# Battery Charger Should Be Plugged In

When the Machine Is Not In Use!

## Proper Battery Charging

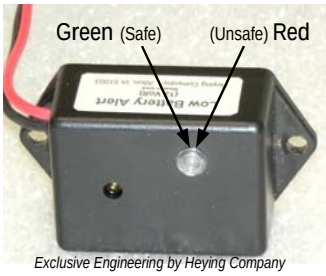
# Important

## - Read This -

## Low Battery Monitor

### Exclusive 12 Volt Low Battery Module informs you when the battery is below a safe level.

Notice inside the battery compartment our exclusive visual and audible alert module. This device monitors the voltage level of the 12 volt battery. When the voltage is above 11.5 volts the light will be green. When voltage drops below 11.5 volts the light will turn red and an intermittent audible "beeping" alert will be heard until voltage rises above 11.5 volts (by charging the battery).




*Exclusive Engineering by Heying Company*

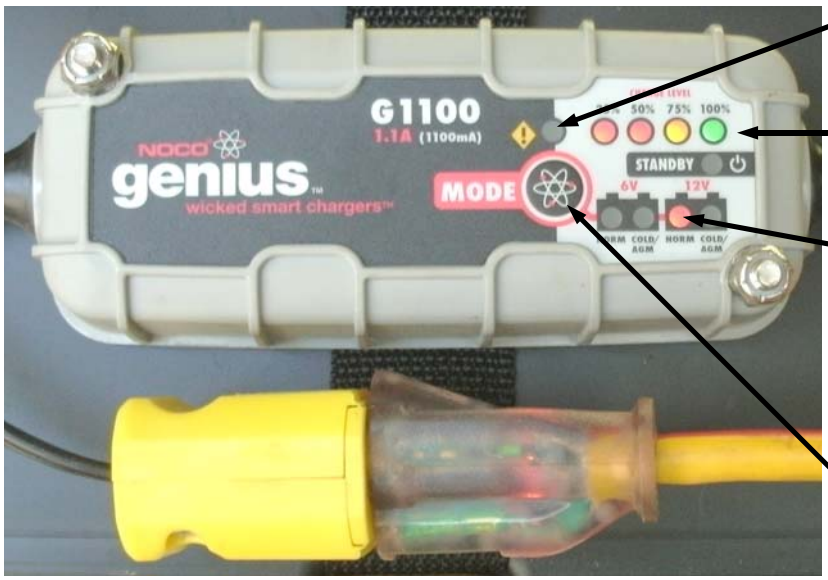
## The G1100 Trickle Charge Battery Charger is an important part of the On-Board Electric System.

The G1100 has a microprocessor inside that will not allow it to overcharge the 12 Volt Battery. This means it can be plugged in whenever the machine is not being used. However, if the charger is not used, and the battery voltage drops below 7.0 Volts, then the G1100 will show an error signal and will not charge the battery correctly.

The G1100 uses very little electricity to maintain the 12 Volt Battery.

When voltage drops below 12.8 volts it charges the battery. When the battery is fully charged it shuts off the charging.

All you need is a standard 120 volt cord plugged into the charger.




Error Light

If this entire row of lights "blinks" all at once then there is an error. See G1100 Charger owner's manual.

12V Norm charge setting should be selected by using the "Mode" button.

12V Cold can be used during long term cold storage in temps below 32 degrees (F).

Mode button

If the battery has been allowed to discharge (below 7.0 VDC) then the ERROR LED (orange) and the CHARGE (25, 50, 75 & 100) lights will blink. *Also See the G1100 (battery charger) owner's manual.*

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**KEEP BATTERY CHARGED!**
**The Battery Charger Should Be Plugged In Whenever the Machine is Not Being Used.**

Failure to keep the battery charged may:
Allow Voltage to Drop too far.
Shorten Overall Battery Life.
Allow Sulfation or Cause Damage.
Void the Warranty.

## You Can Lessen Battery Drainage

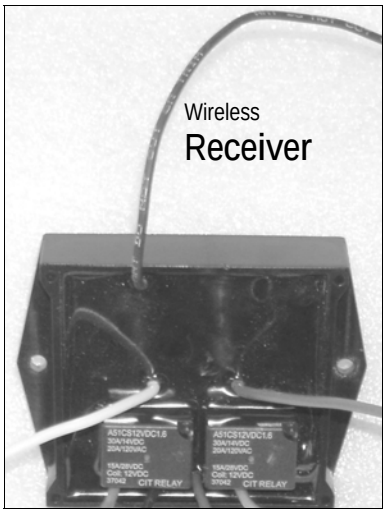
Note: There is no need to do any of the following if you simply plug in the battery charger.

If you know the machine will not be used for an extended time then battery drainage can be lessoned (but not totally eliminated) by doing one of the following:

1) Unplug the Main Fused Power Wire Fitting that connects the positive and negative battery posts to the Red & Black wires of the Wireless Receiver.

2) Remove the Fuse from the Main Fused Power Wire that connects the positive and negative battery posts to the Red & Black wires of the Wireless Receiver.

Note: A battery will still naturally lose charge over time even if you unplug wires or remove a fuse.
It is always recommended that the charger be plugged in whenever the machine is not being used.




# It's Always On!

The Wireless
**Receiver & Transmitter**
are constantly communicating even when the machine is not being used.
This speeds the depletion of the 12 Volt Battery.


# Important

## Your Battery should not be left uncharged for an extended length of time!

Damage could occur to the battery if it's left to deplete in charge over time.

For best performance PLUG the battery charger in at all times when machine is not in use. **Why?**
Allowing a 12 Volt battery to deplete may cause damage to the battery. A depleted battery invites sulfation to occur, which can cause irreparable damage. Sulfation can be difficult, and in some cases, impossible to correct.
(There is good information available on the internet about the sulfation affect on batteries).
To deter sulfation (and to always have your machine ready to use when needed) the battery charger should be plugged in when the machine is not being used. Maintaining the charge of the battery with the trickle charger will also extend the life of the battery.


Battery Voltage below 7.0 Volts: Trickle charger will not begin a normal charge!
Check battery voltage with a Voltage Tester.
If below 7.0 volts then the Trickle Charger will not begin a normal charge in the normal 12 Volt Mode Selection.

## Do Not Allow the Battery to Drop to a Low Voltage!

A battery charge of less than 7.0 Volts may result in the G1100 charger showing an error and not being able to charge the battery.

Voltage below 7.0 Volts: Following methods may help recover the battery:

1) Change the mode setting on the G1100 Trickle Charger to 6 Volt Norm and charge the battery until it reaches 100%, which will raise the volts to above 7.0 - then switch to the 12 Volt Norm Setting to finish charging the battery. *(This is mentioned in the G1100 Owner's Manual).*
*This may not work if moderate to severe sulfation has already occurred.*

2) Unplug the G1100 charger, then Charge the battery with a standard non-automatic, or "manual" battery charger - BUT do not charge above 2.0 amps. Charge for at least one day and possibly longer. Then remove the manual charger and plug in the G1100 charger, set it to 12 Volt Mode to see if it will begin a normal charge. *Also see the G1100 Owner's Manual.*

## How Does Sulfation Affect a 12 Volt Battery?

Due to chemical interactions inside a lead battery it should be maintained at or near a full charge or sulfation will occur.
*Sulfation* interferes with the ability of the battery to accept, hold and deliver a charge, and left unchecked will shorten the overall life of the battery and the battery will not perform as intended. Sulfation occurs when the battery sits for long periods of time and the electrolyte solution begins to break down. Sulfur in the solution leaches from the electrolyte, sticking to the lead plates as converted lead sulfuric crystals. These crystals coat the plates preventing them from doing their job. Compounding the problem, the electrolyte solution becomes weaker because it is lacking the sulfuric acid that has converted to crystals. This equation reduces the ability of the battery to deliver and accept a charge. Some of the sulfates enlarge to the point where they won't accept energy so they stay on the plates. Over time, these sulfates can build up until they reduce the overall efficiency of the battery.