

# Project Tutorial

Featuring compatibility with nearly all CNC Machines

It is our pleasure to provide our customers with fun and useful projects to enjoy!

Vectric Project Tutorial  
www.vectric.com

Created with:  
**Aspire** v3

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

**ShopBot**  
www.shopbottools.com

## “The Reader” Magazine Rack

Designed for Vectric™ by Michael Tyler

Stow your magazines with “The Reader” Magazine Rack! You can even customize the magazine front and back cover text with your own wording using Aspire 3’s handy **Text Tool** and **Distort Between Two Curves** option. By also utilizing the “*Project toolpath onto 3D model*” option in the V-carve/Engraving Toolpath menu, the v-carved text conforms seamlessly over the contours of the magazine.

The overall finished dimensions of the rack are about 18½" w x 13¼" h x 9¼" d.



Main items you will need:

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

- END\_Panel\_Mag\_Rack\_1.crv3d
- MAIN\_Mag\_Rack\_Panel\_1.crv3d
- STRINGERS\_Mag\_Rack\_1.crv3d

**2) Boards with the following dimensions:**

- END Panel:** 0.75 "x 8.5 "x 14.5 " (2)
- MAIN Panel:** 0.75 "x 12.75 "x 21 " (2)
- STRINGERS:** 0.75 "x 9 "x 11 " (1)

**3) Twelve #6 1¼" wood screws & ¼" dowel buttons**

**4) Wood glue, clamps, drill, #6 countersink bit, sandpaper, wood stain and/or paint and clear finish**

**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:**

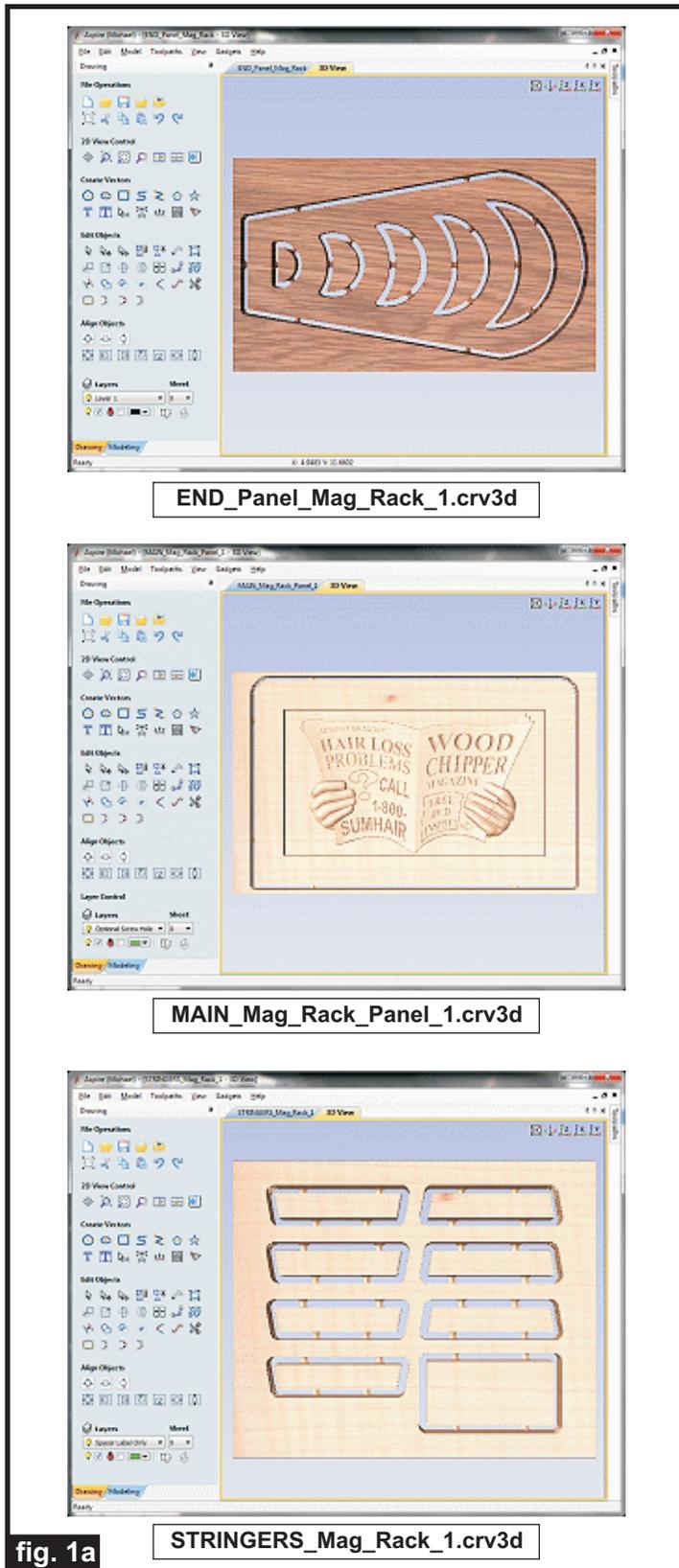
- Roughing: 1/4 " Down-Cut EM
- Finishing: 1/8 " 1° Tapered BN
- V-Carves: 90° V-Bit (0.75 " dia.)
- Cut Profiles: 1/4 " Down-Cut EM

# “The Reader” Magazine Rack

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## STEP 1 - Open and Review the Project Files

Start your Aspire software and open the project files.  
(fig. 1a)



Carefully review all the toolpaths and make any necessary changes to suit your particular bits and machine. The toolpaths are currently set with feed and speeds 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.

**NOTE:** The MAIN\_Mag\_Rack\_Panel\_1.crv3d has optional round divots that can be toolpathed (with the v-bit) if you wish to have your CNC “mark” the exact locations of the holes for hand-drilling countersinks for the #6 wood screws. Some users may prefer not to use screws for assembly at all, rather use an alternate assembly method (such as blind biscuits, glue alone, etc.), so I intentionally left that option open. Also, feel free to customize the ‘magazine’ wording to suit you, or leave it as-is!

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.

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# “The Reader” Magazine Rack

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## STEP 2 - Run the Project

When you are satisfied with your tool settings, save the toolpaths to the appropriate Post Processor for your machine, place your material on your machine bed and proceed to run the project. (fig. 2a)



fig. 2a

Your finished boards will look something like this. (fig. 2b)



fig. 2b

## STEP 3 - Release and Sand Parts

Separate all the parts from the boards with a utility knife or small saw. and sand off the tab remnants. Use a Dremel-type tool with various abrasive wheels/tips to make detail sanding go faster. I applied stain to the end panels before assembly, which made it easy to achieve the contrasting colors of the ends vs. the main panels. I allowed the stain to dry thoroughly before proceeding.

## STEP 4 - Assembly

Glue the front and back panels to the end panels and clamp until dry. I stood up the end panels on a flat surface protected with waxed paper, applied glue to the joints, taped the parts together, then placed the clamps. I used tapered door shims to aid in protecting the project surfaces and allow the clamps to get a good foothold on the angled sides. (fig. 3a, 3b)



fig. 3a



fig. 3b

Glue in the stringers after the assembly is glued and clamped. Glue a stringer at each end first, then use the Spacer Block to evenly space the remaining stringers. *NOTE:* The stringers DO NOT go all the way to the underlying flat surface - the angles will automatically offset them above the bottom by about 5/32". (fig. 3c, 3d)



fig. 3c



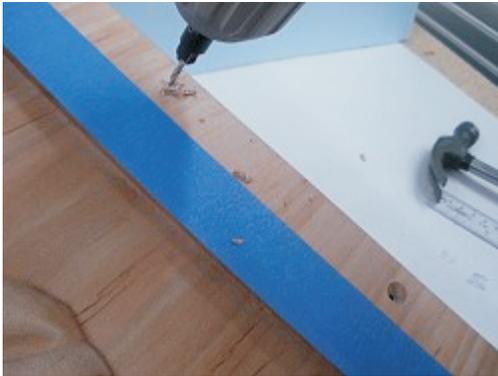
fig. 3d

(cont.)

# “The Reader” Magazine Rack

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When dry, remove the clamps. At this point, you may drill your countersinks through the main panels and into the side edges of the end panels. After installing the wood screws, glue in the dowel buttons to hide the screw heads. (fig. 3e, 3f, 3g)



Drilling  
Countersinks

fig. 3e

Gluing  
Dowel Buttons



fig. 3f

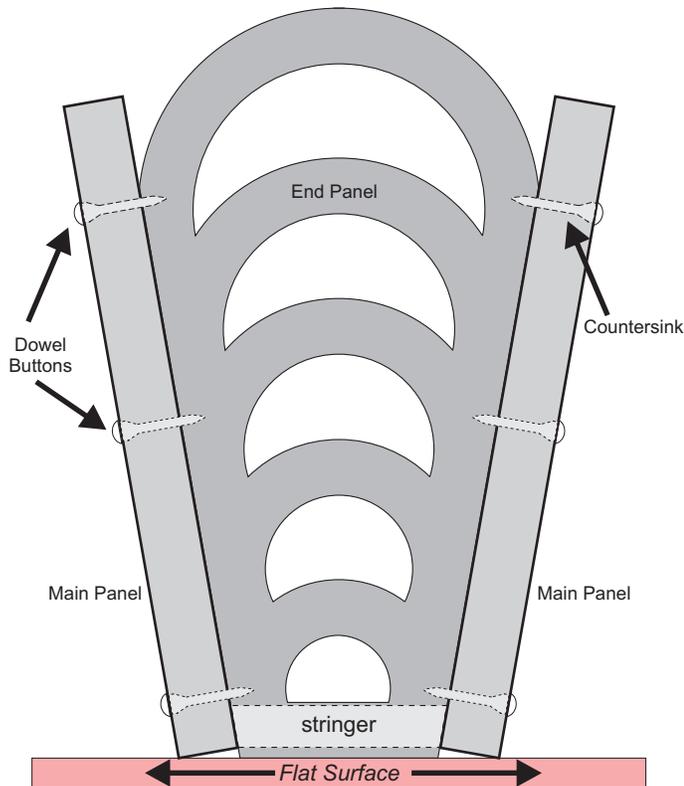


fig. 3g

Cutaway End View

## STEP 5 - Finishing

Apply the finish of your choice. Here's what I used on “The Reader” Magazine Rack made from Red Oak and Maple:

- Minwax Red Oak stain #215 on End Panels (stained before assembly)
- Minwax Natural stain #209 overall after assembly
- 4 coats of Krylon Crystal Clear Acrylic gloss spray

## IN CONCLUSION

I hope you enjoy making “The Reader” Magazine Rack project, courtesy of Vectric!

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**



## Miscellaneous Items Purchased at Home Depot™

- **Minwax Red Oak Stain #215**
- **Minwax Natural Stain #209**
- **Wood Screws and Dowel Buttons**



Krylon Clear Gloss Acrylic  
from WalMart™

# Additional Resources

## RESOURCES...

There are numerous resources for Vectric software owners to make their experience with their products more enjoyable. The Vectric website includes videos and tutorials to provide a good overview of the software products and how to use them. ([http://www.vectric.com/WebSite/Vectric/support/support\\_vew\\_tutorials.htm](http://www.vectric.com/WebSite/Vectric/support/support_vew_tutorials.htm))

As well as the resources available from the Tutorial page, please also visit the 'FAQ' and 'How To' pages for more support information...

### **'How To' webpage**

[http://www.vectric.com/WebSite/Vectric/support/support\\_how\\_to.htm](http://www.vectric.com/WebSite/Vectric/support/support_how_to.htm)

### **'FAQ' webpage**

[http://www.vectric.com/WebSite/Vectric/support/support\\_faq.htm](http://www.vectric.com/WebSite/Vectric/support/support_faq.htm)

### **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.

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