

Lester Electrical

12 VOLT FULLY AUTOMATIC BATTERY CHARGER MODEL 13550-07

Specifications

AC Supply:	120 volts, 50/60 Hertz, single phase, 3 amps maximum
DC Output:	12 volts, 12 amps, electronic control
Battery Type:	6 cell, 12 volt, 40 to 105 ampere-hour capacity (20 hr. rate), 2.40 volts per cell maximum voltage, gel cell and sealed "maintenance-free" lead-acid battery

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.

Features

- Patented electronic circuit monitors battery state of charge and automatically turns charger off when battery is fully charged.
- Line voltage compensation produces consistent charger output for AC supply voltage variations of $\pm 10\%$ from nominal.
- Reverse polarity protected and no output voltage when disconnected from battery.
- Convection cooled design for maximum reliability and minimum maintenance.

IMPORTANT SAFETY INSTRUCTIONS

1. Before using battery charger, read all instructions and cautionary markings on battery charger and battery.

 CAUTION: TO REDUCE RISK OF INJURY, CHARGE ONLY LEAD-ACID TYPE RECHARGEABLE BATTERIES. OTHER TYPES OF BATTERIES MAY BURST CAUSING PERSONAL INJURY AND DAMAGE.

2. Keep dry; do not expose charger to rain or snow. For storage, keep charger in a building.

3. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
4. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
5. Make sure cord is located so that it will not be stepped on, tripped over or otherwise subjected to damage or stress.
6. An extension cord should not be used unless absolutely necessary. Use of an improper

extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure that:

- a. Pins on the plug of the extension cord are the same number, size, and shape as those on the charger (refer to Grounding Instructions);
 - b. Extension cord is properly wired and in good electrical condition; and
 - c. Wire size is No. 14 AWG or larger.
7. Make sure all electrical connectors are in good working condition. DO NOT operate charger with a worn, cut, or damaged cord or plug. Use of a damaged cord or plug may result in a risk of fire, electric shock, or injury to persons. Take to a qualified service agent for repairs.
 8. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service agent.
 9. Do not disassemble charger; take it to a qualified service agent when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
 10. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
 11. Provide adequate ventilation for both batteries and charger. The convection cooled design requires an unobstructed flow of cooling air for proper operation. Keep all charger ventilation openings at least two inches (2") (5cm) away from walls and other objects.

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

GROUNDING AND AC POWER CORD CONNECTION INSTRUCTIONS

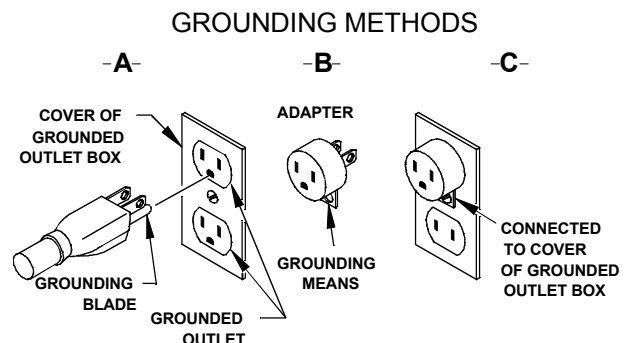
This charger must be grounded to reduce the risk of electric shock. This battery charger is equipped with an electric cord having an equipment-grounding conductor and a grounding-type plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with the National Electrical Code and all local codes and ordinances.

⚠ DANGER: NEVER ALTER AC CORD OR PLUG PROVIDED; IF IT WILL NOT FIT OUTLET, HAVE PROPER OUTLET INSTALLED BY A QUALIFIED ELECTRICIAN. IMPROPER

CONNECTION CAN RESULT IN A RISK OF ELECTRIC SHOCK.

This battery charger is equipped with a grounding plug as illustrated in adjacent Figure A, for use on a nominal 120 volt, 60 Hertz 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 B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

⚠ DANGER: BEFORE USING ADAPTER AS ILLUSTRATED, BE CERTAIN THE CENTER SCREW OF OUTLET PLATE IS GROUNDED. THE GREEN-COLORED RIGID EAR OR LUG EXTENDING FROM ADAPTER MUST BE CONNECTED TO A PROPERLY GROUNDED OUTLET; MAKE CERTAIN IT IS GROUNDED. IF NECESSARY, REPLACE ORIGINAL OUTLET COVER PLATE SCREW WITH A LONGER SCREW THAT WILL SECURE ADAPTER EAR OR LUG TO OUTLET COVER PLATE AND MAKE GROUND CONNECTION TO GROUNDED OUTLET.




Note: Use of adapter shown in Figures B and C is NOT permitted in Canada.

PERSONAL PRECAUTIONS

⚠ WARNING: RISK OF EXPLOSIVE GASES. WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY. TO REDUCE RISK OF BATTERY EXPLOSION, FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY BATTERY MANUFACTURER AND MANUFACTURER OF ANY EQUIPMENT YOU INTEND TO

USE IN VICINITY OF BATTERY. REVIEW CAUTIONARY MARKINGS ON THESE PRODUCTS AND ON ENGINE.

1. Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
2. Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
3. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
4. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
5. NEVER smoke or allow a spark or flame in vicinity of battery or engine.
6. Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
7. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal causing a severe burn.
8. Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low voltage electrical system other than an automotive application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
9. NEVER charge a frozen battery.

 **CAUTION: DO NOT OPERATE THE CHARGER IF IT IS DAMAGED OR APPEARS TO BE MALFUNCTIONING. PERSONAL INJURY OR DAMAGE TO THE CHARGER AND/OR BATTERIES MAY RESULT.**

PREPARING TO CHARGE

1. If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
2. Be sure area around battery is well ventilated while battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other non-metallic material as a fan.

3. Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
4. Add distilled water in each cell until battery reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer's recharging instructions.
5. Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
6. Determine voltage of battery by referring to car owner's manual and make sure charger output voltage is the same as battery voltage.

CHARGER LOCATION

1. Locate charger as far away from battery as DC cables permit.
2. Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
3. Never allow battery acid to drip on charger when reading gravity or filling battery.
4. Do not operate charger in a closed-in area or restrict ventilation in any way.
5. Do not set a battery on top of charger.

DC CONNECTION PRECAUTIONS

1. Connect and disconnect DC output clips only after setting all charger switches to "OFF" position and removing AC cord from electric outlet. Never allow clips to touch each other.
2. Attach clips to battery posts and twist or rock back and forth several times to make a good connection. This tends to keep clips from slipping off terminals and helps reduce risk of sparking.

NORMAL OPERATING INSTRUCTIONS

1. With AC supply cord disconnected from outlet and power switch in "OFF" position, connect DC output clips to battery as described in (a) or (b) below:
 - a. FOLLOW THESE STEPS FOR A BATTERY INSTALLED IN A VEHICLE. POSITION AC AND DC CORDS TO REDUCE RISK OF DAMAGE BY HOOD, DOOR, OR MOVING ENGINE PART. STAY CLEAR OF FAN BLADES, BELTS, PULLEYS, AND OTHER PARTS THAT CAN CAUSE INJURY TO PERSONS.

(1) Check polarity of battery posts. POSITIVE (POS,P,+) battery post usually has a larger diameter than NEGATIVE (NEG,N,-) post.

(2) Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see item a. If positive post is grounded to the chassis, see item b.

(a) For negative-grounded vehicle, connect POSITIVE (RED) clip from battery charger to POSITIVE (POS,P,+) ungrounded post of battery. Connect NEGATIVE (BLACK) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheetmetal body parts. Connect to a heavy gauge metal part of the frame or engine block.

(b) For positive-grounded vehicle, connect NEGATIVE (BLACK) clip from battery charger to NEGATIVE (NEG,N,-) ungrounded post of battery. Connect POSITIVE (RED) clip to vehicle chassis or engine block away from carburetor, fuel lines, or sheet metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

b. FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

(1) Check polarity of battery posts. POSITIVE (POS,P,+) battery post usually has a larger diameter than NEGATIVE (NEG,N,-) post.

(2) Attach at least a 24 inch long, 6-gauge (AWG) insulated battery cable to NEGATIVE (NEG,N,-) battery post.

(3) Connect POSITIVE (RED) charger clip to POSITIVE (POS,P,+) post of battery.

(4) Position yourself and free end of cable as far away from battery as possible then connect NEGATIVE (BLACK) charger clip to free end of cable.

(5) Do not face battery when making final connection.

(6) When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.

(7) A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

⚠ WARNING: LEAD-ACID BATTERIES GENERATE GASES WHICH CAN BE EXPLOSIVE. TO PREVENT ARCING OR BURNING NEAR BATTERIES, DO NOT DISCONNECT OUTPUT CLIP(S) FROM BATTERY WHEN CHARGER IS OPERATING. IF CHARGE CYCLE MUST BE INTERRUPTED, MOVE THE POWER SWITCH TO "OFF", DISCONNECT THE AC SUPPLY CORD FROM OUTLET, AND THEN DISCONNECT THE OUTPUT CLIPS FROM BATTERY. IF BATTERY IS INSTALLED IN A VEHICLE, DISCONNECT CHASSIS CLIP FIRST.

⚠ DANGER: TO PREVENT ELECTRIC SHOCK, DO NOT TOUCH UNINSULATED PARTS OF CHARGER OUTPUT CLIPS OR BATTERY TERMINALS.

⚠ CAUTION: THIS CHARGER IS FOR USE ONLY ON 6 CELL, 12 VOLT, 40 TO 105 AMPERE-HOUR CAPACITY (20 HR. RATE), 2.4 VOLTS PER CELL MAXIMUM VOLTAGE GEL CELL OR SEALED "MAINTENANCE-FREE" LEAD-ACID BATTERIES.

2. Connect AC supply cord to properly grounded 120 volt, 60 Hertz, single phase outlet (refer to Grounding Instructions).

3. Move power switch to "ON" position.

4. Charger turns on automatically one to three (1-3) seconds after power switch is turned on. GREEN light will glow when charger is on.

Monitor ammeter for correct charge rate. Initial charge rate should be 11 to 12 amps. As the battery reaches approximately 80% of full charge the charge rate decreases to less than 1 amp, and remains there until the charger turns off. Charger is equipped with a temperature sensor which automatically turns charger off if it overheats. Should charger turn off before the battery is fully charged check to be sure all ventilation openings are free from obstructions. After charger cools down to a safe temperature, it will automatically restart. If charger repeatedly overheats, refer to a qualified service agent.

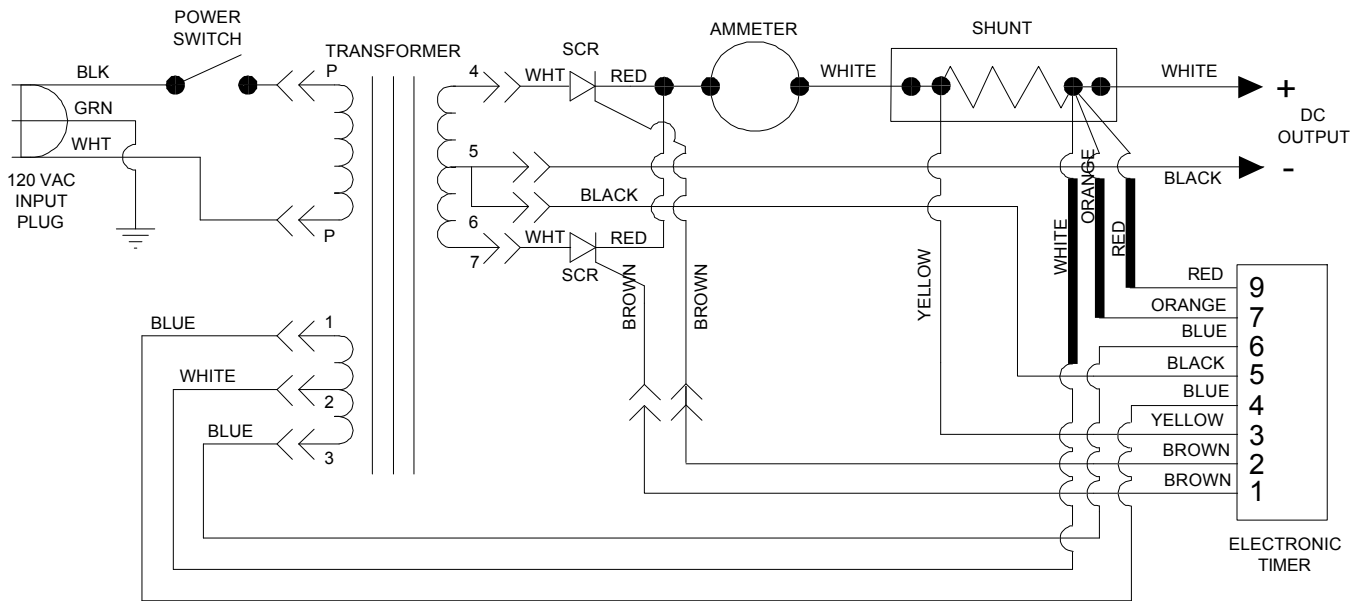
5. Charger turns off automatically when batteries are fully charged. Charge time varies with battery size and depth of discharge. Allow 8 hours for normal charging. A severely discharged battery may require 12 hours or longer to be properly charged and equalized. After charger has turned off move power switch to "OFF", disconnect the AC supply cord from

outlet, remove clip from vehicle chassis, and then remove clip from battery terminal.

6. If the charger operates for 18 hours and is unable to fully charge the battery, the charger turns off and the RED fault light glows. If the fault light is on, first check the battery for defects

and that it is the correct type and size. If the battery checks good a charger malfunction has occurred. Take the charger to a qualified service agent.

WIRING DIAGRAM



L2120S05

PARTS LIST FOR MODEL 13550-07

PART NO.	QTY.	DESCRIPTION
18977S	1	CASE ASSEMBLY
13545S	1	TRANSFORMER ASSEMBLY
13555S	1	ELECTRONIC TIMER ASSEMBLY
13102S	1	AMMETER, 12 AMP
15987S	1	CONTROL CABLE ASSEMBLY
04275S	2	BUSHING, INSULATOR, 6N3-4 FOR CORDSETS
16907S	1	CORDSET, AC, 18/3, 102"
16203S	1	CORDSET, DC, 14/2, 108", W/ ALLIGATOR CLIPS
15986S	1	THYRISTOR ASSEMBLY, 25 AMP, 200 VDC

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 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 factory, Lester will provide only the replacement parts. Defective parts should be sent with transportation charges prepaid to the Lester factory at the address noted above.

If the unit or parts are found in the reasonable judgment of Lester to be defective in material or workmanship, repair or replacement will be made by Lester without charge for parts or labor. Repair or replacement will be at the discretion of Lester, with replacements being made using current models or parts performing the equivalent function. Labor charges other than those incurred at the Lester factory are not covered under this warranty. All expenses associated with delivering defective items to the Lester factory and the expense of returning repaired or replaced items from the Lester factory to the owner will be paid for by the owner. All warranty work accomplished at the Lester factory will be completed with 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. Warranty on parts not manufactured by Lester, 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 charger. Lester 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 the two 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's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective items. Lester issues this warranty in good faith and with full confidence in the workmanship and quality of Lester products.