



## **74015 Battery Charger**

# **THIS CHARGER IS NOT COMPATIBLE WITH LITHIUM-ION BATTERIES**

### **Introduction:**

This charger is designed to charge 12-volt and 16-volt lead acid batteries, and both sealed AGM and wet cell.

The charger is equipped with a volt/amp meter combo for viewing the status of the charge cycle. This switch is not a setting but is for viewing.

In addition, a tri-color LED is provided to track the charge cycle progress.

### **SAFETY INFORMATION AC WIRING:**

Before making AC connections, refer to the requirements on the charger ID label. Your charger is equipped with an AC plug for 115-volts.

To reduce the risk of fire, use this charger only on branch circuits that are protected by a circuit breaker or fuse, adequate to carry the power drawn by the charger. All wiring should be in accordance with the national Code, ANSI/NFPA 70, and all local codes and ordinances.

The battery charger must be grounded to reduce the risk of shock. 115-volt chargers are equipped with a grounding type plug.

**\*DO NOT USE THIS CHARGER ON A TWO POLE UNGROUNDED OUTLET OR ATTEMPT TO BREAK OFF THE GROUND PRONG FOR USE ON A RECEPTACLE OR EXTENSION CORD NOT HAVING A GROUND\***

If an extension cord must be used, make sure it is in good condition. Use a three conductor cord no smaller than the size being used on the charger, and keep it as short as possible. The use of an improper extension cord could result in a fire or electric shock. Locate all cords so they cannot be stepped on or tripped over or otherwise subjected to damage or stress.

**-Do not use the charger if it shows signs of physical damage, or if the DC output leads or connectors feel hot when being used.**

**-Do not disconnect the DC output clamps, or connector from the battery when the charger is on. The resulting arch could cause the battery to explode.**

**-Do not expose the charger to any liquids or rainwater.**

**-Do not allow the battery charger to be in a dusty or contaminated area as these particulates will end up inside the charger case and reduce its life expectancy.**

**For Technical Assistance, call Moroso's Tech Line**

**(203)-458-0542, 8:30am-5:00pm Eastern Time**

**MOROSO PERFORMANCE PRODUCTS, INC.**

**80 CARTER DRIVE**

**GUILFORD, CT 06437**

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**The charger will become hot during use, so proper air flow is required around it. Place the charger on a hard, stable, non-flammable surface, and allow 12-inches of space on all sides.**

**Always wear safety glasses and protective clothing when working with batteries. Batteries contain acids which can cause severe chemical burns and bodily harm. Do not put wrenches or other metal objects across the battery terminal or battery top as arcing or explosion of the battery can result. Do not wear jewelry when working around batteries as arcing can cause severe burns.**

The tops of the batteries and battery hold down must be kept clean and dry to prevent self-discharge and flow of the current between the battery post and frame.

With wet cell batteries, maintain the proper electrolyte level by adding water when necessary. Never allow the electrolyte level to fall below the tops of the battery plates. Electrolyte levels fall during discharge and rise during charging.

**To prevent the overflow of electrolyte when charging, add water after the batteries have been fully charged, or add enough water to cover the plates if discharged.**

Old batteries require more frequent additions of water than new batteries. Do not over discharge batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete battery failure. Re-charge batteries as soon as possible after a deep discharge, but allow cooling if battery is hot.

Provide adequate ventilation when charging batteries. Chargers can ignite flammable materials and vapors. The charger should not be in direct sunlight as the unit is already creating heat during a charge cycle, and excessive heat will reduce its life expectancy.

#### **PRE-CHARGING INFORMATION:**

1. Before connecting the charger to the batteries make sure the battery pack is of the same voltage rating as the charger.
2. **Never charge a 12-volt battery in a 16-volt position**
3. Make sure the AC cord, DC output leads, terminals, connectors, or clamps are all in good working condition.
4. Do not use the charger if there are any signs of stress or damage, or if wires are cut or have damaged insulation. Using the charger with any of these symptoms could result in a fire, property damage, or personal injury.
5. Have a qualified service person to make the necessary repairs.

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## **CHANGING THE DC LEADS FROM FACTORY CLAMPS TO A CONNECTOR:**

If you are removing the clamps that are installed from the factory for your own connector, the connector must be rated for 30-amps, and the wires must be crimped and soldered to function in a 30-amp application. Failure to do so will void the warranty of the battery charger. **This is the most common failure when troubleshooting an issue.**

## **CHARGING:**

1. Connect charger to battery observing red clamp to battery positive and black clamp to battery negative.
2. Flip the switch on the meter to volts. The meter should read battery voltage. If it does not, the charger is connected incorrectly (see step 1 above), or the battery does not have enough voltage in it to start the charger. (See paragraph on how to jump start the charger)
3. With battery voltage reading on display, move the power switch to the correct battery voltage.
4. The LED should flash red and then stay steady red. The voltage should rise on the voltmeter as the battery charge progresses. Switch the meter to amps and charge amperage should be displayed. This indicates the battery is being charged.
5. Once the LED turns yellow/orange, the charge cycle is 80% complete, and the cycle has about an hour to go. During this hour, the voltage will rise to a maximum of 14.6 volts on a 12-volt system, and or 19.4 volts on a 16-volt system. The amperage will decline and should finish between 1 to 5 amps before the cycle ends, indicated by a solid green light.
6. If when powered on, and the LED light goes to yellow/orange within about 5 minutes, the battery can be considered already fully charged.

## **MAINTAINING:**

After the charging cycle ends, the charger will monitor the battery and turn itself back on and run a cycle if the battery discharges below 50% of its capacity.

## **JUMP STARTING THE CHARGER TO CHARGE A TOTALLY DEAD BATTERY:**

### **\*DO NOT ATTEMPT TO CHARGE A DAMAGED BATTERY\***

1. Using a fully charged battery and jumper wires, connected to the dead battery observing correct polarity.
2. The voltmeter should now read the battery voltage (through the jumper battery), and the charger can be powered on.

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3. A few minutes after the charger has been started, the jumper cables can be removed, and the charger will continue to charge the dead battery.

#### **PROGRAM SETTING:**

The charger is set from the factory to charge AGM and Wet Cell. No changes should be made.

#### **Troubleshooting:**

| <b>Symptom</b>  | <b>Cause</b>  | <b>Corrective Action</b>  |
|---|---|---|
| No voltage meter reading when connected to battery, and the LED flashes red/green   | Connected reverse to battery, or not connected to battery<br><br>Break in DC cord, or connector<br><br>Battery too dead to charge | Correct polarity, or connect to battery<br><br>Have a qualified person make repair<br><br>Jump start as described in the instruction or replace |
| When switched on, the red LED does not light, and no amps read on meter   | The panel circuit breaker is popped<br><br>There is no AC present at the plug   | Reset Breaker<br><br>Check that there is power at the source. If using an extension cord, check that it is not damaged                          |
| Checking voltage with a voltmeter across the output of the charger, and no voltage is displayed   | The charger must be attached to a battery to activate   |   |
| The battery voltage reads well below the rating of the battery, and when powered up the LED is red with a yellow flash, and is below 5 amps | The battery is extremely low and is in a slow charge phase until the voltage rises to a safe level before full activation         | Leave connected for a few hours. If the voltage rises even a little, then turn the charger on full  |

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| When switched on, the LED flashes red/yellow, and there is no amp output on the meter           | Charger and battery voltage mismatched  | Connect the charger to a battery with the same voltage rating  |
| The charger blows its fuse, or branch circuit fuse/circuit breaker as soon as it is switched on | Charger is shorted  | Contact Moroso   |
| Voltage rises quickly on battery and the amps fall fast even though they are dead               | Battery is sulfated   | Sometimes batteries can be recovered. Leave the charger on for a few hours, if the voltage falls and the current begins to rise, it may be able to recover.<br><br>Replace battery |
| After a full charge, the LED is green with a yellow flash                                       | The batteries did not reach 80% charge in 12 hours, or did not reach minimum voltage, and the charger timed out | Sometimes running a second cycle will achieve full charge, but battery replacement is likely   |

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