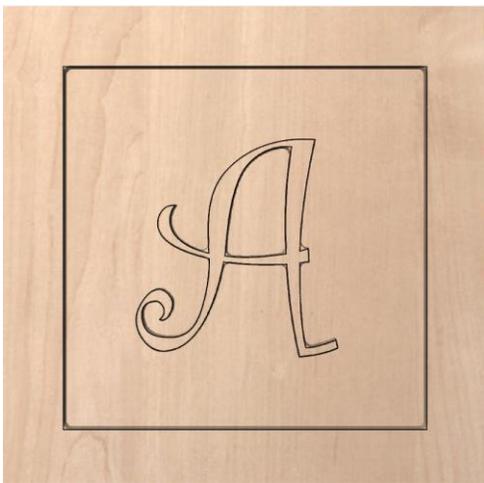# The CNC Orientation Process

The purpose of the CNC orientation is to familiarize you with the CNC Operating System and the safe operation of the machine. For the orientation process you will be asked to produce several projects for machining on the CNC. You will then use the CNC to machine your project with the instructor offering direction and answering any questions you may have. When you can demonstrate an understanding of the steps to safely operate the machine you will receive your certification.

Projects for the CNC Orientation should be small, simple designs using one or two separate CNC bits. Keep in mind the main purpose of the orientation process is to acquaint you with the safe operation of the CNC machine, not to produce a museum quality piece or family heirloom.

Examples of designs appropriate for the CNC Orientation are below. At least one of your projects need to be cut all the way through your project, as in the second example.

Each member of the Guild must supply their own CNC bits. It is recommended that you read the two articles in this series "Understanding CNC Bits" and "Suggested CNC Bits" prior to purchasing CNC bits for your orientation projects.

To receive certification, you must demonstrate:

- The ability to design a project using the CAD/CAM software (i.e. V-Carve Pro or Aspire).
- The ability to safely program the toolpaths used in your project including bit feed and speed rates.
- The ability to follow the instructions provided by the Guild to set up the machine for your project.
- The ability to safely secure your workpiece to the CNC machine.

- An understanding of the orientation of the CNC machine (X, Y and Z axis) as it relates to your project.
- An understanding of "Work Offsets" and how and when to set them.
- An understanding of the "Control Panel" and demonstrate the ability to navigate between sub menus.
- The ability to set the "Z0 height" for either the machine bed or the top of your workpiece.

All of this sounds complicated; however, the Guild has step by step instructions to guide you through the process.