

Understanding Generators

Portable Generators

Portable generators can be a great convenience for some people and an absolute necessity for other people.

Generators produce electricity from a separate fuel source. Most portable generators run off standard automobile grade gasoline, although there are also generators that use diesel or natural gas. Generators are commonly used as a backup power source when your house power fails and as portable sources of power where it is not normally available (campsites, RV's, etc.).

In deciding which generator is right for you, there are several factors you should consider: wattage, noise level, size and portability, and starting mechanism.

Wattage

Wattage is a function of voltage multiplied by amperage.

The formula is as follows: $\text{Watts} = \text{Volts} \times \text{Amps}$

The power draws of electrical devices may be given in either watts or amps. If the draw is given in amps, you can convert it to watts simply by multiplying the amps by the volts (usually 220V or 240V for a standard household plug).

Some devices have a separate measure for rated wattage (also known as running wattage or continuous wattage) and surge wattage (also known as peak wattage). The rated wattage is the power draw of a device as it normally runs. The surge wattage is a short burst of power draw that a device requires, usually as it starts or stops its motor.

The total running wattage of the devices you intend to run on the generator should not exceed the rated wattage of the generator. To calculate the total running wattage of your devices, just sum up their individual rated wattages.

Generators have two ratings for their power output, much like the draw of electrical devices – continuous or peak.

The figure you should be most concerned with is the continuous rating – find one that adequately meets the requirements of your devices. The surge wattage should be an afterthought as well. Be sure that the total of all your device surges does not surpass the surge rating of the generator.

Noise Level

The noise level of generators is measured in dBA (decibels with A-Weighting) at a certain distance away (the industry standard is 7 meters or 21 feet away from the source). Generator noise levels typically range between 55 dBA to 85 dBA. Fairly quiet generators are usually rated below 75 dBA. Generators above 75 dBA are louder than usual. The noise level rating of a generator can be especially important if you plan on using it at a campsite. Many campsites now have noise level restrictions to help maintain the ambience and experience for other campers, so your safest bet would be to find one under the 75 dBA thresholds. Also, you want to look for a generator with a spark arrestor (mechanism that prevents sparks or burning embers from escaping through the exhaust), as small sparks could potentially lead to huge fires. In general, the larger the generator is (in terms of the motor's horsepower rating, as well as the power output), the higher the noise level of the generator is going to be.

Size and Portability

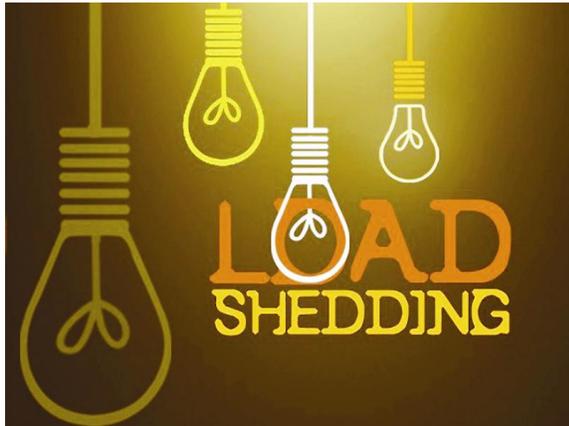
In determining which generator would work for you, you should consider the physical size of the generator and its portability. If you intend to move it around often, such as for campsite use, you may want to look for a smaller overall generator. If the unit is for backup home power use where the unit will not be moved around often, a larger unit may be fine. For use as a RV backup unit, the size of the available space in the RV would determine the maximum size of the generator used.

Wheels and/or a handle kit are sometimes included with generators. Wheels are mounted to one end of the generator frame, while a peg stand is mounted to the other end. This allows the generator to be tilted by one end and to be pushed around on its wheels.

Starting Mechanism

Electric start usually involves turning a switch or key and drawing power off of a battery to start the generator, similar to starting a car. The obvious advantages of an electric start over a recoil start are the convenience and ease of use – it's so simple, a child could start it. One note about electric start, though, is the battery needs to stay charged, so you'll need to start the generator once in a while to keep it charged. Some electric start generators have recoil start available as a backup in case the battery is drained.

5 things you should know before buying a Generator!



Yes, unfortunately load shedding looks to be part of life in our rainbow nation. And the situation doesn't look like it will be improving soon. This weekend was wet and cold and Eskom still implemented stage 2 rolling blackouts nationwide. The crisis stricken utility had earlier assured South Africa it would not load shed during winter. Right now, the parastatal's promises are as unstable as the power grid.

We South African's are a resilient bunch though. You know the saying - A Boer maak a plan! So there's plenty of solutions around. From solar power to battery inverters, to generators. Each solution has pros and cons.

Solar Panels

The sun is the most amazing and abundant source of energy. So it makes sense to harness some of its freely available energy. Solar power is a clean renewable source of energy. The cost and lifespan of solar panels is improving rapidly. The batteries needed to store the power, traditionally have not lasted more than a year or two, which increases the cost factor and made it less attractive. This is changing. There is huge investment around the world in battery technology. Popularised by Tesla in the US, which uses Lithium Ion batteries to power its cars and home battery system called Power wall.

Inverters

An inverter is also an option for backup power. Very similar to the UPS used for computers, an inverter will keep a battery bank charged through the regular electrical supply, and when power is down, converts the 12v battery voltage into 220v for home and business use. A huge advantage of inverters is the silent operation. This makes it attractive for home use and places where noise is frowned upon. But like solar panels, batteries do need to be maintained every few years or the backup time deteriorates drastically.

Generators

Generators, whether petrol or diesel powered, have been around for longer than most other backup power systems. It remains one of the easiest and cost effective ways of combatting load shedding. Yes, burning diesel releases harmful gas into the atmosphere. But keep in mind, that a generator is not intended to run 24/7. It serves merely to keep your business or home running for the hours when Eskom cuts your supply, usually 2 ½ to 3 hours. In this timeframe, the environmental damage done by running your generator is minimal in the broader picture.

There are of course a few points to consider when deciding on a generator.

1) Not all generators are equal. Especially in our current energy crisis, there are a growing number of new generator suppliers and brands flooding our market. You should check out the supplier's track record. Ask for references. Even Google their brands. You don't want to find out later, that your shiny new **Samsung HD plasma** has been fried by a surging generator.

2) Ensure you get an **ECA (Electrical Contractors' Association)** accredited installer to wire up your generator. Fitting a generator is not a simple plug and play procedure. You want to ensure that the correct standards are followed.

3) If you opt for a portable generator, ensure that the unit is waterproof when in use. It could be a simple shelter constructed for this purpose.

4) Very important to have adequate ventilation for the exhaust fumes. The combustion engine produces toxic carbon monoxide and can be lethal in an enclosed area.

5) Lastly, if you store extra fuel for your generator, please use an approved jerry can made specifically for fuel. Keeping fuel in regular plastic containers or Coke bottles is dangerous, as the plastic degrades and will leak fumes.

That's it for now. Let us know if we've missed any tips. And don't forget, we've been doing this kind of work for 10 years, so send us a message if you require a backup generator for your business or home.