VIKING PREFERRED SERVICE

TROUBLESHOOTING GUIDE
&
TESTING PROCEEDURES

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TROUBLE SHOOTING GUIDE ---- *FREESTANDING GAS RANGE* ----

PROBLEM	PROBABLE CAUSE	CORRECTION
1. No bake operation in bake or broil.	1A. No voltage to thermostat	1A. Check for 120VAC at the thermostat terminals BA to Neutral. If no voltage is present check for broken wiring.
2. No bake operation. Broil operates normally, bake ignitor does not glow red.	2A. Defective thermostat	2 A. Check thermostat contacts for continuity contacts or check for 120VAC at thermostat contact BA to Neutral. If no voltage is present or open contacts indicated, replace the thermostat. If voltage is present or contacts is closed, check for broken wiring between thermostat and ignitor. Proceed to 2B.
	2 B. Defective ignitor.	2 B .Check ignitor for continuity. If no continuity is indicated or if ignitor does not glow when tested, replace the ignitor. If the ignitor glows when tested or indicates continuity, check for broken wiring between the ignitor and gas valve. Proceed to 2C.
	2C. Open heater coil in gas valve.	2C. Check gas valve heater coil for continuity. If heater coil is open replace the gas valve. If continuity is indicated, check for broken wiring between the gas valve and thermostat.
3. No broil operation. Bake operates normally. Broil ignitor does not glow red.	3A. Defective thermostat	3A. Check thermostat contacts for continuity contacts.or check for 120VAC at the t-stat Contacts BR to Neutral. If no voltage is present or open contact is indicated, replace the thermostat. If voltage is present or the contact is closed, check for broken wiring between the t-stat and ignitor.
	3B.Defective ignitor.	3B. Check the ignitor for continuity, if no continuity is indicated or if the ignitor does not glow when tested, replace the ignitor.If the ignitor glows when tested or indicated continuity, check for broken wiring between the ignitor and gas valve. Proceed to 3C.
	3C. Open heater	3C. Check the gas valve heater coil for continuity. If the heater coil is open, replace the gas valve. If continuity is indicated, check for broken wiring between the gas valve and thermostat.
4. No gas flow to the burner ignitor glows red.	4A. Defective ignitor	4A. Check the ignitor current draw. If less Than 3.2 amps replace the ignitor.
a) Intermittent burner flame b) lighting only one side of c) gas odors --d) lowering average temp. of oven.	4B.Gas pressure too low .	4B. Check the for correct gas pressure. Nat gas pressure should be 5"WCP and LP gas pressure should be 10" WCP.

TROUBLE SHOOTING GUIDE ---- *FREESTANDING GAS RANGE* ----

PROBLEM	PROBABLE CAUSE	CORRECTION
5. Gas flows to bake/broil burner but does not light.	5A. Ignitor position too far From burner. 5B. Dirt or grease in orifice. 5C.Insufficient gas pressure. 5D.Gas supply.	5A. Reposition ignitor closer to the bake/broil burner. 5B. Clean the orifice. 5C. Check for correct gas pressure. Pressure should be 5"WCP for natural gas or 10" WCP for LP gas. 5D. Check oven shut off valve located on the manifold.
6. Fan motor does not operate	6A.No power to the fan motor. 6B. Defective fan motor winding or frozen motor shaft.	6A.Check for 120VAC supplied to the fan motor. If no voltage is present, check the selector switch for continuity and , check for broken wiring between the selector switch and fan motor. If voltage is present at the fan motor proceed to 6B. 6B. Check the motor winding for continuity. Check for a frozen motor shaft and check for broken wiring between the motor and neutral terminal block.
7. Oven light does not operate. 8. Oven light stays on.	7A. Burned out bulbs. 7B. Defective light switch 7C. Defective light socket. 8A. Defective light switch	7A. Replace bulb. 7B. Check light switch contacts for continuity. 7C. Check for 120VAC at the light socket terminals. If voltage is present, replace the socket. If no voltage is present, check for broken wiring between the light switch and light socket. 8A. Check light switch contacts for continuity Replace light switch.
9. Oven indicator light does not come.	9A.No power to the indicator Light. 9B. Defective indicator light.	9A. Check for broken wiring between the thermostat and indicator and from the indicator to the neutral terminal block. 9B. Check for 120VAC at the indicator terminal. If voltage is present, replace the indicator.
10.No spark at top burners	10A.No power 10B.Broken ignitor 10C.Wire connection, Pinched wire. 10D.Valve switch 10E.Defective spark module.	10A.Check power source. 10B.Replace spark electrode. 10C Check connection between spark Electrode and spark module. 10D.Check continuity on valve switch. If no Continuity replace switch. If continuity Checks ok, check all wire connections. 10E.Replace spark module.
11.Delayed ignition on top burner.	11A.Electrode position 11BClogged ports on burner.	11A.Align electrode with burner port. 11B. Clean or replace burner.

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PROBLEM	PROBABLE CAUSE	CORRECTION
12. Intermittent spark or ghost spark (Ghost spark occurs when the ignition system is in the off position at approx-imately every 20 minutes).	12A.Lack of or improper ground.	12A. Check ground at outlet. Check module ground.
13. Continued reignition on top burner.	13A.Defective spark switch or incorrect switch. 13B.Position of spark electrode 13C.Lack of or improper ground. 13D.Defective spark module.	13A. Replace switch. 13B. Align spark electrode with burner Port. 13C. Check ground outlet. Check ground at the module. 13D. Replace spark module.
14. Yellow tipping - produces soot and blocks flueways.	14A.Lack of primary air due to incorrect air shutter adjust-ment. 14B.Blocked, dirty primary air openings or blocked burner ports. 14C.An orifice hood out of line will reduce primary air injection. 14D.Faulty drilling or a dirty orifice.	14A. Open air shutter to get rid of the yellow tips. CAUTION-too much primary air will cause lifting, noisy flames. Balance must be obtained. 14B. Clean and readjust burner 14C.Align with burner venturi and tube 14D. Clean orifice or replace faulty drilled Orifice.
15. Lifting flames- flames rise from the ports to burn some distance above the port, also known as a noisy flame.	15A.Lifting burner flames results when the flow velocity of air-gas mixture from a port exceeds the flame velocity. (Flame Velocity -the speed at which a flame moves through a fuel/air Mixture.)	15A. Reduce primary air.
16. Fluctuating flame	16A.Normally caused by non Uniform gas pressure.	16A. Check gas pressure a) supply b) regulator 16B. Check orifice for blockage. a) metal shavings b) dirt or dust c) excess grease from burner valve.
17. Floating flame-lazy looking, no well defined inner cone, appears to be "reaching" for air. Normally a strong aldehyde odor is present. (Aldehyde-A class of com-pounds which have a pungent distinct odor.)	17A.Lack of secondary air. combustion products recirculated in the burner box contaminate the air supply. 17B. The appliance may be over-rated. If so the flue outlet area may be too small for the gas rate.	17A.Open secondary air inlets. 17B. a) Decrease gas flow rate b) check and clear any blockage found in the flueway. c) check for blockage of burners And clean if necessary. d) Adjust primary air to get rid of any yellow tipping which may have produced soot to block the Flueway.

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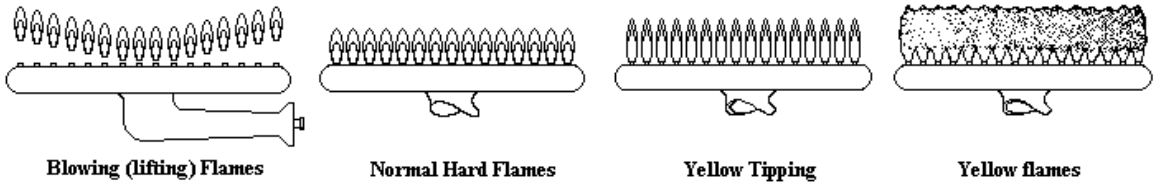
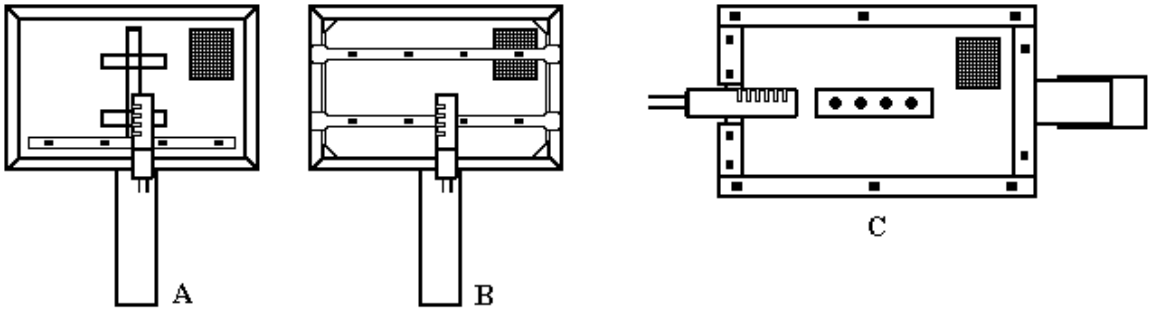
PROBLEM	PROBABLE CAUSE	CORRECTION
18.Flashback-The air/gas mixture ignites inside the burner to burn near the orifice, creating a roaring noise like a blow torch.	18A. Under rated burner 18B. Increase primary air. 18C. Flashback occurs with the Burner valve in on off probably , the valve is probably leaking.	18A. Check orifice size. Increase size if necessary or increase gas pressure. 18B. Adjust air shutter to reduce primary air. 18C. Change burner valve. 18D. If #1,2 &3 corrections fail to eliminate flash back, replace the burner.
19. Extinction pop-A small explosion of gas in the burner head occurs when the burner is shut off.	19A. Similar to flashback.	19A. Reduce primary air supplied to the burner. CAUTION: do not allow yellow tipping during normal burner operation. 19B. Check orifice size. 19C. Check gas pressure.



Blowing (lifting) Flames **Normal Hard Flames** **Yellow Tipping** **Yellow flames**

Check the gas supply and set the regulator to the proper supply of gas. A properly adjusted burner should be stable and quiet. The flame should have a sharp, well defined blue inner cone, no yellow tipping. The flame should also be stable and uniform with no flames lifting off the burner ports.



A. VGRC / VGSC I / R broiler construction prior to Feb. 1995 used one (1) screen support. The support was mounted internally from the venturi forward to the front of the broiler burner box. The screen support partially covered the glow coil ignitor. This usually caused slow or delayed ignition, especially when used LP gas.

B. A change in the manufacturing of the I / R broiler repositioned the screen supports. The screen supports, now two (2), are positioned from, right to left. The glow coil ignitor is now completely open for igniting the gas almost immediately.

C. The first generation, VGR / VCM, screen support should be welded in four (4) places. A limited production run used pop rivets. The center of the rivets may fall out causing the broiler to back flash to the venturi. Should this occur you can close the opening with a #6 machine screw. Any rear or puncture in the screen or opening in any welded seam will also cause the broiler to back flash.

VBSC360/420/480 REFRIGERATION

TROUBLE SHOOTING AND DIAGNOSIS
GENERAL TROUBLE SHOOTING SITUATIONS

Heavy Warm Load

The amount of warm food placed in the refrigerator affects running time and power consumption. Generally speaking , when a supply of food is placed in the refrigerator, the unit will operate continuously until the food has been cooled down to the desired storage temperature. This continuous operation is normal. In regions where the ambient temperature is relatively high, an excessive warm load may cause overload cycles.

Excessive Door Openings

The length of time the door is left open and the number of times the door is opened should be held to a minimum. Excessive door openings will greatly increase running time, power consumption and frost build-up.

Improper Packaging

Uncovered foods and improper packaging materials and methods cause food to dry out. This reduces the flavor of the foods and results in an excessive frost build-up. Refer the customer to the OWNER'S GUIDE which came with the refrigerator.

Warm Room

1. A warm room or other large source of heat (such as range, heater, hot air duct, sunny window) can affect performance. If the room ambient temperature exceeds 100*F, 100% running time can be expected.

2. At temperatures approaching 120*F, the unit may cycle on the overload.

3. In general, the warmer the room, the greater time and power consumption.

Exterior Sweating

Refrigerators are designed to prevent "runoff" moisture at 90*F and 90% relative humidity. There may be a thin film of moisture on areas at a lower temperature and relative humidity. This is within design specifications and is not a fault of construction.

If possible, relocating the refrigerator in a less humid, better ventilated area will normally eliminate most moisture problems.

DIAGNOSTIC CHART

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE - ACTION
Compressor will not start	No power at ON / OFF switch No power at the compressor No power at the outlet	Plug in electrical outlet or turn on breaker. Press power switch to ON. Check with test lamp or volt meter. Should supply 110-120 volts AC, 60 HZ.
	Thermostat: a. Turned off b. Points not closing	Turn knob clockwise Place jumper between terminals. If compressor starts, thermostat is defective and should be replaced.
	Relay or overload	Using starting cord, check compressor Directly. If compressor starts, check relay and overload individually with ohmmeter and replace one found defective. If compressor doesn't start, replace compressor.
	Loose connections Run capacitor Motor windings open, shorted or grounded	Check circuit from power source to compressor using wiring diagram as guide. Check capacitor, replace if defective. Check windings with ohmmeter. See wiring diagram for resistance values. Replace Compressor if motor is defective.
	Timer	Timer may be in defrost cycle. Turn clockwise past 2 o'clock. Wired wrong. Check timer and replace if defective.
	Compressor stuck	Try starting with starter cord. If compressor won't start, change compressor.
Compressor runs, but no refrigeration or insufficient refrigeration.	Moisture restriction Heavy frost around evaporator	Heat frosted area. If frost line moves farther along coil after heating, restriction was probably caused by moisture freeze up. Discharge unit, sweep the system and recharge.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURES-
ACTION Compressor runs, but no refrigeration or insuf-ficient refrigeration	Permanent restriction	First check for moisture restriction. Check for crimped or damaged tubing. Repair or replace restricted component.
	Low charge or no charge	Check for leak. Add leak charge to get internal pressure. Repair leak or replace leaking component.
	No capacity or low capacity compressor.	Check operating wattage and pressure. See performance chart for wattage and high and low side pressures. Do not judge compressor to have low capacity until restrictions and low charge have been ruled out.
	Air circulation on high side: a. Condenser or grille restricted by lint b. condenser fan motor running or running slowly. c. Condenser fan motor top cover not in place.	Clean condenser and air passage with vacuum cleaner. Disconnect fan motor leads and check separately. Replace motor if defective. Put condenser fan motor top cover in place.
Compressor kicks out on overload	High ambient and / or ab-normal usage.	On initial pull-down in high ambient, the compressor may cut off on overload. Instruct customer.
	Low or high voltage	Check voltage with voltmeter. Voltage at outlet should be 110 to 120 volts AC at the moment of start. Low voltage may cause false start s. High voltage may cause compressor to overheat. Correct voltage condition.
	Run capacitor	Check capacitor. Replace if defective.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-ACTION
Compressor kicks out on overload (continued)	Air circulation on high side: a. Condenser or grille restricted by lint b. Condenser fan motor Running or running Slowly. c. Condenser fan motor Top not in place.	Clean condenser and air passage with vacuum cleaner. Disconnect fan motor leads and check separately. Replace motor if defective. Put condenser fan motor top in place.
	Relay and / or overload	Replace with parts known to be good.
	Motor windings shorted	Check windings with ohmmeter. See wiring Diagram for resistance values. Replace Compressor if motor is defective.
	Over charge	Check for high wattage and frosted suction Line. Evacuate and recharge with correct charge.
Freezer compartment too warm.	Thermostat: a. Set too warm b. Sensing tube not properly positioned c. Out of calibration or Not functioning	Turn knob to higher setting. See that sensing tube is properly positioned. Check thermostat for cut-in and cut-out temperatures. Replace if necessary.
	Interior air circulation a. Fan b. Restriction in ducts	Check evaporator fan. Replace if defective. Check for and remove obstruction in ducts.
	Abnormal usage	Instruct customer.
	Bad door seal or door not closing.	Adjust door to obtain proper seal. Instruct customer to make sure door closes completely.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-
Freezer compartment too warm (continued)	High ambient temperature	Locate in area our of direct rays of sun and away from heat registers or other source of heat.
	Cabinet light	Check to make sure door switch is closed. Replace or adjust switch if necessary.
	Excessive frost on evaporator.	Check items under complaint, "incomplete defrosting."
	Unit: a. Compressor won't Run b. Compressor runs continuously	Check items under complaint,"Compressor won't run. Check items under complaint,"Compressor runs, but no refrigeration or insufficient refrigeration.
Refrigerator compartment too warm	Motorized Air Door: a. Baffle closed b. Baffle is stuck closed	Check for a motor winding resistance of 8800 ohms between the BE/Y andW wires or the Y/R and W wires. If the meter reading shows "open"for both BE/Y and Y/R wires, replace motor. Check for iced door.Remove ice and eliminate moisture entering due to air leak.
	Electronic control board: a. Set too warm b. Baffle stuck closed	Turn knob to colder position. Check for 120 v. between the OR/W and W wires at circuit board plug. **NOTE:** Use static control gloves when handling electronic control board.
	Thermistor: a. Sends wrong or high resistance signal to control board. b. Others, same as "Freezer compartment too warm	Check resistance for given temperature at **GY** wires.An open or infinite resistance reading closes the door.Replace the thermistor. Same as items under, "Freezer compartment too warm."

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-ACTION
Internal Sweating	Abnormal usage Door Seal	Instruct customer to cover foods and liquids. Adjust door for proper seal.
	Insufficient air circulation	Make sure return air flow is not restricted. Increase cold air flow by operating refrigerator compartment as cold as possible without freezing food.
Incomplete defrosting or high cabinet tempera-tures during defrost .	Limit switch	Check bimetal defrost control. If bimetal opens too soon defrost will be incomplete and frost will accumulate. If bimetal is stuck closed or opens too late, high cabinet temperature will result. A loose bimetal may cause the defrost heater to stay on too long. Change bimetal if defective.
	Timer	Check timer for proper operation. Timer should initiate 21 minute defrost cycle every 10 hours. Replace if defective.
	Defrost Heater	Check defrost heater with ohmmeter. Inoperative defrost heater will result in frost and ice accumulation on evaporator. Replace if defective.
	Drain clogged	Clogged drain may result in ice buildup in evaporator. Clear drain system.
Taste and odor	Odorous food	Instruct customer to keep food covered and clean refrigerator and freezer with solution of baking soda and water. Explain how odor and taste of food in refrigerator can be absorbed by ice cubes in freezer due to internal air circulation.
	Hot plastic	Check for a heater in contact with plastic or sealing compound, which may cause odor.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-TEST
Door will not close or will Not seal	Gasket binding	Adjust hinges, add shims if necessary. Lubricate face of gasket on hinge side With parawax.
	Door warped	Loosen retainer screws and rack door To fit cabinet.
	Cabinet racked	Level cabinet; make sure cabinet is setting solidly at all four corners.

THE MOTORIZED AIR DOOR

The electronic control board, located inside the refrigerator control cover, controls the operation of the motorized air door, the thermistor and the evaporator fan motor.

120 volts AC is supplied to the electronic control board through the BK wire and operates the circuit as follows:

1. To open the baffle: 120 volts AC is supplied to the baffle motor through the Y/R wire and switch SW1 (Fig.31-C). The motor rotates 270* from the "closed" position (Fig.31-A) to the "open" position where it contacts SW1 which opens and parks the motor.
2. To close the baffle: 120 volts AC is supplied to the baffle motor through the W/BR wire and Switch SW2 (Fig.31-C). The motor rotates 90* from the "open" position (Fig.31-B) to the "closed" position where it contacts SW2 which opens and parks the motor.
2. 120 volts AC is supplied through the OR/W wire to the electronic control board which energizes the evaporator fan motor and supplies low voltage to the thermistor.

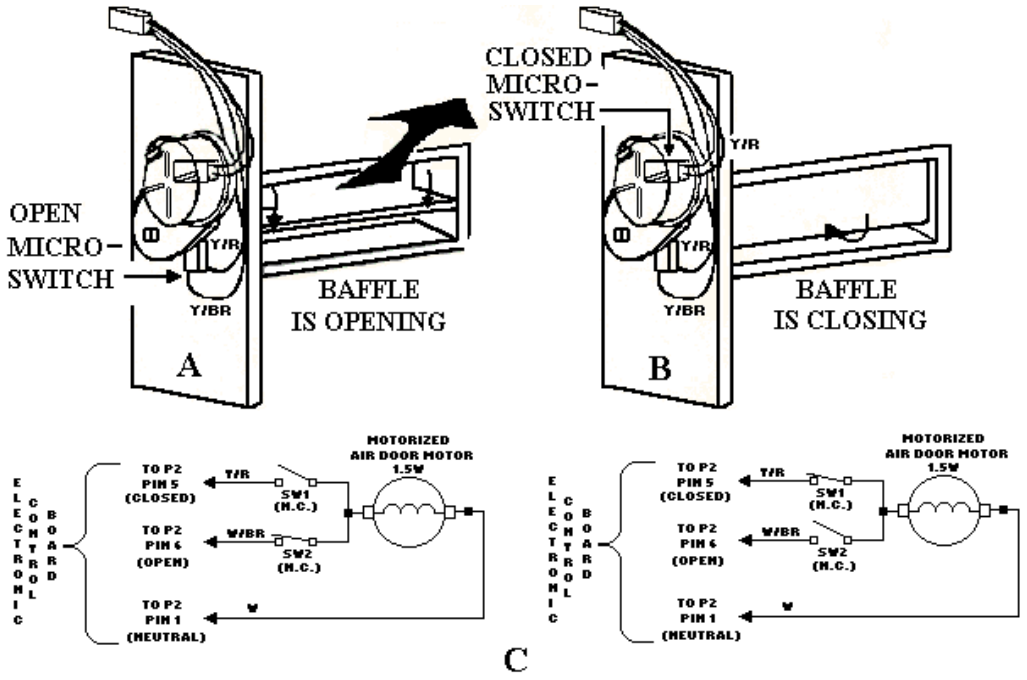


FIG. 31

CHECKING CONTINUITY

To make component or wiring measurements, set an ohmmeter's RANGE switch at R x 1 (unless directed otherwise.) For all "ground" measurements, set the RANGE switch to R x 10k. Insert the ohmmeter probes into the plug pins or against the component terminals as directed in the procedure.

COMPONENT	TEST PROCEDURE	METER READINGS
THERMISTOR	The thermistor can be tested by measuring the resistance between The GY wires at the thermistor connector or at the DC connector of the electronic control board. Making the test at the board is an easy way to check out the thermistor wiring harness. The "Meter Readings" show the thermistor resistance over a range of temperatures.	`Temperature(*F)=Resistance(Ohms)` 35*F = 8240 - 8926 65*F = 3628 - 3930 40*F = 7143 - 7739 70*F = 3189 - 3455 45*F = 6209 - 6727 75*F = 2810 - 3044 50*F = 5410 - 5860 80*F = 2480 - 2687 55*F = 4724 - 5118 85*F = 2194 - 2376 60*F = 4235 - 4479 90*F = 1945 - 2107
DEFROST HEATER	Disconnect the defrost heaters wire connector from the wiring harness. Touch the ohmmeter probes to the Connector pins.	The ohmmeter should indicate approximately 19 ohms to 20 ohms.
	`Ground Test:` Touch one probe to the chassis and the other to each connector pin.	Should indicate an "open' circuit for both pins. Any resistance indicates a short circuit.
BIMETAL	Make sure that the freezer is cold Enough to close the bimetal contacts. The bimetal contacts close at approximately 20*F +/- 8*F and open at approximately 50*F +/- 8*F. Disconnect the 2-pin bimetal connector (PX and BR wires) from the wiring harness. Touch the ohmmeter probes to the pins on the ends to the wires.	Continuity if the evaporator temperature is below 12*F. No continuity if the evaporator temperature is above 56*F.
EVAPORATOR FAN MOTOR	Disconnect the wire terminals from the motor. Touch the ohmmeter probes to the motor terminals.	The ohmmeter should indicate between 40 ohms and 80 ohms.
	`Ground Test:` Touch one probe To the chassis and the other to each wiring connector.	Should indicate an "open" circuit. Any resistance indicates a short circuit

COMPONENT	TEST PROCEDURE	METER READING
MOTORIZED AIR DOOR	Disconnect the wire terminals from the motor and touch the ohmmeter probes to the connector pins as follows: 1. Y/BR and W wires 2. Y/ R and W wires	Approximately 8800 ohms between the W/BR and W wires OR the Y/R and W wires.
ICE MAKER FILL VALVE	Disconnect the solenoid wiring connector. Touch the ohmmeter probes to the solenoid terminals.	The ohmmeter should indicate approximately 270 ohms.
	`Ground Test:` Touch one probe to the chassis and the other to each solenoid terminal.	Should indicate an "open" circuit for both terminals. Any resistance indicates a short circuit.
CONDENSER FAN MOTOR	Disconnect the condenser fan motor connector from the wiring harness. Touch the ohmmeter probes to the motor wire connector pins.	The ohmmeter should indicate between 115 ohms and 450 ohms.
	`Ground Test:` Touch one probe to the chassis and the other to each motor wiring connector.	Should indicate an "open" circuit for each connector. Any resistance indicates a short circuit.
THERMOSTAT	Disconnect thr thermostat wiring connector. Touch the ohmmeter probes to the thermostat connector pins.	With the thermostat turned fully clockwise, the ohmmeter should show "continuity." Fully counter clockwise rotation should show "no continuity."
COMPRESSOR	Touch the ohmmeter probes to the S and C connector pins.	The ohmmeter should indicate between 4 ohms and 22 ohms.
	Touch the ohmmeter probes to the M and C connector pins.	The ohmmeter should indicate between 1 ohm and 4 ohms.
	`Ground Test:` Touch one probe to the chassis and the other probe to the S, M and C connectors.	Each connector should indicate an "open" circuit. Any resistance indicates a shorted winding.
OVERLOAD PROTECTOR	Touch the ohmmeter probes to the two terminals.	The switch is normally closed (N.C.), so the ohmmeter should show continuity (0 ohms).

COMPONENT	TEST PROCEDURE	METER READING
PTC START RELAY	The PTC Start Relay cannot be tested. To determine its reliability, use the following procedure: 1. Measure the R and W wires at the compressor for 120 volts AC. 2. Check the overload relay to make sure there is continuity through It. (Use the previous test procedure.) 3. Test the run capacitor. (Use the following test procedure.) 4. Use a test cord and start the compressor. If it starts, and the preceding checks are okay, the relay is defective.	
RUN CAPACITOR	Disconnect the wires and touch the ohmmeter probes to the two terminals.	The ohmmeter reading should peak and then drop. Reverse the test probes on the terminals and the same results should occur.
TIMER **NOTE:** The production timer (Paragon) has a 10 hour cumulative run time with a 21 minute Defrost duration. The service replacement timer (Mallory) has an 8 hour cumulative run time with a 21 minute defrost duration.	To test the timer, perform the following steps: 1. Use a screwdriver and manually turn the time clockwise until you hear a "click." This will place the timer in the "defrost" position if the refrigerator was running, the compressor and fans will turn off. 2. Unplug the unit. 3. Disconnect the 4 wire connector from the timer. 4. Set the ohmmeter to the Rx10k. Checking the Motor: 1a. Paragon Timer: The motor windings have a capacitor connected In series. Use the same procedure that you would use for checking a capacitor. Momentarily touch the probes to terminals PK and R, then reverse the probes and touch the terminals again.	Paragon Timer - When you first touch the terminals the meter should momentarily deflect and show continuity.

COMPONENT	TEST PROCEDURE	METER READING
TIMER (Continued)	1b. Mallory Timer: Touch the meter probes to timer terminals PK and R (motor windings).	Mallory Timer - the meter should read 6000 ohms to 9000 ohms.
	The Defrost Mode 1. Set the ohmmeter to Rx1 scale and zero the meter. 2. Touch the meter probes to timer terminals PK and BK (switch contacts.) 3. Touch the meter probes terminals BK and OR (switch contacts.)	 The meter should read " zero" resistance (contacts closed.) If it reads anything else, replace the timer. The meter should read "infinity" (contacts open.) If it reads anything else, replace the timer.
	Cooling Mode 1. Use a screwdriver and Manually advance the Time 1/4 turn. 2. Touch the meter probes to timer terminals BK and OR (switch contacts.) 3. Touch the meter probe to timer terminals PK and BK (switch contacts.)	 The meter should read "zero" resistance (contacts closed.) If it reads anything else, replace the timer. The meter should read "infinity" (contacts open.) If it reads anything else replace the timer.

WHAT'S IN WATER

INGREDIENT	EFFECT	CORRECTION
	A. IT AFFECTS ICE QUALITY	
Algae or Sulfides	Objectionable Taste and Odor	Carbon Filter
Minerals: Sodium Potassium Manganese Calcium	Cloudy Ice Slow Cutting Refreezing	1. Check: a. Water flow restriction, b. Correct siphoning. 2. Polyphosphate feeder or water softener. 3. Change water source.
	B. IT AFFECTS ICE MAKING	
Iron Chlorine Manganese	Staining (Aesthetic only)	1. Citric acid or liquid ice machine cleaner. (Citric acid works best) 2. Water softener AND iron filter.
Permanent Hardness Calcium or Magnesium Sulfates Chlorides Nitrates	Scale	1. Abrasive cleaning. 2. Polyphosphate feeder or water softener reduces or eliminates abrasive cleaning.
Temporary Hardness Calcium or Magnesium Carbonates	Scale	1. Liquid ice machine cleaner. 2. Polyphosphate feeder or water softener reduces frequency of cleaning by 50%.
RECOMMENDATIONS: Water softeners or polyphosphate feeders are not cure-all, but do reduce (and in some cases, prevent) scale build-up. They are particularly effective in controlling sulfate scale, which is rock-like and can be removed only by sanding, scraping or chiseling. Caution: Some polyphosphate feeders cause slime build-up, so their use in low mineral content water should be carefully considered.		

(Continued)

When the ice slab takes too long to divide into cubes because the water supply has a high mineral content, a special replacement transformer is available from your parts distributor. This transformer has a selectable 11- volt tap that will increase the heat of the cutter grid wires, helping divide the ice slab into ice cubes faster.

WHAT'S IN WATER

C. WATER TESTING

Water testing is necessary to determine the amount of minerals in a water supply that affect ice and the ice maker.

T.D.S.	(Total Dissolved Solids) is the test for the total concentration of all minerals present in the water.
Chlorides Alkalinity Total Hardness	Are tested to determine the degree of cloudy ice and scale build-up.

Small concentrations of minerals do not affect the ice quality or cause excessive scale build-up. However, amounts which have an adverse effect are:

TEST	CONCENTRATION	EFFECT ON ICE	EFFECT ON ICE MAKER
T.D.S.	50-1000 ppm or higher	Cloudy slow cutting refreezing	Temporary and permanent scale build-up
Chlorides	200-300 ppm or higher	Major cause of cloudy ice, slow cutting, refreezing	Temporary and permanent build-up
Alkaloids	300-400 ppm or higher	Cloudy slow cutting refreezing	Temporary and permanent scale build-up
Total 5-10 GPG* hardness	Clear ice (100-170 ppm) 10-15 GPG (170-255 ppm) 15-20 GPG (255-340 ppm) 20 GPG and up (340 ppm and up)	Minimum scale Slightly cloudy Noticeably cloudy possibly slow cutting and refreezing Severely cloudy Slow cutting Refreezing	build-up Moderate scale build-up Serious scale build-up Excessive scale build-up

*Grains/Gallon

Water treatment companies usually have the equipment to test water. Most city water departments can supply information concerning the mineral content in the water.

TROUBLE SHOOTING GUIDE --- *UNDERCOUNTER ICE MACHINE* ---

PROBLEM	PROBABLE CAUSE	CORRECTION
1.Unit will not Operate	1a. Service control switch not turned on 2b. Bin is already full of ice up to the bin thermostat. 3c. Power is not available to the unit.	1a. Turn control service switch on 2b. Check ice level. 3c. Check fuse or breaker, and unit's power plug.
2. Power is available to the unit, but the compressor or water pump is not running.	2a. Ice is stuck between the wall and the bin thermostat well. 2b. The compressor, relay or overload protector are not operating. 2c. The water pump is not operating.	2a. If the cutter grid is warm, check for ice between the wall and t the bin thermostat. 2b. See component testing section (Page 26). 2c. See component testing section (Page 26)
3. Ice cubes hanging on to the bottom of wires.	3a. The water valve is restricted. 3b. The drain in the water reservoir pan is restricted. 3c. There is excessive mineral content In the water supply. filter to remove minerals.	3a. Check water valve assembly and screen for clogging. 3b. Remove restriction. 3c. Check water for increased mineral content. Use charcoal Filter to remove minerals.
4. Uneven built-up of on evaporator plate.	4a. The water valve is restricted. 4b. There is little or no water in the water reservoir pan. 4c. The drain plug is not in place on bottom of the water reservoir pan. 4d. The water level is over the top of the drain tube in the reservoir pan at the beginning of the ICE MAKING cycle. 4e. The water restrictor or the holes in the distributor are plugged. 4f. The water pump is not operating.	4a. Check water valve assembly and screen clogged. 4b. Check water pump. 4c. Check drain plug. 4d. Check sump pump operation. 4e. Clean and unplug the distrib-utor holes. 4f. Feel under the pump to make sure the agitator arm has not been broken off.
5. Unit not making ice ,compressor Running and water flow over evaporator plate	5a. The evaporator freezing plate is not getting cold. 5b. The hot gas valve is not operating properly.	5a. The plate should feel cold during the ICE MAKING cycle. 5b. See component testing section (Page 26)
6. Ice slab not releasing from evaporator plate during the HARVEST cycle	6a. The hot gas valve is not operating properly. 6b. The evaporator plate is nicked or scratched, or covered with a mineral build-up. 6c. The condensate pump is not pumping out the water. The pressure switch will terminate the HARVEST cycle.	6a. See component testing section (Page 26) 6b. Inspect the evaporator plate. replace if damaged. 6c. See component testing section. (Page 26)

TROUBLE SHOOTING GUIDE ---*UNDERCOUNTER ICE MACHINE* ---		
PROBLEM	**PROBABLE CAUSE**	**CORRECTION**
7. Too thick of an ice slab forming.	7a. The hot gas valve is not operating properly. 7b. The evaporator thermostat is not operating properly. 7c. The evaporator plate is nicked or scratched, or covered with a mineral build-up.	7a. See component testing section (Page 26) 7b. The thermostat should open and close at the temperatures indicated on the unit's tech sheet. 7c. Inspect evaporator plate, replace if necessary. Test water supply for high mineral content.
8. Ice Slab with hollow area in the center.	8a. The water valve is stuck open. 8b. The hot gas valve is leaking. 8c. The refrigeration sealed system is under charged, or partially restricted.	8a. Listen for water running out the drain during the ICE MAKING cycle. 8b. See component testing section (Page 26) 8c. Check sealed system for leaks and for restrictions.
9. Ice slab with a lip over the front of the evaporator freezer plate.	9a. The capillary tube has broken loose.	9a. Check underneath the front edge for a separation of the capillary from the edge of the evaporator plate.
10. Ice slab with side flanges	10a The hot gas valve has a small leaks.	10a. See component testing section (Page 26)
11. Ice ball forming on the capillary tube at the evaporator inlet.	11a. The bin door is cracked open, or the door seal is leaking. 11b. The insulation bag is not in place blocking the passage of warm air from the unit compartment into the evaporator area.	11a. Check door seal and replace if damaged. 11b. Reposition the insulation bag.
12. Frost between outlet of the evaporator and the accumulator	12a. The ice thickness control is set too high, and too thick of an ice slab is forming. 12b. There is an over charge in the refrigeration sealed system.	12a. Reset the thickness control. 12b. Check sealed system for over charge or restriction.
13. Sweating or frost on suction line.	13a. The accumulator is not level, (Horizontal). 13b. There is an over charge in the refrigeration sealed system.	13a. Level accumulator (Ice machine). 13b. Check sealed system for over charge or restrictions.
14. Unit still making ice after bin is full.	14a. The bin thermostat is not operating properly. (The thermostat should open and close at the temperatures indicated on unit's tech sheet).	14 a. Check position of thermostat. Change bin thermostat.

TROUBLE SHOOTING GUIDE ---*UNDERCOUNTER ICE MACHINE*---

PROBLEM	PROBABLE CAUSE	CORRECTION
15. Excessive amount of water dripping onto cubes in bin.	15a. The overflow tube in the water reservoir pan is restricted.	15a. Clear the restriction from the overflow tube.
	15b. The drain plug is not tightly inserted in the bottom of the reservoir pan.	15b. Check and secure the drain plug.
	15c. The water inlet tube is not properly installed into the reservoir pan.	15c. Check position of the water inlet tube.
	15d. The drain tube is leaking.	15d. Replace the drain tube.
	15e. Ice is jammed up on the cutter grid, forming a bridge from the evaporator plate.	15e. Clear ice away from the cutter grid.
	15f. The lip on the front of the evaporator plate is bent outward.	15f. straighten or replace evaporator plate.
	15g. The deflector, if installed, is not positioned properly.	15g. Check installation and reposition as needed.
16. Ice in bin melting very fast	16a. The bin door is not closing properly, or the door seals are leaking.	16a. Check door seals for damage, straighten seals or replace.
	16b. The evaporator plate is nicked, scratched, or has excessive mineral build-up.	16b. Check for damage to evaporator plate. Replace if needed. Check for excessive mineral content in water supply.
	16c. The hot gas valve is not operating properly.	16c. See component testing section (Page 26)
	16d. The insulation under the bin is wet.	16d. Check for a hole or tear in the insulation bag. Replace the insulation bag.
	16e. The bin drain partially blocked, causing a slow run off of melting water.	16e. Check for kink in the drain hose under the bin, or a blockage inside the bin at the drain.
	16f. If a water softener is adding too much sodium (salt) to the water supply, the ice produced in the Ice maker will melt at a lower temperature.	16f. Check the salt content in the incoming water supply.

NOTE: Customers should be informed not to store drinks, juices, etc. in the ice maker.

Another phenomena that may be encountered in the ice machine is slushing. Often after servicing a unit, when the unit is powered up, there is the temptation to leave the bin door open to be able to observe that the ICE MAKING cycle begins properly.

When warm air is allowed to enter the bin area during the beginning of an ICE MAKING cycle, the water flowing over the evaporator plate may only freeze into a loose slush. This slush will melt off the plate back into the reservoir pan where it may cause the water pump to stall (stop operating).

If the bin door is closed after the slushing is noted, the slush in the reservoir pan will rapidly melt and the ice maker will once again begin to operate properly.

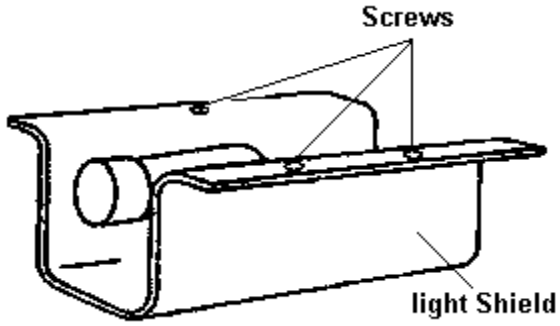
WINE COOLER

Problem	Possible Cause / Solution
Odor in cabinet	Interior needs cleaning
Noisy operation / cabinet vibrates	Cabinet not level; weak floor
Cabinet light not working	Bulb burned out; no power to outlet.
Appliance will not run	Temperature control turned to "OFF"; line cord not plugged in; no power at electrical outlet; house fuse blown.
Appliance runs too long	Prolonged door openings; control set too cold; condenser needs cleaning.
Moisture collects inside	Too many door openings; Prolonged door openings; hot, humid weather increases condensation.
Moisture collects on outside surface	Hot humid weather increases condensation; as humidity decreases, moisture will disappear; control improperly set.
Interior too hot / too cold	Control improperly set; faulty thermostat; relocate thermostat to center of cabinet and recheck.

LIGHT BULB REPLACEMENT

IT IS RECOMMENDED THAT YOU DISCONNECT THE POWER CORD BEFORE ATTEMPTING LIGHT BULB REPLACEMENT.

The unit uses a 15-watt, intermediate base bulb and is located inside the light shield. The light shield is on the ceiling of the unit and is held in place by the use of three screws. Remove the three screws and light shield to remove the light bulb. Do not replace bulb with a bulb higher than 15 watts.



TROUBLESHOOTING GUIDE ----*DISHWASHER* ----		
PROBLEM	PROBABLE CAUSE	SOLUTION
Not Filling With Water	1. Water Valve off 2. Undercarriage flooded (See continuous drain 3. Open fill valve 4. Clogged fill valve 5. Loose connection 6. Door switch 7. Timer or selector open or burned contacts	1a. Turn water valve on 2a. Clogged air gap, hose, pump b. Loose waterline connection c. Hole in system hose: pump, drain, washer motor, spray arm 3a. Replace fill valve 4a. High water pressure, stuck fill valve, faulty pressure switch 5a. Check all wiring and repair 6a. Open or switch out of bracket 7a. Replace as needed
Unit always on or not turning on when door (Interior light hot when door first opened)	1. Check door switch. Door switch may : a. Open b. Come loose from bracket c. Have burnt wire ends (connector) d. Separated at seal Check door switch bracket (lock guard). Bracket may have a weak containing arm for the micro switch.	 a. Replace door switch b. Replace bracket and switch, if needed. c. Replace wire or wire connectors d. Replace door switch
Continuous Drain (Undercarriage full of water)	1.Check for a clogged drain system In states where air gaps exist or in homes where an air gap is installed, check for a clogged air gap or drain hose. 2.Any restriction from the drain pump can cause a build up of pressure and a temporary separation of the drain pump housing, thus filling the 3.When the under carriage fills with water a float safety switch is activated causing the unit to go into a pump out mode. The dishwasher must be disconnected from power and the water in the undercarriage removed completely in order to reset the dishwasher into a normal mode. 4.Check overflow switch	1a. Clear clog and advise customer on how to maintain a clean air gap 2a. In some cases two (2) drain hoses may be connected causing a vortex at the connection. This vortex may cause larger particles to clog in drain hose or at vortex. Remember - anything can be found in drain hose. Some things to watch for are: toothpicks, fish bones, flatware, and crystal labels, seeds, broken toys, etc. 4a. Replace open overflow switch

Continuous Drain (Con't)	5. Check for leaks: 5a. At door 5b. Lens cover for interior light 5c. Hoses and loose clamps 6. Timer motor may have stalled 7. Timer may be misaligned to causing timer to freeze up when cycling.	 5a. Plum and square dishwasher 5b. Replace lens mount and lens 5c. Tighten fittings or advise custoner to contact Installer or plumber. (Recommend using an original hose clamp and crimping tool) 6a. Replace timer 7a. Align timer
Rapid timer advance	1.Faulty timer 2.Under carriage full of water	1a. Replace timer 2a. (See continuous drain)
Excessive water in tub	1.Check when float switch is activated	1a. Replace float switch 2a. Check for leak in hose
Interior too hot or melting silverware container and rack	1. Element shaped incorrectly 2. Temperature switch out of Bracket or temperature switch remaining closed beyond high limit.	1a. Bend element down in high areas 1b. Replace element 2a. Remount temperature switch 2b. Replace faulty temperature switch 2c. Replace damaged parts
Film on dishes	1. Water contains too many minerals. 2. Unit reusing old water or (See continuous drain) 3. Open drain pump 4. Water not hot enough 5. Detergent dispenser tank empty or valve not opening	 1a. Notify customer 2a. Drain system clogged - clear drain 3a. Replace drain pump 4a. Heater coil open, fractured wire 5a. Check continuity to detergent dispenser
Base pan area full of water	(See continuous drain)	
Not drying dishes	1. Ventilator air fan malfunct-Ioning 2. Blower fan not working 3. Solenoid open for circulating air flow. 4. Heating element open	1a. Check air flow through ventilator at bottom of door. 2a. Replace blower fan / check wiring 3a. Check continuity / replace solenoid 4a. Replace heating element.

Power supply: Always disconnect unit from power before servicing. **NEVER ASSUME:** 1) Unit voltage has been disconnected. Check line voltage at dishwasher. 2) Breaker will remain off during service - anyone at anytime for any reason may turn breaker on, take precautions, especially when other workers are on job site.

Mounting Problems: Always mount and secure dishwasher square and plum
Drain: Always use same size drain hose and connectors and do not detach drain hose from upper back mount.
Fill: Run fill line clear of all mechanisms and electrical connections. It is not recommended to use a metal braided fill hose.
Interior: Lime or mineral deposits can be cleaned with General Electric dishwasher lime and mineral cleaner.
Door: When removing door be cautious of wire length to door switch. Too much pull on the door switch wire can cause door switch to brake in half or come free of holding bracket.

To clean pump:

- You can reach the drain pump from inside the machine. First remove the coarse strainer and the fine strainer. Then you can remove a small cover in the bottom of the hole. There you can reach the pump impeller and remove the dirt. Replace the fine filter.

Trouble shooting

- **There is water left in the dishwasher:** If the dishwasher is taking in too much water, the drain pump starts automatically. If the water, in spite of this, is not drained off, it might depend on any of the following reasons:
  1). The filter is clogged.
  2). The pump is blocked. Pieces of bone or other foreign particles in the drain pump.
  3). The drain hose is clogged (blocked) Check to make sure that there are not obstacles in the hose where it connects to the water. Foreign particles can get lodged in the entrance of the connection line (see illustration). Also check to make sure that the cone-shaped connection line has been cut to an inner diameter of at least ¾".

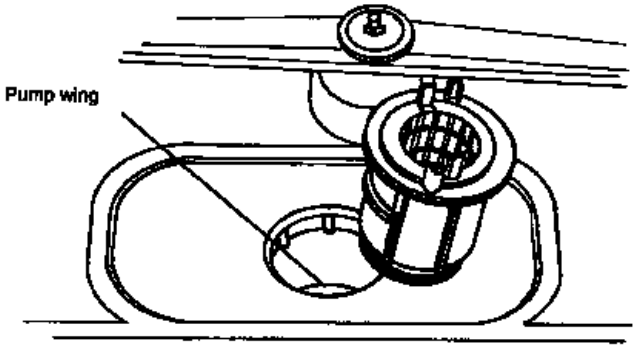
The drain hose is kinked:
Check to make sure that there are no kinks in the drain hose.

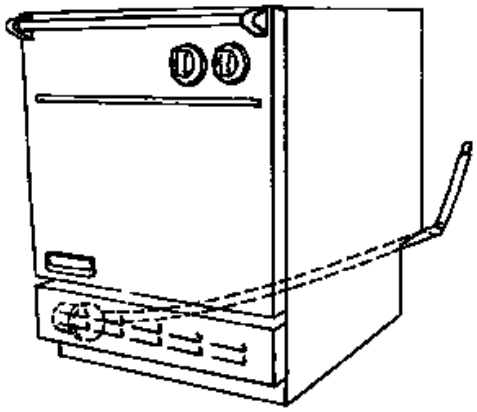
Air gap:
If the machine is equipped with an air gap, be sure the air gap is not blocked or plugged.

1) Keep air gap clean.
2) Check air gap first if the drain becomes blocked and there is water left in the dishwasher.

The dishwasher does not start , check the following:

1) The door is not completely closed.
2) The POWER / HEAT knob is in the "off" position.





3) The CYCLE SELECTION knob is in the "off" position.
4) A fuse is blown or a breaker is open, check the electrical box.
5) The safety overflow float / switch in the base pan under the tank has turned off all power to the dishwasher. This means that there is a leak and water is accumulating in the base pan

The Pressure (level) **Switch** closes the Inlet Water Valve when the dishwasher has taken in too much water.

Low Water consumption—4.6 gallons in the normal cycle.

Low Detergent consumption because of low water usage.

VOLTAGE READINGS

POINT	NORM	DRAIN	HEAT	WASH	DRY
*DRAIN PUMP	120	120	120	120	120
*BLOWER	120	120	120	120	120
SOAP SOL.	0	0	3	0	3
TIMER POINTS					
P1	0	120	3	120	3
P1B	0	120	3	9	3
P2a (INLET VALVE)	0	120	3	0	3
P3 P4 P4a P5b	0 120 0 6	120 120 120 6	3 120 120 10	120 120 120 15	3 120 120 7

***Drain Pump** and **Blower Fan** will always have voltage present. The **Timer** completes the circuit to allow the **Motors** to run. This is normal and should not be considered a **Timer** fault.

RESISTANCE READINGS

THERMISTOR	25K
INLET VALVE	480
SOAP DISH	320
SOLENOID	
VENT SOLENOID	2K
HEATER	10
DRAIN PUMP	23
CIRC. PUMP	12
VENT BLOWER	260
THERMOSTAT	2K

All resistance readings should be taken with the component disconnected and no voltage present so as not to damage meter.

POOR DISHWASHING RESULTS

Try the following remedies. Poor results may not always be caused by the dishwasher. Read through the chart below before contacting your servicer.

Problem	Possible Cause	Suggested Remedy
Spotting and filming	Hard water	Use the maximum recommended amount (3 tablespoons) of dishwasher detergent. You may need a home water softener. To remove hard water spots, try a vinegar rinse. • Wash and rinse load as usual. • Remove all metal items from dishwasher. • Do not add detergent. • Pour two cups of vinegar into a bowl and set it on the bottom rack of the dishwasher. • Run the dishes through and entire wash program. If the vinegar rinse doesn't work, repeat the above process substituting 1/4 cup citric acid crystals (available at most drug stores) for the vinegar. Wiping with a damp cloth should remove spots from metal items. For sterling and silver plated flatware, rub with a towel, or use a good cream silver polish.
	Filter system	Check filter system to be sure it is clean and properly installed.
	No rinse aid	Does the rinse aid dispenser need to be filled? (Note: use only in hard water areas.)
	Too little water	Check that the water valve is fully open. Make sure that the water pressure is between 15 and 176 PSI. **Check filter in the inlet valve.**
	Dishwasher detergent	Use only the correct amount of dishwasher detergent according to the hardness of the water and the wash program you have selected. Do not use old or caked detergent. Store dishwasher detergent in a dry place and in a closed container. **Change the dishwasher detergent if the result is still unsatisfactory.**
	Items not loaded Properly	Check that you are loading the items according to the instruction in Your guide. **Do not overload. Make sure water can reach all soiled surfaces.**
	Wash arms rotation poorly or stand still	Check that both wash arms can rotate freely and that items do not obstruct the movement of the wash arms. Lift the arms and make sure that no grains of dirt, etc retard the rotation of the wash arms. If necessary, clear the obstruction, refit the arms and check that they rotate. **Make sure that the holes in the wash arms are not blocked by dirt, if necessary, clear the holes with a pointed object.**
	Strainer blocked	Check the strainer. Clear if necessary.
	Excessive foam in the machine	Use only dishwasher detergent.
	Flatware incorrectly	Pay particular attention to spoons so that they do not nest in each other and Prevent water penetration.

POOR DISHWASHING RESULTS (Con't)

Problem	Possible Cause	Suggested Remedy
Small particles deposited on items	Wash arm or arms not rotating freely	Be sure a utensil or handle has not prevented their turning.
	Detergent	Use only fresh detergent, store in a tightly closed container in a cool dry place. Fill dispenser only when ready to start the dishwasher. Use the recommended amount of detergent, especially with hard water.
	Low water pressure	Check that the water valve is fully open.Make sure that the water pressure is between 15 and 176 PSI.
	Improper loading of dishes	Load dishes to prevent water and detergent from being trapped in or between items. Water should circulate freely.
Marks and discoloration	Aluminum utensils rubbing against items during washing	Be sure aluminum utensils, especially light weight foil type pans, do not touch dishes. To remove spots, use a non-abrasive cleaner.
Yellow or brown	Iron or manganese Marks	Temporary solution: Pour 1 teaspoon to 1 tablespoon of citric acid crystals in water instead of the pre-wash detergent directly on the inside of the door. Follow this pre-wash with a full detergent wash. Use the pots / pans or normal wash cycle. **Permanent solution: Install an iron removal system in the water supply.**
	Copper with sterling silver	Yellow film on sterling silver results when you wash copper utensils in the same load. Silver polish will usually remove this stain.
	Tea or coffee (tannic acid)	Tea or coffee can stain cups. Remove stains by hand, using a solution of ½cup bleach and 3 cups warm water. (Do not use on sterling silver or silver plate.)
Discoloration of stainless steel silver plate or	Allowing salty or acidic foods to remain on flatware	Rinse flatware that is to stand several hours before washing.
	Stainless steel compartment.	Do not put stainless steel and silver flatware in the same silverware basket Direct contact between these metals can cause permanent damage to silver. Clean stained items with silver polish. Do not use abrasives on stainless steel or silver
Distortion of plastics	Plastic item has low heat tolerance	Plastics vary in their ability to tolerate heat. Check washing instructions for all plastic items to be sure they are dishwasher safe. If they are, place in top rack away from the heating element.
Marks on mela-mine and plastics	Porous material	Use a special cleaner for plastic. **Do not use bleach or scouring powder on these items.**

POOR DISHWASHING RESULTS (Con't)

Problem	Possible Cause	Suggested Remedy
Cloudy film on glassware-etching of glass	Too much detergent especially in soft water	If vinegar or citric acid rinse doesn't remove film, the cloudiness is "etching". This is permanent. To prevent etching , use the least amount (1 teaspoon) of recommended dishwasher detergent if you have soft water. **Use a good quality dishwasher detergent and rinse aid**. Do not overload the machine. Water should circulate freely to assure adequate rinsing and draining. **Use drying without heat.**
	Rinse aid used with soft water	Use rinse aid in hard water areas only.
Dishes not dry	Non-heated drying	Be sure to select heated drying for best results. Allow more drying time when using non-heated drying.
	No rinse aid	Fill rinse aid dispenser. Rinse aid helps dishes to dry faster. (Note: Used only in hard water areas).
	Plastic items	Certain plastics materials are difficult to dry. Plastics may need towel drying.
	Improper loading or unloading	Do not overload items. Be sure all surfaces drain well. Load items with concave bases so as much water as possible can run off. Unload the bottom rack first. Water from dishes in the top rack may be spilling into the bottom rack.
	Dry cycle interrupted	If the door is opened during the heated dry cycle, the heating element comes back on after the door is reclosed. If the dishwasher door is opened immediately after the dry cycle is completed and then shut again, the vent door is closed, trapping warm humid air. It is best then to leave door open slightly.
Detergent left in detergent compartment (detergent compartment will not open)	Compartment cover blocked	The cover may not be opening because of improperly loaded items. Move dishes that may be blocking it.
	Old detergent	If detergent is hard or caked in the box, throw it away. Use only fresh detergent. Add detergent to dishwasher right before starting it.
Chipping or breaking of glassware	Improper loading	Do not overload. Load between prongs, not over them. Glasses loaded over prongs will not be supported and may chip or break. Make sure glassware is secure and can't come loose. Always use top rack for delicate items. Use the light/china cycle.
Unusual noise	Improper loading	Utensils may not be secure or something small may have dropped from the rack. Water may cause utensils to rattle. Make sure everything is securely placed in the dishwasher.

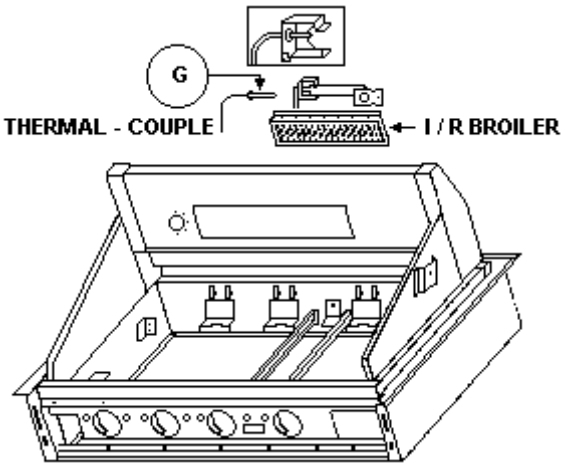
POOR DISHWASHING RESULTS (Con't)

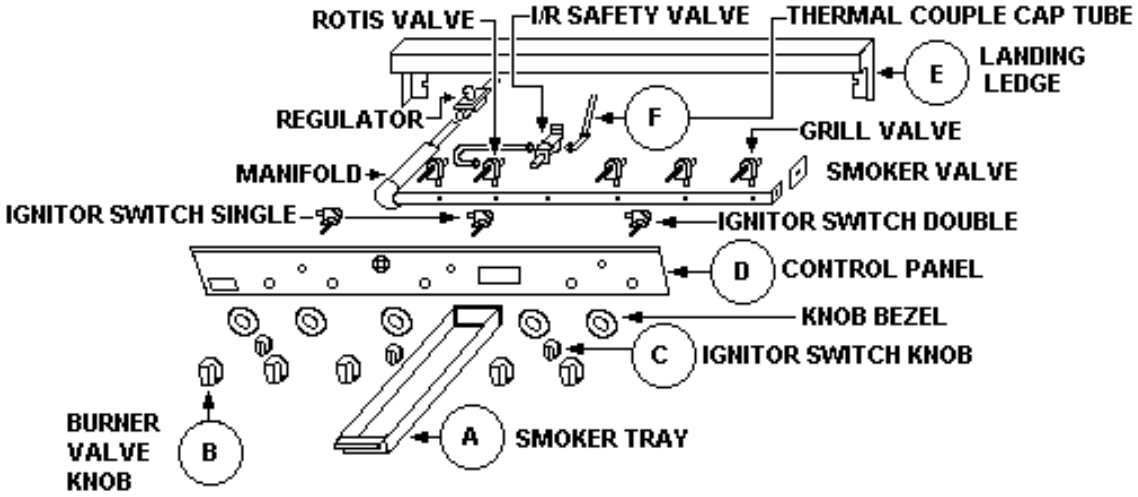
Problem	Possible Cause	Suggested Remedy
Water left in bottom of dishwasher near filters	Dishwashing cycle not complete	Allow dishwasher to complete cycle.
	Some is normal	Water left in removable coarse strainer is normal.
Dishwasher will not drain	Air gap	Be sure air gap is not blocked or plugged.
	Drain hose	Check for kink in drain hose.
	Filter system	Be sure there is no blockage in filter system. Remove, clean and place back in dishwasher before starting dishwasher.
	Clogged drain pump	Clean drain pump.
Dishwasher will not start	Blown fuse or tripped circuit breaker	Replace fuse or reset circuit breaker. Remove any other appliance from the circuit.
	Door not completely closed	Close tightly until you hear a click.
	Control on "OFF"	Turn the POWER/HEAT knob to the appropriate setting.
Dishwasher will not fill	Door open	Check that door is firmly closed.
	Controls	Check that dishwasher is on.
	Water supply	Be sure water is available and turned on.
Water backs up in sink when dishwasher drains	Food waste disposer and trap	Check disposer and trap at sink for blockage or food particles.

OUTDOOR GAS GRILL

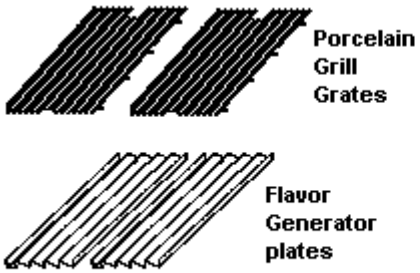
NOTE: Check the thermal – couple capillary tube connection at the I/R safety valve, make sure it is tight before condemning the thermal – couple.

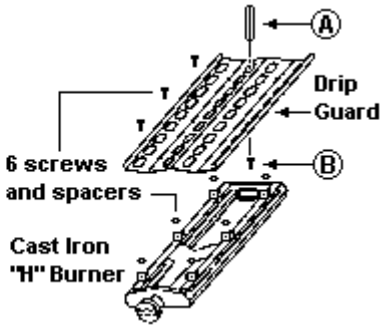
- Remove the back panel to gain access to the Infrared burner.
- Remove the Smoker Tray (A).
- Remove the Burner Valve Knobs (B).
- Remove the Control Panel (D). (The top bezel screws secure the control panel to the manifold support bracket.
- Remove the Landing Ledge (E).
- Remove the Thermal Couple capillary tube (F) from the Infrared Burner Valve.
- Remove the Thermal Couple (G) from the bracket at the Infrared Burner and feed the capillary tube down and through the burner box.





CAST IRON "H" BURNER REMOVAL





- Remove the Porcelain Grill Grates
- Remove the Flavor Generator Plates.
- Do not remove the six (6) screws that hold the Drip Guard to the "H" Burner.
- Insert screw driver and remove the screw marked "B".
- Lift rear of burner up and pull to the rear to disengage the orifice.
- Remove the Burner

With the burner removed you can clear the ports, remove any debris from inside the burner, and check for spider webs or other inhabitants.

* Place these pieces on a protective pad to protect the customers property. These pieces are heavy with protruding edges.

TROUBLE SHOOTING GUIDE ----*OUTDOOR GAS GRILLE*---		
PROBLEM	**PROBABLE CAUSE**	**CORRECTION**
1. Grill won't light when the the rotary ignitor is turned	1A. Remove the grill rack and the flavor generator plates. Watch the ignitor tip. You should see a spark jump from the tip of the ignitor when the knob is turned. 1B. Plugged orifice at the ignitor.	1A. Check spark lead from the sparker to the electrode. 2A Check the other burners, do they light? 3A Make sure the ignitor is clean and free from debris 1B. Use stiff metal wire to clear ports.
2. Burner flame is yellow or orange and a gas odor is Present.	2A. Check the burner inlet for obstructions. 2B. Check the air shutter for proper adjustment.	2A. Clean the gas inlet. 2B. See the install. instruction for burner adjustments.
3. Low heat with knob on "HIGH"	3A. Bent or kinked fuel hose. 3B. Low gas supply.	3A. Straighten or replace fuel hose. 3B. Check and refill L.P. tank. Check the manual shut-off valve, is it fully open? Check check- valve (turn all burners off, turn the manual shut-off vale to off on the gas supply. Disconnect the quick disconnector to relieve the pressure. Reconnect and turn on the gas supply.
4. Low heat on one burner	4A. Dirty or plugged orifice. 4B. Improper flame. 4C. Dirty or plugged burner ports.	4A. Check and clean orifice. 4B. Check air / gas adjustment 4C. Remove burner and clean ports.
5. Optional rotisserie will not light with the ignitor but can be lighted with a match.	5A. No spark at the thermo-Couple.	5A. Check sparker
6. Optional rotisserie lights, but will not hold flame once button is released.	6A. Kinked or bent thermo-couple (out of the flame) 6B. Safety valve button not being held long enough.	6A. Readjust to lay flat against burner. 6B. Hold button in until burner remains lit.

TROUBLE SHOOTING GUIDE ----*OUTDOOR GAS GRILLE*----

USE AND CARE (CLEANING AND MAINTENANCE)

1. **Spider and insect warning.** Spiders and insects can nest in the burners of this or any other grill, and cause the gas to flow from the front of the burner. This is a very dangerous condition which can cause a fire to occur behind the valve panel, thereby damaging the grill and making it unsafe to operate.

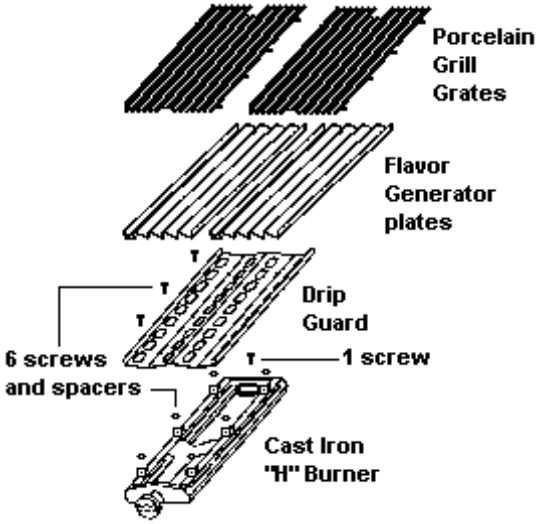
When to look for spiders: You should inspect the burners at least once a year or immediately if any of the following conditions occur.

1) The smell of gas along with the burner flames appearing yellow.
2) The grill does not reach the proper temperatures.
3) The grill heats unevenly.
4) The burner makes a popping noise.

Porcelain Grates and Burners: The porcelain grill grates may be cleaned immediately after cooking is complete and before turning off the flame. Wearing a barbecue mitt to protect your hand from heat, use a soft bristle barbecue brush to scrub the porcelain burner grid. Dip the brush frequently in a bowl of water. Steam is created as the water contacts the hot grate. The steam assists the cleaning process by softening the food particles. For thorough cleaning of the grates, allow grates to cool, then soak 15 to 30 minutes in a hot water and detergent solution. After soaking, scrub with a Teflon scouring pad. **DO NOT USE** a steel wool pad, abrasive cleaners or metal. brush. They could damage the porcelain finish.

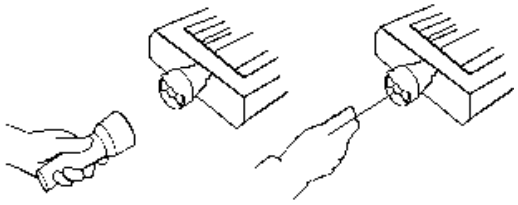
Before removing, ensure the gas supply is off and the knobs are in the "off" position.
To disassemble for thorough cleaning, remove parts after they have cooled in the following order:

- Porcelain grill grates
- Flavor generator plates
- Drip guards
- Cast iron burners



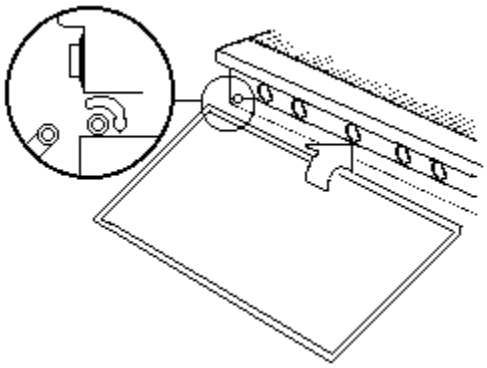
USE AND CARE (CLEANING AND MAINTENANCE)

Clean greasy parts with a household grease solvent such as household ammonia and water. Use a flashlight to inspect the burner inlet to ensure it is not blocked. If obstructions can be seen, use a metal wire coat hanger that has been straightened out. Shake out any debris through the air shutter.



Drip Tray

The drip tray should be removed and cleaned after each use. Allow the drippings in the drip tray to cool completely before removing the drip tray. To remove the drip tray, pull until it stops, slightly lift up on the tray to release it from the rollers inside the burner box and pull the rest of the way out. To replace after cleaning, slide back of tray into rollers, lift slightly and push into rollers. Both sides must be placed in the rollers at the same time.



Infrared Rotisserie Burner

Special care is not required for the infrared rotisserie burner. It is designed as a self-contained unit. Do not attempt to clean it. Its own operation burns off any impurities which condense on it..

Stainless Steel

All stainless steel parts should be wiped regularly with hot soapy water at the end of each cooling period. Use a liquid cleaner designed for that material when soapy water will not do the job. **Do not** use steel wool, abrasive cloths, cleaners, or powders. If necessary to scrape stainless steel to remove encrusted materials, soak the area with hot towels to loosen the material, then use a wooden or nylon spatula or scraper. **Do not use** a knife, spatula or any other metal tool to scrape stainless steel. **Do not permit citrus or tomato juice to remain on stainless steel surface, as citric acid will permanently discolor stainless steel. Wipe away any spill immediately.**

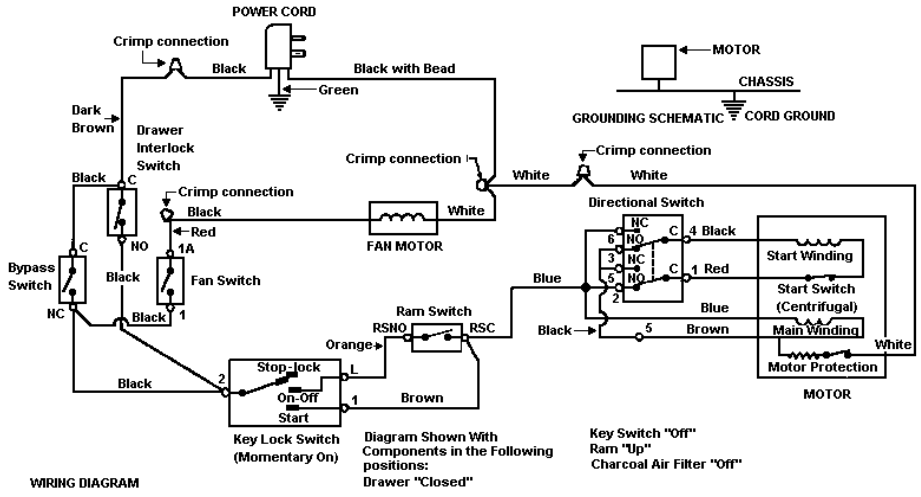
Brass Parts

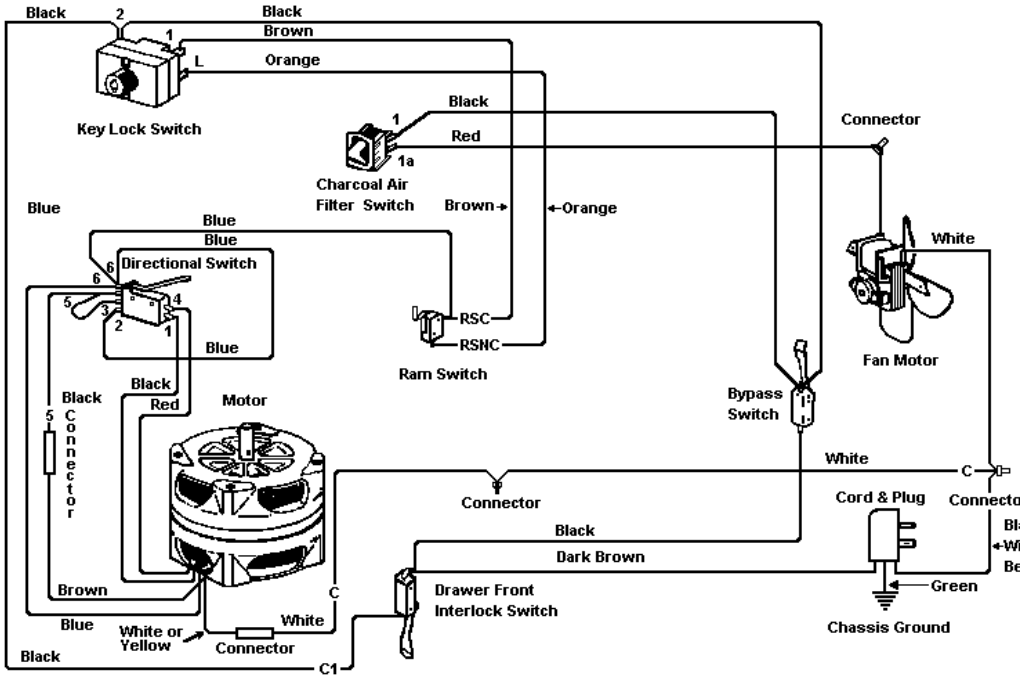
CAUTION: All brass special ordered parts are coated with an epoxy coating. **Do not use brass cleaners or abrasive cleaners on the brass optional parts.** All brass parts should be wiped regularly with hot soapy water. When hot soapy water will not do the job, use every day household cleaners that are not abrasive.

VIKING COMPACTOR ** SERVICE TIPS **

CONDITION	POSSIBLE CAUSE	REMEDY
Motor runs but ram inoperative	1. Motor pulley, motor sprocket, drive sprocket or drive pulley is inoperative	1.1 Replace pin(s) 1.2 Replace drive belt 1.3 Replace drive chain 1.4 Replace pulleys or sprockets
Ram stuck in "down" position	1. Malfunction of directional switch.	1.1 Replace directional switch
Ram operates continuously	1. Malfunction of ram switch 2. Misalignment of start Switch button	1.1 Adjust or replace ram switch 2.1 Realign start switch button.
Drawer will not close	1. Drawer latch mechanism misaligned. 2. Drawer track malfunction 3. Drawer latch rod will not slide over cam on drawer slide hooks.	1.1 Adjust latch rod for proper alignment with drawer track hooks. 2.1 Clean and loosen or replace drawer track. 2.2 Replace drawer spring. 3.1 Apply a small amount of lubricant (grease) on the drawer slide Hook cam surface to allow drawer Latch to slide on cam surfaces.
Drawer will not open	1. Drawer kickboard drags on floor. 2. Malfunction of directional switch 3. Drawer latch mechanism malfunctions. 4. Trash jamming drawer. 5. Malfunctioning tracks. 6. Track spring inoperative.	1.1 Adjust leveling legs. 1.2 Replace drawer springs. If required. 2.1 See "Ram stuck in down" position. 3.1 Adjust or replace malfunction Parts. 4.1 Remove trash 5.1 Clean, lubricate or replace as required. 6.1 Correct or replace.
Compactor will not operate	1. No electric power to compactor 2. Drawer not completely closed 3. Key in locked position.	1.1 Make sure compactor is "plugged in". 1.2 Check fuse or circuit breaker. 2.1 Close drawer. 3.1 Turn key to unlock.
Motor will not operate	1. Improper electrical connections. 2. Motor inoperative.	1.1 Check and correct. 2.1 Replace motor.
Odor	1. Fully absorbed charcoal air filter. 2. Inoperative blower motor.	1.1 See "Use and Care Guide". 2.1 Check electrical connection. 2.2 Replace motor.
Clearance between drawer and litter bin door uneven	1. Improper drawer and /or litter bin alignment.	1.1 Align as needed.

VIKING COMPACTOR WIRING DIAGRAMS





VGDO271 TESTING PROCEDURES

Service Information

Electronic Range Control (ERC) operates in conjunction with a transformer/relay board 1, relay board 2, and oven temperature sensor(s) to control all bake, broil, and self-clean functions.

The **ERC** is connected to a mylar control panel incorporating minute timer, clock, stop time, oven light, cancel, bake, bake time, broil, and clean. Slew pads are used to set times and temperatures.

The **mylar** control panel provides direct input to the **ERC** to control all functions.

The **ERC** display consists of two digital readouts which displays all timing functions, and all temperature functions.

The **transformer/relay** board for upper oven consists of oven light, bake, broil, door lock, and double line break relays controlled by the ERC, and a step down transformer with two secondary windings which convert 120 VAC input to filament voltage (3.2--4.2 VAC) to power the ERC display.

The **relay board** for lower oven consists of bake, broil, door lock, and double line break relays controlled by the ERC.

Oven temperature **sensor 1** is mounted in the upper oven cavity and connected to the J4 connector on the rear of the ERC. Oven temperature sensor 2 is mounted in the lower oven cavity and connected to the J6 connector on the rear of the ERC. As the oven temperature increased, the sensor resistance also increases. The ERC converts this resistance to a corresponding temperature readout and cycles the relay(s) to maintain the desired temperature setting.

The **ERC** is also capable of sensing certain failure conditions which can occur in the oven temperature sensor(s), the self clean latch switch(es) the adaptor board or the ERC itself. If the ERC senses a failure, power will be removed from the relays, an alarm will sound and a failure code will be displayed.

Each major component of the ERC system is serviced as a separate part. However, each component and related wire harness must be tested prior to replacing an individual component.

Quick Test Procedure

"Quick Test" Mode for Electronic Range Control

Follow procedure to use the quick test mode. Entries must be made within 32 seconds of each other or the control will exit the quick test mode. The quick test mode cannot be reactivated until power is disconnected from oven, and must be accessed with in 5 minutes of powering up.

NOTE: To enter Quick Test mode, this **must** be the first key pad entered after power is applied.

1. Apply power to oven **press and hold** BAKE TIME (upper oven) pad for 5 seconds.
2. Display will read the following:

Pad	Response
CLEAN	Double Line Break (DLB) on
BAKE	DLB and Bake on
BROIL	DLB and Broil on
STOP TIME	Panel light and beeper on
BAKE TIME	Displays manufacturer code and sensor readings "000" = open semsor
TIMER	Displays dashes
CLOCK	All display segmentsilluminated
OVEN LIGHT	Oven light on
CANCEL	Exit Quicktest
SLEW	Sequences through display segments

ERC Warnings and Failure Codes

The ERC is capable of detecting certain failures within the ERC, along with oven temperature sensor and self clean door latch switch.

The warning and failure codes which may appear on the display:

ERC will flash "door", if one full door lock cycle has not been completed within 60 seconds of energizing the door lock relay.

DIGIT FAILURE DISPLAY

F1 control malfunction - **Replace ERC**

F2 oven over temperature - **Check sensor wiring, sensor, and temperature limiter**

F3 open sensor or sensor circuit - **Check sensor resistance and wiring**

F4 shorted sensor or sensor circuit - **Check sensor resistance and wiring**

F7 shorted input key - **verify control panel to p.c. board connection, test control panel continuity, replace control panel**

F9 failure of door lock switch sensing with door unlocked-**Check latch switch, door motor, check plunger switch, and wiring.**

FF failure of door lock switch sensing with door locked - **Check latch switch, door motor, check plunger switch, and wiring**

TESTING PROCEDURES

Temperature Calibration Offset

The ERC incorporates ± 35° F. calibration offset capabilities for the oven. This adjustment will not effect the cleaning cycle temperature and will remain in memory if power is interrupted. Follow the procedures as listed to calibrate oven.

1. Press BAKE pad.
2. Press ± until an oven temperature greater than 500° F. shows in display.
3. Immediately press and hold BAKE pad until "00" appears in display, approximately 5 seconds
4. To decrease oven temperature (for cooler oven), press – until negative numbers appear. Oven can be adjusted from –05° to -35° F. lower. To avoid over adjusting oven move temperature -5° each time.
5. To increase oven temperature (for warmer oven) press + until positive numbers appear. Oven can be set from 05° to 35° F higher. To avoid over adjusting oven, move temperature 05° each time.
6. Press OFF/CANCEL pad. Temperature adjustment will be retained even through a power failure.

Function Switch Connection Check Procedure

The Quick-Test mode can be used to verify relay operation on the transformer/relay board. If the relay engages (clicks) during Quick-Test mode it is generally operative.

Transformer/Relay Board 1

The relay for door lock, oven light, bake, and broil, are controlled by approximately 24 VAC signal from the ERC. Input voltage is 102-132 VAC.

Testing of the relays is with voltage applied to oven **after** attaching voltmeter leads to appropriate terminals.

Double Line Break –K6

Drive voltage (24 VAC) indicated at J1 connector pin 1 and 3.

1. Turn off power to oven.
2. Attach voltmeter lead to E1 connector on relay board.
3. Attach voltmeter lead to E18 connector on relay module.
4. Turn on power and touch bake, broil or convection.
5. If 24 VAC is indicated, the double line break relay is closing. Otherwise, replace the transformer/relay board.

Bake Relay –K4

Double line break relay okay. Drive voltage at J1 connector pins 3 and 5.

1. Turn off power to oven.
2. Attach voltmeter lead to E18 connector on relay board.
3. Attach voltmeter lead to E11 (BK) connector on relay module.
4. Turn on power and touch the bake pad.
5. If 24 VAC is indicated, bake relay is opening.

Broil Relay –K5

Double line break relay okay. Drive voltage at J1 connector pins 3 and 6.

1. Turn off power to oven.
2. Attach voltmeter lead to E18 connector on relay module.
3. Attach voltmeter lead to E12 (BR) connector on relay module.
4. Turn on power and touch broil pad.
5. If 24 VAC is indicated broil is operating.

Oven Light Relay –K10

Drive voltage at J1 connector pins 1 and 4.

1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connector on relay module.
3. Attach voltmeter lead to E17 connector on relay module.
4. Turn on power and touch oven light pad.
5. If 120 VAC is indicated, oven light relay is operating.

Door Lock Relay –K3

Double line break relay okay. Drive voltage at J1 connector pins 1 and 9.

1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connector on relay module.
3. Attach voltmeter lead to E8 connector on relay module.
4. Turn on power and program cleaning cycle operation.
5. Two indications will be present during this test.
    a. 120 VAC will be present when the lock assembly is being engaged.
    b. 0 VAC is indicated when the door is locked and cleaning is operational.

Display (Filament) Voltage

1. Turn power on, turn meter to VAC scale.
2. Touch meter lead to J1-1 terminal.
3. Touch meter lead to J1-14 terminal.
4. Meter should indicate 3.VAC.

TESTING PROCEDURES

Relay Board 2

The relays for oven light, bake, broil, convection element, convection fan and double line break are controlled by approximately 24 volts from ERC. Input voltage is 102-132 VAC.

Testing of the relays is with voltage applied to oven **after** attaching voltmeter leads to appropriate terminals.

NOTE: If bake, broil, or convection do not work, the first test would be the relay for double line break.

Bake Relay –K2

Double line break relay okay. Drive voltage at J1 connector pins 4 and 5.

1. Turn off power to oven.
2. Attach voltmeter lead to gray wire connection on double line break relay.
3. Attach voltmeter lead to E3 (BA) connector on relay module.
4. Turn on power and touch the bake pad.
5. If 24 VAC is indicated bake relay is operating.

Broil Relay --K3

Double line break relay okay. Drive voltage at J1 connector pins 3 and 5.

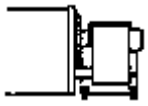
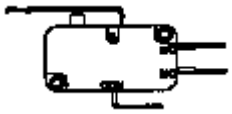
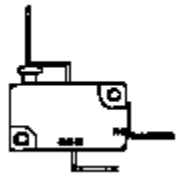
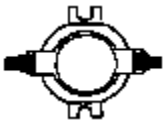
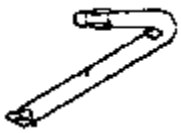
1. Turn off power to oven.
2. Attach voltmeter lead to gray connection on double line break relay.
3. Attach voltmeter lead to E6 (BR) connector on relay module.
4. Turn on power and touch broil pad.
5. If 24 VAC is indicated broil relay is operating.

Double Lock Relay –K4

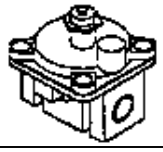
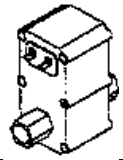
Double line break relay okay. Drive voltage at J1 connection pins 1 and 7.

1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connection on transformer/relay board 1.
3. Attach voltmeter lead to E2 connector on relay module.
4. Turn on power and program cleaning cycle operation.
5. Two indications will be present during this test.
    - 120 VAC will be present during the lock assembly is being engaged.
    - 0 VAC is indicated when the door is locked and cleaning cycle is operational.

COMPONENT TESTING INFORMATION

Illustration	Components	Test Procedures	Results
	Oven light socket	Test continuity receptacle terminals. Measure voltage at oven light	Indicates continuity with bulb screwed in. 120VAC, see wiring diagram for terminal identification. If no voltage is present at oven light check wiring.
	Hinge	Carefully open the hinge fully, & Insert a wooden dowel or screw-Driver bit into opening. Remove top and bottom screws securing hinge. Slide hinge top toward rear of unit and guide hinge out through frame opening or storage drawer.	⚠WARNING Do not place hands in hinge area when oven door is removed. Hinge can snap closed and pinch hands or fingers.
	Blower motor	Verify supply voltage. Disconnect and check continuity to motor at the terminals, and verify terminals are not shorted to chassis.	120 VAC Continuity.
	Heraeus sensor	Measure resistance.	Approximately 1100Ω at room temperature.
	Door lock switch	Switch connections in following Positions: Unlocked Locked	Normally open. Com-NO=Open, Com-NC=Closed Com-NO=Closed, Com-NC=Open
	Sail switch	Switch connections in following position: Not ingaged Engaged	Normally open. Com-NO=Open, Com-NC=Closed Com-NO=Closed, Com-NC=Open
	Controls	Verify proper operation. 31833001 Control limit 042056 Fan switch 1-2 (NO) 1-3 (NC)	Normally open Opens at 145°F, Closes at 185°F Opens at 120°F, Closes at 150°F Opens at 150°F, Closes at 120°F
	Bake Burner	Verify gas is supplied. Orifice adjusted for Natural or LP. Check for obstructions or Contamination in ports	

COMPONENT TESTING INFORMATION

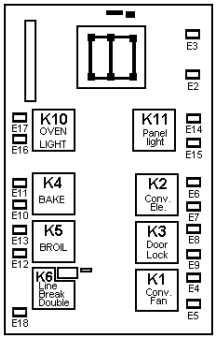
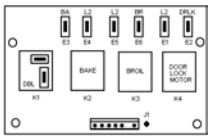
Illustration	Components	Test Procedures	Results
	Broil Burner	Verify gas is supplied Proper orifice installed for Natural or LP. Check for damage to screen.	Replace if punctured or torn
	Pressure regulator	Verify gas pressure (WPC) If on LP service verify gas supply conversion.	5" Natural gas 10" LP/Propane
	Norton Ignitor	Test for voltage at terminals. Teat for the amount of amperage in the circuit (Ignitor may glow but not have sufficient amperage to open valve)	120 VAC 3.2 – 3.6 Amps.
	Gas valve	Disconnect wiring to valve Measure resistance on bake circuit. Measure resistance on broil circuit.	Continuity WARNING Do Not attempt to open valve with 120 VAC Continuity
	Shut off valve	Check to verify gas supply is Turned on.	

COMPONENT TESTING INFORMATION

ERC mylar touch system

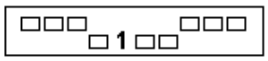
Illustration	Component	Test Procedure	Results
See Illustrations above	Mylar touch system	F1 - Control malfunction. F2 - Oven over temperature. F3 - Open sensor or sensor circuit F4 - Shorted sensor or sensor circuit F7 - Shorted input key. F9 - Door lock or door lock circuitry malfunction (door unlocked) FF - Door lock or door lock circuitry malfunction (door locked) Door - Lock status is not sensed within 90 seconds of energizing door lock relay.	Test mylar touch pad. Check sensor wiring, sensor, and temperature limiter. Check sensor resistance and wiring. Check sensor resistance and wiring. Verify mylar switch connections, replace mylar touch switch. Check latch switch. Check latch switch Verify operation of door latch switches.
ERC control `	Oven temperature adjustment To increase oven temperature (for	Press *Bake* Press + slew pad until an oven temperature greater than 500° shows on display. Immediately press and hold *BAKE* until "00" appears in display, approximately 5 seconds. To decrease oven temperature (for a cooler oven), press - slew pad until negative numbers appear. Oven can be adjusted from -5° to -35° lower. To avoid over adjusting oven move temperature -5° each time. warmer oven), press + slew pad until positive numbers appear. Oven can be adjusted 5° to 35° higher. To avoid overadjusting oven move temperature 5° each time. Press *OFF / CANCEL*. Temperature adjustment will be retained even though power failure.	While increasing or decreasing oven temperature, this does not affect self-cleaning temperature.
ERC control	Twelve hour off	Control will automatically cancel any baking operation and remove all relay drives 12 hours after the last pad touch.	
ERC control	Child lock out	This is a safety feature that can be used to prevent children from accidentally programming the oven. If disables the electronic oven control. Press and hold *BAKE* and *BAKE TIME* for approximately 5 seconds. "Off" will display where the temperature normally appears. To reactivate the control, press and hold *BAKE* and *BAKE TIME* for 5 seconds. Child lockout features must be reset after a power failure.	

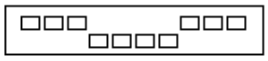
COMPONENT TESTING INFORMATION

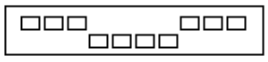
Illustration	Component	Teat Procedure	Results
ERC Controlled	Quick test mode	Press and hold *Bake Time* pad for 5 seconds within the first 5 minutes of power up. (This must be the first pad touched.) Pressing each pad will force a response from control, releasing the pad ends the response. Entries on control pad must be within 32 seconds of each other or control will exit mode. Mode can exited by pressing *Off/Cancel.* See Quick Test Mode Display below.	Clean --- Double line break (DLB) on Bake -- DLB and Bake on Broil -- DLB and Broil on Stop Time- Panel light and beeper on Bake Time - Displays checks and sensor readings Timer-- Displays dashes Clock - Display on full Oven Light- Oven light on Slew pads- Sequences thru display segments Cancel- Exits quick test mode
	Relay Board	Listen for relay to actuate. Verify input and output power	If relay doe not actuate, verify power to relay board (120 VAC)
	Relay Board	Listen for relay to actuate. Verify input and output power	If relay does not actuate, verify power to relay board (120 VAC)

Quick Test Mode Displays:

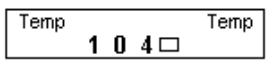
Upper Oven

Clean Pad 

Bake Pad 

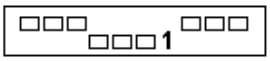
Broil Pad 

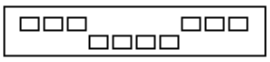
Timer Pad 

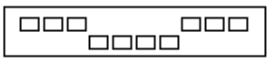
Stop Time Pad 

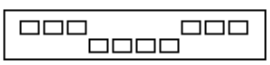
Oven Light Pad: Turn ON both oven Lights

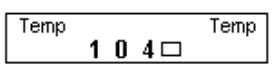
Lower Oven

Clean Pad 

Bake Pad 

Broil Pad 

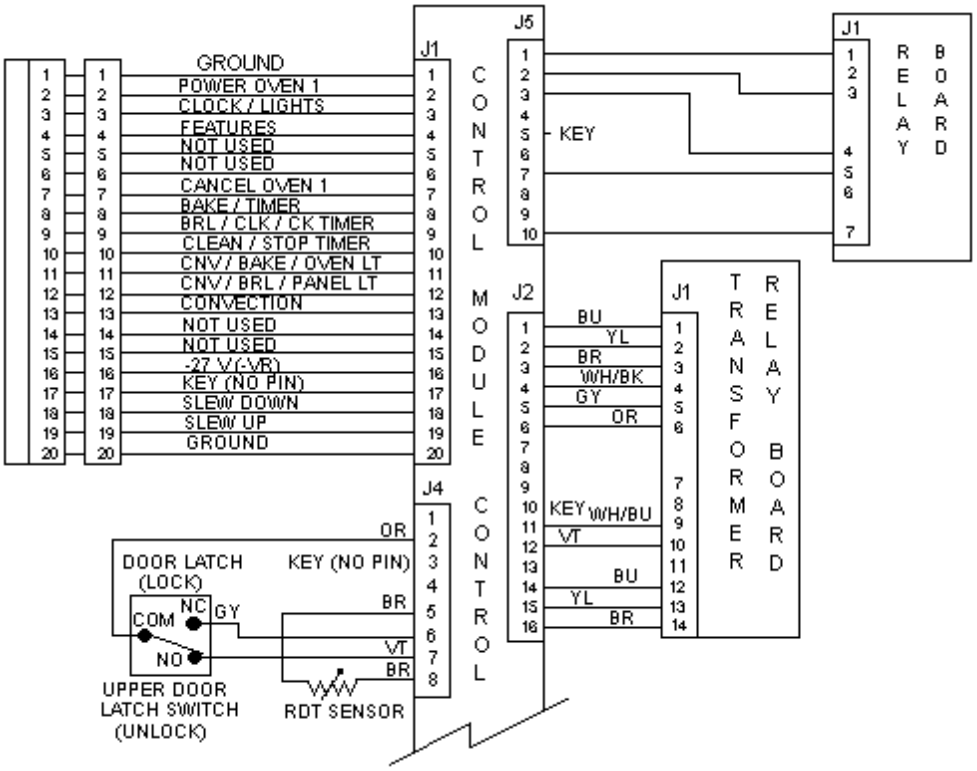
Timer Pad 

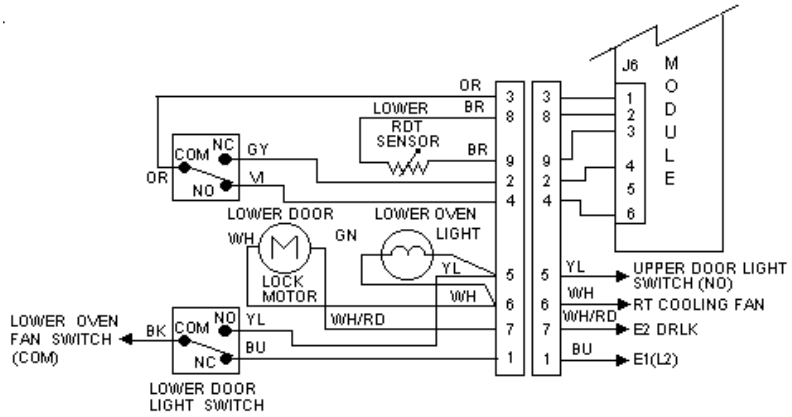
Stop Time Pad 

Oven Light Pad: Turn ON both oven Lights

WARNING To avoid risk of electrical shock, personal injury, or death, disconnect power to unit before servicing.

COMPONENT TESTING INFORMATION

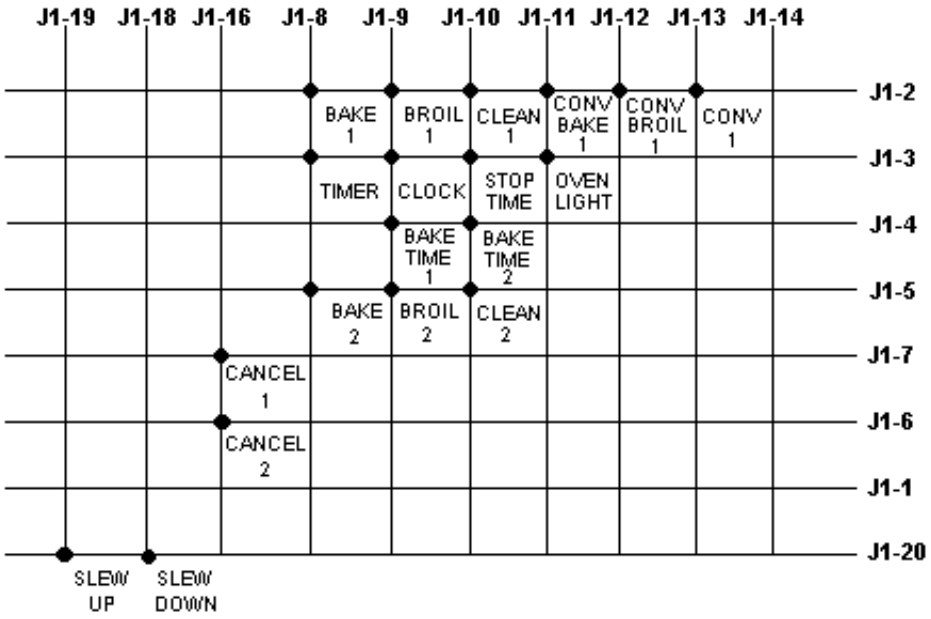




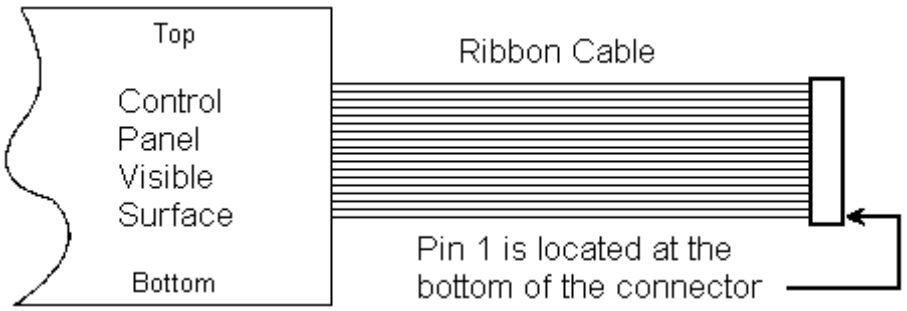
COLOR	COLOR SYMBOL
RED	RD
ORANGE	OR
YELLOW	YL
GREEN	GN
BLUE	BU
VIOLET	VT
BLACK	BK
BROWN	BR
GRAY	GY
WHITE	WH

COMPONENT TESTING INFORMATION

Continuity is indicated as 100 and below. Each pad must be pressed to perform the following test.



Switch Matrix



Relay Drive Requirements
Relay drive requirements are defined as a percentage of on time based on a 60 second cycle.

Bake	100% bake
Broil	100% broil
Clean	Stage 1 - 100% broil, 0% bake, for 30 minutes
	Stage 2 - 0% broil, 100% bake

TESTING PROCEDURES --*VEDO273 Ele. OVEN*

Service Information

The ERC operates in conjunction with a transformer/ relay board 1, relay board 2, and oven temperature sensor(s) to control all bake, broil, convection and self clean functions.

The ERC is connected to a mylar control to control minute timer, clock, stop time, oven light, cancel, bake, bake time, broil, and clean. Slew pads are used to set times and temperatures. The mylar control panel provides input to the **ERC** to control all functions.

The ERC display consists of two digital readouts which displays all timing functions, and all temperature functions.

The transformer/relay board for upper oven consists of convection fan, oven light, convection element, bake, broil, door lock, and double line break relays controlled by the **ERC**, and a step down transformer with two secondary windings which convert 120 VAC input to filament voltage to power the **ERC** display.

The relay board for lower oven consists of bake, broil, door lock, and double line break relays controlled by the **ERC**.

Oven temperature sensor 1 is mounted in the upper oven cavity and connected to the J4 connector on the rear of the **ERC.** Oven temperature sensor 2 is mounted in the lower oven cavity and connected to the J6 connector on the rear of the **ERC.** As the oven temperature increases

the sensor resistance also increases. The **ERC** converts this resistance to a corresponding temperature readout and cycles the relay(s) to maintain the desired temperature setting.

The ERC is also capable of sensing certain failure conditions which can occur in the oven temperature sensor(s), the self clean latch switch(s) the adaptor board or the **ERC** itself. If the **ERC** senses a failure, power will be removed from the relays, an alarm will sound and a failure code will be displayed.

Each major component of the **Electronic Range Control** is serviced as a separate part. However, each component and related wire harness must be tested prior to replacing an individual component.

Quick Test Procedure

"Quick Test" Mode for Electronic Range Control

Follow procedure below to use the quick test mode. Entries must be made within 32 seconds of each other or the control will exit the quick test mode. The quick test mode cannot be reactivated until power is disconnected from oven, and must be accessed within 5 minutes of powering up.

NOTE: To enter Quick Test Mode, this **must** be the first key pad entered after power is applied.

1. Apply power to oven **press and hold** BAKETIME (Upper Oven) pad for 5 seconds.
2. Display will read the following:

Pad	**Response**
CLEAN	Double Line Break (DLB) on
BAKE	DLB and Bake on
CONV. BAKE	DLB, Bake and Conv Fan on
CONVECTION	DLB, Conv, Element and Fan on
BROIL	DLB and Broil on
CONV. BROIL	DLB, Broil and Conv. Fan on
STOP TIME	Beeper on
BAKE TIME	Displays manufacturer code and sensor readings "000"=open sensor
TIMER	Displays dashes
CLOCK	All display segments illuminated
OVEN LIGHT	Oven light on
CANCEL	Exit Quick Test
SLEW	Sequences through display segments

ERC Warning and Failure Codes

The Electronic Range Control is capable of detecting certain failures within the **ERC,** along with oven temperature sensor and self clean door latch switch. The warnings and failure codes which may appear on the display:

If "**d o o r**" flashes in display, switch positions can only be displayed in Quick Test mode be touching clean pad, as shown below:

1. Unlock switch closed
2. Lock switch closed

Digit Failure Display	
F1	Control malfunction - Replace ERC
F2	Oven over temperature - Check sensor wiring, sensor, and temperature limiter.
F3	Open sensor or sensor circuit - Check sensor resistance and wiring.
F4	Shorted sensor or sensor circuit - Check sensor resistance and wiring.
F7	Shorted input key - Verify control panel to P.C. board connection, test control panel continuity - Replace Control Panel.
F9	Failure of door lock switch sensing with door locked- Check latch switch, door motor, check plunger switch, and wiring.
FF	Failure of door lock switch sensing with door unlocked - Check latch switch, door motor, check plunger switch, and wiring.

TESTING PROCEDURES

Temperature Calibration Offset
The **ERC** incorporates ± 35°F calibration offset capabilities for the oven. This adjustment will not effect the cleaning cycle temperature and will remain in memory if power is interrupted. Follow the procedures as listed to calibrate oven.

1. Press BAKE pad.
2. Press + until an oven temperature greater than 500°F shows in display.
3. Immediately press and hold BAKE pad until "00" appears in display, approximately 5 seconds.
4. To decrease oven temperature (for cooler oven), press - until negative numbers appear. Oven can be adjusted from -05° to -35° lower. To avoid over adjusting oven move temperature -5° each time.
5. To increase oven temperature (for a warmer oven) press + until positive number appears. Oven can be set from 05° to 35° higher.. To avoid over adjusting oven, move temperature 5° each time.
6. Press OFF CANCEL pad. Temperature adjustment will be retained even through a power failure.

Function Switch Connection Check Procedure
The Quick Test mode can be used to verify relay operation on the transformer/relay board. If the relay engages (clicks) during Quick Test mode, it is generally operative.

Transformer/Relay Board 1
The relays for oven light, bake, broil, convection element, convection fan and double line break are controlled by approximately 24VDC signal from the **ERC.** Input voltage is 102 - 132 VAC.
Testing of relays is with voltage applied to oven **after** attaching voltmeter leads to appropriate terminals.

NOTE: If bake, broil, or convection do not work, the first test would be the relay for double line break.

Double Line Break --K6
Drive voltage (24VDC±) indicated at J1 connector pins 1 and 3.

1. Turn off power to oven.
2. Attach voltmeter lead to E1 connector on relay board.
3. Attach voltmeter lead to E18 connector on relay module.
4. Turn on power and touch bake, broil, or convection.
5. If 120VAC is indicated, the double line break relay is closing. Otherwise, replace the transformer/relay board.

Bake Relay -- K4
Double line break relay okay. Drive voltage at J1 connector Pins 3 and 5.

1. Turn off power to oven.
2. Attach voltmeter lead to E18 connector on relay board.
3. Attach voltmeter lead to E11 (BK) connector on relay module.
4. Turn on power and touch the bake pad.
5. If 240 VAC is indicated bake relay is operating.

Broil Relay -- K5
Double line break relay okay. Drive voltage at J1 connector Pins 3 and 6.

1. Turn off power to oven.
2. Attach voltmeter lead to E18 connector on relay board.
3. Attach voltmeter lead to E12 (BR) connection on `relay module.
4. Turn on power and touch broil pad.
5. If 240 VAC is indicated broil relay is operating.

Convection Element Relay --K2
Double line break relay okay. Drive voltage at J1 connector Pin 3 and 11.

1. Turn off power to oven.
2. Attach voltmeter lead to E18 connector on relay board.
3. Attach voltmeter lead to E6 (CV EL) connector on relay module.
4. Turn on power and touch convection pad.
5. If 240 VAC is indicated convection element relay is operating.

Convection Fan Relay --K1
Drive voltage at J1 connector Pins 1 and 7.

1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connector on relay board.
3. Attach voltmeter lead to E4 (CVF) connector on relay module.
4. Turn on power and touch convection pad.
5. If 120 VAC is indicated convection fan relay is operating.

TESTING PROCECURES

Oven Light Relay -- K10
Drive voltage at J1 connector Pins 1 and 4.
1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connector on relay module.
3. Attach voltmeter lead to E17 connector on relay module.
4. Turn on power and touch oven light pad.
4. If 120 VAC is indicated, oven light relay is operating.

Door Lock Relay --K3
Double line break relay okay. Drive voltage at J1 connector Pins 1 and 9.
1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connector on relay module.
3. Attach voltmeter lead to E8 connector on relay module.
4. Turn on power and program cleaning cycle operation.
5. Two indications will be present during this test.
   a. 120 VAC will be present when the lock assembly is being engaged.
   b. 0 VAC is indicated when the door is locked and cleaning cycle is operational.

Display (Filament) Voltage
1. Turn on power, turn meter to VAC scale.
2. Touch meter lead to J1-1 terminal.
3. Touch meter lead to J1-14 terminal.
4. Meter should indicate 3.2VAC.

Relay Board 2
The relays for oven light, bake, broil, convection element, convection fan and double line break are controlled be approximately 24VDC signal from the **ERC**. Input voltage is 102 - 132 VAC.

NOTE: If bake, broil, or convection do not work, the first test would be the relay for double line break.

Double Line Break -- K1
Drive voltage (24VDC±) indicated at J1 connector Pins 5 and 7.
1. Turn off power to oven.
2. Attach voltmeter lead to E1 connector on relay board.
3. Attach voltmeter lead to E18 connector on relay board.
4. Turn on power and touch bake, broil, or convection.
5. If 240 VAC is indicated the double line break relay is closing. Otherwise, replace the relay board.

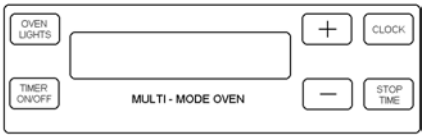
Bake Relay --K2
Double line break relay okay. Drive voltage at J1 connector Pins 4 and 5.
1. Turn off power to oven.
2. Attach voltmeter lead to gray wire connection on double line break relay.
3. Attach voltmeter lead to E3 (BA) connector on relay module.
4. Turn on power and touch the bake pad.
5. If 240 VAC is indicated bake relay is operating.

Broil Relay -- K3
Double line break relay okay. Drive voltage at J1 connector Pins 3 and 5.
1. Turn off power to oven.
2. Attach voltmeter lead to gray wire connection on double line break relay.
3. Attach voltmeter lead to E6 (BR) connector on relay module.
4. Turn on power and touch broil pad.
5. If 240 VAC is indicated broil relay is operating.

Door Lock Relay -- K4
Double line break relay okay. Drive voltage at J1 connector Pins 1 and 7.
1. Turn off power to oven.
2. Attach voltmeter lead to E3 (neutral) connector on transformer/relay board 1.
3. Attach voltmeter lead to E2 connector on relay module.
4. Turn on power and program cleaning cycle operation.
5. Two indications will be present during this test.
   a. 120 VAC will be present when the lock assembly is being engaged.
   b. 0 VAC is indicated when the door is locked and cleaning cycle is operational.

COMPONENT TESTING INFORMATION

ERC Mylar touch system -- ERC5800



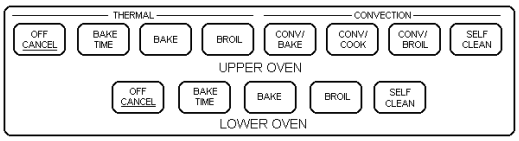
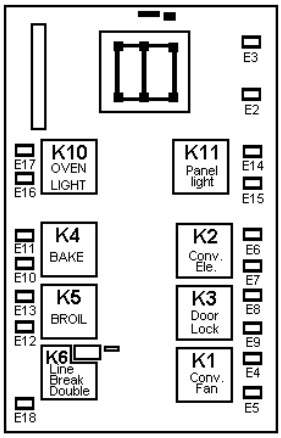
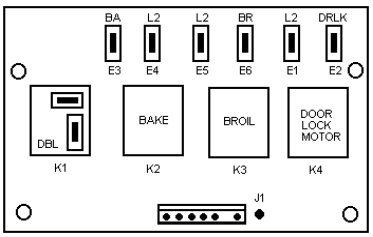


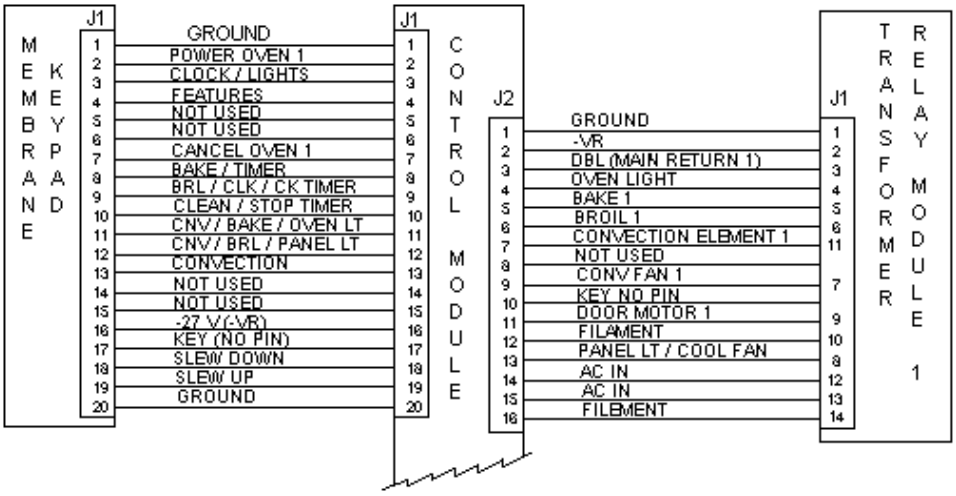
Illustration	Component	Test Procedure	Results
See illustrations above.	Mylar touch system ERC5800	F1 - Control malfunction. F2 - Oven over temperature. F3 - Open sensor or sensor circuit F4 - Shorted sensor or sensor circuit F7 - Shorted input key. F9 - Door lock or door lock circuity malfunction (door unlocked) FF - Door lock or door lock circuity malfunction (door locked) **DOOR -** lock status is not sensed within 90 seconds of energizing door lock relay.	Test mylar touch pad. Check sensor wiring sensor, and temperature limiter. Check sensor resistance and wiring. Check sensor resistance and wiring. Verify mylar switch connections, replace mylar touch pad. Check latch switch. Check latch switch. Verify operation of door latch switches.
ERC5800 Control	Oven temperature adjustment.	Press BAKE Press + slew pad until an oven temperature greater than 500° shows on display. Immediately press and hold BAKE until "00" appears in display, approximately 5 seconds. To decrease oven temperature (for a cooler oven), press - slew pad until negative numbers appear. Oven can be adjusted from -5 to -35 degrees lower . To avoid overadjusting oven move temperature -5 degrees each time. To increase oven temperature (for warmer oven), press + slew pad until positive numbers appear. Oven can be adjusted 5 to 35 degrees higher. To avoid overadjusting oven move temperature 5 degrees each time. Press OFF CANCEL. Temperature Adjustment will be retained even through a power failure.	While increasing or decreasing oven temperature, this does not affect self-cleaning temperature.
ERC5800	Twelve hour off	Control will automatically cancel any baking operation and remove all relay drives 12 hours after the last pad touched.	
ERC5800 Control	Child lock out	This is a safety feature that can be used to prevent children from accidentally programming the oven. It disables the electronic oven control. Press and hold BAKE and BAKE TIME for 5 seconds. "OFF" will display where the temperature normally appears. To reactivate the control press and hold BAKE and BAKE TIME for 5 seconds. Child lockout feature must be reset after a power failure.	

COMPONENT TESTING INFORMATION

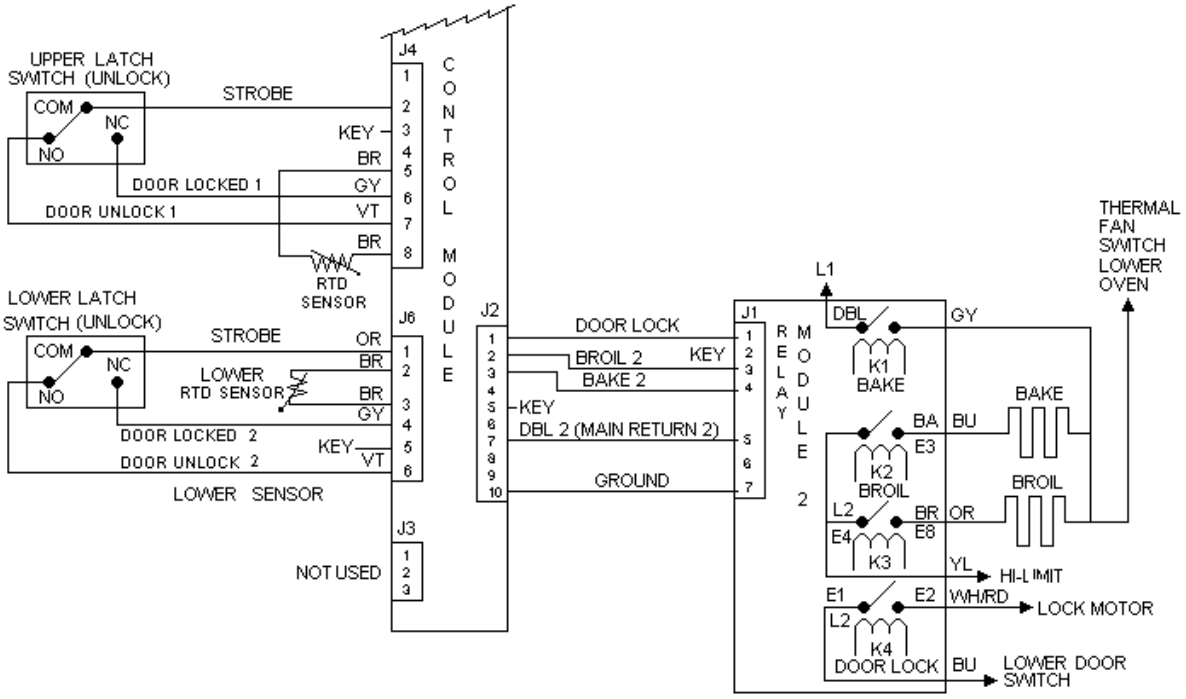
Illustration	Component	Test Procedure	Result	
ERC4800	Quick test mode	Press and hold BAKE TIME pad for 5 seconds within the first 5 mintes of power up. (This must be the first pad touched.) Pressing each pad will force a response from the control, releasing the pad ends the response. Entries on control pad must be within 32 seconds of each other or control will exit mode. Mode can be exited by pressing OFF CANCEL	Clean Bake Conv Bake Convection Broil Conv Broil Stop Time Bake Time Timer Clock Oven Light Panel Light Cancel Slew pads	Double line break (DLB) on DLB and bake on DLB, bake and conv.fan on. DLB, conv. elem.and fan on. DLB, and broil on DLB, broil and conv fan on Panel light and beeper on Displays checksum and sensor reading Displays dashes Display on full Oven light on Panel light and beeper on Exits quick test mode Sequences through display segments.
Relay Board 		Listen for relay to actuate Verify input and output power	If relay does not actuate, verify power to relay board (120 VAC).	
Relay Board 		Listen for relay to actuate Verify input and output power	If relay does not actuate, verify power relay board (120 VAC).	

WARNING To avoid risk of electrical shock, personal injury or death, disconnect power before servicing, unless testing requires it.

COMPONENT TESTING INFORMATION (BLOCK DIAGRAM)

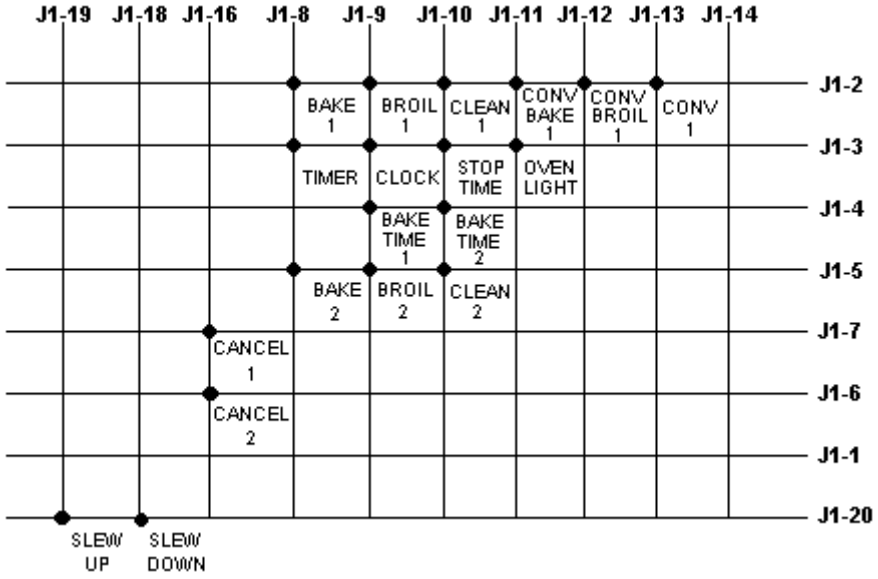


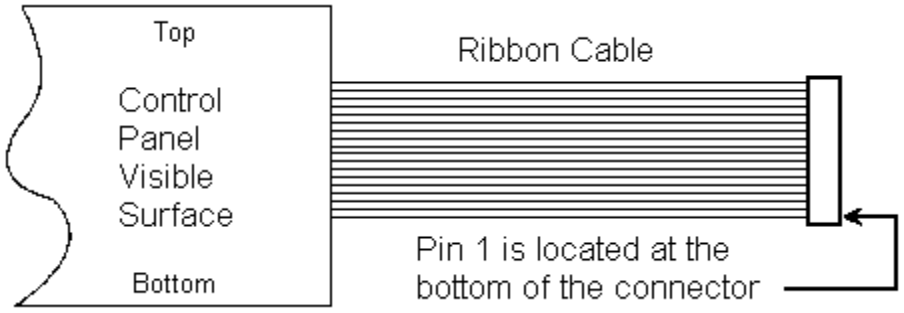
COLOR	COLOR SYMBOL
RED	RD
ORANGE	OR
YELLOW	YL
GREEN	GN
BLUE	BU
VIOLET	VT
BLACK	BK
BROWN	BR
GRAY	GY
WHITE	WH



COMPONENT TESTING INFORMATION

Continuity is indicated as 100 and below. Each pad must be press to perform the following test.





Element Cycle
Relay drive requirements are as a percentage of on time based on a 60 second cycle.

Bake	First rise = 100% bake, 50% broil, then 100% bake, 25% broil.
Broil	0% bake, 100% broil
Clean	Stage 1 - 100% broil, 0% bake, for 15 minutes. Stage 2 - 25% broil, 100% bake.
Convection	First rise = 100% bake, 50% broil, then 100% convection element and 100% convection fan*.
Convection bake	Same as bake plus 100% convection fan*.
Convection broil	Same as broil plus 100% convection fan*.

*- Convection fan is de-energized when the oven door is opened.

TROUBLESHOOTING GUIDE *---Dual Fuel / Self-clean / VDSC - VESO 105 - VED0 205---*		
PROBLEM	**PROBABLE CAUSE**	**CORRECTION**
A. No Bake, No Broil No Cycle Light, No Power to Relay #1.	A-1 House Breaker or fuse open	A-1 Reset Breaker or replace fuse
B. No Bake, No Broil No Cycle Light Power to Relay #1 (Red – Red/Black) terminals #1 & #3) No power to Relay #1 Heater.	B-1 Timed Bake/Broil function switch set to Timed function (wall ovens) B-2 Power Relay #1 Heater circuit open (Power Relay test procedure pg 24) B-3 Open contacts Relay #2 (single / upper oven) (wh/red wire to neutral pins #1 and #7). Open contacts relay #5 (lower oven). (blue wire to neutral pins #1 and #7) B-4 Open contact Relay #3 (single / upper oven) (red/blu contact #3 to wh/vio Contact #9) or open contact Relay #6 (lower oven) (Brown contact #3 to wh/ vio contact #9) B-5 Open Thermostat cycling contacts #1 and # 2 B-6 Open High Limit Switch (contacts normally closed)	B-1 Set Timed Bake/Broil function switch to manual. B-2 Replace Power Relay #1 (Relay #1 Part# PM010026) B-3 Replace Relay #2 (single / upper oven or Relay #5 (lower oven) (Relay #2 & #5 part # PM010029) B-4 Replace Relay #3 (upper oven) or Relay #9 (lower oven) (Relay PN 010029) B-5 Replace Thermostat B-6 Replace High Limit Switch
C. No Bake Functions Broil functions normally and the Cycle Light is on	C-1 Open Bake Element (see pg #21 for C-2 Open selector switch contacts 1 to L2 (See pg # 22 for selector Switch contact checks) C-3 Burned Wiring of Terminal connections	C-1 Replace Bake Element C-2 Replace Selector Switch C-3 Replace or Repair burned wiring and / or Terminals (spade) connections.
D.Poor Baking Results Broil functions Normally, Cycle Light is on.	D-1 Low Voltage Supply (240 VAC required). D-2 Restricted Air Flow through the oven cavity. D-3 No Top Heat from Broil Element. Open Selector Switch contacts 3 to E (see Pg #22 for selector switch checks) D-4 Check Use and Care for suggested Baking tips.)	D-1 Inform Customer of requirements. D-2 Clear restriction from oven vent. D-3 Rep lace Selector Switch

TROUBLESHOOTING GUIDE *----Dual Fuel / Self-clean / VDSC - VESO 105 - VEDO 205---*		
PROBLEM	**PROBABLE CAUSE**	**CORRECTION**
E. No Convection Bake, Bake and Broil functions normally, Cycle Light is on.	E-1 Open Selector Switch contact 6 to I (see pg #22 for details)	E-1 Replace Selector Switch
	E-2 Open Convection Motor winding	E-2 Replace Convection Motor
	E-3 Burned wiring or terminal connections	E-3 Replace burned wiring or terminal connectors.
F. No Convection Cook function, Bake and Broil functions normally, Cycle :Light is on.	F-1 Open Convection Cook Element. (see pg #22)	F-1 Replace Convection Cook Element
	F-2 Open Selector Switch contacts 5 to L2 (see pg #22)	F-2 Replace Selector Switch
G. Convection Cook Heats, No Air Circulation	G-1 Open winding in Convection Fan motor.	G-1 Replace Fan Motor
	G-2 Frozen Motor Shaft	G-2 Replace Fan Motor
	G-3 Open Selector Switch contacts I to 6 (see pg #22)	G-3 Replace Selector Switch
H. No Mini-Broil function, Bake functions normally, Cycle Light is on	H-1 Open Selector Switch contacts 3 to L2 (see pg #22)	H-1 Replace Selector Switch
	H-2 Open Inside Broil Element (see pg #22)	H-2 Replace Inside Broil Element
I. No Maxi-Broil function, Bake functions normally, Cycle Light is on, Mini-Broil funct-ions normally.	I-1 Open Selector Switch contacts F to 4, 2 to L2 and/or 3 to L2 (see pg #22)	I-1 Replace Selector Switch
	I-2 Open Outside Broil Element	I=2 Replace Outside Broil Element
J. No Maxi-Broil function, No Top Heat in Bake function, Cycle Light is on.	J-1 Open Selector Switch contacts F to 4, 2 to L2 and / or 3 to L2 (see pg #22)	J-1 Replace Selector Switch
	J-2 Open Inside and Outside Broil Elements. (See pg #21)	J-2 Replace open Broil Elements
	J-3 Burned wiring or terminal connections	J-3 Replace Burned wiring and/or terminal (spade) connectors.
K. No convection Broil, Bake is normal, Broil is normal, Cycle Light is on. No Mini-Broil.	K-1 Open Convection Motor winding.	K-1 Replace Convection Motor.
	K-2 Open Selector Switch, contacts 3 to L2	K-2 Replace Selector Switch.
	K-3 Open Inside Broil Element (see pg #21)	K-3 Replace Inside Broil Element

TROUBLESHOOTING GUIDE *---Dual Fuel / Self-clean / VDSC - VES0 105 - VEDO 205---*		
PROBLEM	**PROBABLE CAUSE**	**CORRECTION**
L. No Self-clean, Bake and Broil functions normally Door won't lock. No Clean Light. No 120 VAC supply to Door Lock module / timer (PC board) pg #20, item 1 Sel.	L-1 Open Selector Switch contacts J to 6 L-2 Open contact Relay #2 (single / upper oven) or Relay #5 (lower oven). L-3 Open contacts Relay #3 (single / upper oven) or Relay #6 (lower oven).	L-1 Replace Selector Switch L-2 Replace Relay #2 (single / upper oven) or #5 (lower oven). L-3 Replace Relay #3 (single / upper oven) or Relay #6 (lower oven). (120VAC current path from Sel on PC Board to Normally closed contacts on Relay #2 to Selector Switch contacts J to 6 to Line L1).
M. No Self-clean Bake and Broil functions normally Door won't lock- 120 VAC to Door Lock Module / Timer (PC Board) is present-No Motor Movement- Clean Light is on.	M-1 Open Relay contacts LS1 - 1 and / or LS2 - M1 on Door Lock Module/Timer (PC Board) M-2 Open contacts 1 to 2 on Auto Reset Thermostat. M-3 Open Windings in Lock Motor	M-1 Replace Door Lock Module / Timer (PC Board) M-2 Replace Auto Reset Thermostat. M-3 Replace Lock Motor assembly.
N. Door Lock Motor continues to run. No signal to sensor (see pg #19) #3 on PC Board that closes T1-T2 and T3-T4. Clean Light on.	N-1NO SW2 Switch (closed by motor movement) on Door Lock Mechanism not closing.	N-1Adjust SW2 Switch position or Replace faulty Switch.
O. Door Lock Motor engaged. Signal To Sensor #3 (see pg #19). No Heat Clean Light On.	O-1 Door Lock Module / Timer Relay T1-T2 and T3-T4 not closing.	O-1Replace PC Board
P. Door Lock Motor engaged. Cooling Fan Motor runs (PC Board T3-T4 closing) No Heat.	P-1 Door Lock Module / Timer (PC Board) Relay T1-T2 Not closing. P-2 Door Lock Module / Timer (PC Board) Relay T1-T2 closing. Check SW3 on Door Lock Assembly.	P-1 Replace PC Board P-2 Replace SW3

VOLTAGE READINGS

Measured with door open

T4 107VAC 70VAC

T3 4VAC 16VAC

T2 4VAC 16VAC

T1 5VAC 1VAC

MEASURED WITH DOOR LOCKED

T4 80VAC 56VAC

T3 85VAC 56VAC

T2 90VAC 56VAC

T1 93VAC 56VAC

VC--4VDC

SENSOR 3--3VDC SW2 closed in self clean (Locked).

SENSOR 4--4VDC SW1 closed with clean (lock open).

M1--120VAC lock motor supply voltage. (31VAC in locked position)

LS2--70VAC (unlocked)--**55VAC** (locked)

L1-- 70VAC (unlocked)--**56VAC** (locked)

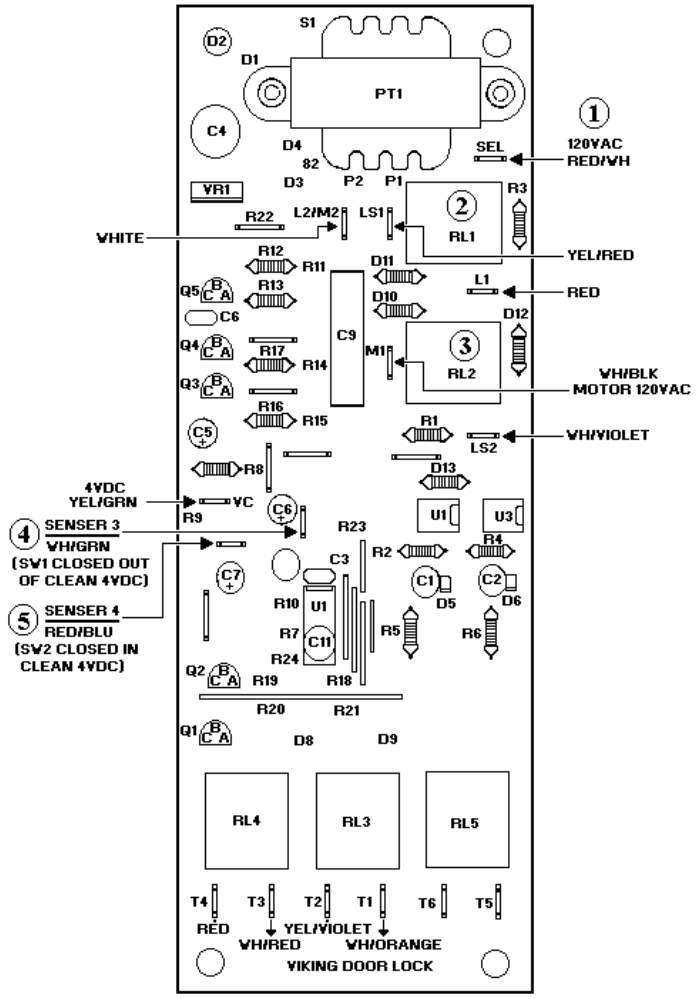
L2/M2--16VAC(unlocked)--**32VAC** (locked)

LS1--107VAC (locked or unlocked)

SEL--120VAC SUPPLY

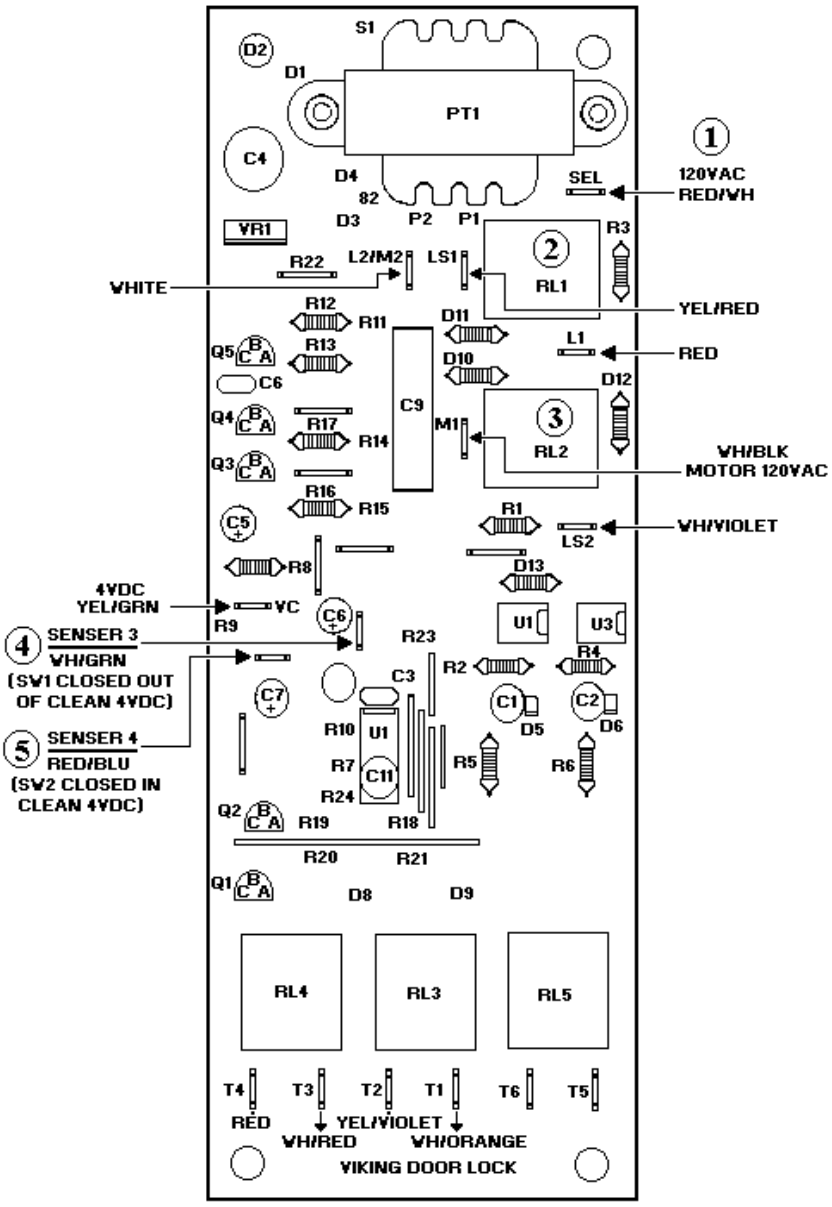
CHASSIS GROUND

P.C. BOARD GROUND

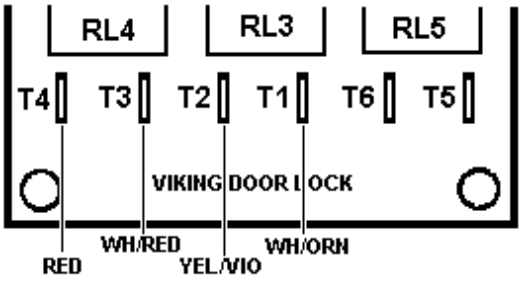


CONTROL CIRCUIT BOARD

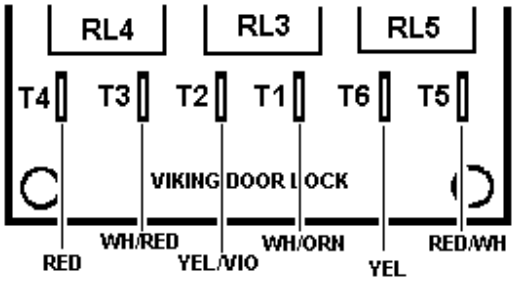
PRINTED CIRCUIT BOARD WIRING
FOR RELAYS T4 – T3 – T2 – T1—T6 – T5



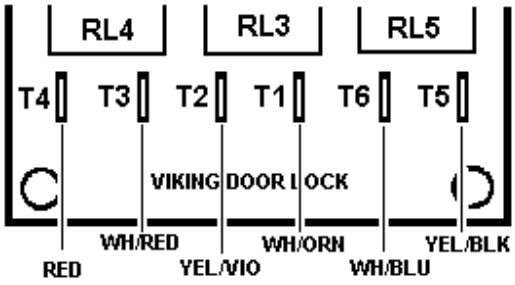
CONTROL CIRCUIT BOARD



VDSC and VESO



VEDO UPPER OVEN



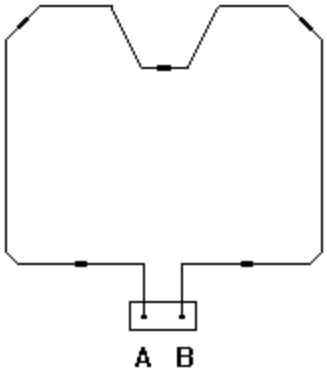
VEDO LOWER OVEN

VOLTAGE and RESISTANCE READINGS

BAKE ELEMENT:

"A" to "B" 21.1 Ohms

"A" to "B" 240VAC during Bake and Convection Bake.



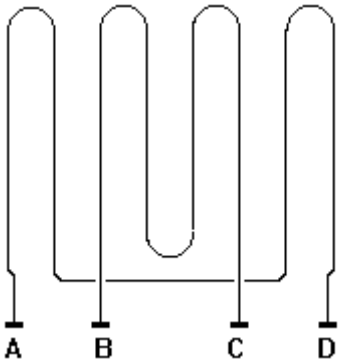
BROIL ELEMENT:

"A" to "D" (outside element) 32.6 Ohms

"A" to "D" 50VAC during Bake and Convection Bake.
240VAC during Maxi Broil.
240VAC during Convection Broil
240VAC during Self-clean

"B" to "C" (inside element) 45.2 Ohms

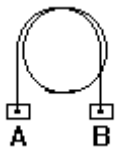
"B" to "C" 70VAC during Bake and Convection Bake.
240VAC during Mini Broil
240VAC during Maxi Broil
240VAC during Convection Broil
240VAC during Self-clean



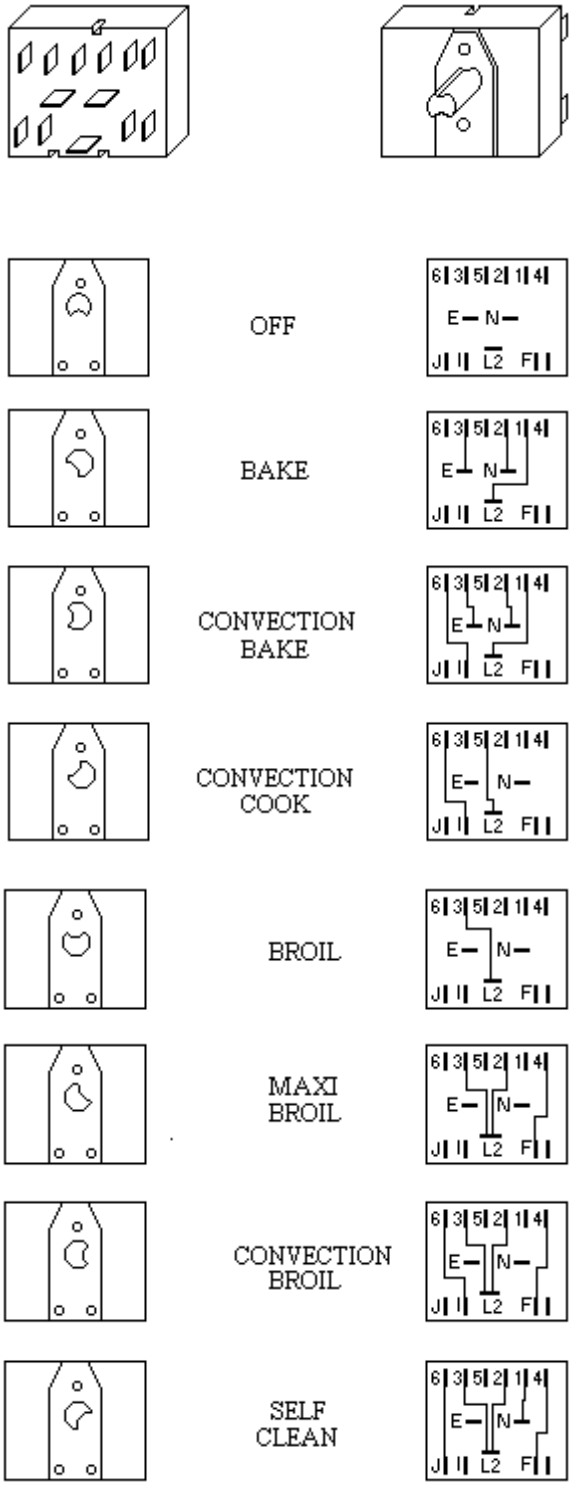
CONVECTION ELEMENT:

"A" to "B" 26 Ohms

"A" to "B" 240VAC during Convection Cook



8 POSITION SELECTOR SWITCH
(With shaft position and internal connections)



SELF CLEAN
Selector Switch closes Heating Element contacts 4-F, 1-N, 2-L2, 3-L2, and Door Lock Module / Timer contacts J-6 energizing Relay #1.
Thermostat Clean Position closes Thermostat cycling contacts 1-2 and normally open (N) - common (C) energizing Relay #3.
Relay # 3 turns on the Clean indicator Light and energizes Door Lock Module / Timer (PC Board) relays LS1-L1 and LS2-M1, also supplying 120VAC to SEL on the PC board
Relays LS1 and **LS2** turns the Door Lock Motor on through the Auto Reset Thermostat contacts 2-1.

Door Lock Motor rotates opening SW1 and closing SW2 and SW3.
Door Lock Switch #2 completes the circuit to sensor #3 on the PC board. After 10 seconds LS1-M1 opens, stopping the Door Lock motion.
Door Lock Switch #3 closes T1-T2 and T3-T4 energizing Power Relay #1 and the Cooling Fan . Closing Power Relay #1's contacts supplies 240VAC to both Broil Elements and 120VAC to the Bake Element.

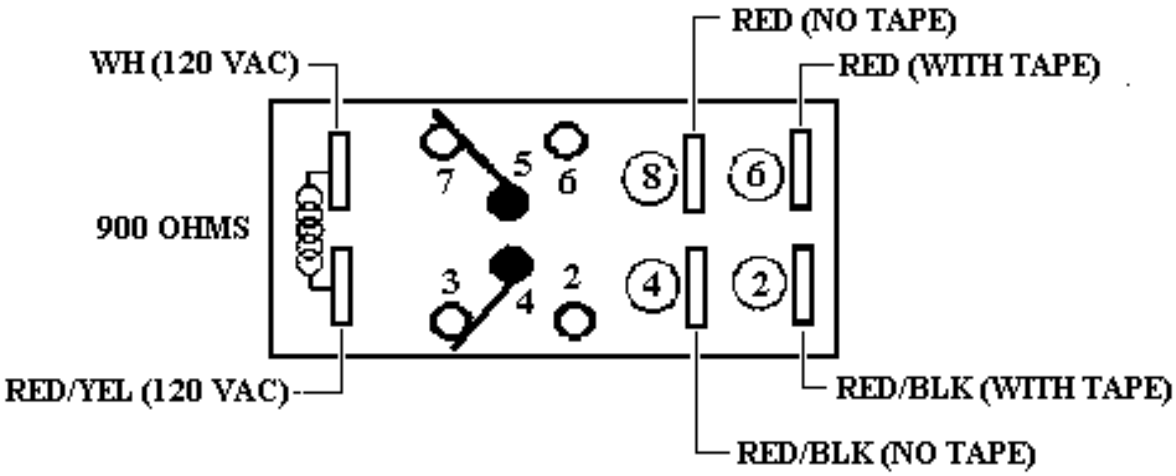
CLEAN DOOR LOCK ABOVE 575*F +/-25*F
Auto Reset Thermostat switches to contacts 1-3 turning on the Door Lock indicator Light and disables the Door Lock Motor circuit.

CLEAN TEMPERATURE (875*F) REACHED.
Door Lock Module / Timer opens T3 -T-4 and T1-T2 turning off the Cooling Fan, now powered by the Fan Limit Switch when needed, and opens the circuit to the Power Relay #1 disabling the Heating Elements.

FINAL BELOW 575*F +/-25*F
Auto Reset Thermostat switches to contacts 1-2, turning off the Door Lock Motor circuit through Door Lock Motor / Timer Relay LS2-M-1. Door Lock Motor operates until 2 seconds after sensor 4 is signaled by VC that the Door Lock /Timer switches LS2- M1 and LS1-L1 open and the Timer
reset.

POWER RELAY (CURRENT) TEST

VDSC-VESO-VEDO Power relay



VOLTAGE SUPPLY - 235 VOLTS AC
CURRENT READINGS AT THE POWER RELAY

BAKE	**#8**	**RED**	**11.8 Amps**	**#4**	**RED/BLK**	**10.4 Amps**
	#6	**RED**	**11.8 Amps**	**#2**	**RED/BLK**	**6.1 Amps**
CONV BAKE	**#8**	**RED**	**11.9 Amps**	**#4**	**RED/BLK**	**11.9 Amps**
	#6	**RED**	**10.5 Amps**	**#2**	**RED/BLK**	**11.4 Amps**
CONV COOK	**#8**	**RED**	**8.9 Amps**	**#4**	**RED/BLK**	**8.8 Amps**
	#6	**RED**	**9.0 Amps**	**#2**	**RED/BLK**	**8.9 Amps**
MINI BROIL	**#8**	**RED**	**5.1 Amps**	**#4**	**RED/BLK**	**5.0 Amps**
	#6	**RED**	**5.0 Amps**	**#2**	**RED/BLK**	**5.0 Amps**
MAXI BROIL	**#8**	**RED**	**12.0 Amps**	**#4**	**RED/BLK**	**12.0 Amps**
	#6	**RED**	**12.0 Amps**	**#2**	**RED/BLK**	**12.0 Amps**
CONV BROIL	**#8**	**RED**	**11.9 Amps**	**#4**	**RED/BLK**	**11.9 Amps**
	#6	**RED**	**11.9 Amps**	**#2**	**RED/BLK**	**11.9 Amps**
SELF-CLEAN	**#8**	**RED**	**17.1 Amps**	**#4**	**RED/BLK**	**17.1 Amps**
	#6	**RED**	**17.1 Amps**	**#2**	**RED/BLK**	**17.9 Amps**

VCBB BOTTOM FREEZER REFRIGERATOR

Program mode

Accessing Program Mode

Two programming modes are available. Mode A allows reading refrigerator and freezer thermistor temperatures. Mode B is used for all other programmable functions.

1. Open refrigerator door.
2. Press Display On pad.
3. Press * Pad.
4. Press the following sequence of pads within 6 seconds; Max Ref, Max Frz, Max Ref, Max Frz.
5. When access is granted, tone will sound three times and control will be in Program A. Unmarked indicator light will illuminate.
6. Toggle to Program Mode B by pressing Display on pad. Unmarked indicator light is off.

EEPROM Update in Control Memory

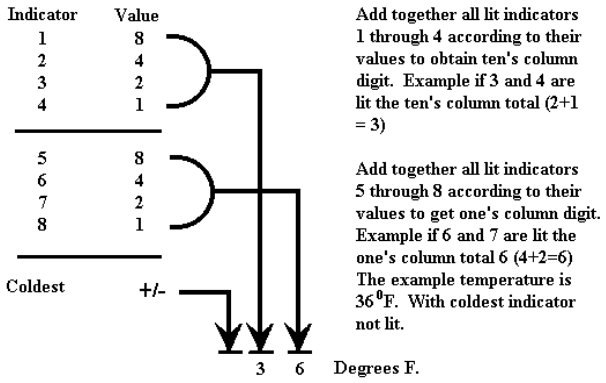
EEPROM is permanent programmable memory of the control panel.

- Entry tone, door audio alarm and status are used in EEPROM after control is deactivated
- Information stored in EEPROM memory is not affected by power loss.

Mode A Function

Reading Temperature Display

Temperature display will show themistor temperature in binary coded decimal format (BCD) indicator lights 1 through 4 represent the tens digit with 1 being the most significant bit. Indicator lights 5 through 8 represent ones digit with 5 being the most Significant bit. Positive and negative are shown by indicator light 9; light glows to show negative value.



Freezer Thermistor Temperature

1. Choose freezer thermistor temperature display be pressing Freezer Temp pad.
2. Freezer thermistor temperature displays.

Refrigerator Thermistor Temperature

1. Choose refrigerator thermistor temperature display by pressing Ref Temp pad.
2. Refrigerator thermistor temperature displays.

Mode B Functions

Automatic Keyboard Functions

Activate and deactivate keyboard be toggling Display Off pad. If high temperature indicator glows, keyboard will disable after 10 minutes. If high temperature indicator is off, keyboard is always enabled. DO NOT LEAVE KEYBOARD IN ENABLE MODE AFTER PROGRAMMING IS COMPLETE.

Door Alarm Delay

1. Press Alarm Off pad. Door open indicator will glow. One temperature indicator should glow indicating present delay setting in minutes (indicator 1 means 1 minute, 2 means 2 minutes, etc.) default delay is 3 minutes.
2. Press Warmer pad to decrease delay by 1 minute.
3. Press Colder pad to increase delay by 1 minute.

Max Ref. Run Time Duration

1. Press Max Ref. Pad. Max Ref. Light will glow.One temperature indicator should glow indicating present Max Ref run time duration in 2 hour increments (indicator 1 means 2 hours, 2 means 4 hours, etc.) Default delay is 10 hours.
2. Press Warmer pad to decrease Max Ref. duration by 2 hours.
3. Press Colder pad to increase Max Ref duration by 2 hours.

Program Mode – VCBB Bottom
Freezer – Refrigerator

Max Frz Run Time Duration

1. Press Max Frz pad. Max Frz light will glow. One temperature indicator should glow indicating present Max Frz run time duration in 4 hour increments (indicator 1 means 4 hours, 2 means 8 hours, etc.) Default delay is 24 hours.
2. Press Warmer pad to decrease Max Frz duration by 4 hours.
3. Press Colder pad to increase Max Frz duration by 4 hours.

Temperature Offset Calibration
Offset amount adjusts temperatures for refrigerator cut ins and cut outs by the amount of offset. The chart below shows the indicator and the amount of offset from the factory default setting.

INDICATOR	OFFSET
1	+8
2	+6
3	+4
4	+2
5	0
6	-2
7	-4
8	-6
COLDEST	-8

- **Setting Refrigerator Temperature Offset.**
  Press Ref Temp pad. Refrigerator indicator and one indicator will glow. Press Warmer pad to move offset to the next warmer setting. Press Colder pad to move to the next colder setting. Factory default refrigerator offset is +2.
- **Setting Freezer Temperature Offset.**
- Press Freezer pad. Freezer temperature indicator and one indicator will glow. Press Warmer pad to move offset to the next warmer setting. Press Colder pad to move offset to the next colder setting. Factory default freezer offset is 0.

Default Mode Selection
Toggle * pad to select adaptive or conventional defrost mode. Vacation indicator glows when adaptive defrost has been selected. If vacation indicator is off, conventional defrost is selected. Conventional defrost uses 8 hour CRTD value.

Forced Defrost
Defrost can be forced to start by pressing and holding the Alarm Off pad for 3 seconds. Program changes will be saved permanently in EEPROM and program mode will exit to Run Mode.

Forced Pull Down (Compressor Start)
Compressor start can be forced by pressing and holding Max Frz for 3 seconds. Program changes will be saved permanently in EEPROM. Compressor, evaporator, fan, damper heater, and condenser fan will come on.

Exiting Program Mode
Press Display On pad for 3 seconds to exit Program Mode. Tone will sound three times. Changes made in Program Mode will be permanently saved in EEPROM.

Note: If no pad is pressed for 10 minutes, Program Mode will be automatically exited. However , no changes will be saved if Program Mode exits automatically.

ELECTRONIC TESTING –VCBB BOTTOM FREEZER – REFRIGERATOR

Electronic Testing Mode

Forced Defrost Start

1. Press Display On pad to activate control panel.
2. Simultaneously press and hold Max Ref and Display Off pads for 3 seconds.

Forced Compressor Start

1. Press Display On pad to activate control panel.
2. Simultaneously press and hold Max Frz and Display Off pad for 3 seconds.

Open Thermistor Detect

Alarm sounds and freezer or refrigerator indicator light shows and temperature indicator 4 through 7 will turn on in sequence if either thermistor circuit opens. Refer to Temperature Control Operation section and Electronic Testing section.

1. Press Alarm Off pad to turn off alarm.
2. Alarm will reset for normal operation. If conditions has not been corrected, alarm will sound again.

Evaporator Fan Suppression

The evaporator fan will turn off every time either refrigerator or freezer door is open.

To test if this function is operating:

1. Perform forced pull down procedure as noted above—evaporator fan should be on.
2. Open the refrigerator or freezer door—the fan should turn off.
3. Push the light switch off – the evaporator fan should start.

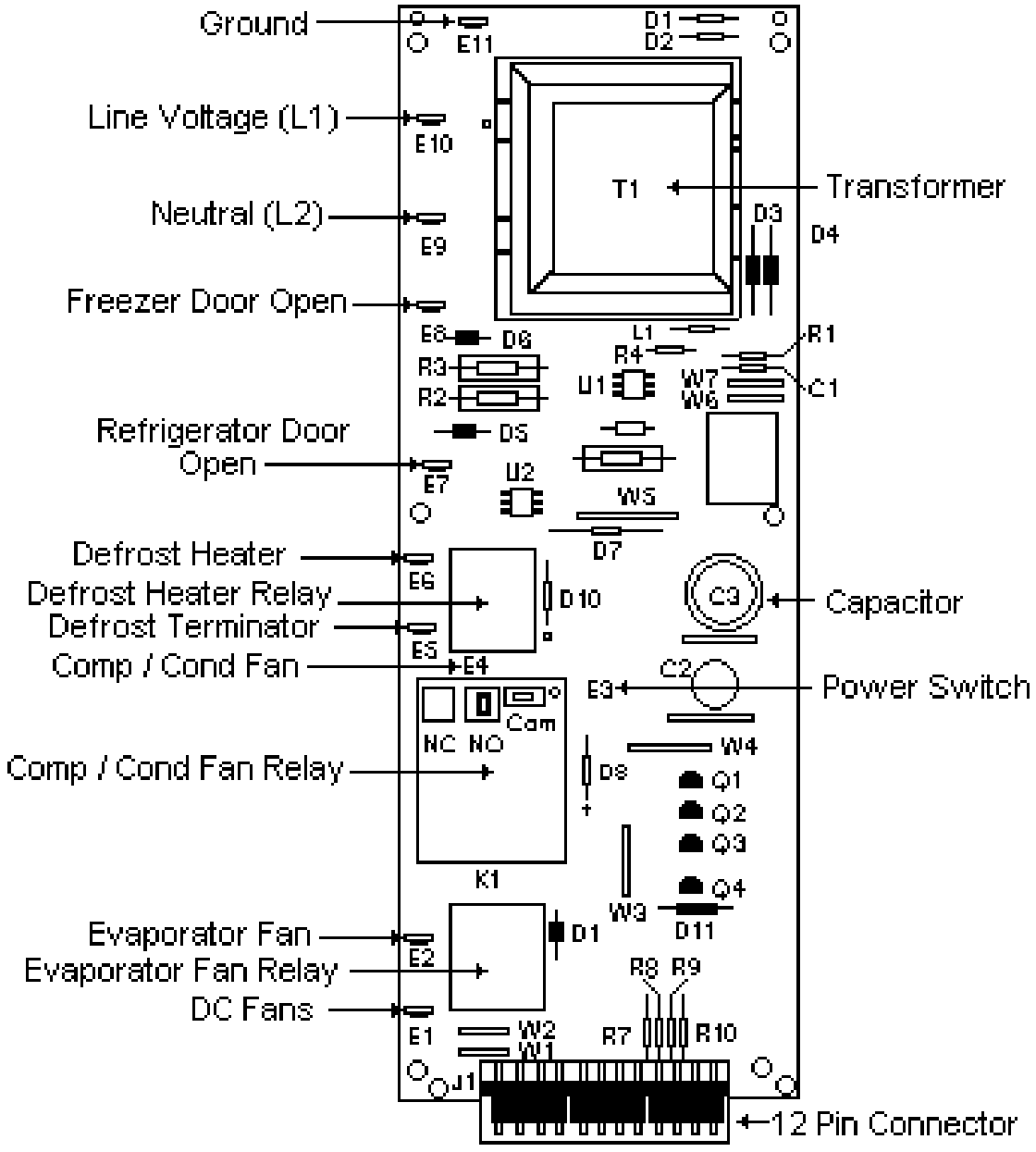
If fan does not toggle off and on when refrigerator light switch is turned off and on it has been determined evaporator fan motor operational, perform following tests to determine failure.

1. Check for line voltage on terminal E7 on high voltage board. With refrigerator door open (refrigerator light ON) reading should be 120 VAC. With refrigerator door closed (refrigerator light OFF) reading should be approximately 0 VAC. If voltage does not change with light switch and light is turning light off and on, red/white wire is broken between switch and high voltage board.
2. Check for voltage on terminal E7 on high voltage board. Output voltage should toggle with toggling of light switch. If output voltage does not toggle, high voltage board needs replacing.
3. If terminal 7 on high voltage board changes with opening and closing of door, orange wire in low voltage harness is broken (check for continuity between pin 7 on high voltage board and pin 10 on low voltage board) or low voltage board needs replacing.

1. Check for line voltage on terminal E8 on high voltage board. With freezer door open, reading should be 120 VAC. With door closed, reading should be approximately 0 VAC. If voltage does not change with light switch and light switch is turning light off and on, violet/white wire is broken between switch and high voltage board.
2. Check for voltage on pin 7 on pin connector on high voltage board. Output voltage should toggle with toggling of light switch. If it does not toggle, high voltage board needs replacing .
3. If voltage on pin 7 on pin connection on high voltage board changes with opening and closing of door, orange wire in low voltage harness is broken (check for continuity between pin 7 on high voltage pin connection and pin 10 on low voltage board) or low voltage board needs replacing.

Electronic Function Description ---*VCBB Bottom Freezer - Refrigerator*

WARNING: To avoid electrical shock which can cause severe personal injury or death, desconnect power to refrigerator using power switch before servicing. Wires removed during disassembly must be replaced on proper terminals to insure earthing and polarization. After servicing, reconnect power using power switch.



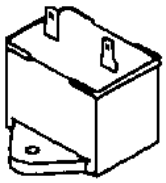
WARNING
To avoid electrical shock which can cause severe personal injury or death, disconnect power to refrigerator using power switch before servicing. Wires removed during disassembly must be replaced on proper terminals to insure correct earthing and polarization. After servicing, reconnect power using power switch.

Refrigeration and Defrost Component Checks Made at High Voltage Board

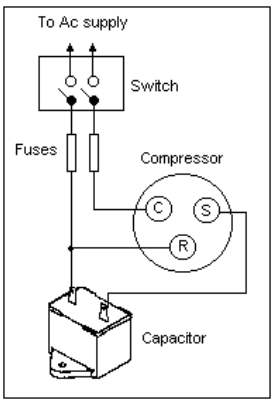
Low voltage board input	W1 to D11	approximately	-25VDC
	E10 to E9 (Neutral) or ground	approximately	120VDC
Compressor/condenser fan motor	"ON" = E4 to E9 (Neutral) or ground	approximately	120VDC
	"OFF" = E4 to E9 (Neutral) or ground		
Compressor/condenser fan motor relay	"CLOSED" = R7 to ground	approximately	-11VDC
	"OPEN" = R7 to ground	approximately	-25VDC
Evaporator fan motor relay	"CLOSED" = R8 to ground	approximately	-11VDC
	"OPEN" = R8 to ground	approximately	-25VDC
Evaporator fan motor	"ON" =E2 (Neutral) or ground	approximately	120VDC
	"OFF" = E2 (Neutral) or ground		0VDC
Defrost heater	"ON" = E6 to E9 (Neutral) or ground	approximately	120VDC
	"OFF" = E6 to E9 (Neutral) or ground		0VDC
Defrost heater relay	"CLOSED" = R9 to ground	approximately	-11VDC
	" OPEN" = R9 to ground	approximately	-25VDC
Defrost terminator	"CLOSED" =E5 to E9 (Neutral) ground	approximately	120VDC
	"OPEN" = E5 to E9 (Neutral) or ground		0VDC
DC fan output voltage from high voltage board to fresh food fan or condensate evaporator fan	"ON' = E1 to ground	approximately	-25VDC
	"OFF" = E1 to ground		0VDC
DC fan input voltage signal to high voltage board from low voltage board for fresh food fan and for condensate evaporator	"ON" =R10 to ground	approximately	-11VDC
	"OFF" = R10 to ground	approximately	-25VDC

Filament voltage at pin 11 and 12 = less than 5VDC

Component Testing ---*VCBB Bottom Freezer – Refrigerator*

Component	Description	Test Procedure
Capacitor 	Run capacitor connects to relay Terminals 3 and L2 side of line.	**WARNING** To avoid electrical shock which can cause severe personal injury or death, descharge capacitor through a resistor before handling 1. Disconnect power to refrigerator. 2. Remove captor cover and disconnect capacitor wires. 3. Discharge capacitor by shorting across Terminals with a resistor for 1 minute. 4. Check resistance across capacitor terminals with ohmmeter set on Rx1K Scale. • Good—needle swings to 0 ohms and slowly moves back to infinity. • Open – needle does not move. Replace capacitor. • Shorted – needle jumps toward 0 and then moves back to constant high resistance (not infinity).
Capillary Tube	Capillary is sized in diameter, and length to feed proper amount of refrigerant to evaporator. Capillary is soldered to suction line to transfer heat from capillary and add additional superheat to gas refrigerant in compressor suction line. Capillary discharges into evaporator.	Restricted or clogged capillary tube must be replaced with tube of same inner diameter and length.

Component Testing ---*VCBB Bottom Freezer – Refrigerator*

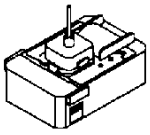
Component	Description	Test Procedure
Compressor	When compressor electrical circuit is energized, the start winding current causes relay to heat. After an amount of starting time, start winding circuit Turns off. Relay will switch off start winding circuit even though compressor has not started (for example, when attempting to restart after momentary power interruption). With "open" relay, compressor will not start because there is little or no current to start windings. Overload protection will open due to high locked rotor run winding current. With "shorted" relay or capacitor, compressor will start and overload protector will quickly open due to high current of combined run and start windings. With open or weak capacitor, ` Compressor will start and run as Normal but will consume more energy.	**Resistance test** 1. Disconnect power to unit. 2. Discharge capacitor be shorting across terminals with a resistor for 1 minute. 3. Remove leads from compressor terminals 4. Set ohmmeter to lowest scale. 5. Check for resistance between Terminals "S" and "C" Terminals "R" and "C" If either compressor winding read open (infinite or very high resistance) or dead short (0 ohms), replace compressor. **Ground test** 1. Disconnect power to refrigerator. 2. Discharge capacitor by shorting terminals through a resistor for 1 minute. 3. Remove compressor leads and use an ohm-meter set on highest scale. 4. Touch one lead to compressor body (clean point of contact) and the other probe to each compressor terminal. If a reading is obtained, compressor is grounded and must be replaced. **Operation test** If voltage, capacitor, overload, and motor winding test good, perform the following test. 1. Disconnect power to refrigerator. 2 Discharge capacitor by shorting terminals Through a resistor for 1 minute. 3. Remove leads from compressor terminals. 4. Wire a test cord to power switch. 5. Place time delayed fuse with UL rating equal to amp rating of motor in test cord socket. 6. Remove overload and relay. 7. Connect start, common and run leads of test cord on appropriate terminals of compressor. 8. Attach capacitor leads of test core together. If capacitor is used, attach capacitor to a known good capacitor of same capacity. 

Compressor	Description	Test Procedure
		9. Plug test cord into volt-watt meter to determine start and run wattage as well as check for low voltage which can also be a source of trouble. 10. With power to volt-meter, press start cord switch and release. • If compressor motor start and draws normal wattage, compressor is okay and trouble is in capacitor, relay / overload, freezer temperature control, or elsewhere in system. • If compressor does not start when direct wired, recover system at high side. After system is recovered, repeat compressor direct wire test. If compressor runs after recovery but would not run when direct wired before recovery, a restriction is indicated. • If compressor does not run when wired direct after recovery, replace faulty compressor.
Condenser	**Condenser** is of tube and wire construction located in compressor compartment. **Condenser** is on high pressure discharge side of compressor. Condenser function is to transfer heat absorbed by refrigerant to ambient. **Higher pressure** gas is routed to condenser where, as gas temperature is reduced, gas condenses into a high pressure liquid state. Heat transfer takes place because discharge gas is at a higher temperature than air that is passing over condenser. It is very important that adequate air flow over condenser is maintained. **Condenser** is air cooled by condenser fan motor. If efficiency of heat transfer from condenser to surrounding air is impaired, condensing temperature becomes higher. High liquid temperature means the liquid will not remove as much heat during boiling in evaporator as under normal conditions. This is indicated by higher than normal head pressure, long run time, and high wattage. From compressor refrigerant flows into serpentine under condensate pan to help evaporate condensate, and then into pre-condenser loop which helps control exterior condensation on flange, center mullion, and around freezer door.	Leaks in condenser can usually be detected be using an electronic or soap solution. Look for signs of compressor oil when checking for leaks. A certain amount of compressor oil is circulated with refrigerant. Leaks in post condenser loop are rare because loop is a one-piece copper tube except for brazed joint visible in machine compartment. For Minute Leaks 1. Separate condenser from rest of refrigeration system and pressurize condenser up to a maximum of 9.65 bars (140 PSI) with a refrigerant and dry nitrogen combination. 2. Recheck for leaks. **⚠WARNING** To avoid severe personal injury or death from sudden eruption of high pressure gases, observe the following: • Protect against a sudden eruuption if high pressure are required for leak checking. • Do not use high pressure compressed gases in refrigeration systems without a reliable pressure regualtor and pressure relief valve in the lines. Remove any lint accumulation, etc. that would restrict normal air movement through condenser.

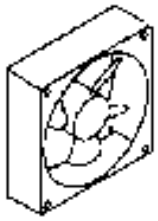
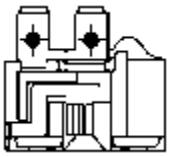
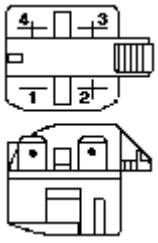
Component Testing --- *VCBB Bottom Freezer - Refrigerator*

Component	Description	Test Procedures
	From condenser refrigerant flows into capillary and then to evaporator before returning to compressor through suction line.	
Drier 	Drier is placed at post condenser loop outlet and passes liquefied refrigerant to capillary. Desiccant (20) 8x12 4AXH - 7 M>S> Grams.	Drier must be changed every time the system is opened for testing or compressor replacement. **NOTE:** Drier used in R12 sealed system is not inter-changeable with drier used in R134a sealed system. **⚠CAUTION** Before opening refrigeration system, recover HFC134a refrigerant for safe disposal. 1. Score capillary tube close to drier and break. 2. Reform inlet tube to drier allowing enough space for large tube cutter. 3. Cut circumference of drier 1 1/4" below condenser inlet tube joint to drier. 4. Remove drier. 5. Apply heat trap paste on post condenser tubes to protect grommets from high heat. 6. Unbraze remaining part of drier. Remove drier from system. 7. Discard drier in safe place. Do not leave drier with customer. If refrigerator is under warranty, old drier must accompany warranty claim.
Evaporator	Inner volume of evaporator allows liquefied refrigerant discharged from capillary to expand into refrigerant gas. Expansion cools evaporator tube and fin temperature to approximately -20 F transferring heat from freezer section to refrigerator. Passing through suction line to compressor, the refrigerant picks up superheat (a relation-ship between pressure and temperature that assures complete vaporization of liquid refrigerant) as result of capillary in suction line.	Test for leaks in evaporator with electronic leak detector or with soap solution. Compressor oil is circulated with refrigerant, check for oil when checking for leaks. **NOTE:** Follow all procedures for recovering R134a refrigerant for safe disposal when opening system. For Minute Leaks: **⚠CAUTION** To avoid severe personal injury or death from eruption of high pressure gases, observe the following. **Protect against a sudden eruption if high pressures are required for leak checking**. **Do not use high pressure compressed gasses in refrigeration systems without a reliable pressure regulator and pressure relief valve in the line**

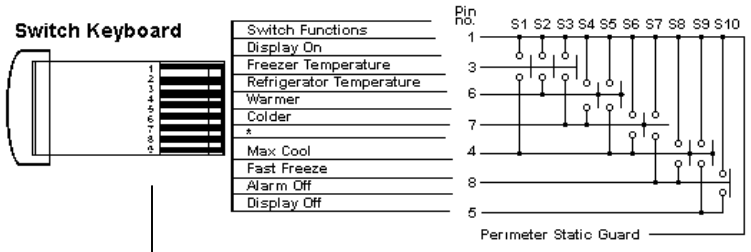
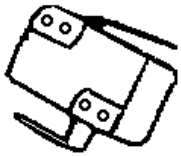
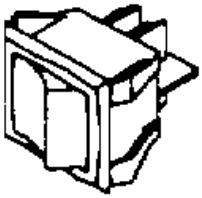
Component Testing --- *VCBB Bottom Freezer - Refrigerator*

Component	Description	Test Procedures
	Refrigerant gas is pulled through suction line by compressor to complete the refrigerant cycle.	1. Separate evaporate from rest of refrigeration system and pressurize evaporator up to a maximum of 235 PSI with a refrigerant and dry nitrogen combination. 2. Recheck for leaks.
Heater, cavity	Applied to back of ice and water cavity to help prevent conden-sation from forming on face of cavity. Wired in series with hot side of line through auger motor interlock switch.	Check resistance across heater. If heater is faulty, use spare heater foamed in place at factory.
Heater, evaporator (defrost)	See "Electronic Function Description, Adaptive Defrost Circuitry.	Check resistance across heater. To check defrost system: 1. Thermocouple defrost thermostat and plug refrigerator into wattmeter. 2. Force into defrost mode (see section on electronic testing) Wattmeter should read specified watts (according to Technical Data Sheet) ±5 F; thermostat should interrupt power to heater
Heater, mullion	For service use only to reduce condensation on center mullion. Heater foamed in place. Not powered from the factory.	To connect mullion heater to power: 1. Disconnect power to unit using power switch. 2. Remove ice grille. 3. Remove bracket holding condensate evaporation fan and water valve. 4. Locate water valve wiring harness. 5. Carefully slit wiring harness vinyl sleeve to expose on black and one white lead with bullet terminals inside harness sleeve. 6. Connect to heater leads at left side of cabinet. 7. Wrap vinyl sleeve with electrical tape to close slit.
Ice Maker	See "Ice Maker" section for service information.	
Motor, condenser 	Condenser fan moves cooling air across condenser coil and	Check resistance across motor windings.
Motor, Evaporator fan 	Evaporator motor moves air across evaporator coil.	1. Disconnect power to unit. 2. Disconnect fan motor leads. 3. Check resistance from ground connection solder. Trace to motor frame must not exceed .05 ohms. 4. Check for voltage at connection to motor.

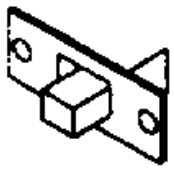
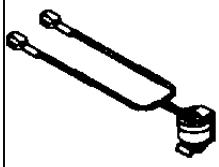
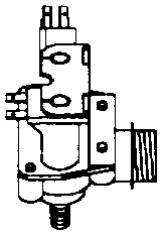
Component Testing --- *VC88 Bottom Freezer - Refrigerator*

Component	Description	Test Procedures
Motor, DC fans 	Refrigerator fan circulates cold air into refrigerator Condenser evaporation fan And out through toe grille to assure complete conden-sate evaporation. DC fan motors are connected in series with semi-conductor switch.	See Refrigeration and Defrost Component Checks made at high voltage board. For DC fan voltage check procedures at high voltage board. Check for voltage across terminals.
Overload/Relay 	Overload is a temperature and current sensing device. Overload opened when high current or high compressor temperature is sensed. After overload opens, reset Can require up to two hours Depending on ambient Temperature and residual Heat load in compressor.	1. Disconnect power to the refrigerator. 2. Remove relay cover and pull relay off compressor. Pull overload protector off compressor common terminal. 3. With ohmmeter, check the resistance between male terminal and female pin receptacle terminal which pushes onto compressor common terminal. At ambient room temperature overload protector should have less than 1 ohm resistance. An open overload protector will have infinite resistance. Relay (see PTC relay)
Relay, PTC  	When voltage is connected and relay is cool, current passed through relay to start winding. After a short time, current heats the resistor in relay and resistance will rise blocking current flow through relay. Start winding remains in the circuit through run capacitor. Solid state relay plugs directly on compressor start and run terminals relay terminals 2 and 3 are connected within relay. Run capacitor is connected to relay terminal 3. L2 side of the 120 VAC power is connected to relay terminal 2.	With power off check resistance across terminals 2 and 3. Refer to Technical Data Sheet for values for model being serviced.

Component Testing --- *VCBB Bottom Freezer - Refrigerator*

Component	Description	Test Procedures
Switch, keyboard	Semiconductor switch for panel keyboard. electronic control is not repairable. If any component is faulty. Entire control must be replaced. **NOTE:** Repair or replaced line voltage components before testing or replacing electronic control. Do not assume problems are caused be electronic control system. Opened, shorted, grounded or otherwise faulty line voltage components (including power cord and wiring) can create problems that appear to be caused by electronic control.	
Switch, NO icemaker interlock 	Interrupts connection to ice maker when freezer door is open.	Check resistance across terminals. Switch arm depressed — Closed Switch arm not depressed — Open
Switch, NC Refrigerator light, Freezer light Refrigerator fan 	Completes circuit to allow indicated function. See tech sheet and wiring diagram for individual switch.	Check resistance across terminals. Switch arm down "NC" terminal — Closed "NO" terminal — Open Switch arm up "NC" terminals — Open "NO" terminals — Closed
Switch, power DPST 	Disconnects all power to unit when switch is OFF (open). Unit shipped with ON	Check resistance across terminals Switch OFF (open) No continuity between 1-2 or 4-5 Switch ON (closed) continuity between 1-2 and 4-5

Component Testing --- *VCBB Bottom Freezer - Refrigerator*

Component	Description	Test Procedures
Switch, showroom 	ON position completes circuit to lights and display only. OFF position completes circuit for normal operation. Unit shipped with switch in OFF position.	Check resistance at test points. Showroom operation—E3 at high voltage board to pin 3 (blue/white wire) at high voltage wire harness. Unit run—E9 at high voltage board to pin 3 (blue/white wire) at high voltage wire harness.
Thermistor 	Senses temperature within Refrigerator and freezer.	Check resistance across terminals. See Technical Data Sheet for bell curve resistance chart at given temperatures.
Thermostat 	Thermostat is in a serried circuit with high voltage board and defrost heater. Controls the circuit through defrost terminator to defrost heater. Opens and breaks circuit when thermostat senses high temperatures. After defrost thermostat opens, thermostat remains open until end of defrost cycle and refrig-erator starts cooling again. when defrost thermostat senses a preset low temperature and closes.	With power off and evaporator coil below freezing, thermostat should check continuous when checked with ohmmeter . See “Heater, evaporator (defrost)” section for additional tests.
Valve, water 	Controls water flow to the ice maker.	Check resistance across coil windings. See Technical Data Sheet for valves for model being serviced.

Troubleshoot Guide --- *VCBB Bottom Freezer - Refrigerator*

Symptom	Possible Causes	Corrective Acton
Unit does not run	No power to unit	Check for power at outlet. Check fuse box / circuit breaker for blown fuse or tripped breaker. Replace or reset.
	Faulty service cord	Check with test light at unit, if no circuit and current is indicated at outlet, replace or repair.
	Low voltage	Check input voltage for proper voltage. Take appropriate action to correct voltage supply problem.
	Freezer temperature set too warm	Adjust freezer temperature.
	Faulty timer	Check with test light. Replace if necessary.
	Faulty relay	Check relay. Replace if necessary.
	Faulty compressor	Check compressor motor windings for opens / shorts. Perform compressor direct wiring test. Replace if necessary.
	Faulty overload	Check overload for continuity. **NOTE:** Ensure compressor / overload are below trip temperature before testing. Replace if necessary.
Refrigerator section too warm	Excessive door opening	Consumer education.
	Overloading of shelves	Consumer education.
	Warm or hot foods placed in cabinet	Consumer education.
	Refrigerator temperature set too warm.	Adjust refrigerator temperature.
	Poor door seal	Level cabinet. Adjust hinges. Replace gasket.
	Dirty condenser	Clean condenser.
	Refrigerator airflow	Check airflow grille for obstructions. Adjust as necessary. Check airflow fan. Replace if faulty.
	Interior light remains on	Check switch. Replace if necessary.
	Faulty condenser fan or evaporator fan	Check fan switch, fan, and wiring. Replace if necessary.
	Faulty compressor	Check intake valve. Replace compressor.
Refrigerator section too cold	Refrigerator temperature set too cold.	Adjust refrigerator temperature.
	Refrigerator airflow not properly adjusted	Adjust airflow grille to freezer. Adjust Chef's pantry temperature control.
Freezer section too cold	Freezer temperature set too cold	Adjust freezer temperature.
Unit runs Continuously	Temperature set too cold	Adjust temperature.
	Dirty condenser or obstructed grille	Check condenser and grille. Clean.
	Poor door seal	Level cabinet. Adjust hinges. Replace gasket.
	Interior light remains on	Check switch. Replace if necessary.
	Faulty condenser fan or evaporator fan	Check fan switch, fan, and wiring. Replace if necessary.
	Refrigerant shortage or restriction	Check for leak or restriction. Repair, evacuate and recharge system.

Troubleshoot Guide --- *VCBB Bottom Freezer - Refrigerator*

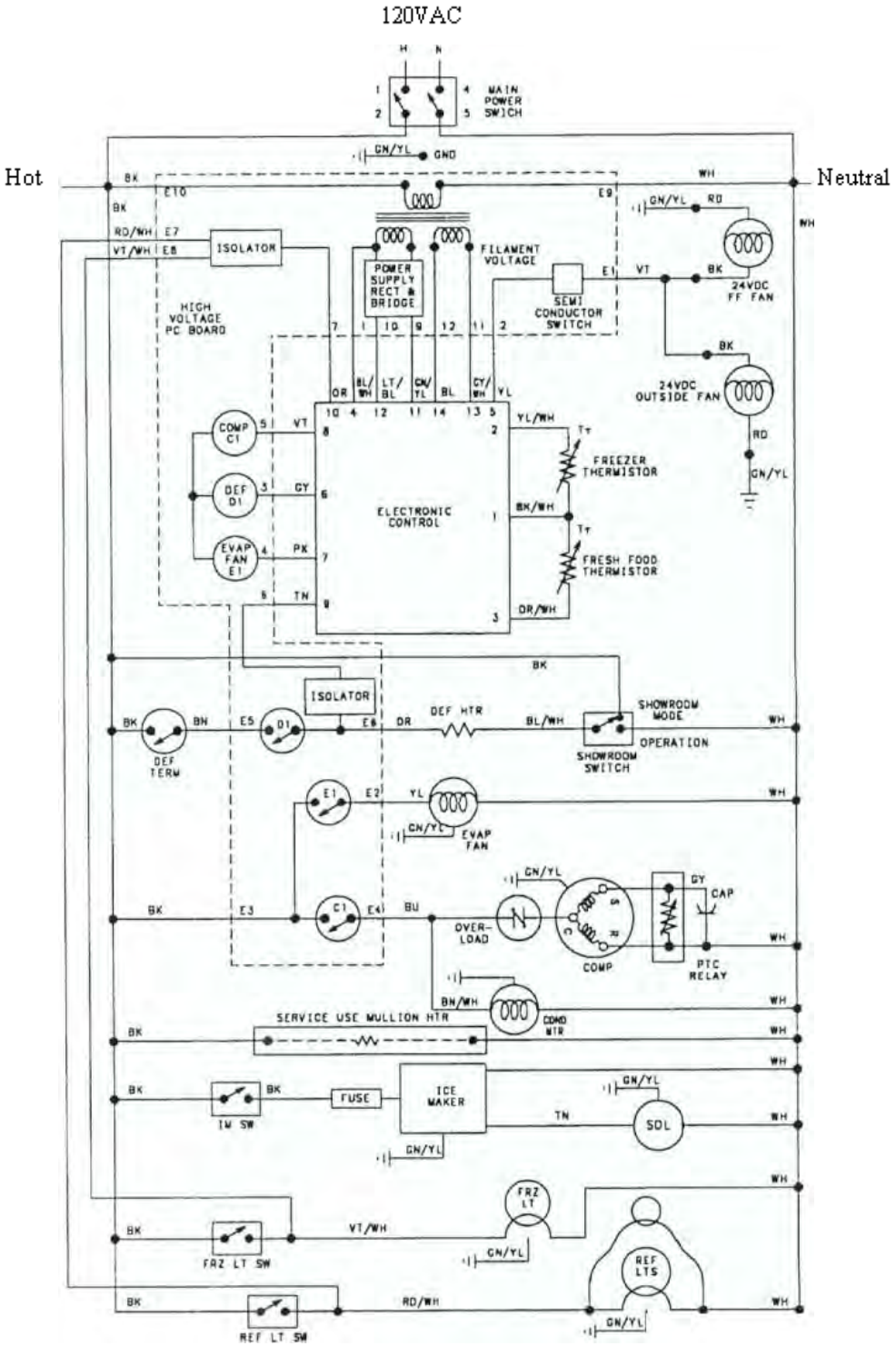
Symptom	Possible Causes	Corrective Action
	Air in system	Check for low side leak. Repair, evacuate and recharge system.
Unit runs continuously. Temperature normal	Ice on evaporator	See "Ice on evaporator."
Noisy operation	Loose flooring or floor not firm Cabinet not level Tubing in contact with cabinet, other tubing or other metal Drip tray vibrating Fan hitting another part Worn fan motor bearings Compressor mounting grommets worn or missing; mounting hardware loose or missing. Free or loose parts causing or allowing noise during operation	Repair floor or brace floor. Level cabinet. Adjust tubing. Adjust drain pan. Ensure fan properly aligned and all attaching hardware and brackets are tight and not worn. Tighten or replace. Check motor for loss of lubricant or worn bearings. Replace if necessary. Tighten hardware. Replace grommets if necessary. Inspect unit for parts that may have worked free or loose or missing screws. Repair as required.
Frost or ice on Evaporator	Evaporator fan faulty Defrost heater remains open Defrost thermostat faulty Open wire to connector Refrigerant shortage or restriction	Check fan motor. Replace if defective. Check defrost heater continuity. Replace if faulty. Check defrost thermostat and replace if faulty. Check wiring and connections. Repair as necessary. Check for leak or restriction. Repair, evacuate and recharge system.
Unit starts and stops frequently (cycles on & off)	Loose wire or thermostat connections High ambient temperature Supply voltage out of specifications. Overload protector open Faulty compressor motor capacitor Faulty compressor Faulty fan motor Restricted air flow Refrigerant shortage or restriction	Check wiring and connections. Repair as necessary. Consumer education. Check input voltage. Correct and supply problems. Check overload protector for continuity. If open, replace overload. **NOTE:** Ensure overload / compressor are below trip temperature before testing. Check capacitor for open / short. Replace if necessary. **NOTE**: Discharge capacitor before testing. Test and replace compressor if faulty. Check fan motor. Replace if necessary. Check condenser and grille for dirt. Clean. Check for leak or restriction. Repair, evacuate and recharge system.

Pressure and Temperature Relationship Chart
(See Service Procedures for additional information about items in this chart.)

Condition	Suction Pressure Variation from Normal	Head Pressure Variation from Normal	T1 Inlet Temperature Variation from Normal	T2 Outlet Temperature Variation from Normal	T3 Suction Temperature Variation from Normal	Wattage Variation from Normal
Refrigerant Overcharge	Increase	Increase	Warmer	Warmer	Colder	Increase
Refrigerant Shortage	Decrease	Decrease or Increase (Restriction Symptoms)	Colder	Warmer	Warmer	Decrease
Partial Restriction	Decrease	Decrease or Increase (Restriction Symptoms)	Colder	Warmer	Warmer	Decrease
Air in System	Near Normal	Increase	Warmer	Warmer	Warmer	Increase
Low Ambient Installation (Reverse from High Ambient Installation)	Decrease	Decrease	Colder	Warmer	Warmer	Decrease
Additional Heat Load	Increase	Increase	Warmer	Warmer	Warmer	Increase
Inefficient Compressor	Increase	Normal or Decrease	Warmer or Colder	Warmer	Warmer	Decrease

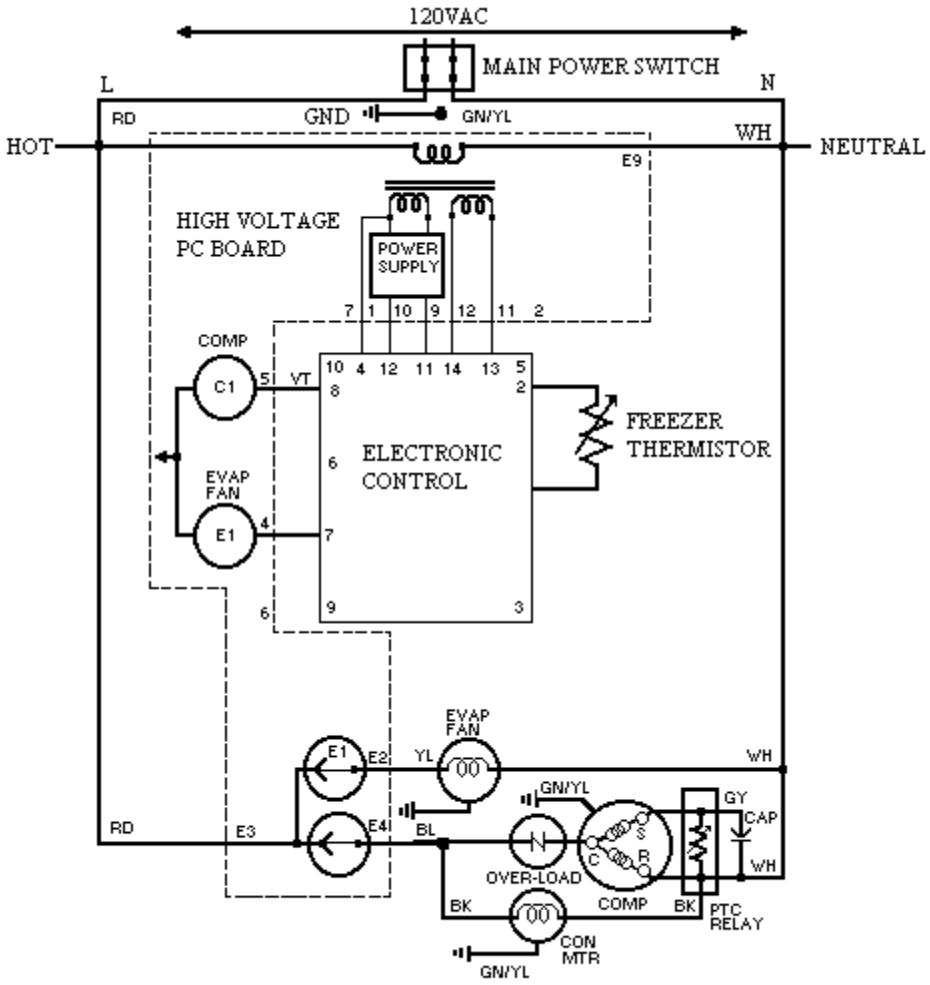
Wiring: Schematic ---*VCBB Bottom Freezer -Refrigerator*---

TO AVOID ELECTRICAL SHOCK WHICH CAN CAUSE SEVERE PERSONAL INJURY OR DEATH, DISCONNECT POWER TO REFRIGERATOR USING POWER SWITCH BEFORE SERVICING. WIRES REMOVED DURING DISASSEMBLY MUST BE REPLACED ON PROPER TERMINALS TO INSURE CORRECT EARTHING AND POLORIZATION. AFTER SERVICING, RECONNECT POWER USING POWER SWITCH.	**WARNING** **DANGER HIGH VOLTAGE**



Wiring: Schematic ---*VCBB Bottom Freezer -Refrigerator*---

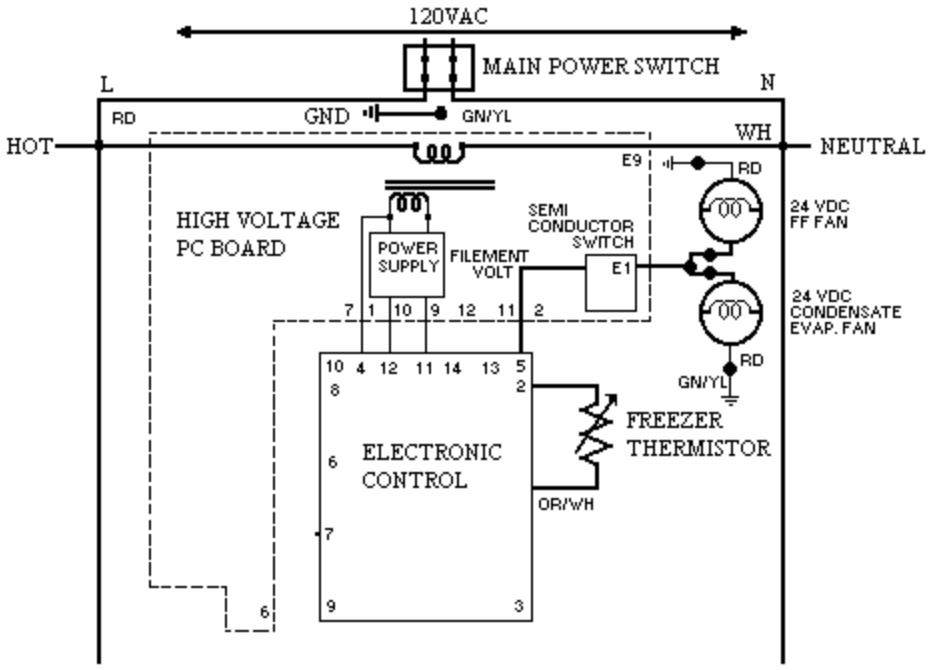
TO AVOID ELECTRICAL SHOCK WHICH CAN CAUSE SEVERE PERSONAL INJURY OR DEATH, DISCONNECT POWER TO REFRIGERATOR USING POWER SWITCH BEFORE SERVICING. WIRES REMOVED DURING DISASSEMBLY MUST BE REPLACED ON PROPER TERMINALS TO INSURE CORRECT EARTHING AND POLORIZATION. AFTER SERVICING, RECONNECT POWER USING POWER SWITCH.



Freezer Compartment Theory of Operation: As a freezer thermistor warms, the resistance decreases allowing low voltage signal to be sent to electronic control. Electronic control sends two low voltage signals, one to the compressor relay coil (C1) and one to the evaporator relay coil (E1). When both relay coils are energized and both relay contacts are closed, high voltage circuits to evaporator fan motor and compressor / condenser fan motor are complete. As thermistor cools during refrigeration cycle, resistance through thermistor increased blocking low voltage signal to electronic control interrupting circuit.

Wiring: Schematic ---*VCBB Bottom Freezer -Refrigerator---*

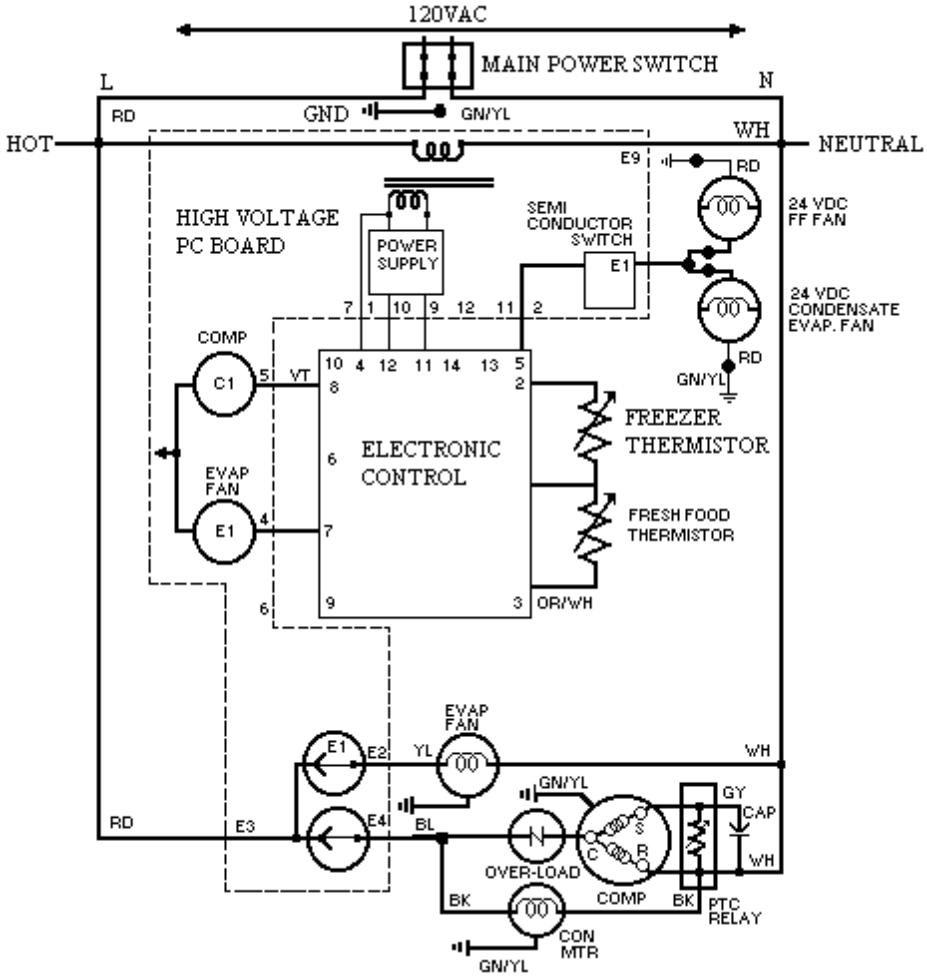
TO AVOID ELECTRICAL SHOCK WHICH CAN CAUSE SEVERE PERSONAL INJURY OR DEATH, DISCONNECT POWER TO REFRIGERATOR USING POWER SWITCH BEFORE SERVICING. WIRES REMOVED DURING DISASSEMBLY MUST BE REPLACED ON PROPER TERMINALS TO INSURE CORRECT EARTHING AND POLORIZATION. AFTER SERVICING, RECONNECT POWER USING POWER SWITCH.



Refrigeration Compartment Theory of Operation: As fresh food thermistor warms, resistance decreases allowing low voltage signal to be sent to the electronic control. Electronic control sends a low voltage signal, to semiconductor switch for DC fresh food fan and DC condensate evaporator fan. Both fans begin operating. Fresh food fan circulates freezer air into fresh food compartment. Condensate evaporator fan circulates air over condensate drain pan aiding in evaporation. As fresh food thermistor cools, resistance increases blocking low voltage signal to electronic control interrupting circuit to DC fresh food fan and DC condensate evaporation fan.

Wiring: Schematic ---*VCBB Bottom Freezer -Refrigerator---*

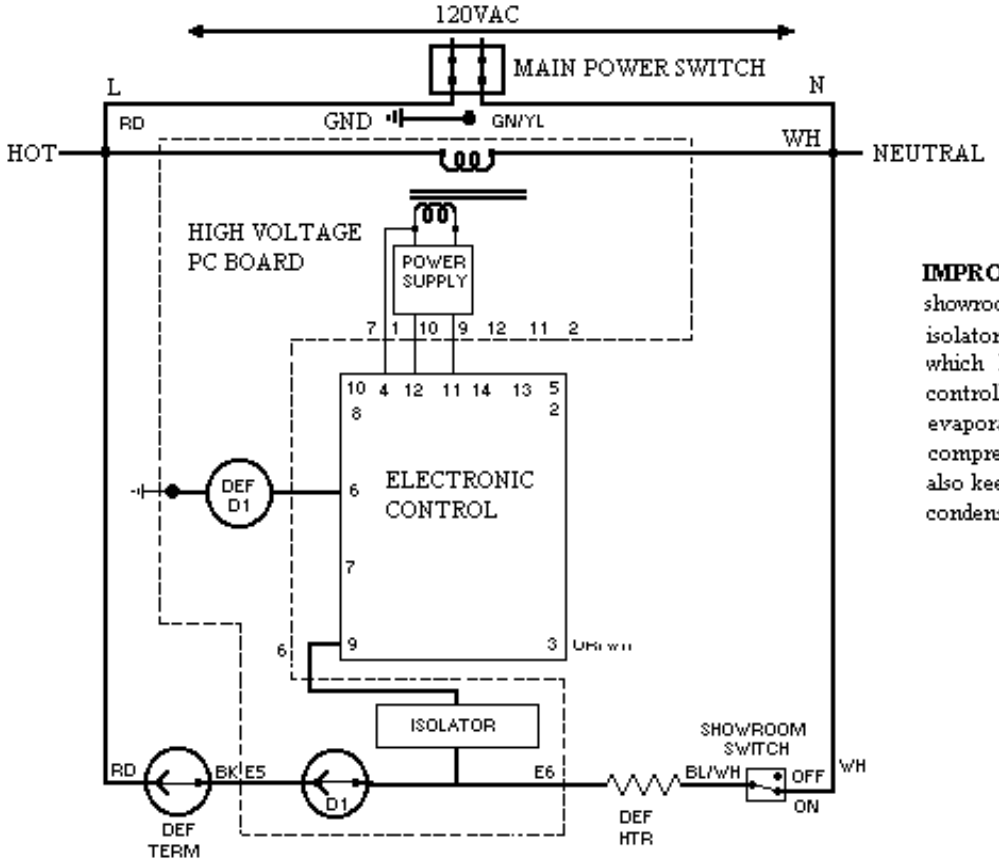
TO AVOID ELECTRICAL SHOCK WHICH CAN CAUSE SEVERE PERSONAL INJURY OR DEATH, DISCONNECT POWER TO REFRIGERATOR USING POWER SWITCH BEFORE SERVICING. WIRES REMOVED DURING DISASSEMBLY MUST BE REPLACED ON PROPER TERMINALS TO INSURE CORRECT EARTHING AND POLORIZATION. AFTER SERVICING, RECONNECT POWER USING POWER SWITCH.



Refrigerator and Freezer Compartment Theory of Operation: If both freezer and fresh food thermistors are warm, their resistance drops (see table Refrigerator and Freezer Thermistor in Temperature Control Section) and the electronic signals for compressor / condenser fan motor operation and for operation of fresh food and condensate evaporator fans. After freezer thermistor cools sufficiently to raise resistance and block the signal to the electronic control, compressor / condenser fan motor will shut off. However, fresh food and condensate evaporator fans will continue to run until fresh food thermistor cools and signal is blocked to electronic control. If fresh food thermistor cools before freezer thermistor, electronic control will interrupt circuit to fresh food and condensate evaporator fans while evaporator fan motor will continue to operate under control of freezer thermistor.

Wiring: Schematic ---*VCBB Bottom Freezer -Refrigerator---*

TO AVOID ELECTRICAL SHOCK WHICH CAN CAUSE SEVERE PERSONAL INJURY OR DEATH, DISCONNECT POWER TO REFRIGERATOR USING POWER SWITCH BEFORE SERVICING. WIRES REMOVED DURING DISASSEMBLY MUST BE REPLACED ON PROPER TERMINALS TO INSURE CORRECT EARTHING AND POLORIZATION. AFTER SERVICING, RECONNECT POWER USING POWER SWITCH.



IMPROTANT: When the showroom switch is OFF, the isolator sees line voltage which keeps the electronic controller from signaling the evaporator fan motor or compressor relay coils and also keeps the fresh food and condenser evaporator fans off.

Adaptive Defrost Theory of Operation: After designated compressor run time, refrigeration cycle is interrupted and electronic control sends a low voltage signal to defrost relay coil (def D1). Powering the relay coil closes contact (D1) completing high voltage circuit to defrost heater through closed defrost terminator (closes at 15°F). Isolator, which is part of high voltage PC board, recognizes presence of line voltage to defrost heater and sends low voltage signal to electronic control. Electronic control keeps count of number of minutes, defrost terminator remains closed (opens at 48°F). length of time defrost terminator is closed determines if the next defrost cycle advances by 4 hours of compressor run time, stays at the same interval, or delays by 4 hours of compressor run. If defrost terminator does not open before 29 minutes, defrost cycle is automatically terminated by electronic control and refrigeration cycle will resume after 6 minutes dwell time.

Ice Maker Troubleshooting Chart ---*VCBB Bottom Freezer – Refrigerator*

No or Low Ice Production	
Problem	**Action**
Warm freezer	Adjust freezer control or repair refrigerator
Broken locking tab on vertical cam	Replace module
Shorted and burned module shut-off switch and contacts	Replace module
Stalled or stripped motor	Replace module
2:30 Ejector Position	
Contaminated module. Motor won't run when "T" and "H" test points are shorted.	Replace module
Open or missing thermostat	Replace or install thermostat Apply Alumilastic
No power to ice maker (harness)	Determine discontinuity by tracing power
Jammed cubes Notice size and density of cubes	Un-jam cubes Check fill tube cup assembly
Frozen fill tube	Replace water valve
Kinked water line	Un-kink line and check line for weak sections
Obstructed water line to ice maker or refrigerator.	Clear water lin
Clogged water valve	Replace water valve
No power to water valve	Determine discontinuity by tracing power
Low water pressure	Short "T" and "H" test points for 10 seconds. Remove jumpers. Catch water in glass. Increase water pressure to 20-120 (1.4-8.2 bar) 140cc's.
Open heater circuit	Replace mold and heater assembly
Closed thermostat	Replace thermostat
Damaged heater tulips on module	Replace module
Short heater pins that do not contact module	Replace mold and heater assembly
Raised shut-off arm	Lower shut-off arm to begin cycle
Water or ice in actuator/housing hole	Remove module Dry actuator and housing hole
Small or burred housing hole	Repair or replace ice maker
Large or burred actuator O.D.	Replace module
Damaged module housing	Replace module
Deformed shut-off arm	Replace shut-off arm
Little or no alumilastic on thermostat	Apply alumilastic to thermostat
Housing to mold screws not seated	Tighten 2 screws (20-26 in.lb) (22.8-29.6 cm.kg)
Heater not staked in mold	Replace mold and heater assembly Apply alumilastics

Ice Maker Troubleshooting Chart ---*VCBB Bottom Freezer - Refrigerator*---

Incorrect heater temperature	Replace mold and heater assembly Apply alumilastic
Broken shut-off lever or mislocated shut-off switch	Replace module
3:00 Ejector Position	
Contaminated	Replace module
Jammed cubes Notice size and density of cubes	Un-jam cubes
Refrigerator or ice maker not level	Level refrigerator or ice maker
No power to ice maker	Determine discontinuity by tracing power
Excessive water-fill volume	Adjust module screw, lower water pressure, or replace water valve
Cubes falling back into mold during ejection Check fill tube assembly	Replace fill cup
4:00 Ejector Position	
Contaminated	Replace mold and heater assembly Apply alumilastic
Thermostat out of calibration	Replace thermostat. Apply alumilastic
Open heater circuit Motor should oscillate	Replace mold and heater assembly Apply alumilastic
Little or not alumilastic on thermostat	Apply alumilastic to thermostat
Heater not staked in mold	Replace mold and heater assembly Apply alumilastic
Broken locking tabs on vertical cam	Replace module
6:00 Ejector Position	
Contaminated	Replace mold and heater assembly Apply alumilastic
Insufficient water to ice maker small or hollow cubes	Refer to "Hollow Ice Cubes"
7:30 Ejector Position	
Contaminated Motor will not oscillate	Replace module
Shut-off arm stuck in ice or obstructed	Remove obstruction Replace module
Cubes not formed properly	Un-Jam Check fill cup and fill tube assembly
9:00 Efector Position	
Contaminated	Replace module
Cubes frozen to fill cup or mold	Un-Jam Replace fill cup and module

Ice Maker Troubleshooting Chart ---*VCBB Bottom Freezer - Refrigerator*---

Excessive Ice Production	
Problem	**Action**
Shut-off arm not in actuator	Replace shut-off arm in actuator
Deformed Shut-off arm	Replace shut-off arm
Broken shut-off lever or lever bypassing vertical cam	Replace module
Broken module actuator	Replace module
Hollow Ice Cubes	
Low water fill volume	Adjust module screw, clear water path, or replace water valve
Improper freezer air-flow	Direct air flow away from thermostat
Thermostat out of calibration	Replace thermostat Apply alumilasic
Flooding or Ice in Bucket or Freezer	
Thermostat out of calibration	Replace thermostat Apply alumilastic
Jammed cube stalled in water-fill cycle	Remove cube Determine reason for stall
Leaky water valve	Replace water valve
Excessive water fill volume	Replace water valve
Motor stalled in water-fill cycle (12: ejector position)	Replace module
Contaminated module	Replace module
Refrigerator or ice maker not level	Level refrigerator or ice maker
Excessive water pressure	Decrease water pressure (20-120 psi) (1.4- 8.2bar)
Shorted and burned module shut-off switch and contacts	Replace module
Broken locking tab on verticle cam (Stalled in water fill)	Replace module
Fill-tube not properly positioned in fill cup	Reposition fill tube
Fill cup water opening blocked	Replace fill cup
Cubes fall over back of ice maker, melting in freezer	Replace fill cup

TROUBLE SHOOTING GUIDE --VGSC SELF-CLEAN FREESTANDING RANGE		
PROBLEM	**PROBABLE CAUSE**	**CORRECTION**
***BAKE SHUTS OFF CONTROL *Selector Switch to Bake *Baking Temperature Set *Cycle Light is on *Bake Ignitor does not Spark *No Flame on Burner	BOARD IS LOCKED OUT (IF FLAME IS NOT DETECTED, THE EXTERNAL LOCKOUT IS EXECUTED)	(Turn off Selector Switch (2) Turn off Temperature Control (3) Position ignitor (4) Adjust Air Shutter (5) Turn on Selector Switch (6) Turn on Temperature Control.
*** *Range Completely Inoperative Electrically*	*No supply voltage to range* *No voltage to range circuits*	*Check fuse/ breaker box* *Check high limit switch*
1. **No Bake:** * Selector Switch to Bake * Baking Temperature set * No Cycle Light	1A. No voltage to Thermostat. 1B. Defective T-stat contacts.	1A. Check for 120VAC at the Thermostat terminals BA to Neutral. If no voltage is present check for broken or burned wires. 1B. Check continuity across contacts BA to Neutral. Contacts open, Replace T-stat.
2.**No Bake:** * Selector Switch to Bake * Baking Temperature set * Cycle Light is on	2A. Selector Switch contacts 1 to 12 open. 2B. Safety Reset Relay contacts 1 to 2 open.	2A. Check continuity at contacts 1 to 12 on Selector Switch. Open contacts, replace Selector Switch. 2B. Check continuity at contacts 1 to 2 on Safety Auto Reset, Open contacts, replace Safety Auto Reset.
3. **No Bake:** * Selector Switch to Bake * Baking Temperature set * Cycle Light is on * Bake Ignitor does not click	3A. Direct Spark Ignition Module (DSI) inoperative.	3A Check for 120VAC to pin #6 (BA / YEL). 120VAC present, Replace DSI module.
4. **No Bake:** * Selector Switch to Bake * Baking Temperature set * Cycle Light is on * Bake Ignitor clicks * Gas supply tubing on wrong * Gas Valve	4A. Open coil in the Bake Solenoid valve. 4B. Air in the gas line.	4A. Check continuity across the Solenoid coils, If open replace the Solenoid Gas Valve. When the coil is okay check the wiring. 4B. Purge the Gas Line, turn control off and retry.
5. **No Convection Bake:** * Bake functions normally	5A. Open contacts in the Selector Switch. 5B. Open Motor windings in the Convection Fan Motor.	5A. Check continuity from 5 to 7 on the Selector Switch. If open replace Selector Switch. 5B. Check continuity across the Motor windings. If open replace Motor. Check wiring.

PROBLEM	PROBABLE CAUSE	CORRECTION
6. **No broil:** * Selector Switch set to Broil * Temperature set to Broil * Bake functions normally * Cycle Light is on * Broil Ignitor does not click * Gas supply tubing on wrong * Gas Valve	6A. Open contacts in the Selector Switch. 6B. Direct Spark Ignition Module (DSI) inoperative.	6A. Check continuity from 1 to 11 on the Selector Switch. If open replace Selector Switch. Check wiring. 6B. Check for 120VAC at pin 7 (BR / RED) on the Module. If voltage is present, replace Module. No voltage check wiring.
7. **No Broil:** * Selector Switch set to Broil * Temperature set to Broil * Bake functions normally * Cycle Light is on * Broil Ignitor clicks	7A. Open coil in Broil Solenoid valve. 7B. Air in the gas line.	7A. Check continuity across Broil Valve. If open, replace valve. 7B. Purge the gas line, turn the control off and retry.
8. **No Convection Broil:** * Selector Switch set to Broil * Temperature set to Broil * Broil Functions normally	8A. Open contacts in the Selector Switch. 8B. Open Windings in the Convection Fan Motor.	8A.Check continuity from 5 to 7 on The Selector Switch. If open replace Selector Switch 8B. Check continuity across the Motor windings. If open replace Motor. Check wiring.
9. **No Self-clean:** **Before Door Lock** • Selector Switch to Clean * Thermostat to Clean (Against the upper stop) * Bake functions normally * Broil functions normally * Clean Light does not light * Door does not lock `	9A. Selector Switch contacts 2 to 10 open 9B. Selector Switch contacts 5 to 6 open 9C. No power to L1 on the Timer PCB. 9D. No power to Pin 1 on the Auto Reset 9E. No Power to Timer PCB contact LS2.	9A. Check continuity from contact 2 to 10. If open replace Selector Switch. Contacts okay, check for Power at **T2** on the Timer **PCB.** No power , check the wiring from Selector Switch form the Selector Switch to the Timer (PC) Board. 9B. Check continuity from contact 5 to 6. If open replace the Selector Switch. Contacts okay, check for power at **SEL** on the timer **PC** board. No power check the wiring from selector Switch to Timer PCB. 9C. Check wiring from L2 to L1.On Timer PCB. 9D. Check continuity from Timer PCB Pin L1 to LS1. If open replace the Timer PCB. 9E. Auto Reset not closing. Check Continuity from Auto Reset Pin 1 to Pin 2. If open replace Auto Reset. Contact okay check wiring from Auto Reset Pin 2 to Timer PCB Pin LS2.

PROBLEM	PROBABLE CAUSE	CORRECTION
	9F. No power to Door Lock Motor	9F. Check for power at M1 on the Timer PCB. If no power replace the Timer PCB. Power at M1, check wiring to Door Lock Motor. Check continuity of the Door Lock Motor. No continuity, replace the Motor.
10. **No Self-clean: Before 600 F After Door Lock** * Selector Switch to Clean * Thermostat to Clean (Against the upper stop) * Bake functions normally * Broil functions normally * Clean Light is on * Door lock engaged * No spark to Broil Igniter * No Broil flame	10A. Selector Switch contacts 2 to 10 open 10B. Timer PCB open contacts T1 to T2. 10C. Door Lock Switch SW3 open. 10D. Micro switch on the T-stat open. 10E. Selector Switch contacts 4 to 8 open.	10A. Check continuity from pin 2 to 10. If open replace Selector Switch. Continuity checks okay. 10B Check for power at T2 on the Timer PCB, no power check wiring from Selector Switch to Timer PCB. Check continuity from T1 to T2 on Timer PCB. If open replace Timer PCB. 10C Check for power at the COM connection on the Micro-switch on the Thermostat. No power, check the Door Lock Switch SW3 for continuity. If open, replace SW3 on the Door Lock. 10D. Check continuity across pin COM to NO. If open replace Thermostat. 10E. Check continuity across pins 4 to 8. Open contacts, replace Selector Switch. Contacts okay, check the wiring from pin 8 to the DSI module.
11. **Partial Self-clean: After 600 F After Door Locks** * Broil Burner comes on during the first half of Self-clean. * Bake Burner fails to Ignite during the last half of the clean cycle. * Bake functions normally	11A. Selector Switch contacts 3 to 9 open. 11B. Bake Relay contacts 9 to 6 open.	11A. Check continuity from pin 3 to 9 on the Selector Switch, open Contacts replace Selector Switch 11B. Check continuity from pin 9 to 6 on the Bake Relay, open contacts replace Relay.
12. **Cooling Fan:** * Does not come on when place in self-clean. * Self-clean cycle okay during initial startup.	12A. Timer PCB contacts T4 to T3 open.	12A. Check continuity from T3 to T4 on Timer PCB. If open replace the Timer PCB. Contacts good check continuity across the Fan Motor. No continuity, replace the motor.
13. **Cooling Fan:** * Does not turn off (The Cooling Fan will normally run for several minutes after a self-clean cycle, until the temperature drops to a safe level.)	13A. Fan Switch defective.	13A. Fan Switch is normally open. Check continuity when cold, if closed, replace the Fan Switch.

VGSC306 DIAGNOSTICS <u>BAKE</u>

NOTE*: RANGE MUST BE TURNED ON FOR AT LEAST 40 SECONDS BEFORE MAKING THESE TESTS.*

Check for 120 VAC at J1-4 to J1-10 (see illustration #1). No voltage, diagnose main wiring harness. 120VAC should always be present at this point. Disconnect the line voltage to the range for approximately 1 minute. Then reconnect the supply voltage. If the supply voltage is not restored check for an open overload protector or a broken wire from the terminal block.

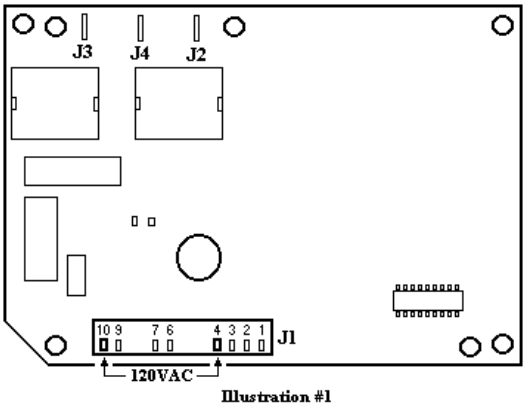


Illustration #1

DOES BAKE CYCLE FUNCTION PROPERLY?

NO: Check POLARITY of supply. Even if no ground is connected, the module will not be able to sense flame presence at the ignitor if the polarity is reversed.

Does the BAKE BURNER establish a flame then shut off?

YES:

Does spark continue after flame is established?

NO: Replace Valve.

YES: Check the ignitor for continuity. If no continuity, replace ignitor. If supply voltage polarity is correct, check BAKE IGNITOR wire for loose connection. If connection is good, replace module.

Does the BAKE BURNER establish a flame then shut off?

NO: Is 120VAC present to J1-4 to J1-6 (illustration #2)?

NO: Diagnose main wiring harness and / or

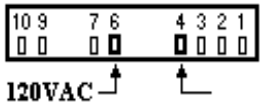


Illustration #2

thermostat.

Is 120VAC present from J1-4 to J1-6?

YES:

Is

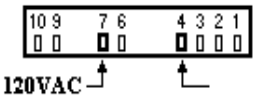


Illustration #3 **J1-7**

YES: Diagnose THERMOSTAT . The module will lock out if a call for Bake and Broil exists simultaneously.

Is 120VAC present from J1-4 to J1-7?

NO: Remove call for Bake (turn Thermostat off) test valve continuity, measure resistance between J1-1 and J1-2, then J1-1 to J1-3 (illustration #4). Are both resistances 216 ohms ± 30 ohms?

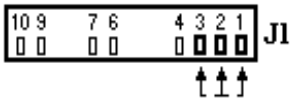


Illustration #4

NO: Measure resistance at the valve, if resistances are different then measured at module, diagnose wiring harness. If resistances are the same as measured at module, then replace the valve. Remove call for bake (turn thermostat off), test valve continuity; measure resistance between J1-1 and J1-2, then J1-2 to J1-3 (illustration #4). Are both resistances 216 ohms ± 30 ohms?

YES: Connect DC voltmeter to J1-1 (+) and J1-2 (-), wait 40 seconds then start a Bake cycle. Six seconds after the Bake cycle is started, does a DC voltage of 7 to 15 VDC appear?

YES: If voltage is higher the 15VDC , check the main wiring harness for bad connections. If OK, replace valve.

Does spark occur at ignitor?

NO:

Does spark occur at Broil ignitor, not Bake?

YES: Check for correct wiring to Bake / Broil valves.

Does spark occur at Broil ignitor, not Bake?

YES: Check ignitor for crack in the ceramics. If cracks are found, replace ignitor. Diagnose Bake ignitor wiring harness. Check for reversed Bake and Broil wires at the valves. If OK replace module.

Does spark occur at ignitor?

YES: The ignitor position is out of tolerance for proper ignition. Adjust or replace ignitor and burner.

VGSC306 DIAGNOSTICS BROIL

NOTE*: RANGE MUST BE TURNED ON FOR AT LEAST 40 SECONDS BEFORE MAKING THESE TESTS.*

Check for 120 VAC at J1-4 to J1-10 (see illustration #1). No voltage, diagnose main wiring harness. 120VAC should always be present at this point. Disconnect the line voltage to the range for approximately 1 minute. Then reconnect the supply voltage. If the supply voltage is not restored check for an open overload protector or a broken wire from the terminal block.

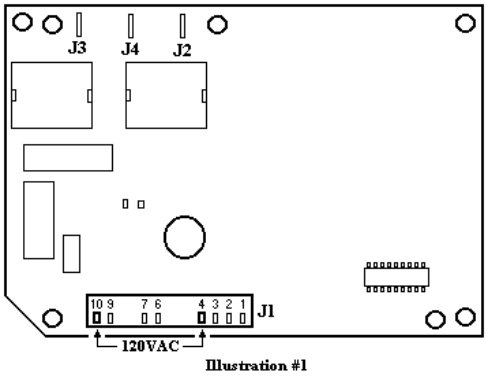


Illustration #1

DOES BROIL CYCLE FUNCTION PROPERLY?

NO*:* Check POLARITY of supply. Even if no ground is connected, the module will not be able to sense flame presence at the igniter if the polarity is reversed.

Does the BROIL BURNER establish a flame then shut off?

YES:

Does spark continue after flame is established?

NO: Replace Valve.

YES*:* Check the igniter for continuity. If no continuity, replace igniter. If supply voltage polarity is correct, check BROIL IGNITOR wire for loose connection. If connection is good, replace module.

Does the BROIL BURNER establish a flame then shut off?

NO: Is 120VAC present to J1-4 to J1-7 (illustration #5)?

NO*:* Diagnose main wiring harness and /or thermostat.

Is 120VAC present from J1-4 to J1-7?

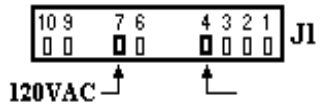


Illustration #5

YES*:*

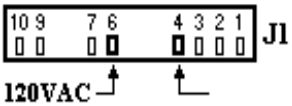


Illustration #6

Is 120VAC present from J1-4 TO J1-6 (illustration #6)?

YES: Diagnose THERMOSTAT . The module will lock out if a call for Bake and Broil exists simultaneously.

Is 120VAC present from J1-4 to J1-7?

NO*:* Remove call for Broil (turn Thermostat off) test valve continuity, measure resistance between J1-1 and J1-2, then J1-1 to J1-3 (illustration #7). Are both resistances 216 ohms ± 30 ohms?

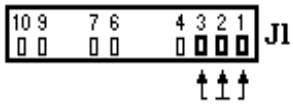


Illustration #7

NO*:* Measure resistance at the valve, if resistances are different then measured at module, diagnose wiring harness. If resistances are the same as measured at module, then replace the valve. Remove call for Broil (turn thermostat off), test valve continuity; measure resistance between J1-1 and J1-2, then J1-2 to J1-3 (illustration #4). Are both resistances 216 ohms ± 30 ohms?

YES*:* Connect DC voltmeter to J1-1 (+) and J1-2 (-), wait 40 seconds then start a Broil cycle. Six seconds after the Broil cycle is started, does a DC voltage of 7 to 15 VDC appear?

YES*:* If voltage is higher the 15VDC , check the main wiring harness for bad connections. If OK, replace valve.

Does spark occur at igniter?

NO:

Does spark occur at Bake igniter, not Broil?

YES: Check for correct wiring to Bake / Broil valves.

Does spark occur at Bake igniter, not Broil?

YES: Check igniter for crack in the ceramics. If cracks are found, replace igniter. Diagnose Broil igniter wiring harness. Check for reversed Bake and Broil wires at the valves. If OK replace module.

Does spark occur at igniter?

YES: The igniter position is out of tolerance for proper ignition. Adjust or replace igniter and burner.

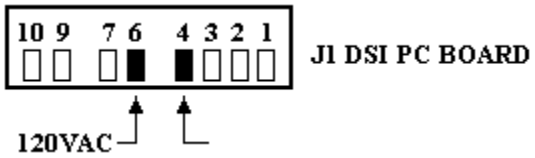
VGRC CHECK LIST

(PRODUCT MANUFACTURED BETWEEN JANUARY 4, 2000 – MAY 12, 2000
Symptoms: Range will not come on. Intermittent sparking. No sparking,

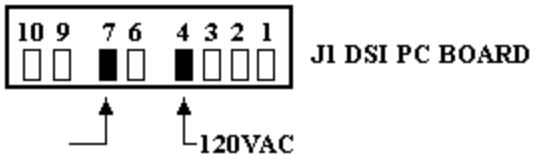
Check POLARITY.

Check for 120VAC between J1 – 4 and J1 – 10. There should always be 120VAC at this point.

Check for power between pin 4 and 6 (J1 connector on DSI PC board).



If power is not present, check wiring and/or Thermostat.



If power is present, check power between 4 and 7. The module will lock out if a call for bake and broil exists simultaneously.

CORRECTION: When all voltages are correct to the board, check the part number for the board.
Part #PA020025 is the part number used before May 12, 2000. Replace board with new board PA020035.

SYMPTOM: Range cycles off during bake and will not re-ignite.

CORRECTION: Check for the three ports added opposite the spark igniter. If the three ports are not there, replace the bake burner with part #PB050059.