



Non-Firing Toyostove Laser Heater/ Oil Miser Heater

WARNING

Rural Energy Enterprises, Inc. does not accept liability for the improper use of this information. Installation, service, and maintenance of heating equipment should be performed by a qualified technician. Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life.

When the room temperature falls below the Toyostove's set temperature, the stove will go through its pre-heat stage before firing (pre-heat takes 3 to 9 minutes, depending upon room temperature at the time of startup). When pre-heat has completed, the fuel pump is activated, and the stove should fire up right away. The error code EE-2 will display if the stove fails to ignite. The error code EE-6 will display when the primary flame rod on the heater fails twice to sense a flame during the normal burning mode. The fuel supply is important to the stove, and a good water block filter must be used.

If the stove does not ignite, turn it off, unplug the stove, and turn off the fuel at the shutoff valve on the incoming fuel line. If there is not a shutoff valve there, one should be installed. The round-handled safety valve inside the stove is for fire protection, not for servicing. Using this valve as a service valve will damage it. It is not designed to be opened and closed repeatedly.

Clean the sump and screen: Install the plastic drain catch between the sump and the mounting bracket, located on the lower right-hand side of the stove. Place a small can under the drain catch to catch the fuel (a tuna can works well). Remove the two screws on the diamond-shaped plate on the side of the sump. There is a small screen in the sump that needs to be removed and cleaned. Use a pair of needle-nose pliers to remove the screen. Note the direction of the screen when removing. The open side of the screen faces the incoming fuel pipe.

Clean the screen thoroughly with a Q-tip and fresh fuel. With the screen removed, open the shutoff valve slightly. Fuel should flow freely from the hole that the screen came out of. If fuel flows freely, close the valve and reinstall the screen and plate. If fuel does not flow freely, the water-block filter is probably plugged, and the filter needs to be replaced. Empty out the small catch can of fuel for the next step.

Remove the larger Phillips head screw (at the 10 o'clock position from the screen plate) to drain the sump. Open the shutoff valve slightly. Fuel should flow freely from the drain screw hole. This proves fuel flow thru the filter and sump. Close the fuel valve, reinstall and tighten the drain screw. Open the fuel shutoff valve. Press down on the red button on the top of the sump one time and release.

Now that fuel flow through the sump has been proven, remove the front panel of the stove. There is a copper line that runs from the fuel pump to the burner assembly. Loosen and remove the 12mm flare nut on the copper line from the fuel nozzle on the burner assembly. Push a small drill bit or a coat hanger into the nozzle it to clean it out. Do not push farther than 3 inches, as this will damage the burner mat or burner coating at the bottom of the burner assembly. Reinstall and tighten the flare nut.

Next, gently pull the white wire off of the flame sensor. To do this, grasp the metal connector at the end of the flame sensor wire firmly between your thumb and forefinger and apply downward pressure. The wire connector should slide right off the flame sensor. Take care not to bend the flame sensor, as bending it will damage it. The flame sensor is located at about the 10 o'clock position on the burn chamber, in relation to the fuel nozzle. Remove the two Phillips head screws from the flame sensor, rotate the flame sensor to the 3 o'clock position and remove it from the burn chamber. Again, be careful not to bend it. Clean the flame sensor off with sand paper or lightly file it clean, then reinstall the sensor and wire.

The next step is to test the igniter. You will need a multimeter to test this properly. Set the meter to read ohms (Ω). The igniter should be at room temperature, approximately 70 degrees F. The igniter should read between 16 and 19 ohms. If it does not, it should be replaced. If the meter reads OL, the igniter is burned out or broken. If it has a higher ohm reading, the igniter is weak and won't light the stove reliably.

If you do not have a multimeter, plug the stove into an outlet. Power up the stove and turn up the set temperature, so the stove will try to light. After the stove has been in its pre-heat cycle for about a minute, the area above the igniter should be very hot to the touch. Use extreme caution as it may be hot enough to burn skin upon contact. If the igniter is slightly warm or cold, you may have a burnt out, weak, or broken igniter, and it will need to be replaced.

If the igniter is faulty and the stove has repeatedly tried to fire, there may be excessive fuel accumulated in the burner. Remove the igniter. Fuel may spill from the igniter's hole in the burner assembly, so be prepared (if the fuzzy igniter guide gasket is saturated by fuel oil, it will need to be replaced). Twist a paper towel into the shape and size of your little finger. Insert the paper towel into the igniter hole. The paper towel will absorb the excess fuel in the burner. Repeat this process with clean paper towels until you have removed all the excess fuel from the burner assembly. Reinstall the igniter.

If you have a shop vacuum, go to the flue termination on the outside of the building and vacuum out the exhaust end of the flue. Plug the stove back in, set the temperature to the desired setting so that the stove will go into the heating mode. The stove should fire after the pre-heat stage. If not, take the stove to your local Toyostove servicer for repair.