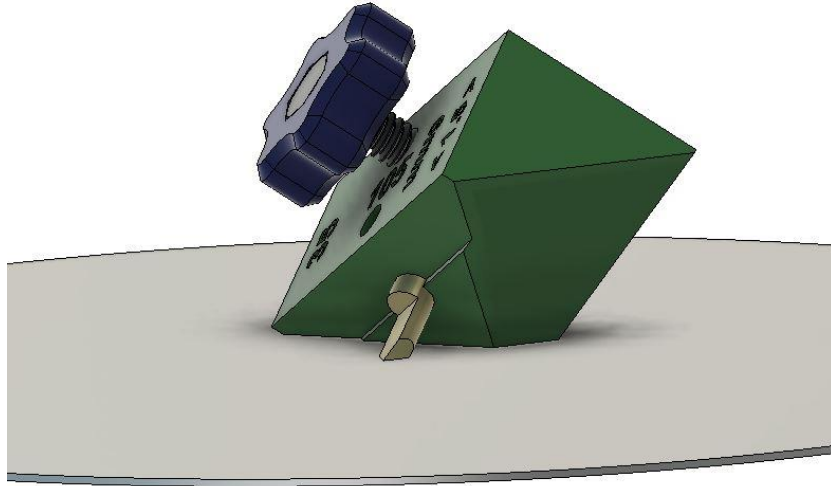


3D Printed Sharpening Jigs



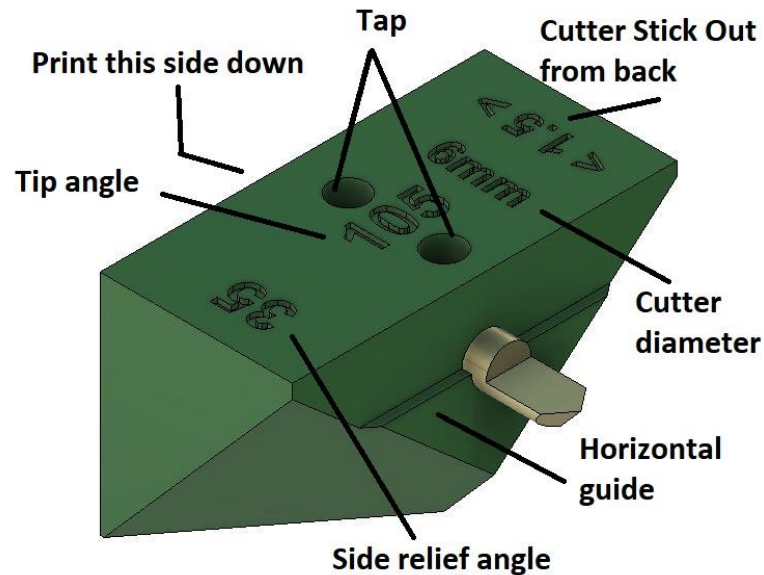
These jigs are primarily used to hand sharpen engraving style bits on diamond lapping plates. There are two styles. The flycutter style tip has equal angles on both sides, while the drill style tips' right side angle is 5 degrees less than the left side. The flycutter style is used in universal, horizontal, and vertical cutting frames, while the drill style is used in a drilling frame.

Printing and preparing the jigs:

Print with the back side down, three or more perimeters, and 30% infill. Cubic or Gyroid are the strongest infill options. Use the model, Puck_3dPrintModifier.stl, as a 100% infill modifier.

The two top holes need to be tapped $\frac{1}{4}$ "x20. The cutter hole may need to be reamed or drilled to size depending on how well your printer is calibrated.

You may need to flatten the angled sides with a sanding block as some printers may make the borders slightly higher than the center.



Sizes:

Tip angles from 60 degrees to 150 degrees in 15 degree increments in each of these cutter diameters: 1/8", 3/16", and 6mm. All jigs have 35 degree side relief angle.

Usage:

Insert the cutter blank so the sharpened tip will be 1.5 inches from the back or .5 inches from the upper front face. The cutter should be level with the horizontal guide.

150 grit diamond lap works well for initial shaping. 600, 1200, 2000, and 3000 grit laps are used in order for a mirror finish.

Most carbide engraving bits have a large relief on the right hand side, so care must be taken to get the tip on the center line. This is critical for the drilling frame bits. Fly cutters can be adjusted for center height.

Locking knob:

3d print [knob](#), then press 1/4" nylon hex bolt into it. Use to lock the cutter in place.

Resources:

Models: <https://github.com/elfren/SharpeningJigs/tree/main/Pucks>

Engraving bits, these are just examples. There are many more available.

6mm*15mm, Half straight bit – aliexpress item 2251801868877245

3.175*3.0*8mm Straight Milling Cutter – aliexpress item 2251832423982437