Intelligent Battery Charger/Maintainer

OWNER’S MANUAL

Model number-457807

Important

For safe and optimum performance, charger must be used properly. Carefully read and follow all instructions and guidelines in this manual and give special attention to the CAUTION and WARNING statements.

Please keep this manual for future reference.
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INTRODUCTION

Thank you for purchasing NiPower Intelligent Battery Charger/Maintainer. This innovative 2 Amp charger and maintainer will keep your GEL or AGM 12V batteries charged while maintaining top performance.

This unit was specially designed to charge and maintain your batteries without having to disconnect them from your boat or vehicle.

With built in safety features such as a reverse polarity alert, easy to read LED indicators, automatic short circuit protection, over temperature protection, and our 3-stage high-efficiency charging process you can be assured that your battery will be charged safely and efficiently.

This manual will explain how to use the charger safely and effectively. Please read and follow these instructions and precautions carefully.

**Three-stage battery charging:**
Stage One - Bulk Charge:

The Bulk Charge delivers maximum charging amperage to "wake up" any serviceable 12 volt battery and allows for quick engine start. The battery will then reach a maximum safe predetermined voltage.

Stage Two - Absorption Charge:

The Absorption Charge maintains the maximum possible charge at a constant, safe and predetermined voltage. During this phase, the charging voltage remains constant, while the actual charging current is reduced to allow for the maximum proper internal chemical energy transfer.

Stage Three - Float Charge:

The Automatic Float Charge feature is ideal for maintaining a battery. It automatically “tops off” battery as needed, to keep battery fully charged.

IMPORTANT SAFETY INSTRUCTIONS

⚠️ WARNING – RISK OF EXPLOSIVE GASES
WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON IT IS OF THE UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ AND FOLLOW THE INSTRUCTIONS PROVIDED EXACTLY AS STATED.
TO REDUCE RISK OF BATTERY EXPLOSION, FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY THE BATTERY MANUFACTURER.

- **WARNING:** Handling the cord on this product or objects associated with the use of this product may expose you to lead. *Wash hands after handling.*
- Read all instructions and cautions printed on the battery charger, battery and vehicle.
- Use the charger for charging lead-acid batteries only such as those used in cars, trucks, motorcycles, boats, etc. It is not intended to supply power to a low-voltage electrical system or to charge dry-cell batteries commonly used in household appliances such as radios, toys, camera, etc. Charging dry-cell batteries may cause them to burst and cause injury to persons and damage to property.
- Use of an attachment not recommended as it may result in the risk of fire or electrical shock.
- **Do not disassemble battery charger.** Take it to a qualified service professional if service or repair is required. Incorrect assembly may result in fire or electrical shock.
- To reduce risk of electrical shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
- Do not expose charger to extreme weather and temperatures. Keep away from moist and wet areas.
- Never charge a frozen battery.
- Never allow the battery clamps to touch when the charger is active. This may cause a spark.
- Never operate a charger if it has received a hard blow, been dropped or otherwise damaged. Take it to a qualified professional for inspection.
- Never pull out the plug by the cord when unplugging the charger as this may cause damage to the cord or plug.

**PERSONAL SAFETY PRECAUTIONS**

- Make sure someone is within your vicinity to supervise any possible hazardous situations when working with or near a lead-acid battery.
- Wear complete eye and clothing protection when working with lead-acid batteries.
- Avoid touching your eyes while working with a battery.
- Have plenty of fresh water and soap nearby for use in case battery acid comes in contact your eyes, skin or clothing. If this happens, wash immediately with soap and water then seek medical attention.
- Never smoke or allow an open spark or flame within the vicinity of the battery or engine. Batteries generate explosive gases.
- Be careful not to drop any metal tool or object onto the battery. This may result in a spark or short circuit across the battery or another electrical device and may cause an explosion.
- Remove all personal metal items, such as rings, bracelets, necklaces and watches from your body while working with a lead-acid battery. A battery can produce a short circuit
current high enough to weld such objects to metal, causing severe burn.

- Never attempt to charge a frozen battery.
- Never overcharge a battery.
- Always operate the battery charger in an open, well-ventilated area.

AC ELECTRICAL CONNECTIONS

PLUGGING IT IN
According to local codes and ordinances, your charger requires the use of 120 Volt AC electrical wall outlet receptacles.

- **WARNING:** Never alter AC cord or plug provided. If it does not fit the outlet, have a proper outlet installed by a qualified electrician. Improper connection can result in a risk of fire or electric shock.

- **WARNING:** Do not operate the charger if it has a damaged power cord or plug. Have the cord replaced.

USING AN EXTENSION CORD
The use of an extension cord is not recommended. If an extension cord must be used, follow these guidelines:

- Make sure that the pins on the charger’s power cord fit firmly into the extension cord and that the extension cord fits firmly into the receptacle.
- Check that the extension cord is properly wired and in good electrical condition.
- Make sure that the wire size is large enough for its length and for the AC ampere rating of the charger, as specified in the chart below.

<table>
<thead>
<tr>
<th>MINIMUM RECOMMENDED EXTENSION CORD</th>
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<tbody>
<tr>
<td><strong>Length of Cord, Metres (Feet)</strong></td>
</tr>
<tr>
<td>7.6 (25)</td>
</tr>
<tr>
<td>15.2 (50)</td>
</tr>
<tr>
<td>30.5 (100)</td>
</tr>
<tr>
<td>45.6 (150)</td>
</tr>
<tr>
<td><em><em>AWG</em> Size of Cord</em>*</td>
</tr>
<tr>
<td>18</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>12</td>
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<td>10</td>
</tr>
</tbody>
</table>

*AWG=American Wire Gauge

- **WARNING:** Use of an improper extension cord could result in a risk of fire and electric shock.

**PREPARING TO CHARGE**

**CHARGER LOCATION**
- Do not expose charger to extreme weather and temperatures. Keep away from moist and wet areas.
- Place the charger as far from the battery being charged as the cables will permit.
- Be sure to position the power cord to prevent it from being stepped on, tripped over or damaged.
- Never place charger directly above battery being charged. Gases from the battery will corrode and damage the charger.
- Never set a battery on top of a charger.
- Never allow battery acid to drip on charger.
• Always charge a battery in a well-ventilated area.

⚠️ **WARNING:** Battery chargers may get hot during operation. Do not set charger on flammable materials such as carpeting, upholstery, paper, cardboard, etc. Charger may damage leather, plastic and rubber.

**BATTERY PREPARATION**

• If it is necessary to remove battery from vehicle to charge it, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are OFF in order to prevent sparks.
• Be sure that the area around the battery is well ventilated while being charged.
• Clean the battery terminals. Be careful to keep corrosion or battery acid from getting in or around your eyes.
• For batteries with removable vent caps, if required, add distilled water to each cell until the battery fluid reaches the level specified by the battery manufacturer. **Do not overfill.** For batteries without removable vent caps, carefully follow the manufacturer’s charging instructions.
• Study all of the battery manufacturer’s specific precautions and recommendations for charging and for recommended rates of charge.
• Make sure that you have a 12 V lead-acid battery. Determine voltage of battery by referring to the vehicle owner’s manual. If the charger has an adjustable charge rate, charge battery at the lowest rate first.
CHARGING A BATTERY INSTALLED IN VEHICLE

NOTE: A marine battery installed in a boat must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

- Connect and disconnect the DC output clamps only after removing the AC plug from the electrical outlet.
- Never allow the DC output clamps to touch each other. This may cause a spark.

FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR BATTERY MAY CAUSE A BATTERY EXPLOSION.

TO REDUCE THE RISK OF A SPARK NEAR BATTERY:
1. Position AC and DC cords to reduce the risk of damage by hood, door, or moving engine part.
2. Stay clear of fan blades, belts, pulleys, and other parts than can cause injury to persons.
3. Check polarity of battery posts. A positive (POS, P, +) battery post usually has a larger diameter than a negative (NEG, N, -) post.
4. Determine which battery post is grounded (connected) to the chassis. IT IS NORMALLY THE NEGATIVE POST.
5. **Connecting to a negative-grounded system:** Connect the positive (red) clip from a battery charger to a positive (POS, P, +) ungrounded post of a battery. Connect the negative (black) clip to the 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 gauge metal part of the frame or engine block.

**Connecting to a positive-grounded system:** Connect the negative (black) clip from battery charger to the negative (NEG, N, -) ungrounded post of battery. Connect the positive (red) clip to the 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 gauge metal part of the frame or engine block.

6. Connect charger AC supply cord to electric outlet.
7. Charge battery as outlined in the **OPERATION INSTRUCTIONS** section.
8. When disconnecting charger, disconnect the AC cord, remove the clip from vehicle chassis, and then remove the clip from battery terminal.

**CHARGING A BATTERY REMOVED FROM VEHICLE**

- Connect and disconnect the DC output clamps only after removing the AC plug from the electrical outlet.
- Never allow the DC output clamps to touch each other. This may cause a spark.

**FOLLOW THESE STEPS WHEN BATTERY IS REMOVED FROM VEHICLE. A SPARK NEAR BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR BATTERY:**
1. Check polarity of battery posts. A positive (POS, P, +) battery post usually has a larger diameter than a negative (NEG, N, -) post.

2. Attach at least a 60cm (6-gauge) (AWG) insulated battery cable to a negative (NEG, N, -) battery post.

3. Connect the positive (red) charger clip to the positive (POS, P, +) post of battery.

4. Position yourself and the other end of the cable as far away from battery as possible, then connect the negative (black) charger clip to the free end of the cable.

5. Do not face battery when making the final connection.

6. Connect charger AC supply cord to electric outlet.

7. Charge battery as outlined in the OPERATING INSTRUCTIONS section.

8. When disconnecting chargers, always do so in the reverse sequence of the connecting procedure and break the first connection while standing as far away from battery as practical.

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**CHARGER FEATURES**

**CONNECTION METHODS**
This charger comes with 2 run connect charging leads for extra versatility – standard clamps and ring terminals. The battery may be charged using any of the two connection options.

⚠️ Warning: you can only select one charging method for charging at a time.
2A CHARGE RATE
This charger is recommended for charging small batteries such as those used in motorcycles, ATVs, snowmobiles, personal watercraft, lawn tractors and golf cars. It is also suitable to maintain larger batteries such as those used in automobile, marine and farm tractors.

CHARGING INDICATOR
A yellow LED light indicates that the battery is being charged.

AUTOMATIC SHUT OFF
The battery charger is designed to automatically shut off once battery charging is complete to prevent overcharging. When charging is complete, the CHARGED/MAINTAINING LED will illuminate and the charger will be switched to Maintenance mode.

MAINTENANCE MODE
Once charging is complete, the charger will automatically go into Maintenance mode (also known as float mode monitoring). In this mode, the charger keeps the battery fully charged by delivering a small amount of current when necessary to keep the battery at peak charge.

REVERSE POLARITY PROTECTION
If the cables are incorrectly connected to the battery, the Reverse Polarity indicator will illuminate. Note: the charger will not begin charging if the Reverse Polarity indicator is lit.
OVERHEAT PROTECTION
The charger is designed to shut itself off if overheating is detected. Once the charger cools down, it will resume charging automatically.

BATTERY CHARGING TIMES

The built-in intelligent microprocessor will continuously monitor and adjust the charger to provide a fast, safe and efficient charge. Note that battery charge times will vary depending on several factors, including:

1. **Battery State** – Depending on the voltage of your battery, it may take up to 10 hours to charge. Batteries with higher voltage can usually be charged in a few hours.

2. **Battery Rating** – A higher rated battery will take longer to charge than a lower rated battery under the same conditions. A battery is rated in ampere-hours (Ah), reserve capacity (RC) and cold-cranking amps (CCA).

3. **Charge Rate** – The charge rate is measured in amps. A battery charged at a lower rate will take longer than a battery charged at a higher rate. However, smaller batteries can be easily damaged by charging at a rate which is too high for the capacity of the battery.

4. **Temperature** – Cold temperature will affect a battery’s ability to accept a charge. Charging in cold temperatures will increase the amount of time required to charge a battery.
MAINTENANCE AND CARE

- Clean cords and clamps each time you are finished using the charger. Wipe off any battery fluid or debris that might have come in contact with the clamps to prevent corrosion.
- Store the power and output cable neatly to prevent damage.
- Occasional cleaning of the battery charger case with a soft cloth will help protect the finish.
- Always unplug the charger when not in use.
- Keep the charger stored in a cool, dry place.

TROUBLESHOOTING

<table>
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<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
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<tr>
<td>The LED indicator does not illuminate when the charging cable is connected to the battery.</td>
<td>Loose connection at the connection terminals.</td>
<td>Check the connection.</td>
</tr>
<tr>
<td>No AC power at outlet</td>
<td>Ensure power is present at outlet.</td>
<td></td>
</tr>
<tr>
<td>Overheating shutdown</td>
<td>Clean dirty ventilation openings or remove objects covering the unit. Place the unit in a cooler location.</td>
<td></td>
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</table>
The battery voltage is too low. Check the battery voltage with a multimeter. Recycle the battery if the battery voltage is too low.

The battery clips are not connected properly to the battery terminals. Check the connection and re-attach the clips to the terminals.

The red LED light turns on. Reverse polarity Check the polarity.

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated input voltage</td>
<td>110 V AC/60 Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>0.5 A</td>
</tr>
<tr>
<td>Maximum output current</td>
<td>2 ±0.2A</td>
</tr>
<tr>
<td>Battery type</td>
<td>12 V lead-acid battery</td>
</tr>
<tr>
<td>Weight</td>
<td>480g</td>
</tr>
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Warranty

The limited warranty program is the only one that applies to this unit, and it sets forth all the responsibilities of NPower. There is no other warranty, other than those described herein. Any implied warranty of merchant ability of fitness for a particular purpose on this unit is limited in duration to the duration of this warranty.

This unit is warranted, to the original purchaser only, to be free of defects in materials and workmanship for one year from the date of purchase without additional charge. The warranty does not extend to subsequent purchasers or users.

Manufacturer will not be responsible for any amount of damage in excess of the retail purchase price of the unit under any circumstances. Incidental and consequential damages are specifically excluded from coverage under this warranty.

This unit is not intended for commercial use. This warranty does not apply to damage to units from misuse or incorrect installation/connection. Misuse includes wiring or connecting to improper polarity power sources.
RETURN/REPAIR POLICY:

If you are experiencing any problems with your unit, please contact our customer service department at 1-800-222-5381 before returning product to retail store. After speaking to a customer service representative, if products are deemed non-working or malfunctioning, the product may be returned to the purchasing store with 30 days of original purchase. Any defective unit that is returned to manufacturer within 30 days of the date of purchase will be replaced free of charge.

If such a unit is returned more than 30 days but less than one year from the purchase date, manufacturer will repair the unit or, at its option, replace it, free of charge. If the unit is repaired, new or reconditioned replacement parts may be used, at manufacturer’s option. A unit may be replaced with a new or reconditioned unit of the same or comparable design. The repaired or replaced unit will then be warranted under the terms of the remainder of the warranty period. The customer is responsible for the shipping charges on all returned items.
LIMITATIONS:

This warranty does not cover accessories, such as adapters and batteries, damage or defects result from normal wear and tear (including chips, scratches, abrasions, discoloration or fading due to usage or exposure to sunlight), accidents, damage during shipping to our service facility, alterations, unauthorized use or repair, neglect, misuse, abuse, failure to follow instructions for care and maintenance, fire and flood.

If your problem is not covered by his warranty, call our Customer Service Department toll free at 1-800-222-5381 for general information if applicable.