

model no. 011-1962-8



## SIMPLE SERIES

Onboard Battery Charger



### IMPORTANT SAFETY INSTRUCTIONS. SAVE THESE INSTRUCTIONS.

This manual contains important safety and operating instructions.

### INSTRUCTION MANUAL

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**IF ANY PARTS ARE MISSING OR DAMAGED,  
OR IF YOU HAVE ANY QUESTIONS, PLEASE CALL  
OUR TOLL-FREE HELPLINE AT 1-888-942-6686.**



Read and understand this instruction manual thoroughly before using the product. It contains important information for your safety as well as operating and maintenance advice.

Keep this instruction manual for future use. Should this product be passed on to a third party, this instruction manual must be included.



**LISTED**

This MotoMaster product carries a three (3) year warranty against defects in workmanship and materials. At its discretion, MotoMaster Canada agrees to have any defective part(s) repaired or replaced free of charge, within the stated warranty period, when returned by the original purchaser with proof of purchase. This product is not guaranteed against wear or breakage due to misuse and/or abuse.

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## INTRODUCTION

The MotoMaster® Simple Series Onboard Battery Charger features advanced microprocessor technology making battery charging faster, easier, and safer than ever before. This manual will explain how to use the charger safely and effectively. Please read and follow these instructions and precautions carefully.

## IMPORTANT SAFETY INSTRUCTIONS

### SAVE THESE INSTRUCTIONS.

- Read all instructions, warnings, and cautions printed on the battery charger, battery and vehicle or equipment using battery.
- **DO NOT** expose charger to rain or snow.
- 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.
- To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
- An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
  - The pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
  - The extension cord is properly wired and in good electrical condition.
  - The wire size is large enough for the AC ampere rating of the charger, as specified in the chart on the following page.
- **DO NOT** operate charger with damaged cord or plug – replace the cord or plug immediately.
- **DO NOT** operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service professional.
- **DO NOT** disassemble the 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 electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

### **WARNING – RISK OF EXPLOSIVE GASES.**

- 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.
- To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary markings on these products and on engine.

### **PERSONAL SAFETY INSTRUCTIONS**

- Make sure that someone is close enough to come to your aid when you work near a lead-acid battery.
- Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
- **NEVER** smoke or allow a spark or flame in vicinity of battery or engine.
- Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
- 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 such objects to metal, causing a severe burn.

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- 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. 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.
- **NEVER** charge a frozen battery.

## AC ELECTRICAL CONNECTIONS

### PLUGGING CHARGER IN

Your charger requires a 120 V AC electrical wall outlet receptacle installed according to local codes and ordinances.

### USING AN EXTENSION CORD

An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:

- The pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
- The extension cord is properly wired and in good electrical condition.
- The wire size is large enough for AC ampere rating of charger as specified in the chart below:

### MINIMUM RECOMMENDED EXTENSION CORD

Length of Cord, Metres (Feet)	AWG* Size of Cord
7.6 (25)	18
15.2 (50)	18
30.5 (100)	18
45.6 (150)	16

\*AWG = American Wire Gauge

## PREPARING TO CHARGE

- If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
- Be sure area around battery is well ventilated while battery is being charged.
- Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
- Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manufacturer's recharging instructions.
- Study all battery manufacturer's specific precautions while charging and recommended rates of charge.
- If charger has adjustable charge rate, charge battery initially at lowest rate.

## CHARGER LOCATION

- Locate charger as far away from battery as DC cables permit.
- Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
- Never allow battery acid to drip on charger when reading electrolyte specific gravity or filling battery.
- Do not operate charger in a closed-in area or restrict ventilation in any way.
- Do not set a battery on top of charger.

## DC CONNECTION PRECAUTIONS

- Connect and disconnect DC ring terminals only after setting any charger switches to "off" position and removing AC cord from electric outlet. Never allow ring terminals to touch each other.
- Attach ring terminals to battery and chassis as indicated in the Connecting Your Battery section.

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## CONNECTING YOUR BATTERY

**FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE.**

**WARNING: A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY:**

- Position AC and DC cords to reduce risk of damage by hood, door, or moving engine part.
- Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.
- Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N, -) post.
- Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see the next step. If positive post is grounded to the chassis, see step, "For positive-grounded vehicle".
- For negative-grounded vehicle, connect POSITIVE (RED) ring terminal from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) ring terminal to vehicle chassis or engine block away from battery. Do not connect ring terminal to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- For positive-grounded vehicle, connect NEGATIVE (BLACK) ring terminal from battery charger to NEGATIVE (NEG, N, -) ungrounded post of battery. Connect POSITIVE (RED) ring terminal to vehicle chassis or engine block away from battery. Do not connect ring terminal to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- When disconnecting charger, turn switches to off, disconnect AC cord, remove ring terminal from vehicle chassis, and then remove ring terminal from battery post.
- See Operation section for length of charge information.



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

- Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, -) post.
- Connect POSITIVE (RED) charger ring terminal to POSITIVE (POS, P, +) post of battery.
- Attach at least a 60 cm (24") long 6-gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, -) battery post.
- Position yourself and free end of cable as far away from battery as possible – then connect NEGATIVE (BLACK) charger ring terminal to free end of cable.
- Do not face battery when making final connection.
- When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.
- A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

**WARNING!**

**A SPARK NEAR A BATTERY MAY CAUSE A BATTERY EXPLOSION!**

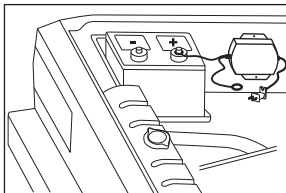
Battery chargers may get hot during operation. **DO NOT** set charger on flammable materials like carpeting, upholstery, paper, cardboard, etc. Charger may damage leather and plastic.

**ASSEMBLY**

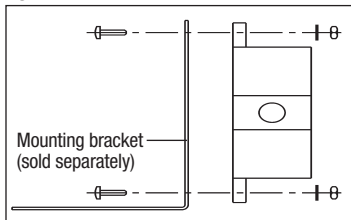
Remove all cord wraps and uncoil the cables prior to using the battery charger.

**MOUNTING INSTRUCTIONS****MOUNTING THE CHARGER TO THE FENDER WELL**

The charger can be mounted directly to the fender well of your vehicle, as shown (Fig. 1), using the double-sided adhesive and cable tie (included).

**Fig. 1****MOUNTING THE CHARGER ALONGSIDE THE BATTERY**

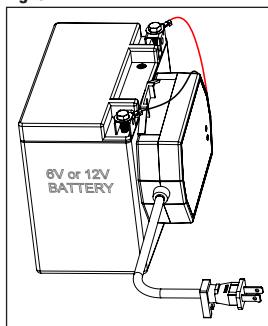
The charger can also be mounted alongside your vehicle's battery, using the bracket (sold separately). If possible, mount the charger to the side of the battery away from the engine and fan blades. Mount the bracket to the charger as shown (Fig. 2) using the nuts and bolts provided with the bracket. Loosen the battery retaining hardware enough that you can insert the bracket between the bottom of the battery and the battery mounting tray as shown. Position the charger so that it will not rub against the battery or any other part of the vehicle, and then tighten the battery retaining hardware. **NOTE:** Do not drill or puncture the battery.

**Fig. 2**

## ELECTRICAL INSTALLATION

The output leads of the charger are terminated with 3/8" dia. ring lugs. Route and secure the AC cord and the output wiring away from the gas line, carburetor or other hot, sharp, moving or pinch parts to avoid damage to the insulation (Fig. 3). Secure the AC cord using a cable tie or equivalent.

Fig. 3



## OPERATION

### LED INDICATORS

- **Red LED (solid):** The charger is charging the battery.
- **Red LED (flashing):** The connections are reversed, or the battery is bad.
- **Green LED (solid):** The battery is fully charged and the charger is in maintenance mode.

### CHARGING YOUR BATTERY

NOTE: For a battery with a starting voltage under 1 V, use a manual charger to pre-charge the battery for five minutes, to get additional voltage into the battery.

1. Follow the instructions in the Connecting Your Battery section to connect your battery, and then connect the charger to a live AC electrical outlet.
2. Charging begins automatically.
3. When charging is complete:
  - If you are finished charging, disconnect the charger from the AC power.
  - If you wish to maintain the battery, leave the charger plugged in.

### BATTERY CHARGING TIMES

BATTERY SIZE/RATING	CHARGE TIME (1.5 A)	
SMALL BATTERIES	6-12 Ah	2½-5 h
Motorcycle, garden tractor, ATV, etc.	12-40 Ah	5-13½ h

Times are based on a 50% discharged battery and may change, depending on age and condition of battery.

#### NOTE:

This charger is equipped with an auto-start feature. Current will not be supplied to the ring terminals until a battery is properly connected. The ring terminals will not spark if touched together. Charging will NOT begin if the connections are reversed.



## **AUTOMATIC VOLTAGE DETECTION**

The charger is equipped with Auto Voltage Detection, which automatically detects whether the battery is 6 V or 12 V and then charges accordingly.

## **BAD BATTERY**

If charging cannot be completed normally, the charger's output is shut off and the Red LED will flash. Have the battery checked and replaced, if necessary.

## **DESULFATION MODE**

If the battery is left discharged for an extended period of time, it could become sulfated and not accept a normal charge. If the charger detects a sulfated battery, the charger will switch to a special mode of operation designed for such batteries. If successful, normal charging will resume after the battery is desulfated. Desulfation could take 8-10 hours. If desulfation fails, the Red LED will flash.

## **COMPLETION OF CHARGE**

Charge completion is indicated by the Green LED. When lit, the charger has switched to the maintenance mode of operation. The charger can be left connected to the battery to keep it topped up while in storage.

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## **MAINTENANCE MODE (FLOAT MODE MONITORING)**

When the Green LED is lit, the charger has completed charging and started maintenance mode. In this mode, the charger keeps the battery fully charged by delivering a small current when necessary. If the charger has to provide its maximum maintain current for a continuous 12 hour period, it will go into abort mode. This is usually caused by a drain on the battery or the battery could be bad. Make sure there are no loads on the battery. If there are, remove them. If there are none, have the battery checked or replaced (if necessary).

## **MAINTAINING A BATTERY**

This product maintains both 6 V and 12 V batteries, keeping them at full charge. It is not recommended for industrial applications. The maintain mode technology allows you to safely charge and maintain a healthy battery for extended periods of time. However, problems with the battery, electrical problems in the vehicle, improper connections or other unanticipated conditions could cause excessive current draws. As such, occasionally monitoring your battery and the charging process is required.



## MAINTENANCE

A minimal amount of care can keep your battery charger working properly for years.

- Clean the ring terminals each time you are finished charging. Wipe off any battery fluid that may have come in contact with the ring terminals, to prevent corrosion.
- Occasionally cleaning the case of the charger with a soft cloth will help prevent corrosion.
- Coil the input and output cords neatly when storing the charger. This will help prevent accidental damage to the cords and charger.
- Store the charger unplugged from the AC power outlet in an upright position.
- Store inside, in a cool, dry place. Do not store the ring terminals on or around metal.

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**TROUBLESHOOTING**

PROBLEM	POSSIBLE CAUSE	SOLUTION
Charger will not turn on when properly connected.	<ul style="list-style-type: none"><li>• Poor connection.</li><li>• Battery voltage is too low. (Battery needs to have a minimum of 1 V to activate the charger.)</li><li>• AC outlet is dead.</li><li>• Poor electrical connection.</li><li>• Battery is defective.</li></ul>	<ul style="list-style-type: none"><li>• Ensure battery posts are clean and making proper contact with the ring terminals.</li><li>• Check the battery's voltage. If less than 1 V, try using a manual charger or boosting the battery to raise the voltage above 1 V and activate the charger. (Note: a battery below 1 V is likely damaged due to sulfation or other internal failure.)</li><li>• Check for open fuse or circuit breaker supplying AC outlet.</li><li>• Check power cord and extension cord for loose fitting plug.</li><li>• Have battery checked.</li></ul>



PROBLEM	POSSIBLE CAUSE	SOLUTION
Red LED is flashing.	<ul style="list-style-type: none"> <li>• Ring terminals are connected in reverse.</li> <li>• Desulfation failed.</li> <li>• Maintain current is too high. (May be caused by battery problem, or the battery is charging and discharging at the same time.)</li> </ul>	<ul style="list-style-type: none"> <li>• Reverse the connection of the ring terminals.</li> <li>• Have the battery checked.</li> <li>• Do not charge and discharge battery at the same time. Have battery checked.</li> </ul>
Battery ring terminals do not spark when touched together.	The charger is equipped with an auto-start feature. It will not supply current to the battery ring terminals until a battery is properly connected. The ring terminals will not spark if touched together.	No problem; this is a normal condition.
Both LEDs come on for 2 seconds, then turn off.	The charger is plugged into an AC outlet.	No problem; this is normal.
I cannot select a 6 V or 12 V setting.	The charger is equipped with Auto Voltage Detection, which automatically detects the voltage and charges the battery.	No problem; this is normal.

**NOTE:**

For more information about troubleshooting or replacement parts, call toll-free: 1-888-942-6686.

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## TECHNICAL SPECIFICATIONS

Input voltage	120 V AC
Input frequency	60 Hz
Input current	0.4 A
Output Voltage	6 V or 12 V
Output current	1.5 A/6 V DC 1.5 A/12 V DC

Made in China  
Motomaster Canada  
Toronto, Canada M4S 2B8