



Lester Electrical

LESTER BATTERY CHARGER

MODEL 13115 TYPE 24LC10-2ET

PLEASE SAVE THESE IMPORTANT SAFETY AND OPERATING INSTRUCTIONS

For correct operation of the equipment, it is important to read and be familiar with this entire manual before installing and operating the charger.
DO NOT DISCARD THIS MANUAL AFTER READING.



LOOK FOR THIS SYMBOL TO POINT OUT SAFETY PRECAUTIONS. IT MEANS: *BECOME ALERT—YOUR SAFETY IS INVOLVED.* IF YOU DO NOT FOLLOW THESE SAFETY INSTRUCTIONS, INJURY OR PROPERTY DAMAGE CAN OCCUR.

INTRODUCTION

The Lester battery charger is designed to recharge deep-cycle, lead-acid batteries. A ferroresonant transformer is used to provide a highly reliable, line compensating unit with a minimum of moving parts, designed for long, trouble-free service. A patented electronic controller turns the charger on and off automatically. This electronic controller determines full charge of the batteries by measuring the rate at which the battery voltage increases during charge. When the voltage stops rising, the battery is fully charged and the charger turns off.

INITIAL INSTALLATION

The AC line to which the charger is to be connected must be capable of supplying the current specified on the charger nameplate.

⚠ CAUTION: TO REDUCE THE RISK OF FIRE, USE THIS CHARGER ONLY ON CIRCUITS PROVIDED WITH BRANCH CIRCUIT PROTECTION (CIRCUIT BREAKER FUSE) OF A MAXIMUM OF 20 AMPERES FOR 115 VOLT CHARGERS OR 10 AMPERES FOR 230 VOLT CHARGERS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, ANSI/NFPA 70, AND ALL LOCAL CODES AND ORDINANCES.

The use of an extension cord with the charger should be avoided. The use of an improper extension cord

could result in a risk of fire or electric shock. If an extension cord must be used, use a three-conductor, No. 12 AWG cord with ground, properly wired, in good electrical condition and keep it as short as possible. Locate all cords so that they will not be stepped on, tripped over, or otherwise subjected to damage or stress.

Do not operate this charger if it has received a sharp blow, was dropped or otherwise damaged in any manner; refer to a qualified service agent. Provide adequate ventilation for both batteries and charger. Keep all charger ventilation openings at least two inches (2") (5cm) away from walls and other objects. Do not allow clothing, blankets, or other material to cover the charger.

⚠ WARNING: CHARGERS CAN IGNITE FLAMMABLE MATERIALS AND VAPORS. DO NOT USE NEAR FUELS, GRAIN DUST, SOLVENTS, OR OTHER FLAMMABLES.

⚠ WARNING: TO REDUCE THE RISK OF AN ELECTRIC SHOCK, KEEP THE CHARGER DRY. DO NOT EXPOSE IT TO RAIN. FOR STORAGE, KEEP THE CHARGER IN A BUILDING.

GROUNDING INSTRUCTIONS

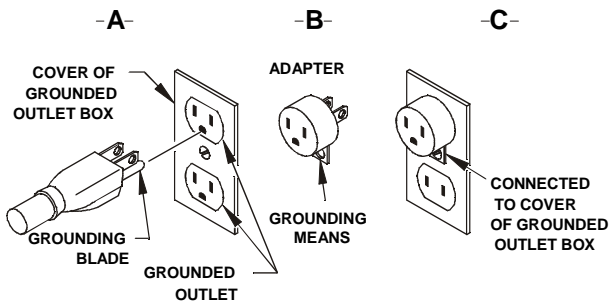
This battery charger must be grounded to reduce the risk of electric shock. This charger is equipped with an electric cord having an equipment-grounding

conductor and a grounding type plug. This plug must be connected to an appropriate receptacle that is properly installed and grounded in accordance with National Electrical Code and all local codes and ordinances.

⚠ DANGER: IMPROPER CONNECTION ON THE EQUIPMENT-GROUNDING CONDUCTOR CAN RESULT IN A RISK OF AN ELECTRIC SHOCK.

The conductor with insulation having an outer surface that is green, with or without yellow stripe(s), is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding connector to a live terminal. Battery chargers equipped with a grounding plug as illustrated in Figure A are for use on a nominal 115 Volt circuit. A temporary adapter, as illustrated in Figures B and C, may be used to connect this plug to a two-pole receptacle as shown in Figure C only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear or lug extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

GROUNDING METHODS



NOTE: The use of the adapter shown in Figures B and C is not permitted in Canada.

Battery chargers for use on a circuit having a nominal rating of more than 115 Volts are equipped with a specific electric cord and plug to permit the connection to a suitable AC receptacle. Make sure that the charger is connected to a receptacle having the same configuration as the plug. No adapter should be used with these chargers.

NORMAL OPERATION

The instructions printed on the charger are for daily reference.

1. Connect the AC plug to a grounded outlet of proper frequency and voltage as shown on the charger nameplate.

⚠ WARNING: TO REDUCE THE RISK OF AN ELECTRIC SHOCK, CONNECT ONLY TO PROPERLY GROUNDED, SINGLE PHASE (3-

WIRE) OUTLET. REFER TO GROUNDING INSTRUCTIONS.

⚠ CAUTION: MAKE SURE THE BATTERY PACK IS A 24 VOLT, 12 CELL, SERIES CONNECTED LEAD-ACID SYSTEM WITH A CAPACITY SHOWN ON THE CHARGER. THE FINISH ON-CHARGE BATTERY VOLTAGE SHOULD BE 2.5 TO 2.6 VOLTS PER CELL. DAMAGE TO THE CHARGER AND BATTERIES MAY RESULT IF THIS CHARGER IS USED ON THE WRONG BATTERIES.

⚠ WARNING: DO NOT TOUCH THE BATTERY TERMINALS OR CONTACTS ON THE DC OUTPUT CONNECTOR. AN ELECTRIC SHOCK COULD RESULT.

⚠ WARNING: MAKE SURE THE DC OUTPUT CONNECTOR AND BATTERY CONNECTOR ARE IN GOOD WORKING CONDITION.

DO NOT USE THIS CHARGER IF:

- The DC output connector is too loose or does not make a good connection.
- The DC output connector and battery connector feel hotter than normal.
- The DC output connector contacts or battery connector contacts are bent, corroded, or the plating is worn off.
- The DC output connector, or cord is cut, worn or has any exposed wires.
- The DC output connector, cords, charger or battery connector are damaged.

Using this charger with any of the above symptoms could result in a fire, property damage, or personal injury.

Have your distributor, dealer or other qualified serviceman repair or replace worn or damaged parts immediately. Repairs should not be attempted by people who are not qualified.

2. Connect the DC plug to batteries. The charger will start automatically after a short delay. The charger will start automatically after a short delay.
3. Monitor the ammeter for the correct charge rate. The initial charge rate will vary from 20 to 29 amps for 25 amp chargers and 8 to 12 for 10 amp chargers depending upon the condition of the batteries, how much the batteries have been discharged and the AC input line voltage available.

The charger turns off automatically when the batteries are fully charged.

The required charge time varies with battery size and depth of discharge.

When charging heavily discharged, new or cold batteries, additional time is required to achieve equalization of all battery cells.

⚠ WARNING: DO NOT LEAVE THE CHARGER UNATTENDED FOR MORE THAN TWO DAYS IN A ROW. SEVERE OVERCHARGING AND POSSIBLE DAMAGE TO THE BATTERIES WILL RESULT IF THE CHARGER SHOULD FAIL TO TURN OFF.

As batteries age, individual cells may weaken resulting in a higher than normal finish charge rate. The electronic timer will, however, still determine when the batteries have reached full charge and turn the charger off. Even though they are properly charged, older batteries will gradually lose capacity, and should be replaced when they will no longer perform as required.

4. After the charger has turned off, disconnect the AC plug and the DC output connector from the battery connector by grasping the connector body or handle and pulling the connector straight out of the battery connector.

⚠ WARNING: DO NOT DISCONNECT THE DC OUTPUT CONNECTOR FROM THE BATTERY CONNECTOR WHEN THE CHARGER IS ON. THE RESULTING ARCING AND BURNING OF THE CONNECTORS COULD CAUSE THE BATTERIES TO EXPLODE. IF THE CHARGER MUST BE STOPPED, DISCONNECT THE AC POWER SUPPLY CORD FROM ITS RECEPTACLE.

⚠ WARNING: TO AVOID DAMAGE TO THE CHARGER CORD, CONNECTOR, AND BATTERY CONNECTOR, DISCONNECT BY GRASPING THE PLUG AND PULLING IT STRAIGHT OUT OF THE BATTERY CONNECTOR. DO NOT PULL ON THE CHARGER CORD; DO NOT TWIST, ROCK OR PULL THE CONNECTOR SIDEWAYS.

BATTERY STORAGE MAINTENANCE

When the machine is not in use, charge the batteries once each week. Disconnect the charger DC output cord at the end of the charge.

PROPER CARE OF MOTIVE POWER BATTERIES

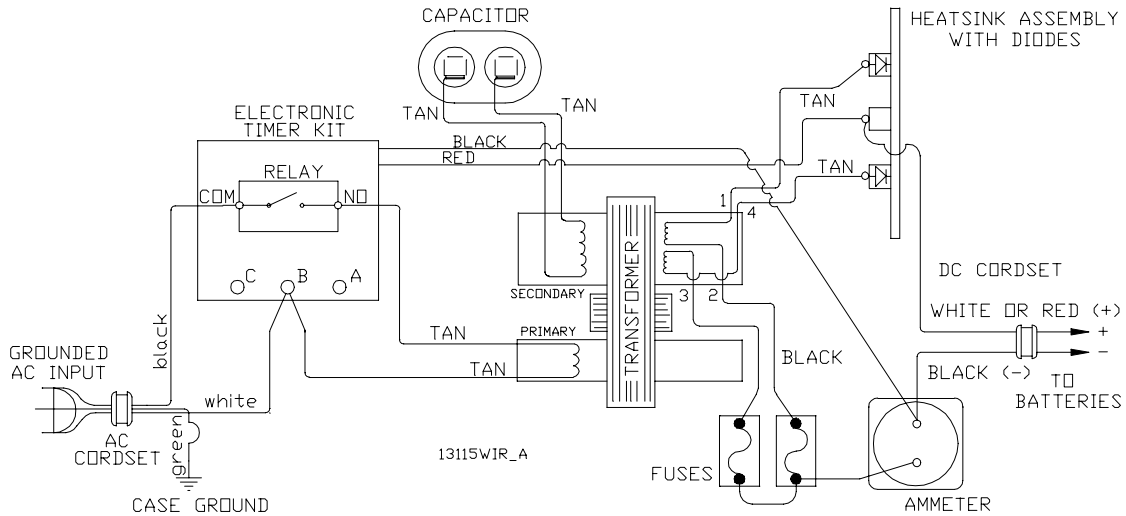
Motive power batteries are subject to severe deep cycle duty on a daily basis. Although these batteries are designed to withstand such duty, the following precautions must be observed to obtain good performance and maximum cycle life.

⚠ CAUTION: ALWAYS WEAR PROTECTIVE EYE SHIELDS AND CLOTHING WHEN WORKING WITH BATTERIES. BATTERIES CONTAIN ACIDS

WHICH CAN CAUSE BODILY HARM. DO NOT PLACE WRENCHES OR OTHER METAL OBJECTS ACROSS THE BATTERY TERMINAL OR BATTERY TOP. ARCING OR EXPLOSION OF THE BATTERY CAN RESULT.

1. When installing new batteries, be sure the polarity of each battery and overall battery pack is correct. Due to the electrical characteristics of this charger, it is possible to improperly hook up the batteries and not blow the fuse when charging. Battery and/or charger damage can result.
2. New batteries should be given a full charge before their first use because it is difficult to know how long batteries have been stored.
3. Limit use of new batteries for first 5 cycles. New batteries and older batteries that have been in storage are not capable of their rated output until they have been discharged a number of times.
4. Do not excessively discharge the batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete failure shortly thereafter. Limited use of new batteries will minimize the risk of cell reversals.
5. Sulfation results when batteries in storage are not maintained in a charged active state. Internal self-discharge can bring about the start of this condition in as little as three days in warm temperatures. Batteries allowed to sit unmaintained in storage self-discharge, sulfate to various degrees and lose capacity. Repeated charging will generally result in the recovery of most of the battery's capacity, though some permanent loss can be expected.
6. Maintain proper electrolyte level adding water when necessary. Never allow the electrolyte level to fall below the top of the battery plates. Electrolyte levels lower during discharge and rise during charge. Therefore, to prevent the overflow of electrolyte when charging, it is mandatory that water be added to cells AFTER they have been fully charged; do not overfill. Old batteries require more frequent additions of water than do new batteries.
7. When the temperature falls below 65°F, the batteries should be placed on charge as soon after use as possible. Cold batteries require more time to fully recharge.
8. The tops of the batteries and battery hold-downs must be kept clean and dry at all times to prevent excessive self-discharge and flow of current between the battery posts and frame.
9. Follow all operating instructions, cautions, and warnings as specified in this manual, on the charger, and in your vehicle owner manual.

WIRING DIAGRAM



PARTS LIST FOR LESTRONIC II CHARGER MODEL 13115 TYPE 24LC10-2ET 115 VAC / 60 HZ

PART NO.	QTY.	DESCRIPTION
15137S	1	CASE ASSEMBLY
09198S	1	TRANSFORMER ASSEMBLY
16354S	1	HEATSINK ASSEMBLY, W/ DIODES
02534S	1	AMMETER
24920S	1	ELECTRONIC TIMER ASSEMBLY
* 04483S	1	RELAY, FOR ELECTRONIC TIMER
** 23385S	1	RELAY, FOR ELECTRONIC TIMER
03820S	1	CAPACITOR, 2.0 MFD, 660 VAC
03837S	2	FUSEHOLDER ASSEMBLY
03838S	2	FUSE, 15 AMP, AGC-15
03894S	2	BUSHING, 7K-2, INSULATOR FOR CORDSETS
03822S	1	CORDSET, AC
09331S	1	CORDSET, DC, 14/2, 108", LESTER PLUG
09491S	1	CORDSET, DC, 14/2, 108", SB50 GRAY PLUG
08695S	1	CORDSET, DC, 14/2, 108", SB175 GRAY PLUG
12041S	1	CORDSET, DC, 14/2, 108", SB50 RED PLUG
17442S	1	CORDSET, DC, 14/2, 108", SB175 RED PLUG

* FOR USE WITH CHARGERS BUILT BEFORE 47/03

** FOR USE WITH CHARGERS BUILT AFTER 47/03

LIMITED WARRANTY

Lester Electrical warrants each new Lester Battery Charger for defects in material and workmanship for a period of two (2) years from the date of manufacture of the complete unit.

Repairs can be made at the Lester Electrical factory. To do so, FIRST obtain a "Return Material Authorization" number by calling the Service Department of Lester Electrical **(402 477-8988)** or by e-mailing **service@lesterelectrical.com** and send the defective unit with transportation charges prepaid to:

Lester Electrical
625 West A Street
Lincoln, NE 68522-1794 USA
Attention: Service Department
RMA # _____

For repairs made at other than the Lester Electrical factory, Lester will provide only the replacement parts. Defective parts should be sent with transportation charges prepaid to the Lester Electrical factory at the address noted above.

If the unit or parts are found, in the reasonable judgment of Lester Electrical, to be defective in material or workmanship, repair, or replacement will be made by Lester Electrical without charge for parts or labor. Repair or replacement will be at the discretion of Lester Electrical, with replacements being made using current models or parts performing the equivalent function. Labor charges other than those incurred at the Lester Electrical factory are not covered under this warranty. All expenses associated with delivering defective items to the Lester Electrical factory and the expense of returning repaired or replaced items from the Lester Electrical factory to the owner will be paid for by the owner. All warranty work accomplished at the Lester Electrical factory will be completed within a reasonable time after receipt of defective items.

This warranty does not cover any semiconductor parts, such as diodes, which are vulnerable to electrical overloads beyond the control of Lester Electrical. Warranty on parts not manufactured by Lester Electrical, which include, but are not limited to, timers and ammeters is limited to the period specified in the original manufacturer's warranty.

This warranty does not cover any charger that has been subject to misuse, neglect, negligence, or accident, or operated in any way contrary to instructions specified on the charger case and in the owner's manual. No claim of breach of warranty shall be cause for cancellation of the contract of sale of any Lester Electrical charger. Lester Electrical assumes no responsibility for loss of time, inconvenience, or other damage, consequential or otherwise, resulting from a defective charger. All implied warranties (including merchantability) are limited in duration to two (2) years from date of manufacture warranty period.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Lester Electrical's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective items. Lester Electrical issues this warranty in good faith and with full confidence in the workmanship and quality of Lester Electrical products.