

Date: 7/19/99

#9904

To: All Lincoln Sales Offices and Service Facilities

## Subject: PC BOARD TROUBLESHOOTING PROCEDURE

The Service Department is receiving an increasing number of warranties claimed on PC boards that when analyzed, "Check OK". To avoid delays in processing your warranty, please make sure that your warranty is completely filled out with a detailed description of the end-user's problem along with your diagnosis and repair procedures. Anytime a diagnosis points to changing a PC board, follow these procedures:

**WARNING! Electric shock can kill. Please follow the troubleshooting procedures listed in the Lincoln Service Manual (SVM) for the machine that you are working on.**

**WARNING! Turn the input power off at the fuse box before working on the machine. Do not touch electrically hot parts.**

### NEW PC BOARD TROUBLESHOOTING & REPLACEMENT PROCEDURE

1. Follow the warnings above and determine to the best of your technical ability what PC board is most likely causing the failure symptom. Troubleshooting steps are outlined in each machine's SVM. Please note the procedure number and page on the warranty report.

2. Check for loose connections at the PC board to assure that the board is properly connected. Check each individual lead that is going into the connector. Pull, wiggle and tug on every lead to insure that each connector is "latched" into the cavity.

Check ground path connections, including those used as PC board mounting points, for clean secure contact.

3. Unplug each connector and look into the end of the connector and check to see if each metal pin is straight and not bent or pushed to the side of the cavity.

4. Check all of the receiving connectors on the PC board for any bent or missing pins. Replug all of the connectors making sure that they are "snapped" into place.

5. Close up all necessary covers and restart the machine. If the same symptom exists, shut off the machine and change the suspect PC board using standard practices to avoid electrical damage and electrical shock. Read the WARNING inside the static resistant bag and follow handling procedures.

6. It is desirable to have a known good test PC board available for troubleshooting. These are available through the Service Department, see Service Notice #9401. If the installation of the troubleshooting board corrects the symptom a new replacement PC board can be installed.

7. Test the machine to determine if the failure symptom has been corrected by the replacement PC board. Allow the machine enough time to heat up to operating temperature for this test.

**Note: It is normal for some power resistors to smoke and turn black because of the heating of sealant coating used to protect the PC board from moisture.**

8. To insure that the customer's problem has been corrected it is a good practice to reinstall the original PC board and recreate the problem if the situation permits.

It must always be noted on the warranty report that Service Notice #9904 PC Board Troubleshooting Procedures were followed.

## WARRANTY REPORT INFORMATION

1. After the repair has been made please complete a Warranty Report Form (SD-122W) and return the suspected PC board with the form to the return address listed at the top of the form.

2. Please make sure that the warranty form is completely filled out and includes the following information:

- Description of complaint or symptom.
- Include weld application, electrode used, output amps and volts if applicable to complaint.
- Type of wire feeder used with the machine (or vice versa).
- Troubleshooting procedure number or SVM number used.
- Description of repair.
- Indication that Service Notice 9904 was followed.

3. Incomplete or "lack of" information on the warranty form may result in refusal of the warranty and the return of "Checked OK" PC boards.

As always, troubleshooting help can be obtained by calling (888) 935-3877.  
This service notice supercedes Service Notice #9102 & O-163.

Thank you,  
John T. Sichko  
Acting Service Manager