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## BATTERY CHARGER

### MODEL 17140 TYPE 60LC20-8ET

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### 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.**

#### INITIAL INSTALLATION

Do not operate this charger with damaged cords. 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 the batteries and charger. The convection-cooled design requires an unobstructed flow of cooling air for proper operation.

**⚠ WARNING: HAZARD OF EXPLOSIVE GAS MIXTURE. DO NOT DISCONNECT THE OUTPUT CHARGING CONNECTOR WHILE THE CHARGER IS OPERATING. THE RESULTING ARCING AND BURNING WILL DAMAGE THE CONNECTORS AND MAY CAUSE THE BATTERY TO EXPLODE. IF THE CONNECTORS MUST BE DISCONNECTED BEFORE CHARGER AUTOMATICALLY SHUTS OFF, TURN THE CHARGER OFF BY DISCONNECTING THE POWER CORD, OR BY PRESSING THE STOP BUTTON.**

**⚠ WARNING: KEEP DRY; DO NOT EXPOSE TO RAIN, POWER WASH DETERGENTS, OR SPRAY.**

#### NORMAL OPERATION

The instructions printed on the front panel of the charger are for daily reference.

1. With the charger DC output cord disconnected from the batteries, connect the power supply

cord to a properly grounded 120 VAC, 60 Hertz outlet.

**⚠ CAUTION: THIS CHARGER IS FOR USE ONLY ON 30 CELL, 180-250 AMP-HOUR (18 HR. RATE), 2.50 VOLTS PER CELL WET LEAD ACID BATTERY SYSTEMS. BATTERIES IMPROPERLY MATCHED WITH CHARGER MAY BURST, CAUSING PERSONAL INJURY AND DAMAGE TO BATTERIES OR CHARGER.**

2. Connect the charger output connector to the battery connector by grasping the plug body and pushing straight into the battery receptacle until fully engaged. The charger will automatically turn on two to five (2-5) seconds after connection if all connections are good and the battery is not over discharged. Monitor ammeter for initial charge rate.

**⚠ DANGER: RISK OF ELECTRIC SHOCK! DO NOT TOUCH UNINSULATED PORTIONS OF THE OUTPUT CONNECTOR OR UNINSULATED BATTERY TERMINALS.**

The correct initial charge rate should indicate around 16 amps depending on battery condition and how deeply discharged. The charge rate should decrease to 10 amps or less during charge.

A frequent error when connecting twelve 6-volt batteries together in series to produce 72 volts is to install one or more of the 6 volt batteries with the

polarity reversed. This error prevents the charger output from decreasing properly and damages the reverse polarity installed battery. The charging voltage measured while charging at the output connector after a few hours of charging should measure at least 63 VDC. If the measured voltage is less, suspect one or more reverse polarity installed battery. Carefully inspect and test the battery system with an accurate voltmeter.

3. The charger turns off automatically when the battery system is fully charged. Very deeply discharged batteries can require up to 18 hours for full recharge; for moderately used batteries, 12 to 16 hour recharge times are normal. Disconnect output plug from battery connector if unattended for two days or more in a row.

**⚠ CAUTION: IN THE UNLIKELY EVENT THAT THE CHARGER DOES NOT TURN OFF AUTOMATICALLY, OVERCHARGING AND POSSIBLE BATTERY DAMAGE MAY RESULT. FOR BEST BATTERY LIFE, CHECK TO BE SURE THE CHARGER HAS TURNED OFF PROPERLY AFTER EACH CHARGE CYCLE.**

## STORAGE

When the machine is not in use, charge the batteries once each week.

## PROPER CARE OF MOTIVE POWER BATTERIES

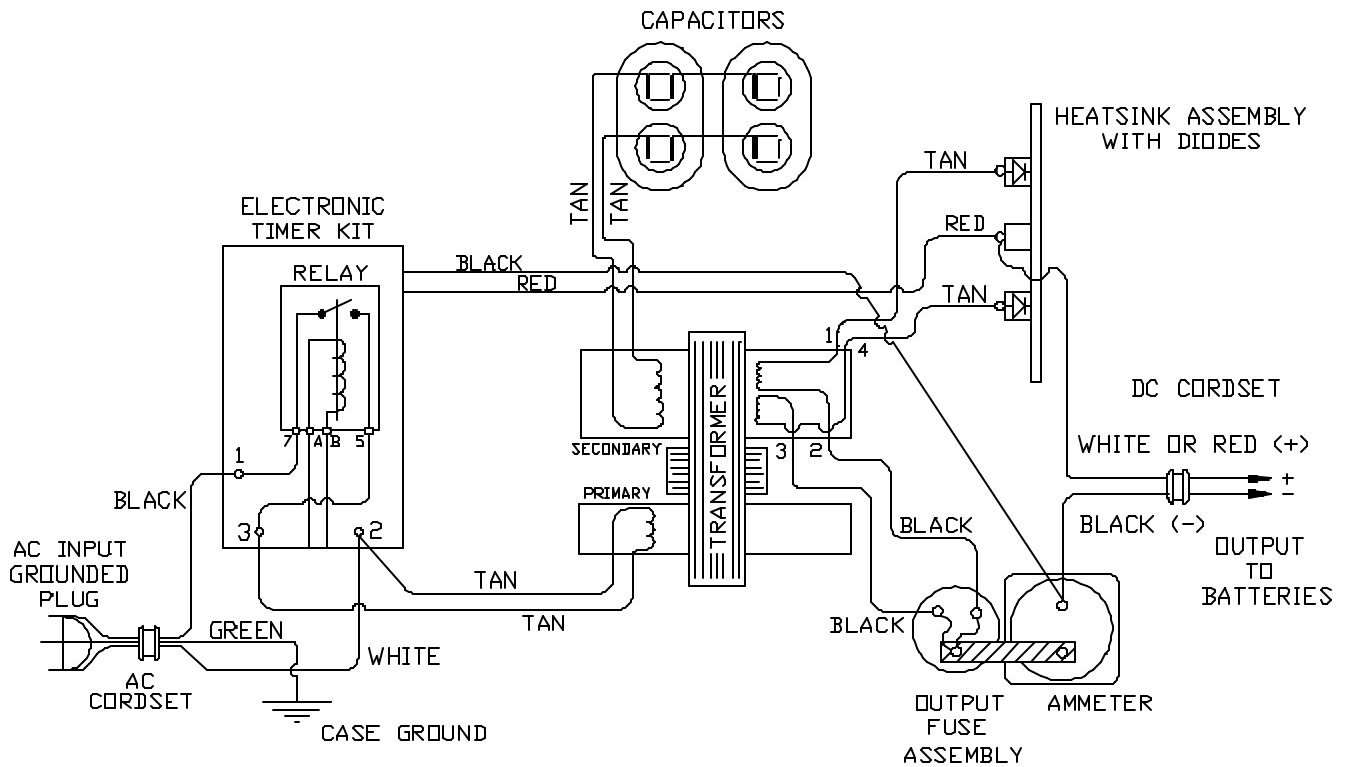
Motive power batteries are subjected to severe deep cycle duty on a daily basis. Although these batteries are designed to withstand such duty, the following precautions must be observed to obtain good performance and maximum cycle life.

**⚠ CAUTION: ALWAYS WEAR PROTECTIVE EYE SHIELDS AND CLOTHING WHEN WORKING WITH BATTERIES. BATTERIES CONTAIN ACIDS WHICH CAN CAUSE BODILY HARM. DO NOT PUT 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 the batteries have been stored.
3. Limit the use of new batteries for the first five cycles. New batteries are not capable of their rated output until they have been discharged and charged 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. Maintain the proper electrolyte level by adding water when necessary. Never allow the electrolyte level to fall below the top of the battery plates. Electrolyte levels fall 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.
6. When the temperature falls below 65°F, the batteries should be placed on charge as soon as possible.
7. 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.
8. Follow all operating instructions, cautions, and warnings as specified in this manual and on the charger case.

## WIRING DIAGRAM



L2115S86

### PARTS LIST FOR MODEL 17140 TYPE 60LC20-8ET 120 VAC / 60 HZ

PART NO.	QTY.	DESCRIPTION
21897S	1	CASE ASSEMBLY
17145S	1	TRANSFORMER ASSEMBLY
02390S	2	CAPACITOR, 6 MFD, 660 VAC
16354S	2	HEATSINK ASSEMBLY, W/ DIODES
08776S	1	OUTPUT FUSE ASSEMBLY, DC
16369S	1	AMMETER, 0-30 AMP
17160S	1	ELECTRONIC TIMER KIT W/ STOP BUTTON AND LOW VOLTAGE START
03894S	1	INPUT BUSHING, 7K-2
02028S	1	OUTPUT BUSHING, 7W-2
03574S	1	CORDSET, AC, W/15-15P PLUG
07755S	1	CORDSET, DC, 1212, SB-50 GRAY, 108"
21893S	1	CORDSET, DC, 1212, NO PLUG, 108"
10536S	1	CORDSET, DC, 1212, SB-50 GRAY, 130"

## **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](mailto: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 # \_\_\_\_\_**

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.