



Contac S4

How to use the through hole plater for whenever multi-layer circuits are used.

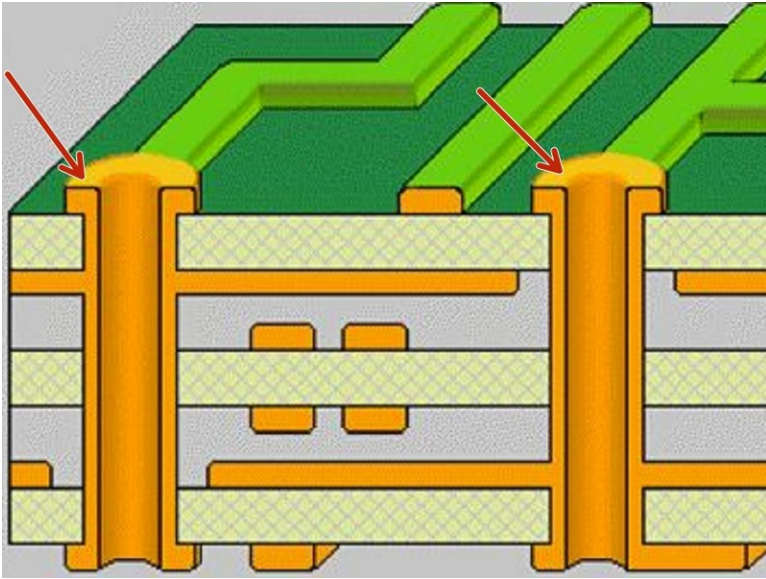
Written By: Jimmy Nolan



Introduction

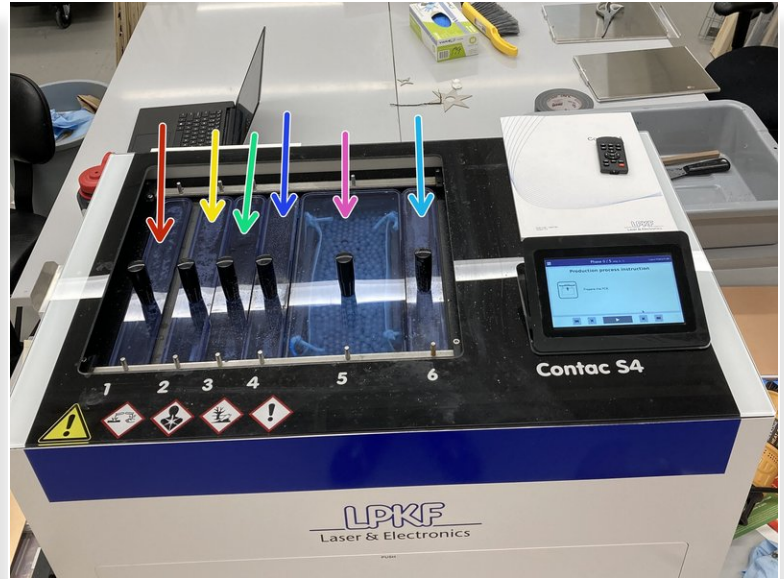
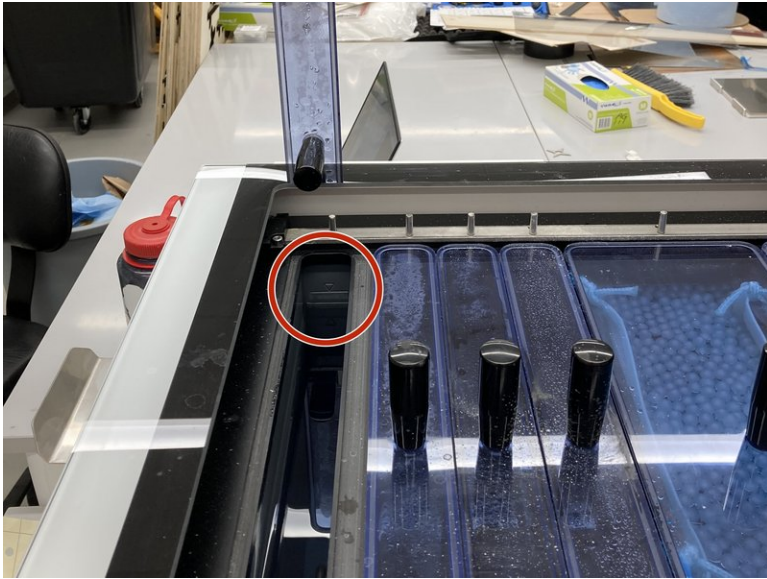
The Contac S4 is a machine used to copper plate vias in circuit boards using electrolysis. It uses a 5 step chemical procedure that takes around 3 hours to complete.

Step 1 — Power on



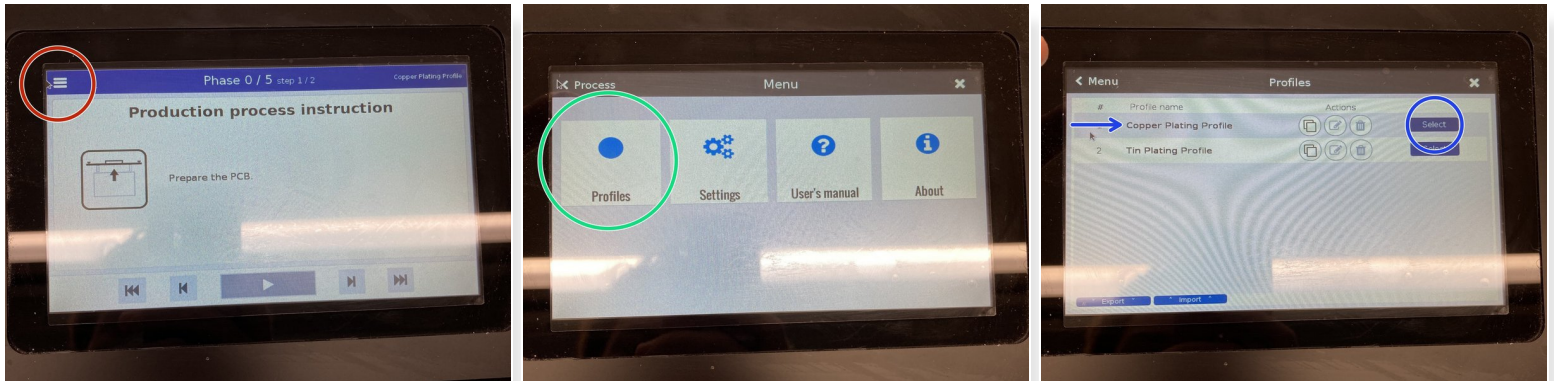
- The Contac S4 is used to plate the insides of the board's drilled vias with copper so that they create a connection between traces on the top of the board and traces on the bottom of the board.
- The power switch is located on the right side of the machine
- ☑ Allow the machine to warm up for 15 minutes on power on

Step 2 — Check the baths



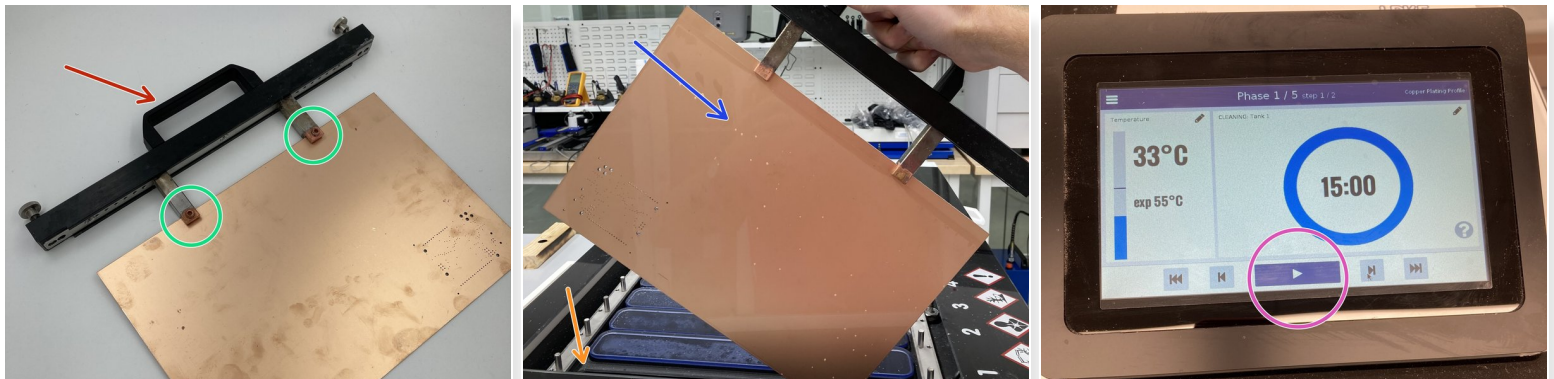
- Ensure all baths are filled to the required levels. Top off with chemicals (or inform a trained staff member) if necessary:
 - Bath 1 takes cleaner 110
 - Bath 2 takes cleaner 210
 - Bath 3 takes activator 310
 - Bath 4 takes via cleaner
 - Bath 5 takes copper plater 400
 - Bath 6 takes tin plater (not used in this guide)

Step 3 — Select profile



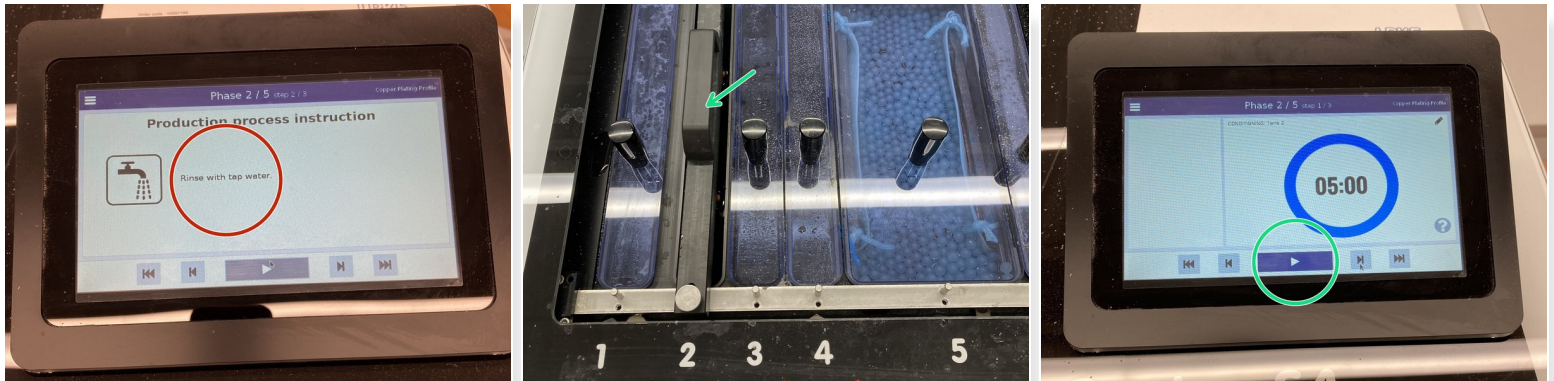
- On the touchscreen interface, push the menu icon in the upper left corner
- Select "Profiles"
- Select "Copper Plating Profile"

Step 4 — Bath 1



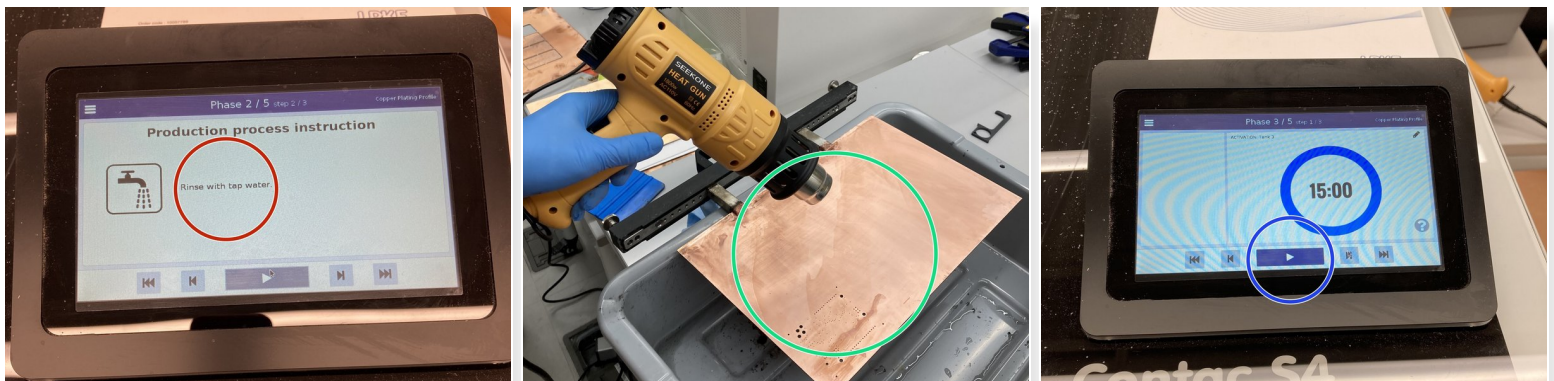
- Mount the board in the PCB handle located on the left side of the machine
 - Insert the long side into the clamps and tighten with an Allen wrench
- Rinse the board with tap water
- Take the lid off bath 1
- Place the board into bath 1 and press play

Step 5 — Bath 2



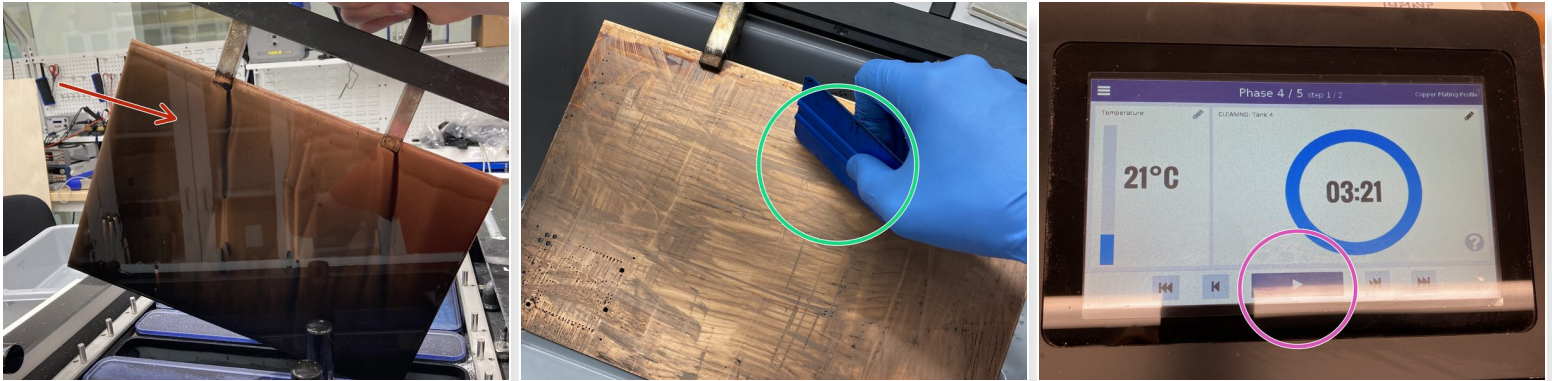
- Once phase 1 is complete, remove the board from bath 1 and rinse it with tap water
- Place the board into bath 2 and press play

Step 6 — Bath 3



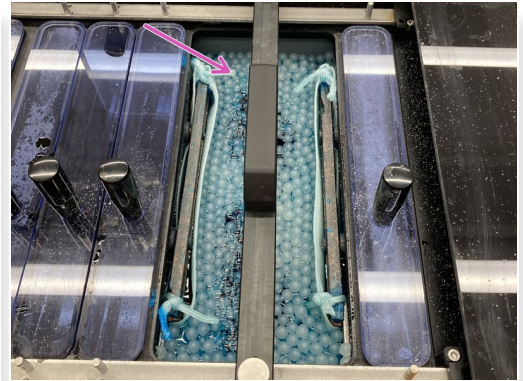
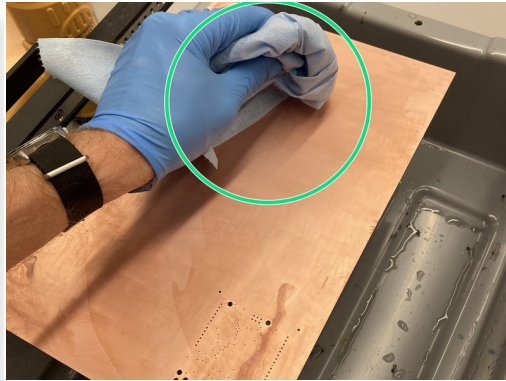
- Once phase 2 is complete, remove the board from bath 2 and rinse it with tap water
- Dry the board with a heat gun
 - ⓘ Hit the board on a hard surface while drying to ensure no air bubbles are trapped inside the vias
- Place the board into bath 3 and press play

Step 7 — Bath 4



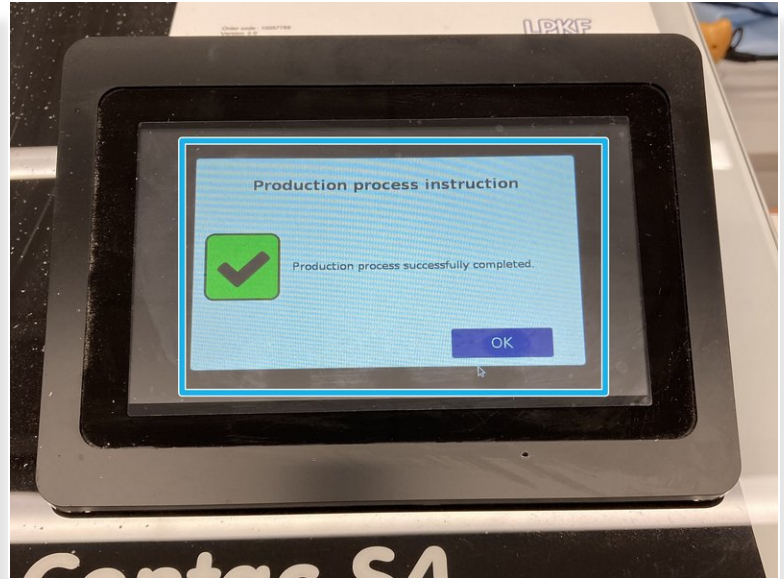
- Once bath 3 is complete, lift the board out of the bath and scrape ink off the surface back into the bath
- Transfer to a tub and scrape off any remaining ink
- ❗ We want ink to remain inside the vias and nowhere else because the copper will get deposited on the ink
- Dry the board and then place into bath 4 and press play
- ⚠ The quality of the copper plating depends on how dry the ink is, so ensure the board is as dry as possible before starting bath 4

Step 8 — Bath 5



- Once bath 4 is complete, remove the board
- Dry the board with a heat gun
 - ⓘ Hit the board on a hard surface while drying to ensure no air bubbles are trapped inside the vias
 - ⚠ Again, the quality of the plating will depend on how dry the insides of the vias are
- Gently wipe the surface with a moist towel to remove as much black ink as possible
 - ⚠ Do not press into the holes on the board; we want the dry black ink to remain in the holes
- Place the board into bath 5 and press play
 - ⓘ Halfway through the two hour plating process the Contac will pause so you can rotate the board 180 degrees and press play again

Step 9 — Process complete



- Once bath 5 is finished, remove the board
- Rinse with tap water and dry with a heat gun
- The via plating process is now complete
- ① Bath 6 is used for tin plating which is not covered in this guide