



Frequently Asked Questions Generators

Fuel Related

How much fuel do the generators use during normal operation? At exercise?

The generator fuel consumption is given in each of the product knowledge books and is also in each of the owner's manuals. The fuel consumption is given at 25, 50, 75 and 100% load ratings. Use the full load consumption rate for proper pipe sizing.

Will my fuel bill increase from the generator exercising?

The increase in cost will be minimal. The generator will only be running for about 12 minutes a week with no load.

What size LP tank should be used for each unit?

We recommend a minimum tank size of 250 gallons be used with the air-cooled units. This allows for between 100-170 hours of operation under full load conditions, depending on model.

We recommend a minimum tank size of 500 gallons to be used with the liquid-cooled units. This allows for 83-133 hours of operation under full load conditions, depending on model.

In very cold temperatures, it may be necessary to size the tank even larger to allow for adequate vaporization.

Never use a gas grill type LP tank to operate any generator. It will not provide enough fuel flow and ice the tank and line.

For specific fuel consumption refer to the owner's manual.

What size fuel pipe do I need and what is the inlet diameter on the generator?

There is a fuel pipe sizing chart in the generator sizing guide. (The generator fuel consumption at full load must be added with any fuel needed for additional appliances that are fueled off of the same source). The inlet into the side of the generators is $\frac{3}{4}$ " up to 40kW. Propane tanks are usually rated by pounds.

Is there a conversion that can be applied to the fuel consumption numbers?

Yes. For general conversion, propane weighs 4.24 lbs. per gallon.

1 lb. = 8.58 cu ft. 1 gallon = 36.39 cu ft.

How do I convert the cubic feet per hour into Btu's?

Multiply your cubic feet per hour by the appropriate multiplier, 1,000 for natural gas, 2,520 for LP.

How do I convert the generator from natural gas to LP and is any extra equipment required?

For model 7 to 25kW all of the necessary pieces come with every generator. In the owner's manual there are step by step directions on how to do the conversion. These manuals are shipped with every generator. For units larger than 25kW, generators are ordered fuel specific.

Can the flexible fuel line that is included with the generator be bent or angled?

No, it must be straight. Its purpose is to accommodate for any settling or vibration of the generator. If it is bent at all, the line is constricted and fuel flow is inhibited.

Sound Levels

What are the sound levels of the generators?

The generators range in sound from 65 to 76 dB maximum, measured at 7 meters under full load. For the rated generator sound specifications, refer to the generator's specific owner's manual. Generator manuals are available for order from the normal literature channels and each generator is shipped with its specific owner's manual. The 16kW air-cooled and all liquid cooled models also utilize a Quiet-test mode during the exercise period. This allows these units to operate at a lower RPM using less fuel and significantly reducing sound levels.

Installation Questions

How long does it take to install a generator system?

The air-cooled can take as little as 4 hours. The liquid-cooled will normally take up to 14 hours, over 2 days. The reason is that while the air-cooled units include a composite mounting pad, the liquid-cooled units, because of the added weight, must be placed on a stronger mounting surface. Concrete slabs are poured and need one day to set properly, which accounts for some of the additional installation time. If the installer can source a prefabricated mounting pad that will meet the weight requirements, the installation time will be reduced accordingly. The length of time is based on a "typical application". It does not apply to extended runs of conduit or gas piping or placement of a unit away from the incoming gas or electrical service.

Can I use an existing grounding rod instead of driving a new one for the generator?

Yes, unless local code dictates otherwise.

Is an electrician required to install the generators?

The generators are designed to be easy enough for any technician to install. Some local codes require an electrician to make the electrical connections within the home owner's distribution panel.

How far should the generator be away from the house?

Local code dictates the necessary distance required between the generator and the house. If local code defaults to manufacturers recommendations, then it is 3 feet from the house for the air cooled units and 5 feet away from the house for the liquid cooled units. In most areas, code (NFPA) also requires the generators to be a minimum of 5 feet away from any air inlets (doors, windows, etc.).

What happens if you need to go beyond or shorten the pre-wired, 30' whip that comes out of the load center transfer switch?

If you are increasing the length by approximately 15' to a total length of 50', the same gauge wire (6) can be used with a junction box. If it must be extended beyond that, the entire whip must be upgraded to larger gauge wire. If there is extra wire, loop the whip and do not cut it. (Technically that breaks UL listing, but if your inspector is okay with it, cutting the whip to shorten it is acceptable.) The 30' whip cannot be run outside as it is not weather proof.

Can the load center switches be mounted outside?

The load center switches are NEMA 1 rated. This means that they have to be mounted indoors. All other switches are available in a NEMA 3R enclosure. This means that the switch can be mounted indoors or outdoors.

What is the required water column for installation?

Air-cooled generators require natural gas pressure of 5" - 7" of water column (0.18 to 0.25 psi) or LP gas pressure of 11"-14" of water column (0.4 to 0.5).

Liquid-cooled generators require natural gas pressure of 5" - 14" of water column (0.18 to 0.5 psi) or LP gas pressure of 11"-14" of water column (0.4 to 0.5).

Are there special tools I will need to work on or install these generators?

To work on the generators, the typical tools needed for electrical work apply. A digital meter that has the capability to measure frequency (Hz) is needed since frequency should be checked on each generator upon install. A metric socket set will also be needed, along with a spark plug socket (one is provided in the preventative maintenance kits) and an oil filter wrench.

How large of a concrete slab do I need for a liquid-cooled unit?

The slab needs to extend a minimum of 12" beyond the base of the generator and must be a minimum of 4" thick. It may need to be thicker depending on local code.

Can I install the generator indoors, in a garage or under a deck if properly vented?

NO. Generators produce carbon monoxide which can be fatal after prolonged inhalation. All of the generators are designed to be installed and operated outdoors only.

What happens if I do not have room for the double-pole breaker I need to install in my customer's house panel when using the air cooled pre-wired automatic transfer switch?

When you make all of your connections within the house panel, the breakers that you removed the hot wire from are no longer active. You can remove the breakers to make room for your double-pole breaker. Remember, the brand of double-pole breaker that you are installing must match the brand of the other breakers in the home owner's panel.

Why would a customer opt for an aluminum enclosure?

In coastal communities, salt air can destroy steel in a short period of time. Aluminum is corrosion resistant, so it prolongs the life and look of the generator.

Warranty & Service

What is the maintenance schedule?

The maintenance schedule is in the owner's manual. The schedule varies between the air-cooled and the liquid-cooled models. The air filter, oil filter and spark plugs need to be changed on an annual basis. If the generator is located in dirty or dusty conditions, it may need the air and oil filters changed more often. If the air cooled generators run in excess of 100 hours, it is recommended to change the oil and filter in addition to the annual maintenance.

What type of oil is recommended?

For air-cooled units: After the break in oil, an all season synthetic oil 5W-30 should be used. API Service Class SG, SH or SJ should be used in all cases. The recommended oil for the liquid-cooled units is 15W-40. All oils should be high detergent oil that meets or exceeds API Service Class SG, SH or SJ requirements for gasoline engines.

Are there indicator lights on the generator or transfer switch to show operation or failures?

There are 5 LED's on the control panel of the generator. One signifies utility power availability. The others are for the following shutdowns, overspeed, overcrank, high-temp and low oil pressure. Currently, there are no indicator lights on the transfer switch.

What are the most common problems seen with the generators?

Virtually all of the problems that are seen with the generators are installation related. Improper fuel pipe size and incorrect or lack of fuel pressure are the two most commonly seen issues.

What is the warranty on the generators?

For 45kW and below, the generators come with a standard 2 year, parts and labor warranty. For 50kW and above the warranty is 1 year parts and labor, the second year is parts only.

General Information

Why should I buy a home standby generator instead of a portable generator?

While portable generators are effective in terms of backup power, a home standby generator produces a higher quality of electricity, operates automatically and exercises weekly to ensure proper response to your needs. There are no extension cords to plug in, no gasoline to retrieve or fill, and will protect your home or business while you're away.

What is the difference between air cooled and liquid cooled generators?

The air cooled generators employ forced air moving over an engine to cool it via fan whereas a liquid cooled generator employs an automotive style engine with an enclosed radiator system.

Are these "whole house" generators?

The liquid cooled generators are designed for "whole house transfer". They are shipped with a service disconnect rated switch enabling it to be placed directly between the electric meter and the house panel. In some cases, the generators may not be able to handle all of the equipment in the house so a sub-panel would have to be employed.

Can I operate a computer using generator power?

Yes. The generator power produces a very clean sine wave and will have no problem powering a computer. Each generator's output is electrically regulated by a voltage regulator. The acceptable steady-state voltage variance is a maximum of 2%.

Can these units be used for medical back-up?

These generators are intended for use in back up situations. Due to some of the specific needs of certain medical equipment (dialysis machines, breathing machines, etc.) the generators do not fall into the category of a medically rated generator.

What is the life expectancy of the generators?

In standby conditions, with proper maintenance, these units will last for 20-30 years.

Will the generator back-feed into the house or power lines when it is running or transferring?

No. The generator transfer switches are designed so that it is physically impossible for back-feeding to occur. The switches utilize a three contact system with a switching mechanism eliminating all possibility of back-feeding. The entire system is UL Listed.

Do the generators charge the battery?

The generator battery is always being charged. When utility power is present and the generator is not running, the utility power is converted to DC and a 2 amp trickle charge is delivered to the battery. When the generator is running, it provides a 2 amp trickle charge which is delivered to the battery.