

1 Diagnostics for the Gas/Elect

Diagnostic Form

Name & email of installer _____

Model # of fridge _____ Serial # of cooling unit: J _____

This form will work for all Dutch Aire gas/electric cooling units. Please fill this out and return this sheet so we can help you get the issue resolved. **If you are a mobile service, go through and complete these steps but then call or text us while you are at the unit so we can decide what needs to be done before you leave, keeping you from making another trip.**

Have you verified that this fridge is sitting level? Yes: _____ No: _____

#1 What temperature is the fridge? _____ and freezer? _____

#2 What type of thermometer are you using to measure inside temps? _____

We require a thermometer with sensors inside the fridge/freezer to be used so that you don't have to open the doors to check the temps. In the freezer, place the sensor in the center (top to bottom) and about 4 inches from the back wall off the freezer. In the fridge compartment, place the sensor on the first shelf below the fins and in the center (front to back and side to side). Thermal guns, or spring dial type are not acceptable for inside temp readings as they can be very deceptive.

#3 Are the ventilation fans running? Yes ___ NO ___ *If no:* The fans will need to be running in order for the cooling unit to perform to its maximum potential. (If there are no fans on the back of the fridge, place one inside the side vent, blowing air up towards the top, temporarily while diagnosing)

#4 Is this fridge in a slide out? YES ___ NO ___ *If yes:* Open the top side vent and make sure the wood or steel baffle has been removed and there is a slideout fan in place. (See page #7 for more info) If there is no fan installed by the top vent to move air out the vent, remove the top vent for diagnosing.

#5 Was this unit sealed in using the supplied Great-Stuff foam? YES ___ NO ___

A thing to remember is the foam might have been used but even if a small 2" gap is there, it cannot work as warm air will get pulled into the cooling system, this foam has to be used to seal the edge after the unit has been installed and just before being stood up to install back into the opening. If this is in question, slide the fridge forward and check the whole perimeter of the cooling unit foam pack for voids by removing the foil tape and checking the foam sealant. This will save us both a lot of time

#6 First we check the cooling unit running thru the board on gas.

Make sure it's been on gas for at least 6 hours or overnight: write down the temperatures using the Temp Chart on the next page

Freezer Temperature _____ Fridge Temperature _____ A: Outside ambient temp _____

B: Coil Temps: Coil #1 _____ Coil #2 _____ C: Tank temp _____

D: Steam Line Temp _____ (If accessible thru the top side vent)

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#7 **Now switch to AC only and after at least 30 minutes**

A: Outside ambient temp _____ B: Coil Temps: Coil #1 _____ Coil #2 _____

C: Tank temperature _____ D: Steam Line temperature _____ (If accessible)

#8 **After at least 6 hours or overnight on electric** Freezer Temp _____ Fridge Temp _____

TEMP CHART

Double coil unit



The Steam Line temperature needs to be taken at the highest point on the top tube.

We need this temperature if the unit has a top

side vent where it is accessible, if the cooling unit has a roof vent, then we will do diagnostics on the unit without that reading.

Note: The Steam Line temperature location will vary between the left and right side, depending on the side of the cooling unit the boiler stack is on.

single coil unit



From here you can email us these results info@jc-refrigeration.com and we should be able to diagnose from there, if it's still unclear we will have you proceed to step #9

#9 **If the above diagnostics do not fix your issue:** Using direct wire guide on the next pages, wire heaters direct to 120V. Also, check to make sure that the heaters are still working properly by checking the amp draw and/or checking the ohms of the heater. (If unit has 2 heaters, check both individually.)

Amp Draw _____ Ohms _____ Amp Draw _____ Ohms _____

#10 **After a minimum of 12 hours of the cooling unit directly wired, using the same temp chart as before, what are the temps as follows:**

Fridge Temperature: _____ Freezer Temperature: _____ A: Outside ambient temp _____

B: Coil Temps: Coil #1 _____ Coil #2 _____ C: Tank temp _____ D: Steam Line Temp _____

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Direct wire manual (Dometic)

To properly diagnose a gas/elect fridge if it's not properly cooling is to wire the heating element, (single element or double) direct to 120V. This will bypass all controls and will give us the proper knowledge if it's the board or the unit that is creating the problem. When heaters are wired direct then an amp clamp or meter needs to be used to verify that the heater is pulling proper amps. 3.6 -3.8 amps on a double heater (58 -62ohms) and 2.6 – 2.8 amps on a single heater (39 – 43ohms). After 24 hours and the fridge is cold then you know a board issue is involved, after 24 hours and the fridge is still not cold then a cooling unit might be at fault.



Warning: When you do this test make sure fridge is either turned off at the controls or its turned onto AC so you don't run gas at the same time.

Note: Your board might look different than this one but it is the same concept. Follow the wires from the heating element to where they plug into the control board. Unplug them from the control board and plug them directly into a 120V pig tail power cord. **If you have vent fans make sure these are directly wired as well so they run on this test.**



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Direct wire manual (Norcold)

To properly diagnose a gas/elect fridge if it's not properly cooling is to wire the heating element, (single element or double) direct to 120V. This will bypass all controls and will give us the proper knowledge if it's the board or the unit that is creating the problem. When heaters are wired direct then an amp clamp or meter needs to be used to verify that the heater is pulling proper amps. 3.6 -3.8 amps on a double (58 -62ohms) and 2.6 – 2.8 amps on a single heater (39 – 43ohms). After 24 hours and the fridge is cold then you know a board issue is involved, after 24 hours and the fridge is still not cold then a cooling unit may be at fault.



Warning: When you do this test make sure fridge is either turned off at the controls or its turned onto AC so you don't run gas at the same time.

Open side vent to the fridge and find your board cover, covers and location to the board might vary some from fridge to fridge: **(RA)**



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Remove wiring as shown and cover by removing screws from board cover



Find your heater wires located on the left side of the board (YA), 2 wires for a single 4 wires for a double heater (RA), remove these off the board

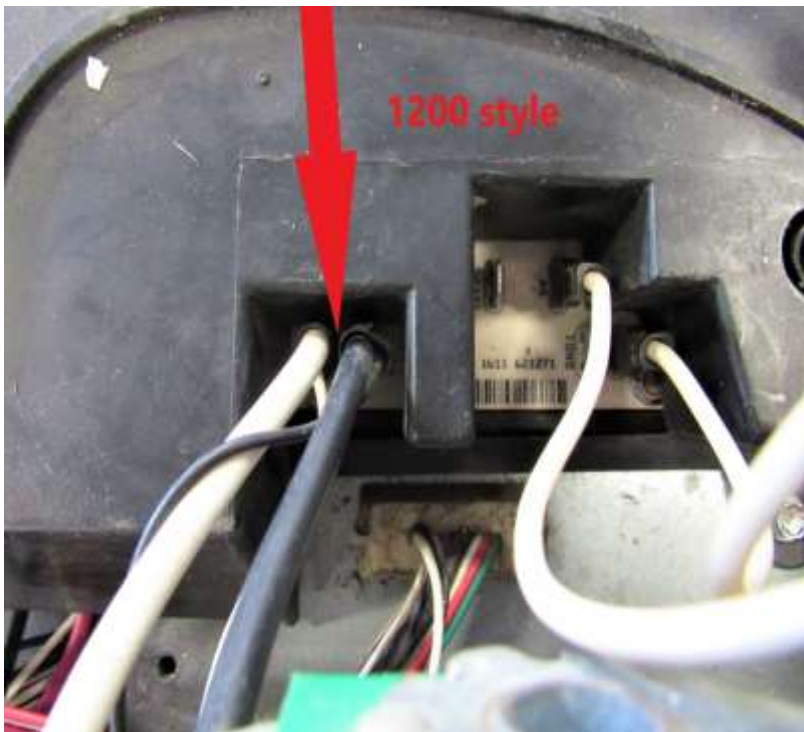


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Make up a short 120V pigtail, that will serve as a power wire for this test, connect the heater direct to this pigtail for the test.



Important: Wire 12V DC vent fans direct as well to ensure cooling unit gets proper ventilation while testing. In this pic the black is ground and white is positive, on the 1210 series there will be a red positive and a black negative coming out of the 8 pin connector at the bottom of the board. And on Dometics you need to find your positive lead that goes to the fan.



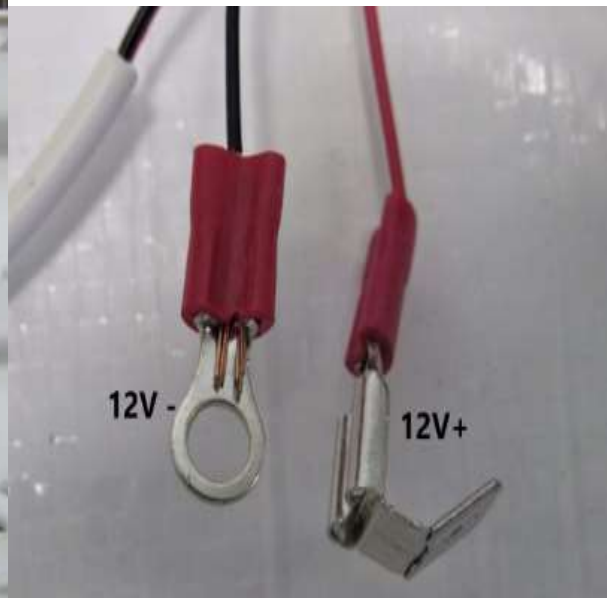
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If your fridge is in a slide out:

This baffle (RED ARROW) needs to be removed or your unit will over heat and warranty will be void, needs to be open as second pic shows and a slide fan needs to be added to your top side vent to force hot air out.



<https://jc-refrigeration.com/product/slide-out-fan-kit-u/>



This slide out fan can be bought off our website or another fan can be used

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Thermometers we recommend

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



Or you can use these below off Amazon Govee Bluetooth Hygrometer Thermometer, Wireless Thermometer, Mini Humidity Sensor with Notification Alert, Data Storage and Export, 262 Feet Connecting Range, 2 Pack

