

OPERATING INSTRUCTIONS #416-E ETCHING KIT

For use with M.G. Chemicals photofabrication products for etching of professional printed circuit boards and for prototyping or small production run requirements.

WARNING: Heating unit must be unplugged to turn off. Do not leave heating unit unattended while it is in use. Do not let Etching tank run dry. Do not attempt to operate etching kit if tank is less than 3/4 full. Avoid skin contact with Etchant or direct breathing of vapor.

Cleanup with warm soapy water. Used etchant should be placed back into original container, write "waste material" on the container and dispose of it in an environmentally safe fashion in compliance with local waste regulations.

M.G. Chemicals cat #416-E Etching Kit contains the following items:

- 1) A seven liter polyethylene tank with clear acrylic lid
- 2) Mounting bracket
- 3) **#416-AP** Heavy Duty Air Pump,
- 4) 3 way adjustable airline manifold
- 5) Triple line sparging unit
- 6) **#416-AH** Air Hose for sparging unit
- 7) **#416-H** 200 Watt vertical Heater
- 8) External Tank mounted digital thermometer
- 9) **#416-G** Latex disposable gloves

**This kit contains no
chemical products**

Instructions:

- A) Mount the heater opposite to the spout end of your etching tank. **DO NOT PLUG IN HEATER.**
- B) Secure the tank within its mounting bracket and screw the bracket to the surface you will be working on. With a sparging unit positioned in the tank, ensure the etchant solution is filled to the level indicated on the quartz element of heater;
- C) Wait 15 minutes for the thermostat to adjust itself to the etchant temperature;
- D) Plug in the heater;
- E) The heater's thermostat has been preset to the correct temperature. However shipping and handling may have effected settings and final temperature adjusting may be required. The pilot light should turn on and remain lit until the operating temperature has been reached.
- F) Allow the heater to operate for one hour. When the desired temperature is reached the pilot light will turn off and the heater will maintain the temperature.

Air Pump Installation:

1. Air Pump must be placed above the etching tank at the highest level of etching solution. This will prevent a backflow of etchant into the pump, causing damage to the pump and leakage of etchant.
2. Connect the airline to the output on pump. The pump is operational when once plugged into wall outlet.

Important: Ensure Heater is unplugged and cool to touch before you remove it or before changing etchant. DO NOT ALLOW ETCHANT TO RUN DRY. Do not allow etchant level to drop below indicated "water line" on heater tube.

Please call our Toll free number @ 1-800-201-8822 where a Customer Service Representative is available to answer your questions weekdays 8 AM to 5 PM PST.
or refer to our website for a visual demonstration of this process @ www.mgchemicals.com