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I was using the Open Sign tutorial and made the following notes, provided so you can see my process,

Set the material size and XY Datum at the center for the design work,

Create the border with the center at X 0 and Y 0,

Create the second border,

To center a hole, hover over the first line, then hover over the second line, then move to the approximate center between those two points and Vectric will show a + sign,

To scale the size, you can hold Shift and then drag with the mouse,

Check the Material Set Up and move the reference to the lower left corner,

Make sure there is no offset,

Select the outer edge of the pocket, drag to capture all of the text with the left mouse button down,

Select V Carve Tool Path,

Define cutting depth,

Select Flat Depth of something like 0.20,

Select the V Bit tool for the first tool,

Select the Use Clearance Tool,

Select the 0.25 End Mill as a clearance tool,

Select the outer edge, select Profile and then the V Bit tool on the outside,

Select the outer edge, select Profile, and the 0.25 End Mill with a 0.20 offset outside,

Use Plunge,

Add tabs,

This is the exported image from VectricPro V10. It disagrees with the results.

This is an attempt in VectricPro V10 with Carbide Motion on my Shapeoko XXL.

This is the V-Carve Engraving Toolpath set up. The material is 3 ½" high by 9" wide by 0.525" thick. The desired cut is 0.200.

V-Carve / Engraving Toolpath

Cutting Depths
Start Depth (D) 0.0 inches
☑ Flat Depth (F) 0.2 inches

Tool: V-Bit (90.0° - 1/2")
Select ...   Edit ...

☑ **Use Clearance Tools**
End Mill (1/4")

Select ...   Remove   Edit ...

Tool-specific options
⦿ Offset   ◯ Raster

Cut Direction
◯ Climb
⦿ Conventional

Raster Angle 0.0 degrees

☑ Ramp Plunge Moves
Distance 1.0 inches

☐ Corner Sharpen

☑ **Use Vector Start Points**
☐ **Use Vector Selection Order**

Safe Z   1.0 inches
Home Position   X:0.00 Y:0.00 Z:1.00
☐ **Project toolpath onto 3D model**

Vector Selection: Manual   Selector ...

Name: Wyatt Trial 2-Pocket

Calculate   Close

Edit Tool

Name   V-Bit (90.0° - 1/2")

Notes

Tool Type   V-Bit

Geometry
Units   inches
Diameter (D)   0.5   inches
Included Angle (A)   90   degrees

No. Flutes   2

Cutting Parameters
Pass Depth   0.13   inches
Final Pass Stepover   0.25   inches   50   %
Clearance Pass Stepover   0.25   inches   50   %
Feeds and Speeds
Spindle Speed   16000   r.p.m
Feed Units   inches/min   Chip Load   0.0017   inches
Feed Rate   55   inches/min
Plunge Rate   20   inches/min

Tool Number   1

OK   Cancel

Edit Tool

Name	End Mill (1/4")
Notes	

Tool Type End Mill

Geometry

Units	inches
Diameter (D)	0.25 inches
No. Flutes	2

Cutting Parameters

Pass Depth	0.13 inches
Stepover	0.1 inches 40 %

Feeds and Speeds

Spindle Speed	16000 r.p.m
Feed Units	inches/min Chip Load 0.0013 inches
Feed Rate	40 inches/min
Plunge Rate	10 inches/min

Tool Number

1

OK   Cancel

2D Profile Toolpath

Cutting Depths
Start Depth (D) 0.0 inches
Cut Depth (C)   0.2 inches
☑ Show advanced toolpath options

Tool: V-Bit (90.0° - 1/2")
Select ...   Edit ...

Passes: 2   Edit Passes ...

Machine Vectors...
○ Outside / Right
○ Inside / Left
◉ On
Direction ○ Climb ◉ Conventional
Allowance offset 0.0 inches

☐ **Do Separate Last Pass**
Allowance (A) 0.0 inches
☐ Reverse direction

☐ **Add tabs to toolpath**
Length 0.5 inches
Thickness 0.1 inches
☐ 3D tabs   Edit Tabs ...

Ramp | Leads | Order | Start At | Corners
☑ **Add ramps to toolpath**
Type ◉ Smooth
○ Zig Zag
○ Spiral
Specify Ramp ...
☐ Ramp on Lead In
◉ Distance 1.0 inches
○ Angle 20.0 degrees
Distance 4.0 inches

Safe Z   1.0 inches
Home Position   X:0.00 Y:0.00 Z:1.00
☐ **Project toolpath onto 3D model**

Vector Selection: Manual   Selector ...

Name: Wyatt Trial 2-Outside V Bit

Calculate   Close

Toolpaths 　　　　　　　⬛ ? ⊞

🔲 2D Profile Toolpath

Cutting Depths
　　Start Depth (D)　[0.0]　inches
　　Cut Depth (C)　[0.525]　inches
☑ **Show advanced toolpath options**

Tool: End Mill (1/4")
　　　　　[Select …]　[Edit …]

Passes: 4　　[Edit Passes …]

Machine Vectors...
◉ **Outside / Right**
○ **Inside / Left**
○ **On**
Direction　○ Climb　◉ Conventional
Allowance offset　[0.2]　inches

☐ **Do Separate Last Pass**
　　Allowance (A)　[0.0]　inches
　　☐ Reverse direction

☑ **Add tabs to toolpath**
　　Length　[0.5]　inches
　　Thickness　[0.1]　inches
　　☐ 3D tabs　[Edit Tabs …]

Ramp	Leads	Order	Start At	Corners

☑ **Add ramps to toolpath**
Type　◉ Smooth
　　　　○ Zig Zag
　　　　○ Spiral
Specify Ramp ...
　　☐ **Ramp on Lead In**
　　◉ Distance　[1.0]　inches
　　○ Angle　[20.0]　degrees
　　　Distance　[4.0]　inches

Safe Z　　1.0 inches
Home Position　X:0.00 Y:0.00 Z:1.00
☐ **Project toolpath onto 3D model**

Vector Selection:　Manual　[Selector …]

Name:　[Wyatt Trial 2-Outside 025 End Mill]

[Calculate]　　　　[Close]

This is the first pocket pass with a 0.250 End Mill, Tool 201 in the Shapeoko tool inventory. The cut is pretty close to 0.200", the value set in the tool path.

This is the V Carve pass with the Shapeoko Tool 301, ½" 90 degree V-bit. The cut is set to 0.200" and the actual cut is close to 0.400". The surprises include the depth, the steps at the bases of the letters, and the exterior dog bone issues on the corners.

This is the exterior V Bit cut, set to 0.200" and cutting to close to 0.400", which matches the inside V carve depth. It should leave a face surface, as shown in the Vectric image.

Final product, out of the work. The outline of the letters is not smooth, the bottom is not flat, the depth is beyond the 0.200" set in the toolpaths, and the dog bone issues on the issue V Carve.

A repeat of the Vectric image for comparison.

And, Vectric keeps saying that the final profile cut is going through the material while the material thickness is set to 0.525" and the cut depth is set to 0.525" as well. A bit frustrated. What setting, what process, is wrong?

Thanks,
Rex A Schildhouse
Lieutenant Commander, United States Navy, Retired and tired