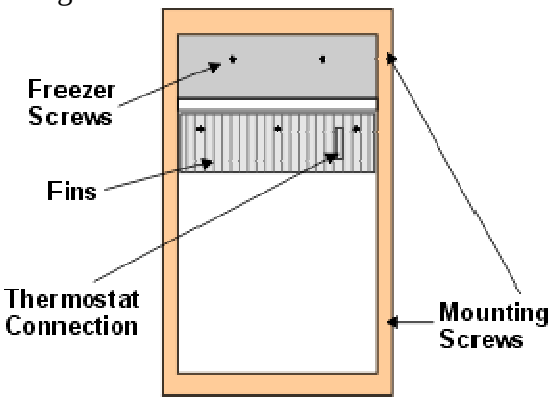
Changing a Cooling Unit Single Door

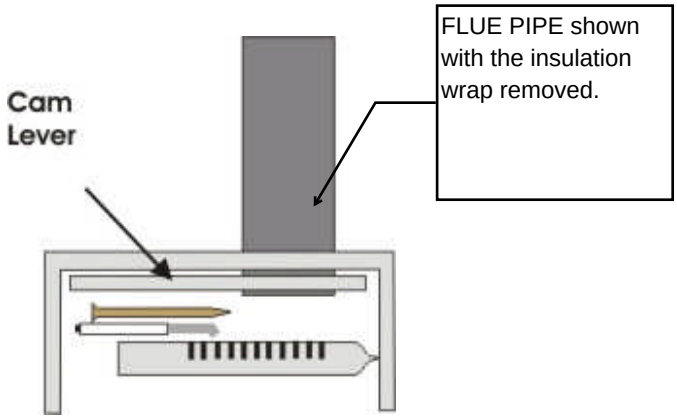
Pulling the Refrigerator: The first step in changing a cooling unit is to pull the refrigerator from its cabinet in the RV. Start by turning off the propane at the main bottle(s) and burning off any residual in the lines at a stovetop burner. Next, from the outside access door for the refrigerator, disconnect the propane line to the refrigerator, unplug the 120 volt cord, and disconnect the 12 volt wiring (for 3 way units only) to the refrigerator. Tape up the ends of the 12 volt wires with electrical tape to prevent sparks or blown fuse. While back there locate two screws that are usually at the bottom outside edges of the refrigerator, securing it to the cabinet floor, and remove them.

Next remove the refrigerator door. After that, most models have mounting screws on the face of the refrigerator frame, usually covered with plastic plugs. See graphic below. These need to be removed. Look for any other fasteners that might prevent removal of the refrigerator. Next, inside the RV, underneath the refrigerator, there is usually a bead of silicone that needs to be cut with a razor knife. The refrigerator should then be free and slid into the RV. If it doesn't move, look around for something else holding the refrigerator in. Sometimes RV manufacturers create their own ways of securing the refrigerator.

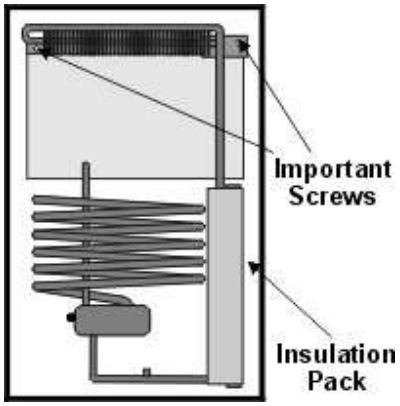


Removing the Cooling Unit: Begin by removing the mounting screws from the freezer back wall. In the lower box, on the aluminum fins, there may be one or two capillary tubes from thermostats held in place by a small plate or clip. A capillary tube is the sensor from a thermostat and resembles a wire. The plate needs to be loosened and the capillary(ies) removed from the fins. Not all models have capillary tubes connected to the fins, so if they are not there, don't worry about it. Also, some of the newer models have a thermistor, instead of a capillary tube, clipped to the fins. The thermistor is a small plastic thing about the size of a quarter, but thicker. It has two wires running from it. Just pull it off and let it hang. Remove the fins screws now remove the fins.

Once the work inside the refrigerator is done, lay the refrigerator on its face. Depending on the circumstance, it may be necessary to lay an old blanket down to protect the face of the refrigerator. The cooling unit is the set of coils on the back of the refrigerator, extending from the top to the bottom. This is what we're after. Obvious parts such as burner assemblies, heat elements etc. need to be removed from the unit. On older models the burner is mounted with screws and the newer RM's have a cam holding the burner assembly to the bottom of the cooling unit chimney. Locate the cam and pull its lever towards you (see below). This will allow the burner to drop down. Anything else in the way of pulling the cooling unit needs to be removed. The heating element or elements are just slide into the small tube weld to the boiler tube.

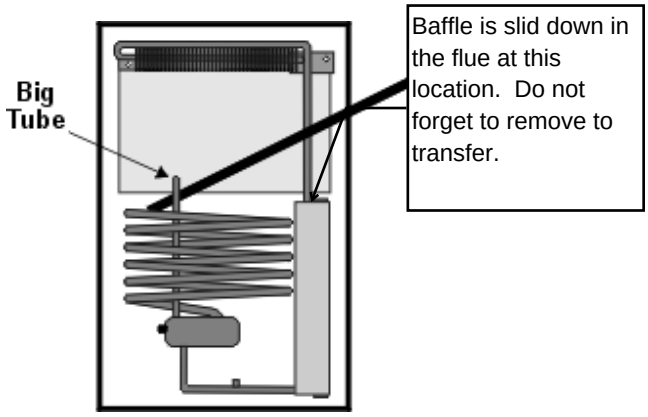


There are a handful of obvious screws holding the cooling unit to the refrigerator that need to be removed. See graphic below. Some later models, may or may not have these screws. Sometimes, due to corrosion, the end of the capillary tube will break off. If this happens, you will need to replace the thermostat.



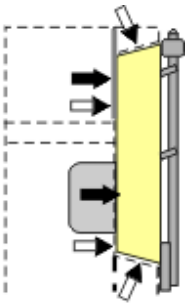
Once all fasteners have been removed, the cooling unit is ready to pull. A pry bar under the "big tube", as in the graphic below, will usually do the job. The "big tube" is the only pipe that should be pried on. Since you will be prying against the refrigerator body, a board or some other protection is necessary between the pry bar and the refrigerator to prevent poking a hole in the box. This is usually enough to pull a cooling unit, but not always. If yours is stubborn, peel up the edges of the aluminum backing paper to expose a line between the foam of the cooling unit head and the insulating foam of the refrigerator

box. If the cooling unit has already been replaced before, the backing may be a piece of sheet metal instead of paper. With some effort, the sheet metal can be removed and slid out from the cooling unit. Running a large knife around the line between the two foams of the cooling unit and box (about 4" deep) and then prying as before will remove the more difficult units. If you're still having problems, go back and be sure you have removed all fasteners. Once the cooling unit is out, Pull the baffle from the cooling unit chimney and remove any other parts (some times the insulation pack) from the unit. These parts will be transferred to the replacement cooling unit. Not transferring the baffle from the old unit to the new one is the most common mistake made by installers. Be sure you are familiar with what the baffle is. Normally, the only thing left on the old cooling unit after it has been changed, is the insulation pack. You're now done with the removal. Note: there is usually a clear plastic sheeting between the foam of the cooling unit head and the foam of the box. This was there to keep the two foams separated when the foam of the cooling unit was poured while the cooling unit was already in place. This plastic can be discarded. This is also why there can be a little difference between the foam heads of cooling units.



The key to a successful cooling unit installation is a snug fit between the cooling unit head (foam block) and the box, with the head all the way into the cavity of the refrigerator and no air leaks. By all the way into the cavity, we're referring to the face of the foam block. Sometimes, because of refrigerator variations, the head is thicker than the cavity and protrudes a little out the back. This is OK, along as the front of the head is flush with the inside of the refrigerator. The part sticking out will be taken care of later.

In the graphics below, The ➫ is a metal to metal contact point that requires thermal mastic. The ➫ refers to a fit point -- a point where the cooling unit has to make good, snug contact with the refrigerator box. The picture shows the lower fins in place but the fins can only be installed after the coils are installed to the back. The picture is to show were the contact point would be.

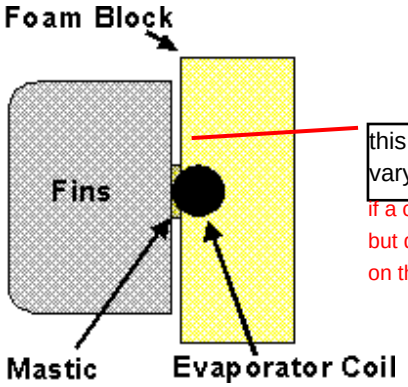


be sure to use the Thermal Mastic on the exposed tubes in the foam pack. Once this is done the rest of the Thermal Mastic can be used a a sealer around the sides of the foam pack. We also furnish a can of spray foam to make the foam pack of the cooling unit air tight once laid in place.

Contact Point ➡
Fit Point ⇨

The location of the made fit points will be sealed with foam furnished. Spray around the cavity of the refrigerator box before you lay the cooling unit in to the fresh sprayed foam. All the fit points are air tight sealed. The foam we furnish will not bond, only seals.

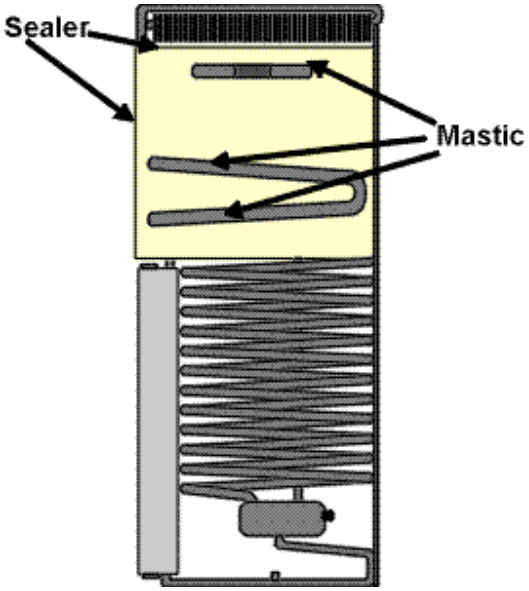
The first step in installing a cooling unit is to apply thermal mastic (comes with the cooling unit) to the coils of the cooling unit that contact the aluminum fins of the refrigerator. Put a bead of the mastic around the side wall of the cavity. After the mastic has been applied, install the cooling unit. On our remanufactured units the holes in these brackets are drilled a size too small, so that your screws will get a good bite. You should see the screws slightly pull the area around them inward. Getting the fins on tight with mastic is critical. Failure to do so will cause cooling problems in the lower box. You should also put mastic on the freezer coils, before installing coils..



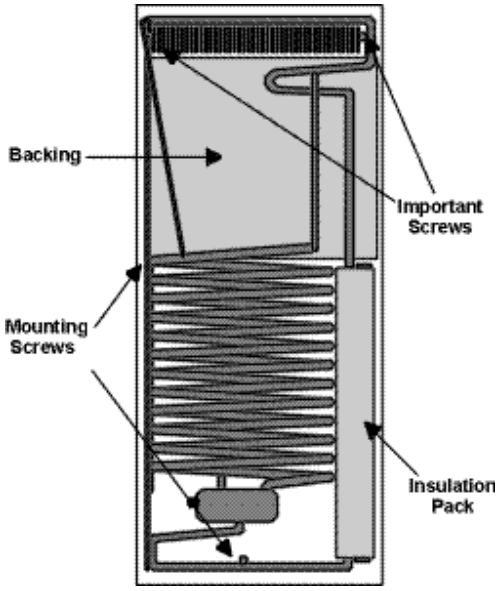
this small gap will vary and is not critical

If a concern to you use a little of the foam but do not allow it to cover the tubes. Thermal Mastic on the tubes, only.

Next, before sealing the edges of the foam block of the cooling unit and permanently installing it into the refrigerator, it's a good idea to place the cooling unit into the refrigerator to see how well it fits. Sometimes the foam block is too big and needs to be trimmed. Don't get carried away with trimming. A rasp works well. Often, after a test fit, you can see marks on the side of the foam that indicate a high spot. Once comfortable with the fit of the cooling unit, put about a half inch bead of thermo mastic around the edge of the foam block and place the cooling unit into the refrigerator.



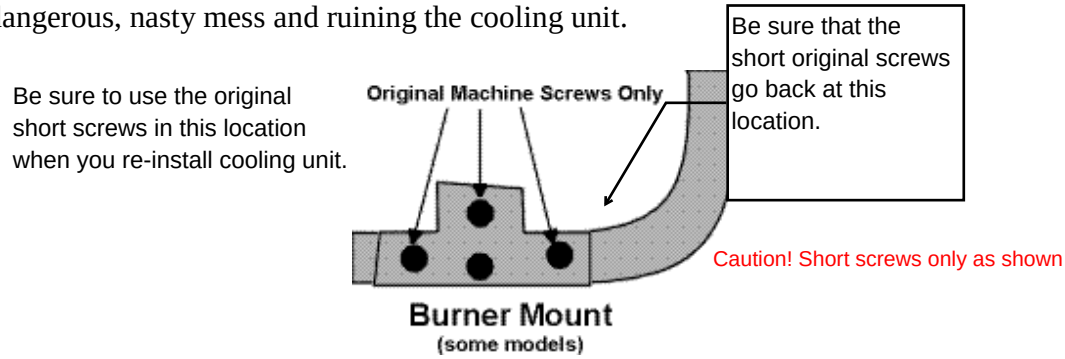
Next, install the mounting screws for the cooling unit. It is important that the two top mounting screws line up with their corresponding holes in the refrigerator. Although all the mounting holes of the cooling unit should line up with the refrigerator, the top two are the most important because they set the angle of the condenser. Also, it is not unusual for this part of the cooling unit to get bent in shipping. If the cooling unit is bent in such a way, it can usually be straightened by running a pry bar through the top pipe of the cooling unit and over the edge of the refrigerator box and prying upward. Failure to get the top two screws in their respective holes may cause the cooling unit not to work. Sometimes this can not be done, due to shipping issues. Just be sure the condenser fins level.



The lower half of the cooling unit should be fastened to the refrigerator in such a way that the boiler (the pipe inside the insulation pack) is parallel to the side of the refrigerator. Normally lining up the cooling unit holes with the holes of the refrigerator accomplishes

this. But if it doesn't, it is permissible to move the lower half of the cooling unit (after the top half has been secured) so that the boiler is parallel to the edge of the refrigerator and start new mounting holes. Once the cooling unit body is fastened down, use screws and duct tape (I prefer aluminum foil tape) to secure the sheet metal backing of the cooling unit in such a way that it is virtually impossible for air to get into the refrigerator from the back. If the head (foam block) protrudes above the surface of the refrigerator box, this is the time to take care of it. Usually a few sheet metal screws along the loose edges of the sheet metal will solve the problem. If the screws don't catch, a good tape job along the edges will suffice.

Install all the peripherals that you had removed earlier (heat elements, baffle, burners etc.). If the mounting bracket on the cooling unit for the burner is like the one in the graphic below, it is very important that you use the original machine screws that were removed from these holes when replacing the burner. Using other screws may actually "drill" a hole into the cooling unit, discharging the coolant. In other words, making a dangerous, nasty mess and ruining the cooling unit.



Once everything on the back of the cooling unit has been installed, set the refrigerator upright. Replace the fins, Reinstall the thermostat capillary tube(s) or thermistor to the fins in the lower box, if appropriate.

Installing the Refrigerator Install the refrigerator back into the RV and make the necessary connections for the electrical and gas. Test for propane leaks at the connections you have made and all gas parts on the refrigerator, using only a soapy solution. The refrigerator should set upright about 30 minutes before being put into operation. Test the refrigerator on AC voltage first, only because there are less variables on the electrical side than on propane. You should see signs of cooling in the freezer in a couple of hours an empty box should come down to temperature in six to eight hours.