

LPKF

# Newsletter

LPKF<sup>®</sup>  
Laser & Electronics



Dear valued customer,

Welcome to the LPKF Laser & Electronics 2008 Quarter 4 newsletter. I would like to take the time and thank all of you for your feedback in regards to my first newsletter. I welcome your questions, comments and any new ideas you may have. It is my intent to produce a newsletter on a quarterly basis to keep you informed of our products and application discoveries.

This issue includes information about some of our new products, as well as valuable information to keep your existing equipment up and running and options to aid in your operations.

*Timoree Leggett*

TIMOREE LEGGETT—Customer Service/Logistics Manager

## Printed Circuit Board Finishing Touches; ProMask and ProLegend

One of the finishing touches in the PCB prototyping and fabrication process is to apply a permanent protective coating or solder mask overlaid with a nomenclature/text or silk screen to aid in manual assembly. These steps are beneficial to seal out contaminants and facilitate neat soldering as well as simplify and assist the process to interpret the location of each component. LPKF has released both the ProMask and ProLegend for these purposes.

The ProMask is a compact effortless way to apply a green solder mask on PCB's up 9.5" x 13" in size, with pad separation as small as 0.5 mm; in as little as 60 minutes.

The ProLegend is an easy-to-apply white legend print resulting in a professional finish.

It's as simple as...

1

Print the positive or negative image of the solder mask or silk screen from CircuitCAM onto a provided film using a standard laser printer (600 dpi minimum).



## Tech Support with a click of the mouse.

For a fast and effective way to resolve an issue, have a question answered, or browse current helpful documentation and/or software, register on the support section of our web site at:

[www.lpkfusa.com/support](http://www.lpkfusa.com/support)

You will have the benefit of accessing a large number of regularly updated frequently asked questions and solutions, as well as newly added "How To" documents containing information about a large range of applications from performing maintenance on your machine to instructional documentation in regards to exporting from multiple CAD packages.

The support site also offers the option to submit a question. Your inquiry is emailed to all of our technicians who will then research and reply with the best possible solution and providing a procedure, link to an upgrade, or an instructional video.



## Did you know... ?

### With the addition of a Fiducial Camera...

You have the ability to measure drill holes and trace widths as well as verify and inspect your current tool bit status/wear. Accurate alignment for multilayer fabrication, depanelization, and re-work, is achieved with the push of a button

With the aid of the Fiducial Camera mounted on a ProtoMat® S62 or S100, the tool bar alignment procedure time is cut in half with great accuracy. The Fiducial Camera option is available for all ProtoMat® milling machines; new and old.



## Did you know... ?

### With the addition of a vacuum table mounted to your ProtoMat S42, S62 or S100...

You are able to achieve near perfect material flatness. This is particularly useful for securing warped, flex, or small substrates. The combination of the fiducial camera and the vacuum table eliminates the need for set pins. The vacuum table also enables you to utilize the ProConduct through hole plating option directly on your machine table top.

# Printed Circuit Board Finishing Touches; ProMask and ProLegend (Continued from page 1)

2

Coat the solder resist or white legend composition on the PCB using one of the provided disposable rollers. This must then be dried in a hot air oven (like the LPKF hot air oven p/n 115877) for 10 minutes.



3

Expose the board with the printed image from CircuitCAM placed on the PCB. This is aligned using registration marks and then placed in the LPKF exposure unit for as little as 30 seconds



4

Develop the board using hot water and the supplied developer. The PCB is immersed in the bath and the non exposed solder mask or legend dissolves. The resulting PCB is then cured for 30 minutes in a hot-air oven.



5

You now have a high quality finished PCB.



Both the ProMask and ProLegend include all the necessary instructions, tools, and supplies and are environmentally harmless due to the provided Ph conditioning powder which neutralizes the developer bath, making the bath disposable in any sewer system. For more information, please visit: <http://www.lpkfusa.com/boardfinish/index.htm>

# ProtoLaser S

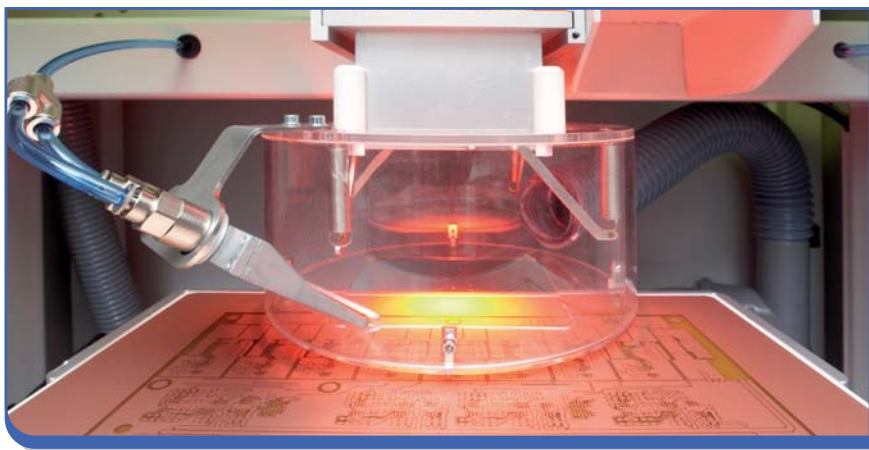
The NEW ProtoLaser S is a fully enclosed laser system ideal for the efficient prototyping of complex digital and analogue circuits, RF and microwave PCBs. The potential to produce highly precise geometries on almost any material makes the ProtoLaser S the ideal system for Prototyping and small batch production runs. With a price tag of \$150,000 (35% cheaper than previous ProtoLaser Models) the laser system opens up a new dimension in in-house prototyping.

The ProtoLaser S features an increase in scan field stitching allowing boards up to 9" x 12" (229 x 305 mm) in size; up from 4" x 4" on the previous ProtoLaser. It easily transfers the layout onto the PCB with unprecedented speed and precision without the use of chemicals. The system combines advanced laser technology, optics and X/Y table mechanisms to produce high processing speeds and simple data handling.

The improved performance speed shortens development time allowing customized small batches on demand. The ProtoLaser S works directly off of CAD data and is compatible with all types of PCB materials; e.g. copper-coated FR4, aluminum-coated PET films, ceramics, TMM, Duorid or PTFE. The contact free process demonstrates its special benefits when flexible and sensitive materials are involved; which it processes reliably and without causing any damage. The protective cabinet allows for a Class 1 laser safety rating, which protects the user from noise emissions and prevents any accidental interference in the operational process.

Intuitive software operation is designed for easy operation of the machine and the smooth import of the usual data formats such as Gerber or DXF files. A whole range of applications can be handled using pre-set and customized profiles.

The software also enables communication with other LPKF systems such as LPKF circuit board plotters. For more information or to watch a demonstration video visit: [http://www.lpkfusa.com/protomat/pl\\_s.htm](http://www.lpkfusa.com/protomat/pl_s.htm)



## Maintenance CORNER

Helpful hints to keep your machine operational and protect your asset.



### For all S62 and S100 customers

Remember to lubricate the O-rings within the tool bar magazine at least once a month in order to reduce friction and guarantee a smooth tool change (recommend lubricant part # 102244 <http://www.lpkfusa.com/Store/ProductDetail.asp?ProductID=110> ). The rings should also be replaced every 3 months (part # 114625 <http://www.lpkfusa.com/Store/ProductDetail.asp?ProductID=321>).

### For all ProtoMat<sup>®</sup> customers

Are you experiencing an offset when flipping your substrate over in either the x or y axis? When is the last time you drilled your set pin holes? After the continual action of inserting and removing your board material, the holes in which the set pins reside will become larger. This will cause the pins to be loose and possibly create a slight front to back offset. This is easily solved by periodically drilling new set pin holes in your set pin strips. This process is recommended every 3 months dependant on machine use.

Please visit the following web page for a detailed instructional document for this process: S-Series: [http://www.lpkfusa.com/downloads/support/docs/ht\\_drill\\_set\\_pins\\_S.pdf](http://www.lpkfusa.com/downloads/support/docs/ht_drill_set_pins_S.pdf) All other ProtoMat systems: [http://www.lpkfusa.com/downloads/support/docs/ht\\_drl\\_set\\_pin.pdf](http://www.lpkfusa.com/downloads/support/docs/ht_drl_set_pin.pdf)

# Send your ProtoMat<sup>®</sup> on vacation for maintenance during the holiday season

During the slow holiday season, send your milling machine in for a winter tune up. The most common cause of equipment failure is lack of preventative maintenance. Instead of waiting for the warning signs of failure to manifest, which can be time consuming and expensive, protect your capital equipment investment by proactively servicing your machine.

From now until January 31, 2009 you have the opportunity to return your ProtoMat<sup>®</sup> for service, restoring your machine back to factory specification, comparatively to the day you bought it. During your ProtoMat's<sup>®</sup> stay, our certified technicians will:

- Thorough 20 point inspection
- Complete adjustment and alignment of all lead screws and linear bearings
- Re-align and replace setpin system
- Lubricate all actuators and lead screws
- Long-term testing (repeatability, orthogonality, milling quality)
- Clean the entire machine
- Generate new .ini files

This service is available for a low price of \$600.00 (part # 221001).

If any repairs are necessary or replacement parts identified during the service, you will be contacted with recommendations.

Please fax your purchase order with complete contact information for date coordination and shipping instructions to 503-682-7151. You may also email [tleggett@lpkfusa.com](mailto:tleggett@lpkfusa.com).

## Attention all Government Contractors and Customers, LPKF is now an official GSA Contractor

To better support our various federal agency customers, LPKF has become a General Services Administration (GSA) contract holder. Now all government affiliated customers can benefit from GSA pricing discounts on our equipment and aftermarket products, as well as enjoy the convenience of ordering directly from LPKF on the GSAadvantage.gov web site.

To review our products and place an order, simply visit the GSAadvantage web site: [www.gsaadvantage.gov](http://www.gsaadvantage.gov) and enter our Contract Number: GS-06F-0054S in the search field to view all of our products on the GSA schedule. You may also search by part # or company name.

\*If you don't see the product you are looking for call our sales department at (503) 454-4219 for GSA pricing information

### GENERAL INQUIRIES

#### Phone numbers:

1-800-345-LPKF

1-503-454-4200

Fax: 1-503-682-7151

#### Mailing address:

LPKF Laser & Electronics

North America

12555 SW Leveton Dr.

Tualatin, OR 97062

United States

### SUPPORT

#### Technical Support

##### Plotter inquires

1-503-454-4229

[support@lpkfusa.com](mailto:support@lpkfusa.com)

#### Technical Support

##### Laser inquires

1-503-454-4239

[lasersupport@lpkfusa.com](mailto:lasersupport@lpkfusa.com)

### SALES

#### System inquires

1-503-454-4219

[sales@lpkfusa.com](mailto:sales@lpkfusa.com)

#### Materials & Tools inquires

1-503-454-4243

[tools@lpkfusa.com](mailto:tools@lpkfusa.com)

The LPKF logo consists of the letters 'LPKF' in a bold, stylized, sans-serif font. The letters are white with a blue outline, set against a dark blue background. The 'L' and 'P' are connected at the top, and the 'K' and 'F' are also connected at the top. The logo is positioned above the company name 'Laser & Electronics'.

Laser & Electronics

[www.lpkfusa.com](http://www.lpkfusa.com)