



Section 6:

Troubleshooting C-Series Stack Dryer

Trouble Shooting

Electronic Control Diagnostic Lights

The electronic control has 6 diagnostic lights to aid in service of the dryer. Each pocket has indicator lights for the motor circuit, door switch circuit, and the heat circuit. When the electronic control is carefully unlocked and moved forward these lights are visible on the circuit board. They are each labeled as to function indicated.

1. When either dryer door is closed, the appropriate door light on the computer should be illuminated indicating that the door is closed.
2. When either dryer is running, the appropriate motor light on the computer should be illuminated indicating that the computer is calling for the motor to operate.
3. When either dryer is calling for heat, the appropriate heat light on the computer should be illuminated indicating that the computer is calling for heat.

An example of their function would be troubleshooting an upper dryer pocket that did not heat.

1. Start the machine and insure that it did not heat.
2. Check the upper heat light and see if it is lit.
3. If the heat light is on, this would indicate that the computer was calling for heat and that it was not at fault. You would then go on to check the rest of the heat circuit.

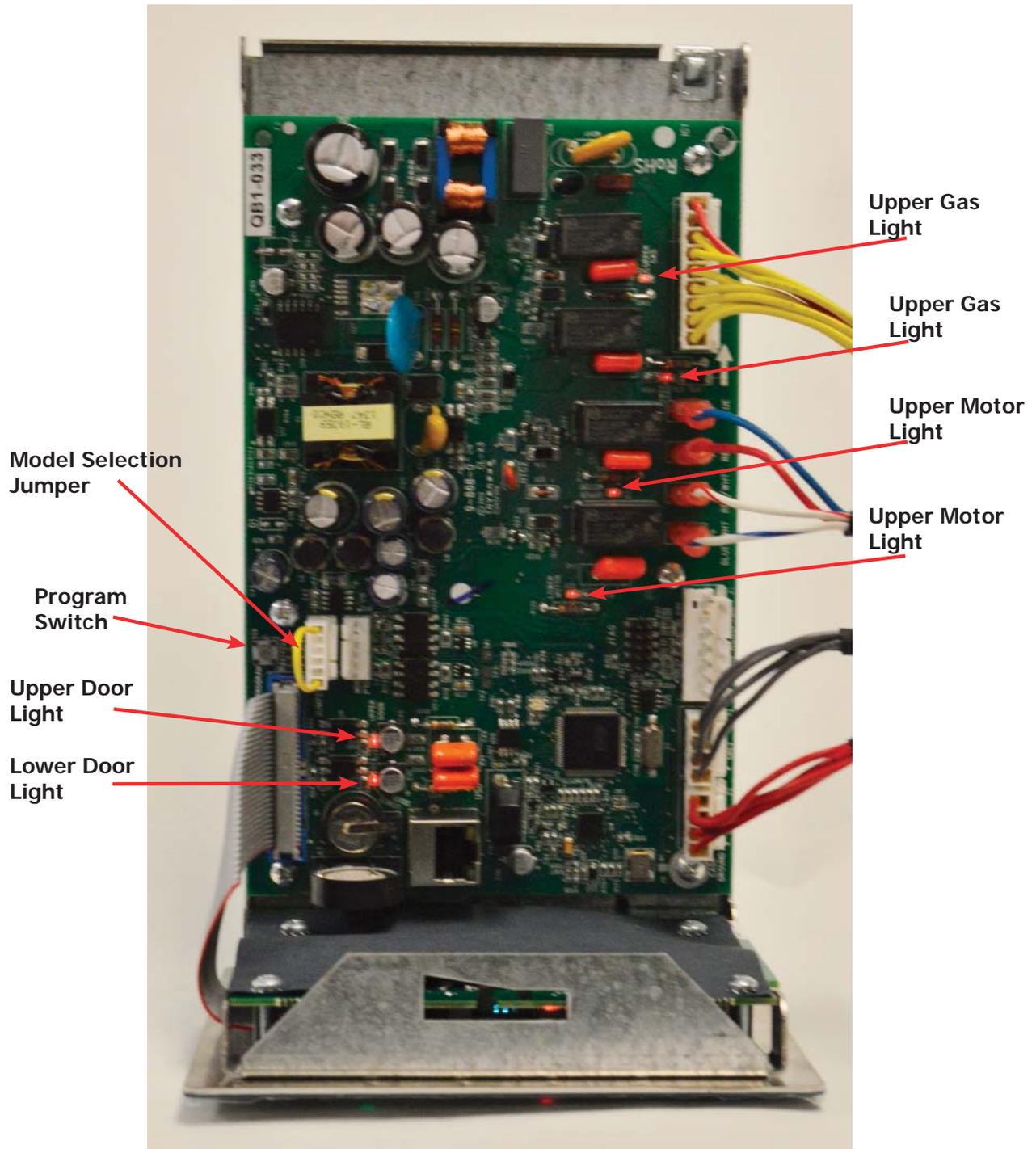


Figure: 1

To enter a test Cycle Mode you will have to enter the programming mode:

MANUAL PROGRAMMING:

The dryer must be in idle mode for the manual programming menus to be accessed. Idle mode is when the dryer is not actively running a drying cycle and the vend price is displayed on the screen (for both upper and lower dryers).

To enter the manual programming mode, the control tray on the dryer must be unlocked and pulled out to reveal the programming button. The programming button is then pressed for 1 second. The control should display "DRYER PROGRAMMING".

See the figure 1

Next press Start and you can scroll through the options you will either want to select Quick test or Continuous Test depending on the length of time you require to perform the tests.

Quick Test Option:

When the Quick Test Option is chosen, the dryer will begin a shortened dry cycle without the displayed vend price being met. The purpose of this shortened cycle is to test all major components for proper operation.

Error Codes should all function normally during this test. The display will show customer prompts in a similar way to a normal dry cycle.

Continuous Test Option:

Similar to the Quick Test, when the Continuous Test Option is chosen, the dryer will begin a dry cycle without the displayed vend price being met. However, in this case, it will be a continuously-running cycle. It will not time out after any designated amount of time.

CAUTION: This option is meant for factory use only. Do not operate the dryer with this cycle active without factory authorization.

Error Codes

Symptom	Probable Cause	Suggested Remedy
TEMP SENSOR SHORT	Shorted Temperature Sensor or wire.	The dryer control shall not start until the detected short circuit is removed. Regardless of condition of short circuit, Error Code will be displayed until programming button is pressed to return machine to idle mode.
TEMP SENSOR OPEN	Open Temperature Sensor or wire	The dryer control shall not start until the detected short circuit is removed. Regardless of condition of short circuit, Error Code will be displayed until programming button is pressed to return machine to idle mode.
PCB ERROR1	Memory corrupted	Power machine down and try to reset control. Vary voltage to the control board. Check ground to board. Replace control board if error can not be cleared
PCB ERROR2	Analog/ Digital Error	Power machine down and try to reset control. Vary voltage to the control board. Check ground to board. Replace control board if error can not be cleared
COMM ERROR1	Communication Bus Error	Power machine down and try to reset control. Vary voltage to the control board. Check ground to board. Replace control board if error can not be cleared
COMM ERROR2	No Dryer Model Selected	This error occurs when a pin combination on the model selection header is used that does not have a model designated for it. check connector marked Jumpers on the control board.
COMM ERROR7	Communication Bus Error	If connected to DexterLive, Disconnect cable, and preform a soft restart by holding down the program button on power up. Preform Soft restart. contact your Dexter factory representative.
Fuse Error	Internal Control program Error.	Internal IC issue. Replace control.
CRC ERROR	Firmware Corrupted	The error is fatal. The control must be replaced.

TROUBLESHOOTING

Symptom	Probable Cause	Suggested Remedy
Tumbler does not turn	Drive belts	Check both drive belts. Replace if failed.
	Drive motor	Check capacitor and motor. Replace if failed
	Door switch	Check for door closed L.E.D on control board. Check door switch contacts and adjustment. Adjust or replace door switch.
	Electronic control	Is electronic control closing motor relay to power drive motor? Check for motor light on electronic control. If no light and time counting down, change control. If light is on, check for proper voltage and wiring to motor relay in rear control compartment.
	Motor run relay	Test for proper voltage to run relay coil, Test output voltage of relay when contacts ingauged. if no voltage replace relay.

Symptom	Probable Cause	Suggested Remedy
Tumbler turns but no spark at burner	Glass fuse	Check small glass control fuse in back of dryer. Replace if failed.
	Temperature sensor	The temperature sensor should have between 30,000 ohms and 60,000 ohms resistance at room temperature if okay. Replace if not in this range.
	Ignition	Check for 24VAC output from transformer.
	Transformer	Replace if have 120V between black & white and no 24V between red and yellow.
	Over temperature	Check to see if manually resettable thermostat. Thermostat is kicked out. Reset by pushing red reset button.
	Ignition control	Check for 24VAC coming into the control on the at burner red wire. If voltage, then check for 24VAC out on the brown wire. Also check for spark at the ignitor. If no 24VAC output or no spark to the ignitor, replace ignition control.
	Air flow switch	Check air flow switch to be sure it closes when dryer is running. If not, adjust or replace switch.
	Hi-limit	Check for continuity. Should be 0 ohms resistance when cold. If not, replace thermostat.
	Gas supply	No gas can cause system lockout
	Electronic control	Is electronic control closing gas relay to power Control heat circuit? Check for gas light on electronic control. If no light change control. If light is on, check voltage and components in heat circuit at transformer at rear of unit.

Symptom	Probable Cause	Suggested Remedy
Tumbler turns, ignition sparks, no flame	Gas supply	Make sure gas supply is working.
	Gas pressure	Make manometer check of gas pressure. Adjust if necessary.
	Spark electrode sensor	Check for damage to electrode or mounting. Replace if necessary.
	Gas valve	Check coil continuity, replace valve if failed.
	Ignition Control	Check for 24VAC to gas valve coils. If no voltage replace ignition control.
Burner Lights, but goes on and off	Electrodes	Check low voltage harness for possible wire break or cuts to allow no signal back to ignition control
Slow drying	Temperature Setting	Check program for correct high temperature setting. Adjust if necessary.
	Air flow restrictions necessary	<ol style="list-style-type: none"> 1. Check lint screen and clean if necessary. 2. Check exhaust for correct length and clean if necessary. 3. Check exhaust damper to insure that it opens when dryer is running and closes when dryer is not in use. 4. Check makeup air to insure that it is adequate. Increase makeup air if necessary. 5. Check static Back pressure no more than .3
	Temperature sensor	The temperature sensor should have between 30,000 ohms and 60,000 ohms resistance at room temperature if okay. Replace if not in this range.

Symptom	Probable Cause	Suggested Remedy
Erratic display	Initial start-up	If erratic on initial start-up, leave power on for approximately one hour and check machine operation again.
	Grounding	Machine must be grounded by separate conductor back to neutral bar in breaker box.
	Program	Check program and make corrections if necessary.
	Voltage spike	Power down machine for 20 seconds and repower. If no improvement, replace control.
Manual overtemp tripping frequently	Recirculating chamber Lint accumulation	Remove manual overtemp thermostat and inspect in chamber for excessive lint build up. Access also gained to this chamber by removing recirculation duct mounted at bottom of chamber, or the panel inside burner chamber between burners and rear back panel
	Exhaust ducting Excessive lint buildup	Remove exhaust duct at rear of dryer and inspect for excessive lint build up in complete duct from dryer to where duct exits building.
	Clean lint of of top heat air chamber above tumbler	Remove front panel completely. Be careful of any wiring attached. Remove heated air chamber cover and clean above tumbler back to burner housing.

120VAC 60 HZ Wiring Schematic Dryer Idle - No Coins Added :

Top Dryer Used For This Example

120-208-240 VAC 60 HZ (Neutral required must be MID POINT OF PHASE) is supplied to the Main Power Terminal Block and comes out on BLK / RED and BLK / BLU wire to the Motor Control Relay (R1 & R2). 120 VAC is supplied to Main Computer Board and both Door Switches on the black wire from L1 terminal off the Main Power Terminal Block. When there is main power to the dryer, the Computer Board will always be powered and the display lighted. Closing the loading door allows 120 VAC to pass through door switches to the Computer Board on two blue wires. One blue wire makes 120 VAC available to one side of the Motor Run Relay on Computer Board. The other blue wire provides a 120 VAC signal to the Computer Board telling it that the door is closed and door LED on the computer board should be illuminated.

Coins Added - Motor Starting and Running

Top Dryer Used For This Example

As each coin is added the Coin Switch closes and completes a circuit to the Computer Board. The Computer Board counts these signals and registers them against time. The time will display once the Start Button for Upper or Lower is pushed. When the Start Button is pushed again the Computer Board Motor Run Relay closes on the computer. With this Relay closed, 120 VAC is supplied to the Motor Control Relay (R1) on the red wire and also a violet wire going down to motor. The motor LED on the computer board should be illuminated anytime the computer calls for the motor to operate. With (R1) engaged and Main Line Voltage at Motor Start Switch in motor, the incoming power 120 or 208-240 VAC is supplied directly to the main run winding and through the Start Capacitor to the Auxiliary Winding (start winding). As the Motor comes up to speed, the centrifical switch inside motor opens the circuit to the Start Winding and closes the circuit to allow 120 VAC to pass to the Gas Relay on the Computer Board on the other violet wire. The heat circuit in the dryer can not operate if the motor is not running. The gas LED on the computer board will be illuminated when Computer Board calls for the heat after Motor Centrifical Switch has closed.

Heat Circuit

Top Dryer Used For This Example

With the Drive Motor running and 120 VAC provided to the Computer Board Gas Relay, it will close if Computer Board senses programmed temperature is needed. The violet wire changes to an orange wire out of the Computer Board Gas Relay. When this relay closes it provides 120 VAC to the High Limit Thermostat. The High Limit Thermostat is normally closed. (It will open, turning off the heat circuit, if the dryer can't move enough air from problems such as an exhaust restriction or other problems.) 120 VAC now goes through to the normally open Air Switch (Sail Switch) on the brown wire. This switch is closed only if the dryer is running and has the correct air flow. With the dryer running and the Air Switch closed, 120 VAC is supplied to the normally closed upper manual reset Overtemp Thermostat on the gray wire and changes to the black wire out of switch and then goes to Ignition Step Down Transformer. Now with 24 VAC the red wire on secondary side of the Ignition Step Down Transformer goes to the 1.5 amp in-line fuse that protects the Upper Ignition Controller (GREY BOX). With 24 VAC now supplied to the Upper Ignition Controller (GREY BOX) it will then send high voltage to the Spark Ignition Electrode via the High Voltage Lead Wire (this lead looks like an automotive spark plug wire). The Ignition Control Module (GREY BOX) simultaneously sends 24 VAC to the Gas Valve Coil which opens the Gas Valve and allows gas to pass to the main burner. When ignition occurs the high voltage sparking stops and if Ignition Control Module (GREY BOX) gets a flame sense signal it will allow gas valve coil to remain energized and continue burner operation. If ignition does not occur, the Ignition Control Module (GREY BOX) will spark for 10 seconds before locking out.

Manual Reset Safety Shutoff Over - Temperature Thermostat

Top Dryer Used For This Example

This thermostat is manually reset by pushing in the red button through the small hole in the cover. The Over Temperature Thermostat is a safety backup for the entire Heat Circuit and located in the recirculation chamber area on the side of the burner housing. If the dryer over heats this Over Temperature Thermostat it opens the line to turn off the heat but leaves the Computer Board lighted and the drive motor powered and turning so the basket will cool down.

Cool Down

Top Dryer Used For This Example

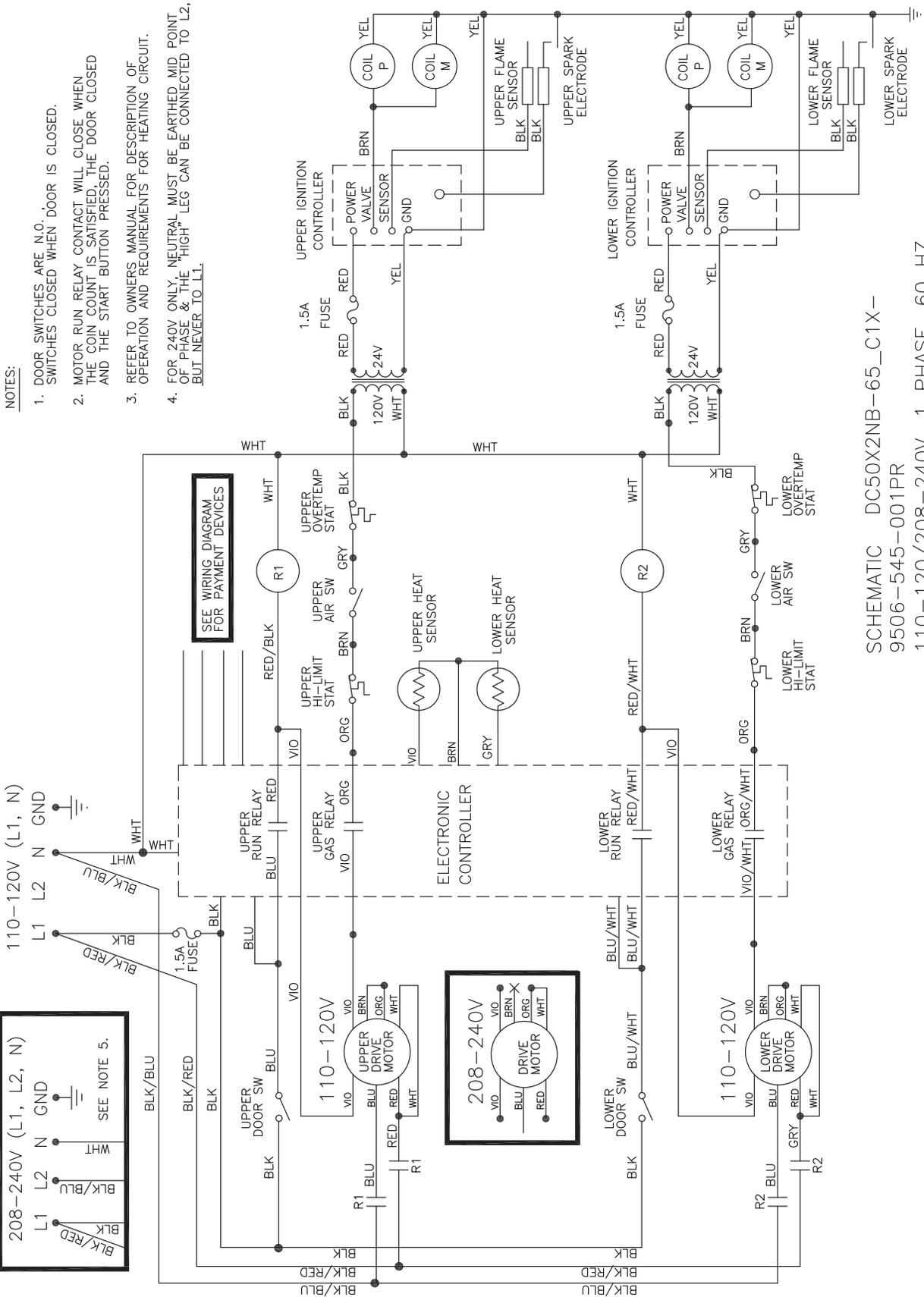
At the preprogrammed time (2 minutes factory setting - adjustable) the Computer Board will open the Gas Relay Contact. This allows the Drive Motor to continue to run but without heat. The gas light on the computer board should not be illuminated anytime the computer is in cool down. This Cool Down period allows the clothing (zippers, snaps, etc.) time to cool down to a temperature that is easily handled by customers.

End of Cycle

Top Dryer Used For This Example

At the end of the cool down, the Computer Board opens the Upper Run Relay, which removes power from the Motor Control Relay (R1) and also removes power to the Drive Motor. The motor light on the computer board should no longer be illuminated. The Drive Motor and tumbler stops and the Computer Board display now flashes until the dryer loading door is opened. Once the dryer loading door is opened to remove the clothing the display goes back to vend price.

Wiring Schematic for DDBD Dryer



NOTES:

1. DOOR SWITCHES ARE N.O. SWITCHES CLOSED WHEN DOOR IS CLOSED.
2. MOTOR RUN RELAY CONTACT WILL CLOSE WHEN THE COIN COUNT IS SATISFIED, THE DOOR CLOSED AND THE START BUTTON PRESSED.
3. REFER TO OWNERS MANUAL FOR DESCRIPTION OF OPERATION AND REQUIREMENTS FOR HEATING CIRCUIT.
4. FOR 240V ONLY, NEUTRAL MUST BE EARTHED MID POINT OF PHASE & THE "HIGH" LEG CAN BE CONNECTED TO L2, BUT NEVER TO L1.

SCHEMATIC DC50X2NB-65_C1X-
 9506-545-001PR
 110-120/208-240V, 1 PHASE, 60 HZ

IMPORTANT: RETAIN THIS ELECTRICAL SCHEMATIC FOR SERVICE.