Dometic 6/8 cu Fridge Gas/electric Installation Manual

RM2852, RM2853, RM2862, RM4872, RM3862, RM3863, RM3962, RM4873, NDR1062, RM2652, RM2653, RM2662, RM3662, RM3663, RM3762, RM4672, RM4673, DMR702

INSTALLATION MANUAL

RV Cooling Unit Warehouse

rvrepair1029@comcast.net

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



1 or 2

And enough time to think things thru at times, so hang in there until the end and don't give up. It will all be worth it because you will have a cold fridge!!



Us at RV Cooling Unit Warehouse try to build these cooling units so that the install is as easy as possible. Making them DIY friendly. But please be aware though, that our upgrades might not look quite the same as the original. The brackets, frames, and holes in the plates might not always line up perfectly as fridge boxes can vary at times. So, some modifications, such as shaving the foam or tweaking the cooling unit, might need to be done to complete the installation. But keep in mind, these cooling units are made out of thick steel tube and plates so if some minor tweaking or bending is needed, you can do that without harming the cooling unit. We try to be as thorough with our install manuals as possible, but if you need help with something during the install, feel free to send us an email at
rvrepair1029@comcast.net with your question, along with a picture to help explain what you are facing, and we will help you to the best of our ability.

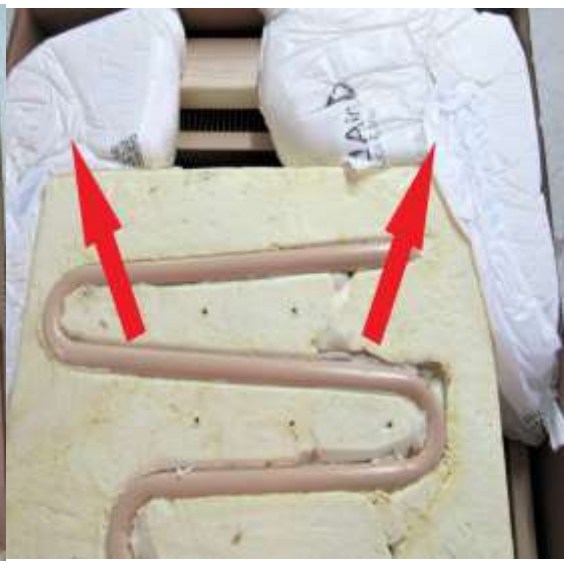
David Force

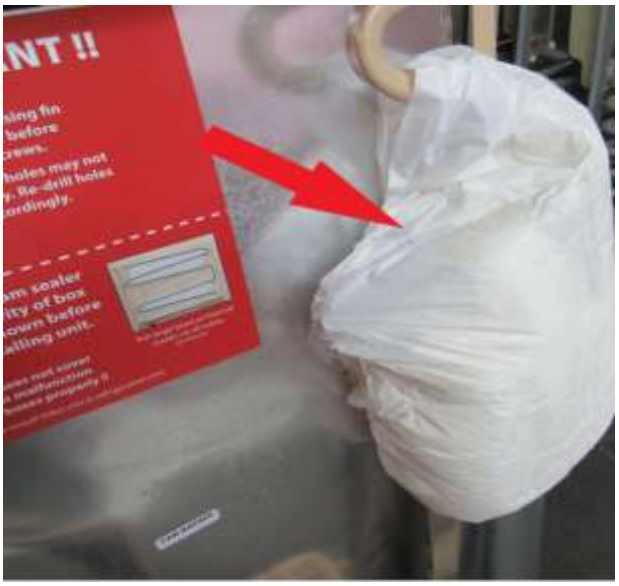
Please read through these notes before starting:

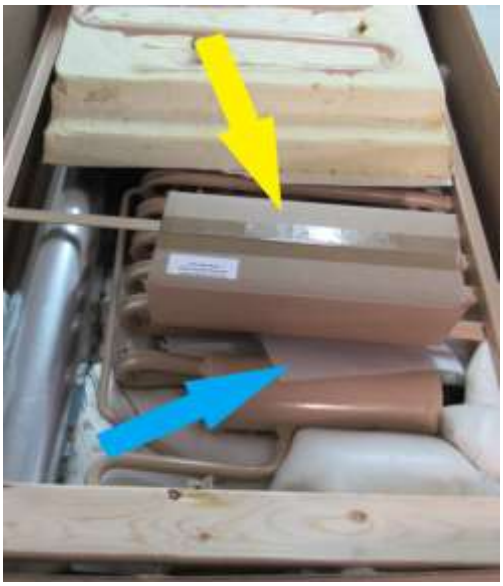
- **Pages 6 thru 25:** cooling unit and board removal and box prep
- **Pages 26 & 27:** Fin fan installation
- **Pages 28 thru 31:** heater, mounting new unit into box
- **Pages 32 & 33:** applying foam and tape
- **Pages 34 thru 40:** attach rear mounting screws, board hook up
- **Pages 41 thru 45:** Rear vent fan, slideout, proper venting
- **Pages 46 thru 50:** re-install fridge back into cabinet, final hook up
- **Pages 53thru 55:** troubleshooting, diagnostic test, FAQS

- 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.
- **With this model this is very important:** This cooling unit covers multiple different models with multiple different boards. Before you take any wires apart it's always a great idea to take pics of how they were. That makes it easy to look back in case something is not quite clear. We cover only one of the most popular style boards, if yours does not look like this do not be alarmed, nothing you are installing will change the boards hook up, so how you take apart is how it goes back. This manual does not show this in a ice maker model as this can get misleading, here again if you do have a icemaker then nothing changes in the wiring, how you take apart will go back the same as before. If things are mentioned but not shown it is because of the great variations in box style and almost impossible to show all styles but the idea or how to remain the same.

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 (RA) and so this needs to be removed some before and some after unit has been taken out of the box.



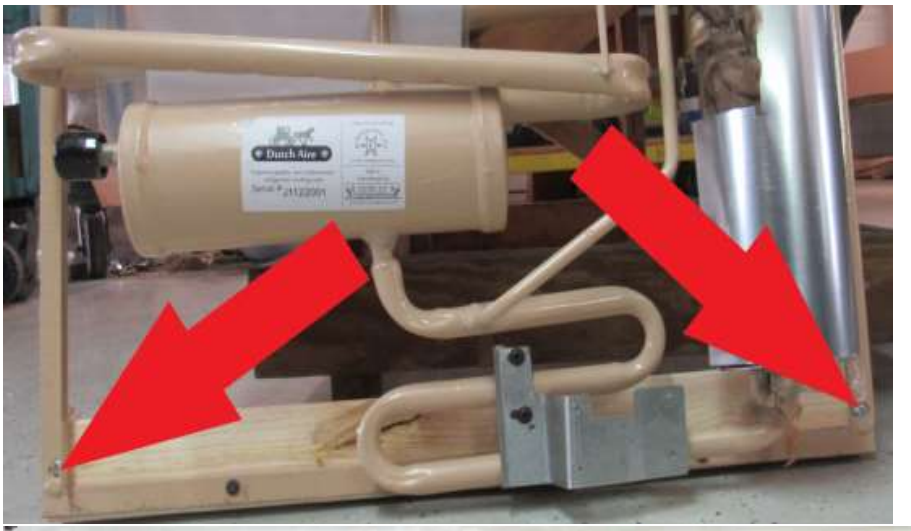




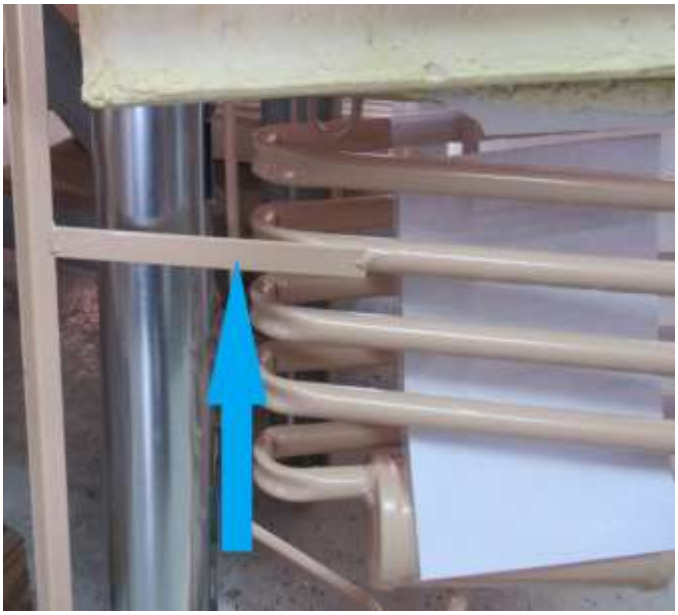
Install Parts Box (RA) and warranty form (BA)

Side frames may be slightly bent in shipping at times which is no problem as we intentionally make these frames to flex so it does not break in shipping

There are 3 shipping braces, 2 wood braces must be removed (RA)



The steel brace does not need to be removed (BA)



Begin by covering 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.

Remove the coach 12V wires from the terminal block. Take a picture of these wires for future reference. Color of these wires will vary from coach to coach

The wires ends are not insulated so use a piece of tape or a twist cap to protect the end of the 12V + wire. This will keep it from accidently touching a ground and blowing a fuse. It will also let you know which one is the 12V + wire once you go to hook everything back up at the end.

Next unplug the 120V power cord from the wall outlet.

After you have made sure that your LP gas tank is shut off, remove the gas line from the burner assembly.

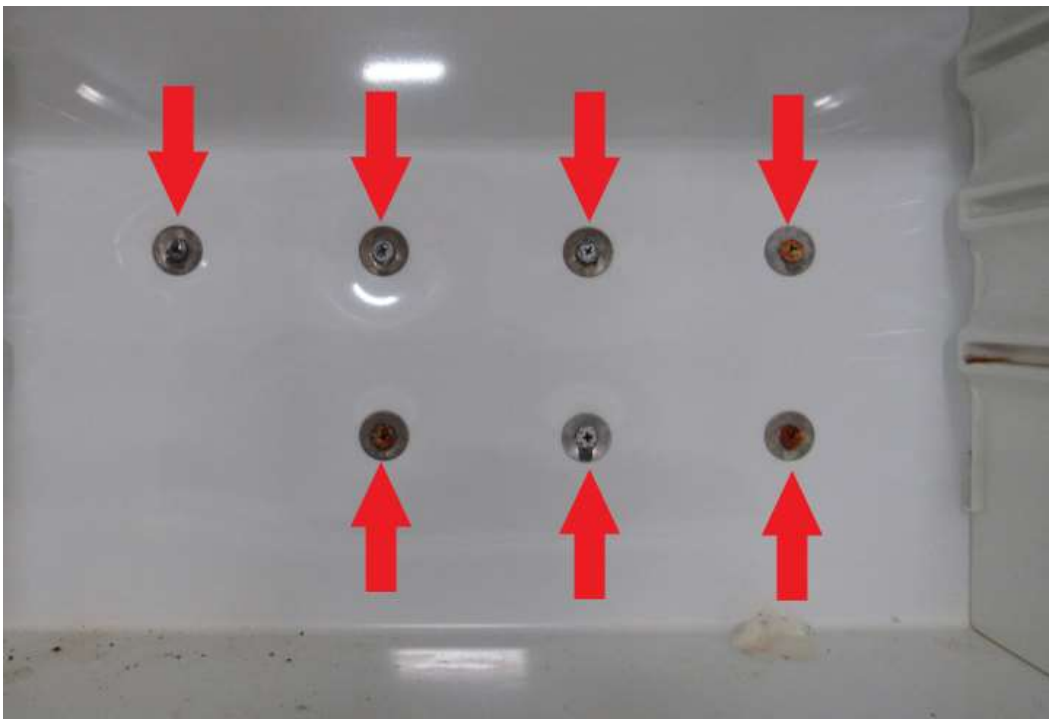
Next, remove the mounting screws from the back side of the fridge. Usually there are two screws but at times there may be more.

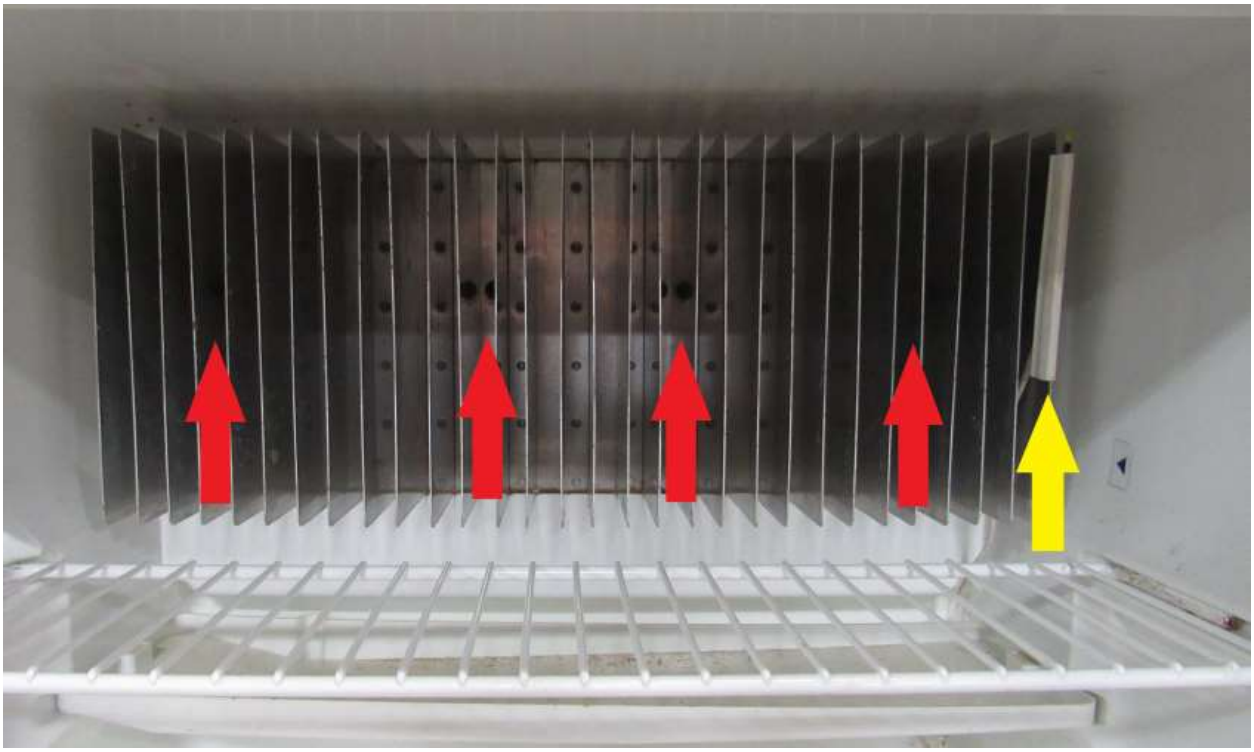
Now you will go to the inside of the coach to remove the mounting screws from the front of the fridge. To remove the top cover, use a flat screw driver and insert it into the slot to release the cover. (Styles may vary)

You will then be able to see the top mounting screws so remove them. Screw placement may vary.

There will also be at least 2 mounting screws on the bottom of the fridge. These will need to be removed as well.

Take a Philips bit and cordless impact driver and proceed to loosen all the screws (RA) and in the freezer and on the fins in the refrigerator (Screw head & length may vary). Also unclip thermistor (YA) and set to the side.





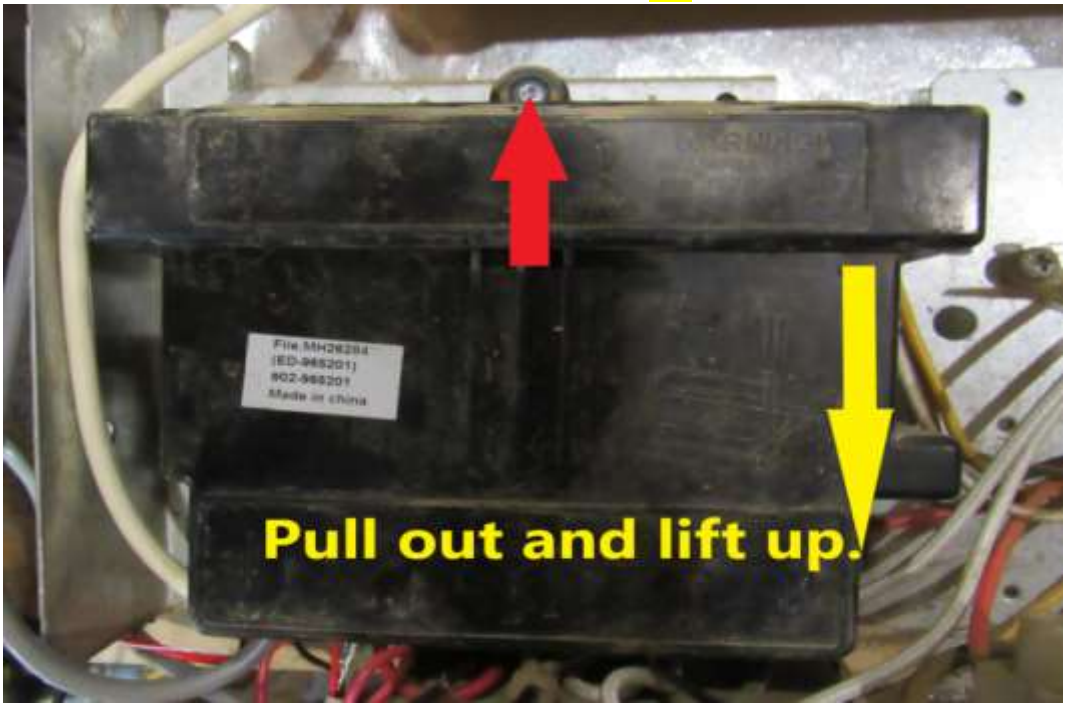
Your door handles should be removed if you have not done so at this point. To get the fridge out of the cabinet, you can use a small pry bar on each side to get it started and then pull on it from there.

We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and it could be misleading to your scenario. But the object is to have 1 person on each side of the fridge and as your fridge starts to exit, lift up gently so that when the rear end of the fridge fully exits the cavity, it does not drop. It then needs to be, carefully and gently, set on the floor and pushed or carried to an open area in your coach. Makes sure your door handles have been removed: Then lay the fridge face down on the floor, making sure doors don't swing open. We normally put a pile of blankets on the floor underneath the freezer door so that when the fridge is lying face down, the freezer section is higher than the fridge section.

Take out the 4 mounting screws. 2 at the top and 2 at the bottom.

The drain hose is sometimes routed through the coil. If this is the case, pull it out so that it doesn't get caught when removing the cooling unit.

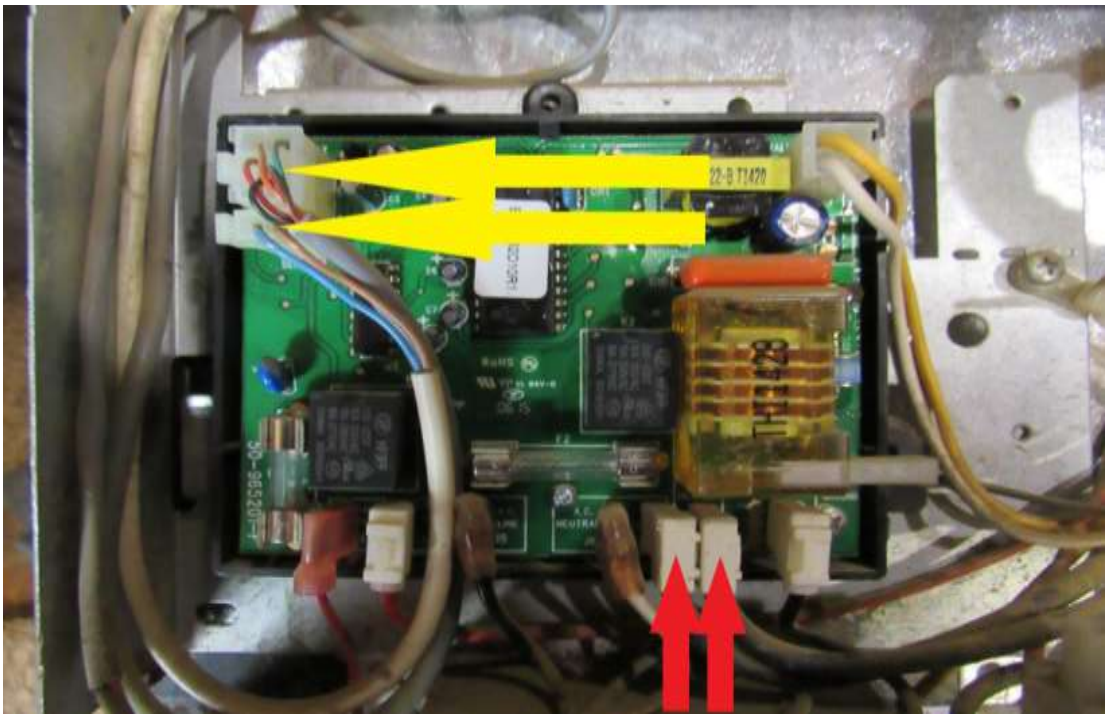
Remove the control board cover screw (RA). You will need to use a flathead screwdriver to pull tabs away from sides (YA).



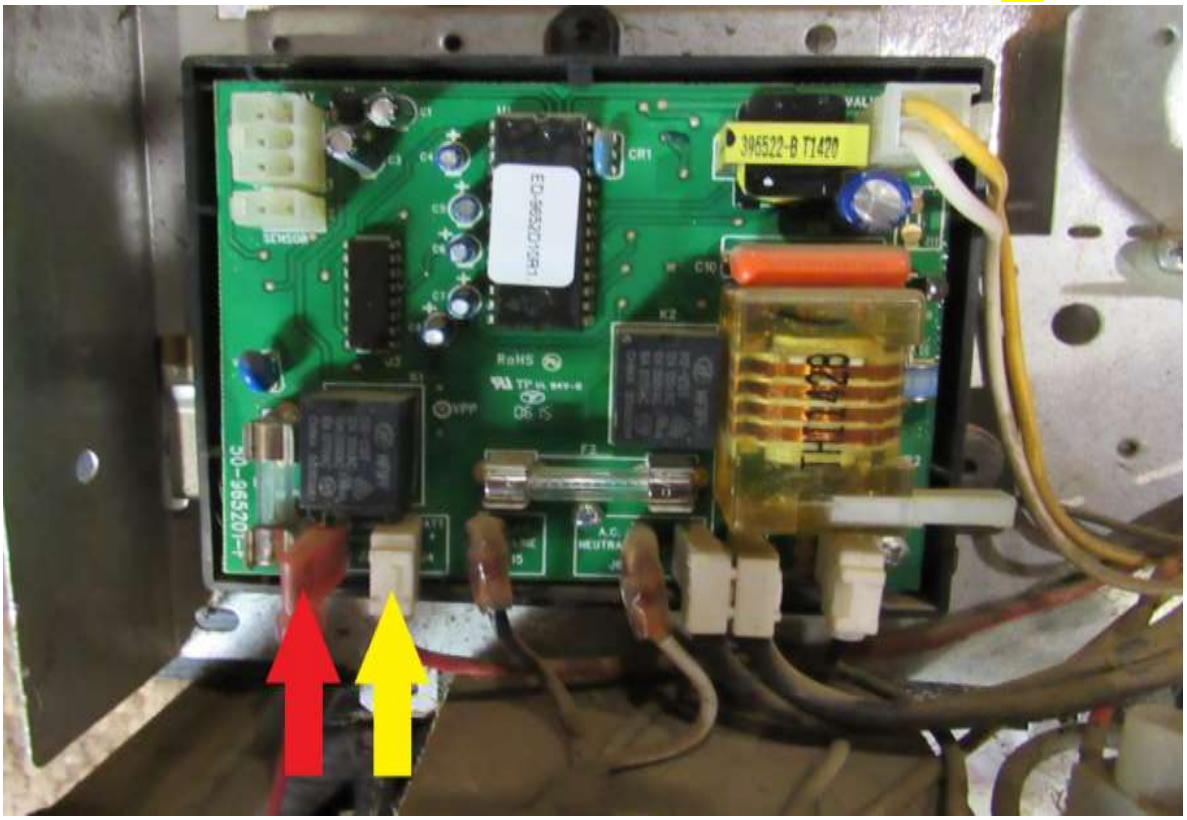
Now we are ready to get into the wiring removal portion of the installation.

Note: These refrigerators can have many different styles of control boards. The way the electrical components on them are wired is almost identical. Please take a few photos before you start so you have something to look back to later if needed, as nothing will change to how it was wired before.

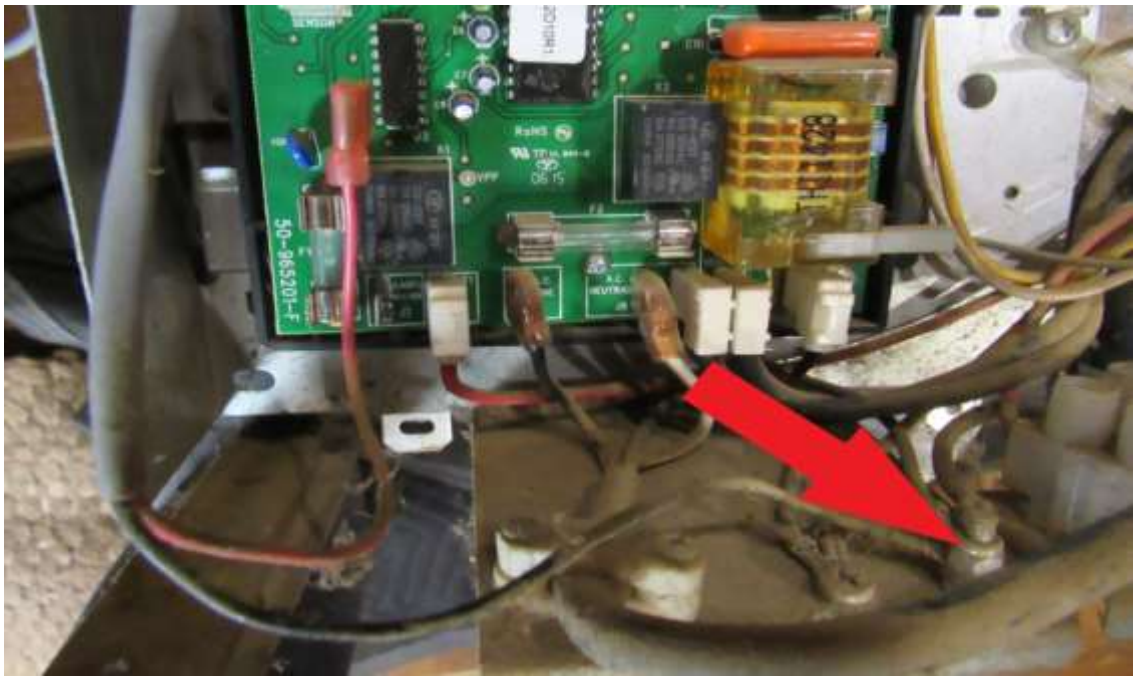
Next, remove the heating element wires from the control board (RA) and remove the thermistor wire and the front display control wire (YA).



Remove the power wire (RA) and the small red/black light wire (YA).

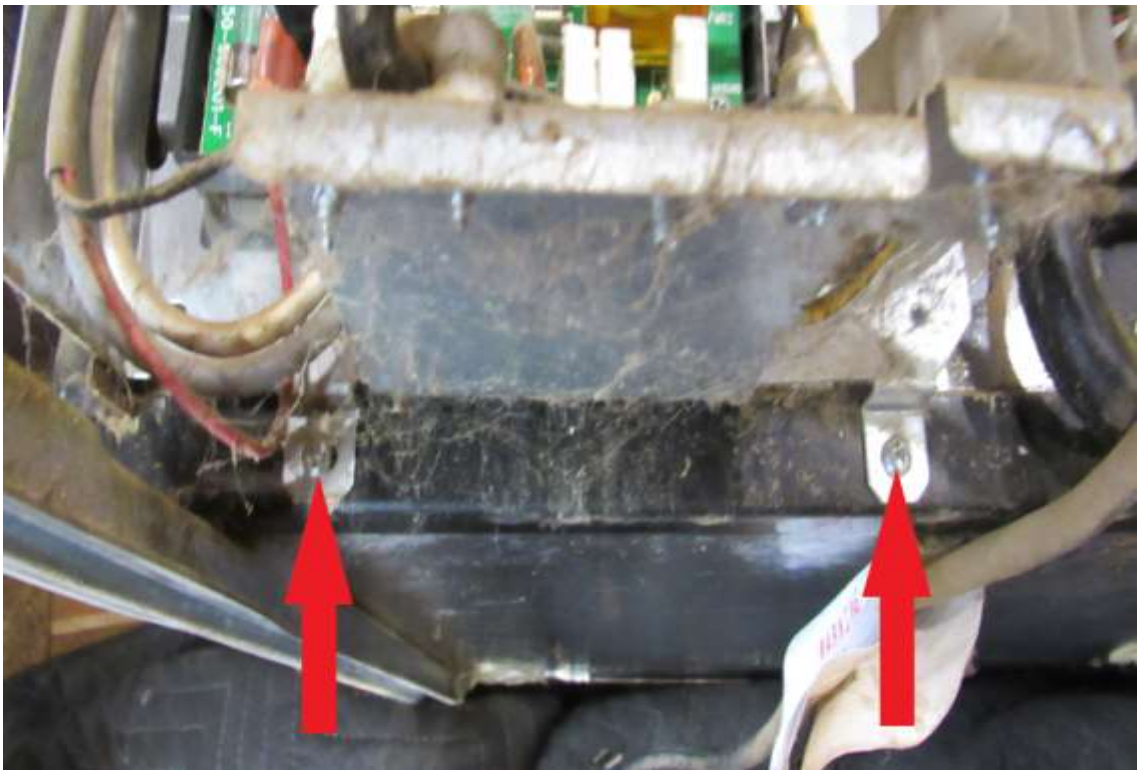


The black wire needs to be removed from the ground terminal (RA). It will need to be put back at the same location later. We normally just cut it then splice it back together later

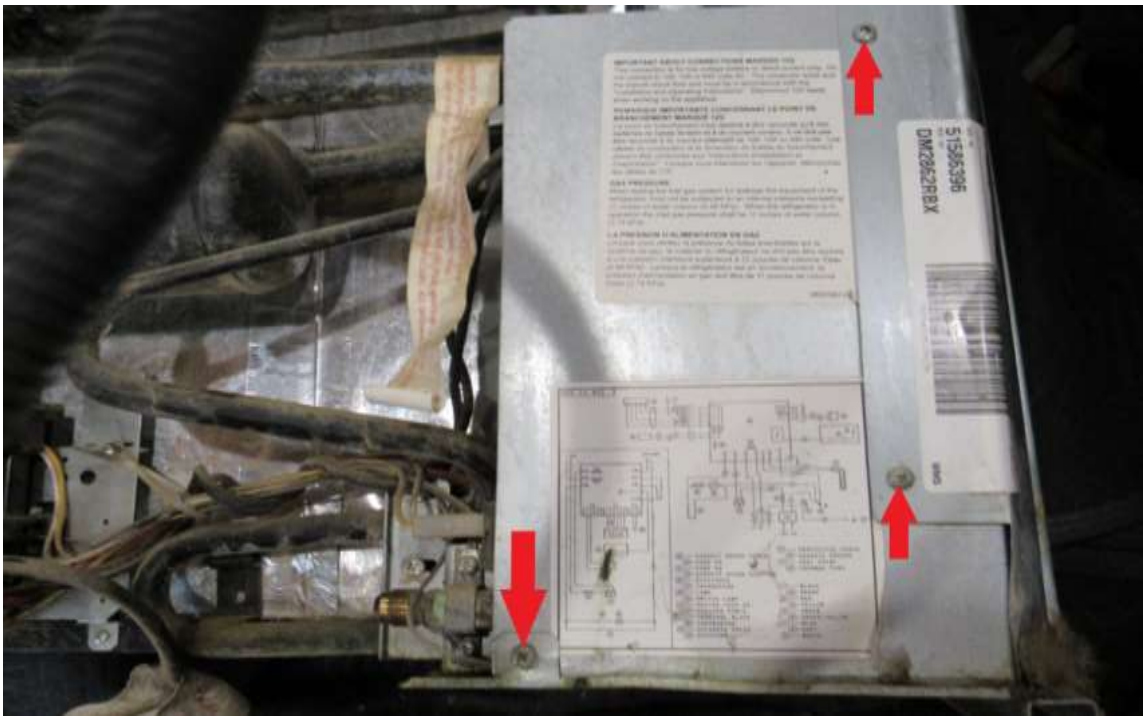


Cut the zip ties that hold the front display wire and the thermistor wire to the cooling unit and pull them out from under the coil so that they don't interfere when removing the cooling unit.

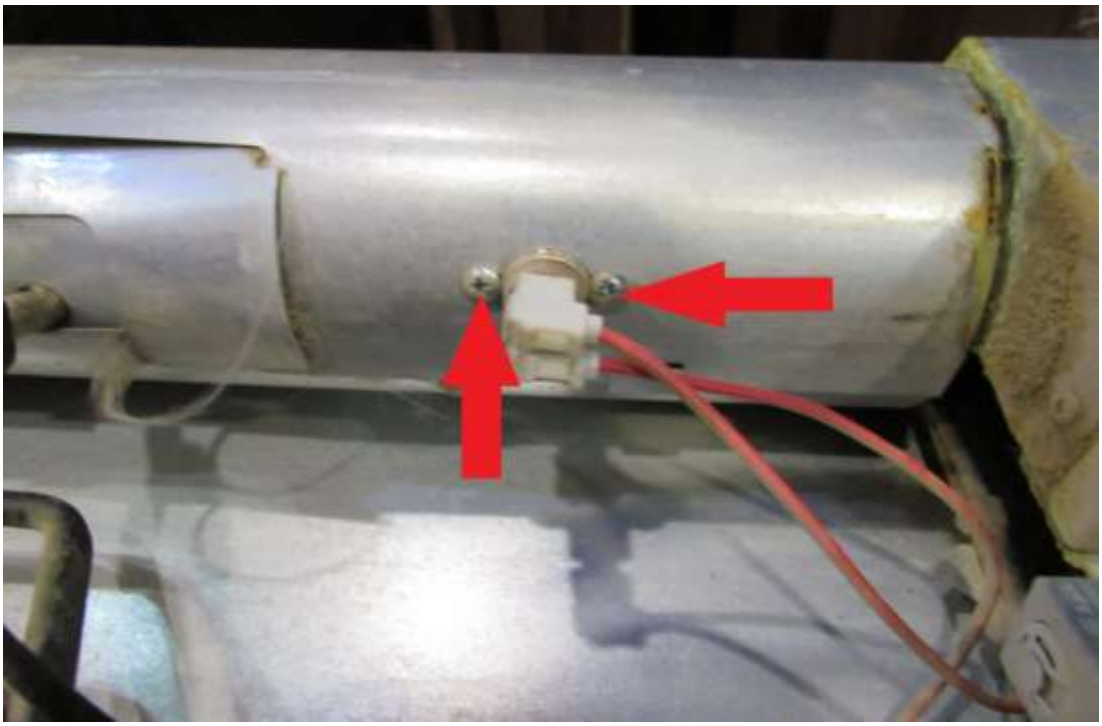
Remove the 2 screws that hold the control board bracket (RA).



Remove the burner plate screws (RA).

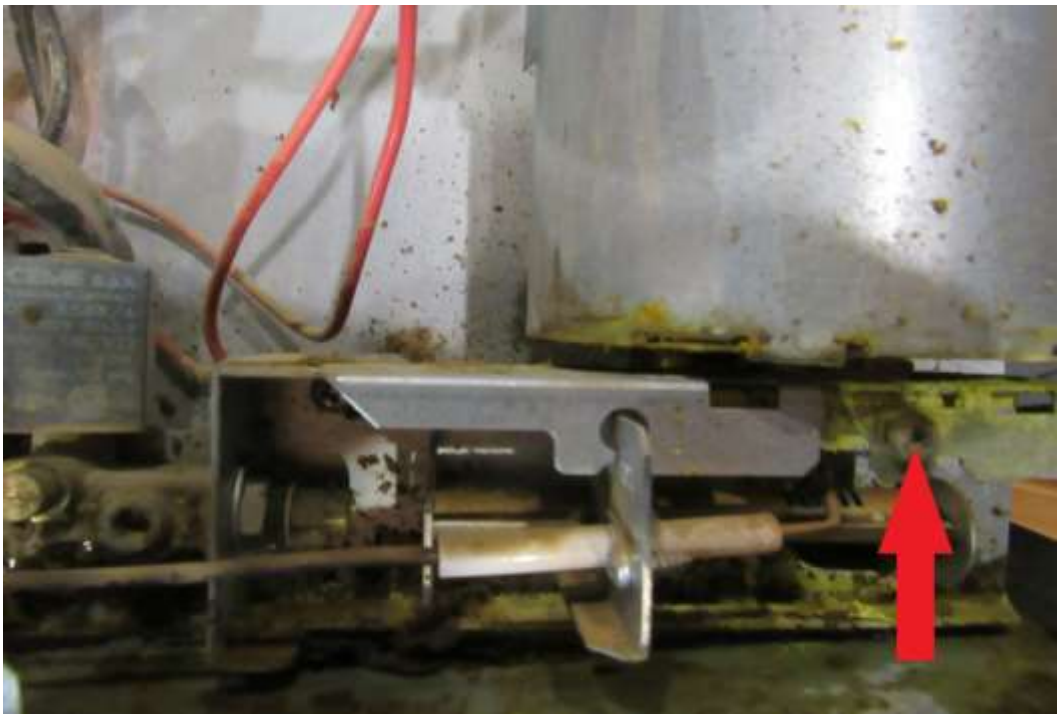


Remove the high temperature switch screws (RA). Sometimes this switch is pop riveted in place, so removing it by drilling the pop rivet heads off is the easiest option.

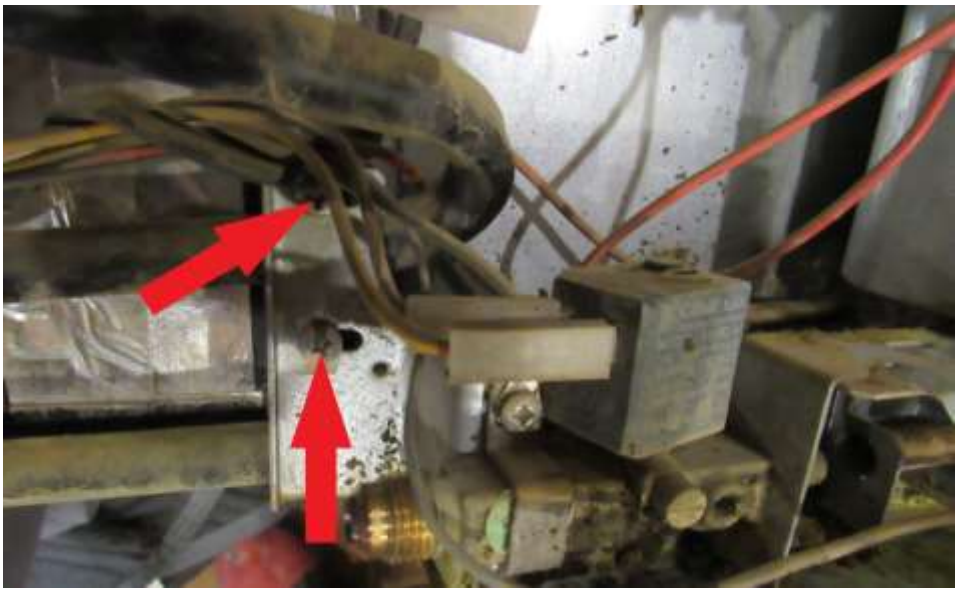


Next, remove the burner cover (RA). If you have yellow residue from a leaking unit, it should be cleaned before re-installing. Plain water clean up

Remove the burner set screw (RA).

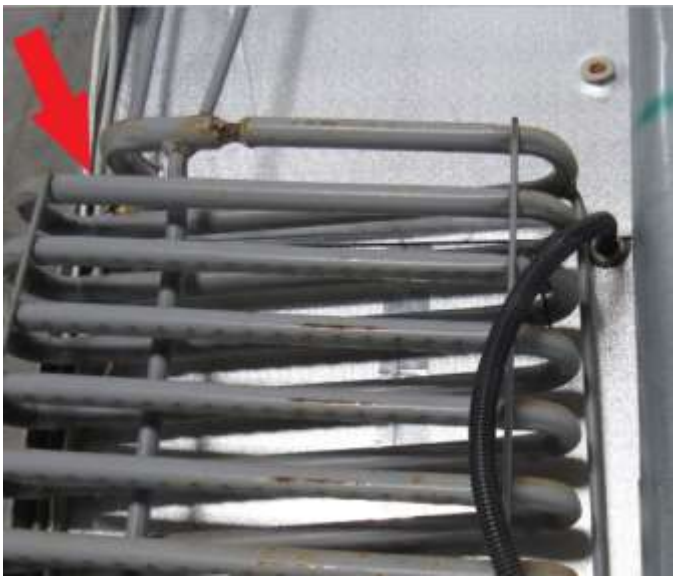


Remove the burner bracket mounting screws (RA).



You will now be able to completely remove the control board and burner assembly and it should look like the picture below.

Remove the old cooling unit from the box. Start by lifting the bottom of the cooling unit. If it doesn't want to lift out, you can use a pry bar and get it between the coils and the fridge (RA) box and pry up. This should get it started. Then continue to pull on the cooling unit until it is completely out of the cavity.



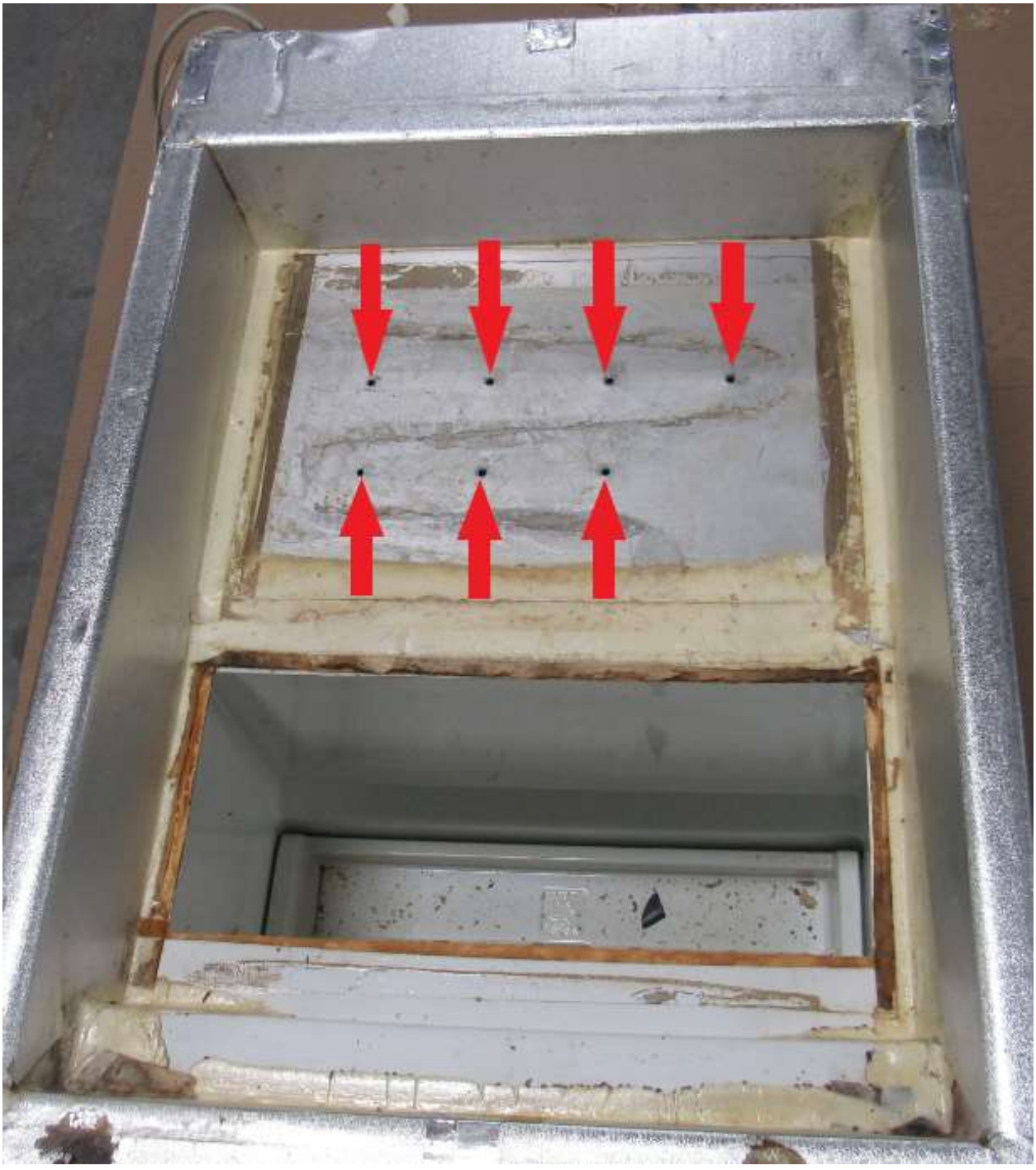
The fridge fins will sometimes separate from the cooling unit when you pull it off but they also sometimes remain attached to the cooling unit, as seen in the picture below.

If fridge fins come out with the unit, make sure to put them into the box the same way they were. If you put them in upside down you could end up running a screw into the new cooling unit. Most time thot his fin will stay with the box thus it does not need to be removed for any reason

You will need to remove this cover off the old unit to reuse on the new unit.

Clean off all the old thermal mastic and remove any tape (RA).

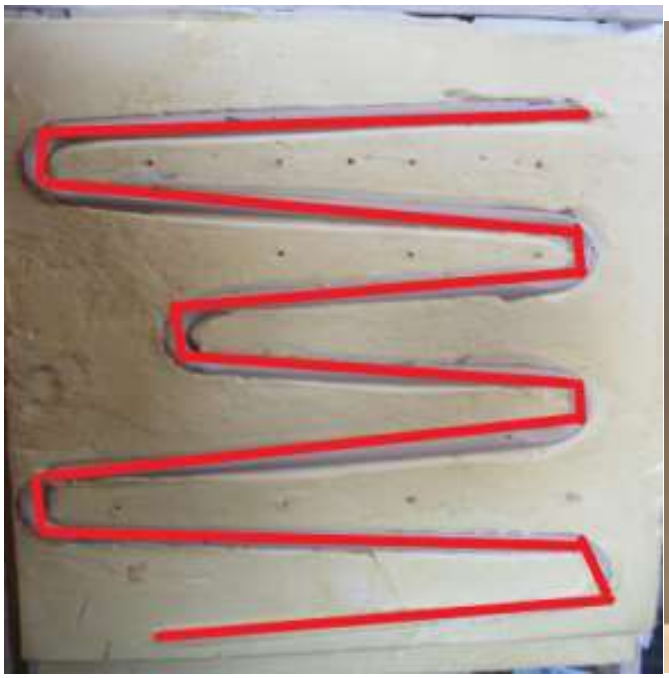
If the original cooling unit pulled the freezer plate inward at the holes for the screws, you want to flatten the area around the hole or you won't have a good connection between the freezer plate of the new cooling unit and the fridge box. These can be tapped down using a hammer. NOTE: If the fin was removed make sure to put this back in right side up as it was, otherwise your holes will not line up once the new unit gets installed.



If you bought a new heating element, insert it into the new unit as shown. Push the insulation back so the heating element sockets are exposed, and slide the heating element into the socket. It does not matter which socket you chose. Make sure it's pushed all the way down to the stop point on the heating element. Push insulation back over the heaters and install the cover we took off of the old unit and tuck the heater wires out of the way for now.

If you are reusing the old heating element, simply remove it from the old unit and follow the above steps to reinstall it.

Lay the unit on its back and place a small bead of thermal mastic as shown in red. You will need to use the the entire tube.



Lay cooling unit into box, being careful not to scrape off thermal mastic. There are many different models, so your exterior mounting screws might not line up perfectly which is normal. Install 1 mounting screw on the bottom and 1 on top.

Set refrigerator in upright position. This procedure works best with 2 persons

If holes are not aligned in the freezer have the rear person remove the bottom/top 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 trim or shave foam off the side, top or bottom foam 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 somewhat visible.

Warning: The freezer box holes can be redrilled or enlarged to make holes line up and then the large washer 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 the 7 freezer screws (RA), if you are wanting to use new screws use a 2" X #10 screw, pull the unit tight against the back. If holes do not line up exactly you can easily angle the screw up/down side/side to get to the hole as these holes are set in approx. 1" from the front surface of the foam pack.

Do the same with the refrigerator fin. Install screws pulling it Evaporator fin up tight.

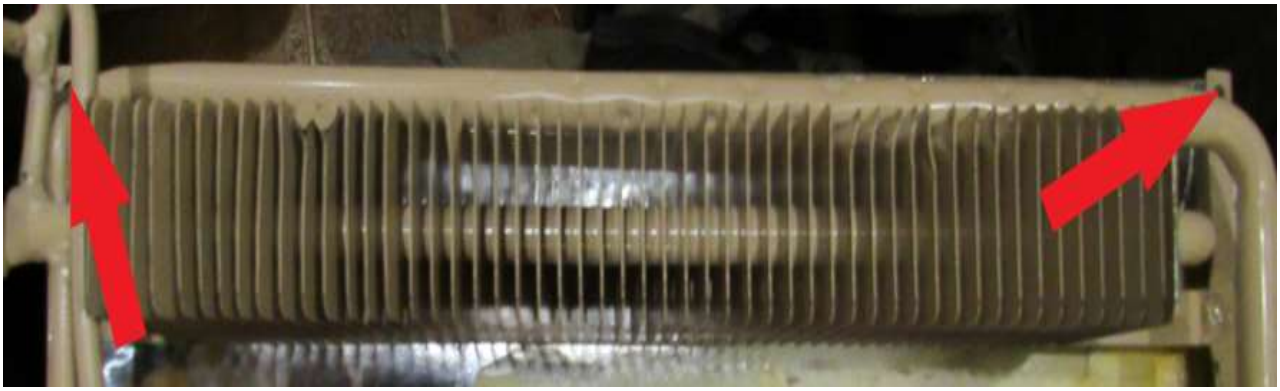
Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly.

Lay fridge back down. Take the can of Great Stuff foam (shake can for a few seconds and make sure it's at least 70F before using) and apply a bead of foam around all four sides as shown below.

Make sure and seal all cracks and gaps on all four sides. This will help seal all air leaks while travelling down the road. We cannot over stress this process as this is our worst cooling failure, either foam is not used or not enough is used, a thing to remember is even a small 2" long gap will prevent the unit from proper cooling.

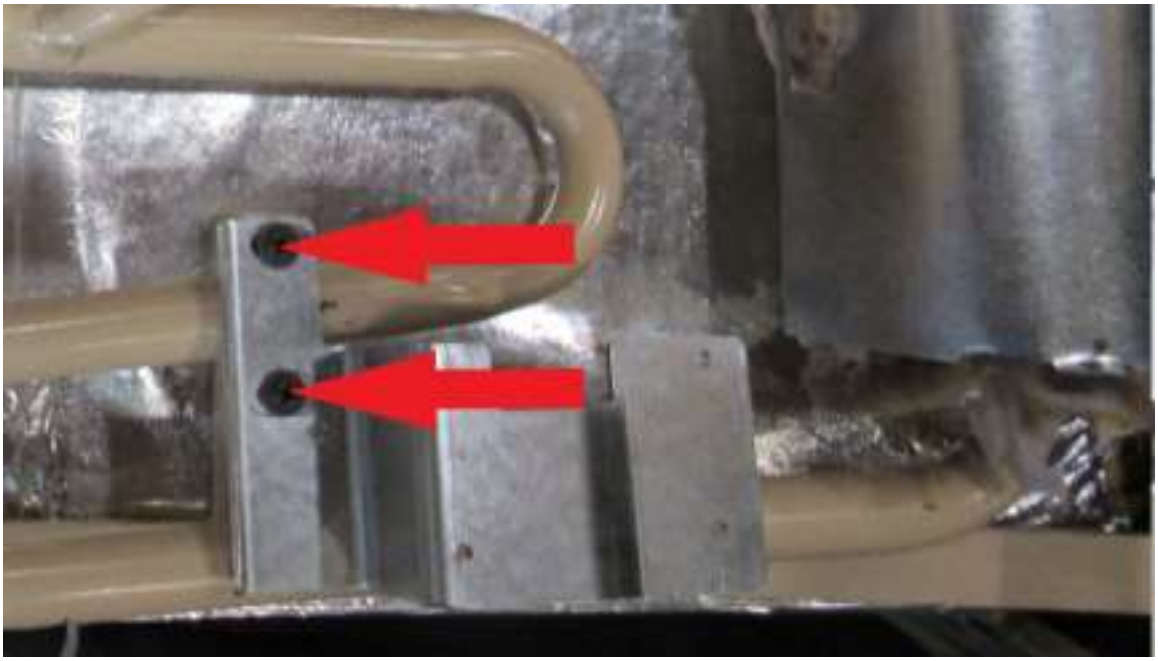
After filling the gaps with foam, follow up with the supplied aluminum foil tape as shown. This foil tape is for cosmetic purposes only, it does not help the seal between unit and box.

Attach exterior frame to box again, if holes do not line up perfect its ok to push/pull frame to the side to make them line up, this unit is made out of thick steel so to tweek it will not hurt it in anyway. And if original screws do not work a 1” X #10 self-drilling screw works great.

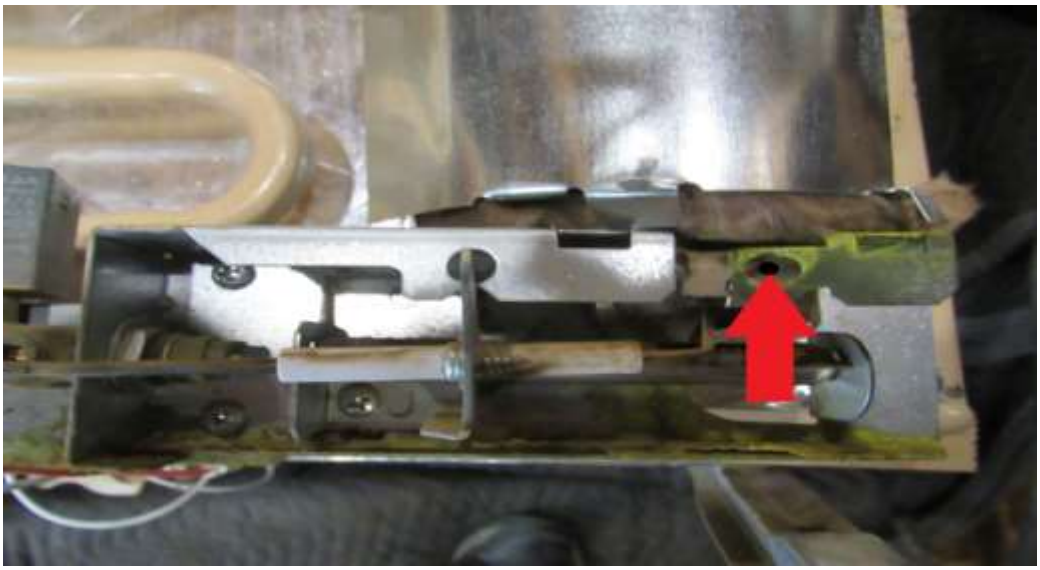


Mount the control board as shown (RA). Holes in frame not provided

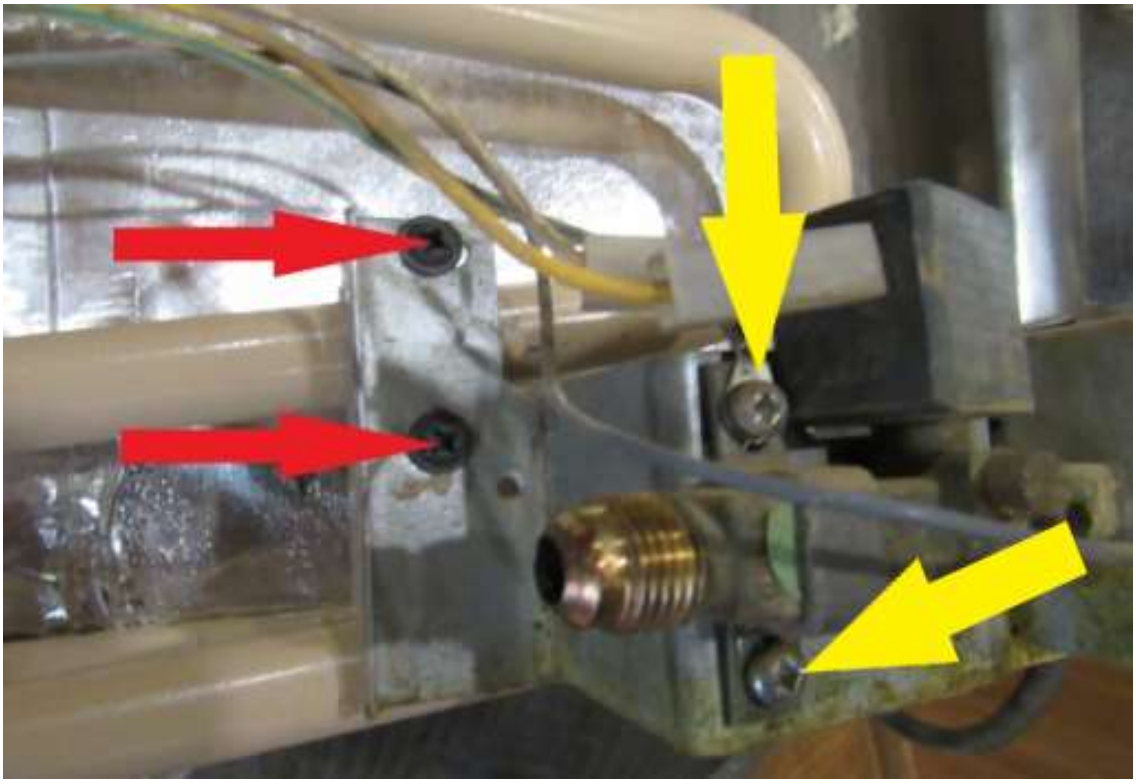
Loosen these screws (RA). We will tighten them in the next steps. On some models this burner bracket will not be used



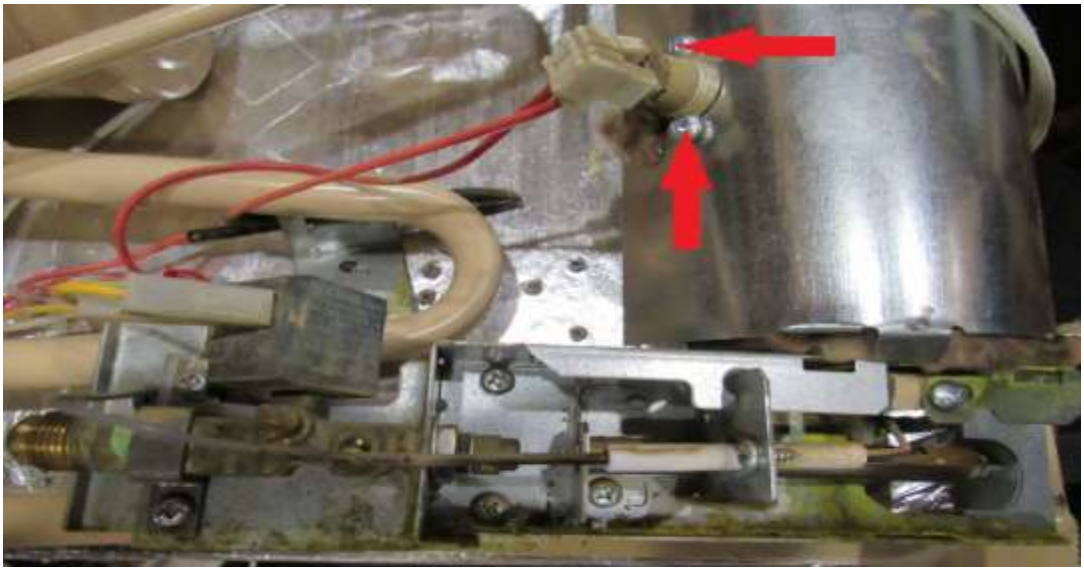
Slide the burner assembly on top of the flue bracket and install the burner set screw RA).



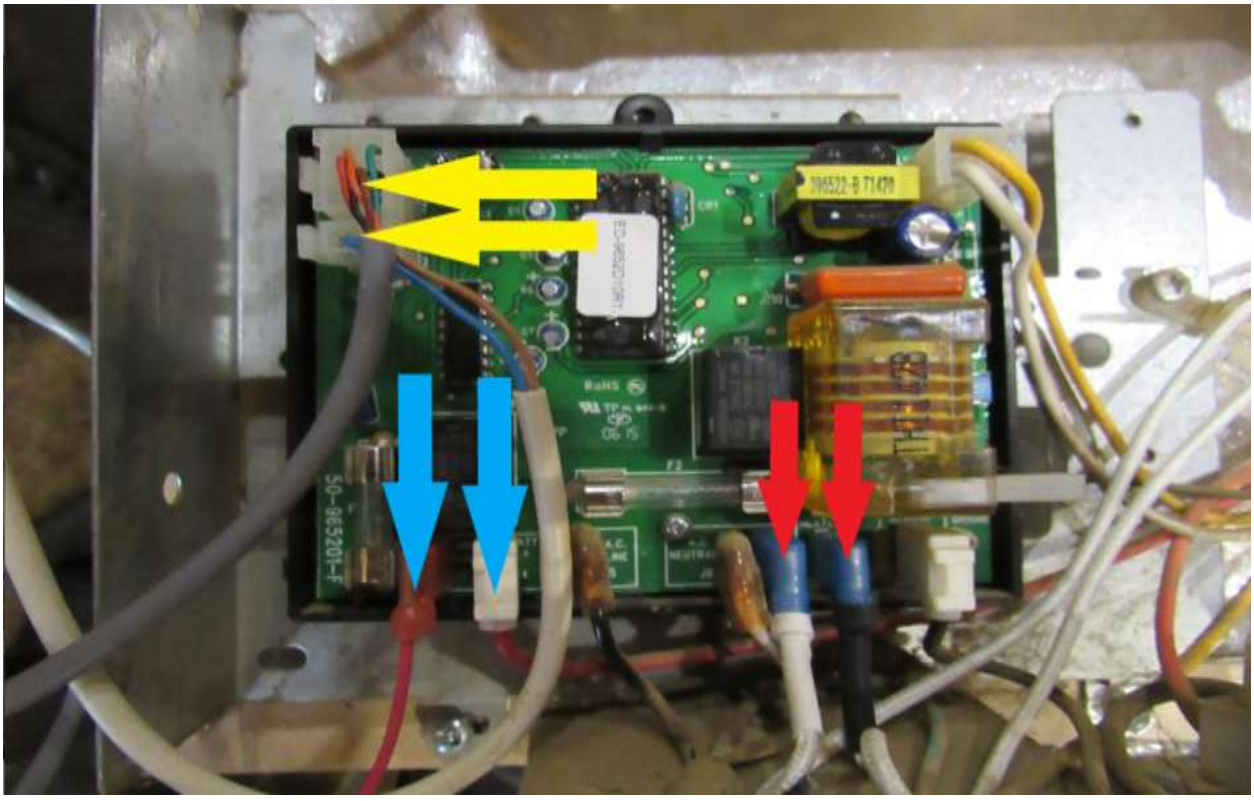
Re-install the gas valve holder screws (YA) retighten screws (RA).



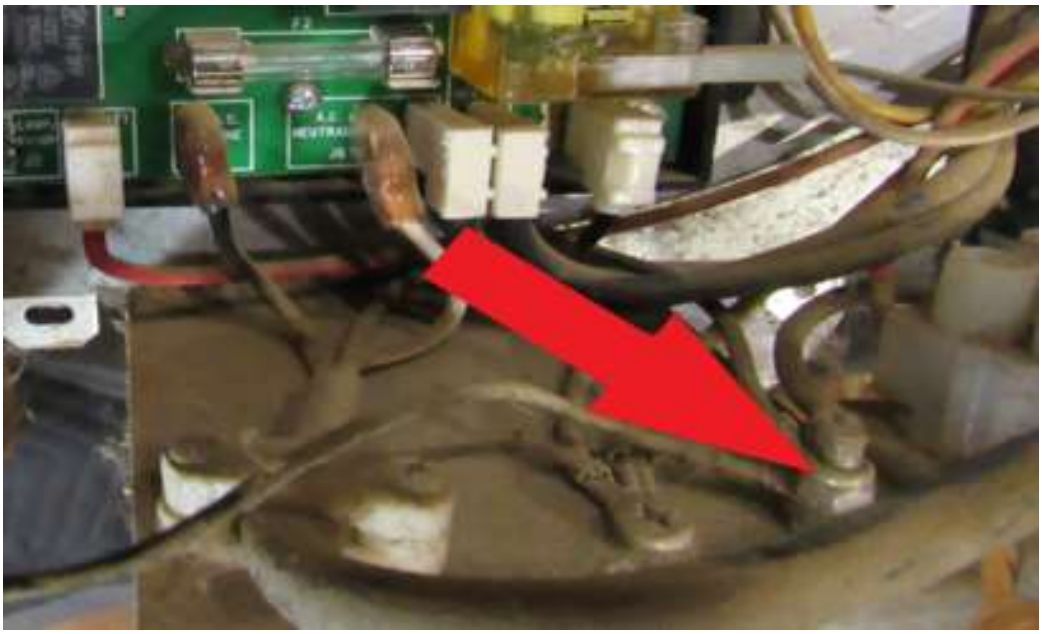
Install the high temperature switch as shown using the original screws (RA). If you do not have screws then use only very short screws to attach to the insulation pack only, do not drill or run a screw into the boiler tube itself



If your board is different this is where you go back to your own take apart pictures. Plug the heating element wires into the board. You can't reverse them (RA). Plug the front control wire and the thermistor wire into the board (YA)Plug the light wire and power wire into the board as shown (BA).

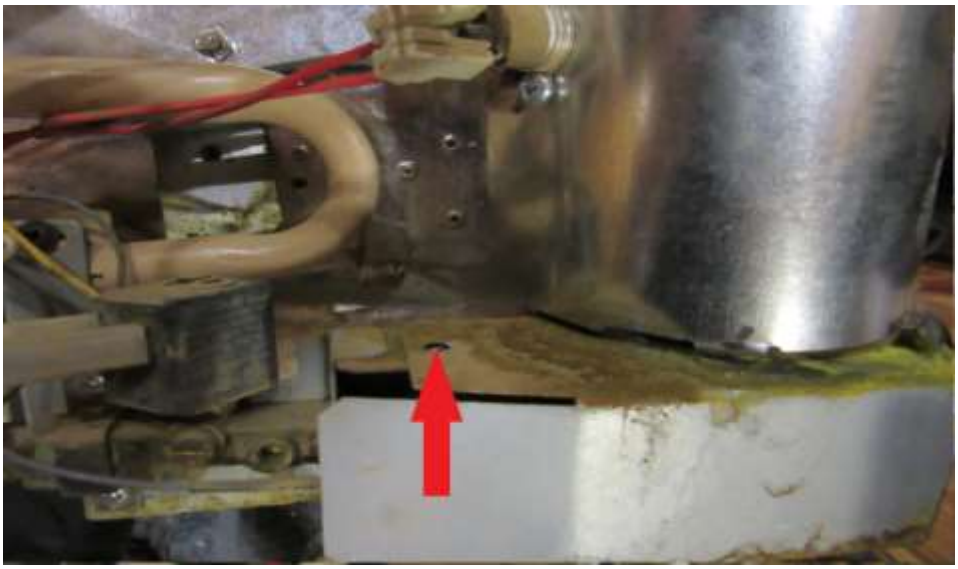


Reconnect the black ground wire to the terminal (RA). Or if cut splice together again

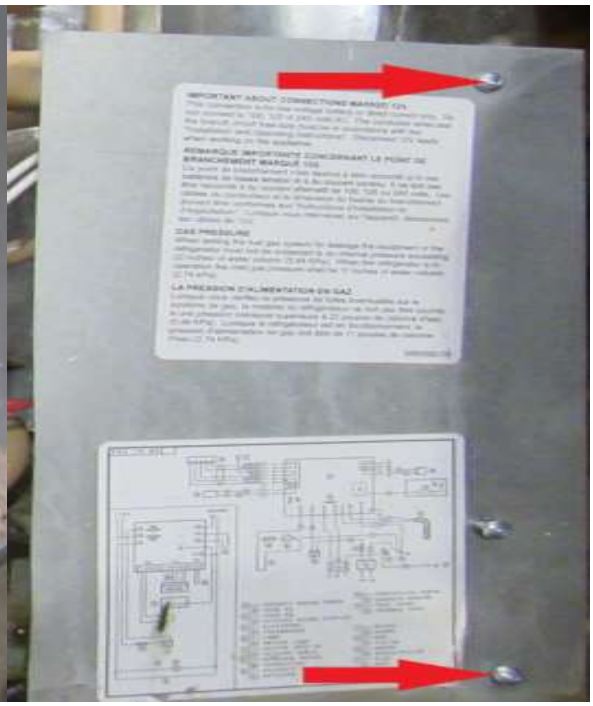


Snap the control board cover back into place and install the original screw (RA).

Slide the burner cover into place and fasten into place with the original screw (RA).



Fasten the side piece if your model has one (RA). Fasten the top piece as shown (RA). Some of these holes might not re-inline again so use self-drilling screws to attach to the box

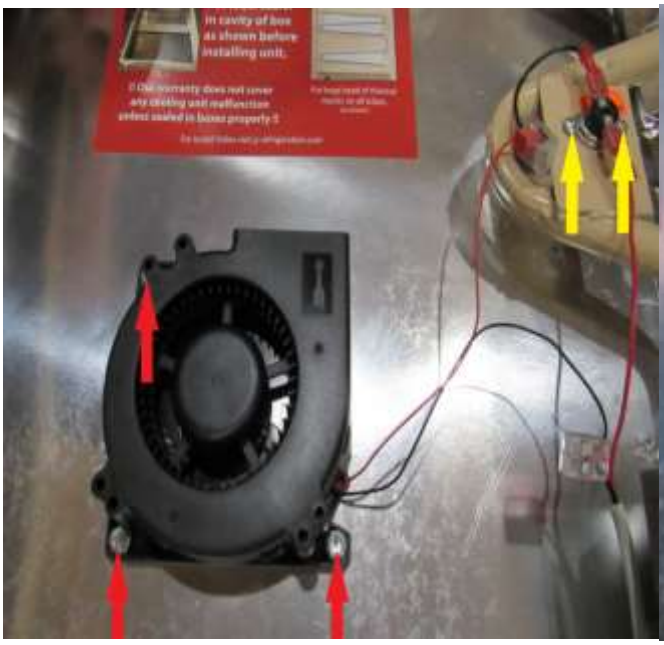


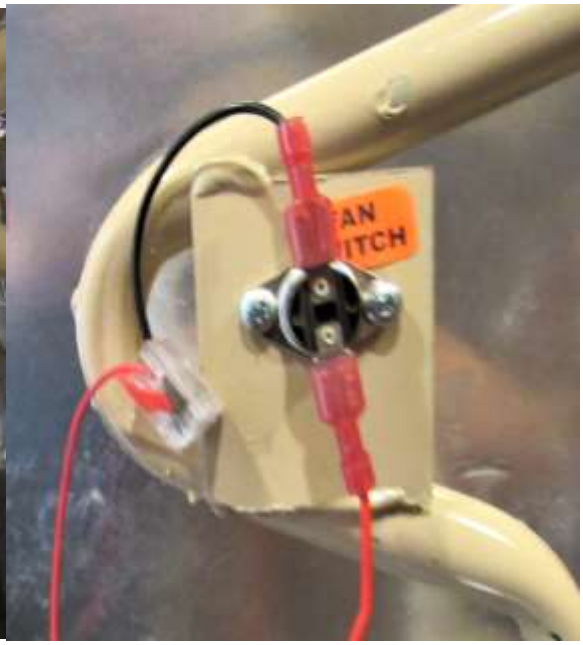
Install the defrost hose.

Find the small “fan backer” sticker on the foil back of the unit, this is where a thin sheet metal is attached to the inside to attach fan to.

Install the ventilation Fan Kit. This is required for warranty purposes if you don't already have a vent fan. For unit being installed in a slide out rooms.

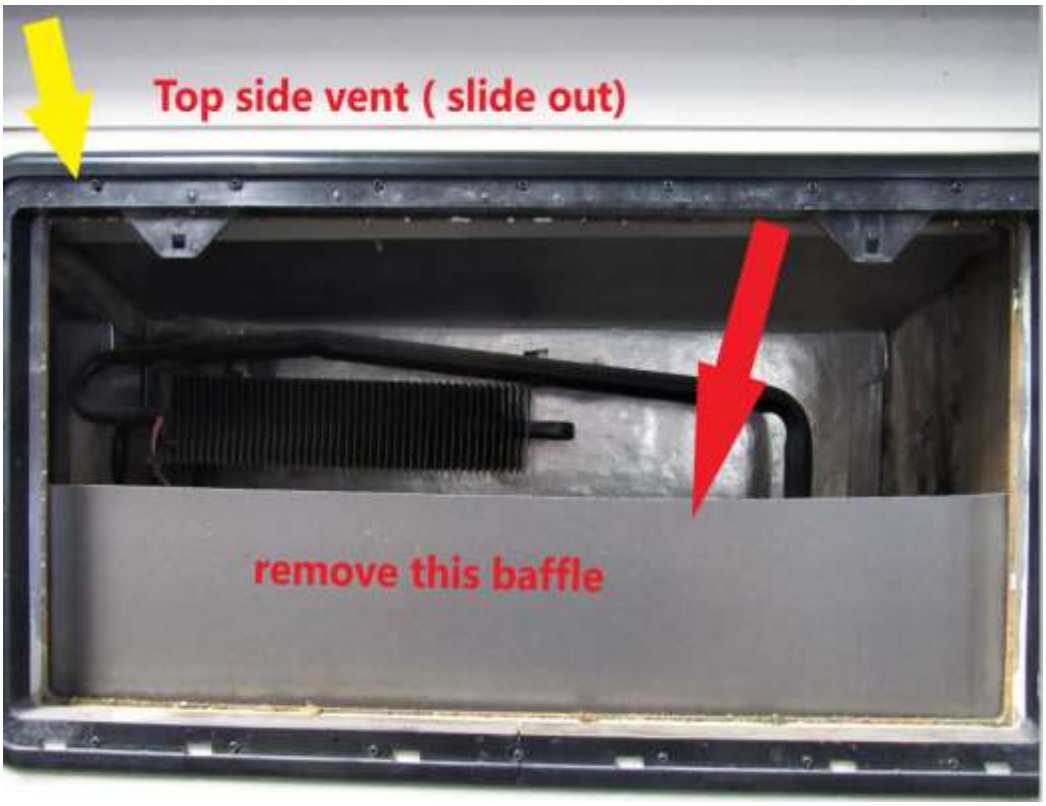
Using the supplied 5/16" hex head screws, fasten the fan as shown (RA) make sure fan is pointing up. Use the small screws to fasten the temp fan switch as shown (YA).





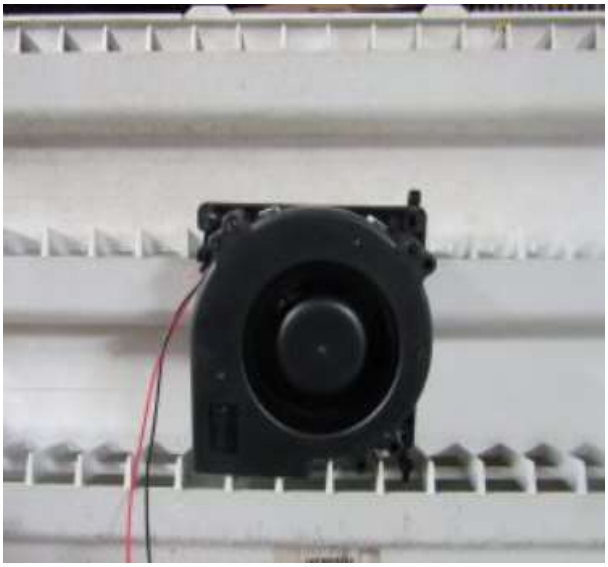
Run the power wire down to the control board to get hooked up later. Zip-tie all loose wiring.

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

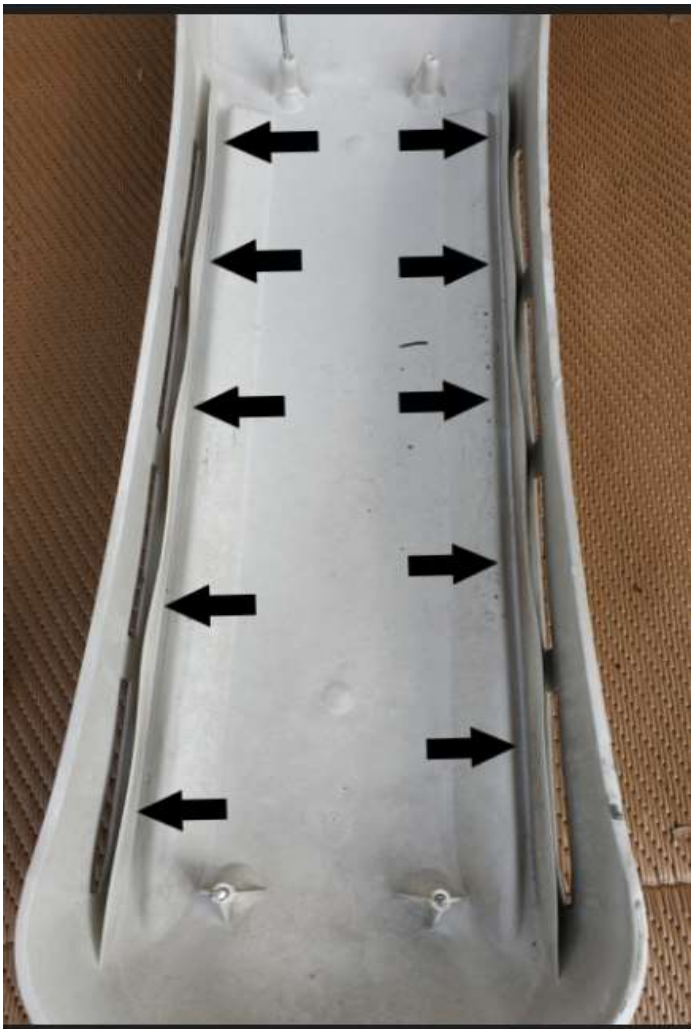
You will then be required to add a slideout fan to your top side vent to force the hot air out that's being pushed up from the fans below the vent, (this is required on all slide out models to be covered in our warranty)

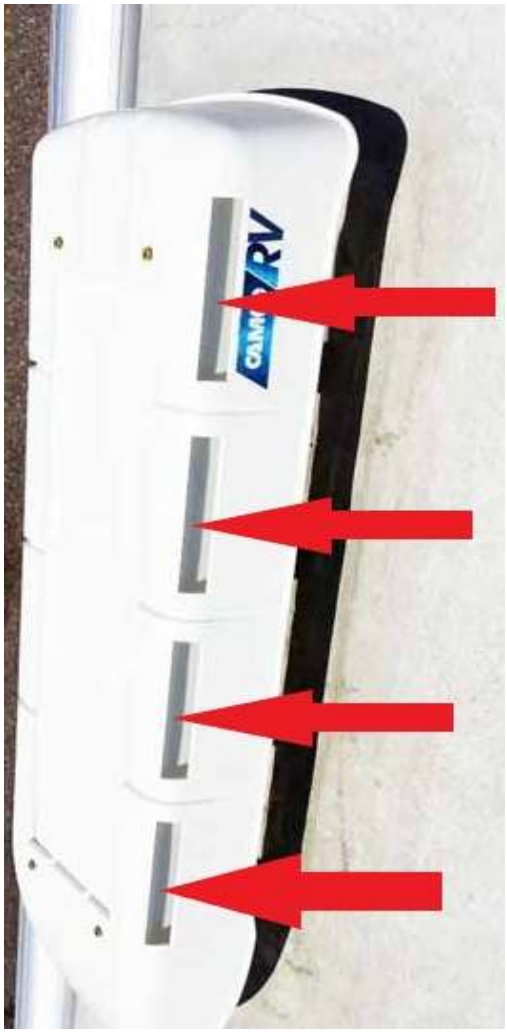


The eyelet can be screwed at any ground, connect female + to the fan switch wire, so it comes on when the lower fans come on

Here is our upper side slide out fan kit ,that can be added to the side vent.

If a fan installed into a roof vent 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.

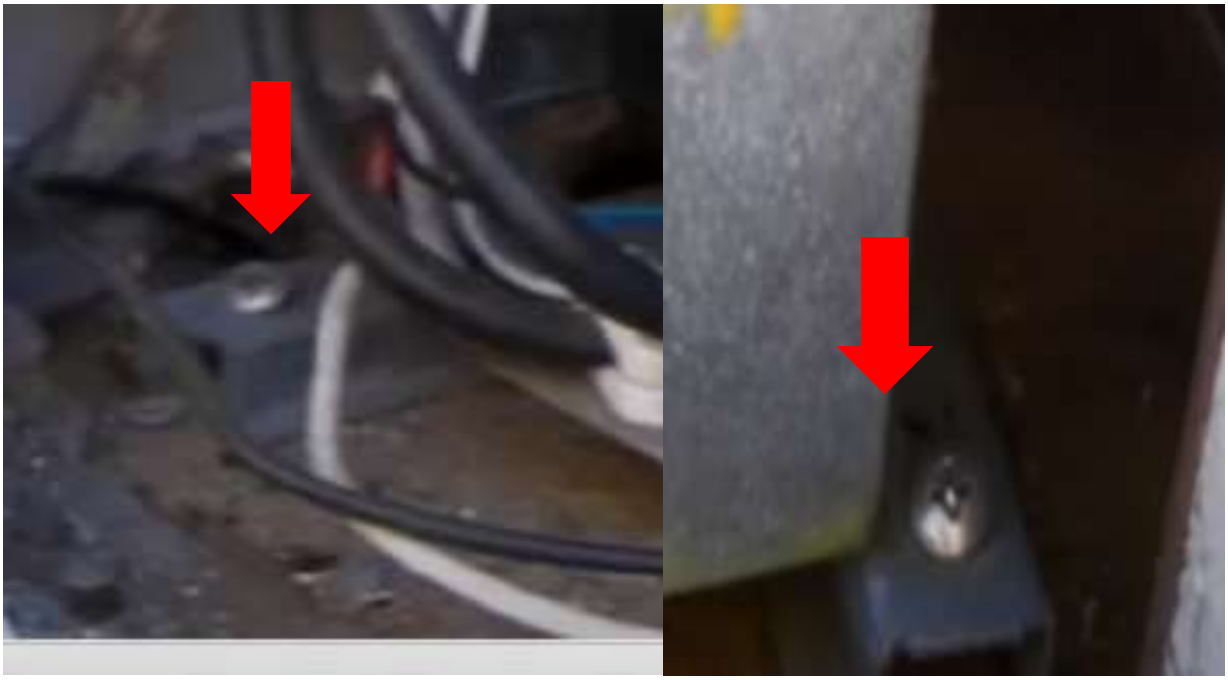
Install the mounting screws on the front of the refrigerator.


Bottom-left
screw


Bottom - right
screw

Then snap the control panel at the top back into place.

Now go to the outside of the coach and install the mounting screws on the back of the refrigerator.



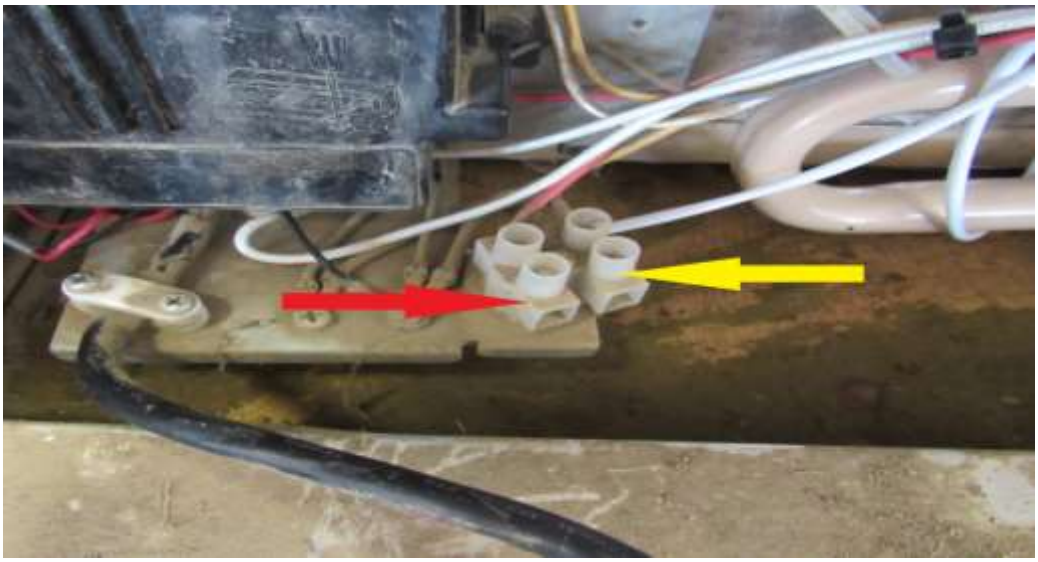
WARNING:

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

Reconnect the LP gas line and tighten. LP gas tank is ready to turn back on and use a soap water mixture check for leaks.

Find your coach 12v wires and connect those wires and also the ventilation fan kit wires to the terminal block. Positive is on the left (RA) and Negative in on the right (YA).

If you installed a fin fan, those wires will also go into the terminal block.



Plug the 120v power cord into the wall.

Go to the inside of your RV and turn your refrigerator control "ON". Turn "auto" off so it will light the burner, after burner is lit you can now make sure you have 120V at the plug in then turn on the "auto" mode again and make sure the burner shuts down and the heater starts to heat up. If your front display has a temp setting of 1-5, start with the fridge set on 3 and let it run for at least 24 hours and then make adjustments as needed. A thing to remember is this gas/elect unit is still a absorption style unit so it takes at least 6 to 12 hrs for it to cool down to temp inside the fridge.

Fin fan Operation

The a fin fan is used of any style when fridge is a very good option. The normal position for the fin fan is to have it circulate the air into the the fin. This will keep a more even temp through out. Also prevent the frost build up. Factory brand is the smaller model Dutch Aire. RV Cooling Unit Warehouse model build more models from a small 2 fan to the 3 fan Frost Guard measuring to cover more on the fin width of either a 13 inch up to 15 3/4 inch giving better air flow.

The thermistor should be located on the 1st fin from the right side.
(See above picture, red arrow)

Note: If you installed an adjustable thermistor, your temp setting on the front display panel will still be in effect as well. A good starting point is to set the front display to 2 (if your model has 1-5). Then set the adjustable thermistor to the middle setting (12:00) and let the fridge run for at least 6 hours then make changes on the adjustable thermistor inside to dial it in to your desired temp. If your display does not have 1-5, still start with the adjustable thermistor in the middle (12:00). Let it run for at least 6 hours and make adjustments as needed on the thermistor.

We highly recommend using a digital wireless thermometer to monitor your inside fridge temps. Many phone calls or 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.

https://jc-refrigeration.com/product/refrigerator-freezer-digital-wireless-thermometer-free-shipping/

Use digital wireless

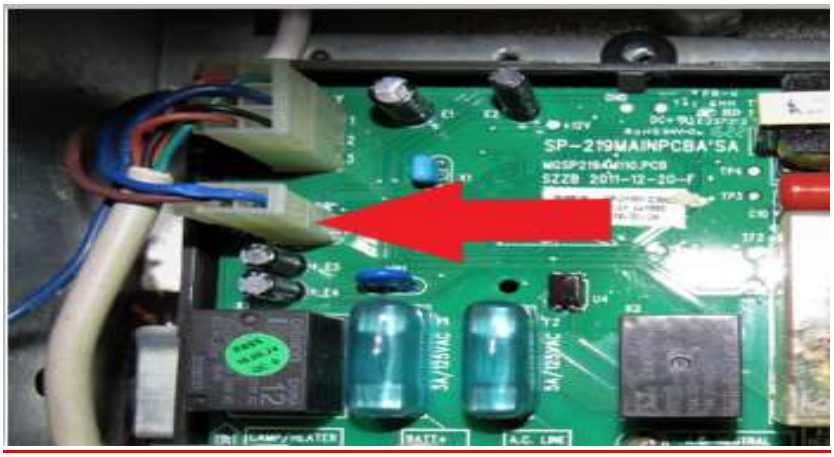
DO NOT USE

Clip the sensor for the fridge on the bottom side of the first shelve beneath the fin. Place it so the sensor is centered, front to back and side to side (RA). If its clipped underneath it will be out of the way and shouldn't interfere with storage. The same applies with freezer, clip underneath the shelf, centered from side to side, but have this one more towards the back of the freezer

Troubleshooting

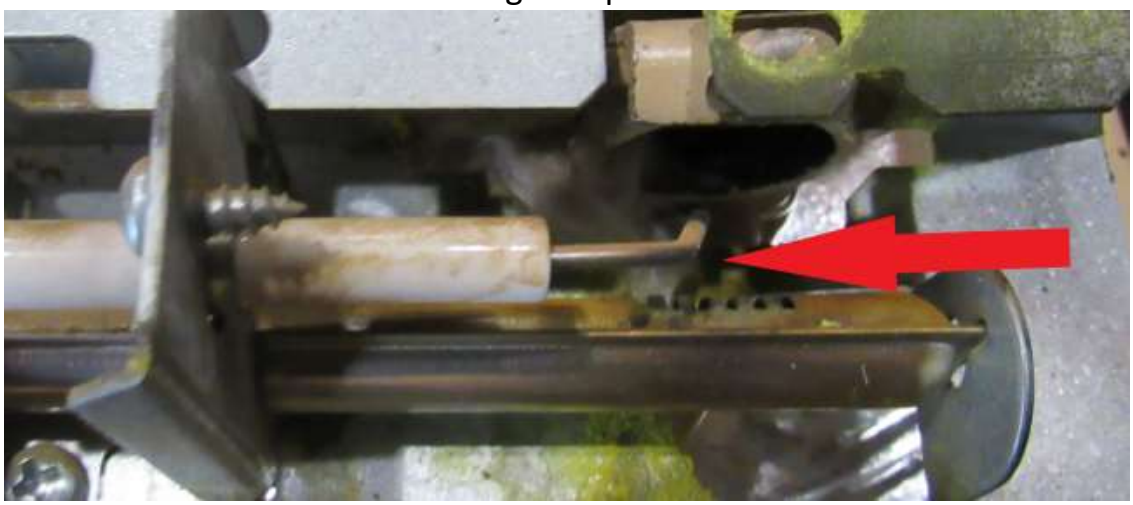
Board makes a buzzing sound when turned on: your black/red light wire is not hooked up properly

Fridge will not cool down over a period of 12 hrs: #1 if running on electric, turn it to gas or vice versus and wait another 12hrs to see if it cools. #2 Unclip thermistor and let it run 12 hrs (RA)



#3 make sure door seals are not torn open or have big gaps between door and box

Check light comes on after a couple minutes of being turned on: #1 check your ground to the board #2 make sure your ignitor wire is properly attached to the igniter and your ignitor by the burner has at least a ¼" gap between top of burner and ignitor probe.



TEMP CHART

If any question arises about performance, we will need temps off the unit emailed to us as seen below, we can then diagnose from there.

To do a diagnostic test on this unit we will need to know temps 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 Dometic parts such as the control board, the front display, thermistor, etc.

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

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

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

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

What makes our unit better then the original: We use much thicker tubing for one and our boilers are all hand welded which will prevent stress cracks (leakers)

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

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 then 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 its not a problem and it will slosh enough to keep going, its while parked that it has to be level.