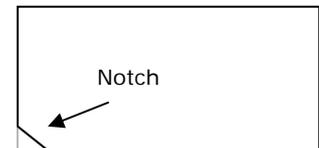


Making a Multi-Layer Board

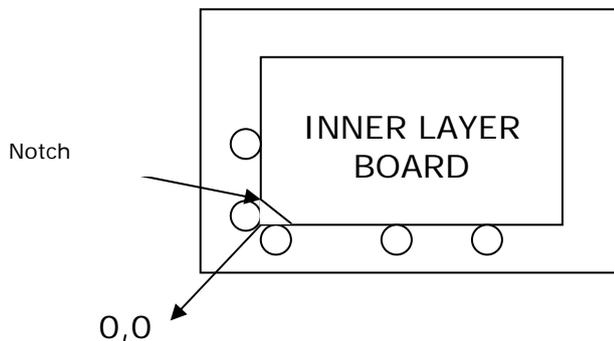
1. Import Gerber files and Drill files into IsoCam
2. Go to 'Edit Drills' and add a 3.25mm drill
3. Go to 'Edit Menu' and Click on add 'Fixing Holes'
4. Select bottom box and make the distance 295mm between centres and then select the 3.25mm tool and Click 'OK'
5. Select all layers and the 'M' for Move Screen – comes up saying select Set-Point – Click 'OK'. Then move the cursor to the centre of the left-hand fixing hole and press the 'Space-Bar'. In the box that comes up put the coordinates 0,0 and press 'Return'. Finally click left-hand mouse button and then reprint and you will see that the fixing holes have moved to the 0,0 for the left-hand, moving all the layers at the same time.
6. Save each required Gerber layer making sure that each layer is identified with Top or Bottom.

7. Save drill file and fixing hole file.



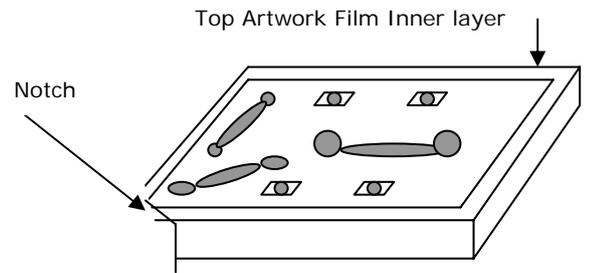
8. Cut notch off front left corner of inner layer board / boards

9. Place the one inner layer 12" x 9" 1 0.8mm double sided board (4 layer board) or 2 x 0.4mm double sided boards 12" x 9" (6 layer board) on top of each other... Onto the bed of the drilling machine with the bottom left hand corner in the 0,0 position as shown below.. Using masking tape to hold the board in place.



10. Load the fixing hole drill file and adjust the offset box so that the first X coordinate reads 5 & Y coordinate 114
11. Put a 3.175mm drill in the spindle and then drill the two fixing holes.
12. Remove the board (4 layer) or 2 boards (6 layer) and using 3.175mm pins fix the board into the hole and centre slot on the brown baseboard of the machine.
13. Create a new RPC file called 'Multilayer' and make offset 10 for first 'X' and 145 for the 'Y'
14. Drill the fixing holes again. These holes will be used to register the artwork.
15. Using the photoplotter plot out all the required artworks making sure the bottom in layer/ layers and the bottom outside copper are mirrored.
16. Clean inner layer board and laminate with dry film.

17. Register artwork over second set of fixing holes on both sides. Make sure Top Layer film is on side with Notch to front left when looking down on it. Repeat for next inner layer of 6 layer board



18. Expose / Develop and Etch as usual.

19. Process the etched inner layer board in the Desmear / black oxide line as follows: -

Tank 1: Desmear / Clean – 2 minutes at 40° - 50°C

Spray wash for 30 – 60 seconds.

Tank 2: Conditioner – 1 minute 35° - 45°C

Spray Wash for 30 – 60 seconds.

Tank 3: Cirboard 9550 – 1 minute at 35°C

Spray Wash for 30 – 60 seconds.

Dry the board with paper towels and hair-dryer or use board drying machine, or place in oven for 2 minutes at 60° - 70°C

20. Prepare the multi-layer stack for pressing as follows: -

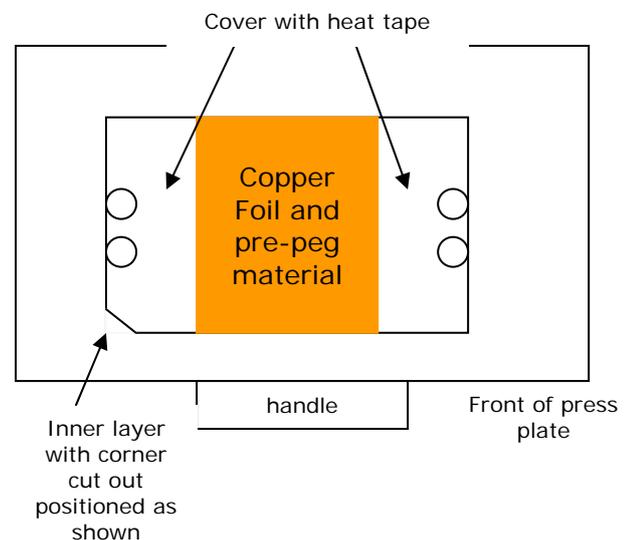
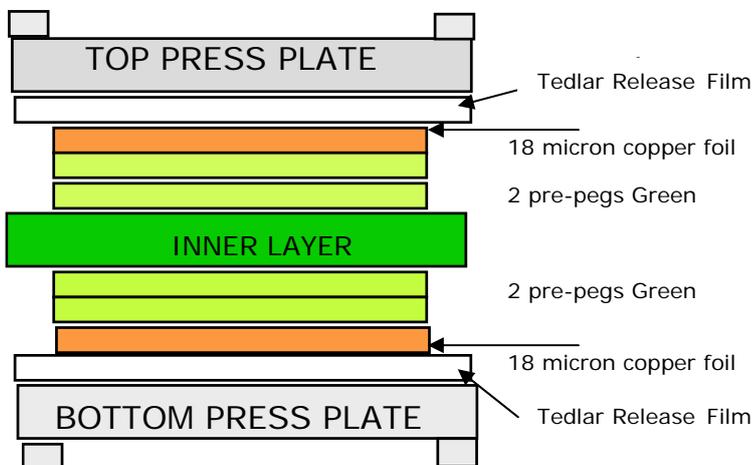
4. Layer Board

Place a piece of the Tedlar release film over the bottom press plate. Then place a piece of 18 micron 11" x 11" copper foil in the centre of the press plate on top of the Tedlar Film. Copper face touching Tedlar film.

Then 2 pieces of pre-peg material.

Then the etched inner layer board with cut off edge facing to front left corner of the stack. Then 2 more pre-pegs plus copper foil, plus tedlar release film.

Make sure that the 2 fixing holes on the inner lay board are not covered by the other materials and cover with heat tape. Also ensure top and bottom pre-pegs and copper in line with each other see figures 1 & 2 below.



Place the stack in the press, and proceed to Press the multi-layer board as per the press Instructions.