



RELAY SERVICE PART REPLACEMENTS

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.

This SPST replacement relay will be one of the following: a Midtex or Magnecraft, an Aromat, or a Potter & Brumfield (P&B) or Song Chuan. **ONLY REPLACE RELAYS WHICH HAVE THE SAME COIL VOLTAGE.** If the relay is used in a charger of improper voltage, it will be damaged. Use of this relay is limited to chargers having specific characteristics and an internal environment suitable for electronic circuitry. Consult the factory before installation into chargers not manufactured by Lester.

CAUTION: THIS AND ALL SERVICE WORK ON THE CHARGER SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY!

Unplug the AC and DC cords before removing the charger cover.

DANGER: HAZARD OF ELECTRIC SHOCK! DO NOT ATTEMPT TO SERVICE THE CHARGER WHILE IT IS CONNECTED TO AC POWER OR TO THE BATTERIES. TURNING OFF THE CHARGER DOES NOT REDUCE THIS RISK!

Two types of installation can be achieved with this service kit: timer kit or charger replacements. A relay bracket is required to retrofit the Aromat, P&B, or Song Chuan relays for either type of installation (bracket is shipped for timer kit installation). Timer kit replacements are when the relay is mounted onto a three layer assembly with the electronics in the middle of the assembly. Charger replacements are when the relay is mounted directly to the charger case. Determine which type of replacement is required for your application and follow the appropriate replacement procedure listed below.

TIMER KIT REPLACEMENT

Remove the timer kit from the charger by removing the three screws which connect it to the charger. If your relay service kit comes with a new top layer (phenolic board, wires, and terminals), remove the old top layer and replace it with the new one provided. Follow the diagrams in Figure 1 to properly install the new relay assembly onto the timer kit.

BE SURE TO FOLLOW THE TERMINAL NUMBERS ON THE BOARDS. TERMINALS 2 AND 3 ARE NOT LOCATED IN THE SAME POSITIONS ON ALL BOARDS, AS SHOWN IN FIGURE 1.

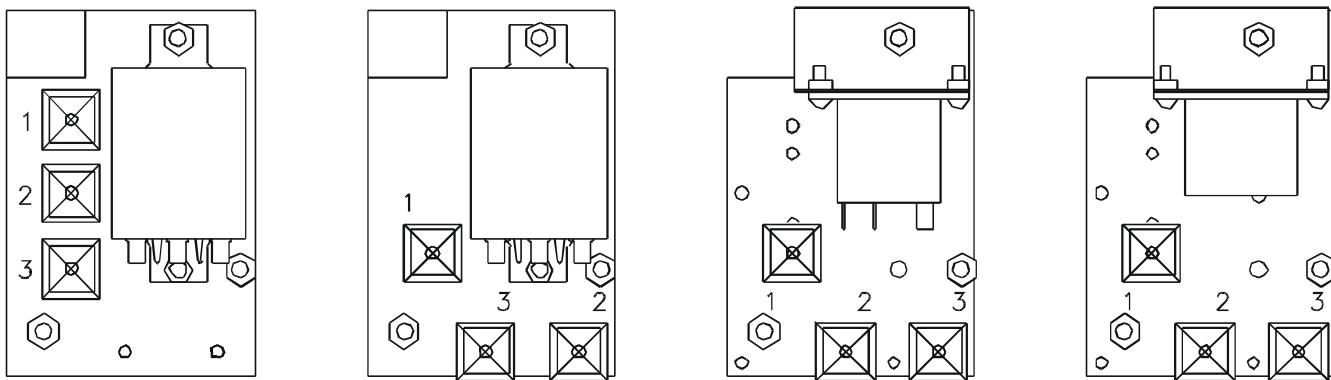


Figure 1

To properly connect the wires to the relay terminals, use the chart below and see Figure 2.

RELAY CONNECTIONS	MIDTEX OR MAGNECRAFT	AROMAT	P & B OR SONG CHUAN
COIL TERMINALS (FROM PC BOARD) BROWN WIRE (SMALL DIA.)	#A	#6	3/16" TERMINALS
ORANGE OR RED WIRE (SMALL DIA.)	#B	#1	3/16" TERMINALS
CONTACT TERMINALS			
AC CORD, BLACK WIRE	#7	#5	COM
TRANSFORMER WIRE	#5	#3	NO
TERMINAL BOARD CONNECTIONS			
BOARD TERMINAL #1	AC (HOT WIRE) – BLACK OR BROWN		
BOARD TERMINAL #2	AC (NEUTRAL WIRE) – WHITE OR BLUE TRANSFORMER WIRE – EITHER PRIMARY LEAD		
BOARD TERMINAL #3	TRANSFORMER WIRE – EITHER PRIMARY LEAD		

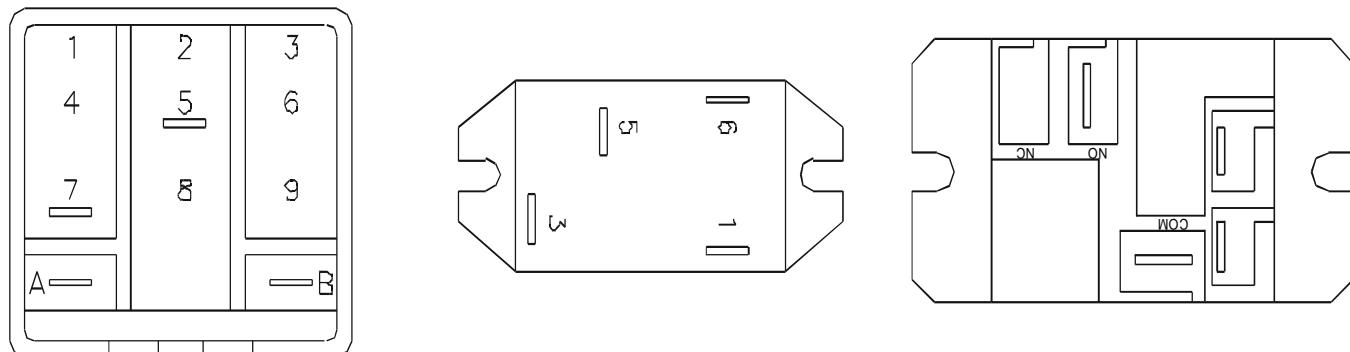


Figure 2

CHARGER REPLACEMENT

If your relay replacement kit comes with a phenolic board with wires and terminals, disconnect the relay and its bracket from the rest of the assembly. Remove the old relay from the charger by removing its associated hardware. Depending on the charger model, different hole patterns were included on the charger base for the different relays. One of two ways can now be used to mount the relay to the

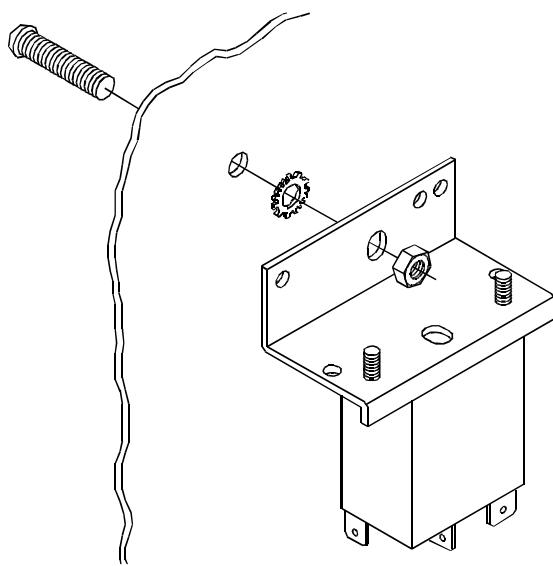
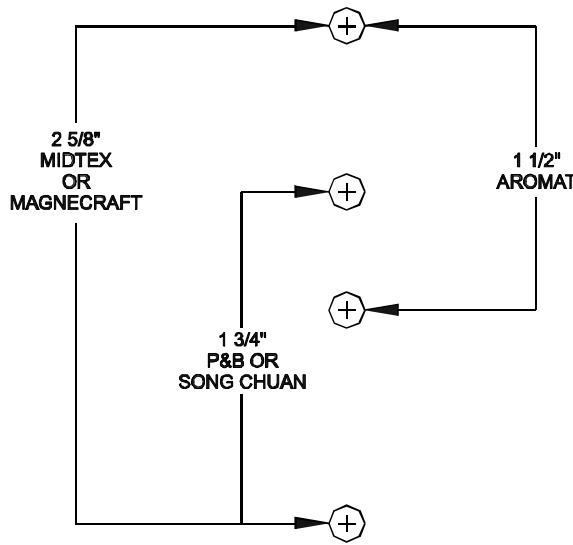


Figure 3

If a relay and bracket assembly are to be used, connect the assembly into the charger with the screw, nut, and lock washer provided using one of the existing relay mounting holes. Place the lock washer between the bracket and the charger case as shown in Figure 3. Orient the relay so the relay terminals are about in the same location as the relay which was removed. The relay assembly will be

base: relay only, or relay and bracket. If the charger base has proper mounting holes for the new relay, mount the relay directly to the base using the nut and screws provided. If the hole pattern does not match, either drill a new hole in the base with the dimensions provided or flip the bracket as shown in Figure 3 (Aromat, P&B, and Song Chuan relays only). Figure 3 example uses the Aromat relay.



held with only one screw, so hold the relay until it is fastened securely to prevent it from turning.

To properly connect the wires to the relay terminals, use the chart given below and refer to Figure 2. When converting to a P&B or Song Chuan relay use the two adapter terminals included (3/16" to 1/4").

RELAY CONNECTIONS	MIDTEX OR MAGNECRAFT	AROMAT	P & B OR SONG CHUAN
COIL TERMINALS (FROM PC BOARD) BROWN WIRE (SMALL DIA.)	#A	#6	3/16" TERMINALS
ORANGE OR RED WIRE (SMALL DIA.)	#B	#1	3/16" TERMINALS
CONTACT TERMINALS AC CORD, BLACK WIRE TRANSFORMER WIRE	#7 #5	#5 #3	COM NO

⚠ CAUTION: BE CERTAIN ALL CONNECTIONS ARE POSITIONED SO THEY DO NOT SHORT TOGETHER OR TO GROUND.

Replace the charger cover and perform the following tests to assure proper operation:

- With the DC cord disconnected, insert the AC cord into a live outlet. The control relay should not pull in with a click, the transformer should not hum. A DC voltmeter connected across the DC should indicate no voltage.
- With the AC cord connected to a live outlet, connect the DC to the specified batteries. After a three to five (3-5) second delay, the control relay should pull in with a click, the transformer hum and the ammeter indicate charging. The charger is ON. Disconnect the AC cordset to turn the charger OFF. Allow the control relay to open with a gentle click.

- With the AC cord unplugged, connect the DC to the specified batteries. If the timer kit has a GREEN wire from the timer kit to the diodes, the control relay should pull in with a click, but the transformer should not hum. If there is not a GREEN wire, the control relay should not pull in with a click and the transformer should not hum.
- With the DC connected, insert the AC cordset into a live outlet. After a short delay, on timer kits with a green wire, the transformer hum and the ammeter indicate charge. The charger is ON. On timer kits without a GREEN wire, after a short delay, the control relay on timer kits should pull in with a click, the transformer hum and the ammeter indicate charge. The charger is ON.

If the charger performs as above, it is ready to use. However, the charger should be monitored during the first charge cycle to verify proper turn off.