

# CNC Inlay Techniques

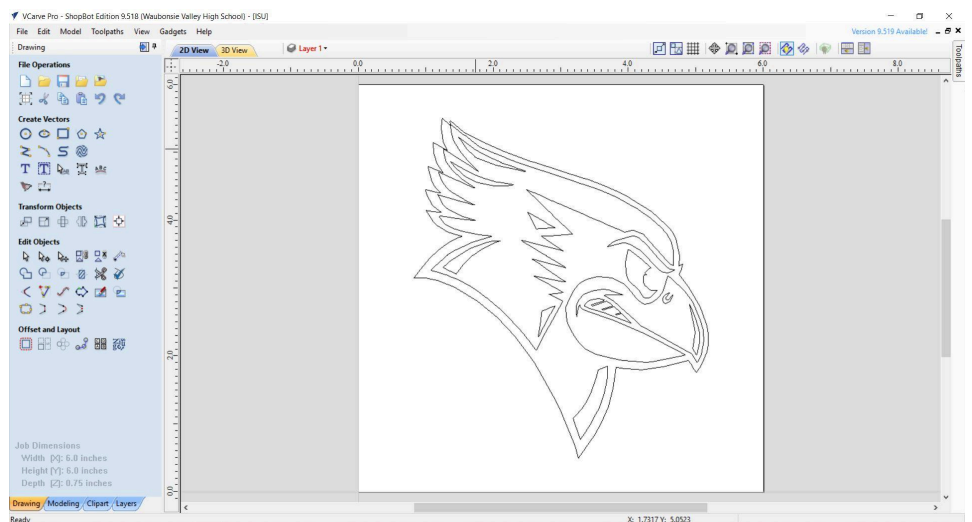
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Create your vector design to be v-carved. This is the **Bottom** vector.



## Toolpath Settings

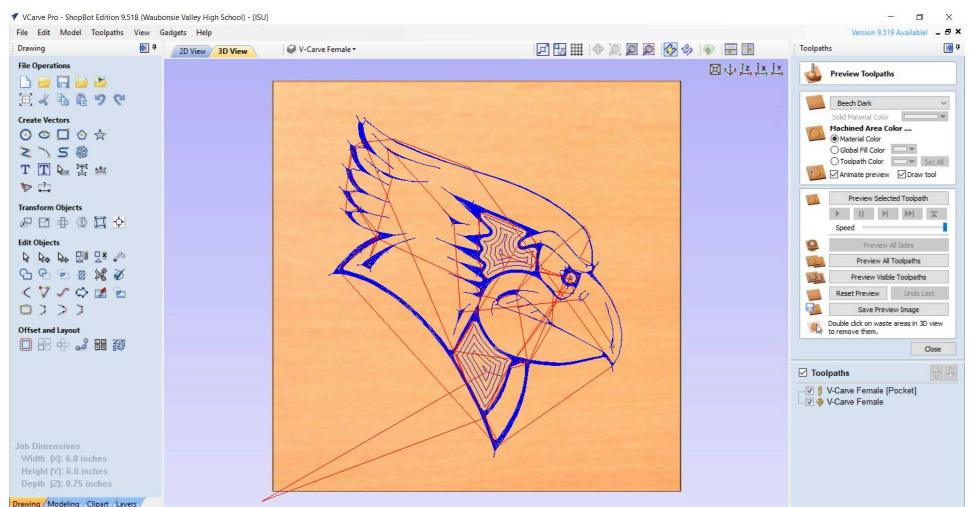
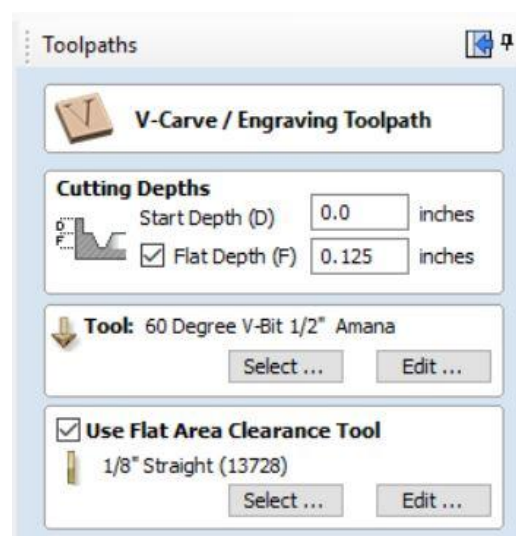
Start Depth - 0"  
Flat Depth - 0.125"

## V-Bit

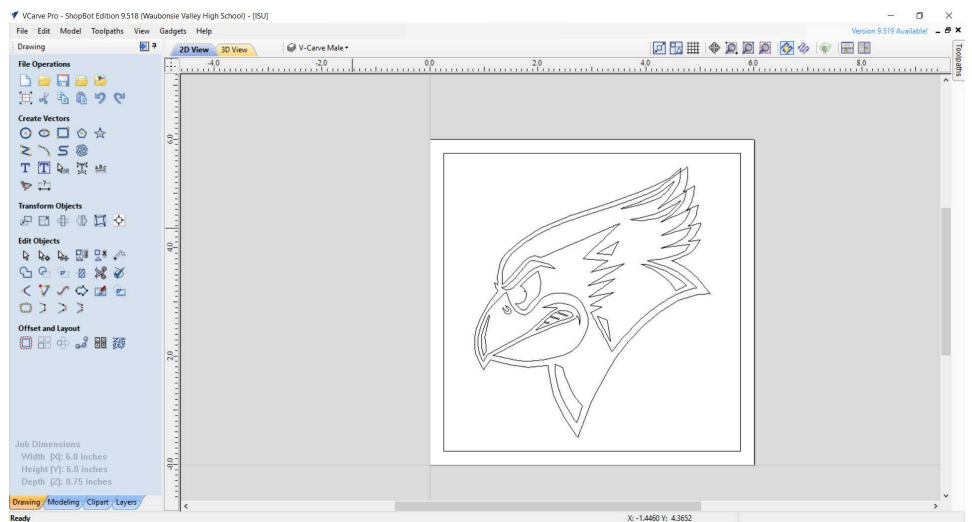
Pass Depth - 0.0625"  
Final Pass Stepover - 0.01"  
Clearance Pass Stepover - 0.01"  
Feed Rate - 40 inches/min

## End Mill

Default Settings



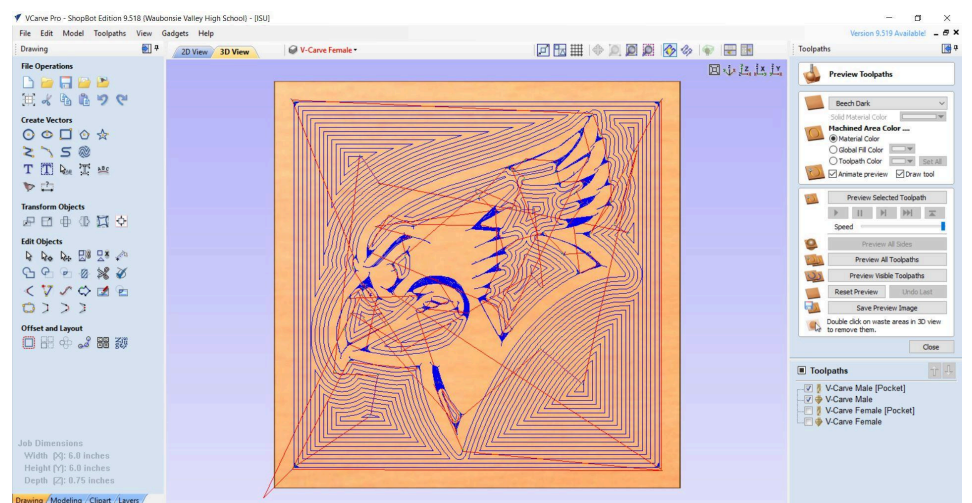
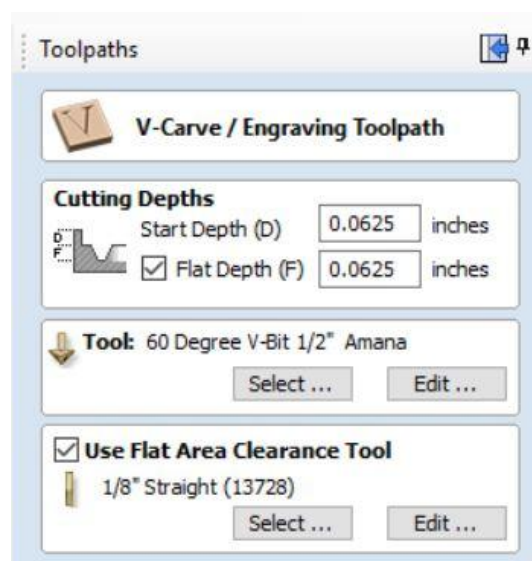
Mirror your vector and place it on a second layer. Create a boundary vector around the mirror. This is the **Top** vector.



**Toolpath Settings**  
Start Depth - 0.0625"  
Flat Depth - 0.0625"

**V-Bit**  
Pass Depth - 0.0625"  
Final Pass Stepover - 0.01"  
Clearance Pass Stepover - 0.01"  
Feed Rate - 40 inches/min

**End Mill**  
Default Settings





It's important that the **Start Depth** and the **Flat Depth** of the **Top Vector** equal the **Flat Depth** of the **Bottom Vector**. You may need to play with these settings, but I found that a 50/50 ratio works well.

You don't want the two halves to bottom out. The gap gives excess glue a place to settle and overcomes any unevenness if your boards aren't flat.



Clamp the two halves together with even pressure. Long reach clamps or cauls are needed. Do not over tighten and smash the V-carves.

The top board can be removed with the CNC machine or a table saw. I do not recommend using a thickness planer as it will tear out the inlay.



### General Guidelines

1. Use a sharp V-bit. I recommend insert bits
  - a. [Amana RC-1108 Insert V-Groove 60 Deg](#)
  - b. [Amana RC-1102 Insert V-Groove 90 Deg](#)
2. Use down cut spiral bits for pockets. Upcut bits can lift the inlay and increase the chance of tearout.
  - a. [Amana 46341 Solid Carbide](#)
  - b. [Whiteside RD1600 Down Cut Spiral](#)
3. Slow down the feed rate and reduce the stepover of V-bits. This will greatly increase your chance of sharp peaks and reduce the likelihood of tearout.
4. Practice, practice, practice. Your machine and bit settings may need tweaking.