

Choosing a Generator

Buying a quality Saber Power generator that's best suited to your needs will save you time and money in the long run and it's an easy process that just requires following these steps:

Step 1: Determine the tools and appliances you want to power at the same time

Step 2: List the start up and running power usage (Watts) for each product

Step 3: Add the total power usage and add 10% as a safety net

Step 4: Choose a generator with a rated and maximum power that equals or exceeds your totals

Example:

| PRODUCT | RUNNING | START UP |
|----------------|--------------|--------------|
| 1HP Water Pump | 750W | 4500W |
| Lights | 75W | 75W |
| Table saw | 2000W | 2000W |
| Total | 2825W | 6575W |
| +10% | 3108W | 7233W |

In this case a generator with a rated power of at least 3108W and a maximum power output greater than 7233W would be required.

Information to help your calculation

Starting Power Consumption

Electronic appliances and brushed motors generally will not draw more than running Watts at start up.

Induction motors and equipment like air conditioners, welders, water pumps and compressors can draw 2 to 5 times their running power to start. Please consult your equipment's rating label, manual or the manufacturer to confirm specific requirement.

Helpful Calculations

To size your generator correctly you need to use Watts - here are some useful calculations:

| | |
|--|--|
| kVA to WATTS | WATTS to kVA |
| $1.0 \text{ kVA} \times 0.8 = 800\text{W}$ | $800\text{W} \div 0.8 = 1 \text{ kVA}$ |

Power Factor + kVA

For Generator selection purposes Power factor is the ratio used to calculate kVA from Watts. Power factor is noted on the generator rating label and manual. Usually this will be between 0.8 and 1.

| | |
|--|--|
| WATTS to AMPS | AMPS to WATTS |
| $\text{Amps} = \text{Watts} \div \text{Volts}$ | $\text{Watts} = \text{Amps} \times \text{Volts}$ |

Other things to consider...

Once you've determined your startup and running power requirements consider what other features and accessories you need.

Builders pack

Builders pack units feature an RCD, minimum IP53 sockets and are fitted with a MEN link. They comply with AS3012-2010 and are suitable for use on building and construction sites. Also known as 'Worksafe' or 'WorkCover approved' generators.

Inverter Generators vs Standard Generators

Inverters produce power in a different way to standard generators. They have a engine driving an alternator but use sophisticated electronics and magnets to produce 3-phase current which is first converted to DC and then "inverted" back to clean AC single phase power.

The benefit of an inverter over standard generators is that the size and weight of inverter generators is usually smaller making them much more portable.

Silent type inverter generators are specifically designed to keep noise to a minimum. Fuel efficiency and run time per litre is also better.

Finally they produce a pure sine wave which is perfect for use with sensitive electrical equipment such as TV's, laptops, tool battery chargers and other consumer electronics.

Pure Sinewave / THD%

A pure sine wave will have a THD% under 6%. Higher THD% alternator are not recommended for sensitive electrical equipment but are perfect for simple appliances, brushed motors and tools. Standard generators can produce a pure wave <6% with additional componentry. Inverter generators produce the purest sine wave usually <3%.

Diesel Fueled

Diesel generators are perfect for farmers and tradesmen who want a safer fuel source, longer performance life and better fuel economy. They are also ideal for power back-up in remote locations and industrial situations.

Back up power

Follow the same process to select the appropriate size and featured generator for your home or worksite. You must use a licensed electrician to install the generator to use for backup power. The manual includes a wiring diagram and instructions to assist.

Electric Start

For ease of starting you may want a generator with electric start in addition to standard recoil start. These have a battery that will require charging and maintenance especially if you leave the generator idle for more than a week so factor this into your purchase.

Low Oil Warning

The engine will shut off if the oil level becomes critically low. This will prevent the generator from over heating and being damaged.

Eco Mode

The generator will run at a reduced RPM while not under full load to conserve fuel.

Fuel tank capacity/Fuel consumption

Check the tank size and running time. If you need a full 8 hour work day running time or backup power you may need a generator with a long range tank.

DC Outlet

A 12V DC outlet with accessory lead is perfect for powering 12V devices and charging batteries.

USB Outlet

Perfect for charging phones and other small electronic devices

Accessories

1. Wheel & Handle kits - our range offer models with these as standard or as add on kits
2. Lifting Point - for heavier petrol models we have a lifting point either built into the design or as an add on kit.
(Check your work site requirements as you may need a lifting point to get your generator past OH&S requirements.)
3. Water Proof Cover - we have waterproof covers to suit silent inverter generators.



SABER[®] POWER

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Quick Selection Guide

| | KVA | Applications |
|---|--|---|
| Small Generators Tough but portable, our smaller open and silent inverter generators will meet your needs at home, in the shed, while camping, for general lighting and in other low demand applications. They are made to go where you go. | 2.5 - 3.3 4.4 - 5.8 | <ul style="list-style-type: none"> • Trades people and emergency power • Home or recreational use • Powering 0.75 - 1HP electric motors • Rural homes trades people • Small appliances (ovens, hot plates) • Small radial saws and grinders up to 9" • Power tools such as drills and jigsaws and 4" grinders • Appliances like toasters, microwave ovens or TVs • Heating and lighting applications and small fridges • Submersible pumps, vacuum cleaners & irons • Air compressors up to 8cfm • Welders up to 120A and electric motors up to 1.5HP |
| Medium Generators Where your application required higher demands our mid-range portable generators will provide you extra power for most situations. They are especially popular on building sites and farms. They are suitable for back up power in some applications. | 7 - 8 | <ul style="list-style-type: none"> • Building sites, hire companies, government departments and on the farm • Appliances such as a kettle or jug, hot water service, clothes dryer, refrigerator, washing machine, dishwasher or air conditioner • On-site applications including brick saw, large grinder, air compressor 8-12cfm, 140-170amp welders and 1.5-2.5HP electric motors |
| Large Generators When you need all the power you can get. Large portable and stationary Diesel generators are available. They will run a wool press on the farm, a large welder or large air conditioner. Perfect for back up power for industry and houses in rural areas. | 9 - 11 12 - 15 | <ul style="list-style-type: none"> • Construction sites, wool presses and shearing plants • Heavy duty vacuum cleaners, large refrigerators and washing machines • On-site applications including 140-200A welders, air compressors 8-16cfm and 2-3HP electric motors • Shearing plants, wool presses, construction sites and as a standby power for all domestic and industrial uses • Suitable for use with 140-250amp welders and electric motors up to 3HP • Large air compressors up to and beyond 16cfm |

Power Usage Guide

This chart shows approximate power usage in common electrical devices

| Appliance / Power tools | Average Running Watts | Average Start Up Watts |
|-------------------------------|-----------------------|------------------------|
| Induction Motor 370W (1/2 HP) | 500 | 1480 |
| Induction Motor 550W (1/2 HP) | 740 | 2200 |
| Induction Motor 750W (1HP) | 1000 | 3000 |
| Induction Motor 1500W (2HP) | 2000 | 6000 |
| Induction Motor 2200W (3HP) | 2950 | 8500 |
| Air Conditioner (2HP) | 4000 | 6000 |
| Angle Grinder 100mm | 1200 - 1800 | 4000 |
| Angle Grinder 230mm | 2400 | 8000 |
| Laptop | 150 - 300 | |
| Concrete Mixer | 1200 - 2400 | 4000 |
| Drill | 450 - 800 | 2000 |
| Drill Hammer | 650 - 1400 | 3000 |
| Lighting LED | 10 | |
| Large Floodlights | 500 - 1500 | |
| Refrigerator (4 Star) | 150 - 650 | 1350 |
| Vacuum | 1000 - 2400 | |
| Welder 140 Amp | 6000 | 6500 |
| Welder 170 Amp | 7000 | 9000 |
| Welder 200 Amp | 10000 | 13000 |

