



Model EX-1 Battery Keeper™ 6/12V Battery Charger Owner's Manual



The information enclosed in this manual is to be used as a guide to assist in the proper use of this product. This manual does not cover every possibility, or use scenario.

Retro Manufacturing, LLC, Exile® or its subsidiaries, assume no responsibility for any issues regarding the product's use or misuse. Please read this manual thoroughly before use.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS:

This manual contains important safety and operating instructions for battery charger model: EX-1

EXILECHARGERS.COM



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What's in the Box



EX-1 Battery Charger



O-Ring terminals w/
quick connect system



Red & Black battery clamps
w/ quick connect system



Charger storage bag



Welcome

Thank you for your purchase. The Exile® 6/12 Volt Battery Charger combines simplicity of operation with premium features not found on other battery chargers.

General Features

- 4-stage charging
- Multiple battery compatible
- Battery fault protection w/ audible alert
- Reverse polarity protection w/ audible alert
- IP65 dust/water-resistant
- Maintains battery without over-charging

Notes

Warnings and Precautions



WARNING



Risk of **SERIOUS INJURY OR DEATH**.
ELECTRICAL SHOCK, EXPLOSION, FIRE, AND EYE INJURY HAZARDS.

PROTECT YOURSELF AND OTHERS.

Before use, **READ AND UNDERSTAND** Owner's Manual .
Failure to read and understand this information could result in **SERIOUS INJURY or DEATH**.



DANGER



ELECTRICAL SHOCK HAZARD

1. This charger is an electrical device that can shock and cause serious injury.
2. **Do not** cut power cords.
3. **Do not** submerge in water or get charger wet.

EXPLOSION HAZARD

4. Unmonitored, incompatible, or damaged batteries can explode if used with charger.
5. **Do not** leave charger unattended while in use.
6. **Do not** attempt to charge damaged or frozen batteries.
7. Use charger only with batteries of recommended voltage.

FIRE HAZARD

8. The battery charger is an electrical device that emits heat and can burn.
 9. **Do not** cover the charger
 10. **Do not** smoke or use any other source of electrical spark or fire when operating charger.
- Keep the charger away from combustible materials.

Warnings and Precautions(Continued)



WARNING



EYE INJURY HAZARD

1. Batteries can explode and cause flying debris.
2. Battery acid can cause eye irritation.
3. Wear eye protection when operating charger.
4. Avoid contact with eyes and wash hands after using charger.
5. In case of eye contact, flush affected area with plenty of water.

RISK OF EXPLOSIVE GASES

6. Working in vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that you follow the instructions each time you use the charger.
7. To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment intended to be used in vicinity of battery. Review cautionary markings on these products and on engine.



CAUTION



1. Do not expose charger to rain or snow.
2. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
3. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
4. Do not operate charger with damaged cord or plug – replace the cord or plug immediately.
5. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
6. Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
7. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

Warnings and Precautions (Continued)



IMPORTANT



DO NOT USE EXTENSION CORDS unless absolutely necessary. Using an improper extension cord could result in a risk of fire and electric shock and may result in property damage, personal injury or death. If extension cord must be used, make sure that:

- 1.) The pins on the extension cord plug have the same number, size, and shape as those of the AC power cord plug on the charger.
- 2.) The extension cord is properly wired and is in good electrical condition.
- 3.) The wire size is as specified in the table below:

| | | | | |
|-------------------------|----|----|-----|-----|
| Length of cord in feet: | 25 | 50 | 100 | 150 |
| AWG size of cord: | 18 | 18 | 16 | 14 |

USE THE FOLLOWING PRECAUTIONS WHEN YOU WORK NEAR LEAD-ACID BATTERIES:

- 1. Consider having someone close enough by to come to your aid when you work near a lead-acid battery.
- 2. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- 3. Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application.
- 4. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
- 5. **NEVER** charge a frozen battery.

Warnings and Precautions (Continued)

(Continued) USE THE FOLLOWING PRECAUTIONS WHEN YOU WORK NEAR LEAD-ACID BATTERIES:

1. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
2. Wear complete eye protection and protective clothing. Avoid touching your eyes while working near a battery. If battery acid contacts your skin or clothing, wash immediately with soap and water. If acid enters an eye, immediately flood the eye with running cold water for at least ten (10) minutes and seek medical attention as soon as possible.
3. Be extra cautious when handling metal tools around a battery. If you drop a metal tool near a battery it might spark or create a short circuit between the battery terminals and some other metal part. Either event may cause a dangerous electrical shock hazard, a fire, or even an explosion, resulting in property damage, personal injury, or death.
4. Never smoke or allow an open spark or flame in the vicinity of the battery or engine.



IMPORTANT



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Before You Charge Your Battery

PREPARING TO CHARGE THE BATTERY

1. If it is necessary to remove battery from vehicle to charge, always remove the grounded terminal from battery first.
Make sure all accessories in the vehicle are off, so as not to cause an arc.
2. Be sure the area around battery is well ventilated while battery is being charged.
3. Clean battery terminals with a mixture of baking soda and hot water. Be careful to keep corrosion from coming in contact with eyes.
4. Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
5. Determine voltage of battery by referring to vehicle owner's manual and make sure that output voltage.
6. If the battery is not a sealed battery, add distilled water to each cell (if necessary) until the battery acid solution reaches the level specified by battery manufacturer. Do not overfill. For a battery without cell caps, such as a valve regulated lead-acid battery (VRLA), carefully follow the battery manufacturer's charging instructions.
7. Before charging, carefully read the battery manufacturer's specific precautions and recommended rates of charge.
8. Determine the voltage of the battery by referring to the vehicle's owner's manual and make sure that the charge mode is set at the correct voltage.
9. Connect and disconnect the DC output cables only after the battery charger is placed in the STANDBY mode and the AC cord is removed from the electrical outlet. NEVER allow the battery clamp or eyelet terminal connectors to touch each other.

BATTERY CHARGER PLACEMENT

1. Locate the battery charger as far away from the battery as possible.
2. Never place the battery charger directly above the battery; gases from battery will corrode and damage battery charger.
3. When reading electrolyte specific gravity or filling battery, never allow battery acid to come in contact with the battery charger.
4. Do not operate the battery charger in a closed-in area or an area with restricted ventilation.
5. Do not set a battery on top of battery charger.

BATTERY SPECS

The following recommendations should ONLY be considered as guidelines. Always refer to the battery manufacturer's recommendations for battery charging. The EX-1 is suitable for charging all types of 6V & 12V lead-acid & gel cell batteries, including Wet (Flooded), Gel, MF (Maintenance-Free) and AGM (Absorption Glass Mat) batteries. The EX-1 is suitable for charging batteries sized from 12-70Ah. The battery charger can also maintain all battery sizes.

DC CONNECTION PRECAUTIONS

- a) Connect and disconnect dc output clips only after setting any charger switches to the "off" position and remove ac cord from electric outlet. Never allow clips to touch each other.
- b) Attach clips to battery and chassis as indicated in as follow t he content of the page 9 .

Connecting to the Battery

CONNECTING TO THE BATTERY

Before you connect to the battery, make sure that the AC power plug is not connected to an electrical outlet. **DO NOT CONNECT THE BATTERY CHARGER AC POWER PLUG TO THE ELECTRICAL OUTLET UNTIL ALL OTHER CONNECTIONS ARE MADE.** Make sure you have identified the correct polarity of the battery terminals on the battery. The **POSITIVE** battery terminal is typically marked by these letters or symbol (POS,P,+). The **NEGATIVE** battery terminal is typically marked by these letters or symbol (NEG,N,-).

FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

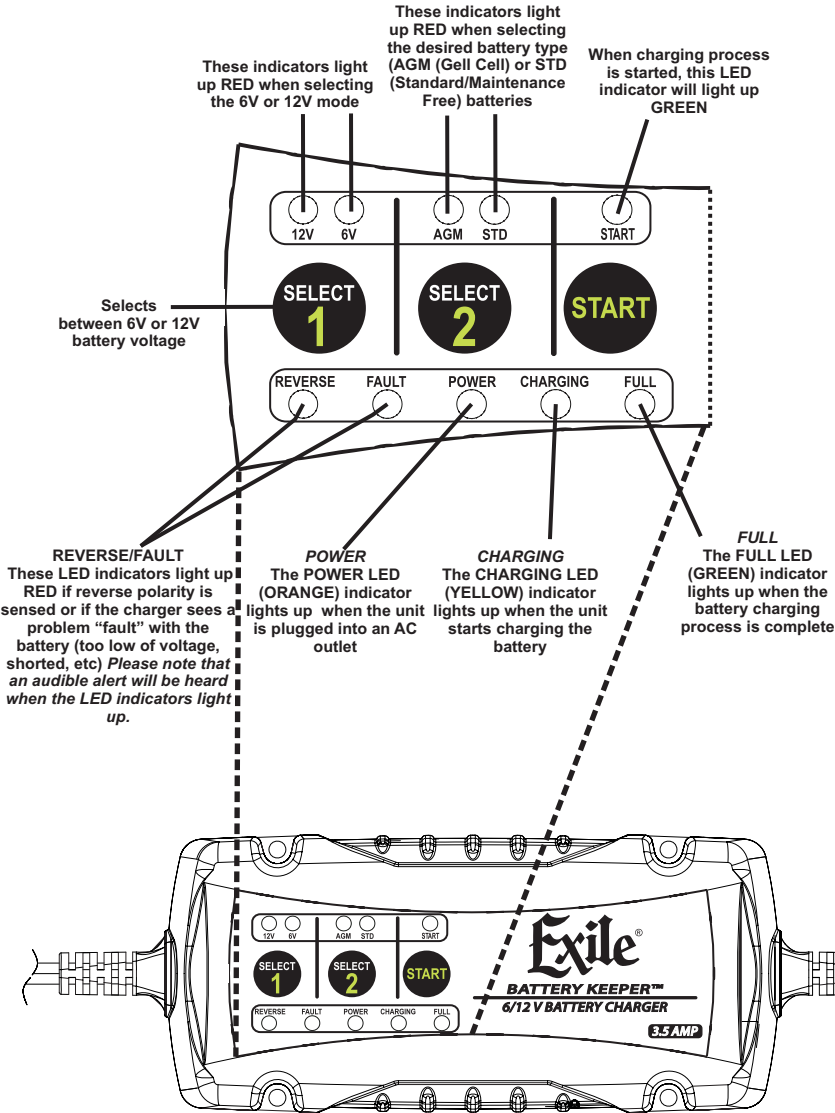
1. Check polarity of battery posts. **POSITIVE** battery post usually has a larger diameter than **NEGATIVE** post .
2. Attach at least a 24-inch-long 6-gauge (AWG) insulated battery cable to **NEGATIVE** battery post.
3. Connect **POSITIVE (RED)** charger clip to **POSITIVE** post of battery.
4. Position yourself and free end of cable as far away from battery as possible – then connect **NEGATIVE (BLACK)** charger clip to free end of cable.
5. Do not face battery when making final connection.
6. When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.
7. A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

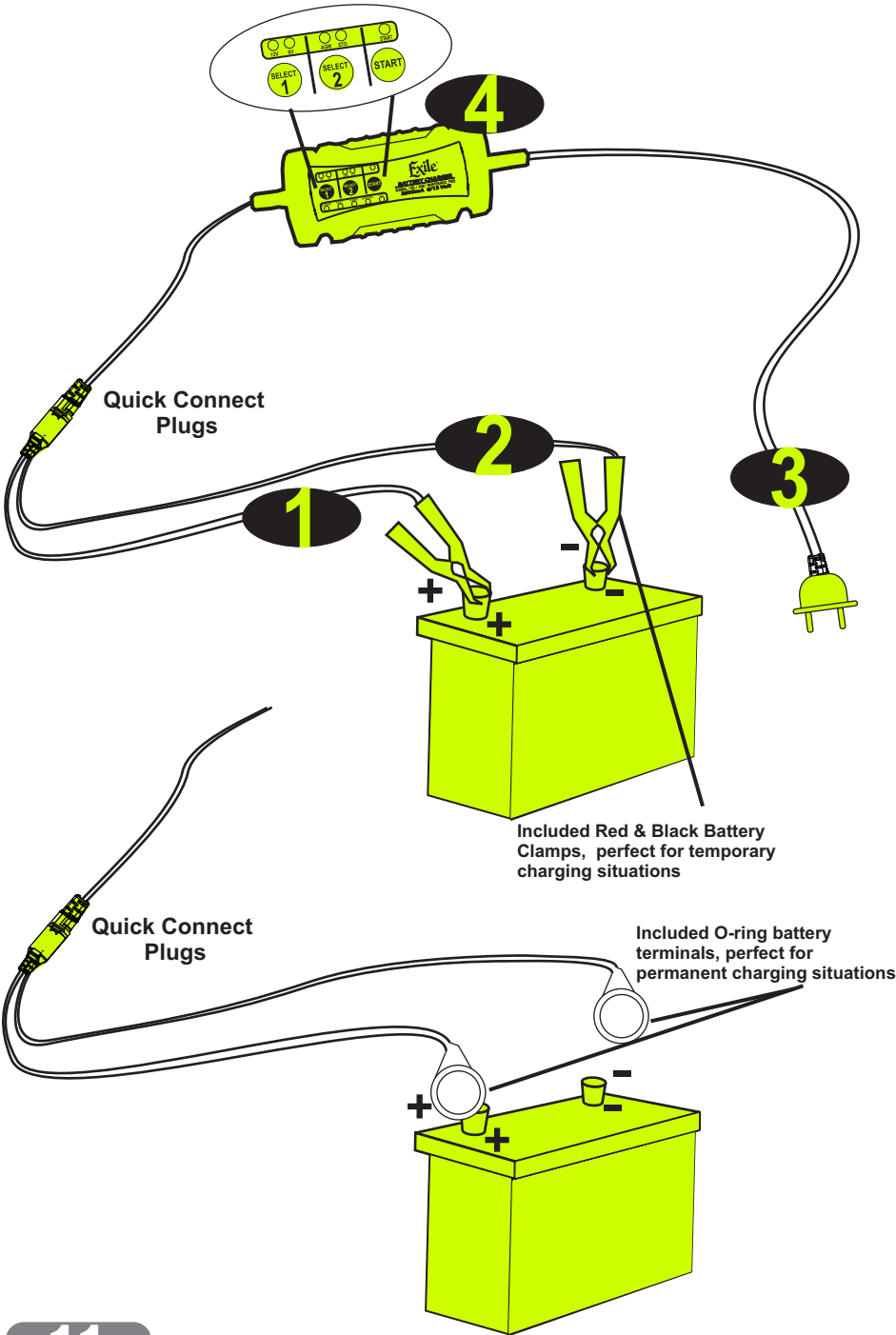
1. Position AC and DC cords to reduce risk of damage by hood, door, or moving engine part.
2. Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.
3. Check polarity of battery posts. **POSITIVE** battery post usually has larger diameter than **NEGATIVE** post.
4. Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see (5). If positive post is grounded to the chassis, see (6).
5. For negative-grounded vehicle, connect **POSITIVE (RED)** clip from battery charger to **POSITIVE** ungrounded post of battery. Connect **NEGATIVE (BLACK)** clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
6. For positive-grounded vehicle, connect **NEGATIVE (BLACK)** clip from battery charger to **NEGATIVE** ungrounded post of battery. Connect **POSITIVE (RED)** clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
7. When disconnecting charger, turn switches to off, disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.
8. See operating instructions for length of charge information.

Wiring Diagram

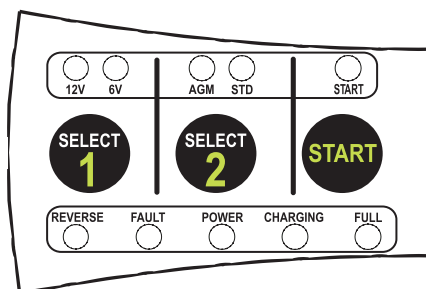
EX-1 Interface (detail)



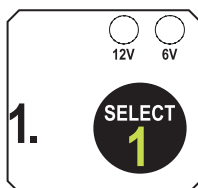
Wiring Diagram Overview



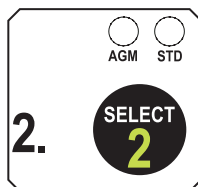
Operating Instructions



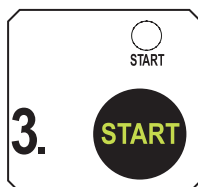
Upon making a proper battery connection, plug the AC power cord into an AC receptacle. All unit LEDs will light momentarily, then only the LEDs corresponding to power ON and the default charging settings (12V, AGM) should stay lit. The charger is now in Standby Mode. If the Reverse Polarity Indicator LED illuminates along with an audible "beep", disconnect from AC power supply immediately and determine the cause of the alarm.



Choose a battery voltage charge setting. The default setting is the 12V mode, which will apply to most charging applications. To charge in 6V mode, push the SELECT 1 button until the "6V" LED is illuminated.



Choose a battery type setting. The default setting is AGM (corresponding to AGM and Gel Cell style batteries). To charge Standard and Maintenance Free acid batteries, push SELECT 2 button until the "STD" LED is lit.



Press the "START" button, and both the "START" LED and "CHARGING" LED will illuminate simultaneously. Once this process has started, the charger will automatically begin and complete the charging process (Please note that the length of charging time may vary depending on the charging condition of the battery). Note: If the FAULT LED illuminates, and an audible beep is heard, disconnect immediately from AC power and determine the cause of the alarm.

When the charging process is complete, the "FULL" LED will illuminate. This indicates that the initial charging cycle is complete and the charger is now in Maintenance Mode, and will resume charging as needed to keep your battery in optimal condition. When you are finished with the charging process, disconnect AC power cord from AC outlet, then disconnect DC leads from vehicle ground and battery in the reverse sequence of the connection procedure.

Operating Instructions (Continued)

EX-1 Charging Steps (detail)

The Ex-1 battery charger features a 4 step charging process:

Step 1: Diagnostic Start Mode

Checks the battery voltage to make sure battery connections are good and the battery is in a stable condition before beginning the charging process. Will start the charging process with a gentle “soft” charge.

Step 2: Primary Charge

Continues the Primary charging process, charges battery to 90% capacity.

Step 3: Final Charge

Brings the charge level to 100%. Once this threshold is reached, the battery charger will deliver small amounts of current to provide a safe, efficient charge and limit battery gassing.

Step 4: Battery Maintain

Monitors the battery voltage continuously to determine if a maintenance charge should be initiated. If the terminal voltage falls below approximately 6.4V (6V) and 12.8V (12V), the charger will start the Battery Maintain cycle until voltage reaches approximately 7.2V (6V) and 14.4V (12V) and then will discontinue the charge cycle. Maintain cycle is repeated indefinitely to keep the battery at full charge, without overcharging. Once connected and in this mode, the battery charger can be left connected indefinitely.

| | |
|--------------------------------|---|
| Input Voltage AC: | 120 VAC, 60Hz |
| Working Voltage AC: | 110-130 VAC, 50-60Hz |
| Input Current: | 1.2A RMS Max |
| Efficiency: | 82% Approx. |
| Power: | 68W Max |
| Charging Voltage: | 7.2V/14.4V |
| Charging Current: | 3500mA |
| Back Current Drain: | <5mA |
| Charger Type: | 4 Step, Fully Automatic, Switch-Mode |
| Type of Batteries: | 6V & 12V Lead-Acid |
| Battery Chemistries: | Wet, Gel, MF & AGM |
| Battery Capacity: | 12-70Ah, Maintains All Battery Sizes |
| Housing Protection: | IP65 |
| Noise Level: | <50 dB |
| Dimensions (L x W x H): | 6.5 x 2.9 x 1.83 Inches |
| Weight: | .53 Kg/ 1.17 Pounds |
| Approval: | UL for US and Canada |

Troubleshooting

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|--|--|--|
| A few seconds after pressing the START key, the FAULT LED lights up continuously, along with an audible alarm. | The battery's voltage is lower than 3 Volts | The battery could be defective or at the end of it's life cycle. Please note that after checking the condition of the battery, the charger will automatically switch to "stand-by" mode. |
| | The battery's voltage is too high (above 15 Volts for 12 Volt batteries or higher than 7.5 Volts for 6 Volt batteries) | |
| | There may be a short circuit in the battery or in one of the cells in the battery. | |
| | You are attempting to charge a 12 Volt battery with the battery charger set to the 6 Volt mode. | Unplug the power supply lead from the AC wall socket to reset the charger. Plug back into the AC socket. Then follow the 1, 2 & 3 steps in the Operating Instructions section of this manual to start the charging of the battery. |
| A few seconds after pressing the START key, the CHARGING LED blinks continuously. | You are attempting to charge a 6 Volt battery with the battery charger set to the 12 volt mode. | Unplug the power supply lead from the AC wall socket to reset the charger. Plug back into the AC socket. Then follow the 1, 2 & 3 steps in the Operating Instructions section of this manual to start the charging of the battery. |
| | The battery charger is attempting to recover an exhausted battery. | Unplug the power supply lead from the AC wall socket to reset the charger. Plug back into the AC socket. Then follow the 1, 2 & 3 steps in the Operating Instructions section of this manual to start the charging of the battery. When charging the battery, if the CHARGING LED starts to blink continuously, the charger is attempting to recover an exhausted battery. Wait a few seconds, if the FAULT LED lights up, this means that the attempt to recover the battery has failed and you will need to replace the battery. |
| If the REVERSE LED starts to blink continuously followed by an audible alarm. | The clamps or o-ring terminals of the charger's output leads are not properly connected to the battery terminals. | Unplug the power supply lead from the AC wall socket, inspect the clamp and o-ring's current mounting position. Correctly mount the clamps/o-rings and then plug the charger back into the AC wall socket to continue charging the battery. |

Warranty

If your product does not work properly because of defects in materials and workmanship Exile™, a division of Retro Manufacturing, LLC (collectively referred to as "the warrantor") will, for the length of 12 months (Parts & Labor), which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" warranty period, there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must mail in your product prepaid during the warranty period. If batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States, Alaska, Hawaii or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

To handle a warranty issue, **contact us at support@exilechargers.com or 888-325-1555 and get a Return Authorization number.** All returns and warranty issues must receive a Return Authorization (RA) number. Any product received without a RA number will be refused.

LIMITED WARRANTY-LIMITS AND EXCLUSIONS

This warranty ONLY COVERS failures due to defects in materials and workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred during shipment, failures which are caused by products not supplied by the warrantor, failures which result from accident, misuse, abuse, neglect, bug infestation, mishandling, misapplication, alteration, faulty installation, set-up adjustment, maladjustment of consumer control, improper maintenance, improper antenna, inadequate signal reception or pickup, power line surge, improper voltage supply, lightning, modification, commercial use (such as use in hotels, offices, restaurants, or other business uses) or rental use of the product, or service by anyone other than the technician from the factory service center or other authorized service centers, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the sevicer, and loss of media, data or other memory contents. The items listed are not exclusive, but are for illustration only.) ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or service center.



MODERN SOUND FOR YOUR CLASSIC