

How to Choose the Proper Generator

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For those of you who have considered the purchase of a stand-by or emergency electric generator, there are a few points to consider before bringing one home.

First, decide on a budget for the unit... it will always cost a little <or a lot > more than you plan on. Give thought to how many times in the past year or so that you have been without electricity and the duration of the outage. Do you really need a 25 KVA unit that will run your entire home, or will a smaller 4 or 5 kW unit serve your needs? It is certainly nice to have a large standby unit, with automatic transfer and weekly tests, but is it worth the expense? Perhaps if you have the resources available and your job like my own could require that you be away from your residence during an emergency, a fully automatic system could be desirable. A few vendors offer standby units designed for residential use; these units are usually around 12-20 KVA and about the size of a 2-ton air conditioning unit. Powered by propane or natural gas, with a high RPM air-cooled engine, these units are generally acceptable in areas with infrequent outages. If you are subject to frequent, lengthy outages you will need a low RPM diesel powered unit; these sport a hefty price tag, since they are not generally used for residential service.

If you will be home during an outage, you have other options. Once again, consider how often you are affected by an outage, and the effects of it. Determine which loads in your home must be supported at the same time; add the rated wattage of all the devices together. Some devices require quite a bit more than rated current when starting, this should not present a problem since it is assumed that you will not be starting all the loads at the same time. If this figure is over 5000 watts then consider the purchase of a stationary unit with a manually operated transfer switch; it is difficult to safely supply a load of this size with extension cords. At least one vendor offers a small transfer switch designed for residential use; the price is not too much more than the cost of several good extension cords.

Assuming a figure in the 3500-4000 watt range, multiply by 1.25, this will give your generator an 80% load. Unfortunately, most of the units sold at retail stores are over-rated, that "5000 watt" unit really doesn't want much more than 4000 watts of load.

Now try to realistically decide how often the unit will be needed; are outages frequent or lengthy in your area? Maybe you can't really remember the last time the power was off, and just want a unit for "insurance". If that is the case, look at the wattage figure you have, go down to your favorite lawn and garden store and pick up that size unit. Almost any brand will do, most of the offered products are air-cooled, 3600 RPM units, and will be satisfactory for in-frequent use at minimal expense.

Or if you, like myself, can remember the time last week that you were in the dark for 4 hours; and the time before that for 3 hours last month, you need a low RPM unit. A few smaller units are available that run at 1800 RPM; these are more suitable for continuous use. A slower running unit will produce less noise, last longer and be more fuel-efficient. The purchase price is somewhat higher, however these units generally offer better voltage regulation, along with a more conservative current rating. For frequent, long-term use the 1800-RPM units are worth consideration.

NOTE: Per National Electrical Code Article 702-6, installing a hard-wired connection from a generator to your home, business etc. requires a suitable transfer switch as Tony mentions above. This serves two purposes: 1) it keeps the generator from back feeding into the AC input and possibly electrocuting someone working on the lines!!! And it also serves 2) to keep your generator from being damaged once the AC is restored!