

# LPKF Circuit Board Plotter

## Safety Handout

Last Revised July 27, 2005

The LPKF ProtoMat C20 Circuit Board Plotter is a powerful rapid prototyping tool for circuit development. It is also a very expensive tool, so it must be operated carefully. There is already a detailed procedure for creating a printed circuit board using the LPKF ProtoMat C20. Please refer to it for actual procedure; this handout is only a summary of key safety issues involving the LPKF ProtoMat C20.



Please observe the following guidelines when operating the LPKF Circuit Board Plotter:

**1) Obtain permission before using the LPKF Circuit Board Plotter**

Before using the plotter, you must first schedule a time with the EE/CE technician. This simplifies scheduling when more than one person needs to use the machine.

**2) Use the plotter only with the technician (or a work-study) present**

This is a requirement, not a suggestion. If something goes wrong the technician or an approved work-study student will be able to fix the problem more easily than you will.

**3) Follow the proper PCB manufacturing procedure**

This procedure is outlined in the document entitled "Procedure for Creating a Printed Circuit Board." Please follow the procedure precisely; it will both prevent errors on your board and keep you safe.

**4) You may wish to use ear protection**

The LPKF Circuit Board Plotter is very loud when the vacuum is on.

**5) Never operate the plotter without cardboard backing material**

This is critical! The backing material prevents the milling bits from cutting into the steel of the circuit board plotter's surface. Failure to use a backing plate will ruin the bits and damage the surface of the plotter.

**6) Close the metal guard ring on the milling head before operating the machine**

This promotes better vacuum suction around the bit and helps prevent the bit from overheating.

**7) Close the Plexiglas doors while the milling head is rotating**

This cuts down on noise and protects people from the milling head