

Bay Area Circuits – Stencil FAQs

Q. What are stencils used for?

A. Stencils are used for even deposition of solder paste onto a bare circuit board. Stencils replace hand soldering of surface mount devices, and the inconsistencies created by hand soldering.

Q: What type of file must be submitted to order/create the stencil?

A: The paste file required to create the stencil is a Gerber file that is usually generated by default as a part of any Gerber export. If you're unsure about which file in the Gerber package is the paste file, submit the entire Gerber package. If a Gerber file is not available, a DXF file is also accepted.

Q. Will there be an opportunity to review the stencil layout before manufacturing?

A. Yes. Once an order and data has been received, a stencil drawing/print will be generated which will be emailed for customer approval. This drawing/print will be used to manufacture the stencil so be sure to identify any issues prior to approval.

Q. How do I choose my stencil thickness?

A. The stencil thickness is determined by the smallest component land pattern. If you are not sure, our design staff can choose the optimum thickness based on the data you supply.

Q: Can multiple stencils be created out of the allotted 10" x 12" material?

A: No. When purchasing a stencil, you're purchasing a single piece of metal with maximum dimensions of 10" x 12". If multiple stencils are required they must be individually ordered.

Q. What are Home Base Apertures and why are they needed?

A. Home base apertures are used to control solder balling and tomb-stoning of chip components.

Q. What are Trapezoidal Apertures and why are they needed?

A. Trapezoidal Apertures are created by distorting the beam on the laser, creating a draft in the aperture wall. Trapezoidal Apertures are effective if there will be a long dwell time between printing of solder paste and placement of components. The taper in the aperture wall causes the paste to sit on top of itself, rather than sliding out the sides.

Q. What are Fiducials? Are they required on a stencil?

A. Fiducials are alignment marks. If the screen printer is equipped with a vision system, fiducials half cut in the stencil to allow for the printer to automatically align the board with the stencil. When manually aligning the stencil with the board, the fiducials can be full cut or just use the surface mount pads.