

Project Tutorial

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Vectric Project Tutorial
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Compatible with
Current Version of:

Aspire

Sample Carved with:
ShopBot Buddy
PRSalpha BT48

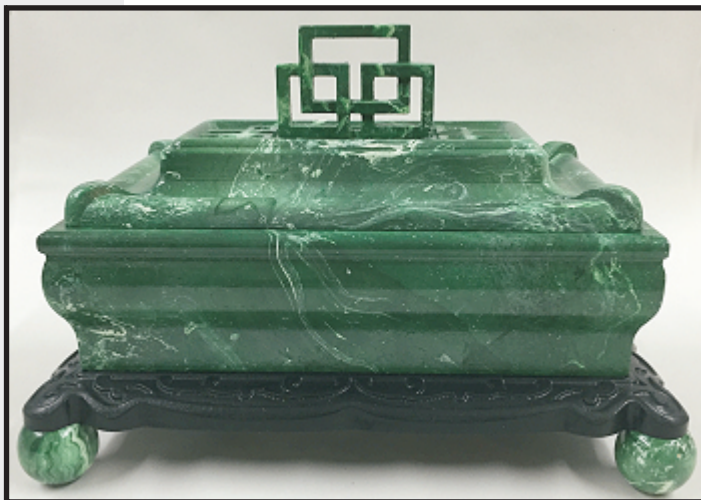
ShopBot
www.shopbottools.com

“Jade & Ebony” Box!

Designed for Vectric™ by Michael Tyler

This “Jade & Ebony” box project is all wood, yet has a realistic appearance of carved green jadesstone. The casual onlooker will be convinced it’s the real thing! The “jade” effect was created with a fun marbleizing technique described in the finishing section of these instructions. The best part is, anyone can do it!

The project uses the new Moulding Toolpath feature released to the public with Aspire version 8.5 (and VCarve). This introduces an easy and efficient method to create nicely profiled mouldings of all kinds. For example, the box sides for this project were generated with no 3D model at all. The new Moulding Toolpath is entirely vector-based. It’s an amazing feature worth exploring for any project that requires moulding. (The Aspire & VCarve 8.5 User Manuals explain this feature in detail.)



The overall dimensions of the Jade & Ebony Box are about:
13 "W x 8 " D x 8 " T

Main items you will need:

1) The Project File(s) (included):

- BASE_Jade_Box.crv3d
- LID_Only.crv3d
- Handle_for_Lid.crv3d
- Moulding_Sides.crv3d

2) Material with these dimensions:

- BASE: 0.75 "x 9 "x 14.5 "
- LID: 0.75 "x 7"x 22 "
- Moulding: 0.75 "x 9 "x 21 "
- Handle: 0.25 "x 5.5 "x 10 "
- Two 0.25 "-thick panels measuring approx. 4.75 "x 9.75 " (for lid stay and box bottom)

3) Waterproof glue, epoxy, four 1.5 " dia. wooden doll heads, clear shellac, spray primer, paints and clearcoat

4) Container large enough to fit the box (such as a 5 gal. plastic bucket)

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:

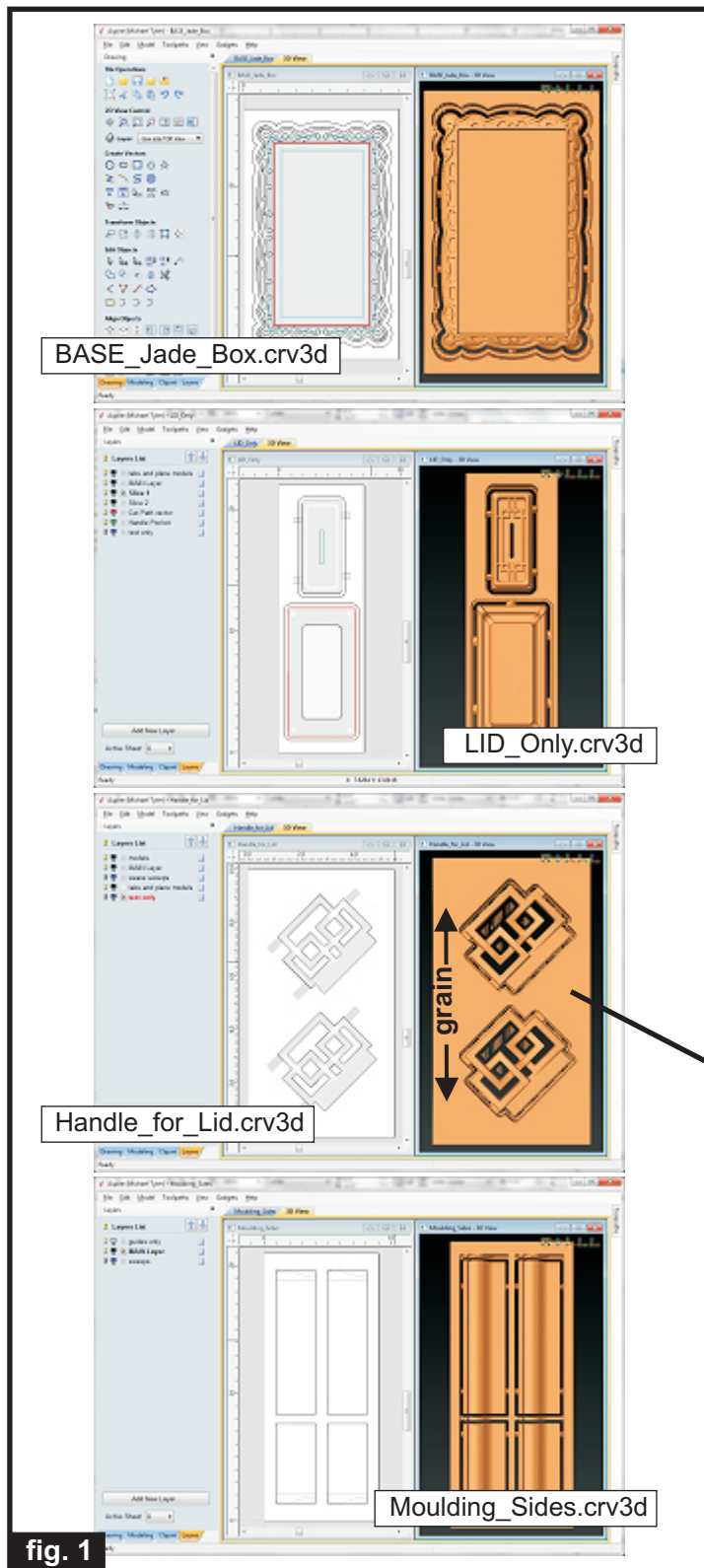
- | | |
|---------|------------------------|
| 0.25 " | Down-Cut End Mill (EM) |
| 0.25 " | Up-Cut End Mill (EM) |
| 0.125 " | End Mill (EM) |
| 0.125 " | Ball Nose (BN) |

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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.

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.

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

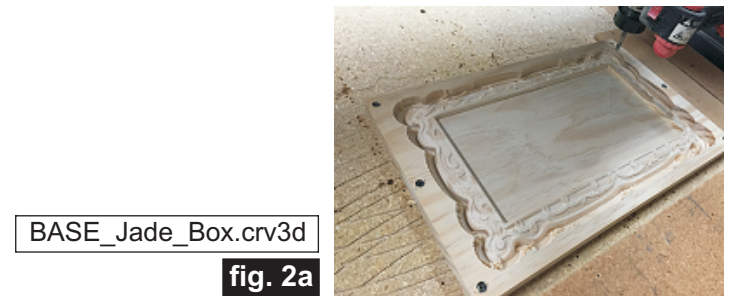


fig. 2a

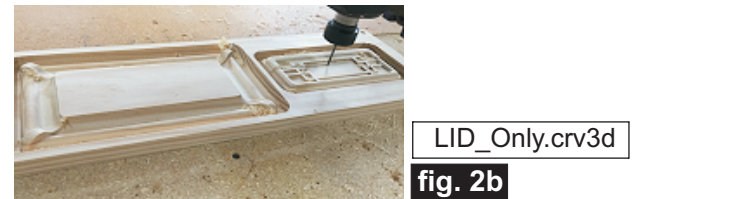


fig. 2b

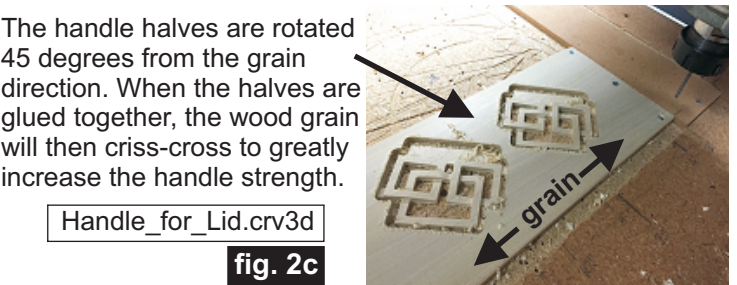
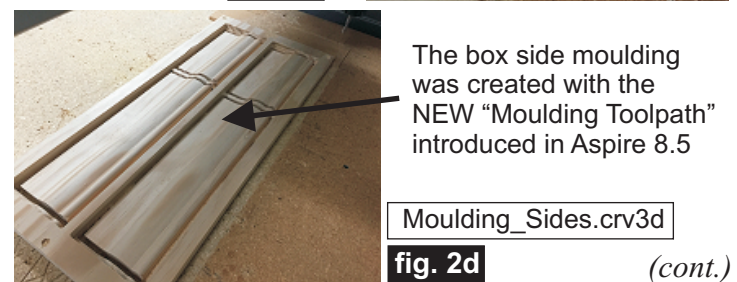


fig. 2c

The handle halves are rotated 45 degrees from the grain direction. When the halves are glued together, the wood grain will then criss-cross to greatly increase the handle strength.



The box side moulding was created with the NEW "Moulding Toolpath" introduced in Aspire 8.5

fig. 2d

(cont.)

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(cont.)

STEP 3 - Separate Parts from Material

Separate the parts from the boards. Sand off tabs and toolmarks. (fig. 3)



fig. 3

STEP 4 - Parts Assembly

Miter-cut the ends of the side molding with a table saw, chop saw or miter box. “Creep up” on the ends of each part to **meet perfectly with the top corner edge** so as not to alter the overall length of the parts. The profile cutouts yield the exact length of the moulding parts, so there is no margin for error. (fig. 4a, 4b)

The saw blade must meet perfectly with the top corner edge when cutting the 45-degree miter



fig. 4a



fig. 4b

Tape the box sides together tightly and check for square. Test-fit the box into the base. (fig. 4c)

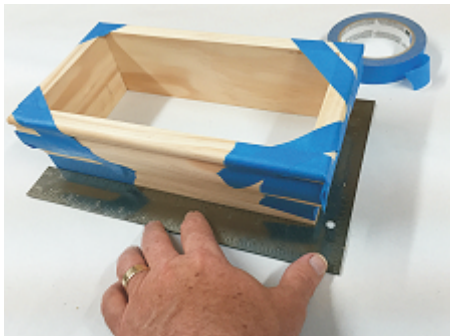


fig. 4c

Place the taped box on top of 0.25" -thick material and trace inside the box with a sharp pencil. This will be the bottom panel of the box. Cut the material along the traced lines with your table saw. (fig. 4d, 4e)

Trace the interior for an exact-sized bottom panel



fig. 4d



fig. 4e

Go ahead and cut another 0.25" -thick panel measuring about 4.75" x 9.75" for the underside lid-stay. You want some clearance so the lid goes on and off easily and without binding. I cut my lid-stay to leave a little over 0.1" gap all around the inside box top dimension. Set this panel aside for later.

Remove the tape from the box, then glue the sides and box bottom together with waterproof glue. Re-apply some tape as you go, while checking for square again. You can use drops of CA glue or a pin nailer to tack parts after alignment. Allow the glue to dry. (fig. 4f)



fig. 4f

(cont.)

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(cont.)

STEP 4 - Parts Assembly (cont.)

Glue the lid slices and handle halves together. Clamp or weigh down while the glue cures. (fig. 4g, 4h)



Glue the lid slices together with waterproof glue. Clamp or weigh down until dry.

fig. 4g

Clothespins make handy clamps for the handle halves while the glue dries

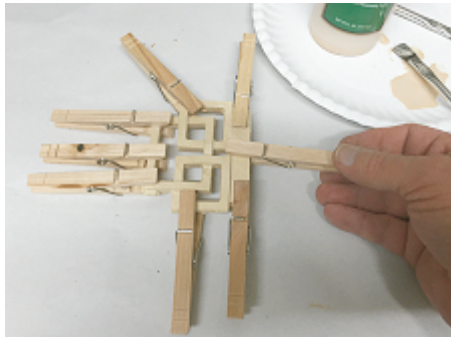


fig. 4h

When dry, sand all details and blend seamed edges using a rotary tool and hand sanding. Round-over the handle tenon edges so it will fit into the radii of the slot in the top of the lid. (fig. 4i, 4j)



Sand details and blend seams

fig. 4i

Round-over the handle tenon to fit into lid slot



fig. 4j

Glue the lid-stay centered on the underside of the lid. Clamp until dry. (fig. 4k)



fig. 4k

Test fit all components and make any necessary adjustments, if required, and perform any final sanding. (fig. 4l, 4m)



fig. 4l



fig. 4m

Final sand all components before applying finish

(cont.)

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(cont.)

STEP 5 - Apply Finish

I applied a faux ebony and jadestone marbledized finish on the sample made from Select Pine and Poplar. After the SealCoat application, I masked off all glue-up surfaces before applying paint finishes.

(fig. 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h):

- Applied three coats full-strength SealCoat on all parts, sanding between coats
- Masked off glue surfaces and around the bottom box perimeter that fits into the base pocket (to avoid paint thickness build-up that might adversely affect the fit)
- Applied three coats of Black Matte spray paint on the base
- Applied three coats of white primer on all parts except the base
- Applied two coats of Krylon white spray paint on all parts except the base
- Performed a marbelizing technique on all parts except the base
- Applied three coats spray shellac on all parts
- Several coats of gloss Krylon Clear Acrylic spray

Applied SealCoat to all parts (SealCoat is de-waxed clear shellac)



fig. 5a



Masked off glue-up areas before applying paints

fig. 5b

Applied Black Matte spray paint to Base



fig. 5c



Applied 3 coats white primer to all parts (except the base)

fig. 5d

Applied 2 coats white semi-gloss paint to all parts (except the base)



fig. 5e

Applied an uneven “sprit” coat of Hunter Green to allow some of the white areas to peek through



fig. 5f

Marbelize the parts by filling a container 2/3 to 3/4 with water, then spray various shades of spray paint on the surface. Slightly stir the paint film with a skewer to “swirl” then carefully (but quickly, before the paint film becomes too dry) dip each part into the water. “Sweep” away the leftover paint film after each part is dipped so you can start with a fresh film of paint each time. The paint film will adhere to the painted surface and produce a very realistic marbled appearance. Visit <http://carvebuddy.com/the-buddy-blog/> to watch videos showing the process in real-time.



fig. 5g

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(cont.)

STEP 5 - Apply Finish (cont.)

Let the marbledized parts dry overnight, then spray a couple coats of spray shellac overall. After the shellac dried, I applied several coats of Krylon Clear Gloss. (fig. 5h)



fig. 5h

Applied 2 coats of spray shellac on all box parts, then applied several coats of Krylon Clear Gloss.

STEP 6 - Final Assembly

Remove masking tape from the parts. Glue the box into the base pocket. (fig. 6a, 6b)

Remove all masking tape



fig. 6a



Glue the box into the base pocket

fig. 6b

Epoxy the handle into the lid slot and epoxy the round feet to the underside of the base. (fig. 6c)



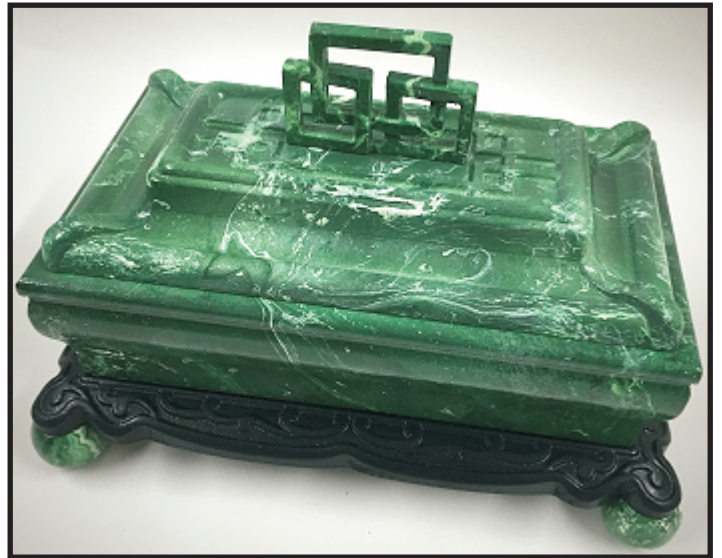
fig. 6c

IN CONCLUSION

I chose green-themed “jade” colors for the sample, but you can choose whatever colors you wish for your box. Jade colors can vary quite a lot, as you’ll see if you search the internet for variation examples. I hope you enjoyed making your Jade & Ebony Box!

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



Miscellaneous Items Purchased at Home Depot™ or Lowes™

- Zinsser Bulls Eye SealCoat
- Zinsser Bulls Eye Spray Shellac (100% wax-free)
- 0.25" -thick Poplar boards
- Sandpaper, glue, epoxy
- Disposable Brushes and Paint Rags



Items Purchased at Michael's Arts & Crafts™

- 1.5" diameter Wooden Doll Heads



1.5" diameter Wooden DollHeads
Brand: Lara's Crafts #10328

Items Purchased at WalMart™

- Krylon Primer, Spray Paints and Clearcoat



Krylon Clear Gloss



White Primer, White Semi-Gloss, Black Matte, Hunter Green, Emerald Green and Seaside Green

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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