



Fully Automatic Battery Charger and Maintainer



Auto Meter Products Inc.

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Battery Extender Owner's Manual

Models: BEX-1500, BEX-3000, BEX-5000

Warning: Failure to follow instructions may result in damage or explosion. **READ ENTIRE MANUAL BEFORE USE.**



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LIMITED WARRANTY



36 MONTHS FROM DATE OF PURCHASE

The manufacturer warrants to the consumer that this product will be free from defects in material or workmanship for a period of thirty-six (36) months from the date of original purchase.

Products that fail within this 36 month warranty period will be repaired or replaced at the manufacturer's option to the consumer, when determined by the manufacturer that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of parts and the necessary labor by the manufacturer to effect the repair or replacement of the product. In no event shall the manufacturer be responsible for special, incidental or consequential damages or costs incurred due to the failure of this product.

Improper use, accident, water damage, abuse, unauthorized repairs or alterations voids this warranty. The manufacturer disclaims any liability or consequential damages due to breach of any written or implied warranty on its test equipment.

WARRANTY AND SERVICE INFORMATION

Warranty claims to the manufacturer's service department must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original purchaser and is non-transferable. Shipper damage incurred during return shipments is not covered under this warranty. It is the responsibility of the shipper (the customer returning the Test Equipment) to package the tester properly to prevent any damage during return shipment. Repair costs for such damages will be charged back to shipper (customer returning the Test Equipment). Protect the product by shipping in original carton or add plenty of over-pack cushioning such as crumpled up newspaper.

CONGRATULATIONS!



You have purchased an Auto Meter Battery Extender. This is a fully automatic battery charger and battery maintainer. It is designed to work on all types of lead acid batteries, including Standard Flooded, AGM, and Gel Cell. If you should have any questions about your Extender or charging procedures, please see the back cover for contact information.

SPECIFICATIONS

Model Number	BEX-1500	BEX-3000	BEX-5000
Charger Type	Fully Automatic	Fully Automatic	Fully Automatic
Battery Voltage	12 V	12 V	6 V, 8 V, 12 V & 16 V
Charge Current (Max.)	1.5 A	3.0 A	5.0 A (3.0 A in 16 V mode)
Battery Compatibility	Flooded, AGM, Gel	Flooded, AGM, Gel	Flooded, AGM, Gel
Charging Modes (Desulfation, Bulk, Absorption, and Maintain)	Yes	Yes	Yes
Fully Automatic / Overcharge Protection	Yes	Yes	Yes
Reverse Polarity Protection	Yes	Yes	Yes
Spark Free Connection	Yes	Yes	Yes
Ingress Protection	IP65 Water Resistant	IP65 Water Resistant	IP65 Water Resistant
LED Indicators	3	6	10
AC Input	100 - 240V AC / 50 - 60Hz 0.4A	108 -132V AC / 60Hz 0.8A	108 -132V AC / 60Hz 2.0A
Ambient Temperature	-4 °F to +122 °F	-4 °F to +122 °F	-4 °F to +122 °F
Size	5.2" L x 3.2" W x 2.0" H	6.7" L x 3.2" W x 2.2" H	7.9" L x 3.9" W x 2.4" H
Weight	1.0 lbs	1.4 lbs	2.0 lbs

SAFETY

Use the BEX-1500 and BEX-3000 on 12 Volt batteries only.

NOTE: It is normal for case to be hot to the touch in charge mode. Thermal protective circuitry provides for safe, unattended operation.

WARNING: Lead acid batteries are dangerous! During use and charging they may generate **EXPLOSIVE** hydrogen gas. This means **YOU MUST** carefully read and follow these instructions before each use of your Battery Extender.



- Before operating your Battery Extender, read and follow all instructions, cautions, procedures, and warnings shown or printed on:
 - This instruction manual
 - Your Battery Extender
 - The battery to be charged or maintained
 - The Vehicle or unit a battery is used or installed in
 Consult Auto Meter if you need more information.
- Use the Battery Extender only on **LEAD ACID BATTERIES** (Flooded, AGM, Gel Cell) that match the voltage printed on the front label of the Battery Extender. **DO NOT** attempt use on other types of batteries (Dry Cell, Nickel Cadmium, Nickel Metal Hydride, Lithium Ion, etc.) commonly found in small home appliances. This may cause the batteries to burst, resulting in damage or injury to people and property.
- DO NOT** use your Battery Extender on batteries that are in use. Use it only on batteries or vehicles that are in storage.
- DO NOT** use attachments with your Battery Extender that are not recommended or sold by Auto Meter. Non-recommended attachments may result in injury, electric shock, or fire and voids the warranty.
- To connect or disconnect the Battery Extender from a battery always use the square two pin connector. When disconnecting from the battery or unplugging from the wall, use the plug to pull on. Never pull the cord, it may damage the plug or the cord.
- Place the power cords in a location where they will not be stepped on, tripped over, or subjected to stress or abuse of any kind.
- Never operate your Battery Extender if any portion of its housing, cords, or attachments appear to be damaged in any way. Have it inspected and serviced by Auto Meter.
- If your Battery Extender has been dropped, received a sharp blow, or abused in any way, have it inspected and repaired by Auto Meter if necessary.
- Use of an extension cord is not recommended. An inadequate extension cord could result in fire or electric shock. If you must use one, make sure the following conditions are met:
 - Use a three prong grounded extension cord.
 - The cord ends are wired correctly and in good condition.
 - The cord itself is in good condition.
 - Insure that all pins on the extension cord are identical in size, shape and number as the plug on the Battery Extender.
 - Make sure the extension cord is large enough to carry the AC amperage rating of your Battery Extender. See chart below:

Length of cord (feet):	25	50	100	150
AWG size of cord:	18	18	18	16

WHAT TO EXPECT

OVERLOAD AND PROTECTIVE DEVICES

The Battery Extender is equipped with two overload protectors.

In the event of minor overloads, power will be reduced to a safe level to allow continued use in maintenance mode only. The second protector will activate in the event of major overload and completely turn the unit off. The second protector is temporary and will reset automatically in a short amount of time.



MAINTENANCE AND CLEANING

Always keep your Battery Extender clean and looking like new! Unplug the Battery Extender, and use a slightly dampened cloth to clean the housing and lead sets. Use no solvents or soaps.

IMPORTANT!

A clean battery and battery terminals insure proper operation of the Battery Extender and the vehicle charging system. Dirty terminals may put a constant slow drain on the battery. If your battery and terminals have a white or blueish crust on them, your charging system may be having problems. Have the vehicle electrical system checked by a qualified automotive service technician.

MOUNTING

Mounting holes are provided on both ends of the unit. It is recommended that you mount the Battery Extender to a wall or other secure surface. This will keep it out of the way and prevent damage due to accidents.

WHAT TO EXPECT

MAXIMIZES BATTERY LIFE

The Battery Extender is designed to maximize the life of a serviceable lead acid battery. A serviceable battery is a battery that is not defective or damaged. This means a vehicle battery will not give you the annual dead battery surprise when it comes out of storage.

PREVENTS PREMATURE BATTERY FAILURE

The Battery Extender keeps your battery at full charge on a continuous basis. Batteries not kept at a full charge become sulfated, which is the main reason for premature battery failure.

MAINTAINS STORED BATTERIES AT FULL CHARGE

The Battery Extender should be used to charge and maintain all starting and deep cycle batteries in storage or that don't receive daily use. Some examples are: automobiles, boats, race cars, campers, RV's, 4 wheelers, motorcycles, personal water craft, farm machinery (tractors, combines, etc.), heavy equipment, rental equipment (trucks, compressors, portable signs, bulldozers, stationary pumps, etc.), and any equipment that receives occasional use or is in storage. The Battery Extender is also fully compatible with Standard, AGM, and Gel Cell batteries. (DO NOT USE WITH DRY CELL, NICKLE CADMIUM, NICKLE METAL HYDRIDE, LITHIUM ION OR SIMILAR BATTERIES. Refer to the enclosed instructions.)

NOTE: Never use the Battery Extender in a boat or water craft. Always remove the battery from the boat or water craft and use the Battery Extender on shore.

VALUABLE PROTECTION

The Battery Extender provides full off-season protection for seasonally used batteries. It keeps your stored batteries ready for their next use. This means a serviceable battery will not give the annual dead battery surprise when it comes out of storage!

PROTECTION FROM COMPUTER DRAIN

Cars are often equipped with computers that require continuous battery power to maintain data in memory. The Battery Extender's superior circuitry automatically delivers the correct charge to compensate.

LONG LASTING PERFORMANCE

The Battery Extender has been designed and manufactured to provide superior performance from the High Tech housing to the last internal detail. Quality is built in and assured with circuit burn-in, computerized testing and inspection. Care in handling and occasional cleaning of the leads and housing will help keep it looking like new, and give you many years of satisfaction.



SAFETY

- NEVER** open the housing of the Battery Extender or attempt to repair it yourself. It must be repaired by Auto Meter. There are no user serviceable parts inside. Any tampering or incorrect assembly may result in fire or electric shock and voids the warranty.
- To prevent injury during cleaning or maintenance, always:
 - Unplug the Battery Extender from the wall outlet first (using the plug).
 - Disconnect the Battery Extender from the battery.
- NEVER** attempt to charge a frozen battery. Allow the battery to return to room temperature before connection.
- ALWAYS** use the Battery Extender in an open and well ventilated area. The area should be dry and free of trash, debris, and combustibles.
- WARNING:** Explosive Hydrogen gas may be present around batteries. **DO NOT** use the Battery Extender in direct sun light or adverse weather conditions such as rain or snow.
- Never place your Battery Extender above or below the battery. Locate it as far to the side of the battery as the leads permit. This prevents acid drips and spills from landing on the Battery Extender during battery filling or specific gravity testing. This also prevents battery fumes from reaching the Battery Extender.
- DO NOT** place a battery on the Battery Extender.
- DO NOT** touch the charging clips together when the Battery Extender is plugged in.
- DO NOT** attempt to open or modify the unit. **DO NOT** cover the unit.
- NEVER** use the Battery Extender in or on any boat or water craft. You must remove the battery from the boat or water craft and charge on dry land. **DO NOT** use the Battery Extender where it will be exposed to moisture or inclement weather, or around combustibles like trash, flammable liquids and vapors.

WARNING!

FOR HYBRID VEHICLES

DO NOT charge the starting battery while it is in the vehicle

DO NOT remove, service or test the hybrid battery pack under any circumstances.

Remove the 12 volt starting battery from the vehicle prior to charging.

PERSONAL SAFETY PRECAUTIONS

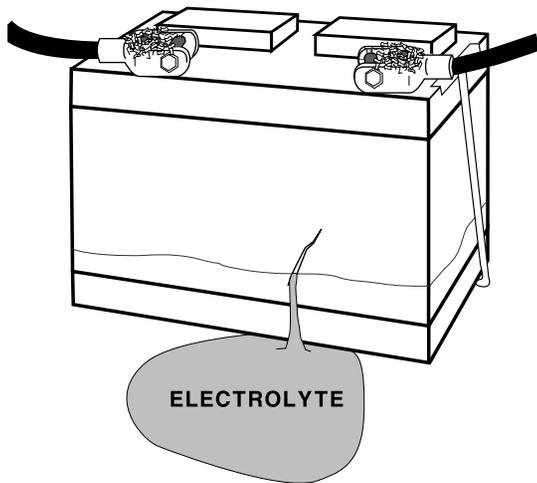
- Wear protective goggles or a full face shield.
- Wear protective clothing. Leave no exposed skin.
- Have plenty of fresh water and hand soap available for use if acid should contact your eyes, skin or clothing.
- Have someone close by in the event you need emergency assistance when working with a battery.
- Remove all metal objects (pens, tools, jewelry etc.) from your body. These items can create a direct short between the battery terminals and can cause serious burns.
- DO NOT** carry tools or metal objects in the vicinity of a battery. These items can fall on the battery terminals creating a high current short. This could result in a fire, burns, explosion, etc.
- DO NOT** touch your face, eyes or other body parts without first washing your hands. Battery acid can burn and irritate eye and skin tissue.
- DO NOT** allow any source of ignition in the area of a battery. Keep all flame and spark producing devices out of the area and **NEVER SMOKE** near a battery.
- Use the one hand rule! Keep one hand in your pocket whenever you make an electrical connection. This reduces the risk of electric shock to the user.
- DO NOT** attempt to open or modify the unit.



INSPECTION

VISUAL CHECK

Carefully perform the following before attempting any battery charging.

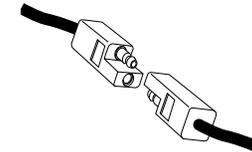
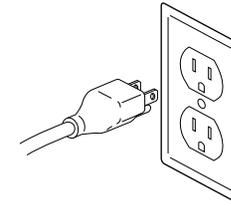


■ **Important Note:** A damaged battery must be replaced before proceeding.

OPERATING INSTRUCTIONS

PROPER DISCONNECT PROCEDURE

1. Always disconnect the AC extension cord first (if used). Then unplug the AC power cord of the Battery Extender.
2. a) Disconnect the square two pin output connector for the ring terminal lead set as shown.
b) For the spring clip lead set, always disconnect the BLACK (-) spring clip first and the RED (+) spring clip second.
3. If you accidentally disconnect the Battery Extender from the battery while it is in operation, it will shut itself off in approximately one second. You must complete the disconnection procedure after this happens by performing steps 1 and 2.



OPERATING INSTRUCTIONS

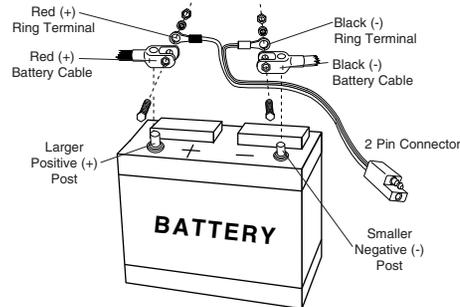


FOR USE WITH PERMANENT RING TERMINALS

For batteries installed in vehicles or other equipment we have provided a lead set with ring terminals. Since many installed batteries are in space-restricted locations or compartments, these ring terminals (see illustration below) have been designed to provide a safe and convenient connection. Follow these steps for connection and operation:

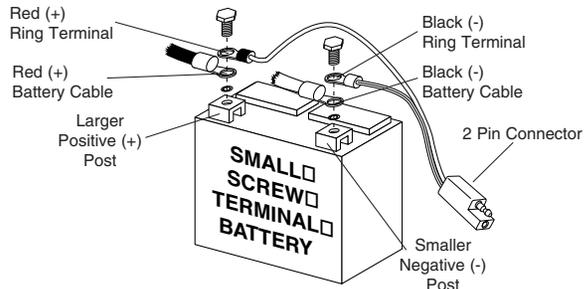
1. Check that the Battery Extender is NOT plugged in to an AC outlet before connecting the ring terminals to the battery.
2. Locate the positive (+) terminal post of the battery, it is usually larger than the negative (-) terminal post. Connect the RED (+) ring terminal to this battery terminal.
3. Connect BLACK (-) ring terminal to negative (-) battery terminal.
4. Double check that the square two pin connector on the lead set is firmly plugged into the square out put connector of the Battery Extender (see illustration in "FOR USE WITH SPRING CLIPS").
5. Secure the lead set out of the way of fan blades, belts, pulleys, and hot items like exhaust manifolds. Nylon ties work great in this situation.
6. Make sure the Battery Extender is safely located away from the battery and in a nonhazardous location.
7. Plug the AC cord in to a grounded outlet.
8. Set the Battery Type button to match the battery type you are charging. (Standard, AGM, Gel Cell). (Model BEX-3000 and BEX-5000 only)
9. Set the 6/8/12/16 volt button to the voltage rating of the battery you are connecting to. (Model BEX-5000 only.)

NOTE: The BEX-1500 and BEX-3000 must only be used with 12 Volt batteries.



NOTE: Smaller batteries may have screws for terminals (see illustration below). You may need to purchase smaller ring terminals for these applications. Do not connect ring terminals to anything but the battery. Other locations are hazardous.

WARNING: Do not use the BEX-1500 and BEX-3000 on any battery voltage other than 12V. Do not use the BEX-5000 voltage set to a higher setting than the battery you are charging. Damage to your battery will occur.



INTRODUCTION

How Batteries Charge:

The charger does not force current into the battery. The charger makes available a limited amount of charge current to the battery. The battery itself determines how much charge current it needs.

Typically the lower the state of charge of the battery, the higher the charge current will be. As the battery charges up, the charge current will taper off.

Some battery types require an activation period when they are deeply discharged before they will accept charge current. The time may take many hours before the battery begins to accept charge current. If your battery has been sitting in a discharged state for a long period of time, it can become sulfated. Sulfated batteries exhibit the characteristic of not accepting any charge current for a long period of time. This may also take many hours. Once the sulfate barrier breaks down, the battery will begin accepting charge current. Severely sulfated batteries may never accept charge current and should be replaced. When a battery charges, the electrolyte will bubble slowly. This is normal when charging a battery. The gases given off while charging a battery can be very explosive. Make sure there are no flames or sparks near a charging battery. Always unplug the charger before connecting or disconnecting the clamps to the battery to prevent sparks.

OPERATING INSTRUCTIONS

Your Battery Extender is equipped with sophisticated circuitry that will safely charge and maintain batteries without overcharging. Make sure you read and follow the "Safety" section of this manual before proceeding with this operating instruction.



BATTERY EXTENDER INDICATOR LIGHTS

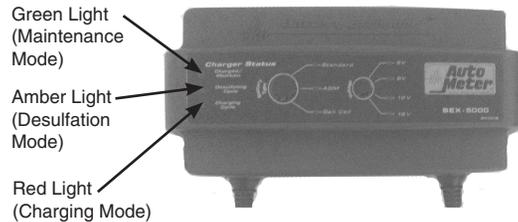
No Lights: Means one of the following:

- You reversed the connections by connecting the red spring clip to the negative (-) battery post and the black spring clip to the positive (+) battery post.
- You have a poor connection at the battery.
- There is no AC power. Check all three!

Red Light (Charging): The Battery Extender is charging the battery.

Amber Light (Desulfation): The Battery Extender is in desulfation mode.

Green Light (Maintain): The Battery Extender is safely maintaining your battery at a full charge. Your battery is ready to go when you need it.



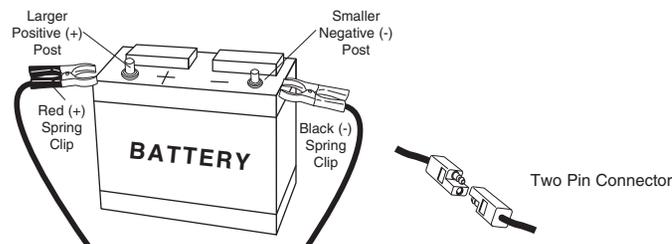
NOTE: The Battery Extender may switch back into full charge mode (Red light ON) as required by your battery, this is normal.

FOR USE WITH SPRING CLIPS

For uninstalled batteries we have supplied a lead set with spring clips. Follow these steps for connection and operation (see illustration to below):

1. Make sure the Battery Extender is **NOT** plugged in to an AC outlet before connecting the clips to the battery.
2. Locate the positive (+) terminal post of the battery, it is usually larger than the negative (-) terminal post. Connect the RED spring clip to this battery terminal post. It's a good idea to wiggle the clip on the battery post to insure a good connection.
3. Connect the BLACK spring clip to the negative (-) battery terminal post.
4. Double check that the square two pin connector on the lead set is firmly plugged into the square output connector of the Battery Extender.
5. Make sure the Battery Extender is safely located away from the battery and in a non hazardous location.
6. Plug the AC cord in to a grounded outlet.
7. Set the Battery Type button to match the battery type you are charging. (Standard, AGM, Gel Cell). (Model BEX-3000 and BEX-5000 only)
8. Set the 6/8/12/16 volt button to the voltage of the battery you are connecting to. (Model BEX-5000 only.)

NOTE: The BEX-1500 and BEX-3000 must only be used with 12 Volt batteries.

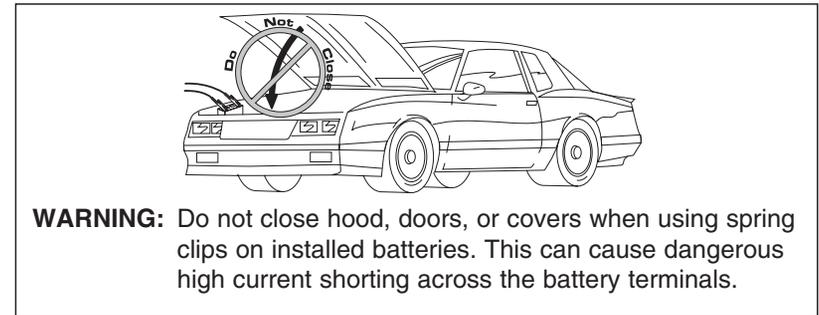


OPERATING INSTRUCTIONS

FOR USE WITH BATTERY CLIPS ON INSTALLED BATTERIES



You may use the spring clip lead set for installed batteries on a temporary basis. However we do not recommend doing this for long term connections. The clips can accidentally come in contact with compartment covers, hoods and other items that may cause dangerous high current shorts across the battery terminals. To temporarily connect the spring clips to an installed battery, follow these steps:



1. Check that the Battery Extender is **NOT** plugged in to an AC outlet before connecting the spring clips to the battery.
2. Locate the positive (+) terminal post of the battery, it is usually larger than the negative (-) terminal post. Connect the RED (+) spring clip to this battery terminal post.
3. Connect the BLACK (-) spring clip to a bolt or screw on the chassis or engine block. These should be heavy steel parts not sheet metal. Do not connect to fuel lines, carburetor, or moving parts. Make the connection as far from the battery as the leads allow.
4. Plug in the AC cord, and observe the indicator lights for operation.
5. Set the Battery Type button to match the battery type you are charging. (Standard, AGM, Gel Cell). (Model BEX-3000 and BEX-5000 only)
6. Set the 6/8/12/16 volt button to the voltage rating of the battery you are connecting to. (Model BEX-5000 only)

NOTE: The BEX-1500 and BEX-3000 must only be used with 12 Volt batteries.