



Toyostove Laser & Oil Miser Ignition Sequence

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.

This document indicates the step-by-step events in sequence and with time delay from the moment the heater thermistor calls for heat and starts the ignition cycle.

Laser 56, L60AT, L73 Ignition Sequence.

- Power switch on
- Room temperature is less than set temperature (example: set = 70, room = 68)
- [Pre-heat] Combustion Blower on high 15 seconds
- Combustion Blower drops to low, igniter on (Pre-heat cycle)
- Pre-heat cycle timing:

Room temperature above 61 F	= 3 minutes
Room temperature between 34 F and 61 F	= 6 minutes
Room temperature below 34 F	= 9 minutes

- [Pre-Purge] Ignition: Combustion Blower increases to medium, medium lamp flashes, FUEL PUMP ON.
- Medium lamp changes to solid when the flame contacts (touches) the flame sensor. If the system does not recognize a flame, it will purge and start Pre-heat cycle. If system does not sense a flame during second ignition cycle, Digital Indicator will display error code EE-2.
- Medium lamp off, low lamp on, combustion blower on low (3 min.)

- Low lamp off, medium lamp on, circulation fan on, combustion blower on medium (3 min.)
- After three minutes in medium burn, system checks room temperature and determines burn level: [Normal Combustion]

Room temperature below set temperature	= high burn
Room temperature 1-degree F above set temperature	= low burn

- System shuts off when room temperature is 4 degrees F above set temperature

Laser 30 & OM 22 Ignition Sequence

- Power switch on
- Room temperature is less than set temperature (example: set = 70, room = 68)
- [Pre-heat] Power lamp flashes at 1 Hz, combustion blower on low, igniter on (Pre-heat)
- Pre-heat timing:

Room temperature above 59 F	= 90 seconds
Room temperature between 32 F and 59 F	= 120 seconds
Room temperature below 32 F	= 240 seconds

- [Pre-combustion] Power lamp flashes at 2 Hz, combustion blower increases to high, FUEL PUMP ON
- Power lamp changes to solid when the flame contacts (touches) the flame sensor. If the system does not sense a flame, it will purge and start Pre-heat cycle. If system does not sense a flame during second ignition cycle, the Digital Indicator will display error code EE-2. NOTE: An EE-22 error code will occur if there are three sequential ignition failures. You must disconnect power cord for 30 minutes to erase this code.
- Medium burn, combustion blower in medium, circulation fan starts in 120 seconds
- After 300 seconds in medium burn, system checks room temperature and determines burn level: [Normal Combustion]

Room temperature below set temperature	= high burn
Room temperature 1-degree F above set temperature	= low burn

- System shuts off when room temperature is 4 degrees F above set temperature

BS-36UFF & OM 148 Water Heater Ignition Sequence

- **Power switch on, set temperature 130 F, water temperature is above 126 F, system in stand-by mode.**
- **Water temperature drops approximately 5 F (125 F, ignition timing starts), combustion blower on, spark igniter on.**
- **After 12.5 seconds, fuel pump is activated.**
- **Approximately 22.5 seconds after combustion blower starts, spark igniter stops. IF Flame sensor detects light, combustion continues until water temperature reaches set temperature. IF Flame sensor does not detect light, the warning lamp comes 25 seconds after starting the ignition cycle.**