

Portable Generators

Portable Electric Generator Safety Tips

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Portable electric generators offer great benefits when outages affect your home or are used remotely during Public Service Events or disaster recovery. Below are guidelines for safely connecting and operating portable generators:

- Don't connect your portable generator directly to your home's wiring or plug it into a wall socket via a specially made extension cord. Connecting a portable electric generator directly to your household wiring can be deadly to you and others. A portable generator that is directly connected to your home's wiring can 'back feed' onto the power lines connected to your home. Utility transformers can then "step-up" or increase this back feed to thousands of volts—enough to kill a utility lineman making outage repairs a long way from your house. You could also cause expensive damage to utility equipment and your generator. The only safe way to connect a portable electric generator to your existing wiring is to have a licensed electrical contractor install a transfer switch. The transfer switch disconnects the home's incoming power line when the generator is running.
- Connect individual appliances that have outdoor-rated power cords directly to the output sockets of the generator if possible but use no more than one extension cord where the generator is located at a distance to reduce noise.
- Don't overload the generator by running more appliances and equipment than the output rating of the generator or the rating of extension cords. Extension cords add resistance to the circuit and thus increase the load so plan accordingly. Startup surges are short lived and won't burn up wiring but they might trip breakers or blow fuses so use surge power in your calculations.

- Prioritize your needs. A portable electric generator should be used only when necessary and only to power essential equipment.
- Never use a generator indoors or in an attached garage. Just like your automobile, a portable generator uses an internal combustion engine that emits deadly carbon monoxide.
- Locate the generator where exhaust fumes will not enter the house or other occupied structures. Only operate it outdoors in a well-ventilated, dry area away from air intakes to the home and protected from direct exposure to rain and snow, preferably under a canopy, open shed or carport.
- A carbon monoxide detector would be a good investment when using any combustion engines near the home or other enclosed structure.

Use the proper power cords

- Plug individual appliances into the generator using heavy-duty, outdoor-rated cords with a wire gauge adequate for the appliance load. Overloaded cords can cause fires or equipment damage.
- Don't use extension cords with exposed wires or worn shielding.
- Make sure the cords from the generator don't present a tripping hazard. Use brightly colored tape or flags to mark the cord's path.
- Don't run cords under rugs where heat might build up or cord damage may go unnoticed.
- Read and adhere to the manufacturer's instructions for safe portable generator operation. Don't cut corners when it comes to safety.
- Consult your manufacturer's manual for correct grounding procedures. Generally, generator frames are grounded via a copper stake driven several feet into the ground and connected by a stranded wire of a gauge adequate for the maximum rated output power.
- Do not store fuel indoors or try to refuel a generator while it's running. Gasoline (and other flammable liquids) should be stored outside of living areas in properly labeled, non-glass safety containers. Fuel should not be stored in any enclosure in which a fuel-burning appliance is in use. The vapor from gasoline can travel

invisibly along the ground and be ignited by pilot lights or electric arcs caused by turning on the lights.

- Avoid spilling fuel on hot components.
- Put out all flames or cigarettes when handling gasoline.
- Always have a fully charged, approved Class BC fire extinguisher located near the generator for quick access.
- Never attempt to refuel a portable generator while it's running or is still hot. Use a battery to keep your radio, light, etc. online while the generator cools. Note that you're switching from AC power to DC...plan accordingly.
- Turn off all equipment powered by the generator **before** shutting down your generator.
- Many generator parts are hot enough to burn you during operation. Wear leather gloves while servicing. **REMEMBER:** Leather gloves are NOT insulative.
- Avoid getting burned; plan your exits before you fuel or start a portable generator and keep that fire extinguisher handy.
- Never turn your back on a fire. Watch for obstacles as you exit 'stage right' or move to the extinguisher but keep an eye on that fire.
- Keep children away from portable electric generators at all times.

How big a generator do you need?

To determine the size generator needed to supply your electrical demand, add the wattage requirements for each of the tools and appliances you expect to operate at one time. You likely won't run a table saw and a drill press and a planer at the same time, use the tool with the highest rating.

Summary: Read the owner's manual and follow directions. Double check your calculations. Be safe.