



Checking Solid State Relay (Heater Control)

For use when Chamber is heating up even during
“Cooling Cycle” and Refrigeration Compressor is working normally.

Disconnect the Chamber from Power Supply and remove top. After removing top, reconnect Chamber to Power Supply.

CAUTION: Electrical Shock Hazard. Use extreme care when working around High Voltage Connectors, Wires, and Components.

1. Turn Chamber on. Check LCD Screen. If Interior Chamber Temperature is below 21.2° then “HEATING” should be displayed. If the Interior Temperature is about 22.2° then “COOLING” should be displayed.

Watch the Display for a few minutes to verify that the Chamber is or is not “Cycling” between Cooling and Heating.

2. While the Chamber is in a Cooling Cycle, check the Heater Control Cable with a voltage meter. It can be checked at Pins #20(-) and #21(+) on the Terminal Block (TB1) on the Main Circuit Board, or at the Solid State Relay. (See Drawing attached.)

NOTE: Voltage for this Low Voltage Side of the Relay should be about 3 Volts.

While the Chamber is in a Cooling Cycle there should be NO VOLTAGE (0 Volts) at these points. If three (3) or more volts are detected then the Driver Transistor on the Circuit Board has failed.

If **NO VOLTAGE** is detected on the Low Voltage Side then you will have to check the **High Voltage Side** of the Solid State Relay. (See Drawing.)

Verify that the Chamber is still in a Cooling Cycle before checking the High Voltage Side of the Solid State Relay.

USE CAUTION this side of the Relay is connected to 220/240 Volts.

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Checking Solid State Relay (Continued)

3. While the Chamber is in a **Cooling Cycle** check the Voltage on the High Voltage side of the Relay.

Check Voltage between point **A** and point **B**.

If A and B = 220 Volts, the Relay is closed and the Heaters are ON.

Check Voltage between point **A** and point **C**.

If A and C = 220 Volts, this is Normal

Point A (White Wire) is the Neutral Wire.

Point B (Black Wire) is the 220 Volt Supply side of the Relay Switch

Point C (Black Wire) is the Switched Wire to the Heaters.

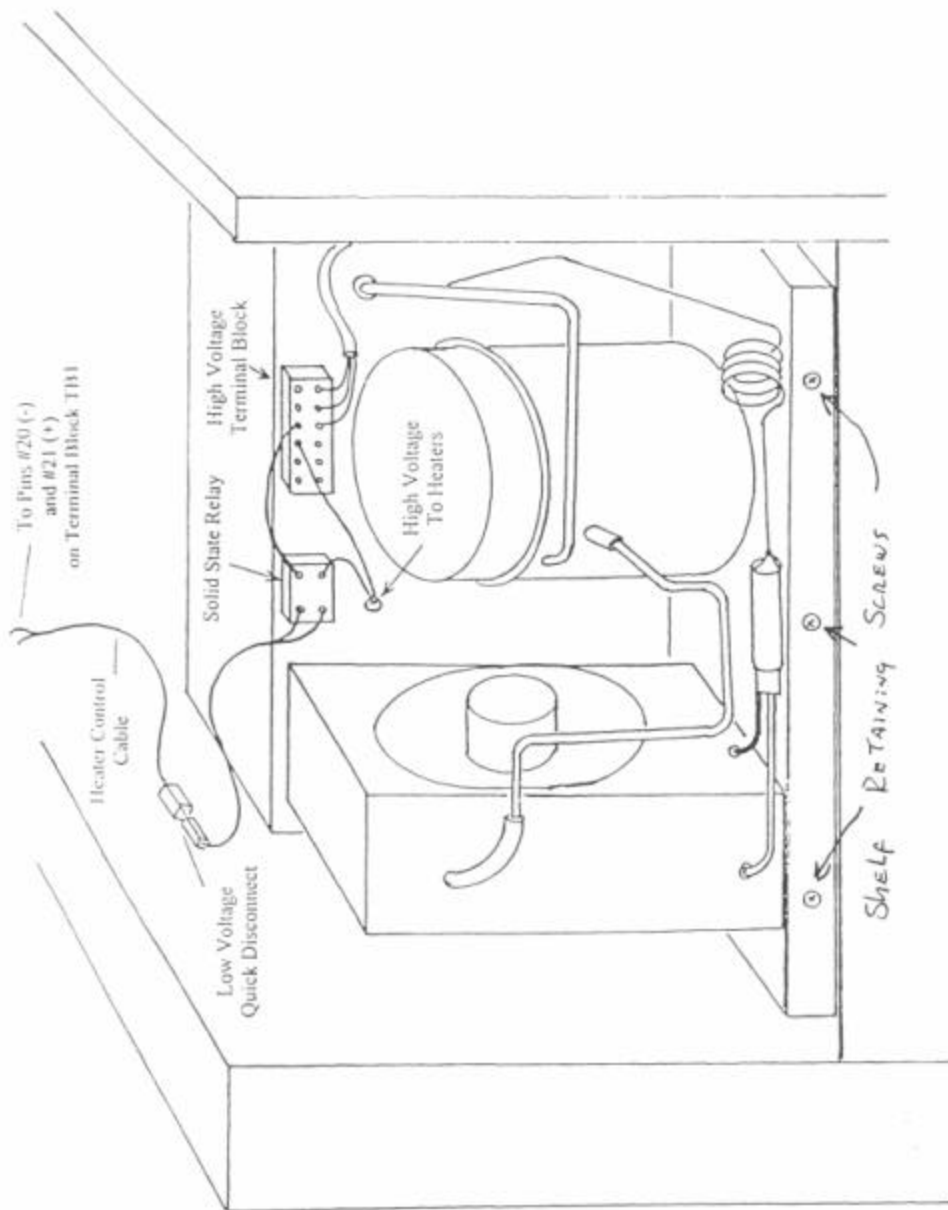
Another way to determine if the Heaters are on because of a Faulty Relay or Driver Transistor is to:

Disconnect the Chamber from the Power Supply. Remove the Switched wire from the Relay that goes to the Heaters. Reconnect the Chamber to the power supply and run for a while monitoring the LCD Display. With the Heaters disconnected, the Chamber will drop in temperature to below normal operating temperature if the Refrigeration Compressor is working normally.

If either test detects a faulty part, or you have any questions, please contact Melco Engineering at: (818) 247-7500 or fax (818) 247-7257 for replacement part(s).

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