

# Project Tutorial

Featuring compatibility with nearly all CNC Machines

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Vetric Project Tutorial  
www.vetric.com

Compatible with  
Current Version of:

VCarvePro

OR

Aspire

Sample Carved with:  
**ShopBot Buddy**  
PRSalph BT48

**ShopBot®**  
www.shopbottools.com

## Knife Nest

Designed for Vetric™ by Michael Tyler

The Knife Nest features an attractive architectural design which incorporates decorative wrap-around grooves and fluted lozenge-shaped recesses on the top surface to indicate each of the five knife slot locations. There are four slots that will accommodate blades up to 1.25" wide and one central slot for blades up to 1.75" wide. All slots can accept blades as long as 8.5".

The sample was made using Red Oak for the knife block itself and Maple for the pocketed side panels. You can choose your own woods, of course, but we recommend using hardwood for the knife block itself.

This is a nice project to do over a weekend and is an excellent introduction to the process of two-sided machining if you've not done that before. Alignment is simple and precise using just two dowel pins.

The finished dimensions of the Knife Nest are:  
4" W x 5.5" D x 9.5" H



Main items you will need:

### 1) The Project Files (included):

- Knife\_Panels\_LEFT-1.crv
- Knife\_Panels\_LEFT-2.crv
- Knife\_Panels\_RIGHT-1.crv
- Knife\_Panels\_RIGHT-2.crv
- Side\_Panels\_layout-1.crv
- Side\_Panels\_layout-2.crv (alternate)

### 2) Boards with these dimensions:

- Knife Panels LEFT\*: 0.75" x 7" x 22"
  - Knife Panels RIGHT\*: 0.75" x 7" x 22"
  - Side Panels 1: 0.75" x 6" x 12"
  - alternate Side Panels 2: 0.75" x 6" x 10"
- \* (2-sided files use one board for machining)

### 3) Two 0.25" diameter dowel pins, glue, sandpaper, clamps, stain and clearcoat

### 4) A Dremel-type rotary tool with assorted sanding wheels and bits to sand small details



### CNC Bits used for the Sample:

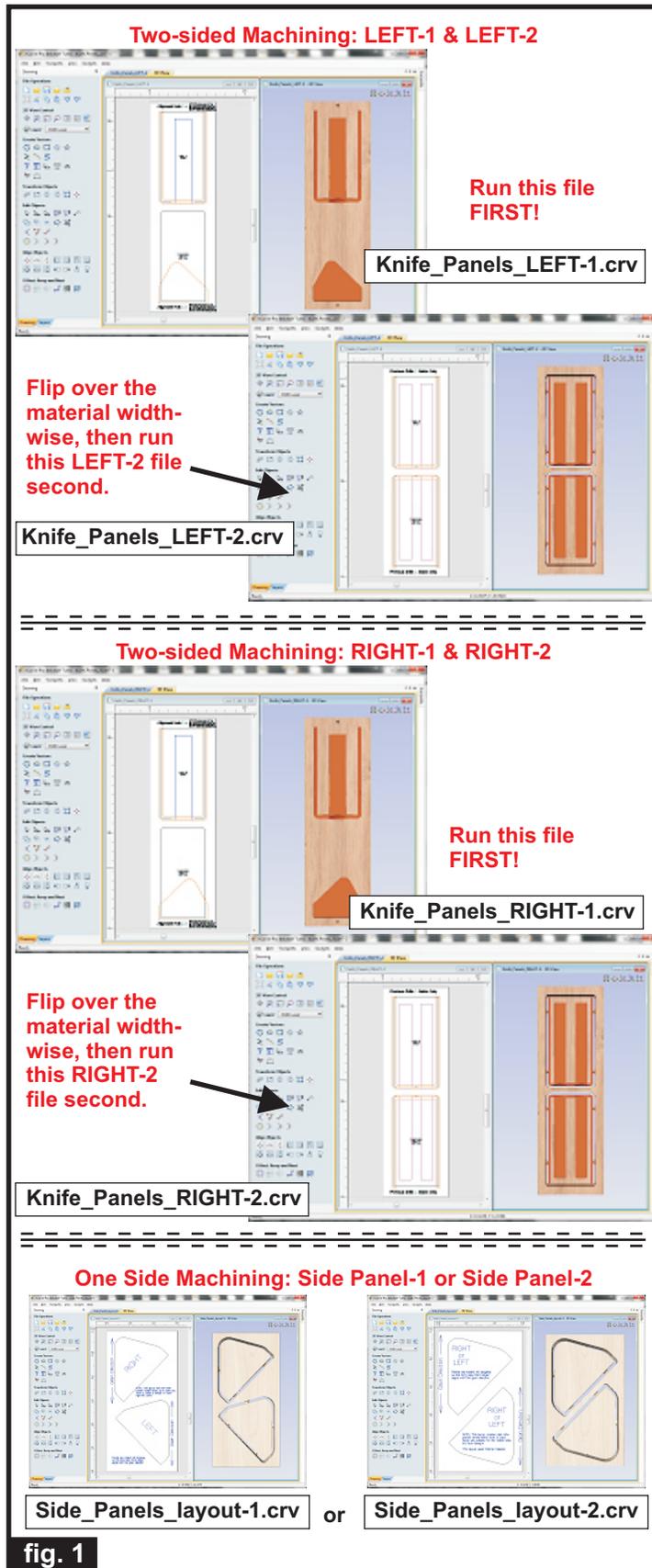
- 0.5" Ball Nose (BN)
- 0.25" Up-Cut End Mill (EM)
- 0.25" Down-Cut End Mill (EM)

# Knife Nest

(cont.)

## STEP 1 - Open and Review the Project Files

Open the files in your VCarve Pro or Aspire. (fig. 1)



Carefully review all the toolpaths and make any necessary changes to suit your particular bits and machine. The toolpaths are currently set with feeds, speeds and pass depths that were used in creating the original sample. Please don't use them directly until you review them for your own setup. **It is VERY IMPORTANT to recalculate all toolpaths after making any edits/changes.** Preview all toolpaths again to visually verify the project outcome on-screen.

## STEP 2 - Run the Project

When you are satisfied with your settings, save the toolpaths to the appropriate Post Processor for your machine, place your material on your machine bed and proceed to run the files. Here are some pointers on running the 2-sided files...

(fig. 2a, 2b, 2c)

Knife\_Panels\_LEFT-1

Run the LEFT-1 file first, label the parts, then flip over to run LEFT-2.

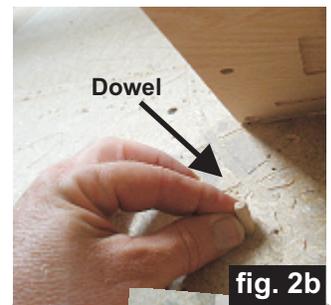
Follow the same procedure for RIGHT-1 and RIGHT-2 files.



After machining and labeling the first file parts, flip the board over across the (shortest) width.

Insert two alignment dowel pins into the holes in the spoilboard and replace the board onto the pins with the plain side up.

Re-apply a secure hold-down method.



Push board onto the dowel pins for perfect alignment between side 1 and side 2



After flipping the material width-wise, run the side 2 file and label the parts after machining

(cont.)

## STEP 2 - Run the Project (cont.)

Additional information for two-sided carving...

For the alignment holes of the prototype sample, I set the depth of the alignment drill holes to 1.1 " when I ran the first file of the 2-sided board (i.e., the Knife\_Panels\_LEFT-1.crv). This drilled all the way through the 0.75 " -thick material and into the spoilboard, creating the two alignment holes in the spoilboard about 0.35 " deep to insert the 0.25 " dia. alignment dowels for placing the flipped board upon. (fig. 2d)

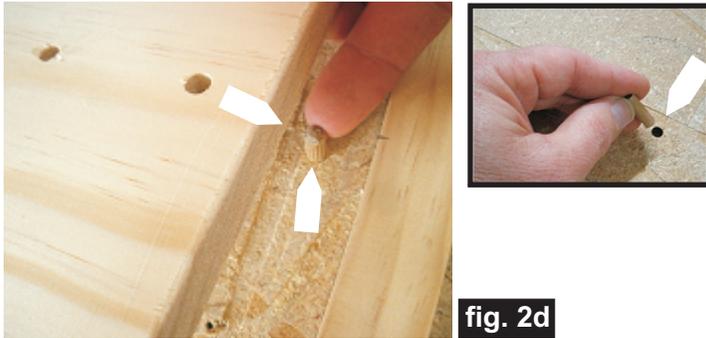


fig. 2d

When I flipped the board over for side 2, I pressed the board onto the dowels and resecured the hold down (screws driven through the material and into the spoilboard). I maintained the same X,Y zero location on the machine bed throughout the complete project run. Inserting a couple dowels into the holes in the spoilboard and into the material holes, yields perfect alignment between the back and front of the material.

Alternatively, you can set up a drilling toolpath on the first side of the material that is ~0.55 " deep. Then after completing the first side, rezero the bit to the machine bed and drill the same holes giving you a total depth of 1 "+. Using 1 "-long glue dowels, this works great.

Another consideration with this alternate technique is you don't have to maintain the same X,Y zero location. You can move the spindle to a different location, rezero X and Y and then continue with drilling the holes in the spoilboard, placing the material and machining the second side.

If you have a 'pristine' spoilboard and don't want to drill into it, this approach would help by not drilling through the material on the first side. Instead, secure a sacrifice sheet of mdf (or whatever) on top of your spoilboard and drill the holes into that for aligning the second side.

## STEP 3 - Release Parts from Material

Separate the parts from the material, then sand off any tab remnants and undesirable toolmarks. (fig. 3a)



fig. 3

## STEP 4 - Parts Assembly

Glue the knife block parts together in pairs. Glue **Middle B** to **Left B**. Glue **Middle 2B** to **Right B**. Clamp the pairs until the glue sets. (fig. 4a)

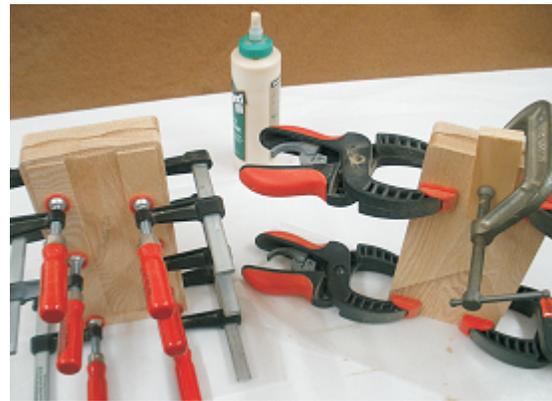


fig. 4a

Remove the clamps, then glue the pairs together (surfaces **Middle 1A** to **Middle 2A**). Clamp until dry. (fig. 4b, 4c)

fig. 4b

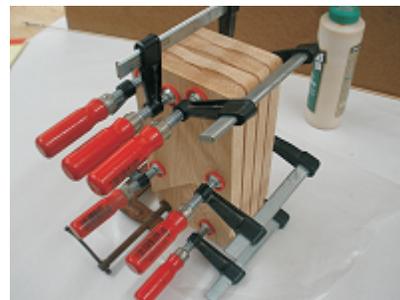


fig. 4c

# Knife Nest

(cont.)

## STEP 5 - Finish Application

Apply your choice of finish before final assembly, if you are planning on a two-tone stained version like the sample. Here's what I used on my Knife Nest made from Red Oak and Maple (fig. 5a, 5b):

### Oak Knife Block

- Applied Minwax Gunstock Stain #231 and Krylon Clear acrylic spray

### Maple Side Panels

- I left the Maple panels their natural color



fig. 5a



Apply clearcoat  
over all  
parts after  
assembly

fig. 5b

## STEP 6 - Final Assembly

Glue the side panels to the knife block sides. Clamp until dry. (fig. 6a, 6b)



fig. 6a



fig. 6b

Lastly, apply a protective clearcoat over all parts.

## IN CONCLUSION

I hope you enjoyed making your Knife Nest! You can customize the project using the editing tools in your Vectric software, if desired. Here are a few possibilities:

- Make a design on the side panels
- Increase knife storage by adding more block sections
- Customize knife slot widths and/or lengths (the fluting vector is longer than a slot is wide...in the sample, they are 0.55 inches longer than the slot widths)

Happy Carving!

*Michael*



# Materials Source Page

- 3M Radial Bristle Discs from [www.mcmaster.com](http://www.mcmaster.com)  
(stack 3 discs at a time on your rotary tool mandrel)

80-grit: part # 4494A19  
220-grit: part # 4494A18



Krylon Clear Gloss Acrylic  
from WalMart™

## Items Purchased at Home Depot™ or Lowes™

- Zinsser Bullseye Spray Shellac (100% wax-free spray shellac)
- Wooden dowel glue pins
- MinWax stain Gunstock Stain #231
- Sandpaper
- Disposable Brushes and Paint Rags



# Additional Resources

## RESOURCES...

There are numerous resources for Vectric software owners to make their experience with their products more enjoyable. The Vectric website includes video tutorials and more, to provide a good overview of the software products and how to use them. Please visit the Support page for a complete listing of available resources for you.

**Vectric Support:** <http://support.vectric.com/>

## Vectric User Forum

Every owner should join the Vectric User Forum (<http://www.vectric.com/forum/>) where fellow users share their experience and knowledge on a daily basis. It is a FREE service that you will surely appreciate. A handy Search Feature helps you find answers to any questions you may have. There are Gallery sections as well, where you can post and view photos of projects created with Vectric software.

**IMPORTANT:** Before outputting any toolpaths you should carefully check all part sizes and the material setup to make sure they are appropriate for your actual setup. You should also check and re-calculate all toolpaths with safe and appropriate settings for your material, CNC machine and tooling.

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