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Project Tutorial

Featuring compatibility with nearly all CNC Machines

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

Vectric Project Tutorial
www.vectric.com

Compatible with:

Aspire 4

(or greater)

Sample Carved with:
ShopBot Buddy
PRSalpha BT48

ShopBot ®
www.shopbottools.com

Bling Box!
Designed for Vectric™ by Michael Tyler
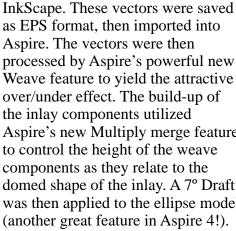
The Bling Box project features a decorative weave pattern on the contrasting ellipse-shaped inlay on the lid and a classic "deep contour" molding shape for the box body to create a beautiful box to store "bling" or whatever else you decide!

The 'braided vectors' on the ellipse were created with the spirograph render extension in the freeware program, InkScape. These vectors were saved as EPS format, then imported into Aspire. The vectors were then processed by Aspire's powerful new Weave feature to yield the attractive over/under effect. The build-up of the inlay components utilized Aspire's new Multiply merge feature to control the height of the weave components as they relate to the domed shape of the inlay. A 7º Draft was then applied to the ellipse model (another great feature in Aspire 4!).

Main items you will need:

1) The Project Files (included):
• Bling_Medallion_Insert.crv3d
• Bling_Box_Top.crv3d
• Bling_Box_Bottom.crv3d
• Bling_Box_Sides.crv3d

2) Boards with the following dimensions:
Medallion: .75 " x 6 " x 7.5"
Bottom: .75 " x 9 " x 12"
Sides: .75" x 7" x 17"
Top: .75" x 7" x 11"

3) Box hinges and screws, #6 x 1" wood screws for attaching the bottom to the box frame

4) Felt or silicon self-stick pads for lid and bottom (optional)

5) Drill, sandpaper, glue, clamps, wood stain and/or paint and clear finish

6) A Dremel-type rotary tool with assorted sanding wheels and bits to sand small details and speed up preparation for finishing.
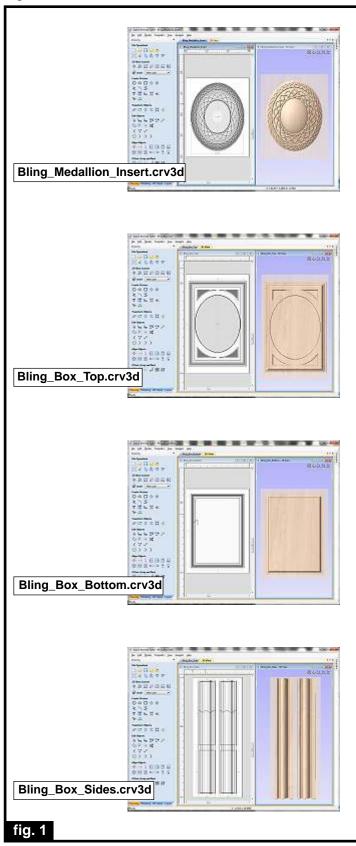
Finished Dimensions:
9 " W x 6 " D x 4.5 " H

CNC Bits used for the Sample:

Roughing :	0.25" Down-Cut EM
Roughing :	0.25" Ballnose
Finishing:	0.125 " Ballnose
Finishing:	0.0625 " Ballnose
Pocket, Cutouts:	0.25 " Down-Cut EM

STEP 1 - Open and Review the Project Files
Start your Aspire software and open the project files. (fig. 1)

Bling_Medallion_Insert.crv3d

Bling_Box_Top.crv3d

Bling_Box_Bottom.crv3d

Bling_Box_Sides.crv3d

fig. 1

Carefully review all the toolpaths and make any necessary changes (feed/speed, RPM settings, etc.) to suit your particular bits and machine. The toolpaths are currently set with feeds, speeds, pass depths and so on, 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.**

Once you have recalculated the toolpaths 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 cutouts. 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 files. **TIP:** Run the Medallion first, then the pocket of the Box Top. Check the fit of the Medallion in the pocket while the material is still on the machine bed. If it's too tight, offset the pocket machining vector by another 0.01 " outwards and machine the pocket again - check fit, and repeat if necessary. (fig. 2a, 2b)

Separate the medallion from the material then check fit in the Box Top pocket

fig. 2a

The pocket already has an allowance, so re-machining likely will NOT be necessary.
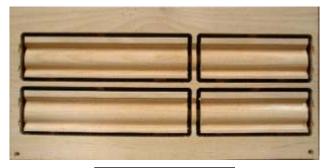
Check fit anyway.

fig. 2b

(cont.)

STEP 2 - Run the Project (cont.)

Your machined material will look something like this. (fig. 2c)

Bling_Medallion_Insert.crv3d

Bling_Box_Top.crv3d

Bling_Box_Sides.crv3d

Bling_Box_Bottom.crv3d

fig. 2c

STEP 3 - Release and Prep Parts

Separate the parts from the material, then sand off any tab remnants and any undesirable toolmarks. (fig. 3a, 3b)

fig. 3a

I use 3M Radial Bristle Discs (80-grit and 220-grit) to remove fuzzies from carvings. I stack 3 discs at a time on a 3/32" dia. mandrel.

fig. 3b

Depending upon what type of woods and finish colors you choose, you may want to apply the finish on the medallion, at this time. Avoid applying too thickly on the edges to prevent interference with the fit in the pocket. (fig. 3c)
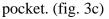
fig. 3c

Here's the finish I used on the medallion made from Select Pine:

• Two coats of thinned Zinnser Bulls Eye Seal Coat (50% denatured alcohol and 50% Seal Coat), sanding after each coat

• Two coats Zinnser Bulls Eye Spray Shellac

(cont.)
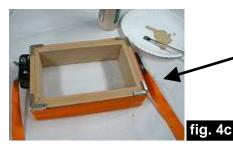
STEP 4 - Main Assembly

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/bottom corner edges so as not to alter the overall length of the parts. As an option, you can alter the crv3d file to NOT cut each part into the separate 6" and 9" lengths, but as two continuous strips. This allows some additional material when miter-cutting to the final length of each part. In any case, you should end up with two parts that are 6" long and two parts that are 9" long. (fig. 4a)

fig. 4a

Lay a sheet of waxed paper over a flat surface in preparation for the glue-up, then glue the box sides together and clamp until dry. (fig. 4b, 4c)

fig. 4b

Strap clamps hold the box frame together while the glue dries.

fig. 4c

STEP 4 - Main Assembly (cont.)

After the side frame assembly has dried, remove the clamps and place it centered onto the bottom panel. Trace the frame outline with a pencil and drill pilot holes for screws or nails to be driven from the bottom. Apply glue and weigh down the frame until the glue has firmed up awhile. Flip the assembly over, then use the pre-drilled holes as a guide for completing the pilot holes to extend into the frame. Make sure the fasteners are sized and positioned so they won't "poke through" any portion of the side frame contours. (fig. 4d, 4e)
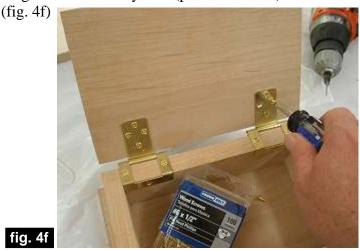

fig. 4d

For the sample, I used 1"-long #6 wood screws driven through the bottom countersunk pilot holes and into the side frame assembly

fig. 4e

Install hinges of your choice. I used .75" no-mortise hinges from leevalley.com (part #00H6012). (fig. 4f)

fig. 4f

(cont.)

STEP 5 - Apply Finish to Box Body

Remove the hinges before finishing. Apply stain/paint and clearcoat of your choice. Here's what I used on my Bling Box made from Alder:

• One light coat of thinned Zinnser Bulls Eye Seal Coat (50% denatured alcohol and 50% Seal Coat), sanding afterwards (fig. 5a)

• Rust-Oleum Ultimate Stain - Golden Mahogany (fig. 5b)

• Two coats spray Shellac (fig. 5c)

fig. 5a

Apply Sealer

fig. 5b

Apply Stain

fig. 5c

Apply Spray Shellac

STEP 6 - Final Assembly and Clearcoat

When your finish is dry, glue the medallion inlay into the lid pocket.
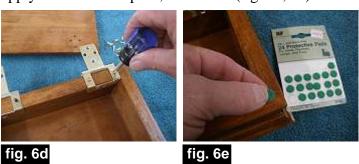(fig. 6a, 6b)

fig. 6a

fig. 6b

Apply the final clearcoats to everything. I used several coats of Krylon Acrylic Clear spray. (fig. 6c)

fig. 6c

When finish is completely dry, replace the hinges and apply felt or silicon pads, if desired. (fig. 6d, 6e)

fig. 6d

fig. 6e

IN CONCLUSION

I hope you have enjoyed the Bling Box project! Several new features in the latest Aspire software (version 4 at the time of this writing) were put to good use while creating this project and made the process that much more enjoyable!

• Enhanced Snapping of Objects
• Extrude and Weave
• Multiply Merge
• Draft
• Dimension Labels

An **EXAMPLE_ROUND_Medallion.crv3d** file is included to demonstrate the basics of how the inlay model was created using layered components with the Multiply merge, then 7° Draft on the completed model.

Here's a few ideas to enhance or customize the project:

• V-Carve a monogram in the center ellipse area of the inlay to personalize the box for that "special someone"

• Paint the inlay with metal paint (such as Sculpt Nouveau brand paints) for a cool "metal inlay" look

• Line the interior of the box with flocking or self-stick felt sheeting

• Make dividers for the interior of the box using thin craft wood or ply to help organize the "bling"

• Apply metal or wooden feet to the box for an additional touch of elegance

• ...and, any more you can think of - have fun with it!

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

Krylon Clear Gloss Acrylic
from WalMart™

Items Purchased at Lowes™

• **Zinnser Bulls Eye Seal Coat**

• **Rustoleum Ultimate Stain - Golden Mahogany**

• **Zinnser Bulls Eye 100% wax-free Clear Spray Shellac**

• **Denatured Alcohol**

• **Disposable Brushes and Paint Rags**

• **#6 x .5-inch and #6 x 1-inch Wood Screws**

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

The 'braided' vectors on the ellipse inlay were created with the Freeware software program, InkScape.
Free Download is available at www.inkscape.org

Vectric Project Tutorial
www.vectric.com

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_vcw_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.