

Save A BatteryTM

Instruction & Diagnostic Manual

• **4 Amp 50 Watt Battery Charger**

• **Battery Maintainer**

• **Alternator Generator Tester**

• **Low Voltage Alarm Monitor**

• **12V Digital Voltmeter**

• **Battery Load Tester**

• **Battery Rejuvenator**

• **Gold Modular Cable System**



Tester Alarm Monitor Voltmeter
Part # **1295**



Charger Maintainer Conditioner
Part # **2365**
2365-6
2365-24
2365-36
2365-48



Charger Tester Maintainer Alarm Monitor Conditioner Rejuvenator Voltmeter
Part # **1702**



Granite
by **D•I•G•I•T•A•L**

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Caution & Safety Instructions Page 3

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

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 - The Save A Battery™ come with 10' AC Power Cord. If possible do not use extension cords in conjunction with these charger's. If an extension cord is necessary we recommend using the Save A Battery™ Extension cord which is heavy duty enough to supply the proper voltage to our units. All other extension cords need to be a minimum of 18 AWG wire size with a length limit of 100 feet.

Page 4 **Caution & Safety Instructions**



WARNING - Use the Save A Battery™ Charger / Maintainer with 12 volt Lead Acid, VRLA, AGM, or Gel type batteries designed for automotive type uses. Other Save A Battery™ models support 6v, 24v, 36v and 48v and are marked with their voltage on the front label of the product. Do not use our products on any other voltage battery than what is stated on the front label. Connect the AC power first then connect the battery connection. Monitor the RED Fault LED on the unit and should it come on disconnect the battery immediately. Battery size should be between 15Ah and 300Ah.

WARNING - Do not cover the battery or the Save A Battery™ 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.

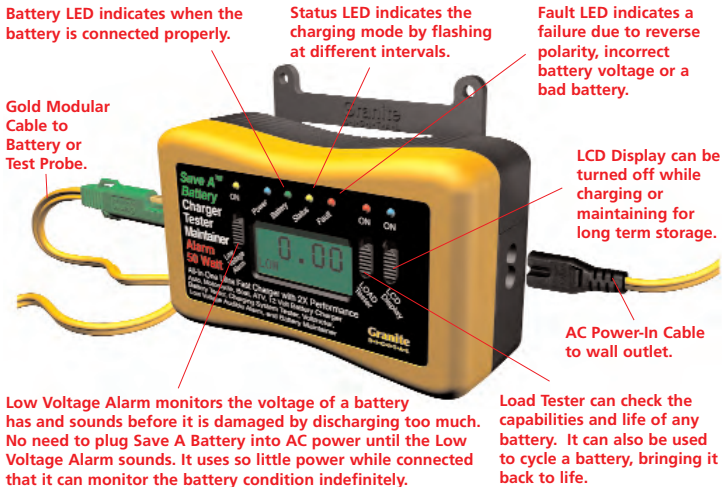
WARNING - Do not connect the charger / maintainer when engine is running. Keep wires, connectors away from all movable parts like the fan, fan belt, alternator, generator, etc. Do not connect the charger / maintainer if you are going to start the engine. Remove it from the engine compartment and make 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.



Charger Maintainer Tester Rejuvenator Alarm Monitor

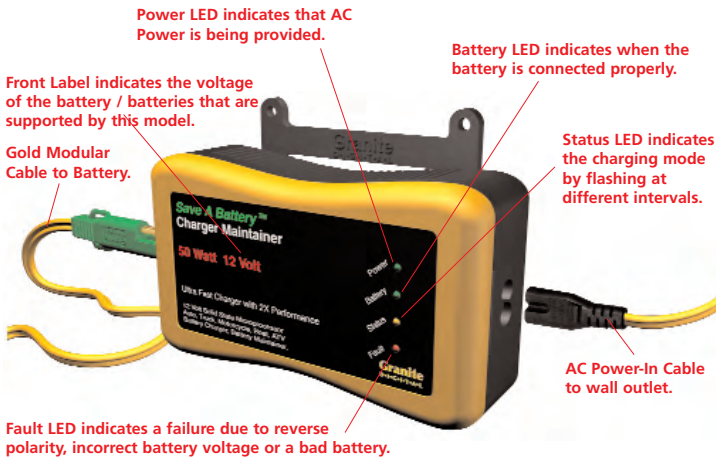
This product supports a variety of functions covered in other sections of this manual. Mounting or locating a place for the charger is the first thing to do. Please read the Warnings before using it. For basic use, first find a AC outlet to plug it into, then choose the type of connection to the battery and when connecting check that the Battery LED comes on and that the Fault LED does not. This indicates that the charger has found a battery and it thinks it can charge it. If the Fault LED comes on... check the polarity of the wires... if they are correct then the battery is not capable of being recharged. The Status LED flashes when charging is taking place and comes on solid when the charger switches into maintenance and rejuvenation mode. The Power LED indicates that AC Power is present. The LCD Display switch turns on/off the LCD display but charging continues. The Load Tester turns on/off the built-in load. This should be off unless discharging the battery or cycling of the battery is being preformed. Low Voltage Alarm monitors the battery status.



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Page 6 **Product Features and Layout****Charger Maintainer Conditioner**

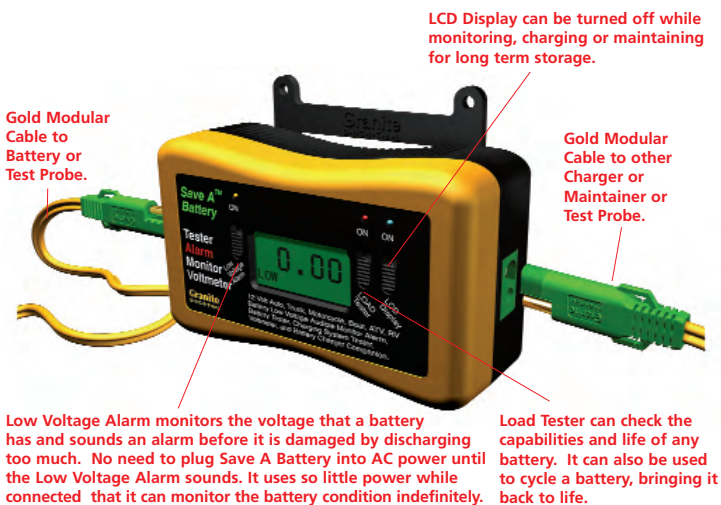
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Tester Alarm Monitor Voltmeter

The Tester can be used remotely or it can be mounted on a wall and used in conjunction with most chargers and maintainers on the market. It adds diagnostic capabilities to any companion charger or maintainer. As a stand alone Voltmeter it can be used to diagnose the electrical system of a vehicle or the charging system including the generator or alternator. It's Alarm monitoring capabilities allows it to be connected to any 12 volt battery and monitor it's condition. By simply installing this onto a battery when the time comes to recharge the battery the Alarm will go off. This happens when the voltage goes too low and before damage can occur to the battery. The Load Tester allows unit to measure the capabilities of a battery by putting a small load onto the battery plates and slowly discharging the battery. This provides a way of slowly cycling a battery from discharged to charged which can help to bring it back to life.



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Page 8 **Connecting to The Battery**

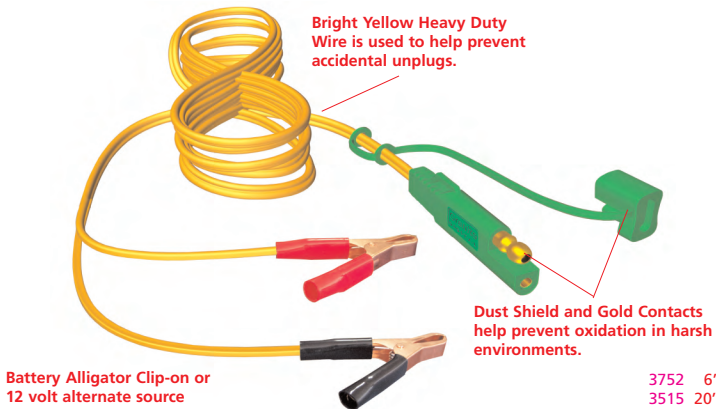


Alligator Clip-on Cable

The Alligator Clip-on Cable connects directly to the battery post. It is the most common way of connecting a battery charger to a battery for temporary use. The only negative that this clip-on cable has is the fact that it can be disconnected if the cable gets pulled our caught. It is not the best approach for long term maintenance applications. Before connecting make sure that the battery charger is plugged in and the Power LED is on. As you connect to the terminals watch the Battery and Fault LEDs on the charger or maintainer. If connected properly to a battery that is chargeable, the Battery LED will come on and the Fault LED will not. If this does not happen there is either a problem with reverse polarity, a non-chargeable battery, or a short circuit. Disconnect the alligator chip-ons immediately.

We offer two lengths, both 6' and 20', additionally you can run up to 30' total cable length on any of our systems so our extension cables can be used to make the cable run longer if need be.

Make sure that battery terminals are clean and that the clip-on connectors are making good contact and are firmly attached to the battery posts.



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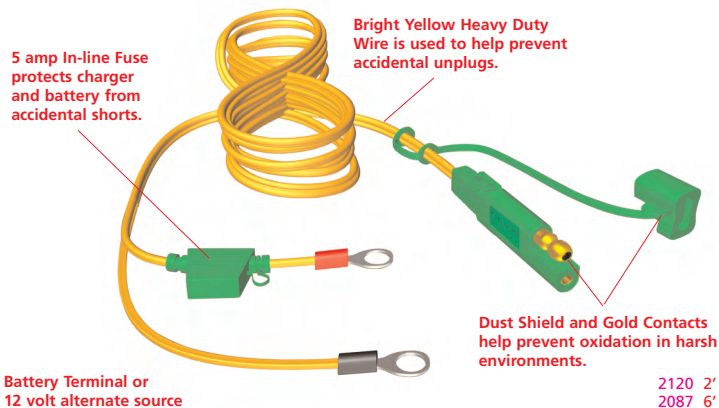


Battery Terminal Lug Cable

The Battery Terminal Lug Cable connects directly to the battery post using the existing nut and bolt that holds the terminal in place. This is a permanent connection and should be done with care. Always remove the ground terminal first. Leave this terminal disconnected as you work with the positive terminal. After the Terminal Lug has been installed on the positive post then connect the negative. After connecting the wires turn on the battery charger and monitor that the Power LED comes on. Next, watch the Battery and Fault LEDs on the charger or maintainer. If connected properly to a battery that is chargeable, the Battery LED will come on and the Fault LED will not. If this does not happen there is either a problem with reverse polarity, a non-chargeable battery, or a short circuit. Disconnect the charger and inspect the cable immediately.

We offer two lengths, both 2' and 6', additionally you can run up to 30' total cable length on any of our systems so our extension cables can be used to make the cable run longer if need be.

The in-line 5 amp fuse is designed to protect the charger and battery from accidental short circuits.



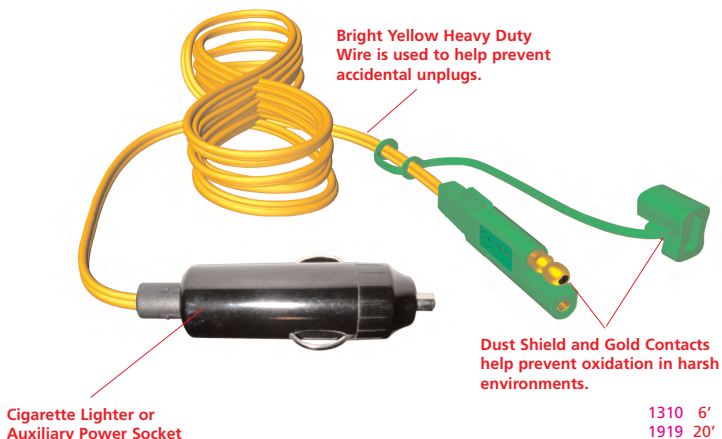
Page 10 *Connecting to The Battery*



Cigarette Lighter or Auxiliary Power Cable

The Cigarette Lighter or Auxiliary Power Cable connects to a vehicles built-in cigarette lighter connection or auxiliary input connector. Most of these connectors are on all the time and by simply plugging in our cable the battery will be charged and maintained. To test, first plug the charger or maintainer into AC power. Turn off the key then look at the Battery LED on the charger or maintainer and the LCD display on the Tester. These should all stay on when the key is turned off. Next, watch the Battery and Fault LEDs on the charger or maintainer, if connected properly to a battery that is chargeable, the Battery LED will come on and the Fault LED will not. If this does not happen there is either a problem with reverse polarity, a non-chargeable battery, or a short circuit. Disconnect the charger and inspect the cable immediately.

We offer two lengths, both 6' and 20', additionally you can run up to 30' total cable length on any of our systems so our extension cables can be used to make the cable run longer if need be.



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The different types & states of battery charge

This is a simple explanation of how our chargers and maintainers work. Both devices use a new technology called Pulse Charging. This type of charging device is microprocessor controlled and offers features and benefits that most other types of chargers do not. Because of the advanced circuitry it is now possible to plug a battery in, charge it, maintain it, and actually rejuvenate it so that the next time the battery is used it is in better shape than before it was plugged in. This extends the life of batteries and keeps them 100% charged and ready to go at any time.

The way our units work starts when the charger is plugged in. The microprocessor immediately checks for a good battery before it turns itself on. This eliminates the problem with sparks, short circuits and possible fire. If our unit sees the correct polarity, correct battery type, correct battery voltage, and a battery it can charge it will go into it's first stage, Bulk Charge Mode. This mode does 80% of the charging and with our 50 watt output it performs twice as efficiently as many other charger and much faster than most of the maintainers on the market. Once the battery reaches it's 80% level the charger changes into Absorption Mode. This is where it slows down the charging rate so as not to overcharge the battery with a minimum of electrolyte loss or battery damage due to overcharging. It is virtually impossible to overcharge with this type of system. Once fully charged we switch into Maintenance Mode which feeds the battery just enough to keep it fully charged. The charger stays in this mode most of the time but periodically switches into pulse mode where it basically cleans the battery plates, and de-stratifies the electrolyte helping to equalizing the cells. This process reduces sulfurization which improves battery life.

Additionally, our charger with the testing circuitry and load tester allows the battery to be cycled between charge and discharged states. Cycling improves the overall condition of a battery that is not used for a prolonged period of time. The slow discharge replicates the conditions of standard usage and then allows the battery to be recharged and this cycling improves and extends the life of batteries that are not used regularly.

Page 12 *Charging a Battery*



How to rejuvenate a weak battery

Many batteries that have been neglected and are no longer strong enough to start a vehicle can be brought back to life. If our charger / maintainer sees the battery (Battery LED comes on) and the Fault LED does not come on then there is a good chance that a weak battery can be brought back to a usable state. If the battery is not maintenance free check the level of the electrolyte before charging. Use distilled water to replenish the level and take care not to overfill the battery. If a hydrometer is available check the cells. Sulfuric Acid is available at auto parts stores when the tested cells read weak. Caution should be taken and read all the instructions before working with Sulfuric Acid... do not get it on your skin or near your eyes! This stuff is dangerous and should only be used in a well ventilated location.

Both of our charging systems have the ability to help condition a battery and if left on long enough (1 - 2 weeks) there should be a marked improvement in the condition of the battery. Our Tester Charger can additionally be used to cycle a battery between charge and discharge improving on the rejuvenation ability and speeding up the recovery process. To cycle a battery follow the procedure listed below:

1 - Connect the Tester / Charger to the battery and read the voltage of the battery. If it reads below 11 volts plug the battery into the AC outlet and let it begin charging.

2 - When the Status LED goes on solid, indicating that the battery appears to be charged, disconnect the AC power and switch on the Load Tester and the Low Voltage Alarm switches.

3 - When the Alarm sounds, this takes a long time on a good battery, (days or weeks), but not long on a weak battery, (hours) then turn off the Load Tester Switch, Alarm Switch and connect the AC power again. Wait for the Status LED to go on solid and repeat the procedure as needed until the battery takes longer and longer to discharge when the Load Tester is on. On average 3 - 4 cycles will improve the performance of recoverable batteries. Some batteries are simply not recoverable and it will be very obvious because the Alarm will come on immediately or the Status LED will never go on solid.

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How to keep a battery in good health

The goal of this section is to detail what damages and shortens the life of batteries. In other words what needs to be done to protect your investment and keep the battery from premature failure. The obvious things that shorten a batteries life include harsh environment, high temperature, freezing, fire, impacts, dropping, crushing, and submerging in liquid. Additionally there are a variety of other causes for battery failure.

Things that damage batteries:

1 - Self discharge... a battery will discharge all by itself even if it's not used. If it attached to a vehicle all the electronics and equipment will discharge the battery at an even faster rate. All the new electronics and devices on newer vehicles draws current and if left for even a short period of time 1 -2 weeks the battery can become discharged. It is important to use a charger / maintainer to counter act this effect.

Solution: Keep the battery on the charger / maintainer as much as possible.

2 - Overcharging... many of the charging devices on the market will overcharge a battery. This will allow "gassing" and "passivation" to occur. Overcharging can also occur in the vehicle if the regulator is operating improperly. The gasses released are both oxygen and hydrogen which is very explosive.

Solution: Use our charger / maintainer only. Check the output of your generator / regulator using our tester to determine if the output is within the limits of the battery capabilities. There should be no more than 14.4 volts coming out of the regulator when the engine is at higher rpms.

3 - Undercharging... This occurs when the battery is never allowed to get to a full charge state. If infrequent use of a vehicle occurs or if there is a large drain on the battery... big stereo... lots of lights... etc. then the battery will never get fully charged.

Solution: Keep the battery on the charger / maintainer as much as possible.

Page 14 *Monitoring a Battery*



How the Alarm Monitoring System works

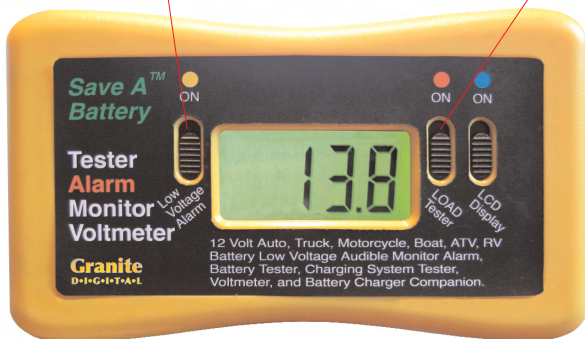
Both the Charger / Tester and the Tester models provide low voltage battery monitoring capabilities. When the monitor is turned on an audible alarm will sound if the battery goes down below 11 volts. This feature can be used in a variety of ways.

First off, these units can simply be connected to a battery to monitor the batteries state of charge. The tester circuit uses virtually no power and can be connected to a battery indefinitely. This guarantees that a battery will not get damaged because it was left unattended for a long period of time.

Secondly, the Alarm Monitor can be used in conjunction with the Load Tester allowing the battery to be cycled and conditioned. By turning on the Load Tester the battery will slowly discharge. When the Alarm Monitor sounds you plug the charger into AC and recharge it. The Alarm Monitor will not allow the battery to get damaged between the charging and discharging procedure. This is a simple way to use the Load Tester feature to improve the performance of a battery.

Low Voltage Alarm monitors the voltage of a battery has and sounds before it is damaged by discharging too much. No need to plug Save A Battery into AC power until the Low Voltage Alarm sounds. It uses so little power while connected that it can monitor the battery condition indefinitely.

Load Tester can check the capabilities and life of any battery. It can also be used to cycle a battery, bringing it back to life.



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How to figure out if the battery is good or bad

Many good batteries are replaced when they don't have to be. Figuring out if the battery is good or bad can be done using or Load Tester. Basically when a battery has been left for a long period without a charge it appears to not be able to be recharged. This may not be the case however, it may be able to be brought back to life if the right steps are followed.

1 - Attach the Charger / Tester and see if there is any life at all in the battery. A battery that read 10 volts or more is likely to be able to be recharged and rejuvenated. If the battery is below 10 volts the likely hood diminishes as the voltage goes down. A battery reading 0 volts will probably not recharge... but should still be tried.

2 - Plug in the AC and leave the charger to do its work. The longer the better... this can take as little as a few hours to as much as a week depending on the size and state of the battery. Monitor the LCD which should read over 13.4 volts when the battery is near full charge.

3 - Once the Status LED comes on solid, unplug the charger and turn on the Load Switch and Low Voltage Alarm. A weak battery will go down in voltage very quickly.... a good battery will last days before the alarm sounds. Repeat these steps until the length of time between alarms increases to a long period of time. This indicates that the battery capacity has increased enough to be used again.

4 - With the AC power disconnected a good battery will read approximately 12.6 volts and be able to hold this voltage for quite a while. Smaller batteries hold their voltage less than large batteries. The bigger the battery, the longer the voltage will stay up.

State of Charge Voltage

100%	12.7
75%	12.4
50%	12.2
25%	12.0
5%	11.8
0%	11.6

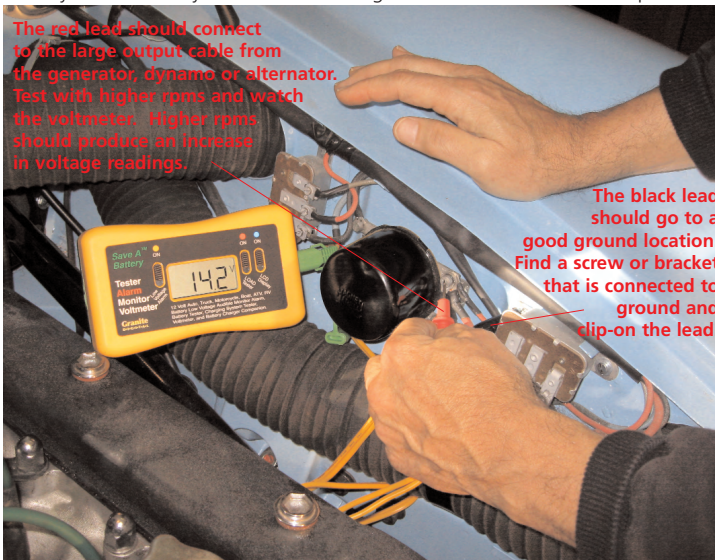


Page 16 *Checking the Charging System*



How to connect to an alternator or generator

We have to generalize a bit on this topic because every vehicle is different. Basically, generator and dynamos have a separate regulator that takes the input from them and regulates the voltage down to an acceptable level and current so the battery can be recharged without overcharging. Finding the heavy lead out of the generator or dynamo leads you to the regulator. This is usually an easier connection to get at, so if possible, check the voltage there. The output with the engine running at a higher rpm should not exceed 15 volts... if it does the regulator is not working correctly. Should there be no difference in voltage with the engine running or not then the generator or regulator is not working. Check with the manufacturer for testing procedures. Alternators usually have the regulator built-in so go directly to the battery to check the voltage... it should increase with rpms.



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Using the Voltmeter for Testing Page 17

Testing the 12 volt electrical system

Both our Charger / Tester and Tester / Monitor can be fitted with Test Probe Leads to make them a stand alone Voltmeter. This gives the ability to use these units for testing the electrical systems in a vehicle. By connecting the black ground lead to a grounded wire, screw, or bracket and using the red positive test probe to test circuits the electrical system can be diagnosed. This is especially useful if you are out on the road and have an electrical or charging problem and don't know what's at fault. The tester gets its power from the source so you quickly know if voltage is present or not. Testing fuses is also very easy with this type tester. No internal batteries are necessary.

The voltmeter function can also be used as a monitoring device by permanently installed the Tester in an RV, boat, truck, or other vehicle. This allows for the continuous monitoring of the battery and charging voltages. Very useful if the batteries in the vehicle is being used to power electrical devices and you want to make sure they don't get too low or go dead.



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Page 18 *Battery Basics and Tutorial*



How a battery is constructed and what makes it work

Lead Acid Batteries have been around for a long time. The technology is old but still very effective and affordable. Other technologies like Ni-Cad or Li-Ion offer better performance but at a much higher price. Simply put a battery stores energy and makes that energy available to you when need it. This energy however has to be replenished and maintained... or when you need it... it won't be there. With all the current demands on batteries, all the stereos, alarms, electronic gadgets, etc. battery life will be shortened if not monitored and maintained properly. Understanding what's inside will make thing a little clearer as to what they need so that they need to live a long time.

What's inside? If you were to open up a Lead Acid battery you would find a large amount of lead plates (and other materials). These plates are divided in cells, for a 12 volt battery you will find 6 cells. Each cell produces approximately 2 volts and are connected together in series, so $2 \times 6 = 12$. These plates and cells are surrounded by a bath of sulfuric acid and water. This solution is called the electrolyte and on some batteries you can actually remove the cover and see the liquid. Newer maintenance free batteries do not allow inspection of the electrolyte. This electrolyte causes a chemical reaction which produces electrons and that is what makes the battery work. (Ok... this is a very simplified answer but actual details would be a book all to itself). There are a variety of Lead Acid designs that differ a little, they include Wet Cell, Gel Cell, and Absorbed Glass Mat (AGM). All of these technologies are similar but offer additional feature and benefits. The most common is the generic Lead Acid which is offered in two forms. The first is known as a Cranking Battery and the second is a Deep Cycle Battery. Basically the Cranking Battery is used in most vehicles and is designed to provide a large amount of energy for starting and are usually designed with more plates. Deep Cycle batteries do not provide this high energy level but rather they are designed for long term energy needs and can live with being deeply discharged and recharged many times. This type of battery is found in RV's, Boats, Golf Carts, etc. where a smaller extended load is being used.

A fully charged battery that is checked with our tester should read 12.6 to 12.9 volts. It should also be noted that there is very little difference in voltage between a fully charged battery and a dead battery which is about

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Battery Basics and Tutorial Page 19

11 volts. It is also important to note that a battery that goes below 12.4 volts is already starting the sulfation process and its performance and longevity will begin to deteriorate. That's why it's so important to keep a charger connected when not in use... to keep this from happening.

Batteries are rated by the amount of energy they can hold and their ability to produce current at a determined rate. The four ratings are **AH**, **RC**, **CA**, and **CCA**.

AH... stands for Amp Hour and represents how many amps can be removed from the battery in how many hours. In other words a 20 AH battery on a motorcycle will provide 1 amp of power for 20 hours. The larger the AH the larger and higher the capacity of the battery.

RC... stands for Reserve Capacity and isn't as commonly used as AH. It is the amount of minutes a battery will last with a 25 amp load and not go below 10.5 volts (fully discharged).

CA... stands for Cranking Amps, this is rated measured at 32° F. It is the number of amps that can be delivered for 30 seconds while the battery stays above 7 volts. It's an indication of what a battery can put out quickly when trying to start a vehicle.

CCA... stands for Cold Cranking Amps, and is similar to CA but at a lower temperature. The rating is done at 0° F, for 30 seconds and again until the battery gets to 7 volts.

Factors that negatively effect battery life are listed below. Preventing these from happening will ensure additional longevity to your battery.

- Don't leave a battery uncharged for extended periods of time.
- Never add tap water to a battery use distilled water only.
- Try and keep stored batteries below 110° F.
- Don't overcharge or undercharge a battery.
- Never short the battery lead together... very dangerous, possible explosion.
- Keep the battery terminals clean and tight so that current flows properly.
- When working with batteries remove jewelry, have good ventilation, remember that sulfuric acid is very dangerous, keep off skin and away from eyes.

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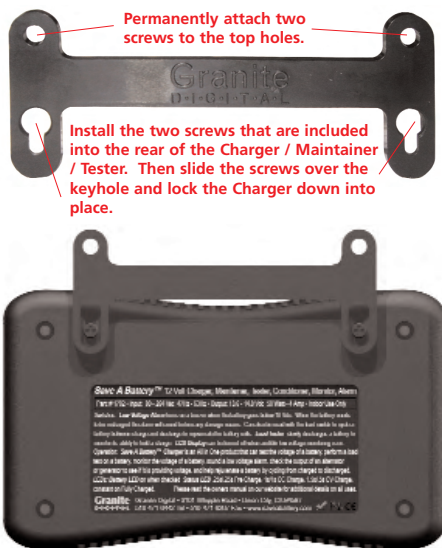
Page 20 *Mounting the Charger*



Wall mounting vs. vehicle mounting

These units are designed to be as versatile as possible and that includes how they mount. They can be placed on a table, or on a car seat, mounted on a wall or installed in a vehicle. The Removable Mounting Bracket System is unique in that it allows the Charger / Maintainer / Tester to be easily removed from the bracket and used remotely. So if you attach the brackets to a wall and then need the Charger at another location, simply unplug the cables and slide the Charger off of the bracket.

For mounting to a wall there are two holes at the top of the bracket which allow it to be screwed onto any surface. Since the Chargers are small and don't weigh much, small screws are all that is needed for support. The included two screws attach to the underside of the case and should have a gap larger enough to allow the Charger to slide onto the bracket slots.



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Specifications Page 21

Charger / Maintainer / Tester

- INPUT CHARACTERISTICS :

AC INPUT 90 - 264 V AC

FREQUENCY 47 HZ - 63 HZ

INPUT CURRENT 1.5 AMP

HOLD UP TIME 8 MSEC

- OUTPUT CHARACTERISTICS :

13.6-14.8 VDC

4.0 AMPS - 50 WATTS

RIPPLE & NOISE 120 mV or less

- PROTECTION :

INPUT FUSED 2AMP

(OC) OVER CURRENT

(OV) OVER VOLTAGE

(SC) SHORT CIRCUIT

(RP) REVERSE POLARITY

- ENVIRONMENT :

0 C - 40 C 20%-80% Humidity

- LIFE & WARRANTY :

10,000 ON / OFF Cycles / 50,000 PWR On

1 Year LIMITED LIABILITY

- WEIGHT AND SIZE :

2.2 LBS - 5.75" x 2.37" x 2.00"

Charger / Maintainer

- INPUT CHARACTERISTICS :

AC INPUT 90 - 264 V AC

FREQUENCY 47 HZ - 63 HZ

INPUT CURRENT 1.5 AMP

HOLD UP TIME 8 MSEC

- OUTPUT CHARACTERISTICS

6V Model - 6.8 - 7.4 VDC

12V Model - 13.6-14.8 VDC

24V Model - 27.2-29.2 VDC

36V Model - 40.8-43.5 VDC

48V Model - 54.4-58.0 VDC

50 WATTS

RIPPLE & NOISE 120 mV or less

- PROTECTION :

INPUT FUSED 2AMP

(OC) OVER CURRENT

(OV) OVER VOLTAGE

(SC) SHORT CIRCUIT

(RP) REVERSE POLARITY

- ENVIRONMENT :

0 C - 40 C 20%-80% Humidity

- LIFE & WARRANTY :

10,000 ON / OFF Cycles / 50,000 PWR On

1 Year LIMITED LIABILITY

- WEIGHT AND SIZE :

1.8 LBS - 5.75" x 2.37" x 1.67"

Tester / Alarm Monitor

- INPUT CHARACTERISTICS :

DC INPUT 7 - 16 V DC

.25 to 12 AMPS Maximum

- OUTPUT CHARACTERISTICS :

DC OUTPUT 7 - 16 V DC

- LOAD TESTER :

100 ohm CONTINUOUS Operation

RIPPLE & NOISE 120 mV or less

- VOLTMETER:

12 VOLT DC

- PROTECTION :

(SC) SHORT CIRCUIT

(RP) REVERSE POLARITY

- ENVIRONMENT :

0 C - 40 C 20%-80% Humidity

- LIFE & WARRANTY :

10,000 ON / OFF Cycles / 50,000 PWR On

1 Year LIMITED LIABILITY

- WEIGHT AND SIZE :

1 LBS - 5.75" x 2.37" x 1.37"

Page 22 **Warranty and Service****1 Year Limited Liability**

Granite Digital warrants your Save A Battery™ System against any defects in material and workmanship, under normal use, for a period of one year following its date of purchase. In the event this product is found to be defective within the warranty period, Granite Digital will, at its option, repair or replace the defective unit.

This warranty is void: a) if the unit is operated or stored under abnormal use and maintenance conditions; b) if the unit is repaired, modified or altered, unless such repair, modification or alteration is expressly authorized in writing by Granite Digital; c) if the unit is subjected to abuse, neglect, lightning strike, electrical fault, improper packaging, or accident; d) if the unit is installed improperly.

Granite Digital will not, under any circumstances, be liable for direct, special, or consequential damages such as, but not limited to, damage or loss of property or equipment, loss of profits or revenues, cost of replacement goods, or expense or inconvenience caused by service interruptions. Under no circumstances will any person be entitled to any sum greater than the purchase price paid for the unit.

To obtain warranty service, you must contact Granite Digital's Technical Support Department by calling 510-471-6442. They will attempt to diagnose and correct your problem by phone. If the unit does not function properly, they will issue a Return Material Authorization (RMA) number. You will be asked to furnish proof of purchase to confirm that the unit is still under warranty.

All products returned to Granite Digital must be securely packaged and shipped postage prepaid. All the product returns must be authorized in advance by Granite Digital's Technical Support Department. Authorization is confirmed by issuance of the RMA number, which must be written prominently on the outside of the box in which the defective unit is returned to Granite Digital.

Granite Digital • 3101 Whipple Rd. • Union City, Ca. 94587 • www.saveabattery.com



Cables and Accessories

The options listed below are available at our on-line store.



Extension Cable, Gold Connectors,
Dust Guard, Tie-down Loops

Part # **2307** 10' Retail \$**15.00**
2050 20' Retail \$**25.00**



Battery Alligator Clip-On Cable,
Gold Connectors, Dust Guard, Tie-down Loops

Part # **3752** 6' Retail \$**10.00**
3515 20' Retail \$**20.00**



Battery Terminal Lug Cable,
Gold Connectors, Dust Guard, Tie-down Loops

Part # **2120** 2' Retail \$**10.00**
2087 6' Retail \$**15.00**



Cigarette Lighter Cable,
Gold Connectors, Dust Guard, Tie-down Loops

Part # **1310** 6' Retail \$**10.00**
1919 20' Retail \$**20.00**



Voltmeter Probe Cable, Gold Connectors,
Dust Guard, Tie-down Loops

Part # **6781** 3' Retail \$**10.00**



AC Power Cord with 4 Outputs,
allows 4 chargers to be powered together

Part # **1513** 12' Retail \$**20.00**



AC Power Cord,
with bright yellow PVC jacket

Part # **4980** 10' Retail \$**10.00**



Padded Carrying Case

Part # **2360** Retail \$**9.95**



Mounting Bracket and attaching screws

Part # **6140** Retail \$**3.00**