature switch and the black and white (Red and Black on some models) cords hanging over side as shown (RA).

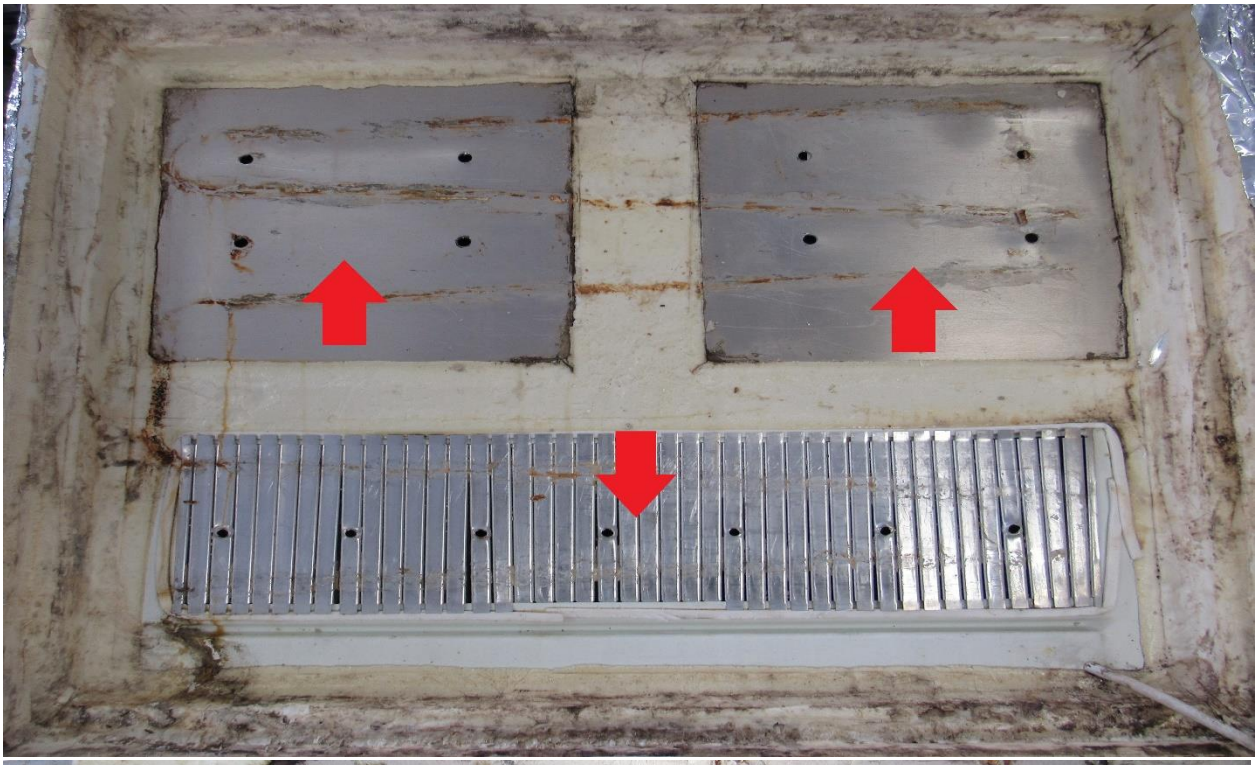


If old unit is taped along the sides, cut tape with knife (RA).

Take off the old cooling unit of your refrigerator by lifting straight up and out. We will need to take some parts off of the old unit later. Clean off any residual foam or thermal sealant around the edges (RA).



Clean off the old thermal mastic (RA) from the freezer plates and refrigerator fin. A large blade putty knife or scraper works well. A shop vac works well to remove any other debris or loose foam. Do not remove the fin as its very easy to get this back in upside down



If you want to remove the ice make, all ice maker wiring, water valve, and 120V ice maker cord can be removed and discarded.

If you are installing a Frost Guard fan. we have couple options:

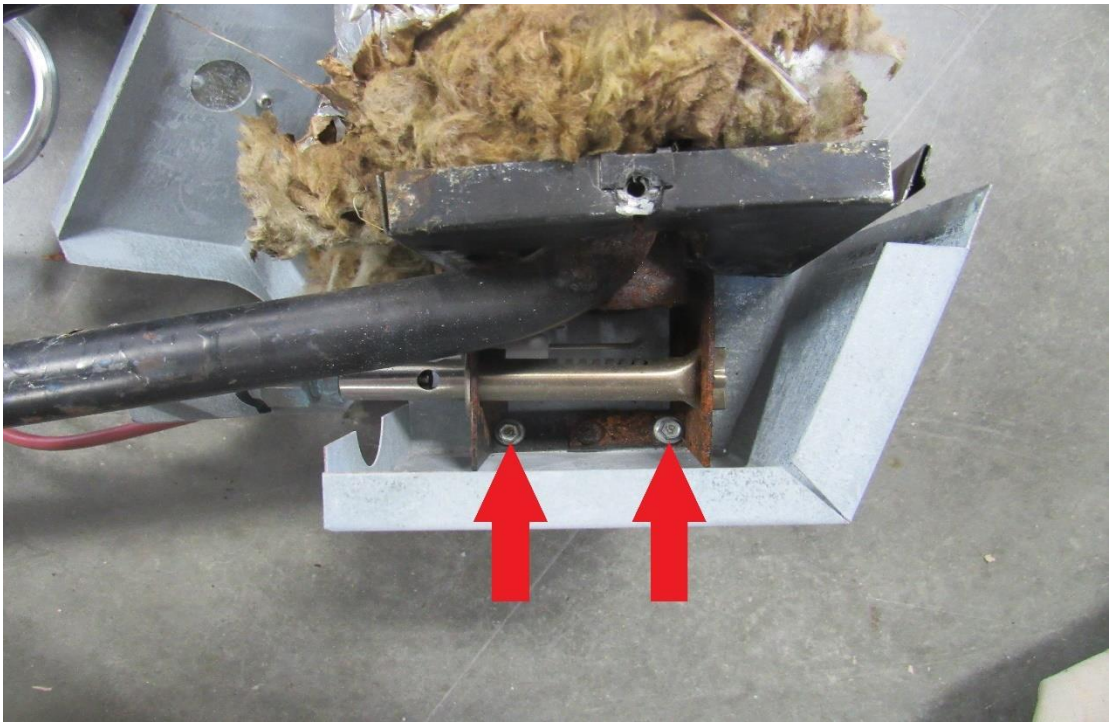
Installing the Frost Guard fan options:

Option#1 Set the Frost Guard fan the refrigerator fin opening by lifting the right-hand corner, make sure it's somewhat secured to a shelve for now. Leave enough wire as shown inside and also enough on the bottom to hook up with later. A fan wire will remain in this position throughout the rest of the install. Of course you can any fan, we sell the 5 fan model for 4 door Norcolds

Option #2 If you would rather install a fan wire thru the defrost hose later, you always install fan later.

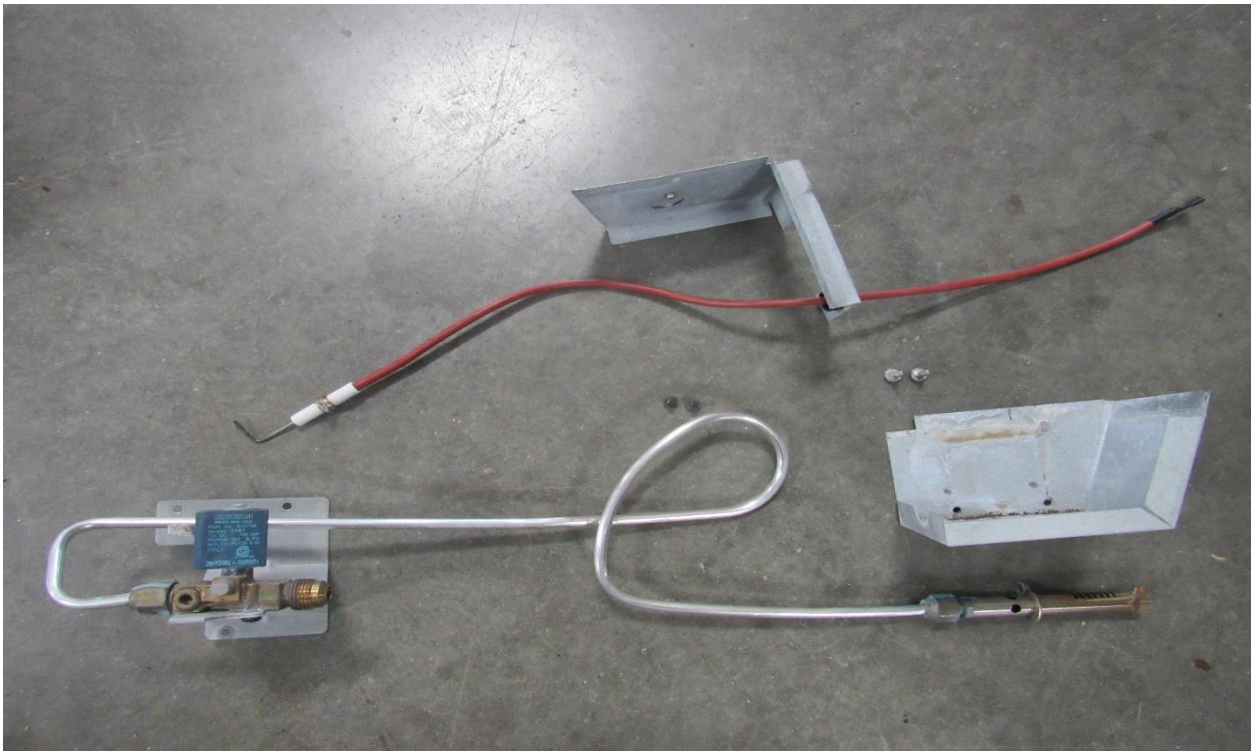
Now we go back to the old unit to take off the LP burner and igniter. Start by removing the ¼" screw (RA). The igniter is attached to this bracket. Leave it attached and just slide the bracket to the side for the next step.

Remove the ¼" screws (RA) and set the burner housing to the side.



Remove the igniter and burner screws (RA). These are usually Phillips screws.

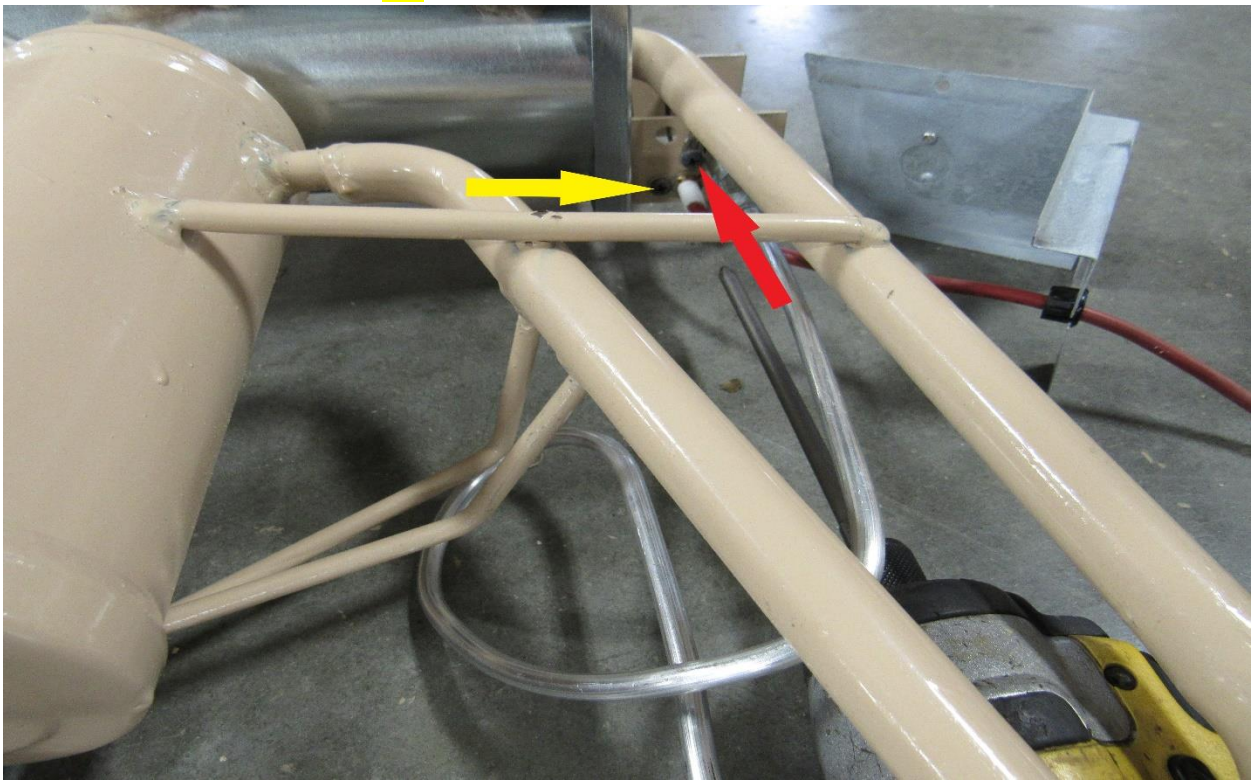
These are the parts to take off of the old unit, and install onto the new unit.



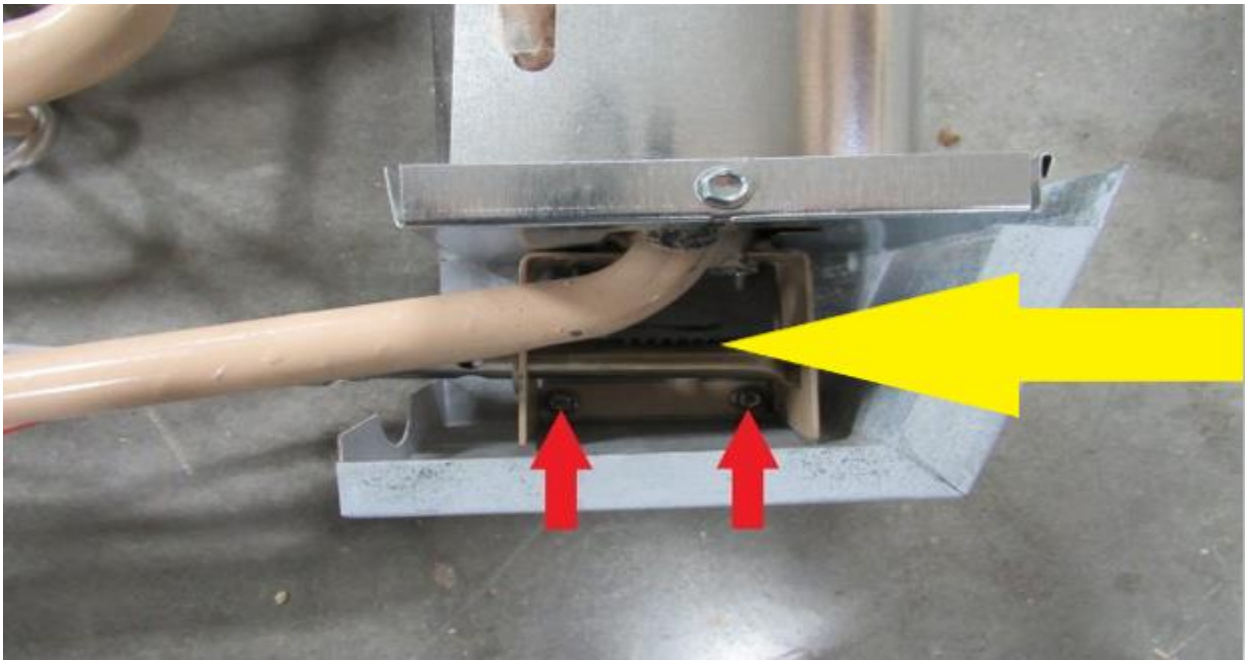
If you are replacing the LP Burner

You start by taking 2 crescent wrenches and loosening the flare nut by the brass orifice, you will notice the orifice is backed away from the burner tube (above), this adjustment is done here and should stay that way, otherwise the burner will not work correctly. Do not over tighten the burner to the gas line as this might create a flare crack, yet you do want it tight enough so you do not have a gas leak.

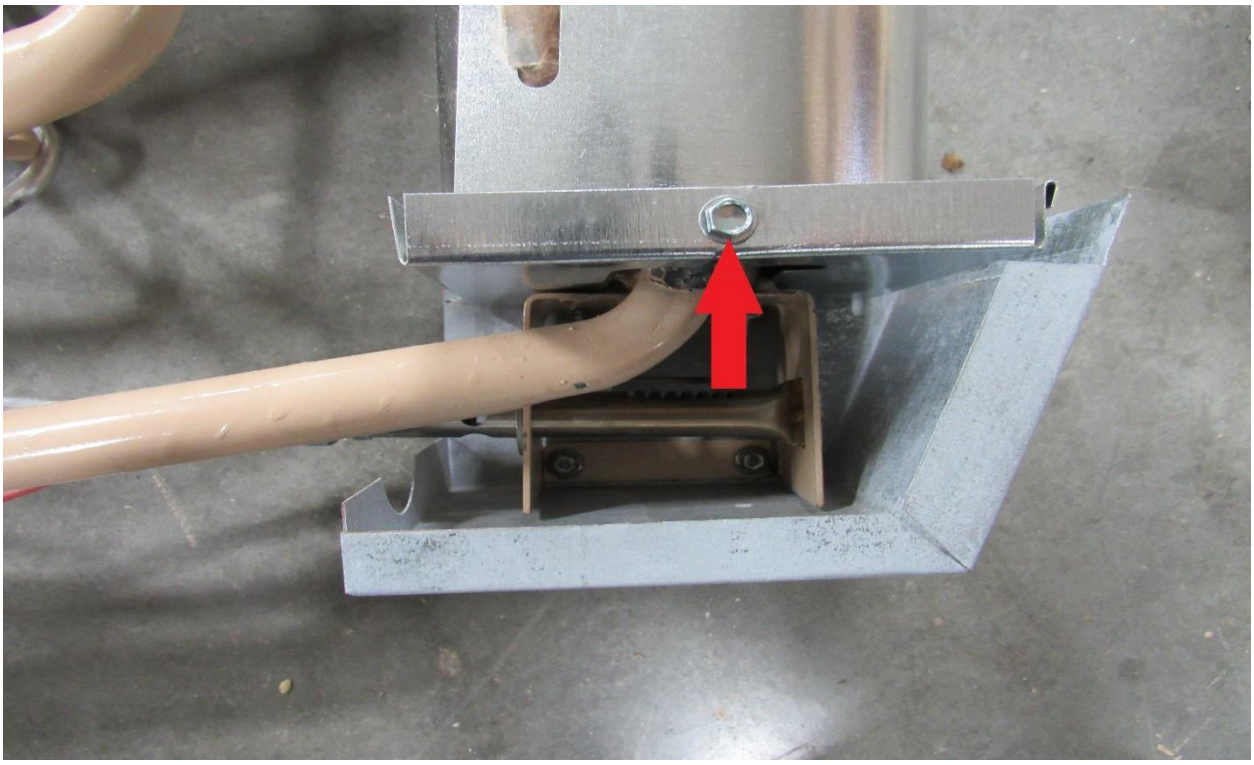
On the new unit, install the burner assembly first (RA) using the original screw. Followed by the igniter (YA) also using the original screw.



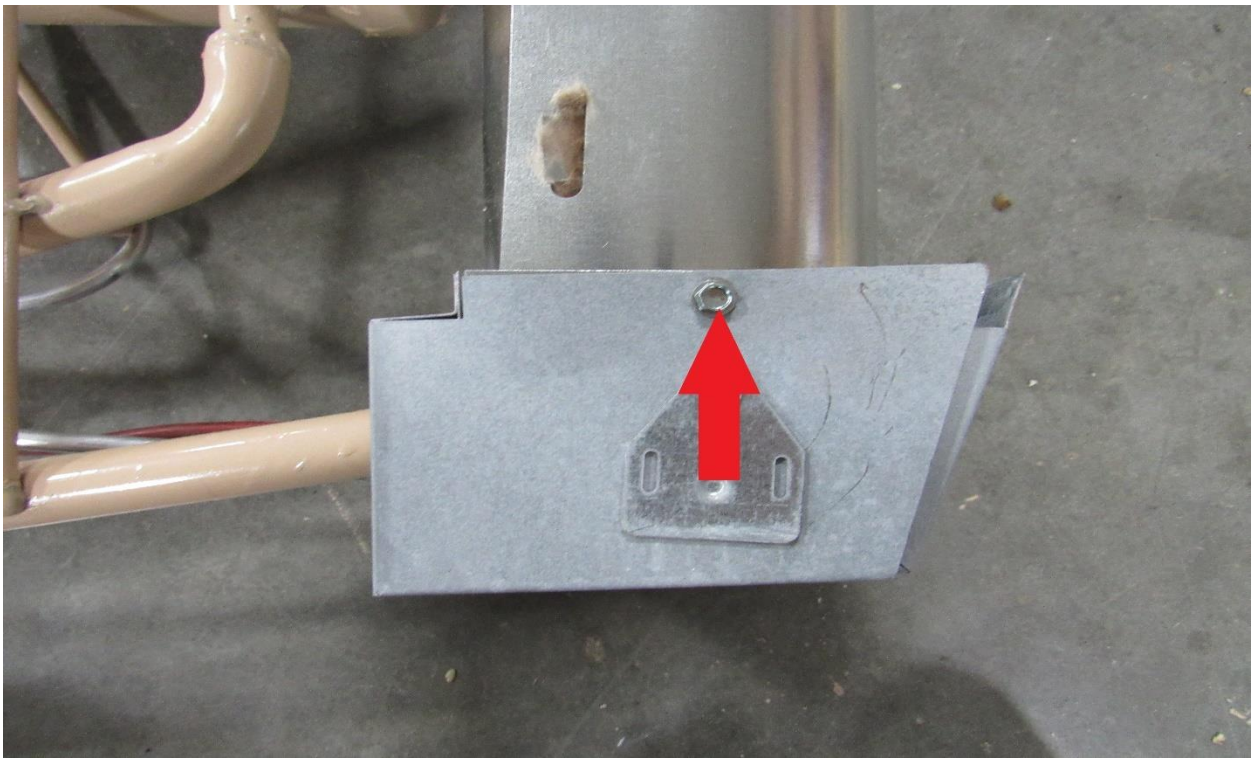
Using the original ¼" screws. Install the burner housing as shown (RA). Make sure you have approx. ¼" gap between burner tube and igniter electrode. (YA)



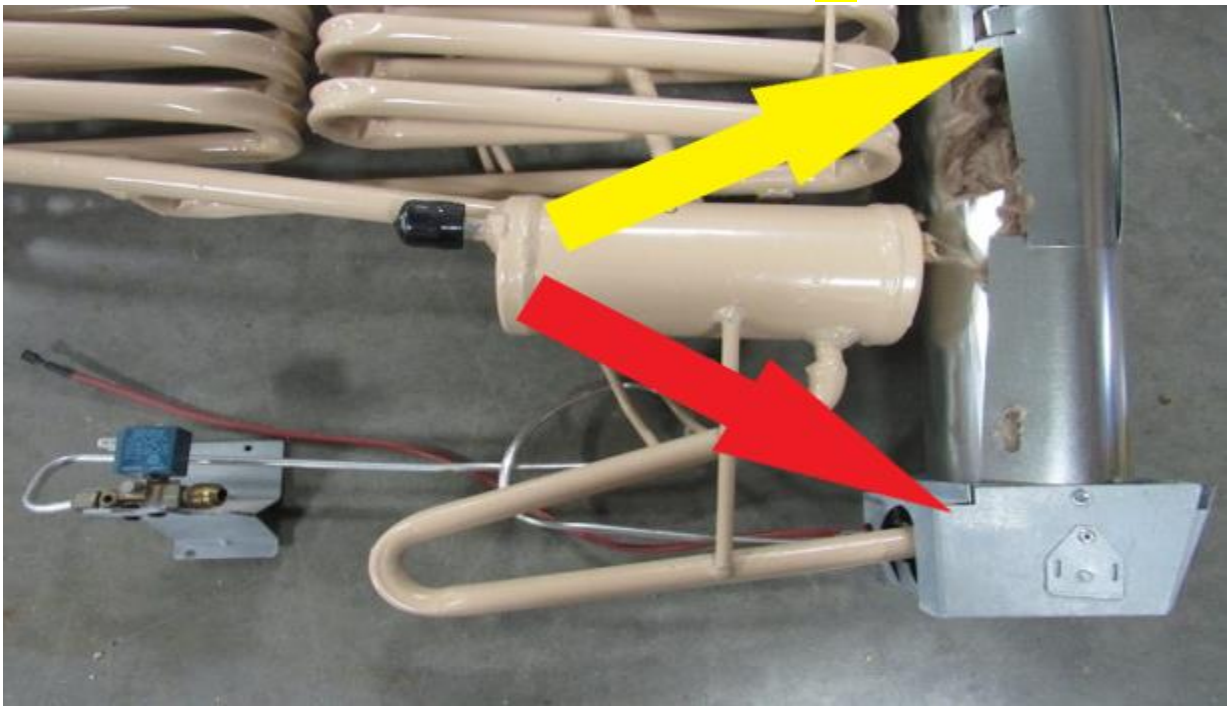
Remove the top screw from the new unit as shown (RA). We will use this screw to mount the top piece in the next step.



Install the ¼" screw as shown below (RA).



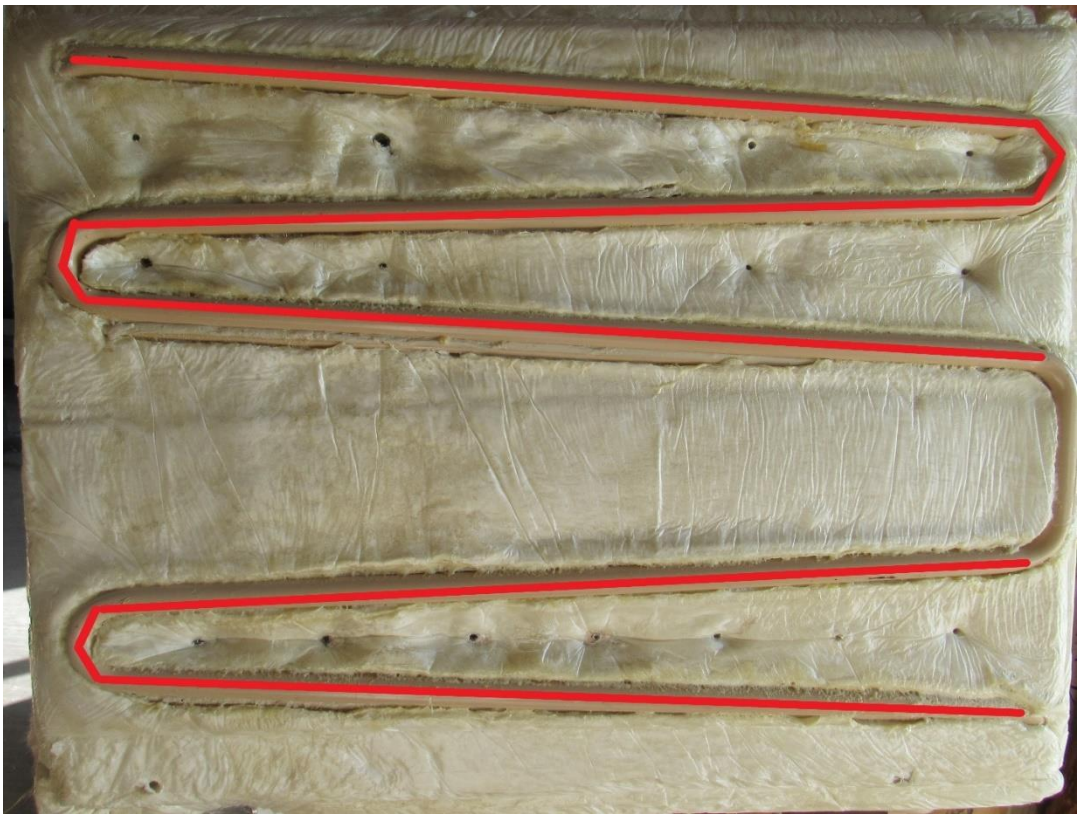
This is how your burner and igniter assembly should look after you're done. (RA)
Now unsnap and open the heating element flapper (YA)



Push the insulation back so the heating element sockets are exposed, and slide the 2 heating elements into the sockets, make sure they are pushed all the way down to the stop point on the heater. Push insulation back over the heaters and close the flapper again and tuck the heater wires out of the way for now.

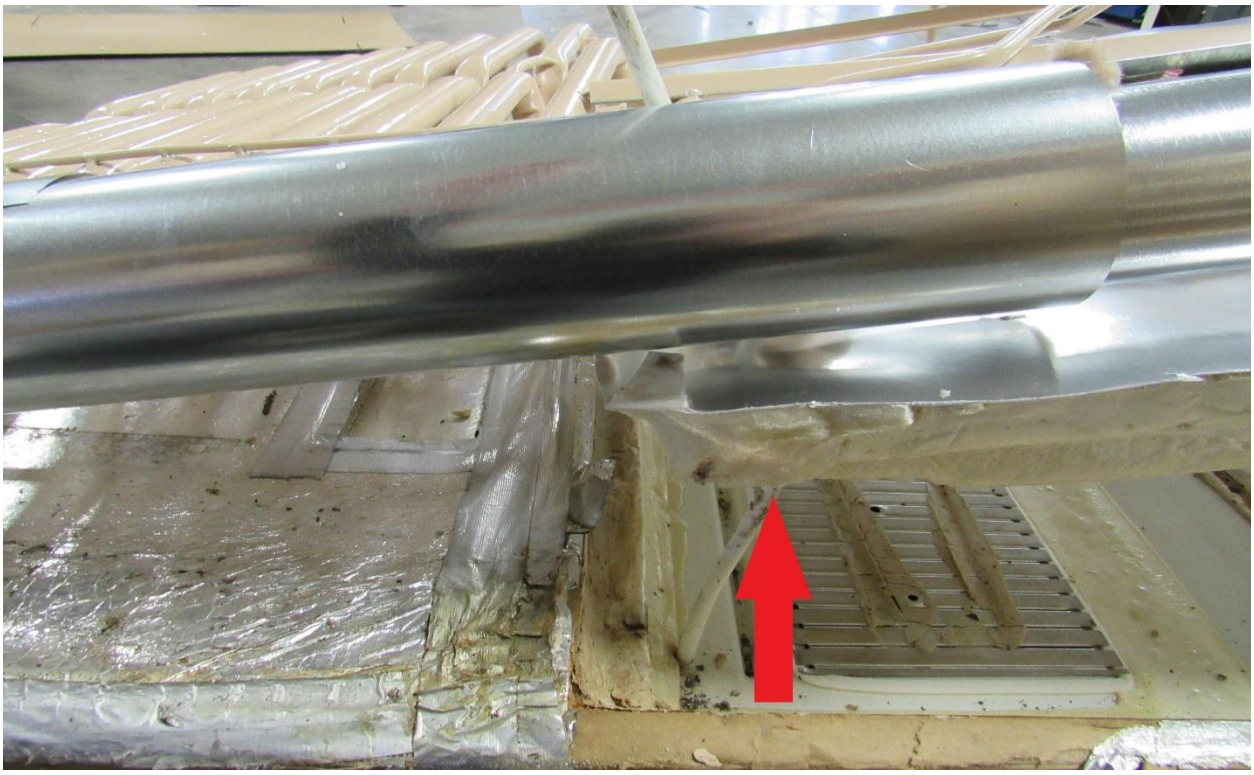
Lay the unit on its back for the next step.

Take a caulk gun and place a small bead of thermal mastic in this fashion. You will need to use the whole tube.



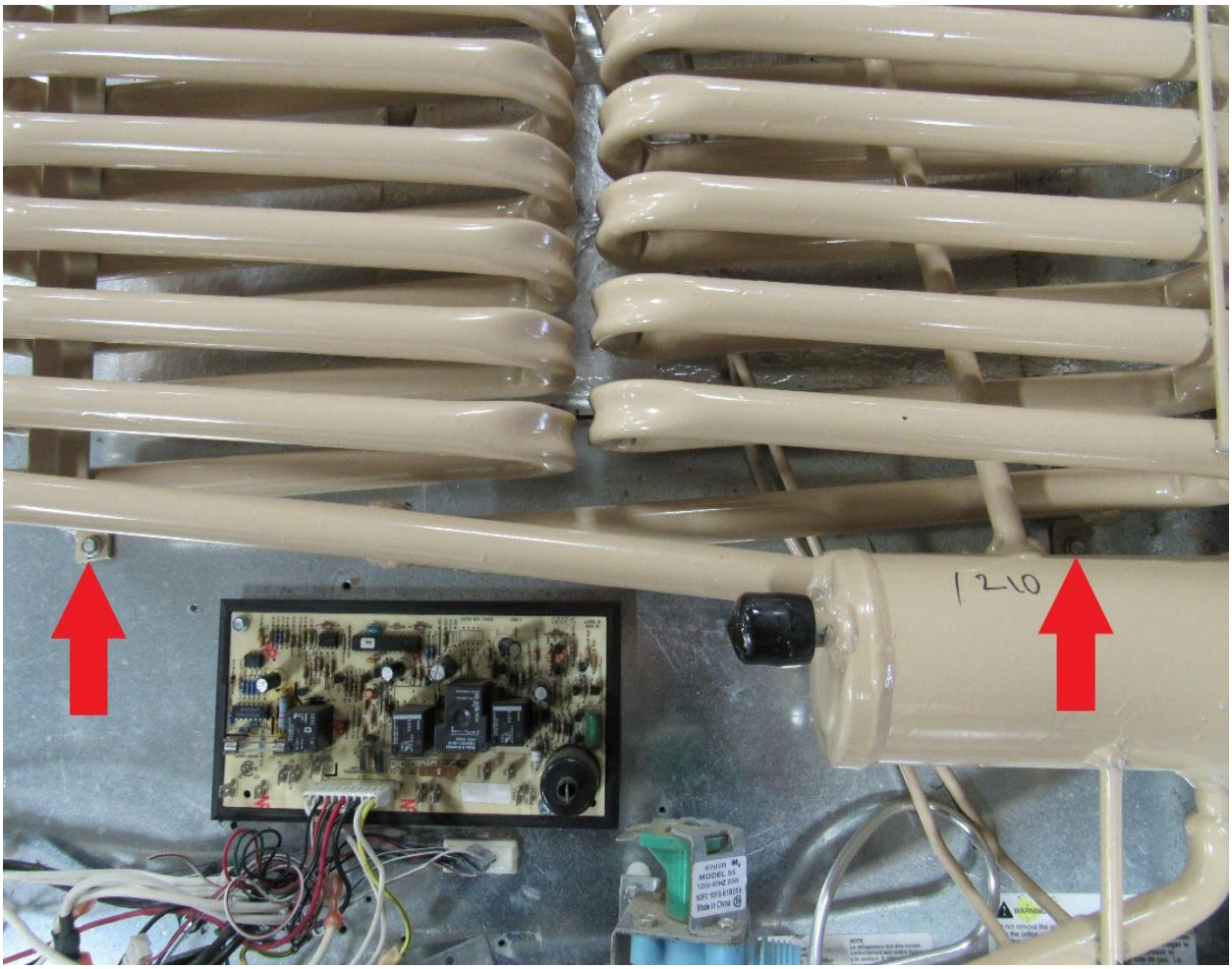
Lay unit into box being careful so as not to scrape off any thermal mastic on the box.

Insert defrost hose into the pre-drilled hole (RA) as shown, while lowering the unit into the box. Make sure to keep defrost hose snug so it does not kink while unit is being set down. Set unit all the way down into the box.



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 5/16” self-taping mounting screws. One on the bottom right-hand side and one on the bottom left-hand side as shown (RA). These mounting holes will not line up with your original holes. Do not be alarmed if the cooling unit does not sit tight with the box at first. After you fasten the freezer mounting screws, the unit will be sucked in tight.



Set refrigerator in upright position.

If holes are not aligned in the freezer have the rear person remove the bottom 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 box holes can be redrilled or enlarged to make holes line up and then the washers can cover the hole.

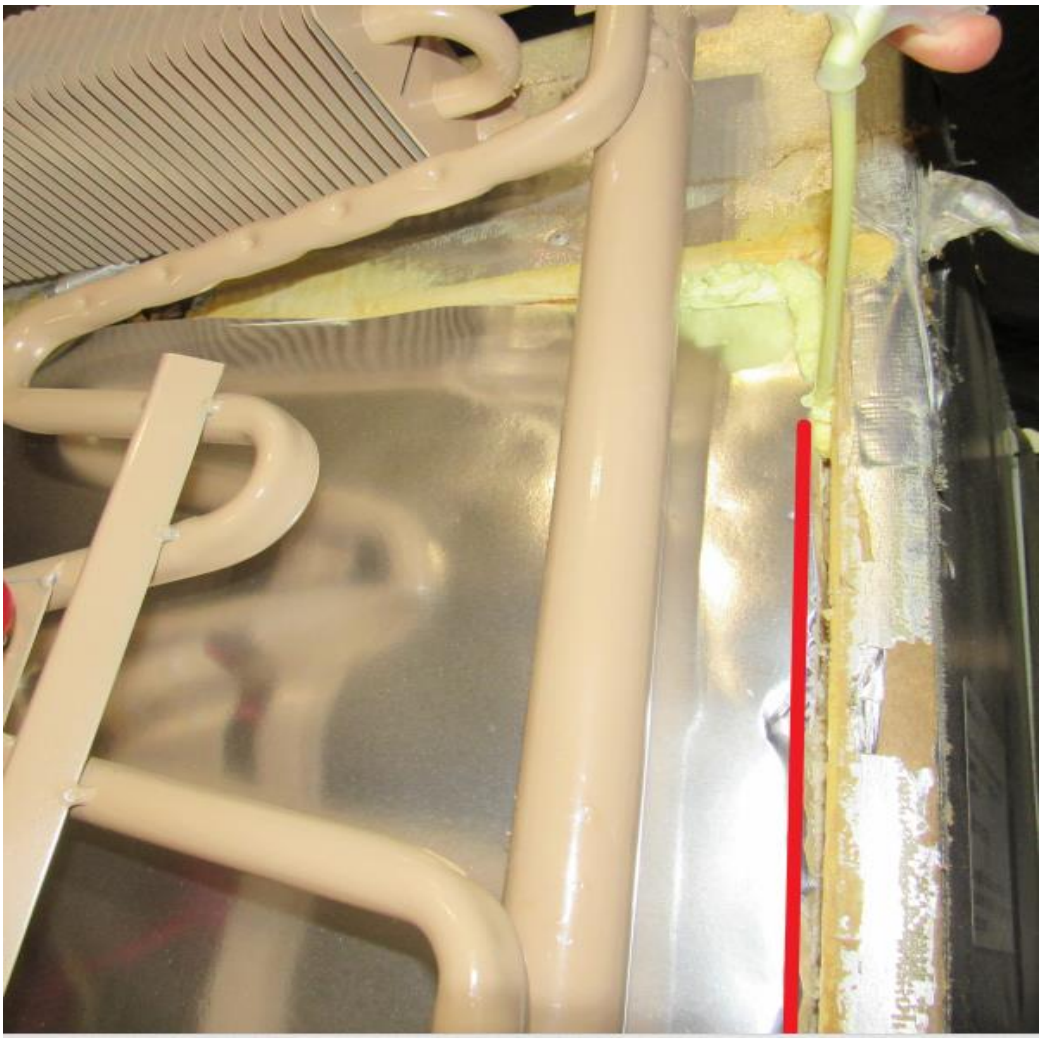
But do not *ever* drill new holes into the cooling unit plates as you will hit the cooling tubes causing a rupture. If part of holes are visible you can either leave them as is since unit will be sealed in the back or you can use white silicone caulk to cover the holes.

When holes are lined up, install 8 freezer screws (RA), using the supplied screws in the parts bag, pulling the unit tight against the back. Do the same with the refrigerator section fin (RA). Install seven screws pulling it tight.

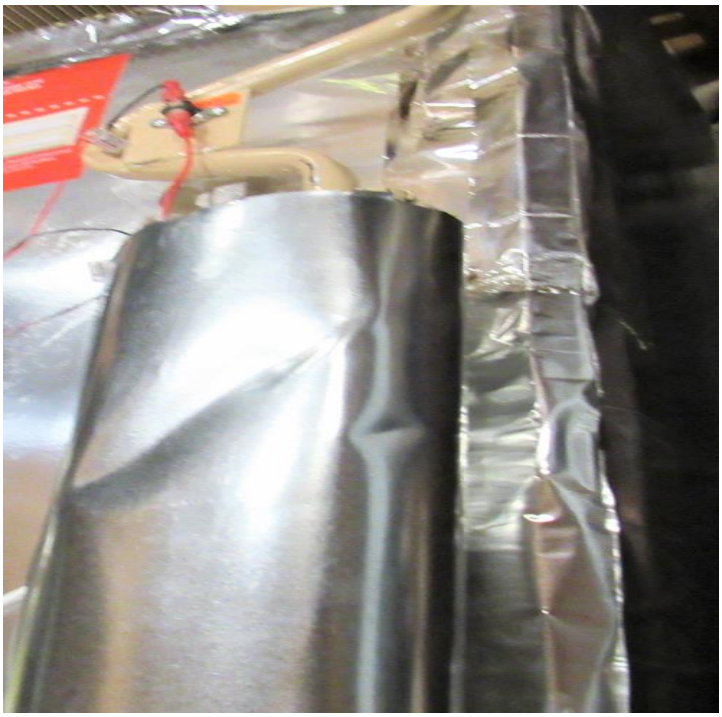
Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly

Lay fridge back down, 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.

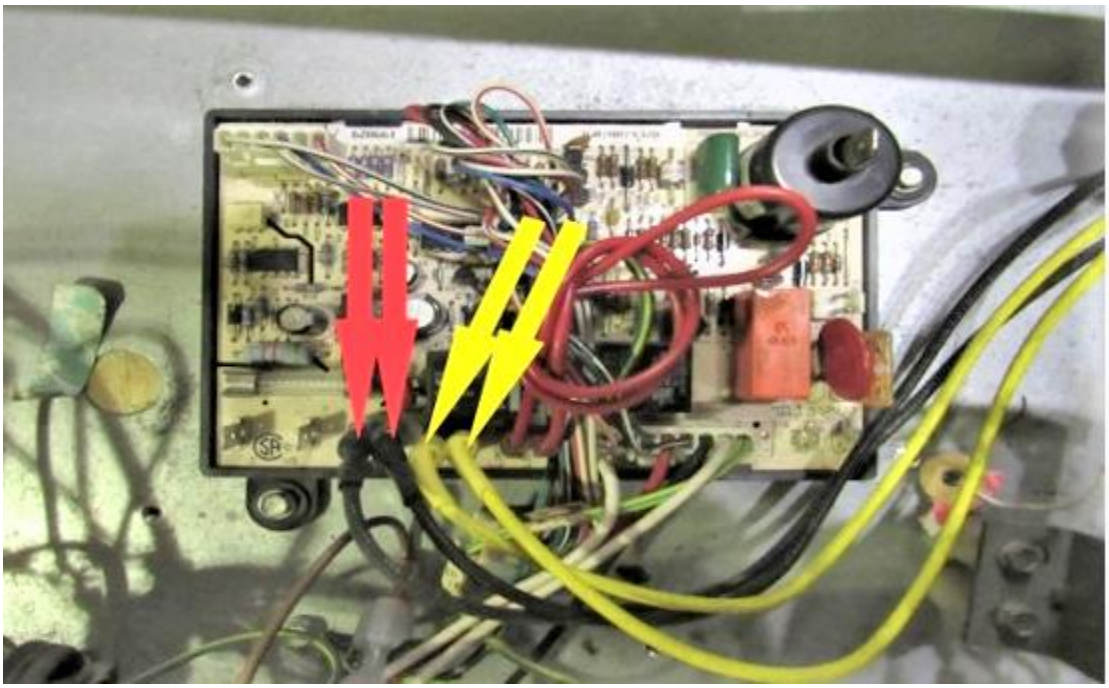
In some areas it might seem to be tight against the box, and in this area cut back enough foam on a angle to create a small gap off the unit so you can get your foam straw in to fill the void further down. We cannot stress enough on this step because if even a small 2" gap is left open it will not cool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



After filling all gaps with foam, follow up with covering the edges with the supplied aluminum tape. This does not serve as a seal but for cosmetic purposes only.

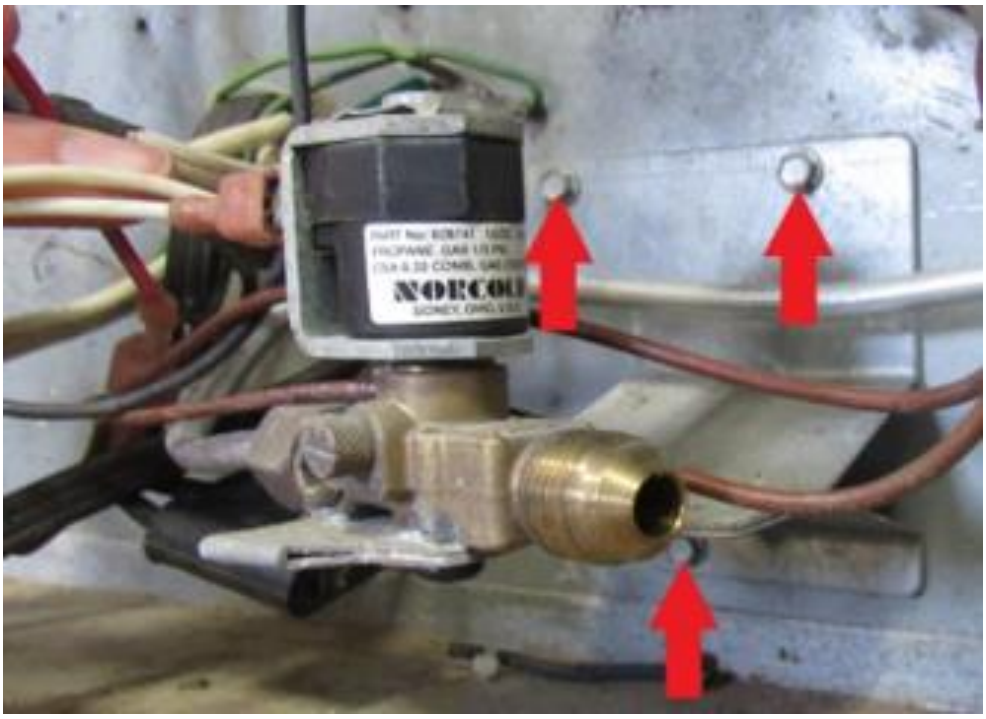


Plug the heating element wires into the board as shown. Black wires into the board spades marked AC HI LO (RA) and plug the yellow wires into the AC HI HI spades (YA). If you have compressed air now would be a good time to blow air thru the board area to clean any moisture or dust off the board

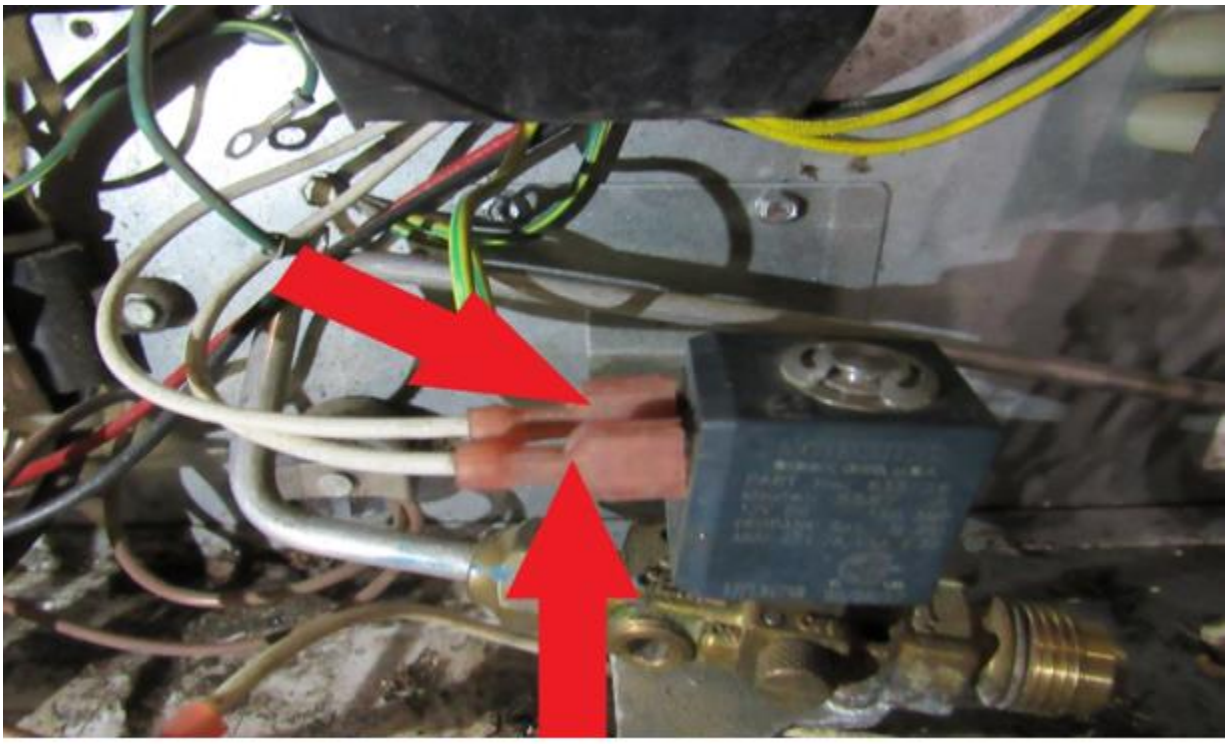


Install the board cover. Screw your board cover screws back in again (RA)

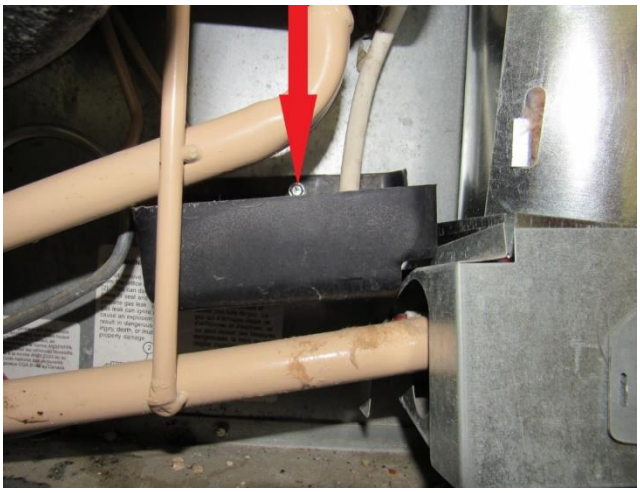
Install the three screws into the LP solenoid valve as shown.



Plug the 2 gas valve wires back into the gas valve (RA)



Install the defrost cup as shown, and secure it with a self-taping screw (RA).



Plug in the black 120v cord into the bottom left corner (RA) of the board

Plug the igniter into the board (RA) as shown.

If you removed the ice maker, skip the next step.

The four ice maker wires coming from the top have a brown, black, white and green.

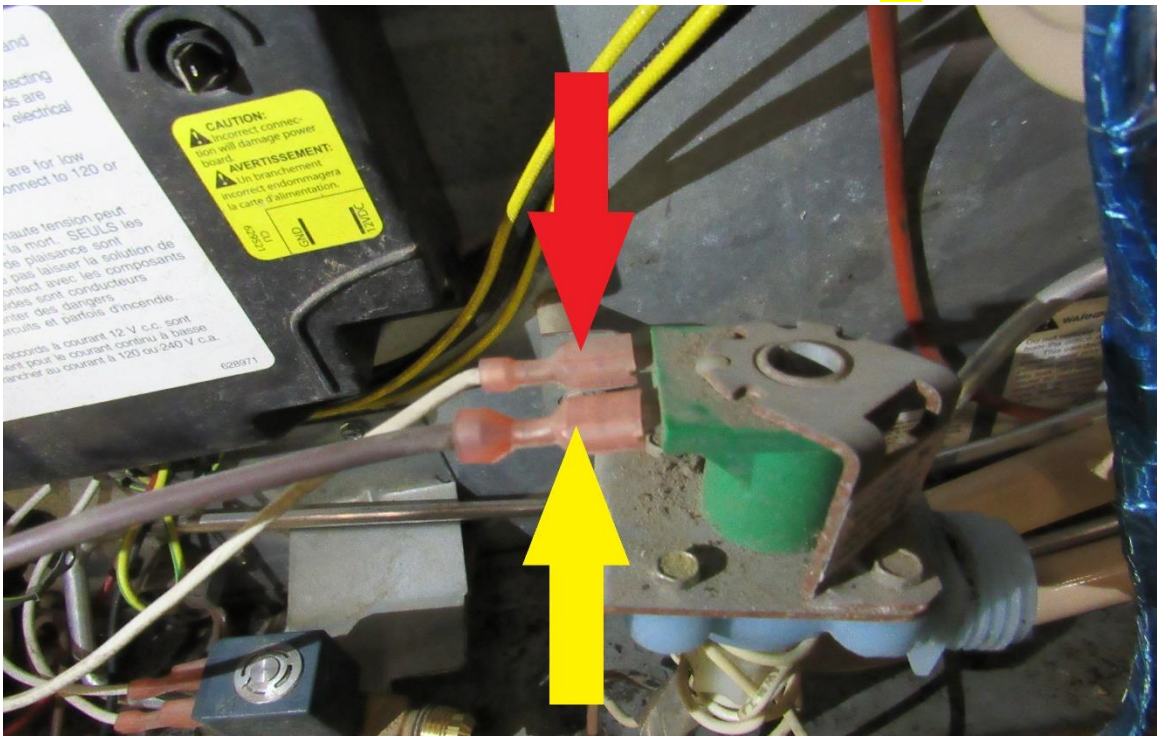
The green wire gets grounded to the box (RA).

The black wire plugs into the white ice maker power cord (YA).

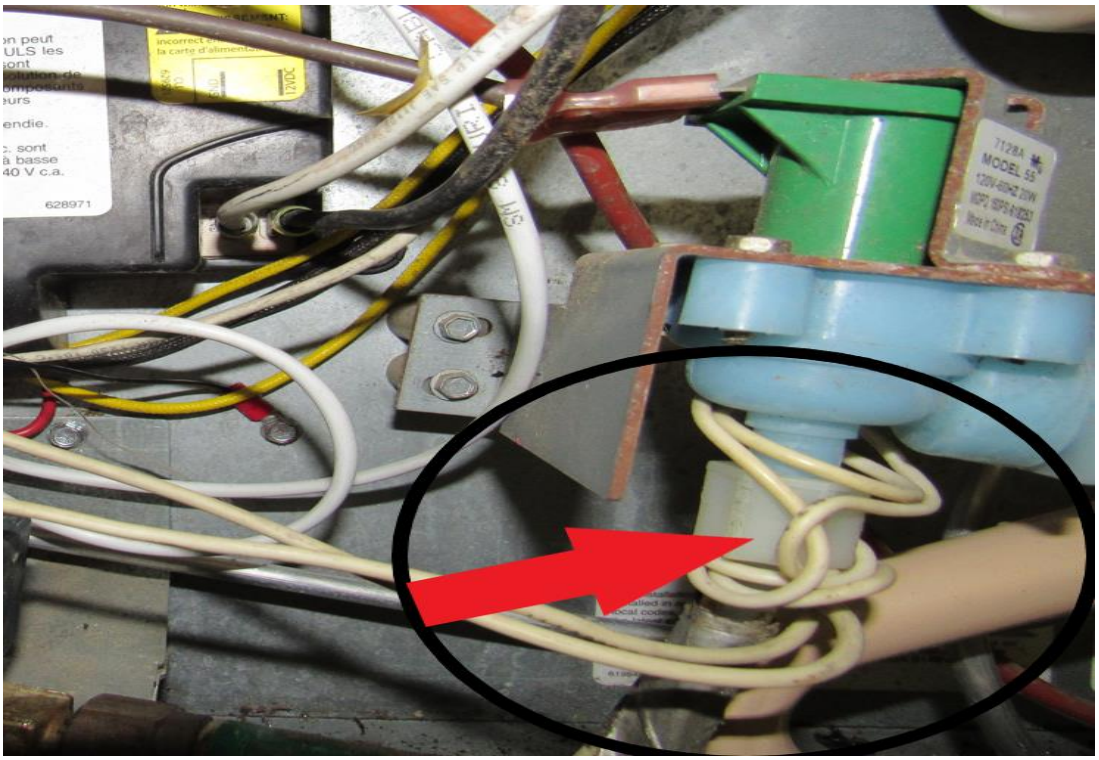
The white wire plugs into the white ice maker power cord (BL).

At times the ice maker plug in is split off the main board plug, and if that is the case then you will not have a white cord, but the hook up will still remain the same

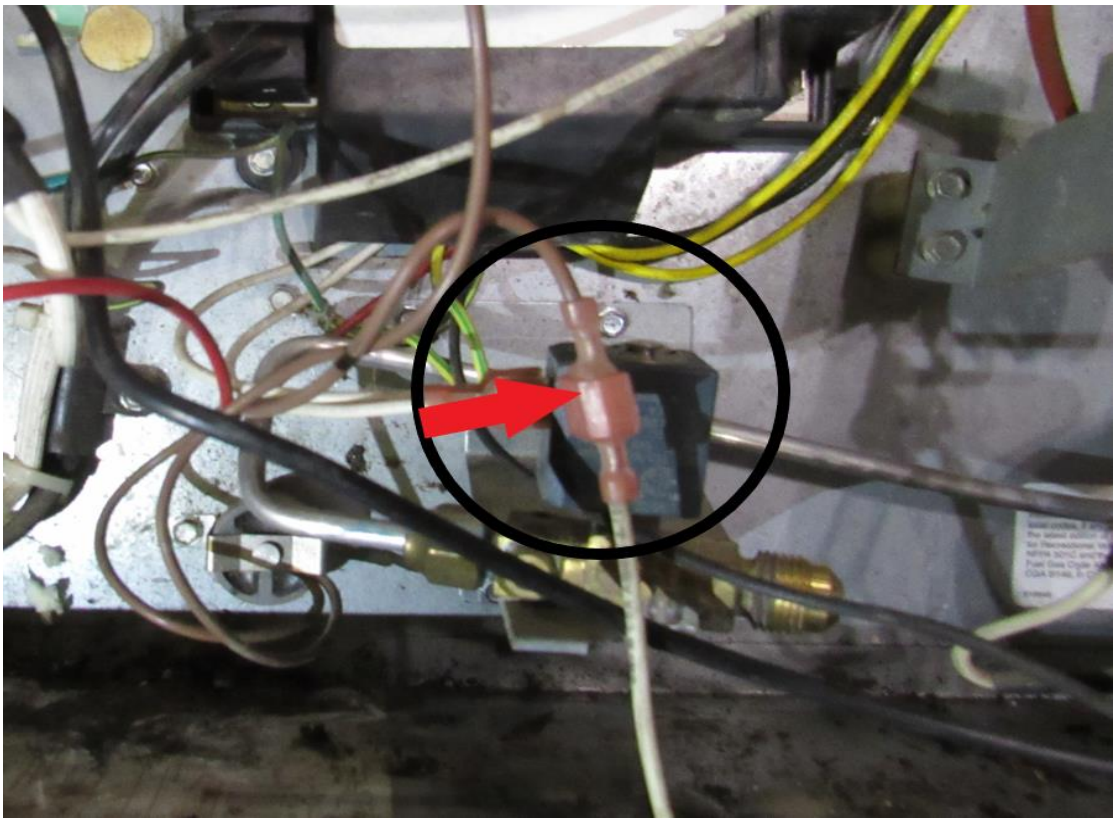
The white/or black power cord has a pigtail coming off of it and that plugs into the ice maker solenoid (RA), along with the brown wire (YA) as shown.



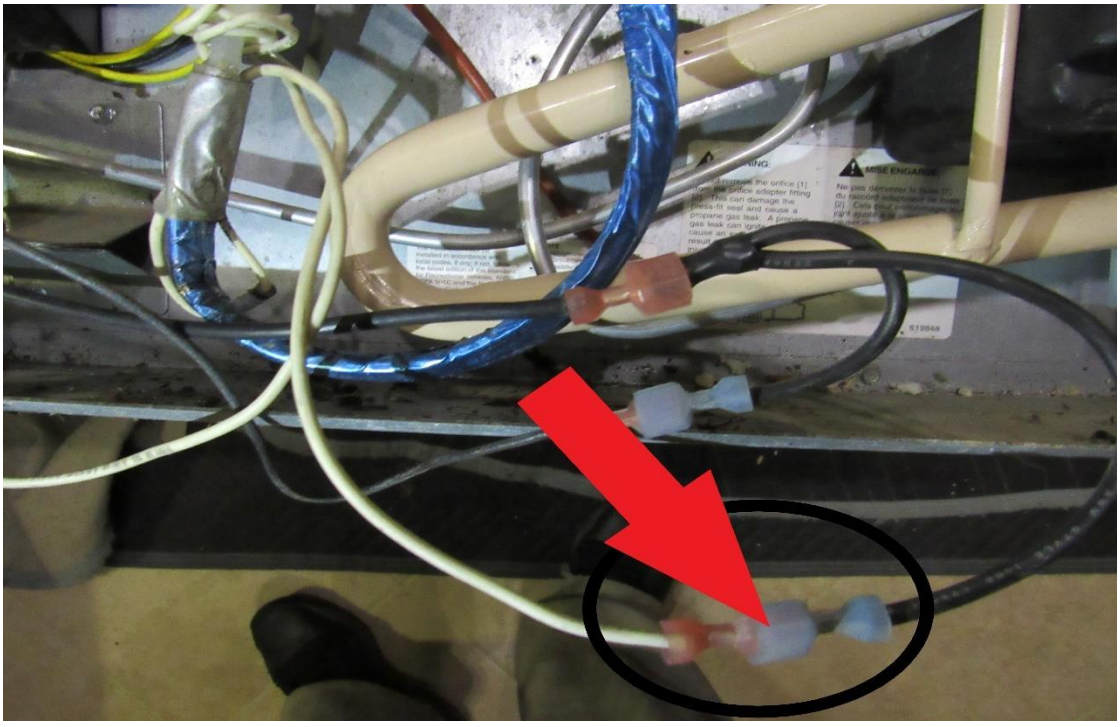
Connect the ice maker hose to the solenoid (RA).



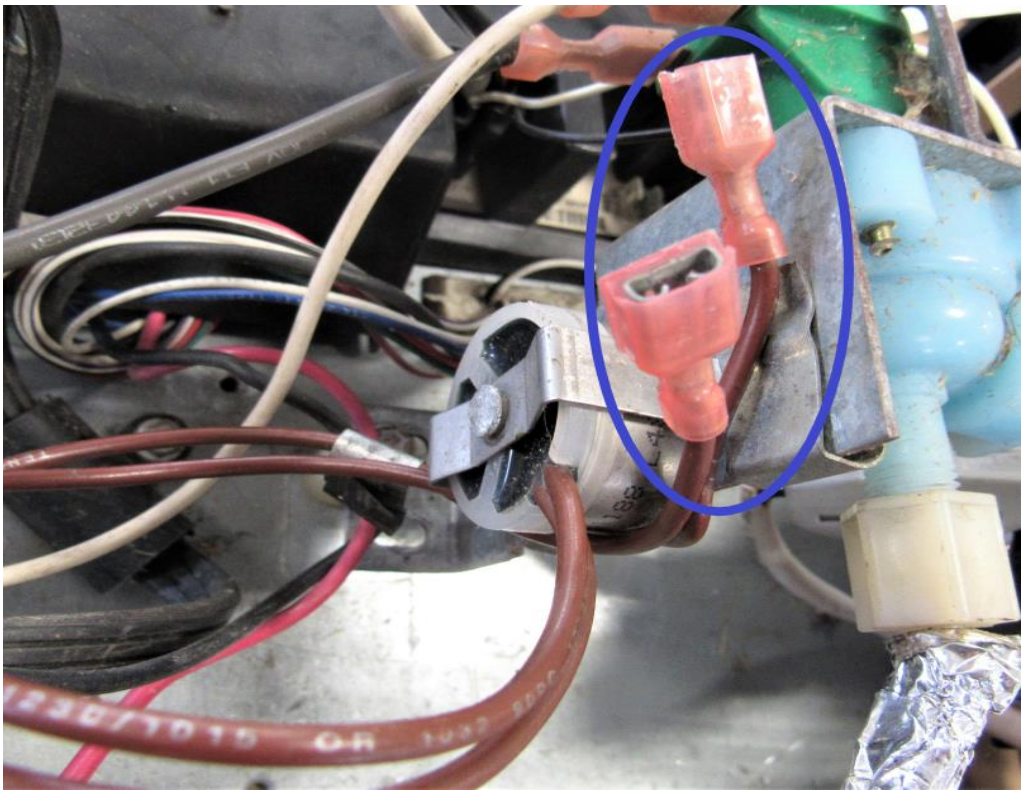
Now we need to connect the two white heater wires that run with the ice maker water hose. Connect one into the brown wire (RA).



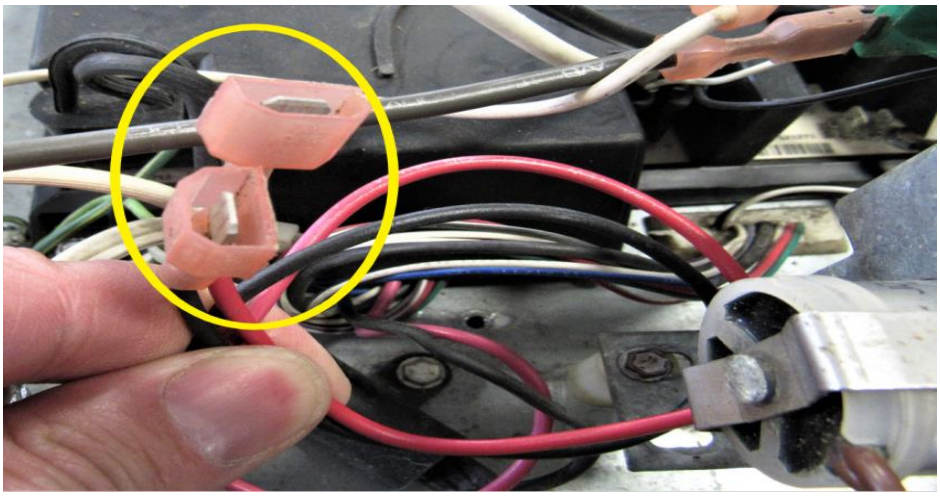
Connect the other to the black wire (RA).



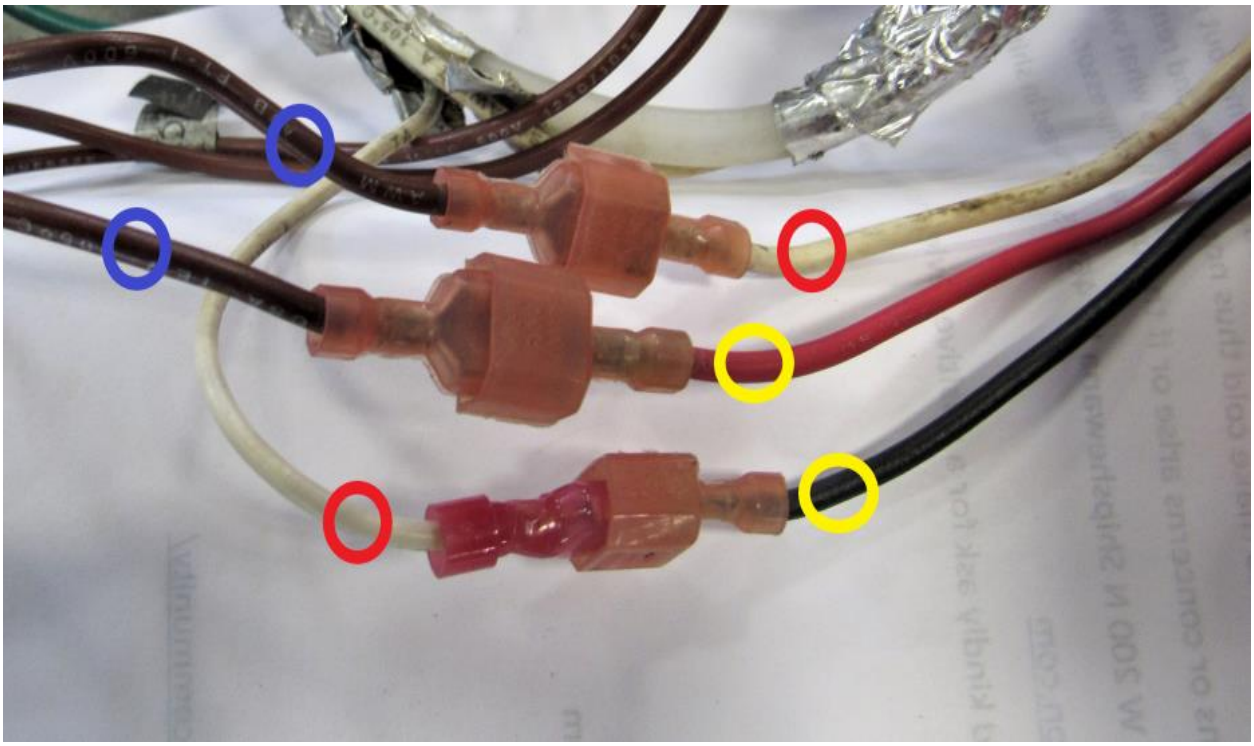
Or if everything was disconnected, this can get complicated, so you can use this as a guide to wire up your icemaker waterline heater as well, if you are not travelling in temps below 32F then this step does not have to be used. 2 brown thermostat wires blue circle.



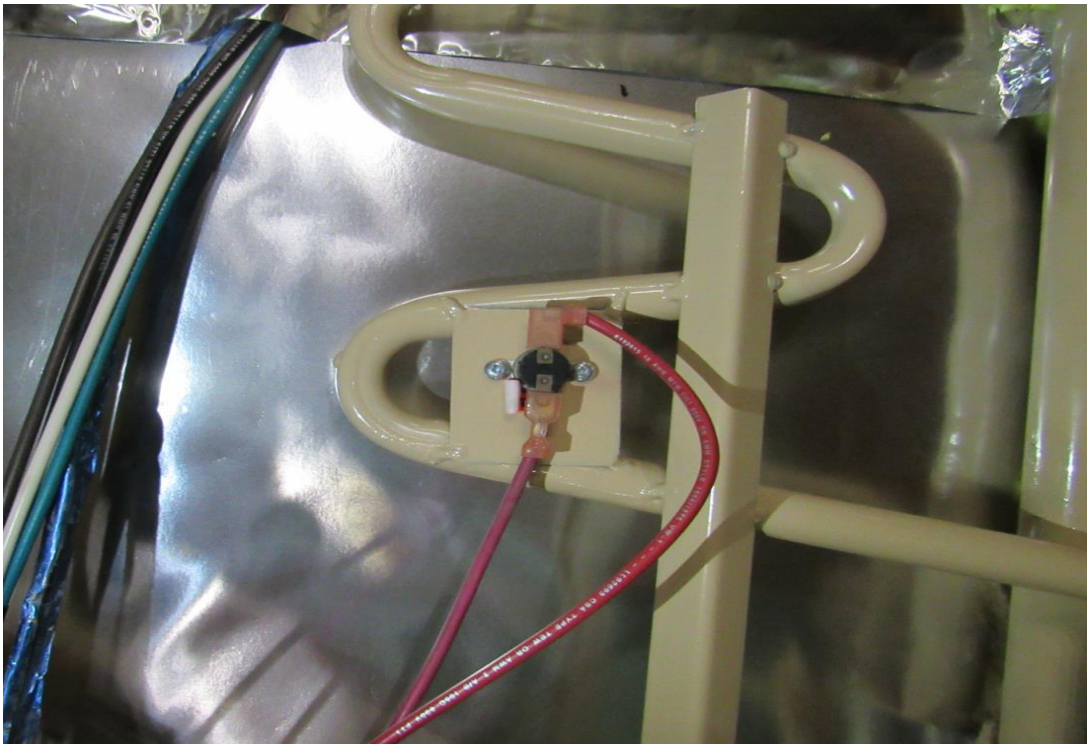
2 red and black 12V DC power wires coming from the board. Yellow circle, these are the same wires that took power to the 12V vent fans, originally these had a T on them to use for this purpose, if its missing go to your old unit and take them off as you will need these.



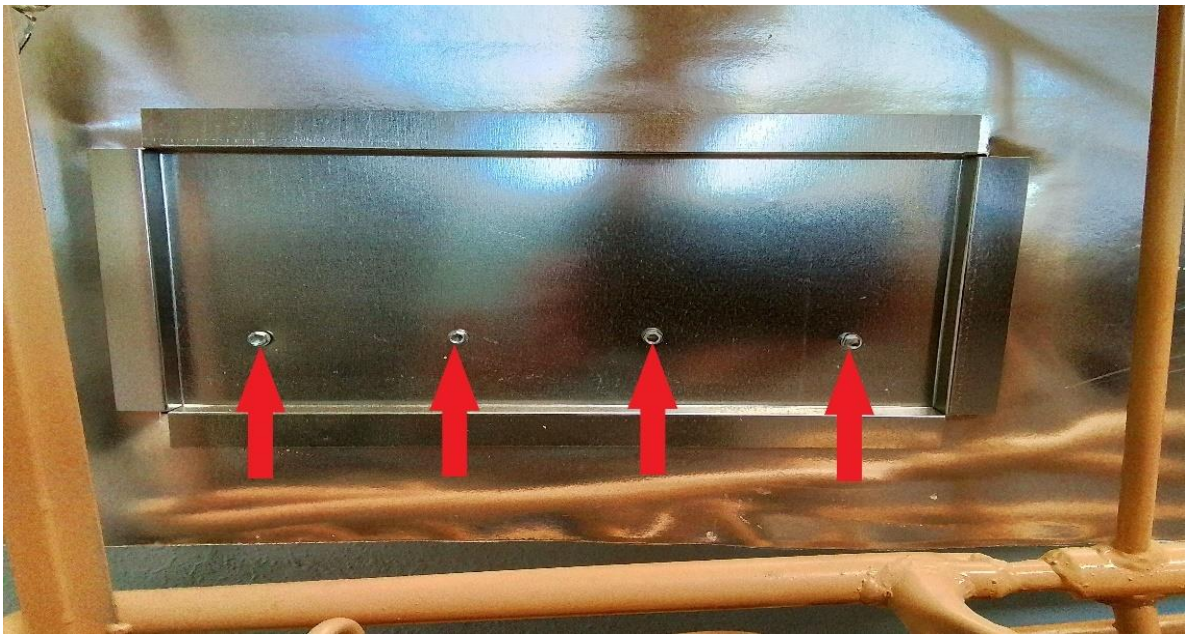
These 6 wires need to interconnect, wires are color coded to previous pics.



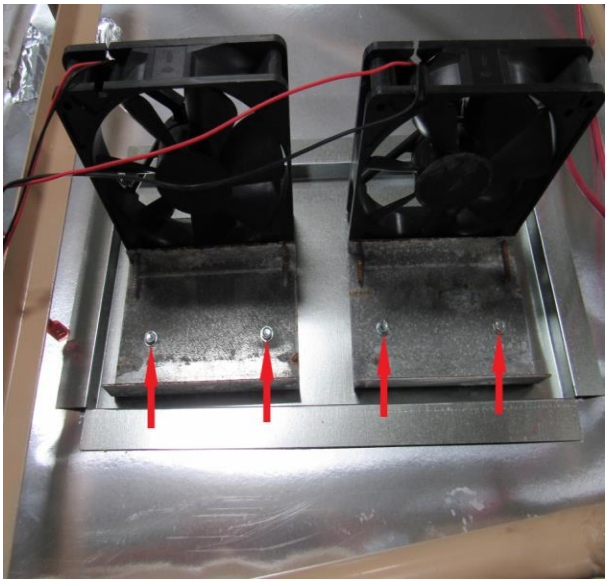
Mount the fan switch onto the plate marked fan switch using the 2 small screws taken out of the old unit, do not locate the fan switch up on the fin as the old one was

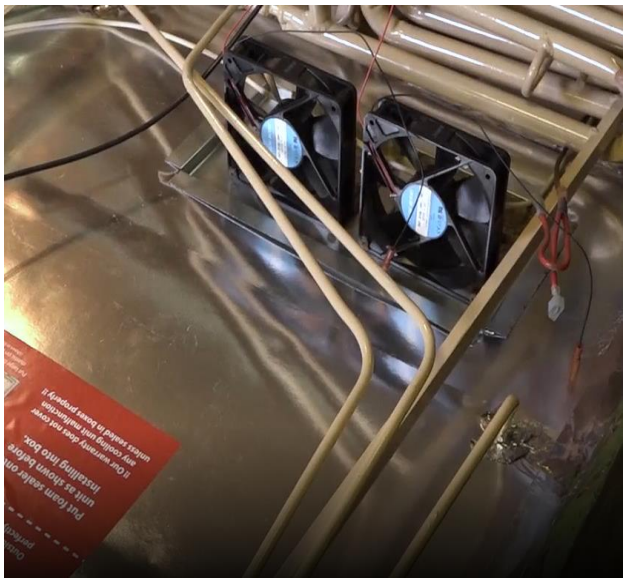


Locate your ventilation fans. Remove the 4- ¼" screws on the fan bracket (RA).

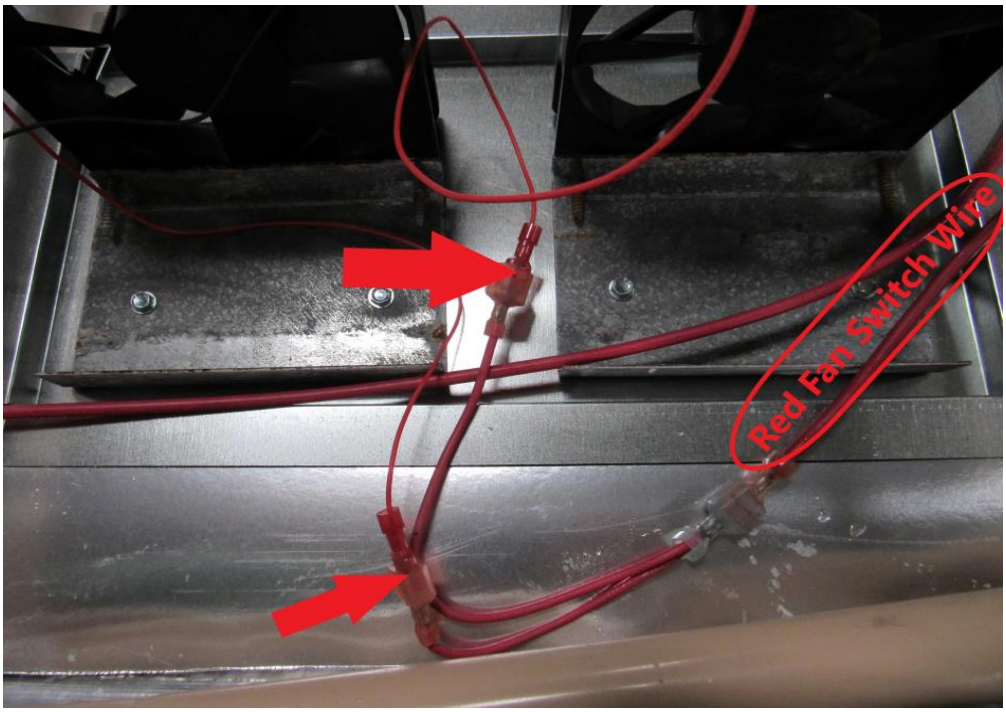


Place the fans facing up and install them using the provided screws (RA). Make sure the sticker of the fans are turned up, use only the holes that were there from the screws taken out do not make new mounting holes into this fan plate.

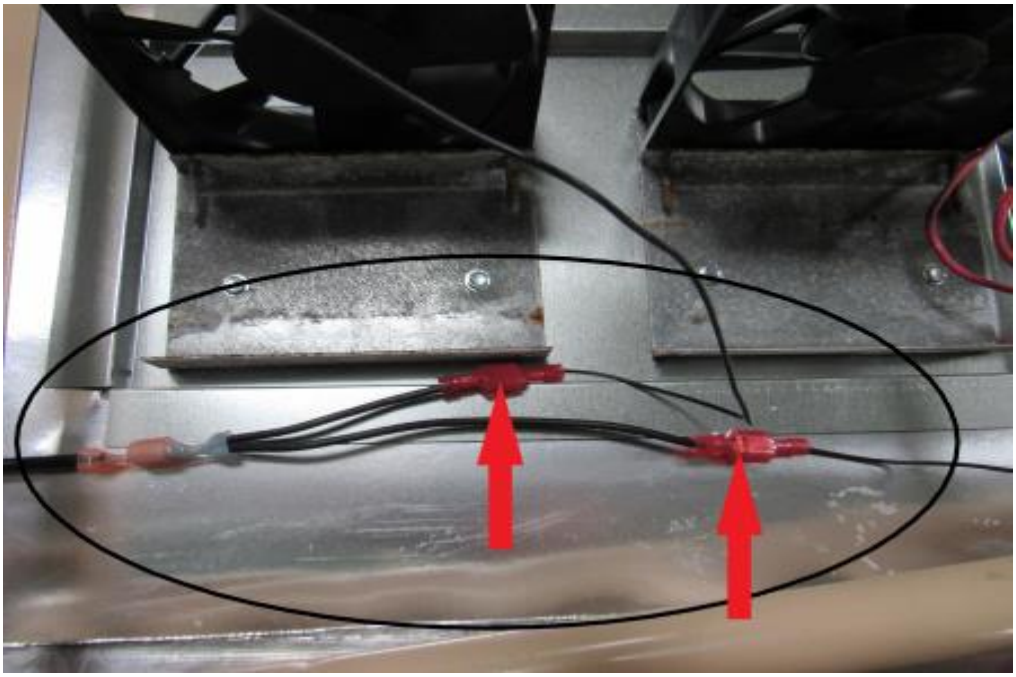




The red wire coming from the fan switch has a 3-way split. Plug the red fan wires into that as shown (RA).

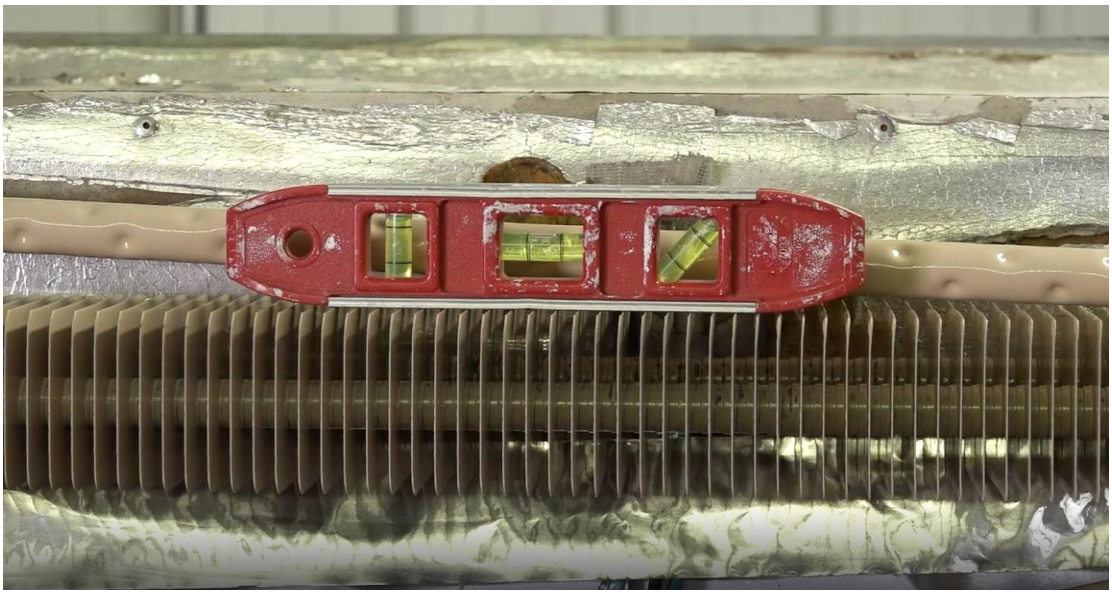


The black wire coming from the controll board that originally powered the fans gets plugged into the fan black wires as shown (RA).

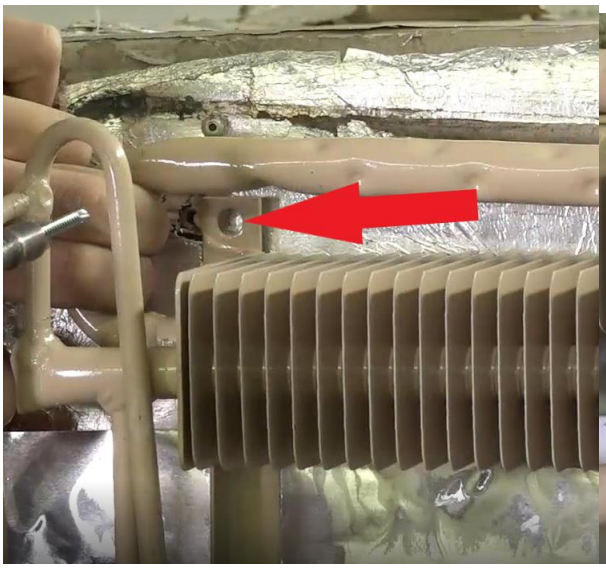


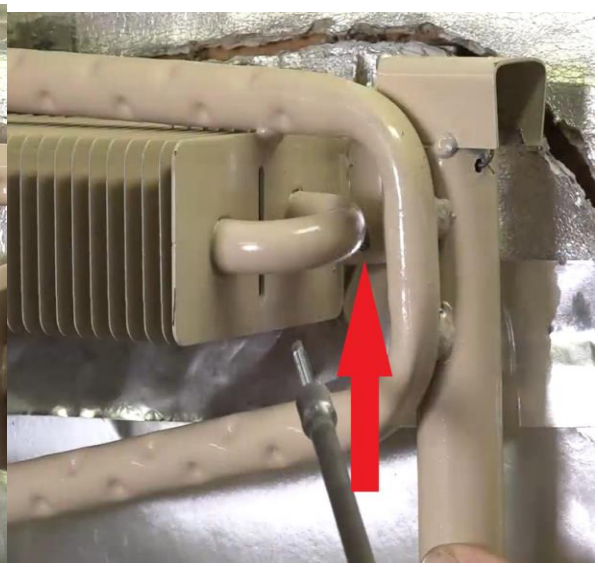
Zip tie any loose wiring including your icemaker wiring and hose, fan wires, and control board wiring.

Stand the fridge back up and level the top fin with the top of the box, if its off then you will need to remove the bottom 2 mounting screws you can push the unit to the side it needs to go to make it level with the box, normally it will not take much to get it close, it does not have to be perfectly level to the box, as long as the bubble of the level is within the lines you are good. Do not remove freezer or fridge screws to move the unit as these screws need to stay tight, and pushing the unit to the side will not put extra pressure on the tubing, remember these units are made with thick steel tubing.

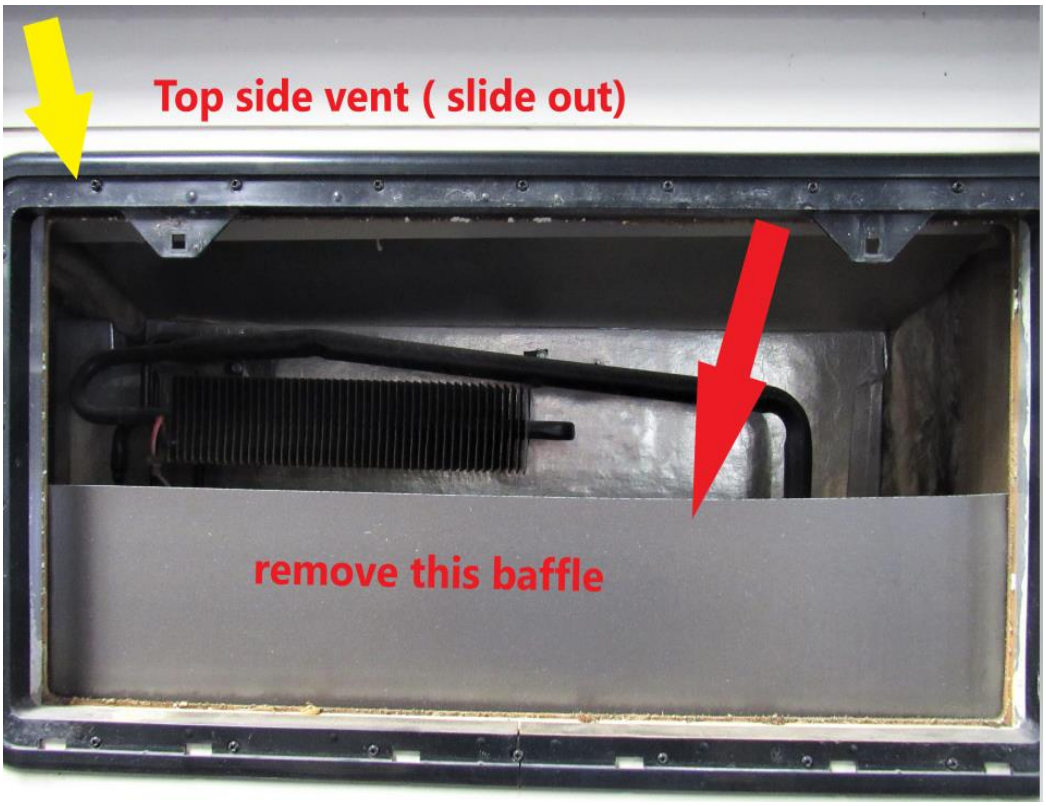


after you have it where you want it add the top left and right screw to the box (RA)



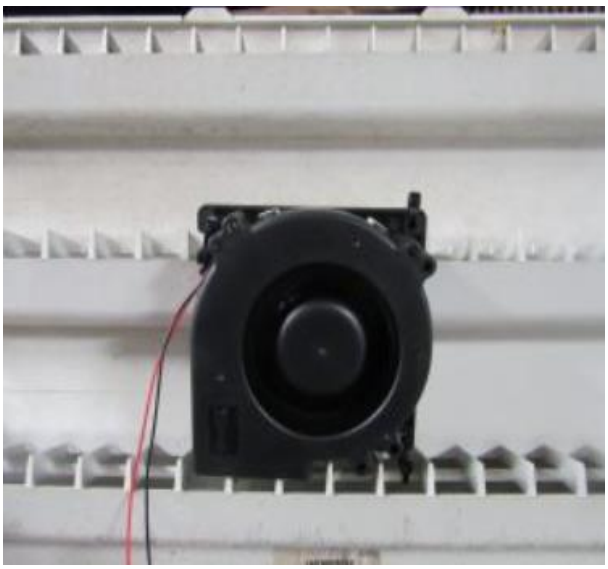


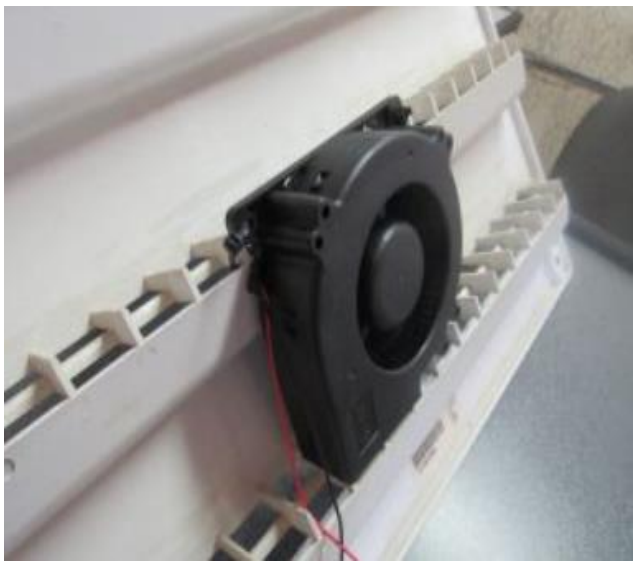
Before installing the fridge back into the cavity, check to make sure wall insulation is secured and this is a good time to sweep or vacuum any loose debris. If this fridge is installed into a slide out then make sure and remove the top side vent (YA) baffling (RA), as you will no longer need this and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



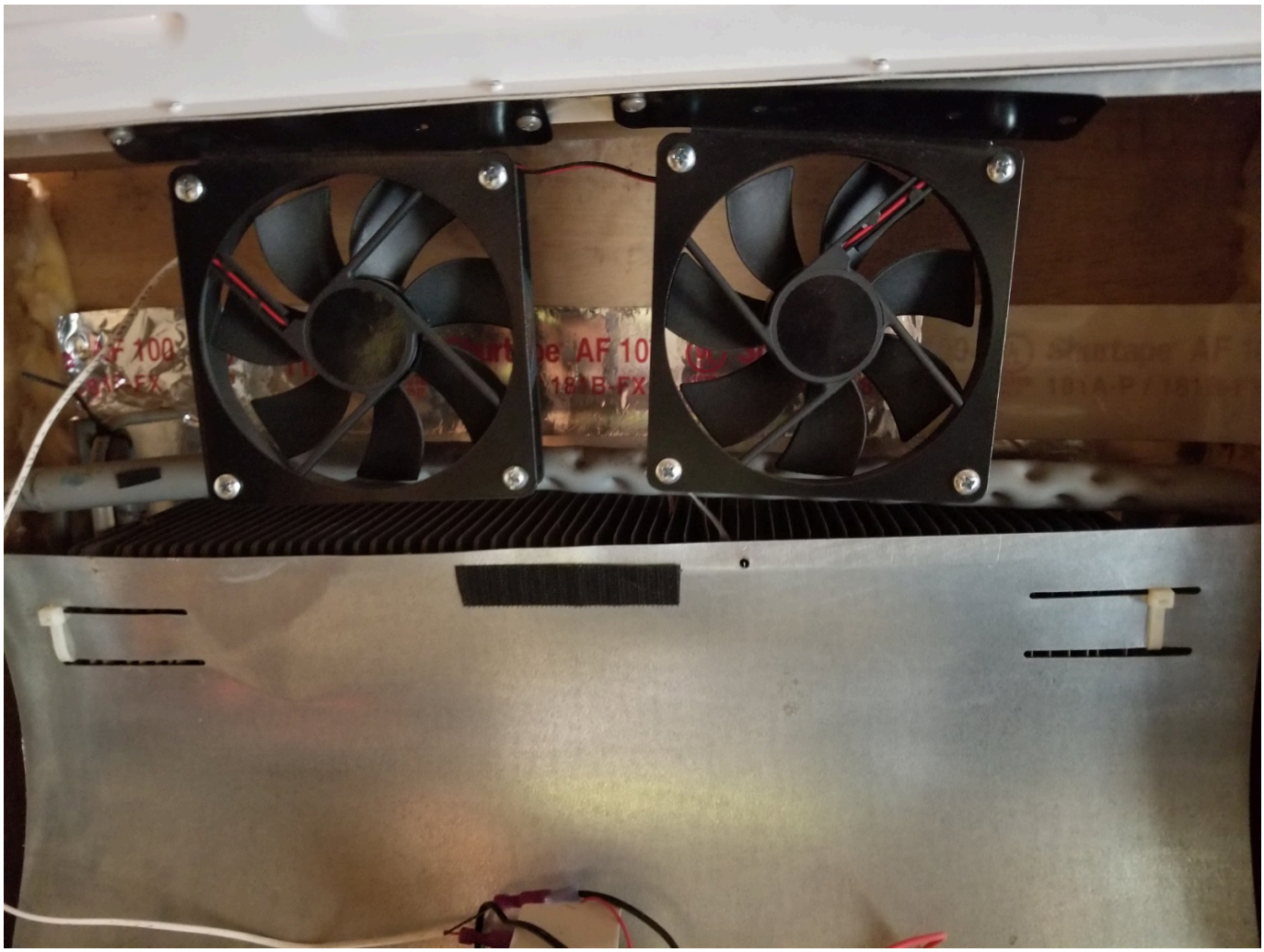
It needs to look like this, wide open vent

You will then be required to add a slideout fan to your top side vent to force the hot air out that's being pushed up from the fans below the vent, (this is required on all slide out models to be covered in our warranty)

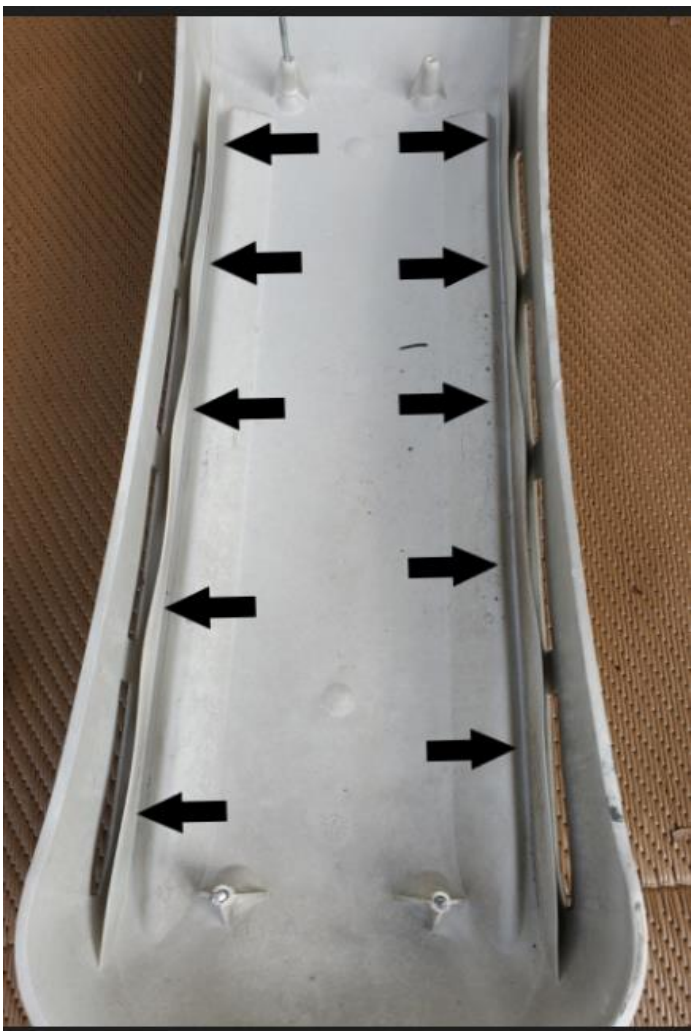


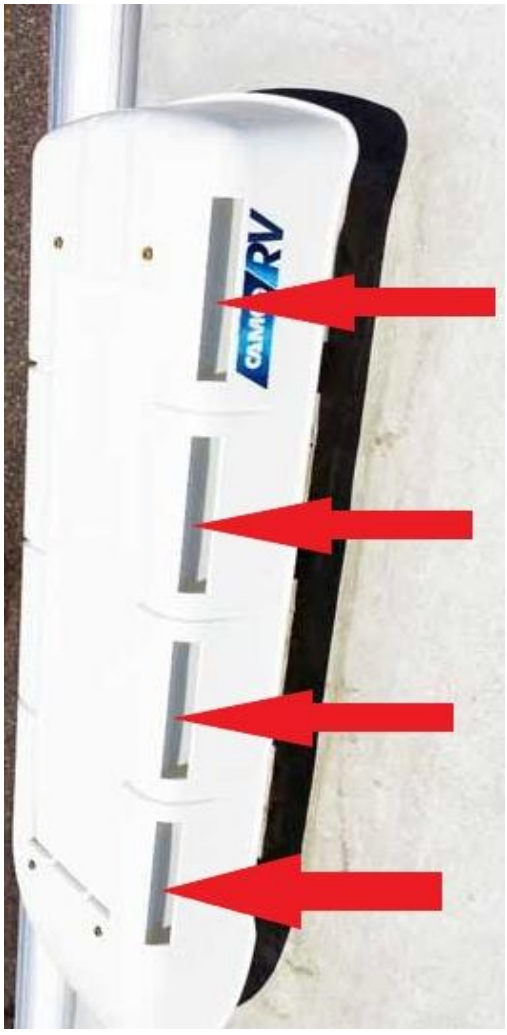


Above is only style, here is another



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.



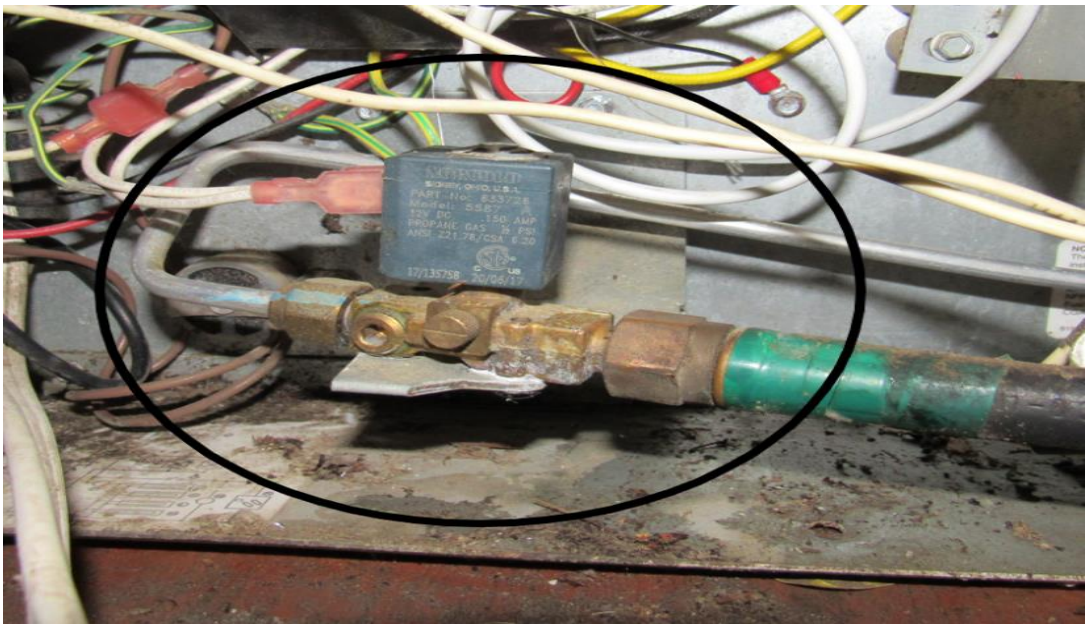


Now you're ready to slide the refrigerator back into the cavity. Once it's started it helps to have someone outside to watch as you slowly push the fridge back into place, making sure the gas line is out of the way. Attach black trim pieces on top and bottom. Install mounting screws (RA)on the top and bottom.

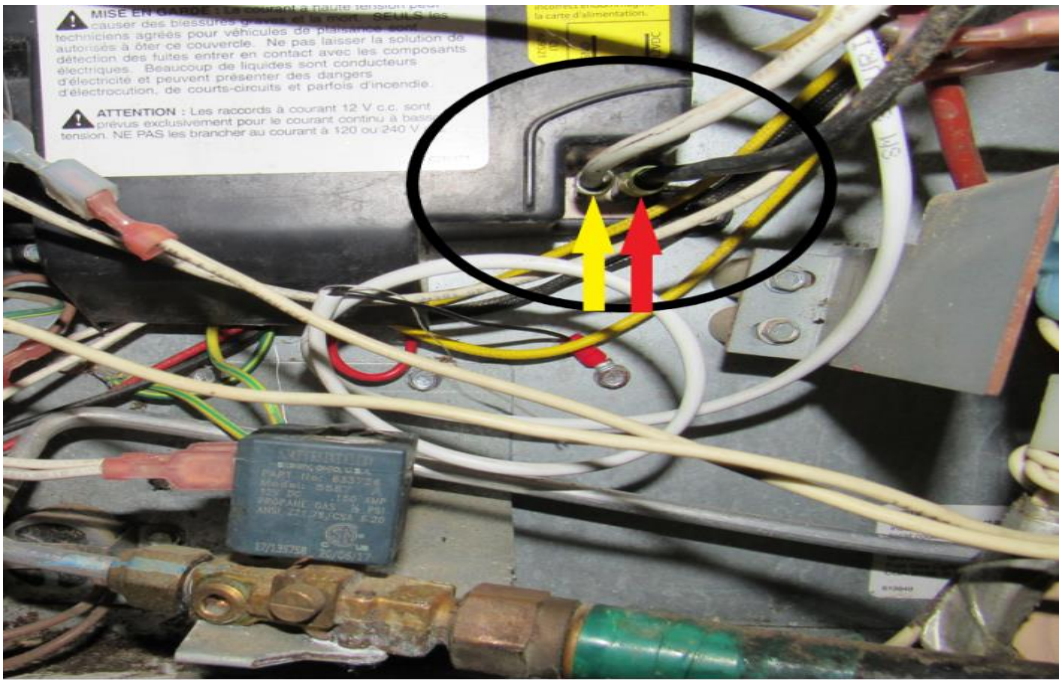
Now we are ready to finish the outside. Put the two mounting screws (RA) back in place. Or if your coach is a Winnebago, put the four bolts back in.

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

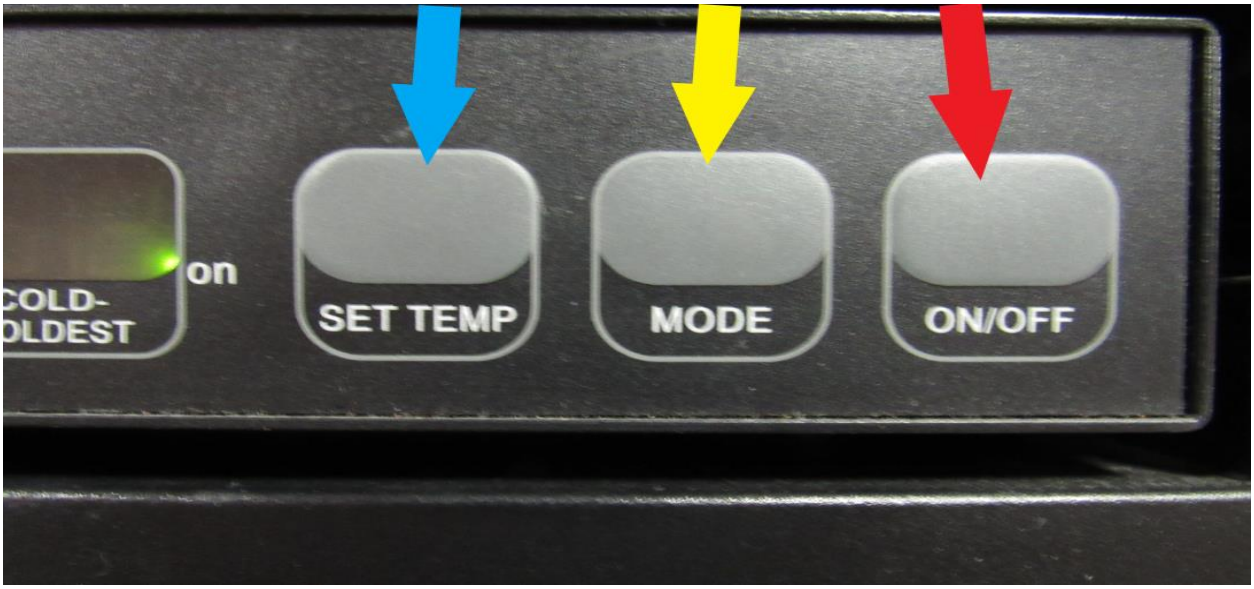
Connect the LP gas line to the LP solenoid, turn on the LP at the tank and leak check with soap and water. MAKE SURE YOU DO NOT HAVE A LEAK before continuing.



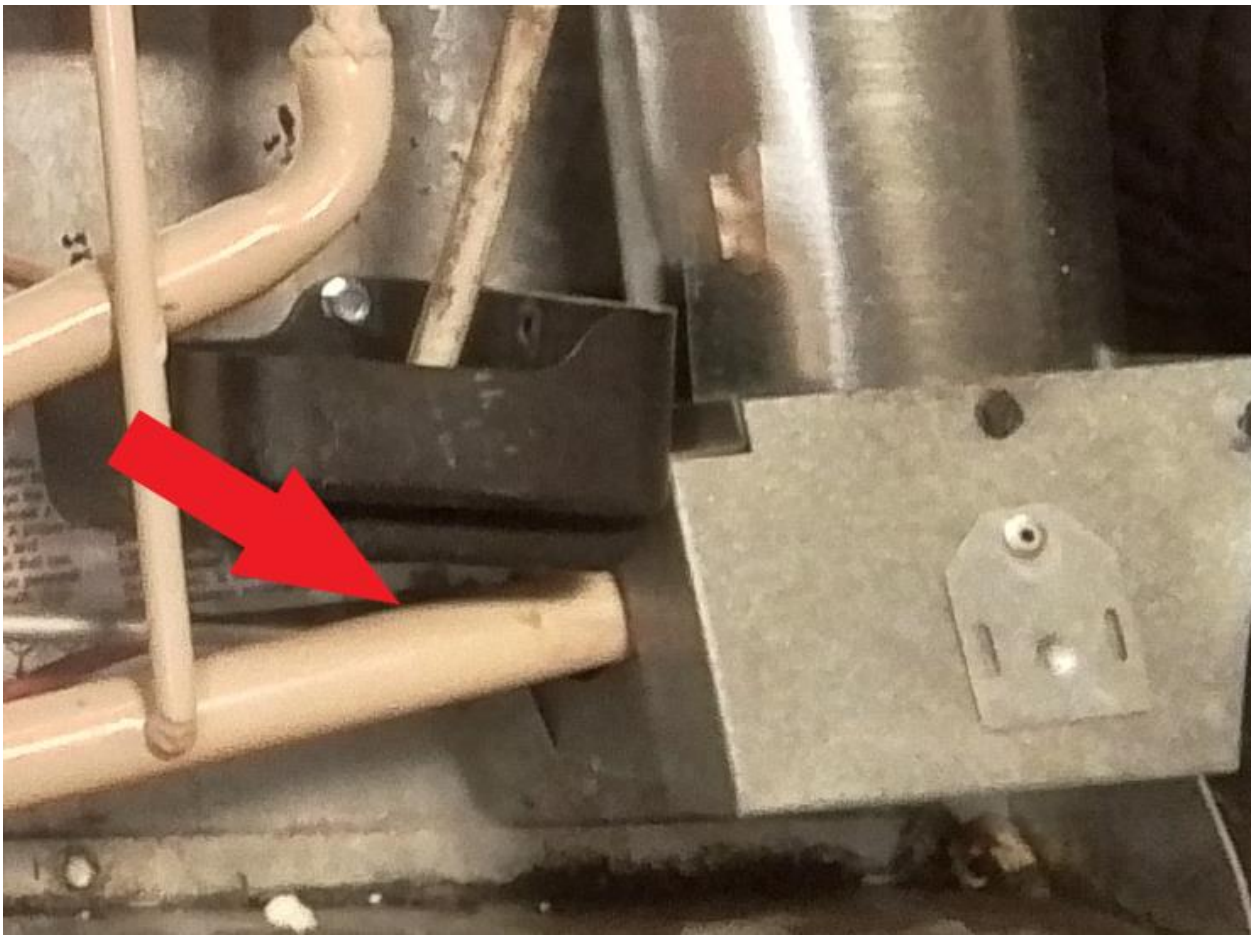
Plug the 12v wires from your coach into the board, Negative is on the left (YA) and Positive is on the right (RA).



Go to the inside of your RV and turn your refrigerator control "ON" (RA) now push the mode button (YA) and set it onto Auto mode. You can now adjust your temp setting (BA) to your desired temp, we recommend setting it onto 4 and then after approx. 24 hrs. adjust up or down to your desired temp inside the fridge. Food zone is 38F to 40F, and in the freezer 0F to 10F, if you have it much colder then 38F your ice on the fin will accumulate very fast.



Keep the electric cord unplugged for now, once the LP burner is lit go back out and check for a gas leak (RA) this gas line nut will be partially hidden but can still be seen and checked with soap water.



Now plug the electric cord into your plug in, and the eyebrow board should switch over to AC, if you have a amp clamp the total amps between the 2 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.

Fin fan Operation

If you installed the fin fan, it should remain running whenever the fridge is powered on.

The thermistor should be located on the 2nd fin from the right side.

We highly recommend using a digital wireless thermometer to monitor your inside fridge temps. Temperature 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 similar to this type.

Use digital wireless

DO NOT USE

Clip the sensor for the fridge underneath the first shelf beneath the fin, place it so the sensor is centered, front to back and side to side (RA). If it's clipped underneath it will be out of the way and shouldn't interfere with storage.

The same applies to the freezer, clip the sensor underneath the shelf, centered from side to side, but have this one more towards the back of the freezer.

Troubleshooting

Error Codes:

"NO FLO" or "No FL": #1 LP gas is not turned on or there might be air in the line. Turn the refrigerator off, wait a few seconds, and turn refrigerator back on, #2 the igniter probe is to close or too far away from the burner tube. #3 your board has gotten wet and needs to be blown out with compressed air.

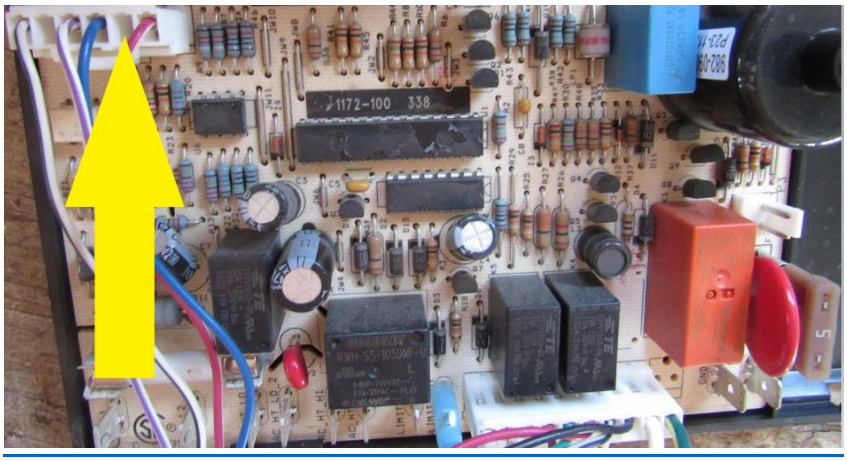
"NO CO "Code

This is a code is the fridge does not drop in temp in 4 hrs., make sure your fans are running and the cooling unit is getting warm in the back, see temp chart for temps and location.

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

-Remove board cover and if you had to unplug any wires in order to remove the cover, plug those back in as you want everything plugged in the way it would normally be. -Take an 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 (YA) 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.

Resetting Control Board



“NO AC” CODE

#1 your electric plug in is not hot, check your breaker box, make sure you do not have the fridge plugged into the inverter or icemaker power outlet

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’s 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 your thermometer inside the fridge, unclip the thermistor from the fin and leave it hang into the box for approx. 1 hour 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 working, 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 until a “CL” shows. Let the refrigerator set like this for a least 5 minutes, then shut fridge off and turn back on and the fridge will be ready to operate again.

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