

Project Tutorial

February Project: Coin Banks

Designs by Rick Frazier

Compatible with the Current Version of





This month's projects are Coin Banks. The samples were made using poplar, however, you might use any woods of your own choosing. We recommend using ay suitable hardwood. This is a nice colorful project for children and adults alike. They have a whimsical theme and are great to give as a gift or make for yourself. These projects have two sections laminated together. It is a two sided. Each Coin bank has 4 basic parts, the body, (2 pieces of poplar) a plastic ball and a piece of .220" thick acrylic for the base.

The Instructions, crv. files and videos are found on Nextwave Automation Website nextwaveautomation.com

This project is aimed at the woodworker with moderate to intermediate skills. You will need access to the current version of V-Carve with updates. The materials and the tools are listed below.

Project material list for Coin Banks:

- ¾ Poplar
- Primer
- Paints (colors for your graphic)
- Plastic clear Christmas Ornament

- 10-24 Threaded rod and
- CA Glue
- .220" acrylic plastic

Project Tool List:

- ¹/₄" up-cut straight bit
- ¼" dia. 60⁰ V-Carve bit
- 1/2" up-cut straight bit
- Various sanding tools
- Various finishing tools

Project CNC Files:

- dino base.crv
- dino_1.crv

Video Files: found on nextwaveautomation.com

- Coin Bank Designing.mp4
- Coin Bank Machining1.mp4
- Coin Bank Finishing and Assembly1.mp4
- Coin Bank Finishing and Assembly2.mp4

With the V-Carve software, open the project CNC files. Carefully review all the toolpaths and make necessary changes to suit your tools and machine. The toolpaths are currently set with tool, feeds and speeds that were used in designing the original project. Be sure to review them for your machine. Edit the tools and change the settings to fit you own machine and requirements. It is very important to recalculate all toolpaths after making any changes. Once having made the necessary recalculations for your own machine and tools, reset the preview, and then preview all toolpaths again to visually verify the project outcome. Create the tap file for your machine by using the correct post processor. Once satisfied with your settings, save the tool paths using the appropriate Post Processor for your machine. Check tool paths by air cutting the project or use rigid foam board to run a sample tool path. Now you're ready to make your own Coin Banks!

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For more information on how to create the Coin Banks tap files and how to modify the Coin Banks, watch the video Coin Bank Designing.mp4.

Milling the Stock:



Mill all of you stock according to the material list. Clamp down to your blank to the spoil board. You are ready for machining.

Step 1: Creating Tap Files:



Make sure to have the following items checked in the Job setup menu to get the best results.

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Zero position: Material Surface XY position: Center



The first step in creating a tap file is to open a project file crv. Make necessary changes for styles and personal taste. Carefully review all the toolpaths and changes to suit your tools and machine. Use the correct corresponding post processor to save the tap files. For this project you should be creating many tap files. When everything is prepared, go over to the tool path menu and save each of the tool paths. The body for this project should have 9 tool paths. The Acrylic should have 2 tool paths



Mount the bottom material so it is square with the X and Y axis. (above illustration.) Secure in the corners with screw or clamps as in the figure above. Make sure the clamps or



screws do not obstruct the bit during machining. Install ¼" up-cut straight bit. Touch off the Z-axis on the "TOP of the Material" (Reference Video). Load the Bottom_dino coin Pocket 3.tap. Run the tap file with a router speed at 12,000 to 16,000 RPM.

Step 4: Machining the Alignment Holes:



Clean the fixture of all debris. Next, we will be drilling the alignment holes in the bottom. Install a 1/4" up-cut straight bit. (above illustration.) Touch off the Z-axis on the "TOP of the Material" (Reference Video). Load the Bottom_Spoil board holes.tap file. Run the tap file with a router speed at 12,000 to 16,000 RPM.



Install the guide pins, make sure they are flush with the board. Install the top and clamp down both pieces. Touch off the Z-axis on the "TOP of both

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pieces of Material" (Reference Video). Load the Bottom_Spoil board holes.tap file. Run the tap file with a router speed at 12,000 to 16,000 RPM.

Step 5: Machining the Clamping Holes:



Clean the fixture of all debris. Next, we will be drilling the clamping holes in the bottom and top. Install a 5/16 drill bit. (above illustration.) Touch off the Z-axis on the "TOP of the Material" (Reference Video). Load the Bottom_Spoil board holes.tap file. Run the tap file with a router speed as slow as you can.

Step 6: V-Carving the bottom side:



Install 1/4 "60° V-Carve bit. Touch off the Zaxis on the "TOP of the Material" (Reference Video).Load the Bottom_Dino profile



outline.tap. Run the tap files with a router speed at 12,000 to 16,000 RPM.

Step 7: Gluing the sides together:



Remove the two sides from the machine. Use the alignment pins, to align the sides, the coin slot facing the side opposite the v-carving. (See reference video). Apply glue to both halves to laminate together. Be careful not to get glue in the coin pocket. Use 1/4 'bolts and nuts to clamp the sides together. Let dry. (above illustration)

Step 4: Flip and machine top side:



V-carve top:

After the glue has dried, Clamp the assembly, top up using the alignment holes, onto the spoil board. Copyright: z Silverback Woodworking 2018 LLC

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Install a 1/4 "60° V-Carve bit. Touch off the Zaxis on the "TOP of the Material" (Reference Video).Load the Top_Dino Profile 1.tap. Run the tap files with a router speed at 12,000 to 16,000 RPM.

Top 1/2" profile clearance cut:



Install ½" up-cut straight bit. Touch off the Zaxis on the "TOP of the Material" (Reference Video).Load the Top_Dino outline 1_2 Profile.tap Run the tap files with a router speed at 12,000 to 16,000 RPM.

Top mouth, belly hole and profile:



Install a ¼" up-cut straight bit. Touch off the Z-axis on the "TOP of the Material" (Reference Video).

Load the Top_Dino Combine.tap. this file combines the bellyhole,mouth and cut out the bank. Run the tap file with a router speed at 12,000 to 16,000 RPM.



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Cutting the base:

Mount the acrylic material so it is square with the X and Y axis. Install a ¼" up-cut straight bit. Touch off the Z-axis on the "TOP of the Material" (Reference Video).

Load the dino base.tap. Run the tap file with a router speed at 12,000 to 16,000 RPM.

Sanding:



Sand the body starting with 120 grit sandpaper going up to 320 grit sandpaper. Be carful not the sand away the details.

Finishing the Body:



Before installing the ball and the base, paint and finish all the body. I used CrystaLac Grande Finale' Top Coat and tinted to a suitable color. After you are finished detailing the model, it is time to spray 4 coats of CrystaLac Super Premium Clear Finish Sanding with 320 grit sand paper and wiping down with a damp lint free towel between coats.

For a complete tutorial on the finish technique (the reference video:) Coin Bank Finishing and Assembly Videos

Assembly



To assemble the bank, you need:

- Plastic clear Christmas Ornament
- 10-24 Threaded rod and nuts
- CA Glue
- .220" acrylic plastic base

Drill a hole in the center of the ornament for the 10-40 threaded rod and nut. Cut a clearance slot for the coins to go into the ball. Glue one half of the ball into the body making sure the slot in the ball lines up with the neck slot. Install the threaded rod and other half of the ball. Install the base and you are finished. Give as a gift and watch the similes on the people faces as the coin are eaten by the dinosaur.



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Hope you enjoy the making of this project. This project will make great gift. So, keep your creative juices flowing and come back next month for another cool project.

Happy Carving! Rick Frazier

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Project material list for Coin Banks:

- ¾ Poplar www.kencraftcompany.com
- Paints (colors for your graphic) https://thecrystalacstore.com
- Plastic clear Christmas Ornament (Darice Plastic Ball Ornament UPC #: 082676963094 or Darice Plastic Ball Ornament UPC #: 082676963087) https://www.darice.com
- 10-24 Threaded rod and nuts (United States Plastic) www.usplastic.com
- CA Glue
- .220" acrylic plastic (Home Depot)



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