



Service Bulletins & Tips

May 2004

Volume 1, Issue 2

In this issue:

Service Department Hours – Learn the best way to contact the Lester Service Department and when they are available to serve your needs.

Meet George Chmielewski – George is the newest member of the Service Department.

Common Service Topics – Two topics are covered in this issue: 1) Wet Batteries vs. Sealed Batteries and 2) Low Voltage Charging

Tips from the Experts – This issue's tip concerns proper packing to minimize the risk of damage to your charger during shipping.

Featured Product – Release of new technology prompts new policy on rebuilt timer kits.

Service Bulletin – Technical update on current and previous Lester product offerings.

New Website Launch – Lester Electrical will be launching its redesigned website with added Technical Service support on June 1st.

SERVICE DEPARTMENT HOURS

Lester Electrical's Service Department provides technical support via email or telephone between the hours of 8:00 am and 4:30 pm (Central Time). The Service Department can be reached at (402) 477-8988. When you reach the receptionist, ask for Service. During these hours, your call will be transferred to either Jeff Hatcliff or George Chmielewski. Due to varying call volume you may have to leave a message, in which case your call will be returned in the order it was received. If you do not need your question answered immediately, send an email to service@lesterelectrical.com and you will typically receive a response within one business day.

If you know what is wrong with your charger and only need to order a replacement part, we ask that you call (402) 477-8988 and ask for Tammy in the Sales Department. Tammy will process your order and can answer any questions you may have on product availability, pricing, or shipping.

MEET GEORGE CHMIELEWSKI

We are pleased to introduce George Chmielewski as the newest member of the Lester Electrical Service Department. George fills the Customer Service Representative position that had been open since December and will be reporting directly to Jeff Hatcliff (Service Department Manager).

George, while new to Lester Electrical, has an extensive history in Customer Service and Technical Service. He worked for 25 years with Cushman in various roles including Field Service Manager, Branch Store Manager, and Q.A. Inspector. His primary responsibilities at Lester Electrical include processing repair order requests and providing technical support and troubleshooting advice to customers.

COMMON SERVICE TOPICS

Wet Batteries vs. Sealed Batteries

Most deep cycle batteries will fall within two categories, conventional wet lead-acid batteries (the type of battery that requires the addition of water to maintain the electrolyte level) or gel/sealed lead-acid, AGM, maintenance-free batteries. To avoid potential battery and charger damage, ensure the proper type of charger is being used.

Conventional, wet lead-acid batteries require a constant *current* finish at the end of the charge cycle. Using a charger designed for sealed/maintenance-free type batteries on conventional wet lead-acid batteries will cause increasingly shorter run times and possible loss of battery life due to undercharging.

Gel/sealed lead-acid and AGM types of maintenance-free batteries require a constant *voltage* finish at the end of their charge cycle. Using a charger designed for conventional wet lead-acid batteries on these types of maintenance free batteries will result in loss of battery life and capacity due to overcharging.

If you are unsure of the charging requirements for the type of battery being charged, contact your battery dealer before attempting to charge the batteries.

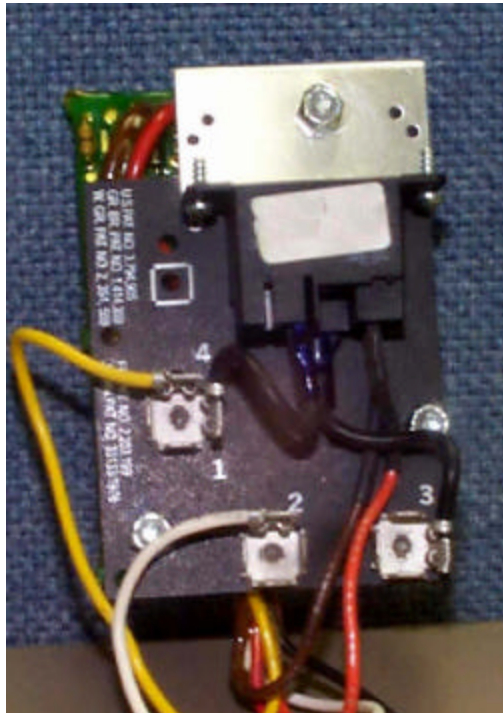
Charger Won't Start

There can be many causes for a charger not producing output when connected to a battery system. The causes can include, but are not limited to, a failure within the charger or battery system or simply a poor connection, to name a few. When possible, try the charger on a different battery system that is known to be good, or vice versa (a known good charger on the battery system in question). One of the most common causes for an automatic charger, such as the Lestronic II, to not turn on is an overly discharged battery system. This condition can be caused by improper maintenance of the batteries during storage or the equipment is not fully shut off after use, which allows for a constant drain on the battery system.

Our new MC3 timer, pictured below, has a minimum turn-on voltage of five volts, regardless of the battery system's voltage rating.



The prior CT3 electronic timer design, pictured below, requires approximately 70% of the battery system's nominal voltage rating to be present before turning itself on. (Note: several versions of the CT3 timer do have a lower minimum voltage requirement. Most with this feature are found in built-in applications where the potential for connection to the wrong size of battery system is not present).



If the cause of a charger not turning itself on is the result of overly discharged batteries, please contact the Lester Electrical service department for assistance with proper timer bypassing.

Just a word of warning, though, a battery charger with a bypassed electronic timer cannot turn itself off and should not be left unattended. A charger that cannot shut itself off or a battery system that does not respond to charging and causes the charger to maintain a high charge rate may cause damage to the charger, batteries, or potentially a fire hazard.

TIPS FROM THE EXPERTS

Packing

Properly packing your charger for shipment to Lester Electrical for repair is important. Improper packaging can result in damage. If there is any doubt you may have that a single shipping carton with packing material will sufficiently protect the charger, go ahead and double box with a larger carton and additional packing material. Another option to consider, which appears to be growing in popularity, is to have a shipping service package and ship the charger for you.

On their respective websites, UPS and FedEx give very useful information on preparing packages for shipment. This information can be found at the following links (click on the links if your email program supports hyperlinks, or copy the link and paste it into your browser):

<http://www.ups.com/content/us/en/resources/prepare/index.html>

<http://www.fedex.com/us/services/ground/packaging/>

FEATURED PRODUCT – REBUILT TIMER KITS

As many of you are already aware, Lester Electrical has been offering rebuilt timer kits, when available, to replace timers returned for service that are beyond repair. Lester Electrical is currently in the process of converting our electronic printed circuit boards from components utilizing leads to Surface Mount Technology (SMT). The two designs are completely interchangeable. This change to SMT has prompted us to allow you to order

rebuilt timer kits without the return of a timer that cannot be repaired, pending availability. The following rebuilt timers are now available for direct sale, while supplies last:

06357R, 06552R, 07810R, 09660R, 09661R, 09662RB, 09664R, 09665R, 09764R, 09765R, 09768R, 09769R, 11820R, 11830R, 11995R, 12296R, 12420R, 12685R, 12955R, 12975R, 13235R, 13670R, 13730R, 13970R, 14255R, 14345R, 14385R, 14580R, 14930R, 15210R, 16385R, 18320R, 18665R, 19435R, 20585R

SERVICE BULLETINS

In the last issue, we gave you information regarding the new MC3 electronic timer kit. We have updated the timer kit manual with better installation instructions. These new manuals are available on the Lester Electrical website, or you can view them by clicking on the links below:

36-Volt Timer Kit: http://www.lesterelectrical.com/service/34001_C.pdf

24-Volt Timer Kit: http://www.lesterelectrical.com/service/33806_C.pdf

You will need Adobe Acrobat Reader to view these instructions.

Proper Installation of DC Connectors

In the last issue we also discussed heat damage found on factory molded DC connectors, which is typically caused by a poor connection to a mating receptacle. In this issue we are focusing on "add-on" connectors, such as the Anderson or SMH series of DC plugs.

It is a given that normal wear from extended use of these types of connectors can eventually show signs of heat damage resulting from a poor connection with a mating connector. However, over the years we have seen numerous connectors of this type with heat damage resulting from improper installation of the connector itself. An improperly installed connector used in a power circuit can easily become a potential source of fire.

Many of the melted and burnt connectors seen on chargers returned for service have been received with both halves of the connection in a melted/burnt "glob". To determine the cause of the heating required X-raying the "glob" to inspect the electrical components of the connectors. The most common cause seen is improperly crimped connections, many times without the required reducing bushings for smaller gauges of wire.

Always make sure these connectors are installed per the manufacturer's installation instructions. Most manufacturers offer crimping tools specially designed for their products to ensure a proper mechanical and electrical connection is made. We also suggest that after properly crimping the contacts, a good solder joint will help ensure a good connection and avoid a potential liability situation. Another alternative, Lester Electrical not only offers replacement DC connectors but also offers complete DC cordsets with the connector installed.

New MC3 Electronic Timer Features

A few inquiries have been received regarding the operating features and parameters of the new MC3 electronic timers. We will cover three new timer features that are the most likely to be encountered:

1. *Maximum Normal Charge Time* – 20 hours is the longest the electronic timer will allow the charger to operate. If the charger does not terminate a charge cycle within this amount of time, a maximum charging time shutoff will occur. This shutoff condition can be caused by batteries that are beyond their useful life or having larger capacity than the

charger's rating.

2. *Under-Voltage Shutoff Level* – Under normal conditions a battery system that is properly matched to a charger should respond to charging by an increase in voltage. A battery system that does not increase in voltage may no longer have useable capacity or may be the incorrect size system for the charger. The new MC3 timers will terminate a charge cycle after 10 minutes if the battery system voltage does not obtain the following minimum thresholds:

Minimum Threshold Voltage	Battery System Voltage Rating
9	12
18	24
33	36
48	48

3. *Over-Voltage Shutoff Level* – An over-voltage state will occur if the voltage reaches this level at any time. This indicates and limits the charging of wrong voltage battery systems. The maximum voltage values per battery system size are:

Maximum Threshold Voltage	Battery System Voltage Rating
16.8	12
33.6	24
50.4	36
65.5	48

WEBSITE LAUNCH

That does it for this edition of the *Service Tips & Bulletins*. On June 1st, look for the newly designed Lester Electrical website at <http://www.lesterelectrical.com> for additional Service Tips, Updated Specials, and information on all of Lester Electrical's product offerings.