

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

Compatible with:

Aspire4
(or greater)

Sample Carved with:
ShopBot Buddy
PRSalph BT48

ShopBot®
www.shopbottools.com

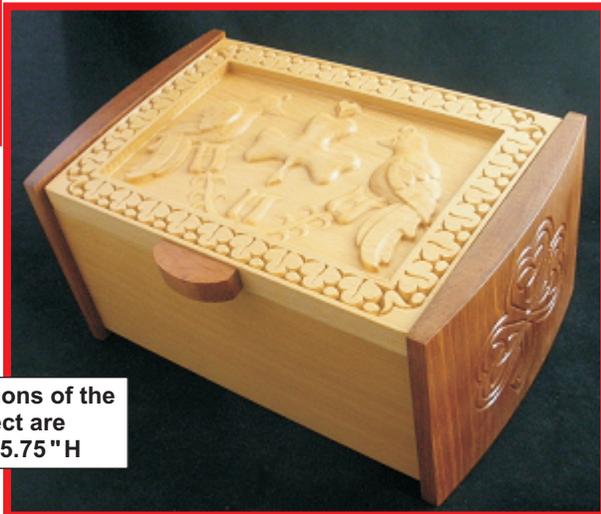
The Irish Blessing Box

Designed for Vetric™ by Michael Tyler

Shamrocks and clover have been symbols of blessing, good fortune and abundance for centuries. This decorative and functional box incorporates these traditional elements. In addition, the lid features a Dutch Irish relief carving motif with two stylized Distelfink birds to signify a double measure of good fortune along with a heart for love and three tulips that represent faith, hope, and charity.

The curved end panels feature a traditional shamrock and triquetra (aka "trinity knot") V-carve design.

This project features 2-sided machining. Pocket cuts (dados) 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 other side. You will need to cut a box bottom from 0.25"-thick wood or hardboard using a suitable saw (I used my table saw).



The finished dimensions of the assembled project are
12"W x 7.75"D x 5.75"H

Main items you will need:

1) The Project Files (included):

- Front_and_Back_Panels.crv3d
- Irish_Box_Lid.crv3d
- Side_Panels_INSIDE.crv3d
- Side_Panels_OUTSIDE.crv3d

2) Boards with these dimensions:

Front/Back Panels: 0.75 "x 11 "x 13 "

Box Lid: 0.75 "x 8 "x 12 "

Side Panels: 0.75 "x 9 "x 14.5 " *

* (2-sided file uses one board for machining)

3) 0.25 "-thick wood or hardboard for box bottom, 20.25 "dia. dowels, hinges

(I used 'No-Mortise' hinges from leevalley.com part #OOH6012)

4) 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:

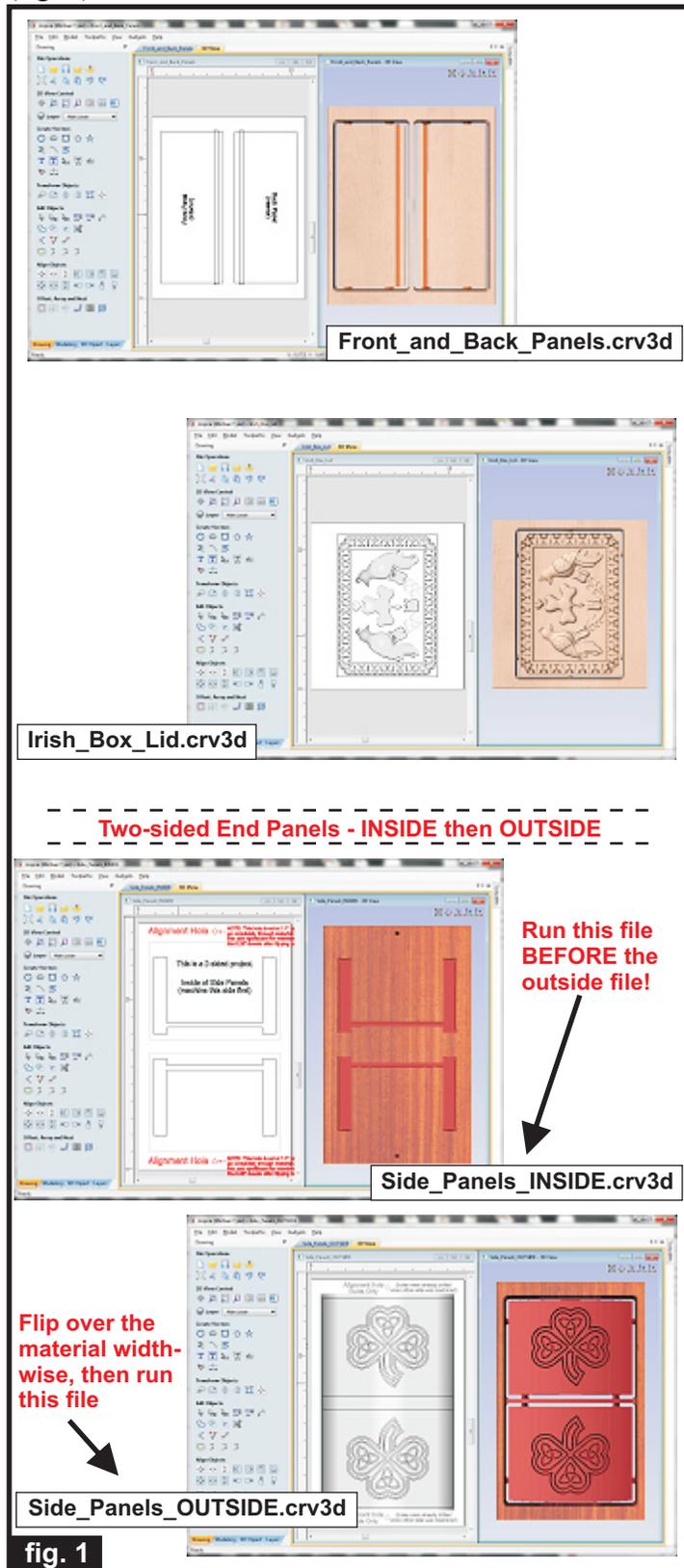
- 0.25 " Ball Nose
- 0.25 " Up-Cut EM
- 0.25 " Down-Cut EM
- 60° V-Bit

The Irish Blessing Box

(cont.)

STEP 1 - Open and Review the Project Files

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



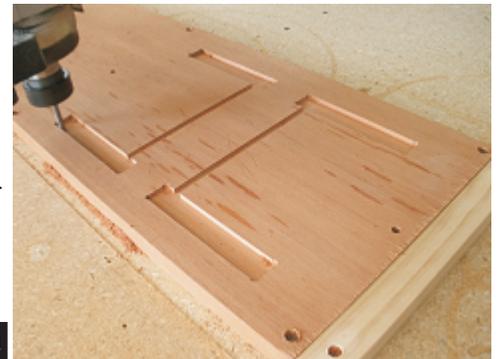
Carefully review all the toolpaths and make any necessary changes to suit your particular bits and machine. The toolpaths are currently set with feeds, speeds and pass depths that were used in creating the original sample. Please don't use them directly until you review them for your own setup. **It 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 Side Panel files... (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 dowel 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, align the drill holes and press the board onto the 2 alignment dowels placed in the spoilboard.

fig. 2b



Then run the OUTSIDE panel file...

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

OUTSIDE Panel

fig. 2c (cont.)



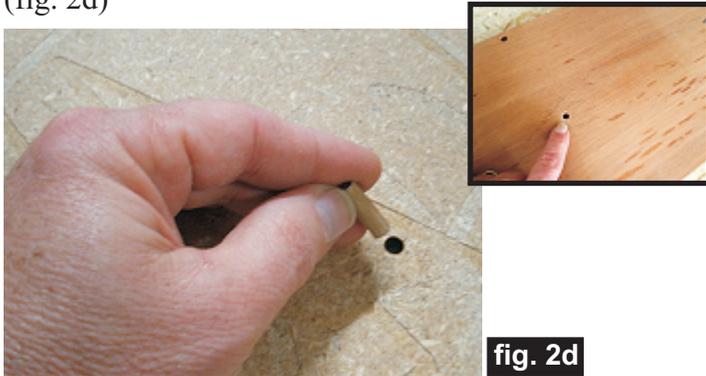
The Irish Blessing Box

(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 Side_Panels_INSIDE.crv3d). 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)



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.

Page 3

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

Dry-fit the box. Cut the box bottom from 0.25 "-thick material to about 5.875 " x 10.625 " (I used oak). Measure the exact size during the dry-fit. You normally want to make the bottom a bit smaller than the pocketed area to allow for slight movement during seasonal changes. If you use hardboard or plywood, then this is not much of a concern. (fig. 3b, 3c)

Cut the
box bottom



fig. 3b

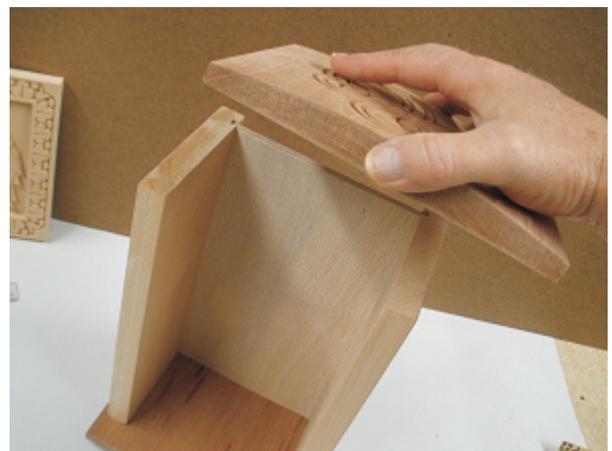


fig. 3c

Dry-fit all the parts
prior to glue-up

(cont.)

The Irish Blessing Box

(cont.)

STEP 4 - Part Assembly

Apply glue to the components and assemble. Check square of the box, and clamp until dry. (fig. 4a, 4b, 4c)

Apply Glue and Assemble Parts



fig. 4a



Check for Square

fig. 4b

Clamp Until Glue Sets



fig. 4c

STEP 5 - Install Hinges and Make Handle

Remove clamps and install your choice of hinges. I used a pair of no-mortise hinges from leevalley.com (part #00H6012) with #6 x 0.5" wood screws.

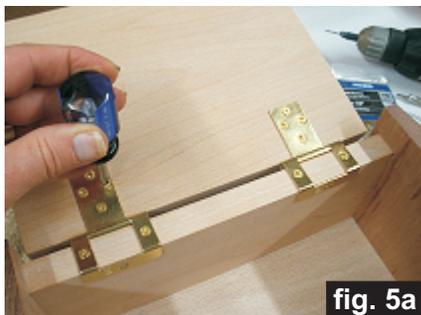


fig. 5a

NOTE: Be mindful of the material thickness on the lid. You may need to clip the screws shorter to prevent them from piercing through the topside. (fig. 5a)

Make (or buy) a lift handle for the lid of the box, as desired. I made one using scrap from the side panel waste material. It's about 0.625" thick x 2.125" long. I sanded the curved shape using a small disc sander, (fig. 5b)



fig. 5b

STEP 6 - Finish Application and Final Assembly

Apply your choice of finish. Here's what I used on my Irish Blessing Box made from Beech and Spanish Cedar:

- One brush coat of thinned Bulls Eye Sealcoat (50/50 sealer and denatured alcohol)
- Several coats Zinnser Bulls Eye spray Shellac (Zinnser spray shellac is 100% wax-free)
- Several light coats of Krylon Clear acrylic spray

Fasten the handle to the lid (I glued on my handle using quick-set epoxy), then reinstall your hinges to complete the project. (fig. 6)



fig. 6

IN CONCLUSION

I hope you enjoyed your Irish Blessing Box! An alternate 8-point rosette design is included in the Side_Panels_OUTSIDE file if you would like to use it on the end panels instead of the shamrock. The rosette symbolizes abundance and goodwill to all, with a scalloped border signifying smooth sailing for life. Another blessing for you!

Happy Carving!

Michael

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



Items Purchased at Lowes™

- Zinsser Bulls Eye Seal Coat (100% wax-free clear shellac)
- 0.25"-thick Red Oak
- Zinsser Bulls Eye 100% wax-free Clear Spray Shellac
- Denatured Alcohol
- Disposable Brushes and Paint Rags
- #6 x .5-inch Wood Screws



.75" no-mortise hinges
purchased from
www.leevalley.com
(part #00H6012)



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 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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