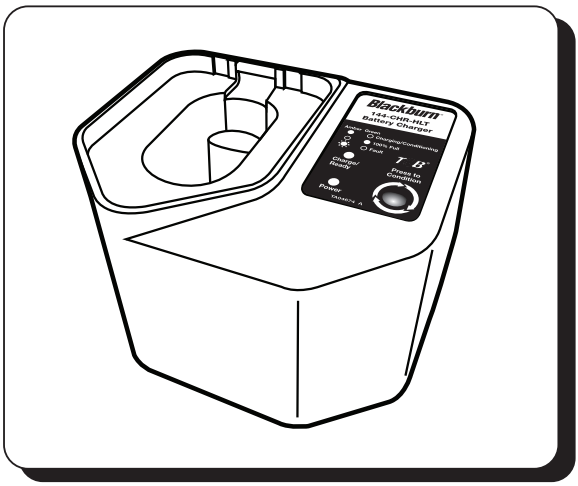
Blackburn®

Operating Instructions for BATTERY CHARGER

Catalog Number: 144-CHR-HLI



These products are intended to be supplied by a Listed LPS Power Supply, rated output 24VDC, 2.5A for the single bay and 24VDC, 5.0A for the multi-bay.

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Thomas&Betts

IMPORTANT: Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

1.0 GENERAL INFORMATION

1.1 ABOUT THIS GUIDE

This guide presents the setup, use, maintenance and troubleshooting of the charger along with instructions for conditioning your batteries.

1.2 DESCRIPTION

This battery charging system is designed to charge or condition multiple battery chemistries and configurations. This includes Thomas & Betts Nickel-Cadmium (NiCd) cat. no. CRCTBP, and Lithium-Ion (Li-Ion) cat. no. 144-BAT-HLI battery packs. The charger can be used with either 110V AC or 220V AC power supply.

1.3 SAFETY GUIDELINES

Before using the battery charger, read all instructions and cautionary markings on the battery charger, battery and on any product using the battery.

⚠ WARNING ⚠

To reduce risk of injury, use this charger only with authorized products. Other batteries or adapters may cause personal injury and/or damage.

- Do not expose the charger to rain, snow or direct sunlight.
- Use the charger at room temperature 68°F (20°C) to 77°F (25°C).
- Place the charger in a well-ventilated area free of foreign objects/matter.
- To reduce risk of electric shock, unplug the charger from the outlet before cleaning or changing adapters.
- Dispose of used batteries in accordance with local hazardous material laws.
- Do not disassemble, incinerate, modify or short circuit batteries, charger or related components.

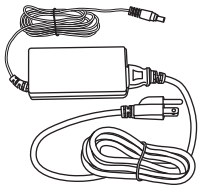
2.0 PARTS & ACCESSORIES

2.1 CHARGER (144-CHR-HLI)

SINGLE UNIT CHARGER

2.2 POWER SUPPLY

AC POWER CORD WITH POWER SUPPLY



3.0 SPECIFICATIONS

3.1 CHARGER

- Accommodates Ni-Cd / Ni-MH and Li-Ion batteries
- Condition feature for Nickel-based products
- Charge control inside each charger
- Power supply: Single Unit Charger: 24V @ 2.5 Amp International switching power supply
- Agency approvals: UL/CUL
- Fault indicators for open or shorted cells and temperature faults
- Charge termination methods:

Ni-Cd / Ni-MH:
Delta temperature
Negative Delta V
Maximum voltage
Timeout
Maximum temperature

Li-Ion:
Minimum current
Timeout

3.2 POWER SUPPLY

POWERTRON ELECTRONICS CORP (E248122), model PA1060-240T1A250, input rated 100-240 Vac, 50/60 Hz, 1.8A; output rated 24 Vdc, 2.5A, 60W max.

3.3 BATTERIES

Thomas & Betts batteries Cat. No. CRCTBP, Ni-Cd rated Maximum 14.4V dc, 1.9 Ah, and Cat. No. 144-BAT-HLI Li-Ion rated Maximum 14.4V, 3Ah.

4.0 OPERATING INSTRUCTIONS

4.1 OPERATING TEMPERATURE RANGES

⚠ CAUTION ⚠

Do not charge a battery that is below 32°F (0°C). Allow the battery to warm up to room temperature before charging.

The operating temperature of the charger is 32°F (0°C) - 113°F (45°C). For best results, charge batteries at room temperature 68°F -77°F (20°C - 25°C). Batteries charged in conditions above or below room temperature will exhibit battery cycle life and capacity below their rated values. This also applies to the temperature of the battery itself. Allow batteries to adjust to room temperature before charging.

4.0 OPERATING INSTRUCTIONS....Continued

4.2 POWER SUPPLY CONNECTION

Connect the power supply and charger to a nominal 110 volt circuit. The power supply manages and conditions the power input to the charger. The power supply does not use a resettable or replaceable fuse. If a power surge occurs the power supply temporarily interrupts the current supply until the condition is corrected. If the power light on the power supply fails to light, an an internal fuse may have blown and must be serviced by the manufacturer. Return the power supply for repair or replacement immediately.

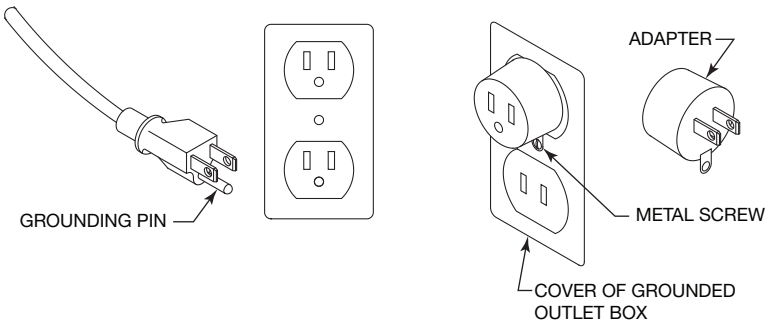
⚠ WARNING ⚠

Never alter an AC cord or its plug. If it does not fit into your outlet, have a proper outlet installed by a qualified electrician. An improper connection can cause an electric shock. To reduce the risk of electric shock, the charger must be grounded.

⚠ WARNING ⚠

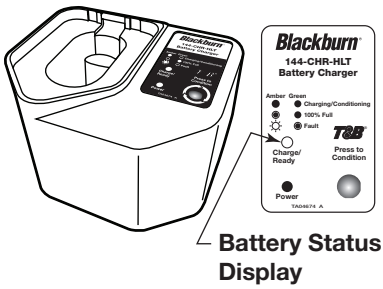
Before using an adapter, ensure that the outlet box is grounded. If you are not sure the box is grounded, have it checked and repaired, if necessary, by a qualified electrician.

A temporary adapter can be used to connect the grounding plug to a properly grounded two-prong outlet. A 110-volt adapter is shown below. Connect the grounding plug on the adapter to the outlet box using the cover plate screw. Use the temporary adapter only until a properly grounded, three-prong outlet can be installed by a qualified electrician.



4.0 OPERATING INSTRUCTIONS....Continued

4.3 BATTERY STATUS DISPLAY



Battery Status Display

NO LIGHT:
- Charger in stand by mode, ready for battery

SOLID AMBER:
- Battery is charging or being conditioned.

FLASHING AMBER (2 per second):
- Battery is rejected.

SOLID GREEN:
- Battery is 100% charged.

4.4 CHARGING THE BATTERY

Insert the battery into the charger. When the battery is inserted, the charging system begins the rapid charge cycle. When the charge cycle is completed, the “READY” indicator turns solid green, and the battery is fully charged. To attain 100% of its capacity, the battery should remain in the charger for 1-2 hours depending on the battery chemistry. A charged battery may be stored in the charger indefinitely.

Upon completion of the charging cycle of the Nickel-based battery, the charger switches to “Maintenance Mode” where it maintains the battery at 100% of its rated capacity. This will not damage your battery.

4.5 CONDITIONING THE BATTERY

(Nickel-based Battery Packs Only)

To condition a battery exhibiting a decrease in capacity, insert the battery into the charger and push and release the **“CONDITION”** button. The charger performs a complete (100%) discharge of the battery and recharges it to full available capacity, eliminating conditions that may cause it to perform below its rated capacity. This deep discharge cycle may take up to 15 hours to complete.

NOTE: The condition cycle should only be used once every several weeks. Performing the conditioning cycle on a daily or weekly basis shortens the usable life of the battery.

If conditioning the battery fails to eliminate the problem, the battery may have exceeded its usable life and may need replacement. Most batteries have a usable life of approximately 500 charge/discharge cycles under normal use.

Battery Rejection

If the Fault indicator on the Battery Status Display flashes, the battery is faulty or damaged. If the battery is still within its warranty period, contact your local Representative or Customer Service for replacement information.

See Troubleshooting table on page 12 for actions to be taken. If the rejected indicator continues to flash the battery should be removed and disposed of in accordance with local regulations.

4.0 OPERATING INSTRUCTIONS

4.6 TROUBLESHOOTING

Symptom/Situation	Probable Cause	Corrective Action
Power indicator (charger) is not lit/displayed.	AC power supply cord not connected to wall outlet. Power supply cord not connected to battery charger. Bad power supply. Bad fuse.	Check power supply connections. Replace power supply. Replace fuse.
Battery Rejected indicator is displayed. (Amber flashing)	Faulty condition identified. Over discharge of battery. Defective Battery.	Remove battery from charger and reinsert. Allow to sit in charger for 15 minutes, then reinsert. Replace battery.
Charger goes to ready in a short period of time (5-15 minutes).	Battery is fully charged. Faulty battery. New Battery.	Try conditioning battery. (Nickel Based Only) Replace battery. Remove battery from charger and reinsert.
Charger will not go into Charge mode. (Amber solid indicator)	Battery not seated correctly. Bad charger. Defective battery. Faulty LED.	Re-insert battery. Replace charger. Replace battery. Send in for repair.
Charger will not go into Condition mode. (Amber solid indicator) (NiMH only) (Li-Ion does not condition)	Battery too hot. Battery not designed to condition in the charger. Faulty LED.	Remove battery, allow to cool & reinsert. Do not condition. Send in for repair.
Battery becomes hot	Defective battery.	Immediately remove battery from charger and replace.
Power supply shuts down temporarily.	Power line surge.	Power will automatically reset.

NOTES:

For parts and service, contact the tool service center at 1-800-284-TOOL (8665).

WARRANTY: Thomas & Betts sells this product with the understanding that the user will perform all necessary tests to determine the suitability of this product for the user's intended application. Thomas & Betts warrants that this product will be free from defects in materials and workmanship for the period stated on the enclosed warranty card. Upon prompt notification of any warranted defect, Thomas & Betts will, at its option, repair or replace the defective product or refund the purchase price. Proof of purchase is required. Misuse or unauthorized modification of the product voids all warranties.

Limitations and Exclusions: **THE ABOVE WARRANTY IS THE SOLE WARRANTY CONCERNING THIS PRODUCT, AND IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE SPECIFICALLY DISCLAIMED. LIABILITY FOR BREACH OF THE ABOVE WARRANTY IS LIMITED TO COST OF REPAIR OR REPLACEMENT OF THE PRODUCT, AND UNDER NO CIRCUMSTANCES WILL THOMAS & BETTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

Thomas & Betts Corporation.
Memphis, Tennessee
www.tnb.com