



SELF-HELP GUIDE

Back-up Power for Ventilators

Ventilators are powered primarily by plugging the power cord into a wall outlet, otherwise known as AC Power. When there is a power outage, ventilators will not receive power from the wall outlets.

All PROP ventilators can be powered by AC power (power from wall outlets), internal battery, and DC power such as a battery (external to ventilator). When the ventilator stops receiving external AC or DC power, the ventilator will automatically switch to the internal battery. In an event of power outage, a ventilator that is plugged into a wall outlet will immediately start using the internal battery power. It is a good idea to have a back-up power source for your ventilator...in a power outage, your ventilator's internal batteries may run out before power is restored to your home.

This document provides information about available back-up power systems for PROP ventilators.

Clients Responsibility

PROP does not supply back-up power systems. It is the clients' responsibility to create their own Emergency Preparedness Plan, including a back-up power system. PROP will be glad to assist you with any questions you may have after reading through this document.

Ventilator Internal Battery

Your ventilator has an internal battery that will provide power to your ventilator for a **limited time**. The length of time the internal battery will last varies due to individual respiratory needs. We ask that clients test their internal battery, every month, so they are aware of the approximate length of time their ventilator will run on internal battery should they experience a power outage.

To determine the approximate length of time your ventilators internal battery lasts, while providing you with respiratory therapy, complete this simple test...

- Plug your ventilator into a wall socket overnight to fully charge up the internal battery.
- While at home, with the ventilator's internal battery fully charged, unplug the ventilator from AC power and use the ventilator. Note the start time.
- Keep using the ventilator until it begins alarming that the battery is running out, and note the end time. Plug the ventilator back into AC power to charge up the internal battery.
- The approximate length of time your ventilators internal battery is expected to last is the time elapsed between unplugging the unit from AC power (Start Time) and the low internal battery alarm going off (End Time). This length of time will change as your battery ages.

Emergency Preparedness Plan

All PROP clients MUST have an “Emergency Preparedness Plan” in-case of a power outage. This is very important for PROP clients who depend on their ventilator. You can estimate how long the power outage may last by contacting BC Hydro at 1-888-769-3766. If BC Hydro expects the power to be out longer than your ventilator’s internal battery would last, you may need to go somewhere not affected by the power outage.

Your emergency preparedness plan should include a facility with a back-up power source (ie: emergency power generator). You need to discuss their availability during your planning, but some possible solutions may include:

- Police Station
- Fire Station
- Hotel
- Hospital



Important Note:

While this document outlines back-up power for ventilators, it is paramount to realize that the Ambu-Bag is your primary piece of emergency equipment. Your Ambu-bag needs to be functioning and ready to use at any moment. Perform daily checks to ensure everybody in your Support Team knows how to assist breathing with the Ambu-bag.

Options for Back-up Power

1. External battery packs

External Battery Pack with outlets: An external battery pack should be kept charged to maximum capacity, so it is ready to power your ventilator in the event of a power outage. It can also be used for an extended period of time away from home where AC power is not available.

An external battery pack is a portable device that contains a battery and electronics that produce AC and/or DC power. There are different sizes and capacities of external battery packs available, so you need to pick the right one for your needs. It is recommended you purchase one that you think will work, take it home and test it using your ventilator, and if it doesn’t last long enough, exchange it for a more suitable external battery pack.

Your external battery pack must be rated more than 300 watts to power your ventilator. How long an external battery pack will last depends on several factors:

- battery type/size
- age of the battery
- ventilator settings.

*If you need assistance, please consult the PROP Biomed Dept. for selecting an appropriate size external battery pack for you.

Some external battery packs require monthly discharging to keep it in good condition. Please follow manufacturer instructions.

Table 1. External Battery Packs

Examples of External Battery Packs Currently Available(Dec 2014)	Where to Buy	Approx. Cost	Capacity	Can Humidifier Be Used?
	Canadian Tire	\$ 200	20 Ah	No
	Wal-Mart	\$ 180	18 Ah	No
	Online	\$ 180	26 Ah	No
	Best Buy (Online only)	\$ 170	17 Ah	Yes

The length of time the external battery pack lasts depends on the battery capacity and individual respiratory settings. To determine how long the external battery pack will last:

- Charge up external battery pack to maximum capacity. Then, unplug it from wall outlet so it is an independent power source.
- Plug your ventilator into one of power outlets of the external battery pack, start using your ventilator, and note the start time.
- Continue using the ventilator until the ventilator switches from AC power (external battery pack power) to internal battery. (Ventilator will alarm “Power Fail” and you will see the internal battery symbol on the ventilator screen) Note the time; this is your end time.

- The length of time your external battery pack battery is expected to last is the time elapsed between the Start Time and the End Time.

CAUTION: As the external battery pack’s battery ages and/or your respiratory needs change, you will receive varying back-up power time from the pack. Please repeat this test monthly.

2) Gas-Powered Generators

A portable generator is a gasoline operated device which produces electricity. You can plug your ventilator into its built-in AC power outlets. This is an effective back-up power source if there is outdoor space to operate a gas generator. You will need a heavy duty extension cord to plug your ventilator into the generator located outside.

WARNING: Gas-powered generators must be outdoors. Carbon monoxide poisoning is fatal.

Table 2. Gas Generators

Examples of Gas Generators Available (Dec 2014)	Where to Buy	Approx.Cost	Can Humidifier Be Used?
	Ramsond Sinemate 1500 Portable Pure Sine Wave Inverter Generator	eBay.ca \$460	YES

Vehicle Battery & Power Inverter via 12V DC Power Source (aka Cigarette Lighter port)

It is possible to power your ventilator with your vehicle’s battery, via the vehicle’s 12V DC power source. It is recommended that the motor be running, at least occasionally, to keep the vehicle’s battery charged to power your ventilator. The vehicle battery can power your ventilator while you travel to a location unaffected by the power outage.

To power your ventilator via your vehicle’s 12V DC power source, you need a “DC to AC Inverter” (Power Inverter), which you connect to your vehicle’s 12V DC power source.

WARNING: DO NOT leave your car running in a garage. Carbon monoxide poisoning is fatal.

WARNING! DO NOT USE HUMIDIFIER IN A VEHICLE

There is a higher chance of water spilling into the ventilator unit when used in a vehicle. If water gets inside the ventilator, it will damage the ventilator.

Table 3. Power Inverters

Examples of Power Inverters Available (Dec 2014)		Where to Buy	Approx. Cost	Power
	CAT 1000Watt Power Inverter	Canadian Tire	\$ 150	1000 Watt
	Cobra 1500Watt Power Inverter	The Source	\$ 200	1500 Watt
	Samlex 12V Modified Sine-Wave Inverter	RP Electronics	\$ 190	1000 Watt