Round "Notions & Sundries" Box

by Michael Tyler, Editor

This month's Tips features a simple round box container project you can make with your CarveWright/ CompuCarve machine.

It was inspired from a photo I received a short while ago of a machined aluminum round box. I thought this would make a fun project in wood and could demonstrate some neat features of the Designer software tools. I have provided the mpc for download (free) at:
http://www.carvebuddy.com/FreePatterns/Round_Box_Shell.zip

Just follow the instructions for a great time discovering more techniques to get the most out of your wonderful machine!

I made two boxes for myself - one with a CarveBuddy Hummingbird pattern and the other with a Shell pattern from the Designer stock library. (The mpc includes the Shell already placed in the layout.) The finished boxes are 5½" diameter x 2" tall.

The design on the top of the box can be substituted with any pattern you wish by deleting the shell and replacing it with a pattern of your choice.

Main items you will need:

1) The Project File (free):
•   Round_Box_Shell.mpc

2) Board with the following dimensions:
     ¾" thick x 7¼" wide x 25" long

     NOTE: Do <u>NOT</u> use a board that is smaller than specified above.

3) Wood glue, clamps, wood stain and/or paint and clear finish

4) A Dremel-type rotary tool with assorted sanding wheels and bits to sand small details and speed up preparation for finishing.

Please visit the manufacturer's website for more information about the CarveWright machines and see the new Pattern Depot at:
www.carvewright.com

For Additional Patterns you can add to your Designer software library, please visit:
www.carvebuddy.com

Round "Notions & Sundries" Box

STEP 1
Start your Designer software and open the .mpc file. This is a TWO-SIDED project with a front and a back. (fig. 1a)

FRONT

BACK

fig. 1a
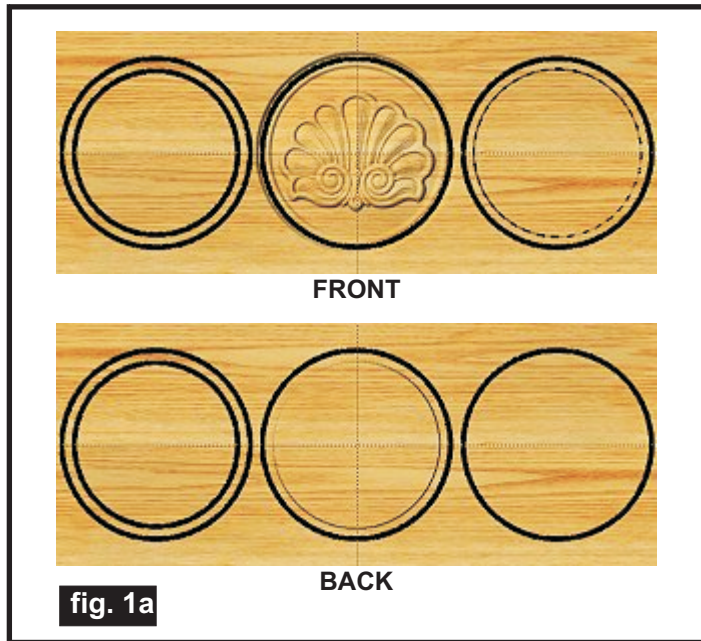
If you wish, you may delete the Shell pattern from the box lid and substitute a pattern of your own, at this time. Do not alter or move any other components!

All you need to do at this point is upload the project file to your memory card. (File/Upload). When you upload, you may or may not get a pop-up window with an "Auto-Jig" warning message (fig. 1b)

fig. 1b
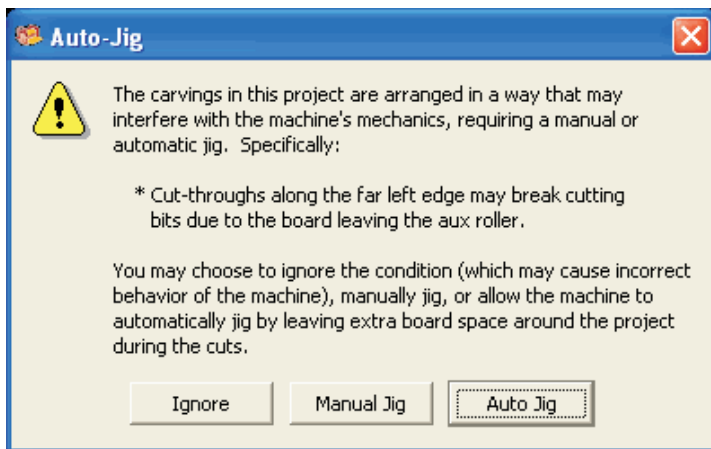
If you do see the message, you may safely click on "Ignore" because our actual boards will be large enough that it won't cause any problems at all. After the project is compiled, select "Best" or "Optimal" for the File Quality setting. **I recommend the "Optimal" setting for this project.**

Click "OK" and upload the mpc project file to your memory card. Insert the card into your machine and load a board that measures the appropriate dimension specified for the mpc (see page 1 for board dimensions). If you have never run a two-sided carve project before, it is a little different than single-sided projects. The **BACK** of the board is always done first! Follow the prompts on your machine's LCD carefully. I have outlined the steps for you in Step 2...

STEP 2
You will see "Project Menu" on your LCD display. Press "1" then scroll to the Round_Box_Shell.mpc project, and press the green ENTER button to select it. Then follow the additional prompts....

• **Stay Under Rollers** - press 1) YES

• **Press Enter to Proceed: Board (Back)**-Press ENTER

• **DO NOT RESIZE or SCALE the project!** If prompted, always keep the original size. No scaling!

• **How to place on Board** - press 1) Center On Board

• **Cut Board to Size?** - press 2) NO

• **Select Vector Bit: 1/8" Cutting** - Press the green ENTER button. The machine will move the bit holder to the center of the machine in preparation for the bit installation.

• **Load Bit: 1/8" Cutting** - Insert your 1/8" cutting bit, then press the green ENTER button. The machine will go through a series of homing steps and then proceed with the carving process for the BACK of the board. (The back carving is always performed first.)

• **After it is done carving the back, you will be prompted to "Please Flip Piece".** Raise the head of the machine to remove the board.

(cont.)

STEP 2 (cont.)
• **Please Load Piece: Board -** Brush off the board, clean excess sawdust debris from the machine and flip the board over width-wise, top-to-bottom (**NOT** end to end! see fig. 2a). Put the board back into the machine (blank side up) and crank down the head.
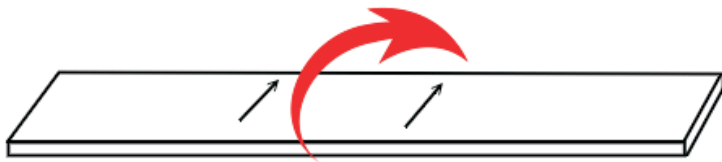

fig. 2a Flip the board over width-wise

• Press **ENTER** to Proceed (will measure board again)

• **Select Drill Bit: 1/8" Cutting** - Press the green ENTER button.

• **Load Bit:1/8" Cutting** -Just press the green ENTER button again, as the bit is still installed. (homes, etc.)

• **Select Cutting Bit: 1/8" Cutting** - Press the green ENTER button again. Nothing happens, since the bit is still installed for this step as well.

• **Select Carving Bit: 1/16" Carving** - Press the green ENTER button. The machine will move the bit holder to the center of the machine in preparation for the bit installation.

• **Load Bit:1/16" Carving** - Remove the 1/8" Cutting Bit and insert your 1/16" carving bit, then press the green ENTER button. The machine will go through a series of homing steps and then proceed with the carving process for the FRONT of the board.

• **After it is done carving, you will be prompted to load your 1/8" cutting bit.** Take out the 1/16" carving bit, clean the chuck, load your 1/8" cutting bit, then press the green ENTER button.

• The machine will now proceed to "drill" the large box recess, then make your cutouts as it moves around the outlines of every component. It leaves little tabs to hold each part in the board. (Cutouts are always performed on the front of the board and occur last, after all other functions are completed.)

• When the machine is finished, remove your board. Turn off your machine - wait several seconds for the LCD to go blank, then remove your memory card.

Your board will look like this...(fig.2b)

FRONT

fig. 2b **BACK**

It is important to run a two-sided project like this *all at once* as a single mpc. You should NOT divide a two-sided project into 2 separate mpc's when there are recessed regions on the backside, along with auto-cutpaths on the front. Doing so would prevent the machine/software from calculating for the missing material on the back. Remember, it is essential to run two-sided projects of this type as ONE mpc project.

STEP 3
Remove the components from the board, then glue the bottom of the box and the wooden ring together. Clamp until dry. (fig 3a)

fig. 3a

STEP 3 (cont.)

Remove the clamps and sand all the components to remove any fuzzies and undesirable tool marks. Be careful not to alter the box dimensions when sanding.

Use a Dremel-type tool with various abrasive wheels and/or tips to make the job go faster. I like to use the 3M sanding discs on the fine details of a carving. Stack 3 discs on the mandrel. (fig. 3b)

The discs are available to order online: http://www.ottofrei.com and http://www.mcmaster.com are two excellent sources.

I order the discs and mandrels from McMaster because they are close to me and I get them the next day via UPS Ground. I have found the 80 and 220 grits work well.

Yellow 80 grit 3M discs- McMaster Part # 4494A19
Red 220 grit 3M discs - McMaster Part # 4494A18

The discs mount on a 3/32" shank diameter Mandrel. (McMaster Part # 4494A44)

Only the 220-grit discs were used on this particular project, although on other projects, I sometimes start with the 80-grit and follow-up with 220-grit.

fig. 3b

Test-fit the lid and sand the inside of the box, if necessary, to make sure the lid doesn't bind.

STEP 4 - Finishing

Apply stain/paint and clearcoat of your choice. I recommend applying the finish as soon as possible after prepping to seal the wood and inhibit the wood from warping. Here's what I used on my two boxes...

Shell Box
- One very light coat of thinned Bullseye Sealcoat (2 parts sealer/3 parts Denatured alcohol)
- Sanded again with very fine sandpaper & Dremel
- Minwax Gel-Stain (Mahogony #605)
- Three coats Minwax water-based Satin polycrylic

Hummingbird Box
- One very light coat of thinned Bullseye Sealcoat (2 parts sealer/3 parts Denatured alcohol)
- Sanded again with very fine sandpaper & Dremel
- Minwax Gel-Stain (Aged Oak #602)
- Three coats Minwax water-based Satin polycrylic

IN CONCLUSION

I hope you have had fun with this project! You will have observed how using the "drill" function created the box recess in the bottom and how the use of circular vector paths created the lip for the box lid. These vector functions save a lot of time compared to using "raster" carve regions. In fact, this saved over an hour's worth of project time by using the Designer tools in this fashion!

Michael

Michael Tyler - Editor

Additional Resources

RESOURCES...

There are numerous resources for the CarveWright/CompuCarve owner to make their experience with these machines much more enjoyable. Please sign up on the CarveWright Homepage to have the monthly newsletters automatically delivered to your email address each month. You'll see a "Join Our Mailing List" section. Just fill in the form and you'll be all set! Every owner should join the CarveWright User Forum where fellow users share their experiences and knowledge with these machines 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.

You can download the free mpc layout for the Round "Notions" Box from the following link:

http://www.carvebuddy.com/FreePatterns/Round_Box_Shell.zip

(you must save the file to your computer hard drive, then unzip it before you can open the mpc)

Customization Tip: *You can copy/paste additional "box rings" into a new project in Designer if you want to make your boxes taller - just glue as many rings together as you want, to reach the overall desired height!*

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