

How To Survive With A 2000 Watt Generator

Mount Logan Stake Preparedness Fair

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USING A GENERATOR WHEN DISASTER STRIKES

Purchasing a Generator

If you choose to buy a generator, make sure you get one that is listed with the Underwriter's Laboratory (UL) or Factory Mutual (FM). Look at the labels on lighting, appliances and equipment you plan to connect to the generator to determine the amount of power that will be needed to operate the equipment.

For lighting, the wattage of the light bulb indicates the power needed. Appliances and equipment usually have labels indicating power requirements on them. Choose a generator that produces more power than will be drawn by the combination of lighting, appliances and equipment you plan to connect to the generator including the initial surge when it is turned on. If your generator does not produce adequate power for all your needs, plan to stagger the operating times for various equipment.

If you can not determine the amount of power that will be needed, ask an electrician to determine that for you. (If your equipment draws more power than the generator can produce, then you may blow a fuse on the generator or damage the connected equipment).

Using a Generator

Follow the directions supplied with the generator. Under no circumstances should portable generators be used indoors, including inside a garage. Adequate ventilation is necessary and proper refueling practices, as described in the owner's manual, must be followed.

It is a good idea to install one or more **Carbon Monoxide** (CO) alarms inside your home (following manufacturer's installation directions). If CO gas from the generator enters your home and poses a health risk, the alarm will sound to warn you. Many home fires and deaths from carbon monoxide poisoning have occurred from using a generator improperly.

Statistics from the Northeastern Ice Storm of January/February 1997 show that as many as 100 people were killed and 5,000 people injured by misuse of a generator at home.

Be sure to let the generator cool down before refueling. Store fuel for the generator in an approved safety can. Use the type of fuel recommended in the instructions or on the label on the generator. Local laws may restrict the amount of fuel you may store, or the storage location. Ask your local fire department for additional information about local regulations.

Store fuel for the generator out of doors in a locked shed or other protected area. Do not store fuel in a garage, basement or anywhere inside a home, as vapors can be released that may cause illness and are a potential fire or explosion hazard.

Do not hook up a generator directly to your home's wiring. The safest thing to do is connect the equipment you want to power directly to the outlets on the generator. There are several reasons why hooking up a generator to your home's electrical service is not a wise idea.

Home-use (non-industrial) generators do not supply enough amperage to supply sufficient power for today's homes (that is, to run a furnace, lighting, appliances and other electronic equipment). Unless your home's power supply was installed with a disconnect to the main power feeding lines, power you put into your home from a generator could backfeed into the main line and cause problems for the electrical utility company, your neighbors or yourself.

Backfeeding is supplying electrical power from a generator at the residence into the incoming utility lines. This occurs when the necessary equipment used to isolate the generator from the incoming power lines is not installed.

The 1999 National Electrical Code®, published by the National Fire Protection Association, is a nationally recognized standard for safe electrical installations. The NEC® does permit an interface between the normal power source (generally the electric utility) and an alternate power source (such as a standby or portable generator) provided that the proper transfer equipment that prevents backfeeding is used.

Simply connecting a cord from the generator to a point on the permanent wiring system and backfeeding power is an unsafe method to supply a building during a utility outage. Improper connection methods not only endanger the building occupants, but pose a serious hazard to electric utility workers as well.

There are a number of products available that will provide either an automatic or manual transfer between two power sources in a manner prescribed by the NEC®. When selecting a product for this function, it should be one that has been evaluated for safe performance by a nationally recognized testing organization such as Underwriters Laboratories.

The product must be installed according to the NEC®, all applicable state and local codes, and the manufacturer's instructions. Homeowners should only attempt to install such products if they have a thorough knowledge of safe electrical installation practices for this type of equipment. Otherwise a qualified electrician should be contacted.

If you have additional questions, please consult a licensed electrician, your local fire department or your community's building safety or engineering department.

This information was developed with technical advice from the National Fire Protection Association (publisher of the National Electric Code®).

<http://www.prepare.org/basic/generators.htm>

Power Load Chart

Essential Loads	Size Generator
Furnace Refrigerator Sump Pump Lighting	8 - 8.5 kW
Furnace Refrigerator Sump Pump Lighting Well Pump Security System	10 - 12 kW
Furnace Refrigerator Sump Pump Lighting Well Pump Small Central Air	15 - 18 kW
Furnace Refrigerator Sump Pump Lighting Well Pump Security System Central Air	20 - 22 kW
Furnace Refrigerator Sump Pump Lighting Well Pump Security System Large Central Air Freezer Electric Range	30 - 35 kW
Furnace Refrigerator Sump Pump Lighting Well Pump Security System Large Central Air Freezer Electric Range Water Heater Microwave Oven	45 - 60 kW

Wattage numbers are estimates. They will vary based on the wattage rating of the tool or appliance being used.

TOOL OR APPLIANCE	RUNNING WATTS (RATED)	STARTING WATTS (PEAK)
Ceiling Fan	800	1200
Central AC - 10,000 BTU†	1500	3000
Central AC - 24,000 BTU†	3800	4950
Circular Saw - 7 1/4"	1400	2300
Clock Radio	100	-
Clothes Dryer - Gas	700	1200
Coffee Maker	1500	-
Computer - 17" Monitor	800	-
Deep Freezer	700	1000
Dishwasher - Hot Dry	1500	1500
Electric Water Heater - 40 Gal.†	4000	-
Fax Machine	65	-
Furnace Fan	800	1300
Garage Door Opener	750	1200
Hair Dryer	1250	-
Hot Plate	2100	-
Inkjet Printer	80	-
Iron	1200	-
Laser Printer	950	-
Lighting	75	-
Microwave Oven - 1000 Watt	1000	-
Miter Saw - 10"	1650	2400
Oscillating Fan	200	400
Quartz Halogen Work Light	1000	-
Reciprocating Saw	1200	2000
Refrigerator/Freezer	700	1500
Security System†	500	-
Space Heater	1800	-
Stereo Receiver	450	-
Sump Pump	800	1200
Table Fan - 14"	200	400
Television - 27"	500	-
Water Well Pump - 1/3 HP (220V)†	1000	2000
Window AC - 10,000 BTU	1200	2200

Note: The wattages listed in our reference guide above are based on estimated wattage requirements. For exact wattages, check the data plate or owner's manual of the item you wish to power.
† These units are usually hard-wired and require a professionally installed transfer switch.

How do you find the right size generator for you?

Below is an example to help you determine which generator may be best suited for your needs.

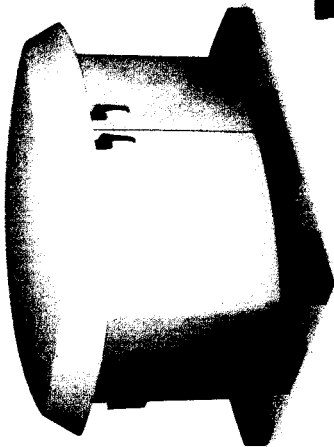
AVERAGE HOUSEHOLD NECESSITIES:

Refrigerator/Freezer	700	1500
Central A/C - 10,000 BTU	1500	3000
Lighting (Four Rooms)	300	-
Water Well Pump-1/3 HP	1000	2000
Total	3500	6500

Based on the above needs, you'll need a generator with a minimum of 6.8 kW

Choose the right standby generator for you

RS12000 - Cost-Effective Security



The RS12000 system is sold standard with the RSS Series Transfer Switch and In-Home display.

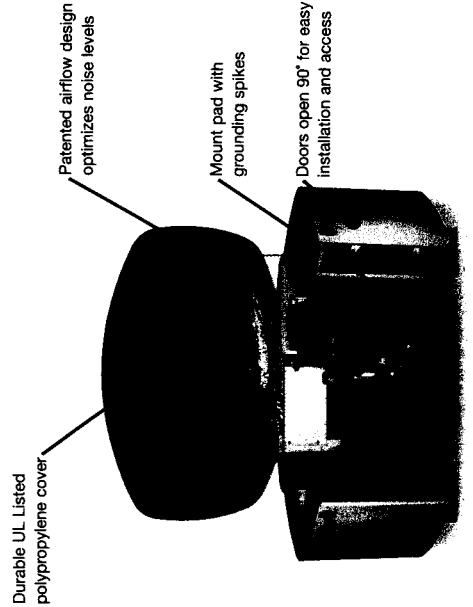


In-Home Display



RSS Transfer Switch

Power Ratings: 10.5 kW (Natural Gas) 12 kW (LP) Available in either LP or Natural Gas	Dimensions: Length: 48 in (1219 mm) Width: 34 in (864 mm) Height: 31.5 in (800 mm)	Sound Ratings: 64 dB(A) at 23 ft (7 m), average Weight: 460 lbs (208.65 kg)
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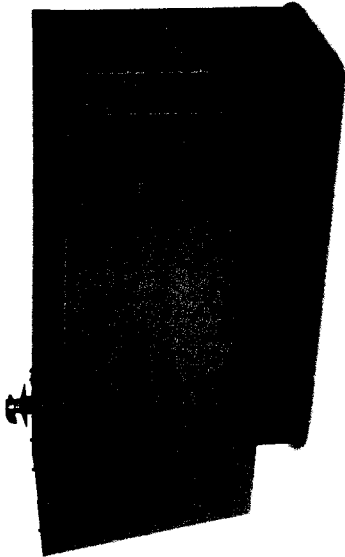
Durable UL Listed polypropylene cover

Patented airflow design optimizes noise levels

Mount pad with grounding spikes

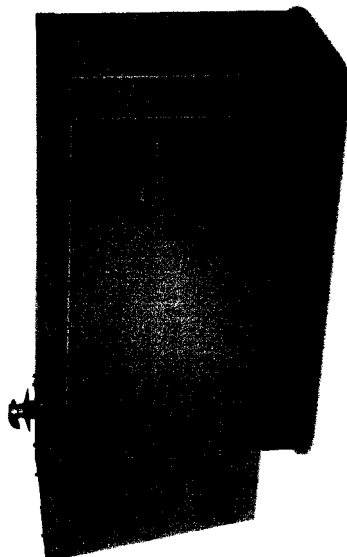
Doors open 90° for easy installation and access

RS20000 - A Powerful Resource



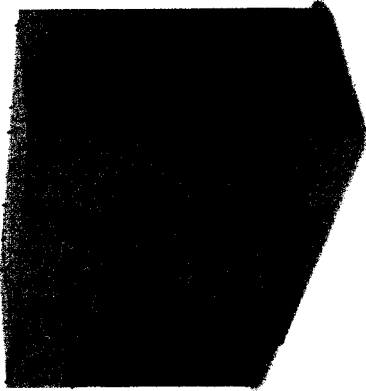
Power Ratings: 20 kW (LP & Natural Gas) Available in either LP or Natural Gas	Dimensions: Length: 85.3 in (2166.68 mm) Width: 30 in (762 mm) Height: 46.7 in (1184.89 mm)	Sound Ratings: Less than 66 dB(A) at 23 ft (7 m), average Weight: 1105 lbs (501 kg)
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RS30000 - Extensive Coverage



Power Ratings: 29 kW (Natural Gas) 30 kW (LP) Available in either LP or Natural Gas	Dimensions: Length: 85.3 in (2166.68 mm) Width: 30 in (762 mm) Height: 46.7 in (1184.89 mm)	Sound Ratings: Less than 67 dB(A) at 23 ft (7 m), average Weight: 1300 lbs (590 kg)
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RS45000 - A Comprehensive Solution



Power Ratings: 42 kW (Natural Gas) 47 kW (LP) Available in either LP or Natural Gas	Dimensions: Length: 101.5 in (2578 mm) Width: 41.3 in (1049 mm) Height: 71.8 in (1824 mm)	Sound Ratings: Less than 66.3 dB(A) at 23 ft (7 m), average Weight: 2668 lbs (1210 kg)
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Automatic transfer panels combine reliability and flexibility in a small, economical package for transferring loads between the main power source and generator set.

RSS Series - 100/200 Amp

Power Ratings:
100 or 200 Amp 124/204V, 1 phase

Enclosure:
NEMA 3R—All climate indoor/outdoor

- Models RSS100-6868 and RSS200-6869 Service Entrance Rated, use with RS12000 only in US
- Models RSS100-6634 and RSS200-6635 NOT Service Entrance Rated

NOTE: Actual power requirement is dependent upon desired electrical loads. Contact your electrical professional for proper sizing. We manufacture generator sets up to 2.7 megawatts. Contact your local certified distributor/dealer for more information on these products. Professional installation required.

Logan City Fire/EMS
76 East 200 North
Logan, UT 84321

Information & Common Questions Regarding Home Fuel Storage

The information in this brochure is meant to enlighten the typically homeowner of the cause and spread of Flammable Liquid type fires and to answer commonly asked questions about home fuel storage.

The following information is based on the 2006 edition of the INTERNATIONAL FIRE CODE, which has been fully adopted into the annotated Utah State Code.

General Information

Fire occurs when ~~the~~ ^{the} elements Heat, Oxygen and Fuel come together in a chain reaction. When flammable liquid is used as the fuel, it changes into the form of a gas (fumes). These gases are invisible and usually have an odor. These gases can be heavier or lighter than air and can spread through heat ducts or openings in the floors, walls or ceilings. When these gases reach a heat source they ignite and wherever the gases have spread almost instantaneously ignite. As the fire heats the flammable liquid it produces more flammable gases which ignite and continue the growth of the fire. As the fire spreads heat to other materials in the building they produce gases that also feed the growth of the fire. Fires caused by flammable liquids occur rapidly and give the occupants little to no time to react.

Common Questions and Answers

Question: Can I store emergency fuel containers inside my home, basement, and/or attached garage?

Answer: No! We ask that you store emergency fuel containers in a detached shed or garage to minimize hazards and ignition sources. Two or three 1-gallon DOT rated containers for gasoline, and 2-cycle fuel for general operation of lawn maintenance equipment is permissible in a garage attached to a home. In the past we have experienced many serious problems due to flammable liquids being stored inside homes, basements, garages attached to homes and carports.

Question: Can I store as many containers as I want in my garden shed or unattached garage?

Answer: No! Depending on the type of fuel (gasoline, kerosene, diesel and propane), you are only allowed to store limited quantities of each type of fuel, in certain kinds and sizes of containers.

Question: How much gasoline can I have and where can it be stored?

Answer: Gasoline & Coleman White Gas has a flash point (the temperature at which fuel will ignite) of less than 73 degrees and is considered a flammable liquid. Maximum residential storage is limited to 25 gallons in a building that is unattached from the house. Of this 25 gallons, no more than 10-gallons can be stored in the garage that is attached to the house. Absolutely no storage is allowed in the house.

Question: How much Diesel, Kerosene or Lamp Oil can I have?

Answer: Diesel, Kerosene, and Lamp Oil have a higher flashpoint temperature rating than gasoline and are considered a combustible liquid. It is still considered volatile and is regulated. The maximum residential storage of these combustible liquids is 60 gallons in a building that is unattached from the house. Of this 60 gallons, no more than 10-gallons can be stored in the garage that is attached to the house. Absolutely no storage is allowed in the house.

Question: Can I use a portable Kerosene heating appliance?

Answer: Portable Kerosene heating appliances that has the "UL" listing can be used, but is limited to a fuel tank having a capacity of only 2-gallons. However the Fire Code specifically prohibits the use of these type-heating appliances in occupied living spaces. When using devices, always maintain adequate separation from combustible surfaces, maintain good ventilation in order to prevent carbon monoxide poisoning and use a battery powered carbon monoxide detector to detect dangerous situations.

Question: Does the fuel in my car count as part of the maximum fuel storage?

Answer: Flammable & combustible liquids in the fuel tanks of motor vehicles (gasoline, diesel and 2-cycle blends) are exempt, and therefore not considered as a part of your total home fuel storage quantities.

Question: Do empty containers count as if they are full?

Answer: Containers that are empty are counted as if they were full. As mentioned earlier it is the gases and fumes that burn. Even though the container is empty the flammable fumes and gases are still in container. All containers shall be counted as full when calculating total storage capacity.

Question: What type of container can be used to store flammable or combustible liquid?

Answer: These storage containers are to be a type that is approved type. Most of the containers are labeled as "approved for flammable liquid use", and indicate the standards they are designed to meet (DOT, ASTM, NFPA 30, etc.). Always use approved or original retail containers. Never use milk jugs or other similar products.

Question: Do I need a fire extinguisher, what type do I need and where should I place it?

Answer: It is always a good idea to have a fire extinguisher in the home. If there are 5-gallons or more of flammable or combustible liquids a fire extinguisher that has a 2-A, 10-B, C rating is required. The fire extinguisher should be located no closer than 10 feet, and no farther away than 50 feet.

Question: What should I be careful of when using or dispensing the fuel?

Answers: Controlling ignition sources is the most important thing to prevent a fire. All transferring or dispensing of flammable or combustible liquids requires careful attention to eliminate static spark discharge, and ignition of flammable vapors. These types of operations should always be done in well-ventilated areas. Open flames and high temperature devices must be controlled and approved for use with flammable liquids. SMOKING is strictly prohibited in the storage and dispensing areas.

Question: Can I store Propane?

Answer: Residential propane storage issues are more complex than those of for flammable liquid. All permanent tank installations need to have a permit from the fire department, comply with current installation codes, and hire a state-licensed installation contractor. Please contact any state licensed propane supplier or the fire department for more information regarding permanent propane gas installations. You can find them in the yellow pages under "Gas Propane".

Question: How much Propane can I have in portable containers?

Answer: Portable DOT tank storage, you are allowed up to 25 gallons total capacity. You could have up to five 5-gallon (20-lb) portable appliance cylinders (the size usually found on barbecue grills) or one 23 gallon (100-lb) cylinder in storage in a building that is unattached from the house. If you want to store propane and flammable/combustible liquids in the same area they must be kept at least 10-feet apart.

Question: What about the small propane container that is on my hand torch?

Answer: You are allowed to store up to two of these small portable 1-pound disposable cylinders in your home or attached garage.

Question: Do propane cylinders that are attached to heating or cooking appliances or those attached to campers, trailer or motor homes count towards the total residential storage?

Answer: Propane cylinders that are attached to heating or cooking appliances or those attached to campers, trailers or motor homes are not counted towards the total residential storage capacity. However, unattached or empty cylinders are counted just as if they were full.

Question: How long will flammable and combustible liquid fuels last?

Answer: It is a common myth that flammable liquid and combustible fuels have an indefinite life span. This is not true, most manufactures recommend that these fuels be used and consumed with 6-months of the purchase.

Some Final Thoughts

Over the past 10-years, the United States Environmental Protection agency (EPA), state environment agencies and local fire departments have required motor fuel dispensers (gas stations, etc.) through out the nation, to spend millions of dollars to control leakage of motor fuels into the environment. Most of the leakage came from under ground and above ground storage tanks. Leakage from these tanks caused millions of dollars in damage and some dangerous fire situations. Naturally, we have a concern of having hundreds of homeowners throughout the area with relatively uncontrolled fuel storage capacities on their personal property.

Therefore, we strongly encourage and recommend that you reduce your home fuel storage capacities to no more than 5-gallons of flammable liquids (gasoline or Coleman White Gas), 25 combustible of combustible liquids (diesel or kerosene) and 5-gallons of flammable gas (propane) in portable DOT cylinders.

Millions of dollar loss is reported to homeowners insurance each year due to flammable and combustible liquid type fires. Therefore Homeowners Insurance Providers also encourage quantities of flammable liquids stored in residences be kept minimum.

We as members of the fire department have a genuine concern for your safety and our own. Flammable liquid & combustible fueled fires contribute to the leading cause of accidental fires. The use and storage of these fuels are life safety issues (yours and mine).