

Battery Saver

Extend's Battery Life

OPERATING INSTRUCTIONS



CHARGING A BATTERY:

Plug the Model 1000 into a AC outlet; if the outlet is powered the BLUE LED on the charger will turn on. If this doesn't happen check the outlet or circuit breaker. Next, connect the cable to the battery. If connected wrong, the word ERROR will flash on the screen. If connected properly, the VOLTAGE DISPLAY will show the current voltage that the battery is being maintained at. The battery will be fully charged when the FULL LED turns on. This can take up to a few days depending on the condition of the battery and the level of Sulphation. When the Model 1000 charges a battery it also cleans the plates, This is known as desulphating.

AMP DIGITAL READOUT:

When the charger is plugged into AC and connected to the battery the AMP readout should start to read a number higher than zero amps. If after a few minutes this reading doesn't go up then that is an indication that the battery may be bad. Batteries that won't take a charge usually need replacing.

ERROR WARNING:

The flashing ERROR 01 warning is due to either the cables being shorted, reversed, or the battery has a bad cell or is bad.

MAINTAINING (LONG TERM):

The Model 1000 automatically switches from Charge to (Long Term) Maintenance when the battery is FULL The Micro-processor then goes into a routine that monitors the voltage and condition of the battery. It performs a variety of steps that condition and exercise the battery which extends the batteries life by keeping it desulphated. It's best to keep the charger powered on all the time so it continually cleans the plates.

CHARGE LEVEL PERCENTAGE:

Indicates the level of charge that the battery currently is maintaining. The charger does not need to be plugged in for an accurate reading. Just connect the charger to the battery and wait a few seconds. As batteries are nearing end of life they will no longer show a 100% charge level. This is usually an indication that it's time to look for a new battery.

TESTING A BATTERY:

Use the Model 1000 to charge the battery first. Unplug the AC Power and the Model 1000 turns into a battery or charging system TESTER. Monitor the voltage drop for 5 to 10 minutes. When the reading stops going down, this is the TRUE battery voltage. See chart below.

The next test is the Cranking Test. When trying to start a vehicle the voltage reading will go down. A good battery will not go down more than a couple of volts. Crank the engine and monitor the voltage drop, if it's sizable the battery is weak.

Start the vehicle. No more than **14.4v-14.6v** should be coming out of an alternator or generator. Higher voltages will hurt the battery. When revving the engine there should be an increase in the voltage reading but no more than the above.

12 volt battery

13.0v = 100%	12.0v = 50%
12.8v = 90%	11.8v = 40%
12.6v = 80%	11.6v = 30%
12.4v = 70%	11.4v = 20%
12.2v = 60%	11.2v = 10%

6 volt battery

6.5v = 100%	6.0v = 50%
6.4v = 90%	5.9v = 40%
6.3v = 80%	5.8v = 30%
6.2v = 70%	5.7v = 20%
6.1v = 60%	5.6v = 10%

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READ ME FIRST! Batteries give off Hydrogen... it's Explosive!

When dealing with any lead acid battery, eye protection should be worn. Batteries are dangerous, they give off Hydrogen gas, if their posts are shorted, sparks, a fire, or explosions can occur, they should be treated with a lot of respect. If you are not experienced please ask for advice before connecting our charger / maintainer... and before removing the battery.

WARNING - Good ventilation is advised. If you are working with a battery that is still mounted on or in the vehicle make sure you place the charger away from the battery itself. Do not expose the charger or maintainer to rain, snow, or high heat. If used outside it should be in a dry cool location. If the battery is removed from the vehicle, find a safe ventilated non-flammable location such as a metal work bench. Never have flammable materials, matches, lighters, cigarettes or other ignitable sources near the battery and charger.

WARNING - Sparks, fire or an explosion can occur if the battery terminals are shorted. When removing a battery from a vehicle extra care should be taken when disconnecting the terminals. Most 12 volt vehicles are negative (-) ground. The negative terminal should be removed first. This helps in preventing a short between your wrench and the positive terminal. If the wrench accidentally touches any metal a direct short can be catastrophic. By disconnecting the negative (-) or ground lead first this eliminates the potential of a direct short from your wrench. Use extra caution when moving a battery, should the battery drop it can rupture and emit sulfuric acid which is extremely dangerous. Make sure all accessories are turned off to prevent a spark when removing the terminals.

WARNING - Use the Battery Saver™ Charger / Maintainer ONLY with 12 or 6 volt Lead Acid, VRLA, AGM, or Gel type batteries designed for automotive type uses. Connect the AC power first then connect the battery connection. Monitor the screen, the voltage should display, if connected incorrectly, ERROR will display. Battery or batteries size should be between 5Ah and 100Ah total.

WARNING - Do not cover the battery or the Battery Saver™ Charger / Maintainer. Covering either can result in a fire or damage the charger. Both the battery and the charger need to be well ventilated.

WARNING - Make sure the battery terminals are clean, if necessary use a battery post cleaner tool to remove corrosion and oxidation before connecting the charger's clip-on terminals. Bad connections can create heat, sparks, and prevent the battery from getting charged properly. Loose connections can also fall off leaving the battery uncharged.

WARNING - Remove all jewelry or other metal objects that can short out the battery and create damage or injury. Battery ACID (sulfuric) is dangerous. If it comes in contact with your eyes, clothing, or skin water and soap should be used immediately. Get medical attention.

WARNING - If the charger / maintainer is connected when engine is running, keep wires and connectors away from all movable parts like the fan, fan belt, alternator, generator, etc. When done remove charger from the engine compartment and make sure all cables are free from moving parts.

WARNING - Do not disassemble the charger / maintainer for any reason. If the charger has been dropped or if the case has been cracked send it back to us for repair or replacement. If the cord gets damage or cut do not use the charger, replacement cords are available.

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