

# HEART BOX



**REQUIRED:** Carviewright version 1.185 or later.

**MATERIALS:**

Four 9 1/2" by 17" by 3/4" Board Blanks  
Sanding materials  
Stain (Optional)  
Clear finish

**OPTIONAL:**

11" by 17" by 3/4" MDF (Sled)  
11" by 17" by 1/2" MDF (Sled)  
Six 1" flat head wood screws (Sled)  
10" square of 1/8" plywood or hardboard  
Two 12" squares of thin cotton batting  
12" square of velvet cloth

**BITS:**

1/16" Carving Bit  
1/8" Cutting Bit  
90 degree V-Bit

Heart shaped jewelry boxes are hardly unique. There are many on the market that are pre-made and many that are ready to make with detailed instructions. There are even a few on the Carviewright pattern depot. What makes each one unique is the detail. This heart box project was created using only the Carviewright Designer and it features the new 2D and 3D add-on tools. Some of the details are a puffed or domed top with a carved molding around the edge, finger wells on the sides to make the top easy to remove, a lip on the inside of the top that fits inside the main part of the box so no hardware or hinges are needed, and a bottom that has a rounded outside edge and built-in carved feet. All four parts of the project are made from one basic heart shape. Included are two .mpc files with the inner and outer shapes already created so you can just use these files or use your own heart shapes if you prefer but, the dimensions should be the same as in this tutorial to achieve the same results.

All of the original MPCs are included in this free project so you can just carve them without having to do anything except change the name on the top. There are no patterns used except for your own pattern designs that you choose to place on the top so feel free to modify the originals in any way you wish(see addendum). The only thing I ask is that if you use my design, please mention me as the original author.

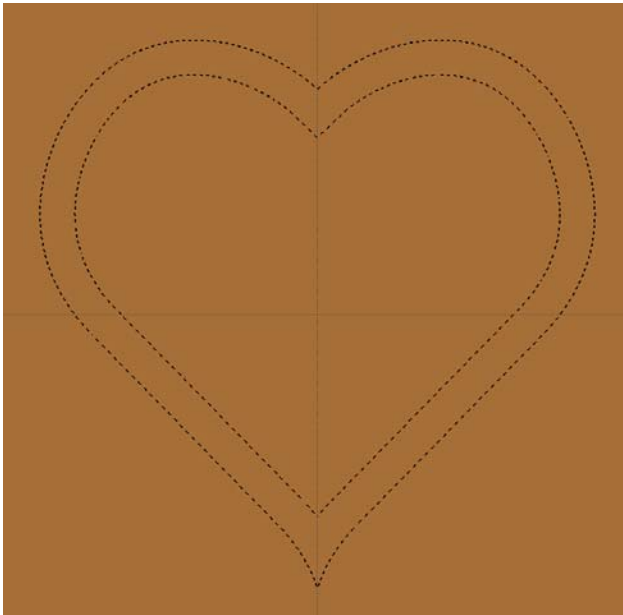
The basic shapes that all parts are derived from are .mpc files and are ready to use. The one for the top (Top Shapes.mpc) is basically the same on both

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sides but, on the back, the inner shape is smaller to help create the “lip” that fits inside the upper middle section. Heart Shapes.mpc has both inner and outer heart vector shapes and is used to create the three bottom layers. The steps outlined below will show you how to create the entire project using these files should you decide to make it yourself.

## TOP OUTSIDE

### Step 1: Create the inner heart shape



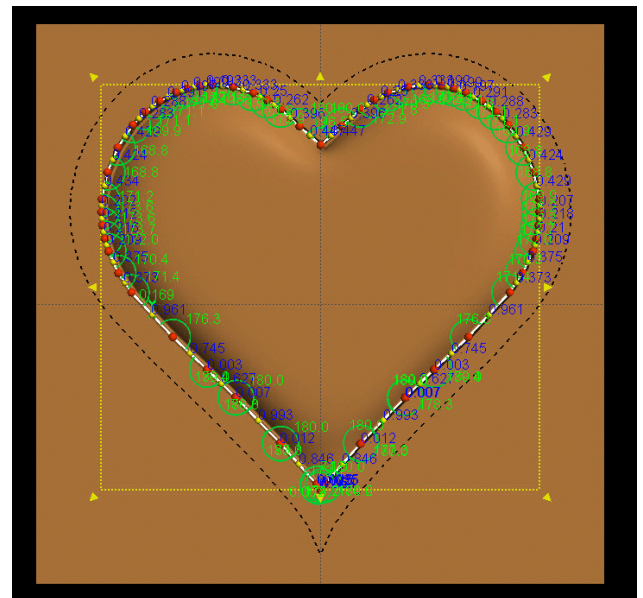
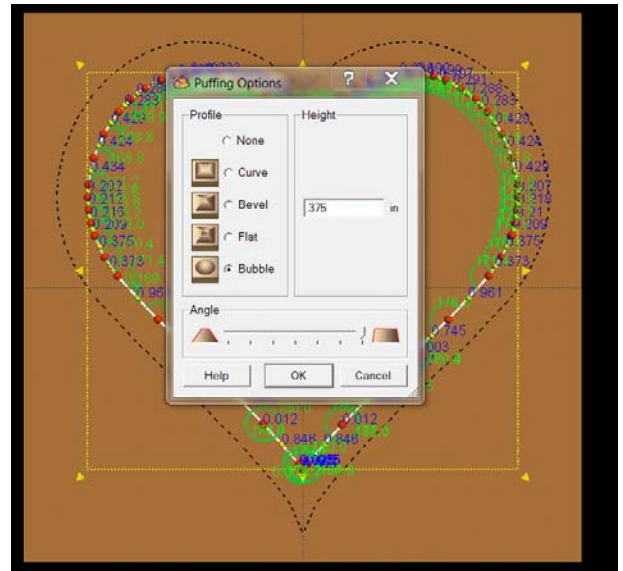
Start with the basic heart outline. Open “Top Shapes.mpc”.

You can skip this step if you choose to just use these shapes instead of creating your own inner shape. Select and delete the inner heart shape. Select the outer heart shape and then select the Path Offset tool (tools, path offset). In the dialog box set the distance to .5 and the file style to “Corner”

Save your work as MyHeart Shapes.mpc as we will use this setup again. Be sure not to overwrite the original Heart Shapes.mpc

### Step 2: Puff the inside shape

Make sure the inner heart shape is selected then Select “Puffing” from the tools menu. The settings in the puffing dialog box should be set to “Bubble” and a height of 0.375. Slide the angle slider all the way to the right and click on “OK”. Your screen should look like the puffed example picture.

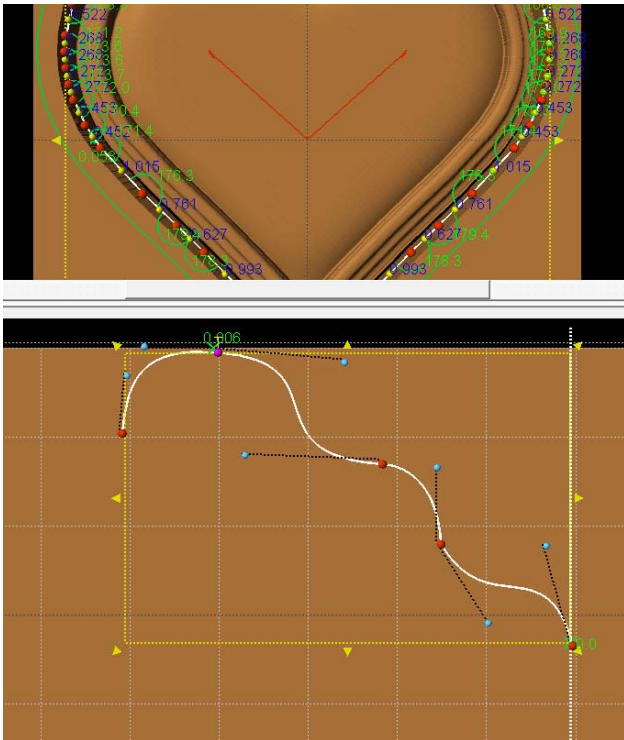


*Puffed*

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## Step 3: Create the outer decorative edge.

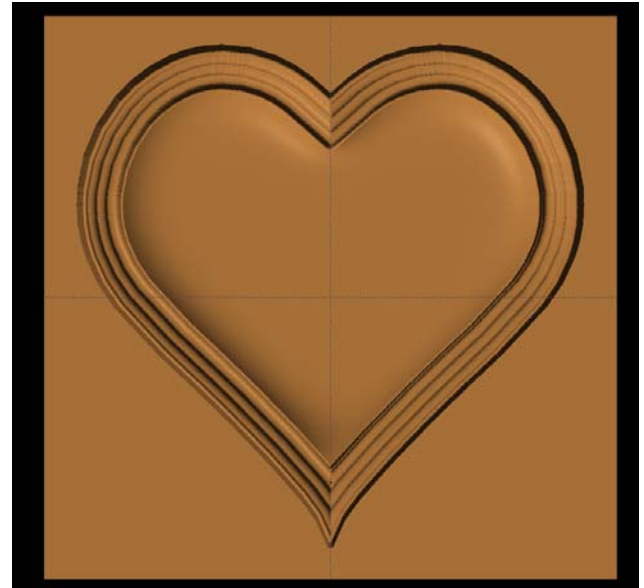
Select the outer heart shape and then select the “Sweep: Corner” tool from the tools menu. Click in the lower pane and from the “Layout” menu turn the grid on and center it. Set the grid interval to 1/8" and leave the snap to grid off.



*Top Outer Edge*

Using the “Smart Spline: tool, draw a shape similar to the one shown in sweep example picture. Notice that the width of the sweep (Left side) will extend over into the puffing about 1/8". Also make sure the right side of the shape touches the white line on the right. If you have difficulty with this you can cut and paste the shape from the finished “Top.mpc” example. When you are happy with the shape, click OK. If you need to change or edit the sweep just double click on the outside heart shape.

## Step 4: Add a name and decorative patterns.



*Top Ready for a Name*

Select the text tool, click on the top and type a



*Top Example Completed*

name. Select a font and click on OK. Right click in the Newly created text box and select “Merge Additive”. Set the depth of the text to .125 and the

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height to 60. Set the bit optimization to “Best” and the feather to “None”. Also set the draft to “Medium”. All patterns are not created at the same height and depth so if you decide to apply another pattern, play with these settings until it looks right. Arrange and size the name and patterns to create an attractively appealing design.

Save your work as MyTop.mpc.

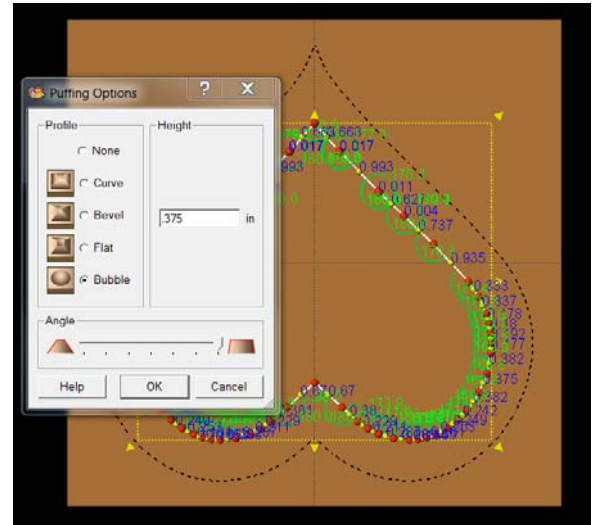
## TOP INSIDE

### Step 5: Create the inner heart shape.

If you decide to use the existing heart shapes you can skip this step.

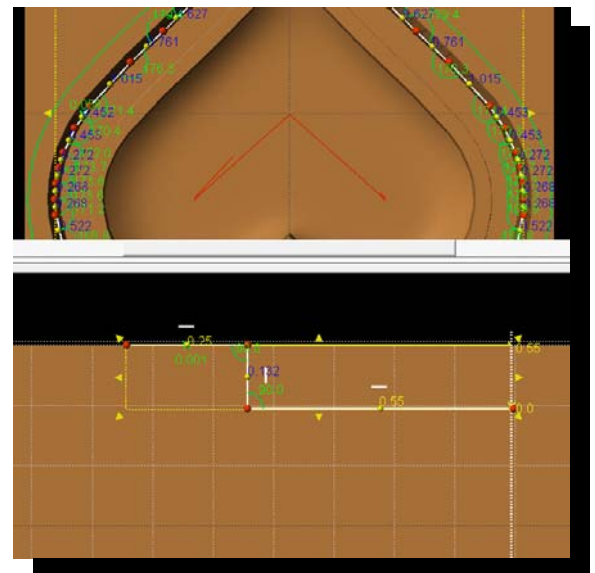
Open “Top Shapes.mpc” again. Select the outer heart shape, right click and select “Copy”. Switch to the top (the MPC you just saved) and flip it over to the back side and delete everything. Right click and select “Paste”. Now we have to flip the heart shape. While it is selected, right click on it and select “Flip and”Rotate. Flip it vertically. At this point it still should be centered but, check to be sure. You should not be able to move it. With the heart shape still selected, select “Path Offset” from the tools menu. Set the distance to .75 to create an inside offset. This offset is different than the one used on the front side. Be careful not to move it as it is not centered. If you do inadvertently move it use “undo” right away.

### Step 6: Puff and invert the inner shape.



*Top Inside Puff Setup*

Select the inside heart shape and then select “Puffing” from the Tools Menu. Again, set the puffing options to: Height: .375, Profile: Bubble, and slide the angle slider bar all of the way to the right. Select OK. Right click on the newly created puff and select “Invert Pattern”.



*Rabbet Sweep Setup*

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## Step 7: Create the rabbet.

Next, select the outer heart shape and then select "Sweep: Corner" from the tools menu. Be sure the grid is turned on and set to 1/8" interval and centered. Using the connected line tool draw a shape that pretty much matches the example. Line lengths are critical here as you are creating the lip that will fit inside of the base of the box. Again if you have trouble you can cut and paste from the finished example. Select OK.

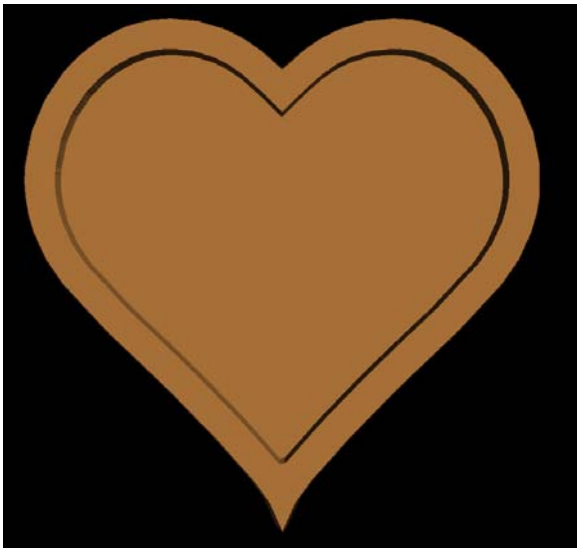
## Step 8: Create the cutout.

Flip the piece over to the front. Select the outer heart shape and then select the Cut Path tool from the tools menu. Flip the cutout so it cuts on the outside of the line. Set the minimum number of tabs to 5 and the tab spacing to 3 tabs per foot. Also set the maximum depth per cut to .25". Click on OK.

Set the bit optimization to "Best" for everything on both sides including the Puff. Save your work. Be sure not to overwrite the Heart Shapes.mpc file as we will use it again.

## BOTTOM

### Step 9: Create the carve region on the inside

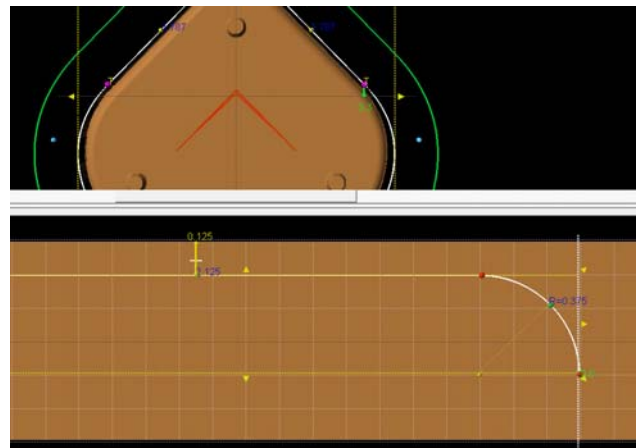


Open Heart Shapes.mpc again. Make the inner heart shape a carve region with a depth of .4". Set the bit optimization to best for this carve region.

## Step 10: Create the cutout

Now select the outer heart shape and press Ctrl-C on the keyboard to copy the shape to the clipboard. We will use this copy on the back side. Make the outer shape a cut path with at least 5 tabs and a maximum depth per pass of .25".

## Step 10: Create the rounded edge and feet on the bottom

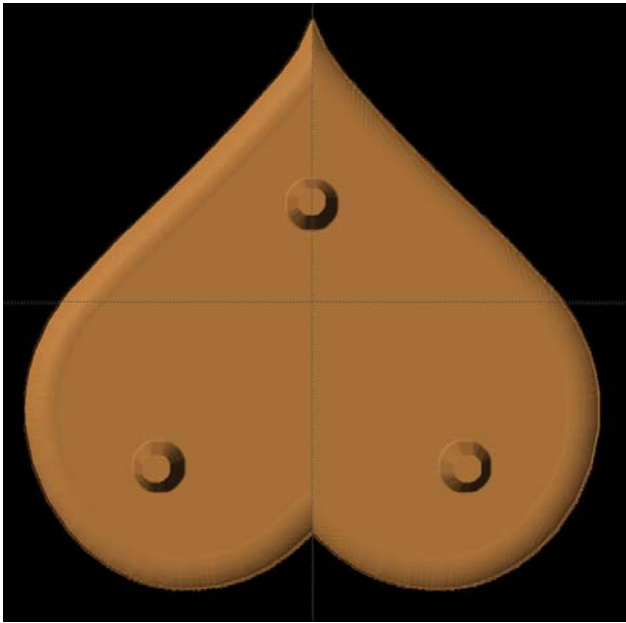


Flip the piece over to the back side and press Ctrl V to paste a copy of the heart shape on the back. Flip this shape vertically and make sure it is still centered. With the outer shape still selected, select Sweep: Corner from the tools menu. Click in the bottom pane and set the grid snap interval to 1/8" centered. With the smart spline tool draw the shape shown in the example picture. This will create the rounded bottom edge and a carve region 1/8" deep. Click on OK. Set the bit optimization to best for this sweep.

Make a 3/8" diameter circle on the bottom near the lower right side and make it a carve region with a 0" depth. This zero depth setting will raise the height of the circle up to make one of the feet.

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Assign a medium draft to give the foot a bevel then set the bit optimization to "Best". Mirror it horizontally to create the foot on the opposite side. Make a copy of the finished foot (Ctrl C). Paste in the copy (Ctrl V) to make the 3rd foot. Center it horizontally and then drag it into position near the point. Make sure the bit optimization for everything



is set to "Best. Save your work as MyBottom.mpc. This completes the bottom.

## MIDDLE SECTIONS

### Step 11: Create the lower middle section

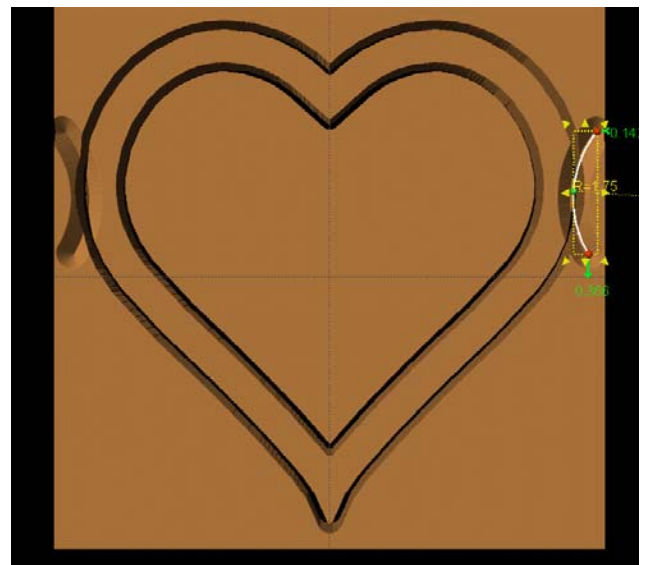
Open Heart Shapes.mpc. Select the outer shape and make it a cut path. Flip the cut so it cuts on the outside of the line with a minimum of 5 tabs and a max depth per pass of .25".

Now select the inner shape. Make it a cut path also with the cut on the inside of the line. Again with a minimum of 5 tabs and a max depth per pass of .25". That completes the lower middle section. If you decide to make the box deeper, add more of these sections. Save your work as MyLowerMiddle.mpc.

### Step 12: Create the upper middle section

We can use the lower middle section that is still on the screen with some slight additions for the finger recesses.

Using the Arc Tool, draw an arc and set the radius to 1.75". Position the arc on the right side about center of the widest part of the heart. Assign the 90 degree V-bit at a depth of .25". Move the arc so only the bevel will cut into the side of the heart. It should be about half of the thickness of the wall of the heart. Then, mirror it horizontally.



Save your work as MyUpperMiddle.mpc.

## SLED

### Step 13: Create the sled

You can skip this step if you want to use the .mpc that is already created or you decide not to use a sled.

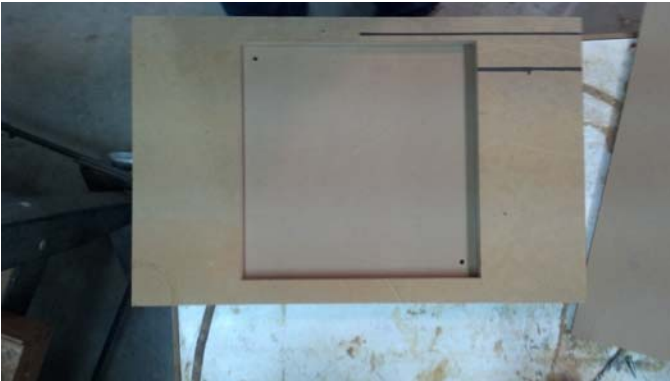
I used a sled to cut the upper middle section and the lower middle section to save wood. This also allowed me to use scrap or cutoff pieces from other

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projects. I do not recommend using a sled on 2-sided carves where both sides must match. Using a full size blank for the top and the bottom will insure better results.

Project size: 17" long by 11" wide by 3/4" depth  
MDF

Using the rectangle tool, place a rectangle on the board 9 1/4" square and center it. Next, make this a cutout with the cut on the inside of the line. Also set the maximum depth per pass to .25". Save it as Heart Sled.mpc..



*Sled*

After the sled is carved, square up the inside corners with a chisel and mount it to a piece of 1/2" MDF of the same size using 1" flat head screws from the back side. To make it easier to remove the carving from the sled, drill a couple of holes in the bottom (not shown).

## Step 14: Cut the blanks

Cut four 9 1/2" by 17" blanks from the wood of your choice. (If you decide to use a sled for the middle sections, cut two 9 1/2" by 9 1/2" square blanks and two 9 1/2" by 17" blanks). All thicknesses are 3/4". When you are ready to carve them, cut the square board blanks for the upper and lower middle sections to fit snugly in the recess of the sled and secure them from the back side on two corners using 1" counter sunk flat head screws.

## Step 15: Carving:

When uploading to the memory card, select the "Optimal" setting for all carvings for best results. The top and bottom are 2-sided carves and the Carviewright will start with the back side first and then prompt you to flip the board vertically (not end for end). Make sure the board size is at least 9 1/2" by 17" so it will stay under the rollers.

Answer the machine prompts as follows for all carvings:

Stay Under Rollers? = No  
Cut Board To Size? = No  
Center on board

If you are using a sled you may get a prompt:  
Too Thick To Cut Through: (1) Abort (2) Continue  
Select (2) Continue

Insert each bit as prompted.

## Step 16: Glue-up The Parts

The glue-up is pretty straight forward. To help keep the parts from sliding around while trying to set the clamps, drive three small wire brads or pin nails evenly spaced on one side of the surface to be glued. If you drive them too deep you will risk cracking. Use side-cutters or end nippers to cut them off as close to the surface as you can. Line up the parts and squeeze them together with clamps before applying glue. Disassemble, apply glue, and re-clamp. Using this method, you should be able to glue up all three layers at the same time.

## Step 17: Sanding

The easiest way to sand the inside of the box smooth is to use a small diameter sanding drum on a drill press and a Dremel type tool with a small sanding drum for touch-up. For the outside, a random orbit sander works good. A sanding mop and/or a dremel type tool with sanding wheels of

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various sizes and grits works good on the top. Do an overall hand sanding on all parts with 220 grit and a final sanding with 400 grit for best results.

## Step 18: Finishing

After the sanding is complete, apply a stain (optional) and three coats of a clear finish with a light buffing of 0000 steel wool between each coat. I used General Finish American Walnut stain and General Finish Armor Seal (Woodcraft) for the clear finish.

## Step 19: Build the padded insert



*Secured on back with Gorilla Tape*



*Dull Scissors*

One of the left over heart shapes from the inside cutouts of the middle sections works good as a pattern for the insert. On a piece of 1/8" plywood or hardboard trace around the perimeter and cut it out using a band saw, jig saw or

hand saw. Wrap the shape with two layers of thin cotton batting and an outer layer of velvet. Secure it on the back side with Gorilla Tape or glue. This will create a removable padded insert that can be taken out and cleaned or replaced.

This project was a lot of fun to design and carve and I hope you have as much fun making it as I did. It is a free project so you can change or modify it in any way you choose. I highly recommend and encourage postings of your carvings and/or adaptations on the Carviewright forum.

Steve

## Addendum:

Complete project files that use patterns instead of the new 2D Vector Drawing Suite and the 3D Pattern Modeling Suite add-on tools have been included so those who do not have these tools can still carve this project.

## *HEART BOX*