

# Project Tutorial

Featuring compatibility with nearly all CNC Machines

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Vectric Project Tutorial  
www.vectric.com

Compatible with:  
**VCarvePro 7**  
(or greater)

and  
**Aspire 4**  
(or greater)

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

**ShopBot®**  
www.shopbottools.com

## Culinary Apothecary

Designed for Vectric™ by Michael Tyler

I've had quite a few requests for a spice rack project, so here it is...the Culinary Apothecary! (You didn't think I would call it just a "spice rack", did you?) Although intended for use in the kitchen, my wife mentioned it could also be used as a bathroom shelf if the decor merits it.

This project features 2-sided machining. Pocket cuts (shelf dados), inside profiles (for shelf dowel 'keepers') and two drill-through holes for material alignment dowels are performed on the inside of the side panels and a detailed v-carve design is cut on the outside of each panel. You will need to cut the shelves, shelf rails and dowels to size using a suitable saw (I used my table saw).

The finished dimensions for the sample are: 4.5" Deep x 13.5" Wide x 23" Tall. Easily change the width by cutting the shelf and dowels longer or shorter.



Main items you will need:

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

- 1\_Inside\_Apothecary\_Panels.crv
- 2\_Outside\_Apothecary\_Panels.crv

**2) Board with these dimensions:**

0.75" x 11" x 25.5"

(a 2-sided project on one board for machining)

**3) 0.3125" (5/16") dia. dowels, 0.5"-thick wood for shelves and rails.**

See detailed list of these materials on pg. 5

**4) Two short 0.25" dia. dowels, glue, sandpaper, clamps, stain and clearcoat**

**5) A Dremel-type rotary tool with assorted sanding wheels and bits to sand small details and speed up preparation for finishing.**

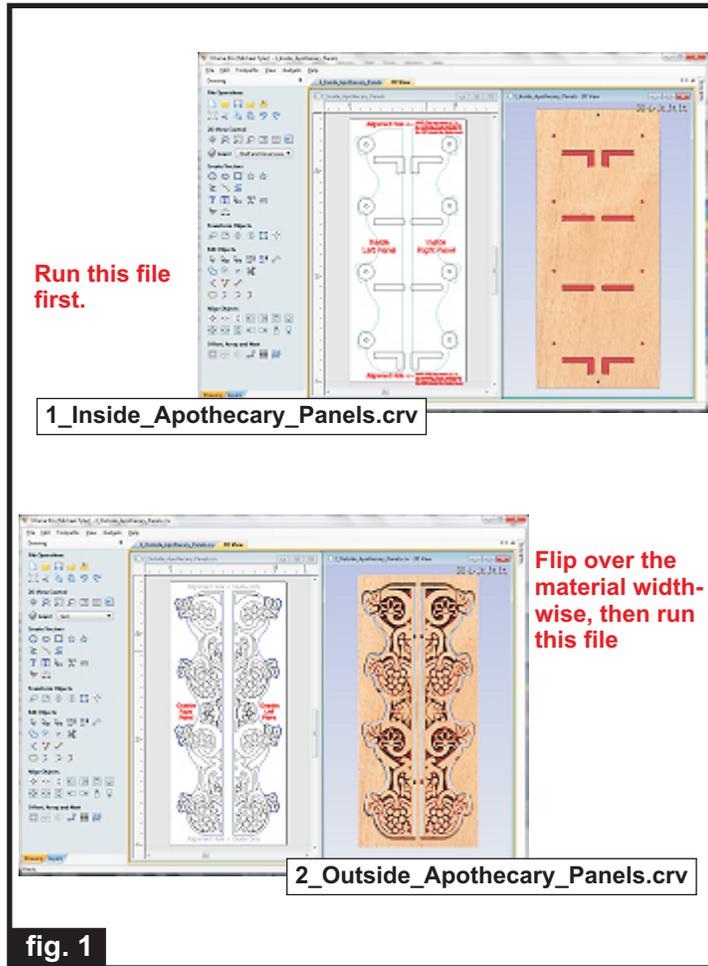


**CNC Bits used for the Sample:**

- 0.25" Up-Cut EM
- 0.25" Down-Cut EM
- 60° V-Bit

## STEP 1 - Open and Review the Project Files

Start your VCarve Pro or Aspire software and open the project files. (fig. 1)



Dimensions for the slots and dowel holes are made slightly oversize to aid in shelf and dowel insertion during glue-up. Be sure to measure your own material to make certain the files' dimensions are suitable for the material you have on hand. It is not at all uncommon for wood thicknesses and dowel diameters to vary by small amounts. Modify the slot and dowel hole dimensions, if necessary. (Recalculate the toolpaths if any changes are made!)

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.

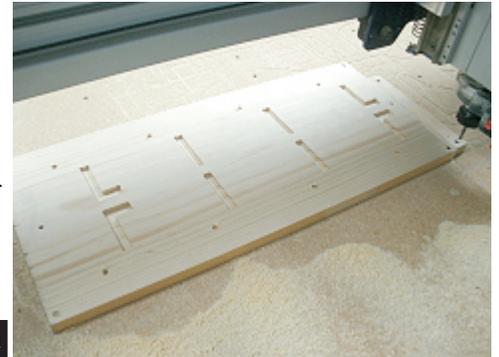
You can edit the tools and change the settings to your own preferences and requirements. **It is VERY IMPORTANT to recalculate all toolpaths after making any edits/changes.** Once you have recalculated for your own machine and bits, reset the preview, then preview all toolpaths again to visually verify the project outcome on-screen. The project is designed with tabs to hold parts in place during the final part cut outs. You may delete the tabs if you use some other reliable hold-down method.

## 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 in the order specified. (fig. 2a, 2b, 2c)

INSIDE Panel  
Run this file first.

fig. 2a



Machine the INSIDE panel file first. After machining that side, flip the board over across the (shortest) width. Insert the two alignment pins into the holes in the spoilboard and replace the board onto the pins with the plain side up and re-apply your hold-down method.

Flip board over and place onto the 2 alignment dowels in the spoilboard.

Run the OUTSIDE panel file to complete the job.

fig. 2b



Flip over the material width-wise, then run this file

OUTSIDE Panel

fig. 2c (cont.)

# Culinary Apothecary

(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 (i.e., the Inside\_Apothecary\_Panels.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)

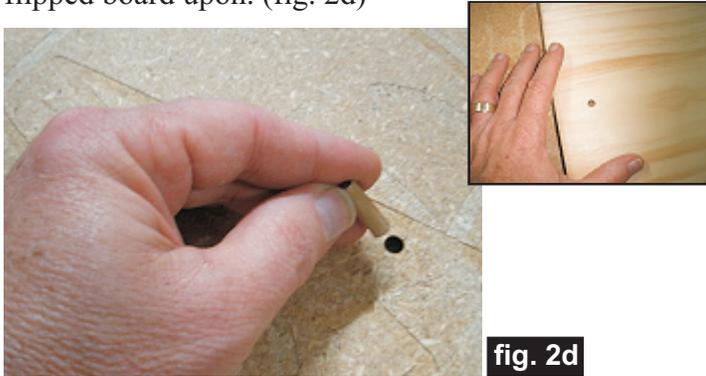


fig. 2d

When I flipped the board over, 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 and Cut Additional Material

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



fig. 3a

Cut the 4 shelves ( 0.5 " x 2.75 " x 12.5 " each) and two rails ( 0.5 " x 1 " x 12.5 " each) to size from 0.5-inch thick material using your table saw. You can opt to make the shelves, rails and 4 dowels (0.3125 " dia. dowels x 12.5 "long) longer or shorter to customize the width of your apothecary shelf unit, if desired. (fig. 3b, 3c)

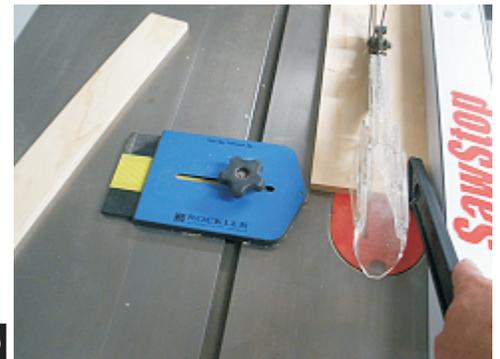


fig. 3b



fig. 3c

All parts cut to size and ready for assembly

(cont.)

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(cont.)

## STEP 4 - Part Assembly

Test-fit the parts, then glue all the components together. Clamp until dry. (fig. 4a, 4b)

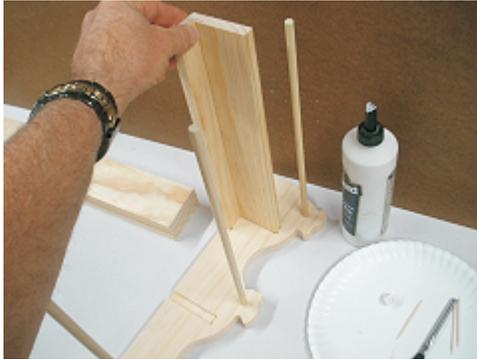


fig. 4a



fig. 4b

## STEP 5 - Finish Application

Apply your choice of finish. Here's what I used on my Culinary Apothecary made from Select Pine:

- Rust-Oleum Ultimate stain - Golden Mahogany
- Several coats Zinnser Bulls Eye spray Shellac (Zinnser spray shellac is 100% wax-free)



Applying Stain



Spray Shellac Clear Coat

## IN CONCLUSION

The Culinary Apothecary has an open back. You could opt to create a hardboard backing panel, as you wish. To mount the shelf unit, you can drill holes through the two support rails for mounting to a wall with screws and wall inserts.

I hope you enjoyed your Culinary Apothecary Project!

Happy Carving!

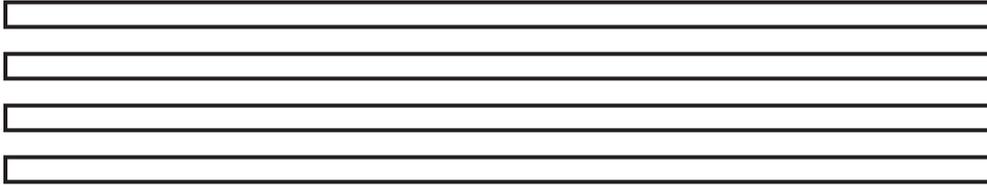
*Michael*



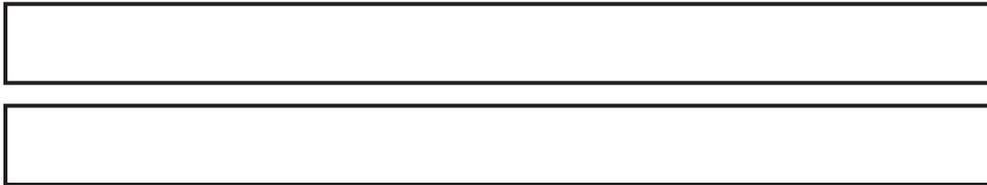
# Dowels, Rails and Shelves Parts List

(cont.)

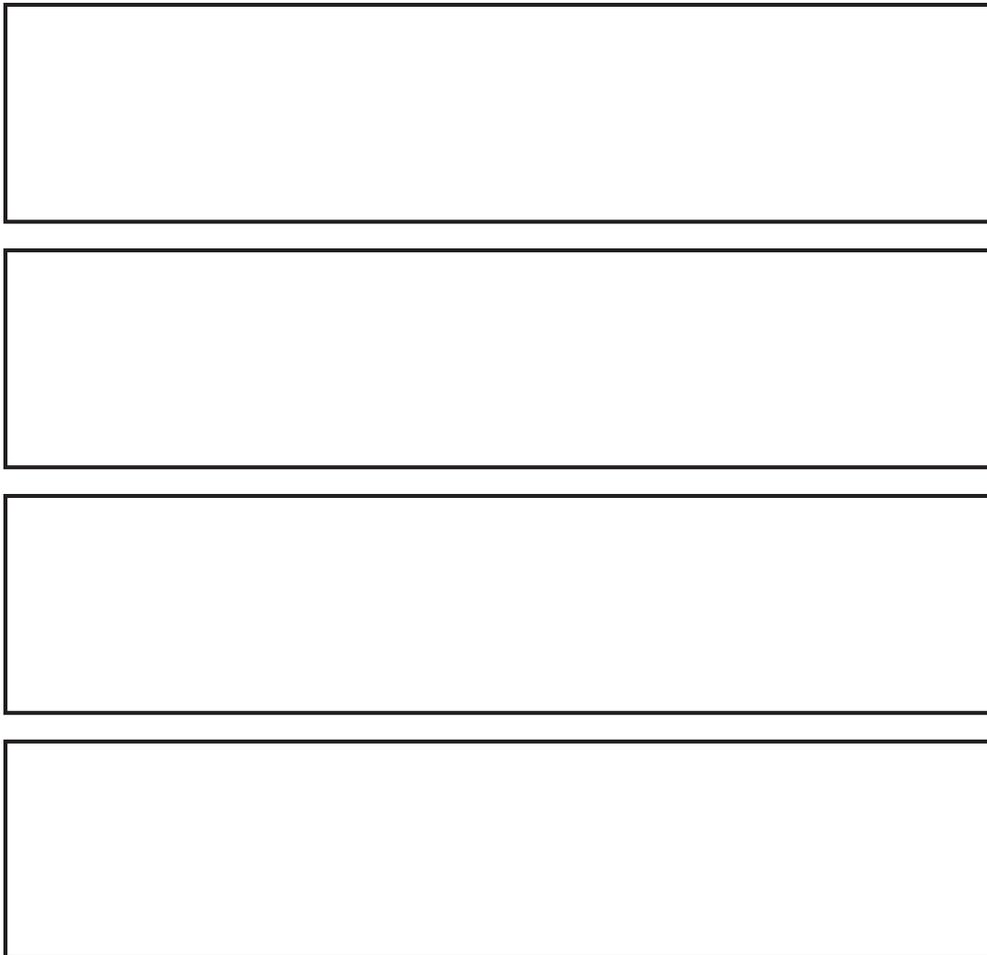
(These components can be cut to size with your Table Saw.)



Dowels  
0.3125" diameter x 12.5" Long (four)



Rails (two)  
0.5" x 1" x 12.5"



Shelves (four)  
0.5" x 2.75" x 12.5"

# 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



## Miscellaneous Items Purchased at Home Depot™

- **Zinsser Bullseye Spray Shellac (100% wax-free)**



## Miscellaneous Items Purchased at Lowes™

- **5/16-inch (0.3125-inch) Diameter Dowels**
- **Sandpaper**
- **Rust-Oleum Ultimate Wood Stain**
- **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.

**Terms of Use:** This Project and artwork is provided on the understanding that it will only be used with Vectric software programs. You may use the designs to carve parts for sale but the Files and/or Vectors, Components or Toolpaths within them (or any derivatives) may not be converted to other formats, sold to, or shared with anyone else. This project is Copyright 2013 - Vectric Ltd.

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