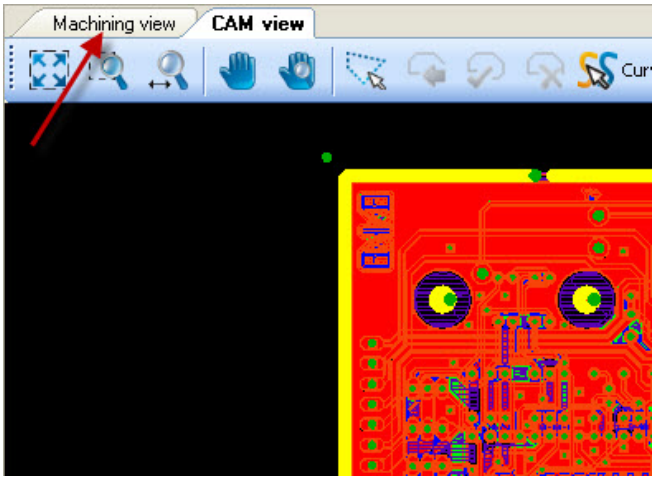
Board Production In CircuitPro

Requirements

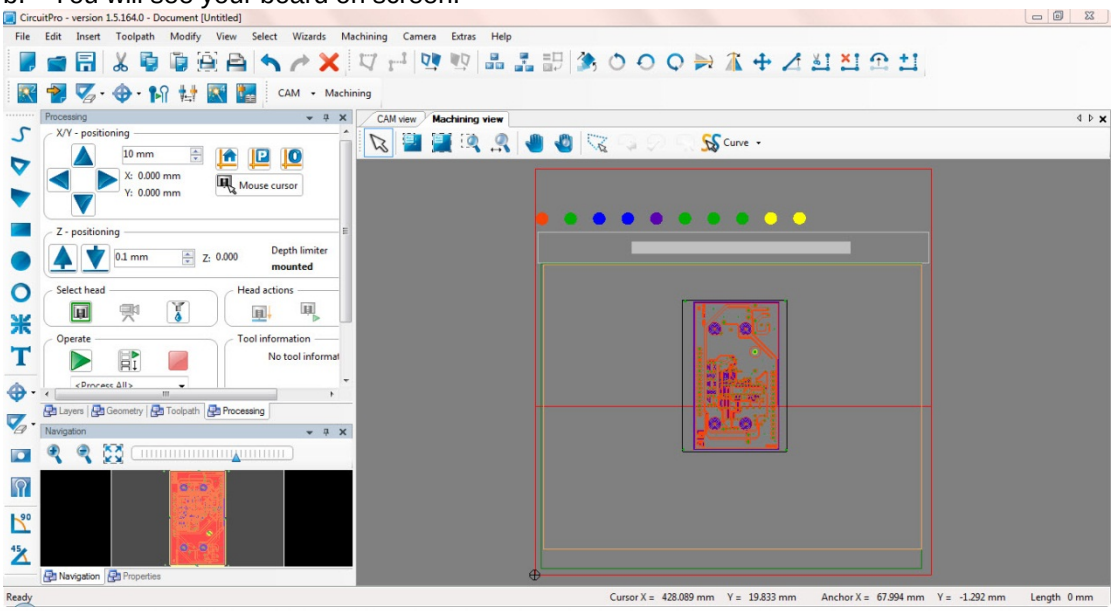
1. Circuit Pro version 1.5 revision 164 or higher
2. Generated tool paths (Processed Gerber or DXF file)
3. 1x piece of copper material
4. 1x set of tools (combo of contour routers, drills, end mills and universal cutters)

Process Steps

1. Switch to machine view
   a. Press the Machine view tab.



   b. You will see your board on screen.



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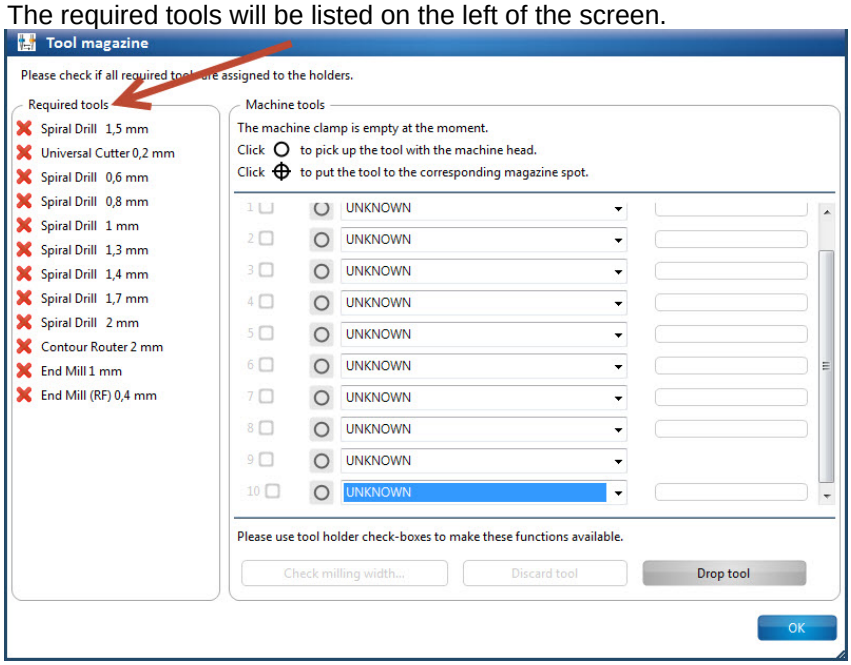
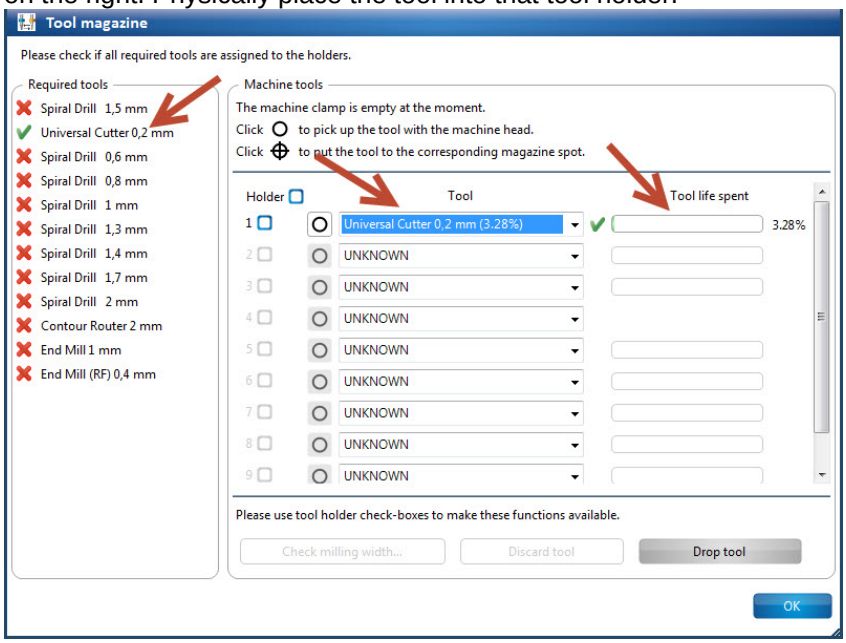
2. Load the toolbar if your system has one. If it does not please skip to step 3.

   a. Press the toolbox dialogue icon , or go to the edit menu and select tool magazine.

   b. The required tools will be listed on the left of the screen.



   c. In each individual tool position dropdown menu on the left, select one of the tools that is listed on the right. Physically place the tool into that tool holder.



Note: As you assign each tool to a tool holder, the red "X" next to the tool column will change to a green "check". The software will also display the tool life that has been used.

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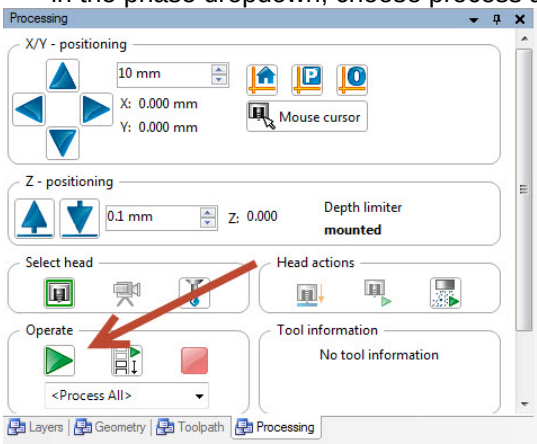
d. Press the ok button.

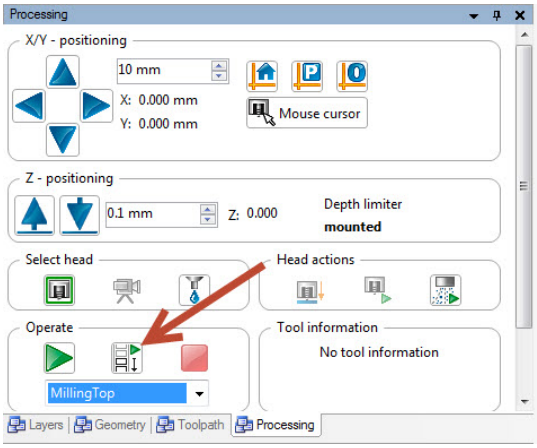
Note: You will notice that the colors of the tool holders on the main layout screen will match the colored rings on the physical tools, as shown below.

3. Start board production.

a. Press the board production wizard icon , or in the phase dropdown, choose process all and press the green play button.



Note: If you wish to start on a different phase and would like to automatically continue to the next sequential phase, select the desired phase in the drop down menu and press the "start selected phase and all following phases" icon, as displayed below.



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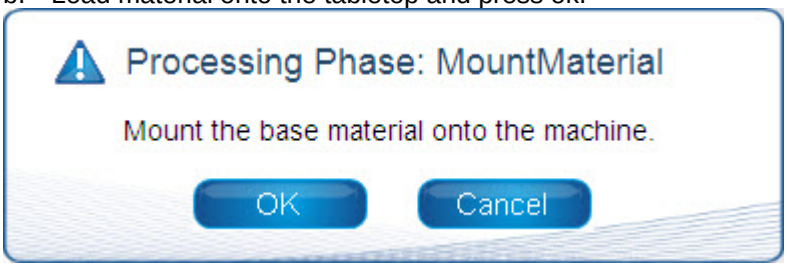
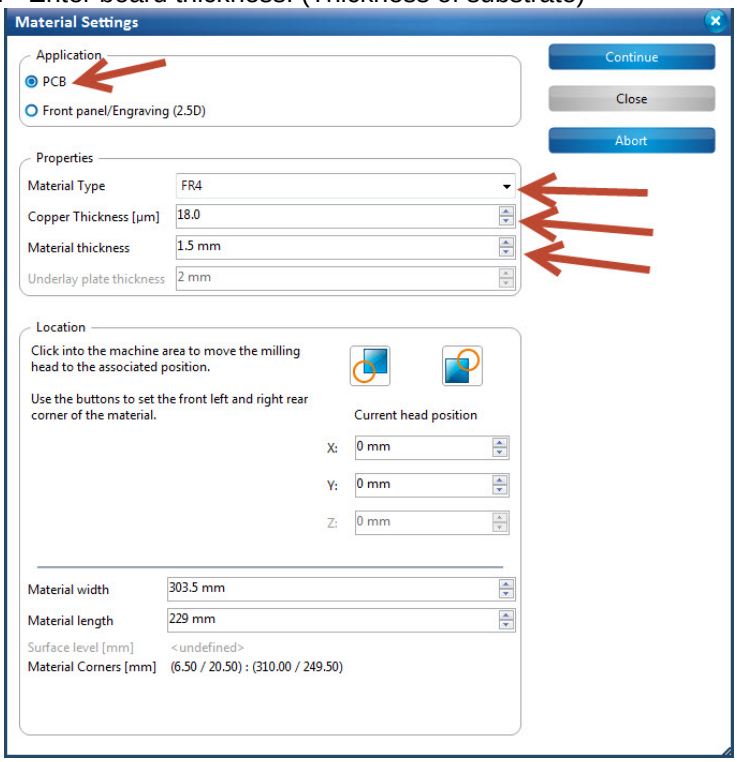
b. Load material onto the tabletop and press ok.



Note: The machine will automatically move to the pause position.

c. Enter in the material settings.
   1. Make sure that PCB is selected in the application field.
   2. Select the material type.(Auto selected)
   3. Enter the copper thickness.
      1. 18 micrometers is 1/2 ounce of copper.
   4. Enter board thickness. (Thickness of substrate)



   5. Press continue.

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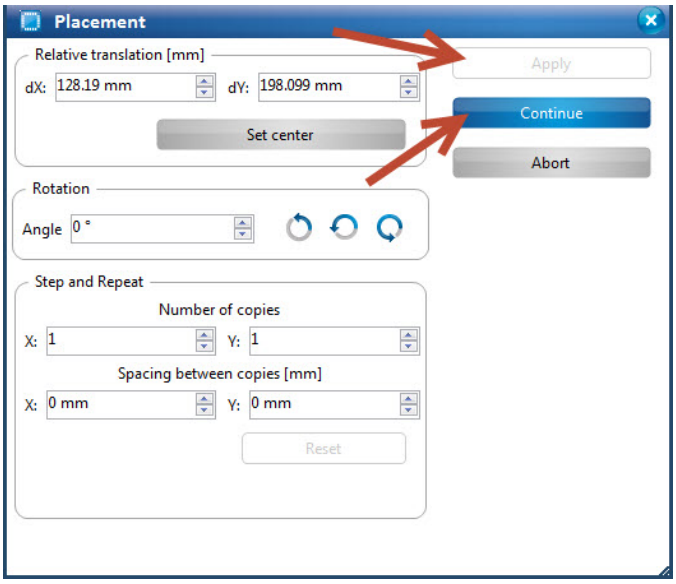
d. If desired, move the board to the desired location.



1. Move the placement window off to the side.
2. Single click and drag your design to its new location.
3. Press the apply button.

Note: If you desire to create multiples of the same design, in the step and repeat section, enter how many designs you want on each axis. Enter the desired spacing between copies.

4. Press apply
5. Press the continue button.

e. The machine will now start creating your design.

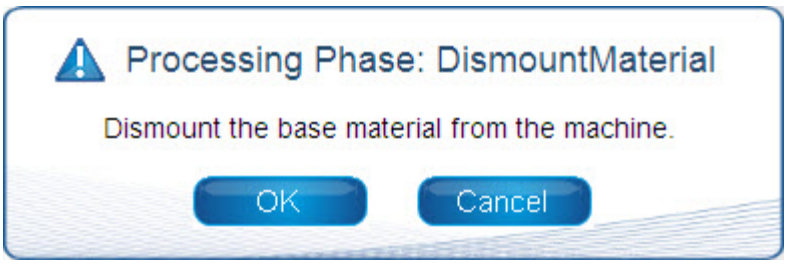
f. The machine will now go and pick up the 1.5mm drill to drill your fiducial holes if you are using them.

Note: A 3 minute motor warm-up is expected. This warm-up will happen on the first spinning of the motor each day, or after a prolonged idle period.

g. The machine will now go and pick up the 0.2mm Universal Cutter and center punch all of the via holes.

h. This machine will automatically transition to the drilling plated phase and drill all of your through holes.

i. Once the drills are complete, the machine will move to the pause position and prompt you to carry out the galvanic plating (MiniContac or Contac plating system).



j. Remove the material and press ok.

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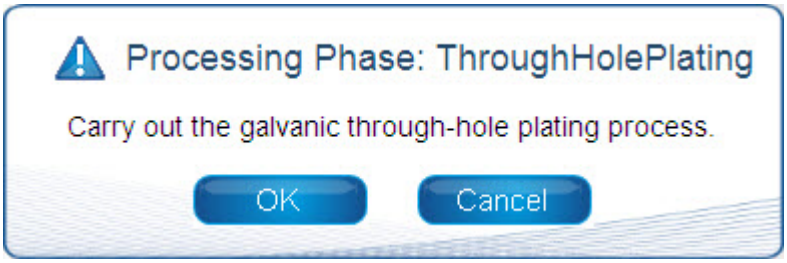
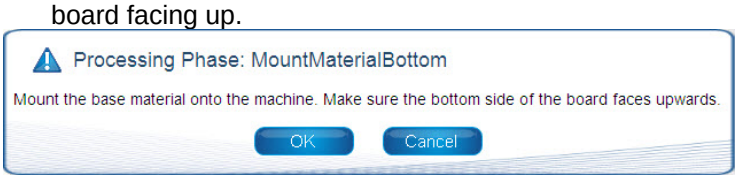
k. Execute the plating process.



l. Press ok.

m. After plating is complete, mount the material back onto the table top with the bottom side of the board facing up.



n. Press ok.

o. The machine will then execute reading the fiducials.

p. Once the fiducials are read in, the machine will automatically transition to the milling bottom phase and start your circuit structuring and removal of excess copper.

q. When the milling bottom phase is complete, the machine will move to the pause position.

r. Flip the board over to the top side of the board.

Note: Always flip the board along the X axis. You will also see the display graphically flip the design to the top side.

s. Press ok.

t. The machine will now read the fiducials from the top side of the board.

u. Once complete, the machine will automatically transition to the milling top phase and start your circuit structuring and removal of the excess copper.

v. Once the milling top is complete, the machine will automatically transition to the cutting outside phase to cut your board out of the material.

Note: The machine will pick up either the 1.0mm or 2.0mm drill (depending on what was processed during the data preparation) and drill a starter hole for the contour router. Once complete, the machine will pick up the contour router and cut out your board.

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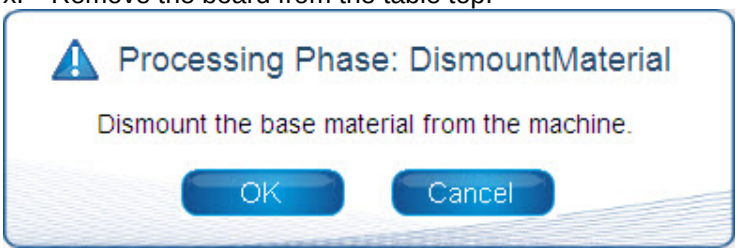
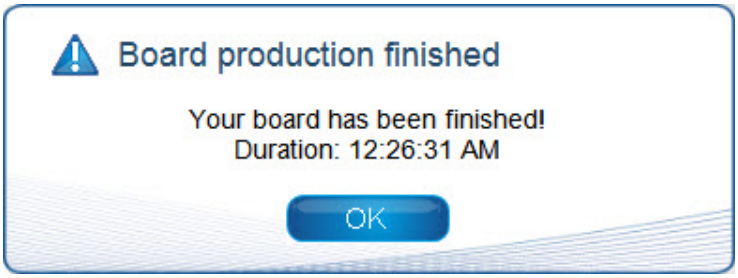
w. Once the cutting out of the board is complete, the machine will move to the pause position.

x. Remove the board from the table top.



y. The machine will now display the total time to create your completed board.



z. Congratulations, you have created a PCB board.

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