

# SHAPER ORIGIN

## USER GUIDE - Portable Handheld CNC Router

### Set up your workspace

1. Use a spoil board ( $\frac{1}{2}$ " MDF works well) as a sacrificial element underneath your material.
2. Use double-stick tape and/or clamps to mount your material to the sacrificial board, to ensure all parts remain intact with the spoil board when you've completed your cut.
3. Make sure to clamp your assembly securely to a workbench or to the Shaper Workstation.
4. Unplug the spindle and ensure the spindle is OFF.
5. Apply ShaperTape in parallel rows 3" - 4" apart in front of the desired cut area. Scan your work area (Scanning Menu), including any reference lines or outside edges of your material. Origin automatically detects and stores your Workspace.
  - a. Make sure it is highlighting the markers in blue through the screen.
6. Determine the correct router bit for your cutting application (straight bit or engraving). Diameter, length of the cut, and profile will all have an impact on the cut result.
7. To swap out the router bit, it is recommended to watch a tutorial, or follow these steps:
  - a. Use the hex key on the side of the shaper spindle (half a turn) to easily remove the spindle.
  - b. Hold down the spindle lock button, loosen the collet and insert in the router bit you plan on using.  $\frac{1}{8}$ " or  $\frac{1}{4}$ " spindle collets may be used.
  - c. Insert bit so the length of the shank is inside the collet. Make sure the cutting flutes don't go inside the collet.
  - d. Tighten the spindle nut with a wrench while holding down the locking mechanism.
  - e. Put the spindle back into the Origin, and tighten it with the hex key once again, and plug it in.
8. Safety Pre-Check:
  - a. Using the right router bit.
  - b. Insert the dust extractor hose into the dust port.
  - c. Replace clear magnetic router bit cover to prevent injury.
  - d. Your workspace is clear and the Origin has sufficient work area.



# Add Designs

1. Easily create or import designs from Illustrator or other vector-based programs. SVG file required. Imperial/Inch dimensions required. No complicated CNC programming required!
2. Save your file to the USB drive, and open it up on the Shaper.
3. Take a look at tutorials online on how to use the AI templates to save you time choosing what type of cut you'll make

# Place File

1. Use registration lines and/or material edges to place your design in the correct location.

## Specify Cut Parameters

1. Diameter of Cutter is essential for correct cutting procedure.
2. Determine Inside/Outside/On Line/Pocket cutting operations
3. Depth of Cut -- you must incrementally cut to your desired depth.
  - a. Maximum DOC =  $(\frac{1}{2}) \times$  Diameter of the Bit
4. Z-Probe: This operation determines Z-axis = 0 height parameter.
5. Plunge Rate: 10 or 15 inches per minute is a good default.

# Start Cutting

1. Switch the spindle on and begin cutting.
2. Follow along as the dotted lines direct your cut. Keep the spindle as centered in the guide circle as possible and proceed with a uniform feed rate.

