

PCB Board Fabrication

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Process Outline

- Create the board layout (Cadence/Eagle)
- Export Gerber/Drill files
- Import files into IsoPro
- Configure Layers
- Run Isolation
- Initialize Machine
- Place & Mill the board
- Cleanup the Board
- Shutdown Machine

Board Export

- Cadence:

Artwork Device: Gerber RS274X

Drill Device: NC Drill

- Eagle:

CAM Output Device: GERBER_RS274X

File Requirements

Traces and spaces: > 12 mils wide

Large holes (>40 mils): any size

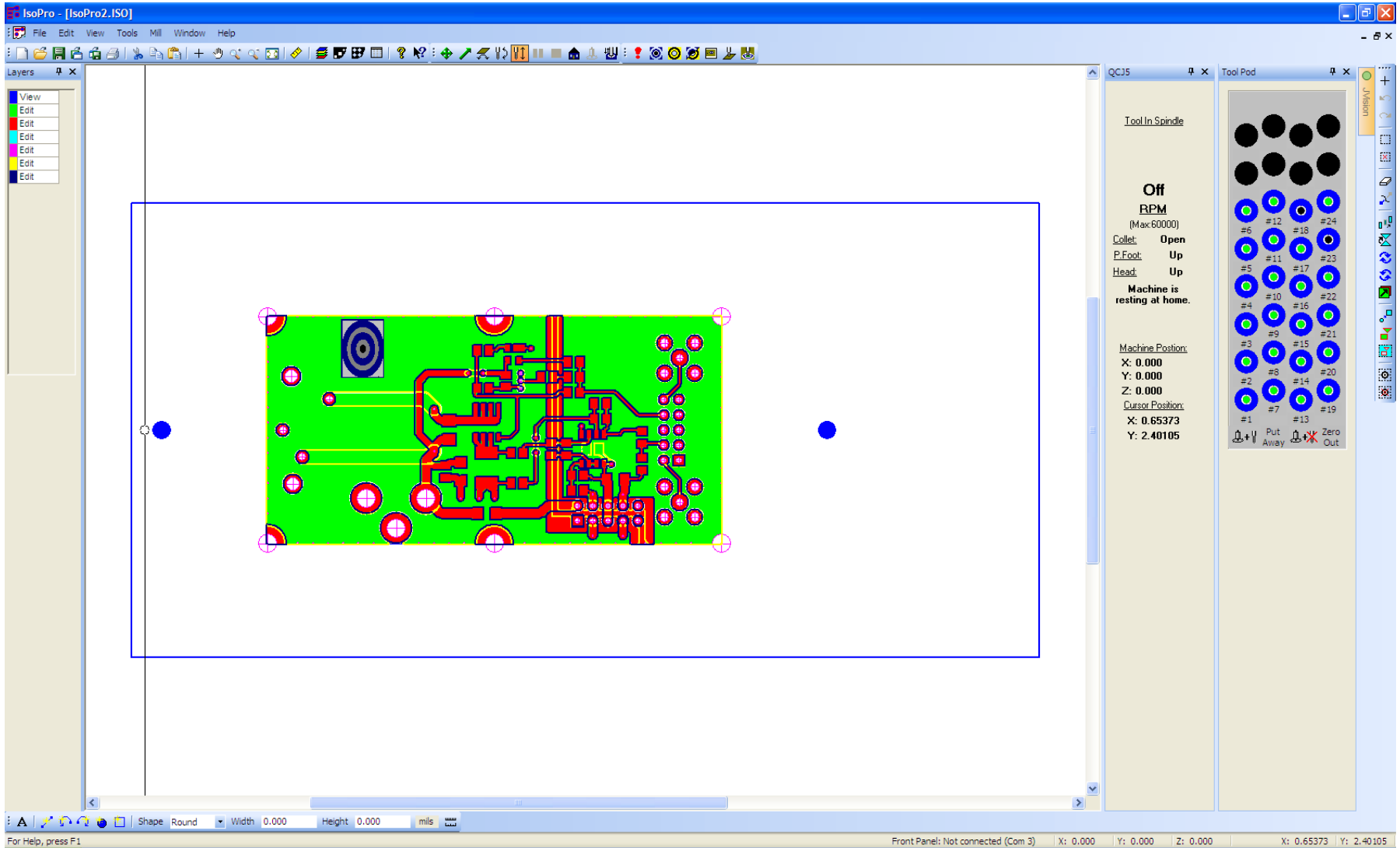
Small holes (<40 mils) : 12, 16, 20, 25,
30, 36, or 40

Mode: Absolute

Units: English

Digits: Integer 5 (2 for drill file), Decimal 3

IsoPro Desktop



Loading the File

- Start IsoPro
- Import Outline (File->Import->Gerber)
- Import Top Layer
- Import Bottom Layer
- Import Drill File (File->Import->Drill)

Setup Layers

- Lock outline layer
- Set bottom layer to Solder
- Copy drill layer to new layer & mirror

Position Graphics

- Select->All
- Drag selection to fit within bounds

Prepare File

- Run Isolation
 - Select Tools->Isolate
 - Select Layers (Top, Bottom)
- Set Contact Area
 - Select (Tools->ContactByTouch->Set target area)
 - Position Target to blank area of board

Examine Isolation

The screenshot displays the IsoPro software interface for a PCB layout. The main workspace shows a yellow PCB layout with various isolation features, including a rectangular boundary and numerous circular pads. The interface includes a menu bar (File, Edit, View, Tools, Mill, Window, Help), a toolbar, and a Layers panel on the left. On the right, there are panels for tool settings (QCJ5, Tool Pod) and machine position (X: 0.000, Y: 0.000, Z: 0.000). The status bar at the bottom indicates the front panel is not connected and provides coordinates (X: 1.06065, Y: -1.01772).

Layers

- View
- Hide
- Hide
- Edit
- Edit
- Edit

QCJ5

Tool Pod

Tool In Spindle

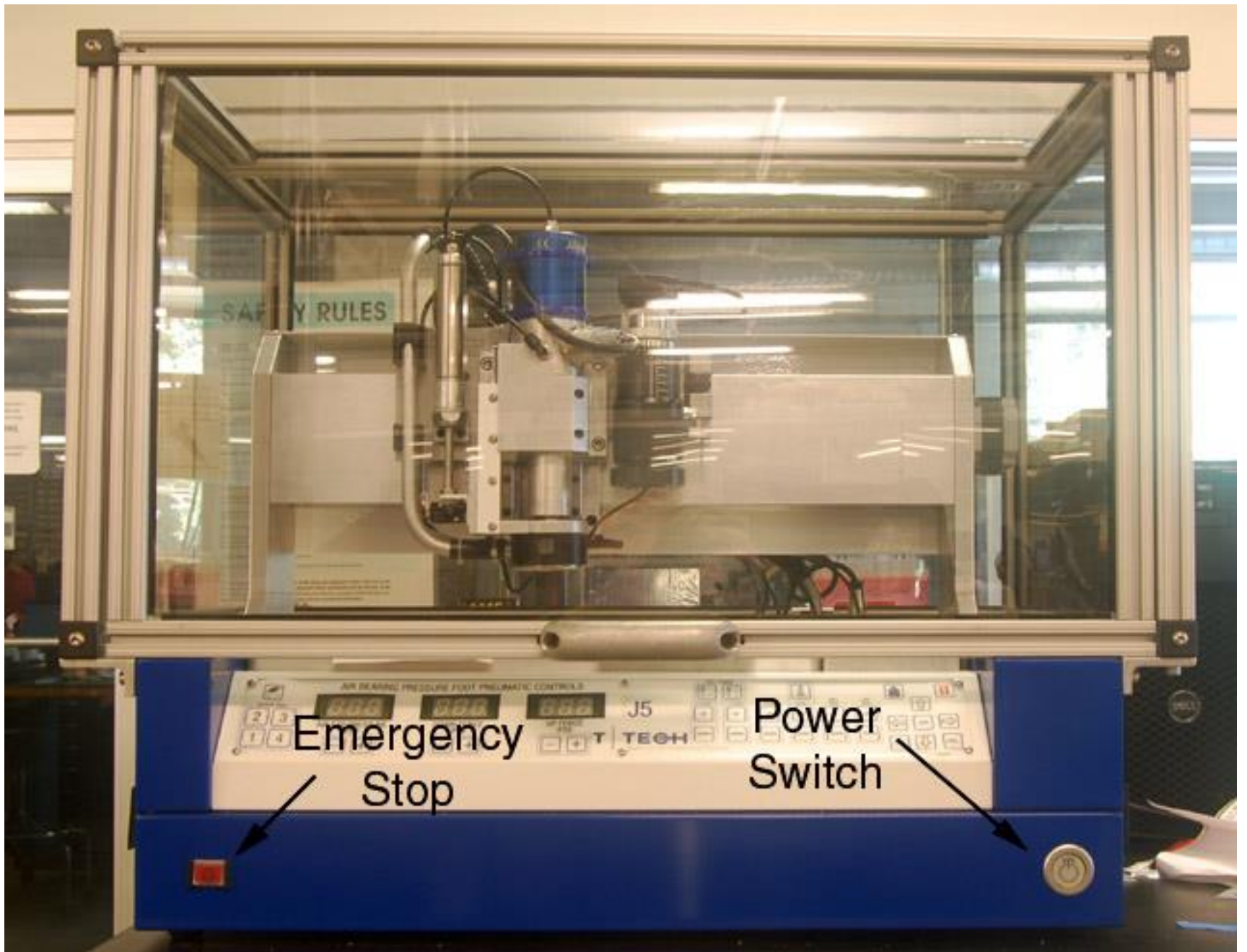
Off
RPM
(Max: N/A)
Collet: N/A
P.Foot: N/A
Head: N/A
Un-initialized

Machine Position
X: 0.000
Y: 0.000
Z: 0.000
Cursor Position
X: 1.06065
Y: -1.01772

Put Away Zero Out

Shape Round Width 0.000 Height 0.000 mils

Front Panel: Not connected (Com 3) | 0.000 | 0.000 | 0.000 | X: 1.06065 | Y: -1.01772



Emergency Stop

Power Switch

Initialize Machine

- Turn on machine
- Set Pressure to 15 psi
- Select Initialize from the IsoPro Mill menu

Place the Board

- Pin the board to the table
- Cover open holes with paper
- Activate the vacuum hold-down

Mill the Board

- Run the drill layer (Mill->Run Layer)
- Run the top layer
- Turn the board over
- Run the reverse drill layer
- Run the bottom layer (if needed)

Finishing & Cleanup

- Turn off Vacuum
- Remove the board
- Remove Burrs
- Trim board to size
- Turn off machine
- Close IsoPro