

## Hand Installation Recommendations

Although Lark's surface mount filter line was designed to withstand many automatic reflow environments sometimes it is advantageous to install these parts by hand. Prototype runs and proof of concept jobs are just a few examples.

First it should be noted that surface mount parts do not rework well. That is to say removal of a component will often render it non-operational. This problem is most easily resolved by buying a few extra in the beginning.

Lark's filters will perform best when proper grounding is provided. Excellent grounding can be accomplished by providing as many grounding pads as possible during the design stage of the PCB that the filter is to be installed on.

The following is a recommended procedure for the actual soldering of the component to the PCB:

First, both the PCB and the filter should be preheated to approximately 120 degrees centigrade for one minute. This preheating is done to avoid thermal stressing any ceramic based components

Next, move the PCB and filter to where the soldering of the components will be done. This should be a hot plate set at a temperature 15 to 25 degrees below the melting point of the solder used for installation. Lark recommends using SN63 solder for leaded filters (Non RoHS complaint). SN63 melts at approximately 182 degrees centigrade. This would require that hot plate be set at 160 degrees centigrade. For lead free filters (RoHS Compliant), Lark recommends SAC305 (Tin/ Silver/ Copper) or Sn96/Ag4 (Tin/ Silver) solder paste.

The soldering should be done as quickly as possible using a 600 degree Fahrenheit soldering tip. Soldering is only necessary at the I/O pads and the grounding pads. A good solder meniscus should be visible along the full length of the joint with the grounding pads.

After completion of the soldering, the device should be returned to the preheating plate to insure a smooth transition during the cooling process. After one minute on the preheating plate the device can be allowed to cool to ambient temperature.

