

**MOTOMASTER** 1933

TM

# ELIMINATOR

## Intelligent Battery Charger



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### SAVE THESE INSTRUCTIONS.

This manual contains important safety and operating instructions. Read all instructions and follow them with use of this product.

Questions? Call Customer Service: 1-877-619-6321

## INTRODUCTION

The MotoMaster® Intelligent Battery Chargers feature advanced microprocessor technology making battery charging faster, easier, and safer than ever before. This manual will explain how to use the chargers safely and effectively.

**Please read and follow these instructions and precautions carefully.**

### SAFETY INFORMATION

#### 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 YOU USE CHARGER, YOU READ AND FOLLOW THE INSTRUCTIONS PROVIDED EXACTLY. 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, warnings, and cautions printed on the battery charger, battery and vehicle or equipment using battery.
- Use the charger for charging lead-acid batteries only (such as those used in cars, trucks, motorcycles, boats, etc.).
- Battery chargers are 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, cameras, etc. Charging dry-cell batteries may cause them to burst and cause injury to person and damage to property.
- Use of an attachment not recommended by the battery charger manufacturer may result in the risk of fire or electrical shock.

## SAFETY INFORMATION (cont'd)

- **DO NOT** disassemble charger. Take it to a qualified service professional if service or repair is required. Incorrect assembly may result in fire or electric shock.
- To reduce risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
- **DO NOT** expose charger to rain or snow.
- **NEVER** charge a frozen battery. If battery acid becomes frozen, bring battery to a warm area and allow it to thaw before you begin charging.
- **NEVER** touch the battery clamps together when the charger is on. 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 Instructions

- Make sure that someone is within range of your voice to come to your aid if needed while you work with or are 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 contacts your eyes, skin or clothing. If this happens, wash immediately with soap and water, then get medical attention.
- **NEVER** smoke or allow an open spark or flame in the vicinity of the battery or engine. Batteries generate explosive gases.
- Take care 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, which 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 a severe burn.
- **NEVER** attempt to charge a frozen battery (see bullet point under *Important Safety Instructions*).
- **NEVER** overcharge a battery.
- **ALWAYS** operate the battery charger in an open, well-ventilated area.

## SAFETY INFORMATION (cont'd)

### AC Electrical Connections

#### PLUGGING CHARGER IN

Your charger requires a 3-pin, grounded 120 V AC electrical wall outlet receptacle installed according to local codes and ordinances.

#### 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.

#### MINIMUM RECOMMENDED EXTENSION CORD

LENGTH OF CORD, METRES (FEET)	AWG* SIZE OF CORD
7.6 (25)	18
15.2 (50)	16
30.5 (100)	12
45.6 (150)	10

\*AWG=American Wire Gauge

#### WARNING



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

## SAFETY INFORMATION (cont'd)

### Preparing to Charge

#### CHARGER LOCATION

- **DO NOT** expose charger to rain or snow.
- Locate the charger as far away 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

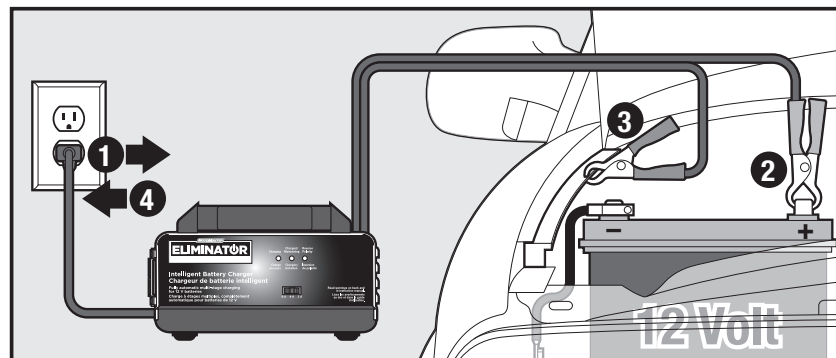
Battery chargers may get hot during operation. **DO NOT** set charger on flammable materials like carpeting, upholstery, paper, cardboard, etc. Charger may damage leather and plastic.

#### BATTERY PREPARATION

- When removing 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.

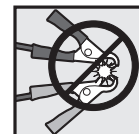
## CONNECTING YOUR BATTERY

### Battery In Vehicle (Negative Grounded)



- 1** Before connecting and disconnecting the DC output clamps, remove the AC plug from the electrical outlet.

**NEVER** allow the DC output clamps to touch each other. This may cause a spark.



#### To reduce the risk of a spark near the battery:

- Position AC and DC cords to reduce the risk of damage by hood, door, or moving engine part.
- Stay clear of fan blades, pulleys, and other parts that can cause injury.

- Check polarity of battery posts. A positive (POS, P, +) battery post usually has a larger diameter than a negative (NEG, N, -) battery post.
- 2** Connect the positive (red) clip from battery charger to positive (POS, P, +) ungrounded post of battery.
- 3** Connect the negative (black) clip to vehicle chassis (must be a heavy gauge metal part of the frame) or engine block away from battery. **DO NOT** connect clip to carburetor, fuel lines, or sheet-metal body parts.
- 4** Connect charger AC supply cord to electrical outlet. (Reverse process to remove charger.)

### ⚠ WARNING

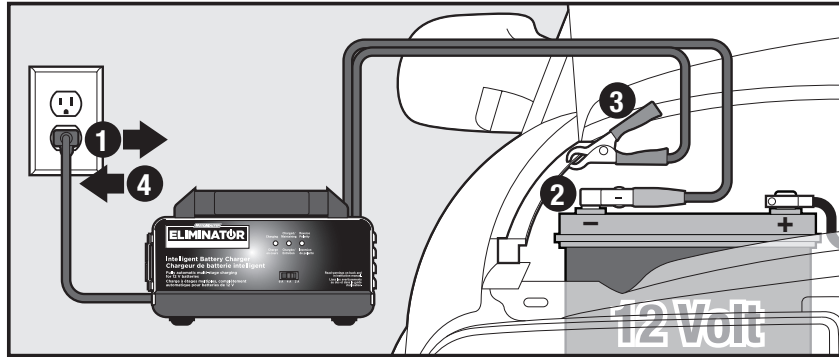


A SPARK NEAR A BATTERY MAY CAUSE A BATTERY EXPLOSION.

**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.

## CONNECTING YOUR BATTERY (cont'd)

## Battery In Vehicle (Positive Grounded)



- 1** Before connecting and disconnecting the DC output clamps, remove the AC plug from the electrical outlet.

**NEVER** allow the DC output clamps to touch each other. This may cause a spark.



**To reduce the risk of a spark near the battery:**

- Position AC and DC cords to reduce the risk of damage by hood, door, or moving engine part.
- Stay clear of fan blades, pulleys, and other parts that can cause injury.

- Check polarity of battery posts. A positive (POS, P, +) battery post usually has a larger diameter than a negative (NEG, N, -) battery post.

- 2** Connect the negative (black) clip from battery charger to negative (NEG, N, -) ungrounded post of battery.
- 3** Connect the positive (red) clip to vehicle chassis (must be a heavy gauge metal part of the frame ) or engine block away from battery. **DO NOT** connect clip to carburetor, fuel lines, or sheet-metal body parts.
- 4** Connect charger AC supply cord to electrical outlet. (Reverse process to remove charger.)

## ⚠ WARNING

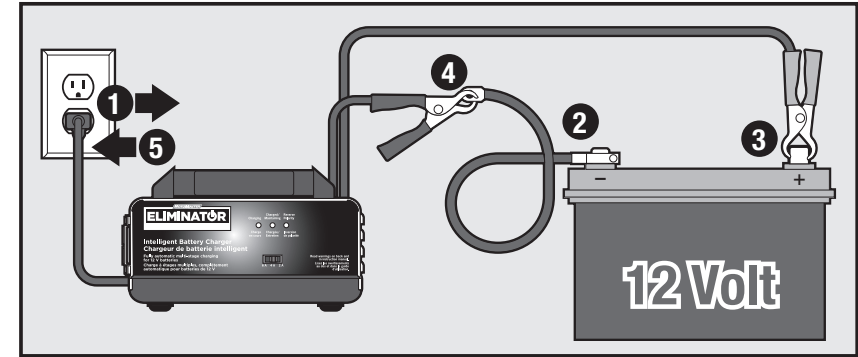


A SPARK NEAR A BATTERY MAY CAUSE A BATTERY EXPLOSION.

**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.

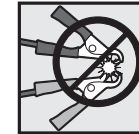
## CONNECTING YOUR BATTERY (cont'd)

## Battery Removed from Vehicle



- 1** Before connecting and disconnecting the DC output clamps, remove the AC plug from the electrical outlet.

**NEVER** allow the DC output clamps to touch each other. This may cause a spark.



- Check polarity of battery posts. A positive (POS, P, +) battery post usually has a larger diameter than a negative (NEG, N, -) battery post.

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

- 3** Connect the positive (red) clip from battery charger to the positive (POS, P, +) post of battery.
- 4** Position yourself and free end of cable as far away from battery as possible, then connect the negative (black) clip from battery charger to free end of cable. **DO NOT face battery when making final connection.**
- 5** Connect charger AC supply cord to electrical outlet. (Reverse process to remove charger.)

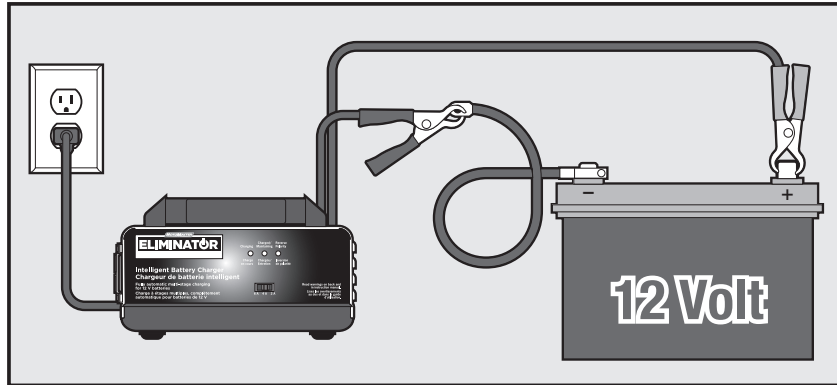
When disconnecting chargers, **ALWAYS** do so in reverse sequence of connecting procedure and break first connection while standing as far away from battery as practical.

## ⚠ WARNING



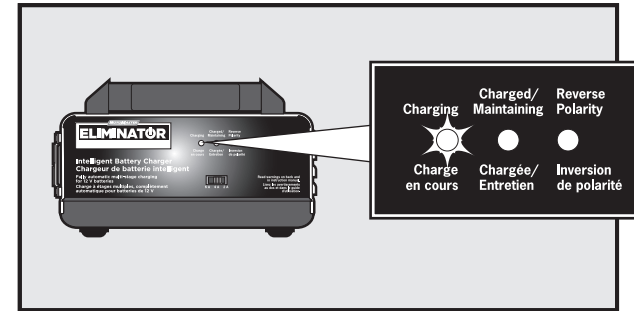
A SPARK NEAR A BATTERY MAY CAUSE A BATTERY EXPLOSION.

Using this battery charger is extremely simple. The built-in micro-processor was designed to seamlessly work with all types of 12 V lead-acid batteries so you don't need to select whether your battery is conventional, low maintenance, maintenance-free, deep cycle, Gel Cell or AGM.



## Normal Operation

If the battery you are charging is in good condition and is properly connected to the charger you will see the following on your charger's display panel:



When connected to a battery one of three LEDs will illuminate to indicate the following:

### CHARGING LED

This yellow LED indicates the battery is being charged.

### CHARGED/MAINTAINING LED

This LED illuminates when charging is complete and the charger switches to the Maintenance Mode.

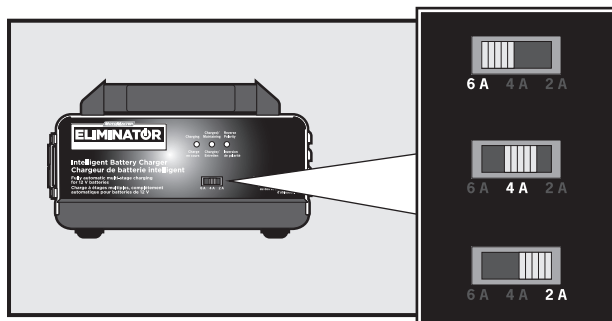
### REVERSE POLARITY LED

This LED will illuminate if the charger cables (+/-) are connected to the wrong terminals on the battery. Note: Charger will NOT begin charging if the Reverse Polarity LED is on.

## UNDERSTANDING CONTROLS & FEATURES (cont'd)

### Changing Charge Rates

Moving the charge rate switch will allow you to change charge rates (6 A, 4 A, 2 A).



### Understanding Charge Rates

- o **6 A Fast Charge and 4 A Medium Charge** – Use for charging small to large capacity automotive, marine and farm tractor batteries.
- o **2 A Trickle Charge** – Use for charging motorcycle, ATV, snowmobile, personal watercraft, garden tractor and golf cart batteries.

### Understanding Charge Rate Times

The built-in intelligent micro-processor 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** – If a battery has been only slightly discharged, it can be charged in less than a few hours. This same battery could take up to 10 hours if very discharged.
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 temperatures 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.

## UNDERSTANDING CONTROLS & FEATURES (cont'd)

### Other Features

#### 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. After switching to the **Maintenance** mode, the charger will limit the charging current to avoid the risk of overcharging.

#### COOLING FAN OPERATION

The charger is designed to control its high-speed cooling fan for efficient operation. Consequently, it is normal for the fan to start and stop during charging.

#### OVERHEAT PROTECTION

The charger is designed to shut itself off if overheating is detected. Once the charger cools down, it will resume charging automatically.

#### AUTOMATIC SHUT OFF

The battery charger is designed to automatically shut off once the battery charging is complete to prevent overcharging. When charging is complete, the Charged/Maintaining LED will illuminate and the charger switches to the Maintenance Mode.

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## MAINTENANCE AND CARE

### 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.

### WARRANTY

## WARRANTY

This MotoMaster® Eliminator 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.