

Project Tutorial

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Vetric Project Tutorial
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Compatible with:



and



Sample Carved with:
ShopBot Buddy
PRSalpha BT48



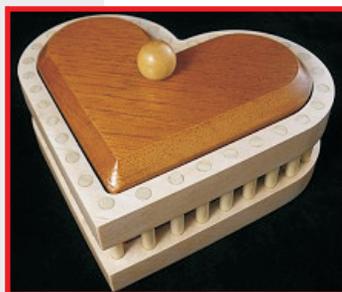
Coeur d'Amour Box

Designed for Vetric™ by Michael Tyler

The “Coeur d’Amour” (French for ‘Heart of Love’) box project will make a beautiful and cherished gift for your loved one on Valentine’s Day, or for any other special occasion!

The sample is made from Maple and Spanish Cedar, but you can get the same overall appearance using just about any contrasting-colored wood you prefer. Only a clear finish was applied to the sample.

The overall dimensions of the finished project are about 6 "W x 7 "H x 3 "T.



Main items you will need:

1) The Project Files (included):

- Light_Components.crv
- Dark_Components.crv
- Drill and Profile-Inside Test.crv

2) Boards with the following dimensions:

- Light_Components: 0.75 "x 7½ "x 15½ "
- Dark_Components: 0.75 "x 6½ "x 14 "
- Drill/Profile Test: 0.75 "x 3 "x 6 "

3) Wooden dowels ¼ " dia., ¾ " wood knob for handle (doll head), self-stick felt sheet for box bottom, three stick-on felt or nylon disks for placing onto the underside of the box

4) Drill, wood glue, sandpaper, clamps, 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:

- V-Carve: 90° V-Bit
- Hole Profiles: 1/4 " Up-Cut EM
- Pockets, Cut Profiles: 1/4 " Down-Cut EM

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(cont.)

STEP 3 - Release and Sand Parts

Separate all the parts from the material. Sand off the tab remnants and any undesirable tool marks. Use reasonable care when sanding the thinner-walled middle section. (fig. 3a, 3b)



fig. 3a



fig. 3b

STEP 4 - Part Assembly

Cut four 1/4" dia. dowels to a length of 2 1/2". Glue the bottom and middle sections together first, then glue on the top section, inserting the four 2 1/2" dowels (no glue on the dowels) to keep the parts aligned. Clamp until the glue dries. (fig.4a, 4b)

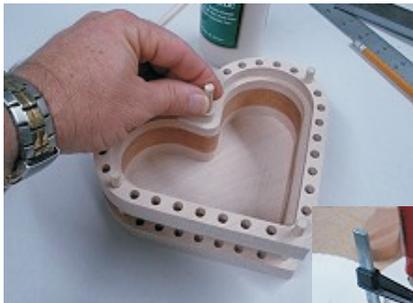


fig. 4a



fig. 4b



When dry, remove the clamps and temporary alignment dowels and sand the inside of the box. (fig. 4c)

fig. 4c

STEP 5 - Apply Finish to the Heart Lid and Box

At this point you may want to apply a finish to the heart lid, knob and body of the box before installing the series of decorative dowels that go around the perimeter of the box. (Don't allow finish to accumulate in the dowel holes.) Apply your choice of finish. Here's what I used on the sample Coeur d'Amour box project made from Maple and Spanish Cedar:

- 4 coats of thinned Bullseye SealCoat, sanding between coats (2 parts sealer/3 parts Denatured alcohol)
- Several coats Krylon Crystal Clear Acrylic (spray)

(fig. 5a, 5b, 5c, 5d)



fig. 5a



fig. 5b



fig. 5c

fig. 5d



(cont.)

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STEP 6 - Install Decorative Dowels

Cut your 1/4" dia. dowel into 34 lengths that when inserted, they will extend just slightly above the top surface of the box (each length will be approx. 2"). The dowel tops will be sanded flush to the box surface after the glue dries. Alternatively, you could cut the dowels SHORT by about 1/4", then use dowel plugs to cap off the dowel holes (even stain them a contrasting color, if desired). You can cut the dowels by hand using a fine-toothed hobby saw, or use a band saw or other suitable tool to make the job go faster. (fig. 6a, 6b)



fig. 6a



fig. 6b

NOTE: Test fit your dowels to make sure they slide snugly, but easily (without too much "slop") through the holes around the box. Sand the diameter of your dowels, if necessary *before* cutting to length.

Apply glue inside the holes in the box base with a toothpick or small brush. (fig. 6c) Slide a dowel partially through the top hole, apply a small amount of glue to the top portion of the dowel, then push the dowel through all the way until fully seated. Repeat for all the dowels. (fig. 6d) Wipe off any glue squeeze out.



fig. 6c



fig. 6d

When the glue is dry, sand the tops of the dowels flush with the top surface of the box. (fig. 6e)



fig. 6e



Apply your final finish/clearcoats to the entire box. (fig. 6d)

fig. 6f

STEP 7 - Final Touches

Install the "doll head" knob onto the lid with a dowel and appropriate size hole drilled in the lid (my knob had a 3/16" hole, so I used a 3/16" dowel and drilled about 1/2" deep in the lid to glue the knob on. (fig. 7a)



fig. 7a



Using the included pattern on page 7, trace and cut out a felt liner for the bottom of the box. (fig. 7b)

fig. 7b

Press on three self-stick round felt or nylon "feet" on the underside of the box. (fig. 7c)



fig. 7c

(cont.)

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IN CONCLUSION

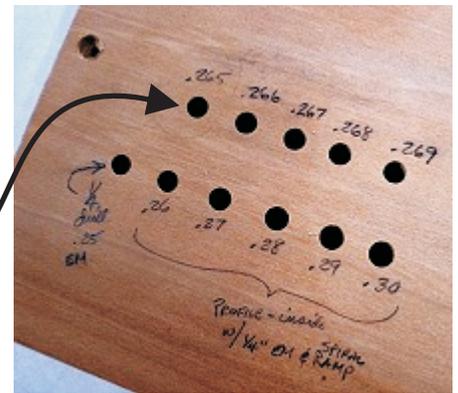
I hope you have enjoyed making your Coeur d'Amour - Heart of Love project. There's quite a bit of room for your own "customization"...V-carve the top with your own design, use rounded dowel plugs for capping off the top holes, eliminating the dowel holes altogether and making the middle section larger (perhaps inset by a small amount between the top and bottom sections), choosing different colored woods, or even make it out of brass or aluminum - let your imagination reign free! Happy Carving!

Michael

Tip for Adjusting Dowel Hole Diameters

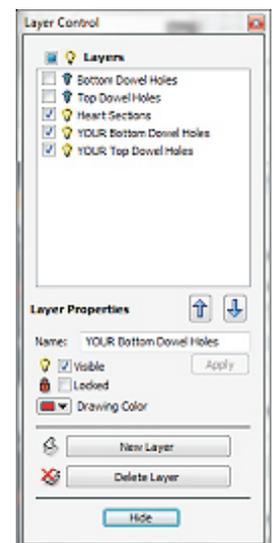
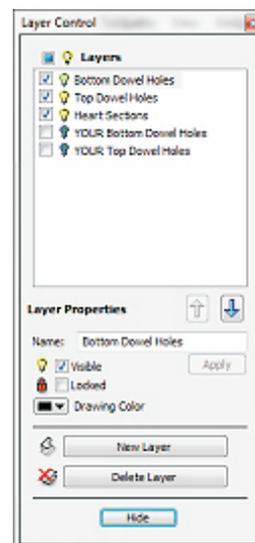
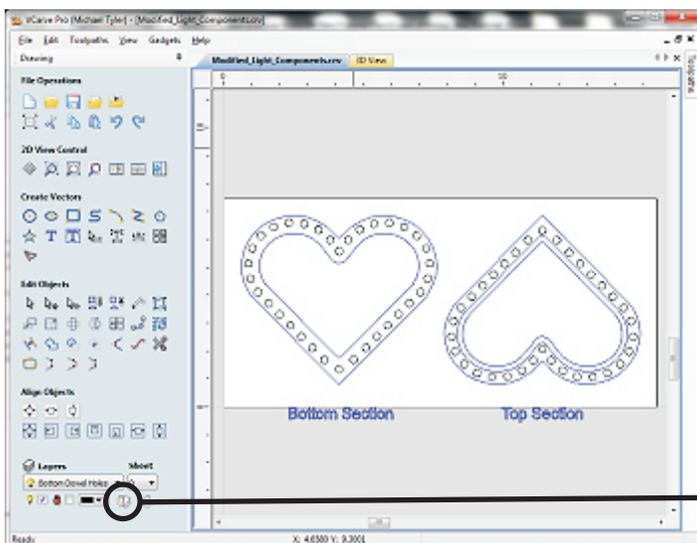
The dowel diameters in the project are not drilled - rather, they are setup as "Profile-Inside" cuts with a Spiral Ramp applied to route out the holes in a spiral/plunging fashion. The holes are currently set at 0.265" to fit the particular 0.25" dowels I had on hand. Your own dowel holes may need a *different* diameter setting for machining, in order for your dowels to slide easily through the holes during final assembly.

I included the **Drill and Profile-Inside Test.crv** file that you can run on a scrap piece of wood to "test fit" your own dowels and determine the best diameter dimension for the 0.25" dowels you will be using. I have found there can be a variance in dowel diameters, so it may be wise to run this test board and see if any adjustments need to be made to the hole size settings before running the actual project files.



First, go ahead and run the **Drill and Profile-Inside Test.crv** file and test-fit your dowels. If they slide easily through the 0.265" hole, you're done and can go ahead and run the project as-is. If you discover the dowels are too tight (or too loose), you can adjust the dowel hole size in the project to the diameter dimension that fits well. There is a handy method for adjusting the circle diameters quickly. (I confess - I forgot about this method myself when doing the project and selected every single circle, one at a time, and changed each diameter one at a time. A good friend reminded me of the following method, AFTER I had already done it the "hard way"!)

1) Open the **Light_Components.crv** file, then open the Layers menu. **Uncheck** the Bottom Dowel Holes and the Top Dowel Holes layers. **Place a checkmark** in both the "YOUR Bottom/Top Dowel Holes" layers.



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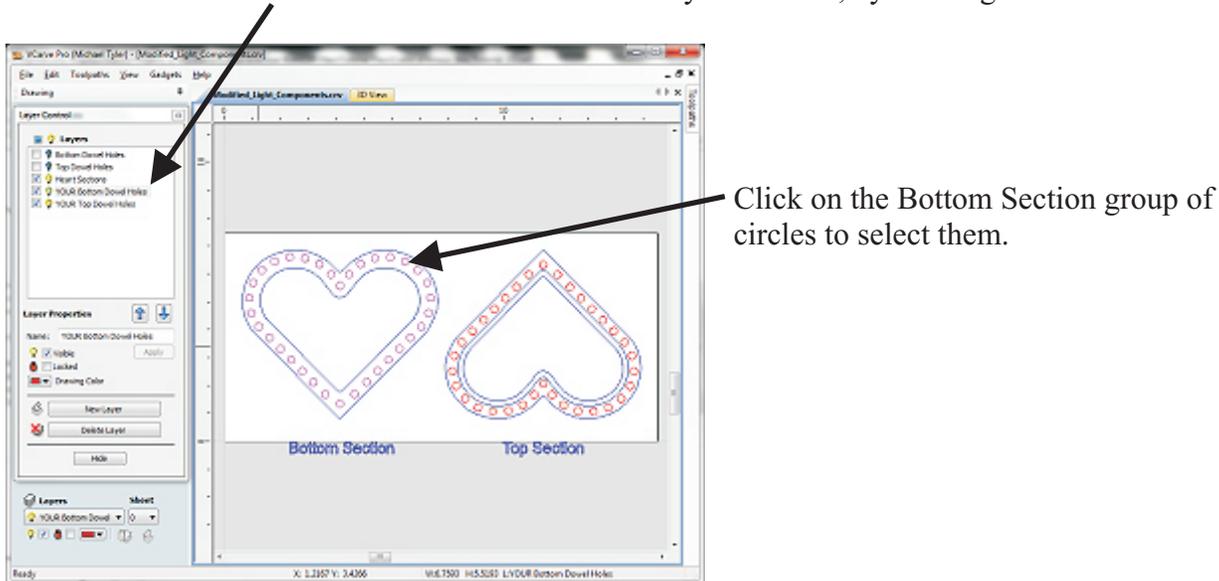
2) Calculate the difference between the existing setting of 0.265 " diameter and your desired diameter.

Example: Let's say your desired diameter will be 0.267 ". You'll need to apply an offset that is one-half the difference between the two diameters.

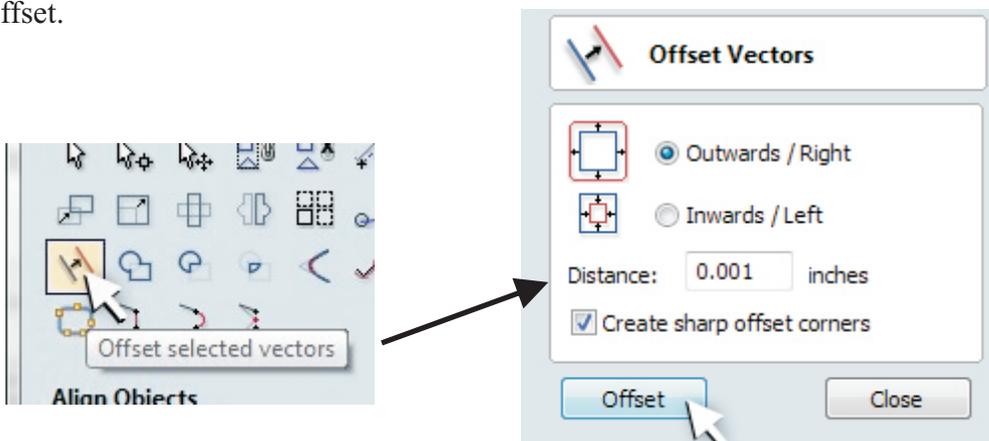
$$\begin{array}{r} 0.267 \text{ " (desired setting)} \\ - 0.265 \text{ " (subtract the existing setting)} \\ \hline 0.002 \text{ " equals the difference} \end{array}$$

Divide the 0.002 " difference in half = .001 " (the offset amount to be entered)

3) Make sure that the "YOUR Bottom Dowel Holes" layer is active, by clicking on the name to highlight it..



4) Open the Offset Tool, type in the desired offset amount (select Outwards or Inwards, as applicable) and click Offset.

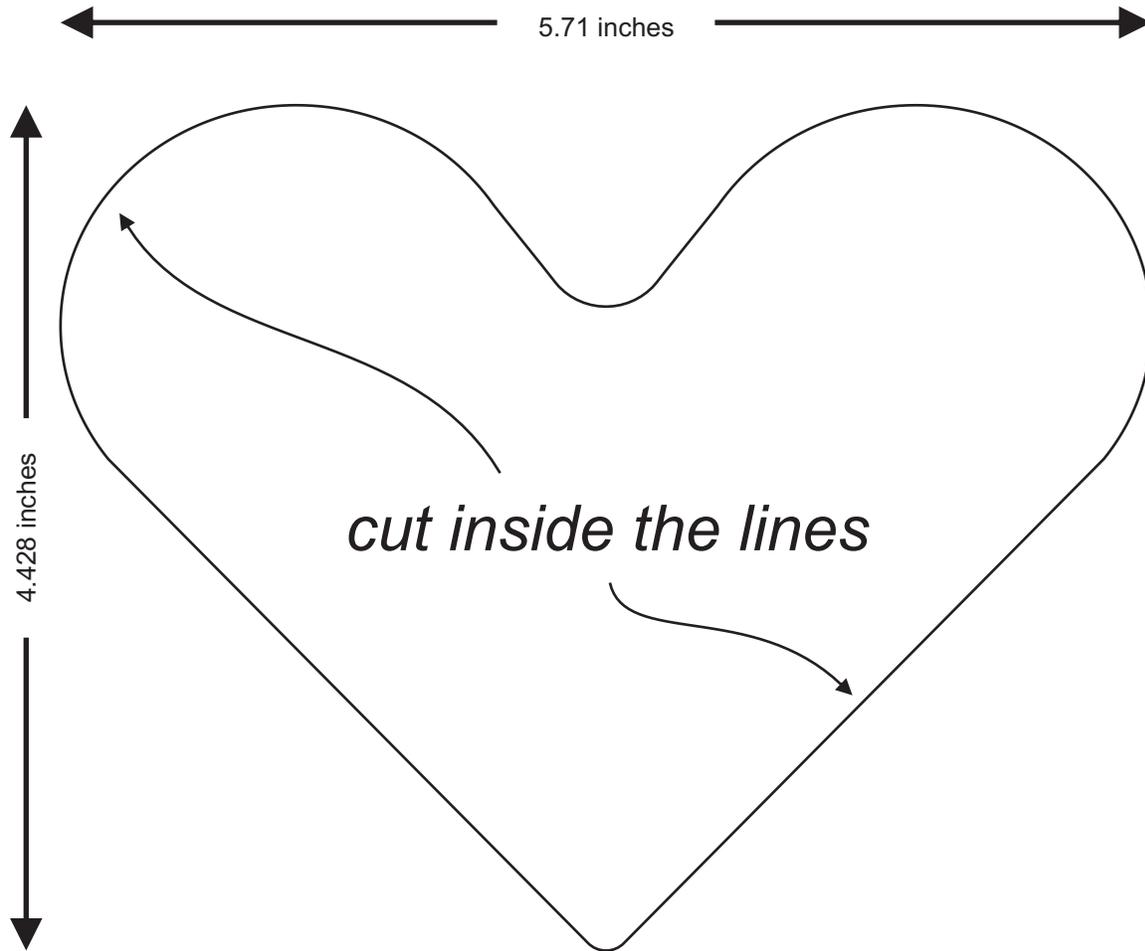


Once you apply the offset, the original-size circle group is still highlighted and you can hit the Delete key on your computer keyboard to dispose of that group. Your circles with the new desired size will remain on the layout. Repeat this overall procedure for the "YOUR Top Dowel Holes" layer, then close out of the Offset Tool.



Don't Forget! You will need to recalculate the toolpaths after making these edits/changes.

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Bottom Box Liner Pattern
(cut from self-stick felt)

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 Michael's Arts & Crafts™

- **Wooden 3/4-inch “Doll Head”** for lid knob
- **Self-stick felt sheeting**



Miscellaneous Items Purchased at Home Depot™

- **Bullseye SealCoat and Denatured Alcohol**

Miscellaneous Items Purchased at Lowe's™

- **1/4-inch Diameter Dowels and 3/16-inch Dowel**
- **Self-stick nylon “round bumpers”** for feet under the box
- **Disposable Brushes and Paint Rags**



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.

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