

Backup Generator



Equipment Description

Backup residential generators are used to provide power to household loads when utility power is lost. Generators can be portable or stationary. Portable generators are smaller units that use gasoline or propane for fuel. Portable generators are equipped with electrical outlets to power loads via a cord. Or, they can be connected to the electrical service of a home via a transfer switch or interlock kit. Stationary generators are larger units that are fueled by propane, natural gas, or gasoline. Stationary generators are permanently wired into a home's electrical system and may be equipped with a detached fuel tank.

Loss Scenario

Portable and stationary generators can suffer engine damage from poor fuel quality, low coolant or low oil level. An improper electrical connection or overloading of the unit can also cause damage to the generator. Stationary units can also experience wiring or component damage from small animals and rodents nesting. Rain, dirt, or brush entering the weather-tight enclosure can cause mechanical and electrical issues with stationary generators.

Size and Carbon Footprint

Generators are rated in watts or kilowatts which represent the amount of electrical power they deliver. One kilowatt (kW) = 1,000 watts (W). The sizes of generators vary greatly. Portable units that are used to supply a limited number of household loads in an emergency are typically rated at 5,000 W or less. Stationary units, which are intended to power the whole house for extended periods, are often rated at 10,000 W or more.

For each gallon of gasoline burned in the generator, 20 pounds of carbon dioxide (CO₂) are produced.

Maintenance Tips

- Check for loose, damaged, or missing parts especially battery terminals and other electrical connections/wiring harnesses.
- Inspect and replace fluids and filters based on the manufacturer's recommendations.
- Inspect and replace spark plugs and alternator brushes as needed.
- Start and briefly run the generator several times a year, even if there is no power outage, just to make sure the unit will be ready to work when an outage does occur.

Loss Prevention Tips

- Check all fluid levels prior to starting.
- Always use fresh, high quality fuel.
- Do not overload the generator.
- Do not run the unit in the rain or snow unless properly rated.
- Check all electrical connections for signs of overheating or looseness.
- Fixed connections from the generator to the electrical panel should always incorporate a single-pole double-throw transfer switch. This will insure isolation from the utility system and avoid creating an unsafe backfeed condition for utility workers.