

Diagnostic worksheet for CZ & BioSmart heaters.

Models PB, PC, PCP, PA

In order to facilitate the diagnosis of a BioSmart portable heater it is helpful to understand the basic configuration of the major components in the heater. The wiring harness is really quite simple.

- Power from plug goes directly to the left side spade connectors on the PC board and also to the connection block.
- The neutral leg from the power cord (that is on the connection block) goes directly to the fan relay switch and the infrared elements. On the deluxe PA units with air purification, the neutral leg on the connection block is also connected to the UV bulb and to the ionizer from the connection block.
- The “Hot” leg from the power cord (that is on the connection block) goes directly to the high-limit switch and then to the right side of the PC board.

That’s it. Everything else is superfluous.

Diagnostics are as follows:

1. Fan Problems – Note: the fan operates independently of the PC Board and is controlled by the fan relay switch. This switch turns the fan on and off depending upon the temperature inside the chassis.

- Noisy Fan – oil or replace
- No fan – fan plug may be loose, or fan relay switch may be defective, or fan motor is dead and needs replacing. The fan switch can be checked by simply putting a jumper wire across the fan switch. If the fan doesn’t go, then look for the problem at the fan plug or you have a bad motor.
- Fan keeps running – fan relay switch is defective

2. Heating problems

- Partial heat – burnt out infrared tube or faulty relay on PC board
- No heat – defective high-limit switch, burnt out infrared tubes, or faulty relays on PC board.
- Heat cycles on & off continuously – faulty high limit switch, or, slow fan.
- Heat stays on – PC board thermostat or thermostat sensor is defective.

3. PC board malfunctions

- Lights go out after 3 minutes except for bottom row – normal sleep mode function.
- Flickering – line load to breaker box has another motor on it, or faulty fan relay switch will cause flickering, or PC board itself.
- DOFL appears on the LED display – the thermostat sensor is disconnected or the PC board is defective. Usually caused by a power failure and then a power surge.

4. UV Bulb problems

- NO UV when the air filtration system is activated (PA models only) – faulty UV bulb or ballast. Usually the bulb.