

Crop Circle Battery Pack Manual

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SAFETY

This product has been designed and tested to be a safe and “environmentally friendly” device. To ensure safe operation and to keep the product safe, the information, cautions, and warnings in this manual must be followed.

CERTIFICATION

Holland Scientific certifies that this product met its published specifications at the time of manufacture. Accuracy of the data recorded by this data acquisition system depends on the user adhering to the procedures published in this manual.

WARRANTY

Holland Scientific warrants this product against defects in material and workmanship for a period of one year from the date of shipment. During the warranty period, Holland Scientific will, at its option, either repair or replace products that prove to be defective.

For products returned to Holland Scientific for warranty service, Buyer shall prepay shipping charges to Holland Scientific and Holland Scientific shall pay shipping charges to return the product to Buyer. However, Buyer shall pay all shipping charges, duties, and taxes for products returned to Holland Scientific from another country.

LIMITATION OF WARRANTY

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

Information in this manual is subject to change without notice. No liability is assumed for damages resulting from the use of this information, device or software described.

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1.PRODUCT OVERVIEW

The Crop Circle Battery Pack contains a 5 A-hr, sealed lead-acid (SLA) battery. The battery pack contains enough capacity to power a Crop Circle Handheld System for approximately 8 to 10 hours when fully charged.

Crop Circle Battery Pack Specifications:

Weight: 5 lb (2.3 kg)

Capacity (C): 5 A-hr

Nominal Output Voltage: 12 Volts

Circuit Protection: 0.75 to 1.5 Amp fast acting 3AG type fuse

Charge Rate: Typically 0.1C

Carrier/holder: Adjustable-belt, lumbar pack.

2.CROP CIRCLE BATTERY PACK

2.1 PRELIMINARY SAFETY INSTRUCTIONS (PLEASE READ CAREFULLY AND FOLLOW RECOMMENDATIONS)

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS— This document contains important safety and operating instructions for charging Holland Scientific 5 A-hr battery packs using the PSC-12500 A-C Series battery charger. Before using the battery charger please read all instructions and cautionary markings on the battery charger, the battery and the product using the battery.

CAUTION!

To reduce the risk of electric shock:

Do not expose the unit to rain or moisture—use indoors only.

Do not remove cover. There are no user serviceable parts inside. Refer service to qualified service personnel.

The plug must be plugged into an outlet that has been properly installed and grounded in accordance with all local and national codes and ordinances.

Disconnect charger from AC power before attempting any maintenance or cleaning. Turning off controls may not reduce this risk.

WARNING!

Do not attempt to recharge non-rechargeable batteries. Use PSC-12500 charger only sealed or valve regulated, lead-acid, non-automotive, maintenance free rechargeable batteries. Attempting to charge other types of batteries may result in personal injury and battery damage.

The enclosure will become hot during the charging cycle—DO NOT TOUCH!

Connect or disconnect the output connectors only when the unit is disconnected from AC power or arcing and burning may result (due to the possible presence of explosive gases).

Ensure correct polarity connection: positive (red) to positive, negative (black) to negative.

Do not leave charger plugged in when they are not connected to a battery.

DANGER!

Never make alterations to the charging unit provided. If it will not fit the outlet have a proper outlet in-stalled by a qualified electrician. Improper connection will result in the risk of an electric shock or fire.

Make sure any cords are located so that they will not be stepped on, tripped over, or otherwise subjected to damage or stress. Do not operate this unit with a damaged cord or plug – replace the complete unit immediately. To reduce the risk of damage to electric plug, pull by plug rather than cord when disconnecting unit.

Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way. Do not disassemble charger; incorrect reassembly will result in the risk of an electric shock or fire. Refer service to qualified service personnel.

Recharge batteries in well ventilated areas to prevent build-up of explosive gases. Allow space around the charger and adequate air circulation to reduce internal heat buildup.

Make sure that the current output of the charger is within recommended parameters for the selected battery as described by the battery manufacturer.

Always keep children away from charging equipment when it is in use. Do not allow them to handle or play with the chargers when they are not in use.

2.2. Crop Circle Battery Pack Charging Procedure

The PSC-12500 charger is designed to operate in a single stage, float charge mode. Note, this charger is not designed to operate as a standalone power supply. The operating temperature range for the PSC-12500 charger is 32°F - 104°F (0°C - 40°C). This unit is designed to automatically switch into a single stage, float charge mode when the battery is charged.

Before using the PSC-12500 battery charger, make sure it is compatible with your battery. Refer to the ratings on the battery charger, the specifications in this manual, and your battery documentation. This charger may be used with input voltages of 110-240 VAC, 50 or 60Hz. This charger is ideally suited for batteries from 4-8AH. Make sure that the nominal voltage of the charger matches the nominal voltage of the battery.

Please follow the steps outlined below to charge the Crop Circle Battery Pack.

Charging Steps:

- 1) Make sure the PSC12500 battery charger is not connected to an AC power outlet.
- 2) In a well ventilated room, connect the battery's 2.5mm power plug into the charger's matching 2.5mm socket by inserting the plug into the socket. Be sure that the plug seats completely into the plug (see Figure 1).
- 3) Plug the PSC-12500 charger into an AC outlet.
- 4) After powering the charger, the red FAST CHARGE LED will illuminate. The charger will take approximately 10 to 12 hours to charge a completely discharged battery.
- 5) After the battery is charged, the charger will switch to float mode and the green FLOAT CHARGE LED will illuminate.

Note, if after 12 hours the FLOAT CHARGE LED does not illuminate, this may indicate that the battery is damaged and need to be replaced. Please contact Holland Scientific for a recommended replacement battery.

- 6) Disconnect charger from AC power and then disconnect charger from battery pack. Store charger in a safe place to prevent it from becoming damaged.

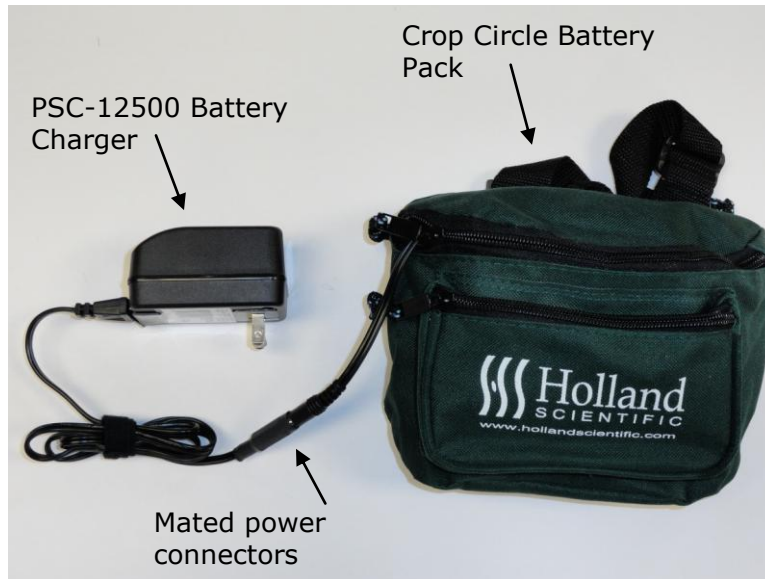


Figure 1. PSC-12500 battery charger connected to Crop Circle Battery Pack.

CHARGING NOTES AND TIPS

For safer and more efficient charging, batteries should be charged with higher voltages when cold and lower voltages when warm. The PSC-12500 charging unit incorporates automatic temperature compensation of the output voltage. It will increase the charge voltage in cold conditions and decrease charge voltage in warm conditions. For this feature to work properly, the battery and charger should be located in the same environment (allow the battery and charger to stabilize at room temperature before charging). Initially, the charger voltage may read a little high until its internal temperature warms during operation, thereby lowering the voltage. Make sure that you only charge the proper voltage battery. Trying to charge a lower voltage battery will cause severe overcharging and trying to charge a higher voltage battery may damage the charger.

The PSC-12500 battery charger is designed to ideally charge a battery at the C/10 rate (capacity divided by 10 hours). Therefore, a 5 A-hr battery will require a 500 milliamp charge. Larger or smaller capacities batteries can be charged with these chargers with the following precautions (refer to these charger specifications and your battery documentation for proper switch and charge currents to determine compatibility with this charger):

When charging a larger capacity battery, the battery may be overcharged due to the unit not switching into float charge mode. Holding a battery for prolonged times at the

high rate charge voltage may damage the battery. Larger capacity batteries really require a larger current charger or a float charger.

When charging a smaller capacity battery, the battery may be undercharged because the charger switches into float charge mode too early (relative to capacity). Leave the battery connected to the charger for several hours to finish charging in the float charge mode.

3. TROUBLESHOOTING

NO INDICATOR LIGHT - If the indicator light is dark, check to see if the receptacle is controlled by a light switch or power strip switch. If all else appears normal then the charger probably needs repair or replacement.

NO CHARGE INDICATOR, NOT CHARGING -If the charger will not go into charge mode then the battery is probably already charged. Try again with another battery which you know is not charged.

CHARGER WILL NOT SWITCH INTO FLOAT MODE - If the charger will not switch into the float mode, after 24 hours, then the battery is probably damaged and is not properly accepting the charge.

4. NOTES