

## Problem: Heater Has Stopped. EE10 Code Displayed.

**Applies to models:**  
**Toyostove Laser Heaters: L-56, L-60, L-73**

### What Does This Mean?

The EE10 error code is very precise and is only displayed when the circuit board detects flame in the burner for more than three minutes after the fuel pump has been stopped by the thermostat control or the on/off button has been turned Off. The EE10 code means that the burner has too much fuel! If the flame sensor detects a flame in the burner the combustion blower and the circulation fan will operate until the flame goes away. Thus, if the burner has too much fuel when the heater goes into the Off mode, this fuel will be burned. If it takes more than three minutes to burn the fuel, the EE10 code is displayed, and the heater must be reset before it can be used. After the code is displayed, however, the heater will continue to operate until all excess fuel has been burned and there is no more flame.

### What Can Cause an EE10 Error?

Several problems can cause the EE10 error. However, this error essentially means that there is a problem with the amount of air getting to the burner or the amount of fuel. Most often, the problem is with the combustion air.

1. **Plugged flue pipe.** If there is any obstruction in the flow of air to the burner, the fuel will not evaporate and burn properly.
2. **Defective motor.** The intake air fan may be loose, missing, or damaged.
3. **Dirty or defective burner.** The small air holes may be plugged or the burner insulating pad may be damaged or missing.

### **WARNING**

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4. **Damaged or missing burner ring.** The ring may be out of position, damaged, or missing.
5. **Defective burner mat.** May be damaged or missing.
6. **Fuel pump calibration.** The fuel pump may be improperly calibrated.
7. **Defective Circuit Board.** Circuit board is not properly controlling the fuel pump or the combustion blower.

#### **What Can Be Done to Correct This Situation?**

1. **Is the flue pipe plugged?** Check the outside of the flue pipe. Be sure that there is nothing that prevents the heater from “breathing” in the air it needs to maintain the fire. Check the hoses that connect the heater to the flue pipe and be sure there are no obstructions. Check the black hose that connects the combustion blower to the base of the heater. (Inside the heater.) Check the chamber under the burner. Nothing must block the flow of air from outside into the heater and nothing must block the flow of exhaust out of the heater.
2. **Is the motor defective?** The lower fan on the combustion motor draws air into the heater and pushes the air into the burner. Remove the front cover and the black elbow hose. Look inside the combustion blower assembly and be sure the fan is there. Use your finger or a pencil to try to determine whether the fan is tight on the shaft. You may also try to turn on the heater. If the fan slips on the shaft, check the locking set screw on the hub of the fan. This will usually require that the blower assembly is taken out of the heater and the basket removed. The locking screw is a 2mm hex allen screw. If you have a long allen wrench it is possible to tighten this screw through the air tube while the motor is in the heater, but it is awkward.

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3. **Dirty or defective burner.** Air enters the burner through many small holes in the inner “pot” of the burner assembly. The first row of holes is about ½ inch from the bottom of the burner. If these holes are plugged with carbon, it can prevent the fuel from evaporating properly. Use a small nail or paper clip to clean each of these holes. It is also very important that the Laser 73 have an insulating pad under the burn pot of the burner. If the heater has recently flooded or if the burner has been replaced, the burner should be removed, and the presence and condition of the burner pad should be verified.

4. **Are the burner ring and mat present and in good condition?** Proper burning also depends upon the burner mat and burner ring. Check to be sure the burner ring is in good condition and is properly positioned in the burner. The burner mat must also be intact and glued to the burner. Check for any “blistered” parts of the mat where the mat is lifted up off the bottom of the burner.

5. **Is the fuel pump properly calibrated?** Consult the Laser service manual regarding the proper procedure for adjusting the fuel pump. Check to be sure that the heater is delivering the proper amount of fuel at each burning mode.

6. **Is the circuit board defective?** If the fuel pump cannot be adjusted properly or if the combustion blower motor does not seem to be operating properly (though this will usually result in EE8 not EE10) the main circuit board may be defective. Replace if necessary.

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