Cutting Angles.

We want to cut some 2 inch x 1/8 inch aluminum angles to make a bracket. This is a brief look at how to draw, set it up on the Panel Pro and cut it.

Drawing:

Simply represent the outline and add the cutouts inside of it. The origin (work zero) is at the lower left corner.

In this drawing the part is already cut to length. If I wanted to trim the ends, I would add a line on the MTP (manual tool path) layer in CAD. We are using a 1/8" end mill. Assuming a trim on the top, the line would need to start left of the piece and extend to the right to cut on the left side of the line. It would need to be offset from the finished edge by ½ of the end mill, .062. We want to cut 2 slots, so they are drawn on layer 2 to represent the finished slot dimensions. We will use the auto tool path cutting mode in AvCAM.

Set up:

While not ideal for rigidity, I camp to one 1 inch mounting bar with the clamps on the side. I want to make more than one of these, so I mark the origin with a clamp on the bar only. While clamping I slide a piece of angle under the horizontal piece to space it off of the bar to keep from cutting into the mounting bar. After it is clamped I remove the temporary piece.
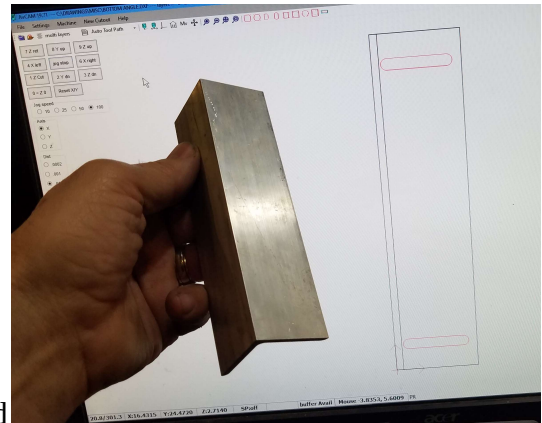

Setting Work zero:

Set Z zero on top of the material.

To set Y zero, touch the lower edge with the end mill. Be sure to use the mouse wheel to move, not the jog buttons to avoid breaking an end mill. When the edge is touching, click the y coordinate display on the bottom of the screen to bring up the Y control dialog. The position defaults to ½ of the end mill diameter.

Click set as listed. The dialog closes and the Y status will now say Y:-0.0625.
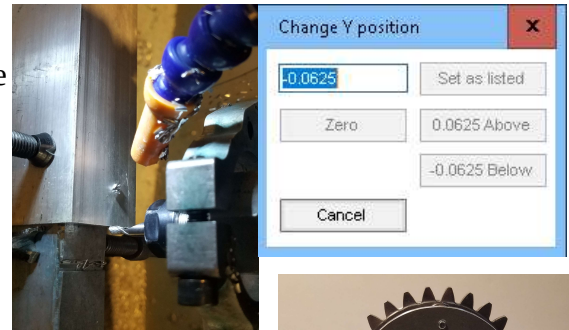
Repeat on the left edge to set the X axis. Simulate using the "S" key or simulate button on the cut dialog. Click cut on the cut dialog and 30 seconds later your part is done. The picture to the right shows the angle attached to a machine to anneal the ball screw ends for the Panel Pro to enable machining. All the parts other than the fasteners and motor were made with the Panel Pro