



# Toyostove Power Supply Requirements

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## **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.*

All heating equipment requires a stable electrical power supply, and Toyostoves are no different. Problems with the power supply can result in costly damage which is not covered under warranty. Following these guidelines will ensure proper operation of your Toyostove:

Surge protection is highly recommended, especially if you live in an area that sees frequent voltage spikes. A ten-dollar surge protector can keep you from having to spend hundreds of dollars replacing a main circuit board. Look for:

- UL Listed
- Transient surge protection
- Clamping voltage: less than 400V
- Energy dispersion: greater than 200 joules

For even better protection, a computer UPS (uninterruptible power supply) or an electrical line conditioner will protect against not only power surges and voltage spikes, but against many other power problems, such as brownouts (low voltage), line noise and frequency variation. Additionally, depending on the model, a UPS can provide from a few minutes up to several hours of Toyostove operation should your building lose power (blackout). Look for:

- Pure/true sine wave. A modified/simulated sine wave will not work properly with Toyostove electronics.
- Minimum 450W continuous, 800W peak

When powering your Toyostove using a battery array/inverter setup follow these guidelines:

- A 100A deep cycle battery or larger is recommended. Depending on the number of ignition cycles, a 100A battery will operate a Laser 73 for 8 to 10 hours.
- Pure sine wave inverter rated a minimum of 450W continuous, 800W peak.
- Power connection should be a good quality, grounded 14-gauge (minimum) copper wiring system (maximum run 50 feet).
- Generator should be a minimum of 1800W.
- Generator must provide a steady state 115-120 VAC, 60 Hz.
- Output must be a true/pure sine wave; a modified sine wave will not allow the Toyostove to operate properly.
- Toyostove should not be connected until the generator has run for a minimum of 5 minutes.
- Never allow the generator to run out of fuel.
- Never overload or shut down the system when your Toyostove is connected to the generator.