

Average Joe's RV Refrigerator

By Roger D. & Onna Lee Ford - Ford RV Service & Refrigeration Training Center

Since 1984, we have serviced thousands of RV refrigerators. The most common issue has been sufficient temperature in the freezer, but not in the refrigerator compartment. The purpose of this article is to educate you with simple procedures you can do yourself, which in turn will save you **lots** of money.

Procedure 1: The refrigerator should be operating in the I/OV mode.

Helpful Hints



We recommend you troubleshoot in 110V mode. We also recommend the use of a temperature probe in the refrigerator compartment. This will give an accurate temperature reading while eliminating the need to open the door to the refrigerator. We prefer our refrigerator temp to be approximately 35 degrees.

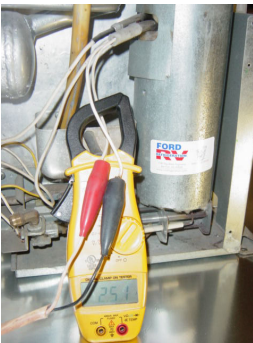
Picture left - Multimeter used to read refrigerator temperature



If you are using the temperature probe with a long stem or one similar to the one shown in the picture to the left, place it in a cup of water before beginning your testing. That way when you remove it from the refrigerator to read, you won't lose degrees too quickly. This enables you time to get an accurate reading.

Procedure 2: Make sure the thermostat is set in a position that calls for cooling.

Procedure 3: Check the heating element wattage. Once you know what amperage your heat element should be, you can do the following step. (**Average Joe's RV Refrigerator Troubleshooting & Repair Guide**, has a wattage chart that lists this information)



- With a multimeter clipped around one of the 110 Volt heat element wires (either one is ok), find the amperage reading. (ex. 2.6 Amps)
- Now take a voltage reading in the receptacle the refrigerator is plugged in to. (ex. 110V)
- Using Ohm's Law, take the voltage X amps to find the wattage.

Example: 110 Volts X 2.6 Amps = 286 Watts.

There is a 10% fluctuation allowance in either direction. So if the correct heat element for your make and model of refrigerator is 300 watts, 286 watts will work fine. If the result is more than 10% below or above the 300 watts, it needs to be replaced.

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To many times over the years, we have seen RV refrigerators condemned by others and the only thing wrong was a heat element fell out of the 10% range which caused insufficient cooling. RV owners have spent thousands of dollars on refrigerator replacements because their technician misdiagnosed their refrigerator.

An example of why technicians are misdiagnosing these refrigerators is in the following quote from one of our past students. Note* RVDA/RVIA Master Certified, is suppose to be the top of the line technician in the RV Industry.

Jason, RVDA/RVIA master certified technician from Nevada said, "I was amazed at how much I did not know about RV refrigerators. Everything I thought I knew about the operation of the cooling unit was wrong and everybody I had talked to before I took the Ford's RV training knows all the same wrong information".

Procedure 4: Make sure the refrigerator is level. I recommend using a small pocket torpedo level.



Place the level in the freezer compartment. It should read level side to side and front to back. If not, adjust camper level to accommodate freezer level. Perfectly level was very critical on older models and is still desired on today's models. However, newer units have a small amount of tolerance. If a unit is not perfectly level it should still work as long as most of the bubble is between the lines.

Procedure 5: Open the access door exposing the back side of the refrigerator.



This area should be free of debris to enable good airflow. Air enters the lower access door, rises up the back of the refrigerator taking the heat away from the cooling unit and is exhausted through the roof vent in the top of the RV. Any excessive dust and lint build up on the coils and fins can diminish the efficiency of absorption refrigerators. This is of greater significance in extremely high ambient temperature.

You should be able to view daylight when looking up to the roof vent from the lower access door. If daylight is not present, there is something restricting the air flow and needs to be corrected. You may need to use an inspection mirror to view this if you cannot put your head in far enough to look up.



Some RV's have the upper and lower vent on the side of the RV, especially those with slides. If one is not already present, we recommend that a thermostat controlled fan be installed on the back of the refrigerator to help the hot air move away from the cooling unit to the vent. Sometimes propping the access door open will increase air flow enough to improve cooling.

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Mud dobbers and wasps like to make nests on the backside of the refrigerator. Check for these and other debris that could cause problems.



Here's a little tip that will prevent critters from creating havoc around the lower vent. Remove the lower access door from the RV and lay it face down. Cut a piece of nylon screen a few inches larger in diameter than the actual size of the access door. Apply a bead of silicone around the inside perimeter of the access door. Press the nylon screening into the silicone attaching the screen to the access door. Allow to thoroughly dry. Cut off any excess screening and reinstall the access door.

Procedure 6: Check freezer and refrigerator compartment door gasket for signs of wear. Often the lower part of the door gasket is the trouble spot. If visually the gasket looks good, check the seal by using a dollar bill. This is done by opening the refrigerator door and inserting a dollar bill between the gasket and the cabinet.



Close the door and pull the dollar away from the gasket. There should be some resistance showing a good seal. If there is little or no resistance, this indicates a poor door seal in this area. Repeat this step around the entire door gasket. Replace the door gasket if necessary.

Procedure 7:



All refrigerators have a condensation drain. This consists of a tray located in the refrigerator compartment under the evaporator fins. When condensation forms on these fins, it drips into the tray. This is transferred to a drain hose attached near the bottom of the tray that passes through the back wall of the cabinet and down to the lower access door. The backside of the cabinet, where the hose passes through the refrigerator cabinet should be sealed with putty or caulking. If this seal is poor, replace with a new one. Some have a drain hose that the end is pinched together so the water is just able to slowly drip out. Some newer models have the drain hose protruding through the access door with a small cap inserted into the end of the drain hose. This cap has many small holes.

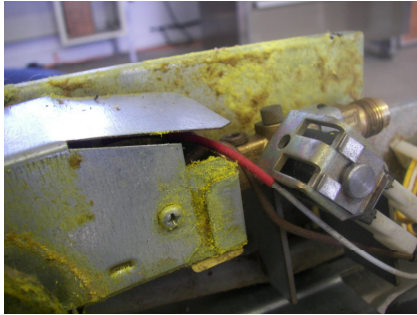
This drain tube needs to have a "P" trap before exiting the lower access panel. Condensation drains are designed to allow condensation to escape and prevent ambient air from reaching the cooling fins.

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Any one of these conditions can change the refrigerator temperature up to nine degrees. A combination of these conditions can raise the temperature twenty degrees or more.

During troubleshooting, after changes have been made using any of the above procedures, do not open the refrigerator door for a period of at least six hours. Then check the refrigerator temperature. If possible, let the refrigerator run overnight before checking.

Note* When spending long periods of time in temperatures of 90°F plus, it is a good idea to install a 12V fan behind the refrigerator. It will help move air across the cooling unit core.



If you see this yellow chalky residue around the burner, or if you smell ammonia, the cooling unit has a leak. Contrary to what you might be told, the cooling unit can be successfully repaired and recharged. We have RV Refrigeration Network Associates (RVRN) across the USA who are Specialists in this area. Having your cooling unit reconditioned by an RVRN Member will cost approximately half the amount of a new replacement cooling unit. Plus, instead of the limited warranty that comes with new units, you will receive a 100% warranty. To find the RV Refrigerator Specialists nearest you go to www.rvrefrigeration.com

RV REFRIGERATOR RECALL INFORMATION

Because of leaks in the boiler tube above the burner, both RV refrigerator manufacturers have recalls on many of their refrigerators. If you have not checked to see if yours is under the recall, you should do so immediately as it could be a fire hazard. For those who have checked, check again. Both manufacturers periodically have updates. Therefore, if you were told in the past that yours is not under recall, it's possible that it is now or will be in the future. Please share this information with every RV owner you talk to.

We encourage you to find a way to support our troops. At our service center we provide everyone with a 10% discount on parts and accessories as a way to help out with today's economy. However, for Veterans and those in active duty we give a 20% discount on parts and accessories.

More valuable information can be found in Average Joe's RV Refrigerator & Troubleshooting Repair Guide. See www.rvrefrigeration.com

Happy RVing & God Bless You All!