

Project Tutorial

Featuring compatibility with nearly all CNC Machines

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

Vetric Project Tutorial
www.vetric.com

Created with:



Also Compatible with:



Sample Carved with:
ShopBot Buddy
PRSalph BT48



Wooden-Hinged Photo Frames

Designed for Vetric™ by Michael Tyler

This month's Vetric project demonstrates how to create slotted photo frames with integrated wooden hinges by cutting out components and layering/gluing them together on top of one another.

Each frame will hold a 3½" x 5" photo with a clear plastic protective sheet and cardboard backing. This project is compatible with both VCarve Pro 6 and Aspire 3 (or greater).

The design is laid out as a tri-panel set, but can easily be modified to a bi-panel (by deleting the middle panel) or to an unlimited number of interlocking panels (by duplicating the middle panel as many times as you wish).

The finished dimensions of the assembled project are about 1" thick x 6" tall. Overall length will vary, depending upon the number of panels created.



Main items you will need:

1) The Project File (included):

- TriPanel_Photo_Frames.crv

2) Boards with the following dimensions:

- 0.75" x 7.25" x 21"
- (2 of these butted together, top to bottom)

3) ¼" dia. x 7" long dowels (2 or more)

4) Thin clear plastic sheeting and Medium thick cardboard/chipboard

5) Foam sponge, paste wax

6) Sandpaper, clamps, wood glue, wood stain and/or paint and clear finish

7) 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:

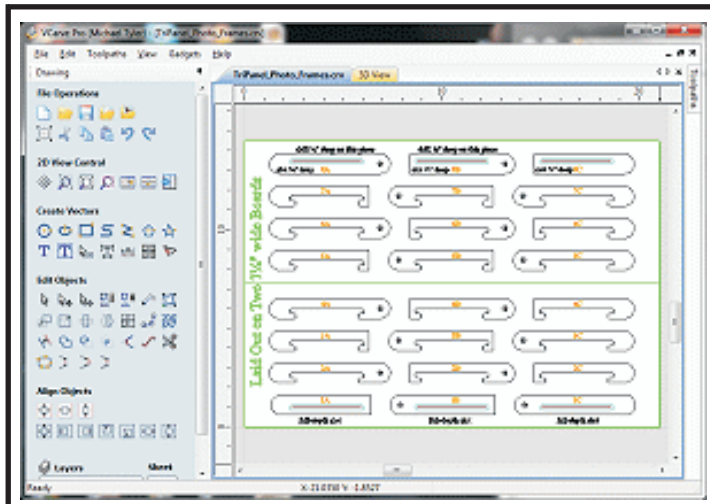
Drill Holes: 1/4" Up-Cut EM
Cut Profiles: 1/4" Down-Cut EM

Wooden-Hinged Photo Frames

(cont.)

STEP 1 - Open and Review the Project File

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



TriPanel_Photo_Frames.crv
(vector view)

NOTE: Two of the drill areas are only 0.5 " deep, and three of the slots are only 0.25 " deep - don't change those particular settings. You'll see them labeled on the vector view in the software.

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 project. (fig. 2a, 2b)

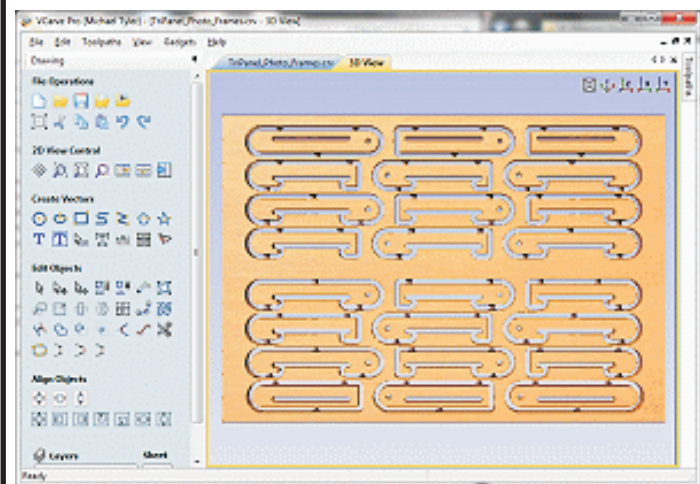


fig. 1

(toolpath preview)

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.

It's important that you set the appropriate profile cuts, the full-depth slots and the drill-throughs to go all the way through the thickness of the board. Measure your own board thickness and increase the cutting depth, if necessary. (The depths are currently set at 0.76 ")



fig. 2a



fig. 2b

(cont.)

Wooden-Hinged Photo Frames

(cont.)

STEP 3 - Release, Sand and Prep Parts

Before removing the parts from the boards, number each part with a pencil! Use the vector view as a numbering guide. (fig. 3a)



fig. 3a

Separate all the parts from the boards with a utility knife or small saw. Sand off any tab remnants, but do NOT sand the thickness of the parts (i.e., the top and bottom), as this will alter the fit in an adverse way. (fig. 3b)



fig. 3b

Using the dowels to help align the parts, dry-fit the middle section of each panel on a flat surface, and use a sanding block to sand the inside of the slot surface flat. (fig. 3c)



fig. 3c

NOTE: The dowel diameters may need to be “eased” with sandpaper so they slide easily through the holes without binding. (fig. 3d)

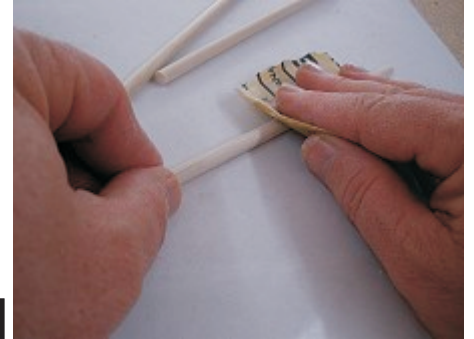


fig. 3d

STEP 4 - Part Assembly

Glue the parts together, starting with 1A and laying 2A, 3A, 4A, etc. on top of one another until part 8A. The 8A is actually flipped over onto part 7A (you’ll see how that works when doing your glue-up. Use dowels and a metal square to help align the parts. (fig. 4a, 4b) Repeat for parts 1B through 8B and 1C through 8C.



fig. 4a

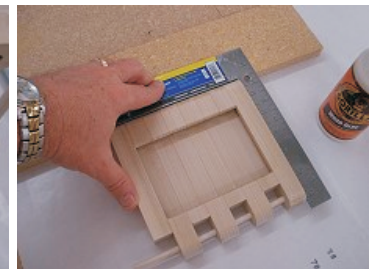


fig. 4b

Dry-fit the panels together at the hinges using the dowels to align, and clamp the parts together over waxed paper placed on a flat surface until dry. (fig. 4c)



fig. 4c

(cont.)

Wooden-Hinged Photo Frames

(cont.)

STEP 4 - Part Assembly (cont.)

Remove the clamps and “ease” the hinge joints slightly by sanding to allow for your finish coat thickness and smooth operation. (fig. 4d)



fig. 4d

Final sand all the panels. (fig. 4e, 4f)



fig. 4e



fig. 4f

STEP 5 - Apply Finish

Apply your choice of finish to the parts. Here's what I used on the sample “Wooden-Hinged Photo Frames” project made from Poplar: (fig. 5)



fig. 5

- Minwax Natural stain #209 (helps seal end-grains)
- Minwax English Chestnut stain #233
- 4 coats of Krylon Crystal Clear Gloss Acrylic spray

STEP 6 - Final Assembly

Insert the dowels and mark the trim line with a pencil. Trim with a hobby saw. Apply a coat of paste wax to the dowels except for the bottom 1/2". Apply a small dab of glue to the wax-free tip only. Reinsert the dowels until the glue-end is flush with the outside bottom surface of the panels and apply a matching finish to the dowel ends, if desired. (fig. 6a, 6b, 6c)



fig. 6a



fig. 6b



fig. 6c

STEP 7 - Insert Photos

Select your photos and cut 3 1/2" x 5" panels of clear plastic sheeting and backing cardboard for each. The plastic sheet, photo and cardboard “sandwich” slide into the slots and are held in place by a strip of sponge wedged into the slot. This is easily removed if/when you want to change photos. I cut the strips from a white Magic Eraser foam sponge, but any similar sponge or foam will do. (fig. 7a, 7b, 7c)



fig. 7a

Cutting the Cardboard and Clear Plastic Sheets



fig. 7b

Cutting the Foam Sponge



fig. 7c

Wedge the Sponge into the slot to hold photo in place

IN CONCLUSION

I hope you have enjoyed your Hinged Photo Frame project. Feel free to share pictures of your results on the Vec tric Forum in the Gallery section!

Happy Carving!

Michael

(cont.)

Materials Source Page

- **3M Radial Bristle Discs** from www.mcmaster.com
(stack 3 discs at a time on your rotary tool mandrel)

80-grit: part # 4494A19

220-grit: part # 4494A18

(also available from <http://www.ottofrei.com>)



Miscellaneous Items Purchased at Michael's Arts & Crafts™

- **Plastic Sheets and Cardboard**



Miscellaneous Items Purchased at Home Depot™

- **Minwax Natural Stain #209**
- **Minwax English Chestnut Stain #233**

Other Miscellaneous Items

- **White Foam “Magic Eraser” sponge** from the supermarket



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)

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

'FAQ' webpage

http://www.vectric.com/WebSite/Vectric/support/support_faq.htm

Vectric User Forum

Every Vectric software 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.

The trademarks, service marks and logos used and displayed in this document are registered and unregistered Trademarks of Vectric and others.