

BATTERY MAINTAINER

INSTRUCTIONS



The **ROCKWOOD BATTERY CHARGER/MAINTAINER** is equipped with a fully automatic microprocessor control unit to safely keep your 12 volt automotive, marine, motorcycle, lawn equipment and powersports batteries at their peak power and efficiency. It features reverse-polarity, short-circuit, and overload protection. The four-function LED readout is easy to read, and the Charger/Maintainer is excellent for maintaining a battery at full charge even through seasonal storage.

INCLUDES

- 12 Volt DC, 0.8 Amp (800 ma) output capacity Charger/Maintainer.
- 10-1/2 foot DC output cord with polarized connector.
- 3" Battery Terminal Clamps with 2 foot cord and polarized connector.
- 1/4" Ring Terminals with 2 foot cord, polarized connector and 3 Amp fuse on positive lead.



SPECIFICATIONS

- 12 Volt DC, 0.8 Amp (800 ma) output capacity.
- Automatic input power, charging, & fully charged LED display.
- Automatic switching; charge/maintain/charge microprocessor circuitry.
- Built-in Circuit Overload protection.
- Automatic Reverse-Polarity and Short-Circuit detection.
- Connect to side-or top-mount battery terminals.
- Ideal for maintaining a charge during winter season when the starting performance of vehicle batteries is lowered by cold or extreme weather conditions.
- Minimum battery voltage for charger to operate = 1.5 volts.
- Input power requirements = 120 V AC, 60 Hz., 0.25 Amp.

SAFETY INFORMATION



READ INSTRUCTIONS!

Thoroughly read and understand this instruction manual before use. Save manual for future reference to safety warnings, maintenance and operating procedures. Failure to follow all warnings can result in tool damage or serious physical injury.



WARNING!

- Use the Battery Charger/Maintainer for charging and maintaining 12-volt regular, deep-cycle, sealed Lead-Acid, Gel-cell and AGM (absorbed glass mat) batteries only. It is not intended to supply power to a low-voltage electrical system other than in an automotive application.
- Do not use Battery Charger/Maintainer for charging dry-cell batteries that are commonly used with home and portable appliances. These batteries may burst and cause injury to persons and damage to property.
- Perform all charging procedures in a safe, dry, well-ventilated area. Batteries produce explosive gases during charging.
- Keep Battery Charger out of reach of children.
- Do not operate this Battery Charger/Maintainer in rain or snow, or allow it to be immersed in water or other liquid.
- Do not open the Battery Charger/Maintainer. There are no user-serviceable parts inside.



EXPLOSION HAZARD!

- Do not use this Battery Charger/Maintainer in the presence of flammable fumes or gases.
- This Charger/Maintainer is designed to be used with 12-volt DC battery systems only. Do Not connect to a 6-volt or 24-volt battery system.
- Working in the vicinity of a lead-acid battery can cause an explosion of the battery being charged.
- When lead-acid batteries are charging, they vent explosive hydrogen gas which can be ignited by sparks from electrical connections. It is important to read this manual before charging and follow the battery charging and engine starting instructions exactly each time you use this Battery Charger/Maintainer.
- Do not smoke or use flammable items (matches, cigarette lighters, etc.) while working on a vehicle's battery system.
- Never charge a frozen battery, as it could explode.
- Do not expose battery to fire or intense heat, as it can explode.



HEALTH HAZARD!

- Always wear protective eyewear when using this product. Contact with battery acid can cause blindness and/or severe chemical burns.
- Keep clean, fresh water and soap nearby when working with batteries to clean skin, eyes and clothing which may have contacted battery acid.
- In case of battery acid contact:
SKIN: Wash skin thoroughly if battery acid comes in contact with skin, seek medical attention immediately.
EYES: Flush eyes with cool water for at least ten minutes. Seek medical attention immediately.



ELECTRICAL SHOCK HAZARD!

- Never operate or store unit in damp or wet conditions.
- If an extension cord is required, a 25' cord is recommended not to exceed 50'. All extension cords must be UL approved, 3 conductor grounded, 18 AWG or greater.
- Always unplug Battery Charger from outlet before attaching or removing clamps to battery terminals.
- Remove all jewelry or metal objects that could cause short circuits. A 12-volt battery will produce a current high enough to weld rings, watches or other similar objects to metal, causing a severe burn.
- This Charger is designed to be used with 12-volt DC battery systems only.
DO NOT CONNECT TO A 6-VOLT OR 24-VOLT BATTERY SYSTEM.
- Never touch Charger clamps together or to a common piece of metal. Sparking, explosion or damage to the Charger could result.

INDICATOR LED FUNCTIONS

- **RED Flashing LED Indicator:** When the battery charger is plugged into AC power and while charging, the RED Power-on LED will flash for a brief period then illuminate a steady RED.
- **RED Steady LED Indicator:** The RED LED will illuminate steadily to indicate the Charger is functioning normally and in the Charging Mode. This feature will only function on batteries that have at least 1.5 volts of charge.
- **GREEN Flashing LED Indicator:** The GREEN LED will begin flashing as the battery exceeds 80% of full charge.
- **GREEN Steady LED Indicator:** The GREEN LED will illuminate steadily to indicate the battery has reached full charge.
- **Maintenance Mode :** The Charger/Maintainer will automatically shut off at full battery charge and go into a Storage/Float mode with automatic On-Off monitoring. If the battery voltage falls below 12.8 volts, the Charger will re-activate and start the Charging Mode.
- **Protection Features:** The Charger/Maintainer has Reverse-Polarity, Short-Circuit and Overload protection circuitry. If any of the above conditions occur, the RED LED will flash constantly and instantly shut off charging output.

NOTE: Typically, 12.6V DC is considered full charge for a 12-volt battery if the voltage is measured one hour after the Battery Charger is disconnected. During charging, a nominal 12-volt battery can reach a charge level of 13.6 volts or even higher. To record an accurate battery volt reading, wait at least one hour after removing charger.

SET-UP

1. Determine which cable end cord and terminal set to be used (Terminal Clamps or Ring Terminal ends) and connect the polarized plugs together. Be sure to push the connectors together firmly until they fully seat.
2. When connecting Terminal Clamps to a battery, rock the clamps back and forth on the battery terminals to ensure a secure connection and reduce the risk of sparking.
3. If using the Ring Terminal connections, use ¼" or 6mm screws, nuts and washers (not included) in good, clean condition.
4. Place the Charger/Maintainer as far away from the battery being charged as the charging cables will permit.
5. If using the Battery Charger/Maintainer close to the vehicle's battery and engine, place the unit on a flat, stable surface, and keep all clamps, cords, clothing and body parts away from moving parts of the engine and vehicle.
6. Refer to the specific vehicle battery charging procedure as found in a shop or owner's manual.
7. Determine that vehicle charging system is 12 Volts. If uncertain, refer to vehicle owners or shop manual.
8. Be sure area around battery is well-ventilated while battery is being charged.
9. If it is necessary to remove battery from vehicle to charge, or to clean terminals, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are turned off to prevent arcing.

10. Clean battery and cable terminals to ensure good contact. Be careful to keep corrosion from coming in contact with eyes or skin. Corrosion build-up can be dissolved with a baking soda-water paste solution.
11. For a battery without cell caps, carefully follow manufacturer's recharging instructions.
12. For batteries with removable vent caps, add distilled water in each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill.
13. Do not operate Battery Charger/Maintainer in an enclosed area or restrict ventilation in any way. Marine batteries must be removed from enclosures and charged on shore.

CHARGING BATTERY

1. Position AC input power and DC charger cords to reduce risk of damage by hood, doors, or moving engine parts.
2. Stay clear of fan blades, belts, pulleys and other moving/rotating parts.
3. Check polarity of battery terminals:
Positive = (+, POS, P)
Negative = (-, NEG, N)
NOTE: If polarity is reversed, the Reverse-Polarity and Short Circuit protection will cause the LED indicator to continuously flash RED and will not provide charging to the battery.
4. Determine which terminal of battery is grounded (connected) to the chassis. If negative terminal is grounded to chassis (as in most vehicles), it is a negative ground system. If positive terminal is grounded to the chassis, it is a positive ground system.
5. **FOR NEGATIVE-GROUNDED VEHICLE**, connect positive (RED) charger clamp from Battery Charger to positive (+, POS, P) ungrounded terminal of battery. Connect negative (BLACK) charger clamp to vehicle chassis or engine block away from battery. Do not connect charger clamp to carburetor, fuel lines or sheet metal body parts. Connect only to heavy gauge metal part of the frame or engine block.
6. **FOR POSITIVE-GROUNDED VEHICLE**, connect negative (BLACK) charger clamp from Battery Charger to negative (-, NEG, N) ungrounded terminal of battery. Connect positive (RED) charger clamp to vehicle chassis or engine block away from battery. Do not connect charger clamp to carburetor, fuel lines or sheet metal body parts. Connect only to a heavy gauge metal part of the frame or engine block.
7. Plug in the Battery Charger/Maintainer unit into a 120 Volt/AC outlet.
8. When disconnecting Battery Charger, unplug Battery Charger/Maintainer from 120 Volt/AC outlet, remove clamp from vehicle chassis and then remove clamp from battery terminal.

TROUBLESHOOTING

- **No LED illumination:**
 - Check 120 VAC input plug connection.
- **RED LED flashes constantly and does not switch to solid RED:**
 - This may indicate an abnormal condition such as crossed polarity, an internally shorted battery or pinched cable. Disconnect immediately and do not reconnect until the source of the warning is found.
 - Unplug Battery Charger and check terminal condition and connections. Remove and clean battery terminals and cable ends.
 - Check Battery Charger Cable Clamp connections. Wiggle the clamp while holding onto terminal to allow clamp teeth to “bite” into terminal.
 - Make sure the battery voltage is at least 1.5 volts. Battery may be fully discharged and will not accept charging.
 - Battery may be sulfated.
 - Battery may be expired and internally shorted.
 - If using Ring Terminal cable end, check the condition of the 3 AMP fuse in the holder located on the positive (RED) terminal end. If burned out, determine cause, correct and replace with a 3 Amp automotive blade fuse.
- **Battery slow to charge or will not accept a charge.**
 - Unplug Battery Charger and check terminal condition and connections. Remove and clean battery terminals and cable ends.
 - Check Battery Charger Cable Clamp connections. Wiggle the clamp while holding onto terminal to allow clamp teeth to “bite” into terminal.
 - Battery is excessively cold. Charge rate will increase significantly above 32F.
 - Make sure the battery voltage is at least 1.5 volts. Battery may be fully discharged and will not accept charging.
 - Battery may be sulfated.
 - Battery may be expired and internally shorted.

If you have any questions about the use of this product, please contact

The Eastwood Technical Assistance Service Department: 800.544.5118 >> email: techhelp@eastwood.com
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