

## Technical Bulletin - Generators for Power

As dry ice blasting becomes more prevalent in the blasting and cleaning world, we are experiencing more contractors using dry ice blasting for a wide variety of tasks. Many of these new applications are in areas where there is not a reliable electrical source available. However, steady and accurate current is crucial to all electric assist blasting machines. This bulletin will outline how to prevent machine failures and damages from under or over voltage.

- **Proper Grounding:**
  - Always use a properly grounded 3 prong, 110v outlet. When standard plant or house electricity is not available, a generator is to be used as a last resort only. Generators do not produce steady electricity at all times and must be properly grounded to release static electricity. Otherwise, machine electronics can be shorted out from static electricity. Grounding is most often done by driving a copper rod into the ground and attaching a lead between the generator and the rod (check with your supplier for the rod and lead).
  
- **Generator Load:**
  - If a generator is used there should be a constant “load” on the generator. This load will allow the generator to produce a steady voltage stream to the dry ice blasting machine. This can be accomplished by plugging in a halogen light set or two to the generator. They draw high voltage at a stable rate and will keep the generator RPM at a high and steady rate. Most dry ice blasting machines need 110v ac, plus or minus 10 percent, to operate properly.
  
- **Frequency Inverters:**
  - Most electric assist blasting machines have a frequency inverter to convert AC electricity to DC electricity and act as an onboard power supply and computer. These frequency inverters are often what senses the over or under voltage and either shut down, throw an error code or just simply fail when the voltages are incorrect coming in to the machine. If your dry ice blasting machine does not power up or you experience an intermittent power supply, your electrical source is typically the first place to investigate.
  
- **Generator Settings:**
  - Many of today’s generators have an energy saving setting or “green mode.” This mode allows the generator to idle at a lower RPM when it does not sense a large load being pulled. This means that it is not producing maximum energy. When the generator in this

mode senses a greater need to produce more voltage, the generator ramps up quickly and then will lower and finally steady. This ramp up and subsequent slowdown is what often shuts down a dry ice blasting machine. This is due to the voltage often going outside the 110v, plus or minus 10%, in the loading or unloading process.

- Extension Cords:
  - If an extension cord is used with or without a generator, the cord must be of a high quality, the ground prong intact and be of a low gauge wire. Generally, the lower the number gauge, the larger the diameter of the wire, allowing better electricity flow. No more than a 50' extension cord is recommended and it should be of 10 or 12 gauge wire. If a longer cord must be used, the maximum would be 100' of 10 gauge cord. The longer the cord, the more likely a failure will occur due to a voltage drop.
  
- Fuses:
  - Many dry ice blasting machines also have fuses that need checked if a machine suddenly shuts down or fails to power up. These fuses are there to protect more sensitive electrical parts from power surges.

These guidelines should help clarify how important a properly grounded and steady electrical source is to a great dry ice blasting experience. These items are important for safety and optimal blasting machine operation. If you have further questions please contact our technical support office for further assistance.