



Overload Identification:

As stated in the Introduction section of this Bulletin, units shipped after July 1982 are equipped with SSOLs which have been modified.

Before proceeding to the corrective action section of this bulletin, the overload module should be inspected to determine if it is the earlier version. Examine the terminal strip as shown in Figure 1. When looking into the SSOL with the terminal strip toward the top, as it is mounted in the starter, the fifth and sixth terminals from the right in an unmodified SSOL are labeled F1 and F2. Terminals 5 and 6 in a modified SSOL are labeled E1 and E2. The upper two screw terminals on the swing out of an unmodified SSOL circuit board are labeled F3 and F4. The modified SSOL terminals are labeled E3 and E4 (see Figure 2).

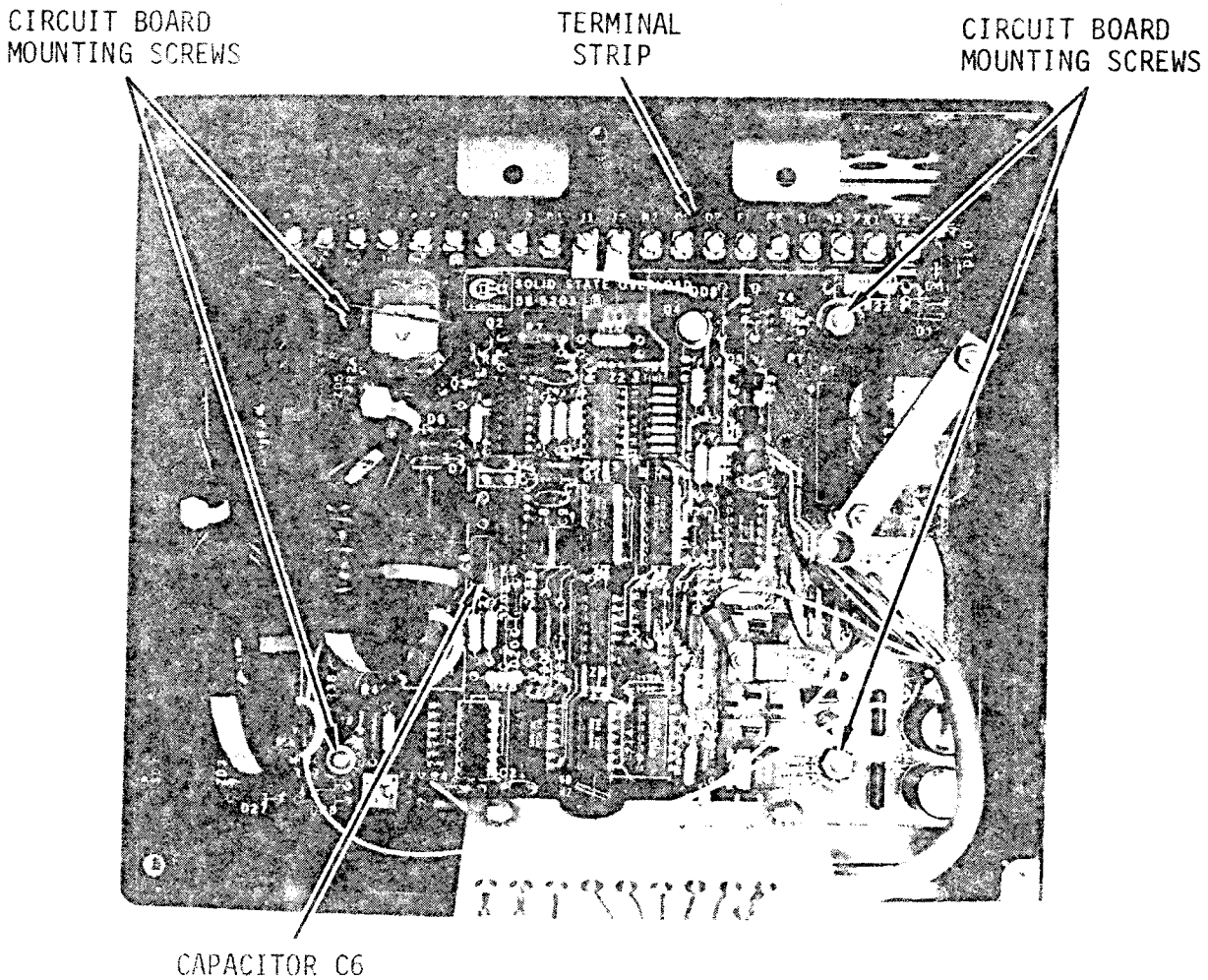


FIGURE 1 - Solid State Overload Circuit Board

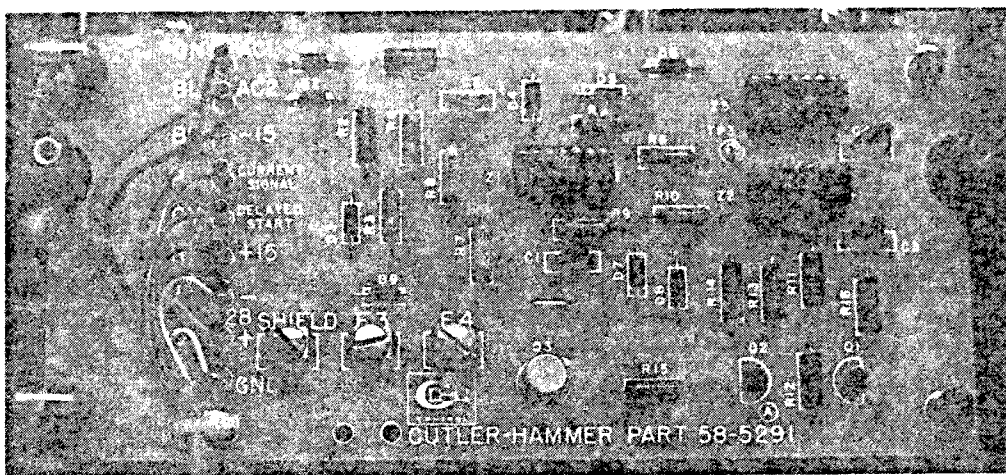


FIGURE 2 - Solid State Overload Swing Out Circuit Board

Any SSOL without the swing out circuit board is an unmodified model.

The modified SSOL has the changes described in this bulletin incorporated into its circuitry. Therefore, the modification described here is not applicable to a modified SSOL.

Tripout Diagnosis:

Proper identification of the exact time of the tripout occurrence is very important. The corrective action described in this bulletin applies only to tripouts which occur precisely as the contactors finish transition from start to delta. The motor will accelerate normally, transition will occur as the current drops to 80% of RLA as normal, but as soon as the contactors can be heard transitioning the "Motor Overload" fault trip indicator on the starter door will trip. If the nuisance tripout does not occur precisely at transition as described, the following corrective action does not apply.

CORRECTIVE ACTION:

Corrective action involves replacement of the C6 capacitor on the main circuit board in the SSOL. The C6 capacitor originally supplied on all SSOL's provides approximately an 8 cycle delay after transition before the module begins to sense running current. The addition of a larger capacitor increases the delay time preventing nuisance tripouts. The C6 capacitor that needs to be replaced is shown in Figure 1. This designation is written on the circuit board next to the capacitor. The capacitor has a flat rectangular shape and is orange in color.

For replacement, a 40 to 70 mf (micro farad) electrolytic capacitor rated between 35 and 50 volts should be used. Such capacitors are available at most electronic supply stores.

To remove the old capacitor, it will be necessary to remove the main circuit board. It is held in place by four screws located near the corners of the circuit board. See Figure 1. The board is held in place with electrical isolating washers and star lockwashers. Care must be taken to note the location of these parts while the board is being removed, so that they are replaced correctly.

Once the circuit board has been removed, the capacitor can be desoldered and removed.

*NOTE: A soldering pencil of no larger than 35 watts should be used when soldering electronic components. Higher power soldering irons may overheat the components causing failure.*

Excess solder will often be left in the mounting holes when the old capacitor is removed. This may make installation of the new capacitor difficult. The excess solder may be removed with a desoldering tool or "solder sucker". This is a tool which sucks melted solder from the soldered joints. This tool is available at most electronic supply stores.

Once the old capacitor has been removed, the new one may be installed. The original capacitor was a non-polarized type while the new one is polarized and must be installed correctly.

*NOTE: The new capacitor must be installed with the correct polarity to prevent failure of the SSOL.*

The correct polarization of the capacitor is with the positive (+) end toward the terminal strip.

Insert the new capacitor into the circuit board and solder in place. Be careful not to use too much solder. Excess solder can cause a short circuit on the circuit board. Clip the excess wire off the capacitor leads. Bolt the circuit board back into the black box. Be careful to reinstall all spacers and insulators in the correct position. Carefully reinstall the SSOL in the starter making sure it is wired correctly.

*NOTE: The F1-F2 terminals of the unmodified SSOL are not 115 VAC power inputs. XX1-X2 are the 115 VAC power inputs. The control voltage wiring in the starter, which is used to power the SSOL, may be labeled F1 and F2. These wires do not go to F1 and F2 in the SSOL, they go to XX1 and X2. The F1 and F2 terminals of the SSOL should be wired to the "Motor Overload" fault trip indicator. Follow the unit wiring diagram when reinstalling the module.*

#### PARTS ORDERING INFORMATION:

All parts should be purchased locally.

#### NEW PRODUCTION:

CenTraVac starters (direct ship and unit mounted) shipped after July 1982, are equipped with the modified SSOL which eliminates the nuisance tripout.