

Chip Carving Sunburst Using a DXF Design

CREATING A CHIP CARVING USING AN EXISTING DXF FILE

IN THIS EXERCISE WE WILL SHOW YOU HOW TO IMPORT AN EXISTING 2D DXF DESIGN AND TURN IT INTO A CHIP-CARVING STYLE DESIGN USING A V-BIT.

NOTE: THIS PROJECT REQUIRES THE DXF IMPORT SOFTWARE, A DXF FILE THAT IS NOT OPEN DOMAIN, AND AT LEAST VERSION 3 OF THE DESIGNER SOFTWARE. HOWEVER, THIS TUTORIAL CAN BE REPEATED WITH ANY OTHER DXF FILE OR DESIGN THAT YOU CAN DRAW IN THE DESIGNER SOFTWARE.

This project covers the following design concepts:

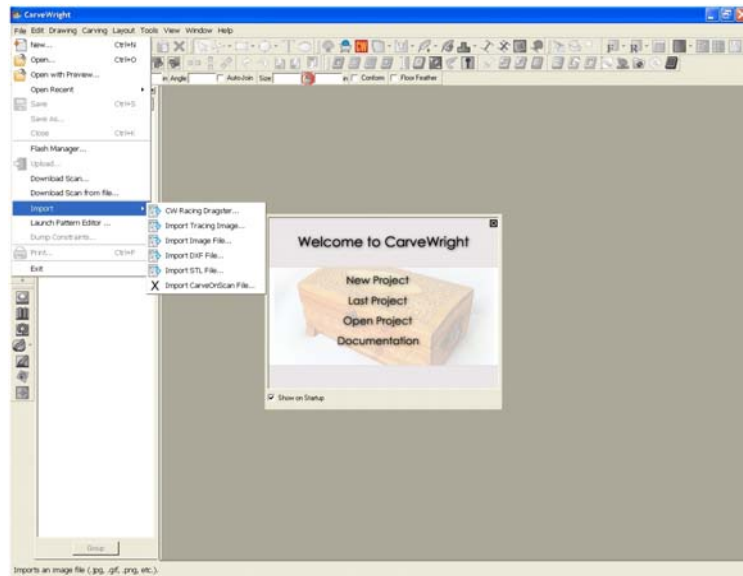
- IMPORTING A DXF FILE USING THE DXF SOFTWARE
- MANIPULATING THE DXF FILE
- CREATING A BOARD IN THE DXF SOFTWARE
- CREATING A VECTOR GROUP
- CLEANING UP ERRORS IN A VECTOR GROUP
- SELECTING THE AREAS TO BE CARVED FROM THE VECTOR GROUP



Open the Designer Software. The Welcome Screen will appear.

➤ IMPORTING A DXF FILE USING THE DXF SOFTWARE

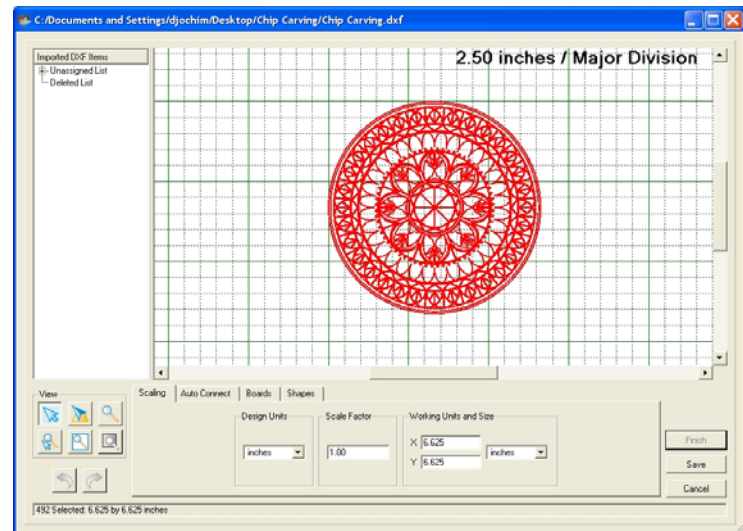
Select “File” from the Main Menu Bar and select “Import” and “Import DXF File” from the drop down menu. Locate and select the desired DXF file from your computer.



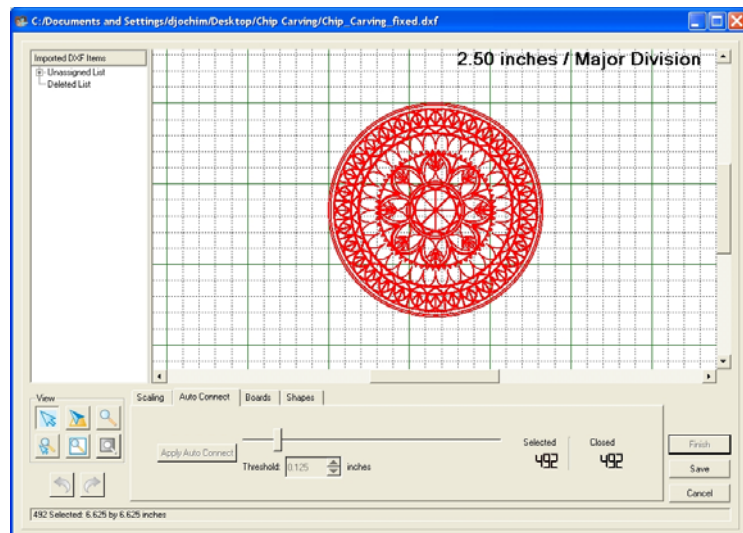
➤ MANIPULATING THE DXF FILE

The graphic is displayed at the output size of the DXF.

On the **Sizing** tab; resize the group by selecting all vectors and changing the X or Y size. Selected vectors are shown in red.



In the **Auto Correct** tab, verify that all of the vector paths are closed. If the **Selected** path number does not match the **Closed** path number, adjust the threshold slider until all paths are shown as closed.

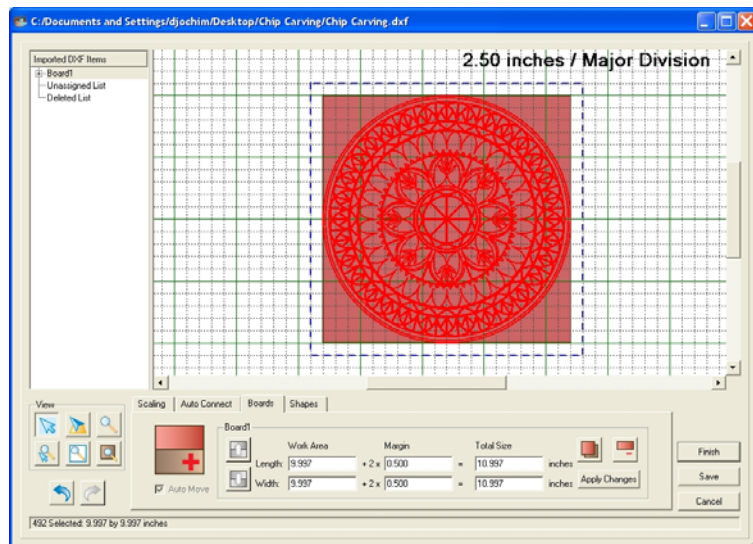


➤ CREATING A BOARD IN THE DXF SOFTWARE

On the **Boards** tab; adjust the margins around your design until the Total size is as desired. The board size can also be modified once it is sent to the designer.

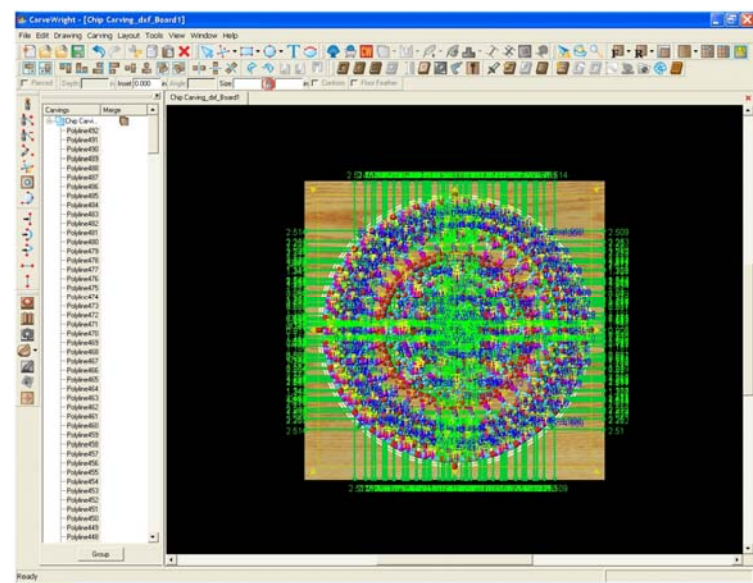
Select Add New Board and see how a pink board is shown behind the paths.

Select **Finish**.

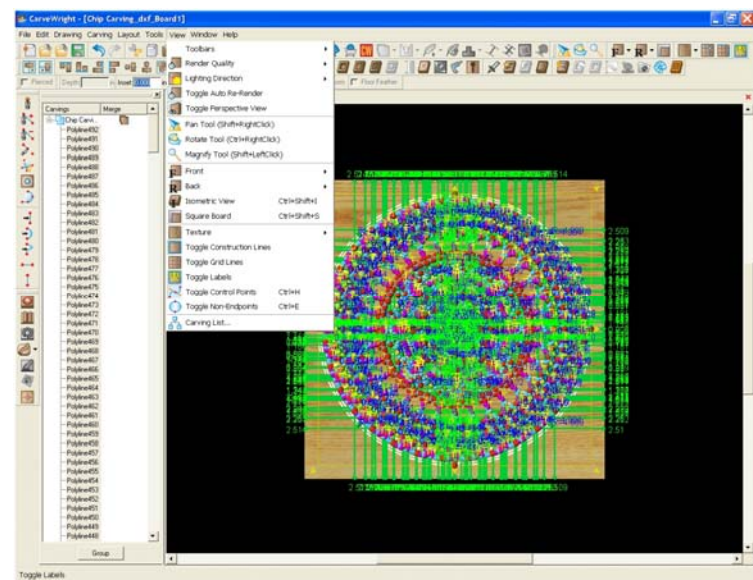


➤ CREATING A VECTOR GROUP

The DXF paths are now shown in the Designer software placed on a board.



For better viewing, turn the dimension labels off. Under the **View** menu, select the **Toggle Labels** option.



With the Labels turned off, all of the paths are now visible. Each path is shown with all of its control points.

With all of the paths highlighted, select the **Make Vector Group** icon on the 3D Toolbar (to turn the toolbar on, select the **Toolbars** item under the **View** menu).

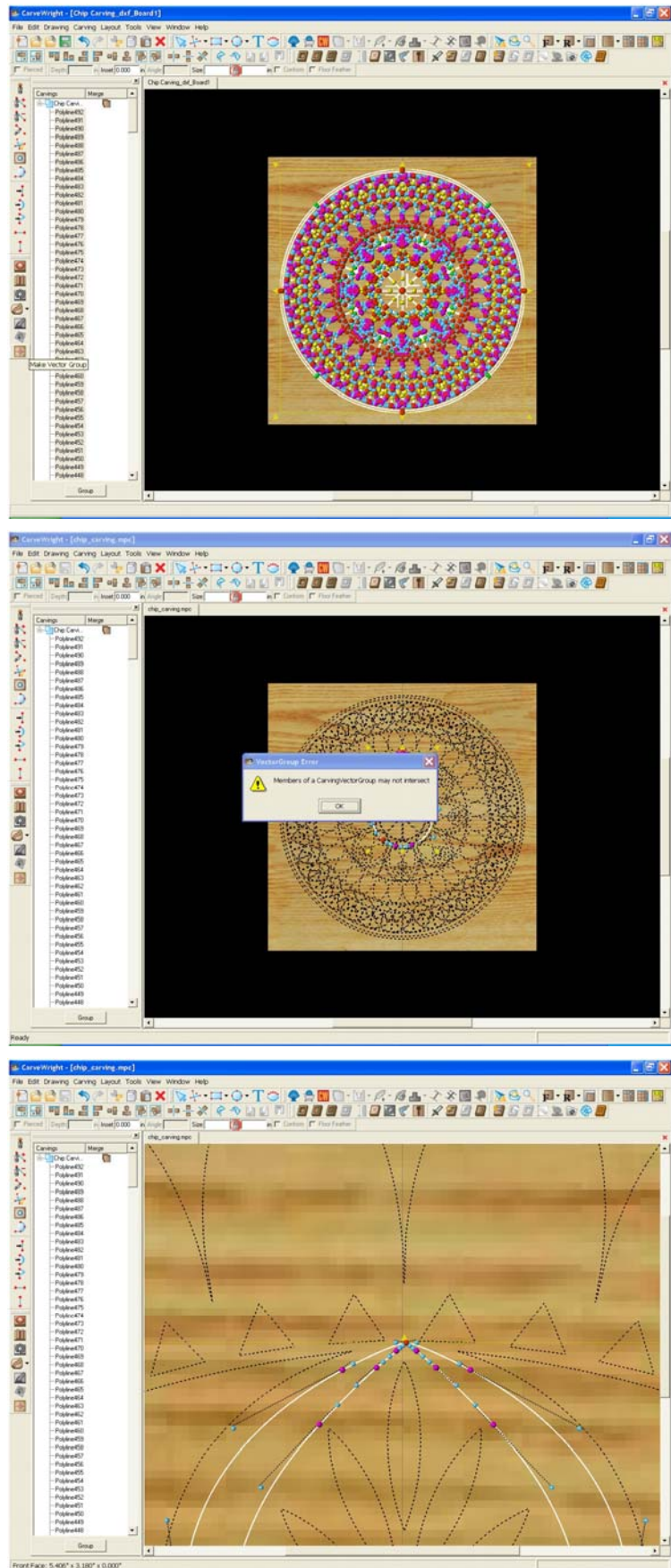
If somehow you click on the board and need to reselect the paths, simply press the **CTRL** and **A** keys at the same time. This selects all items on the board. The carving list can also be used to select paths.

At this point the software will make sure that the selected paths are able to be carved. Every path must be closed and must not intersect any other path. Any intersecting paths must be fixed before continuing.

In this example there are two areas that need attention.

➤ CLEANING UP ERRORS IN A VECTOR GROUP

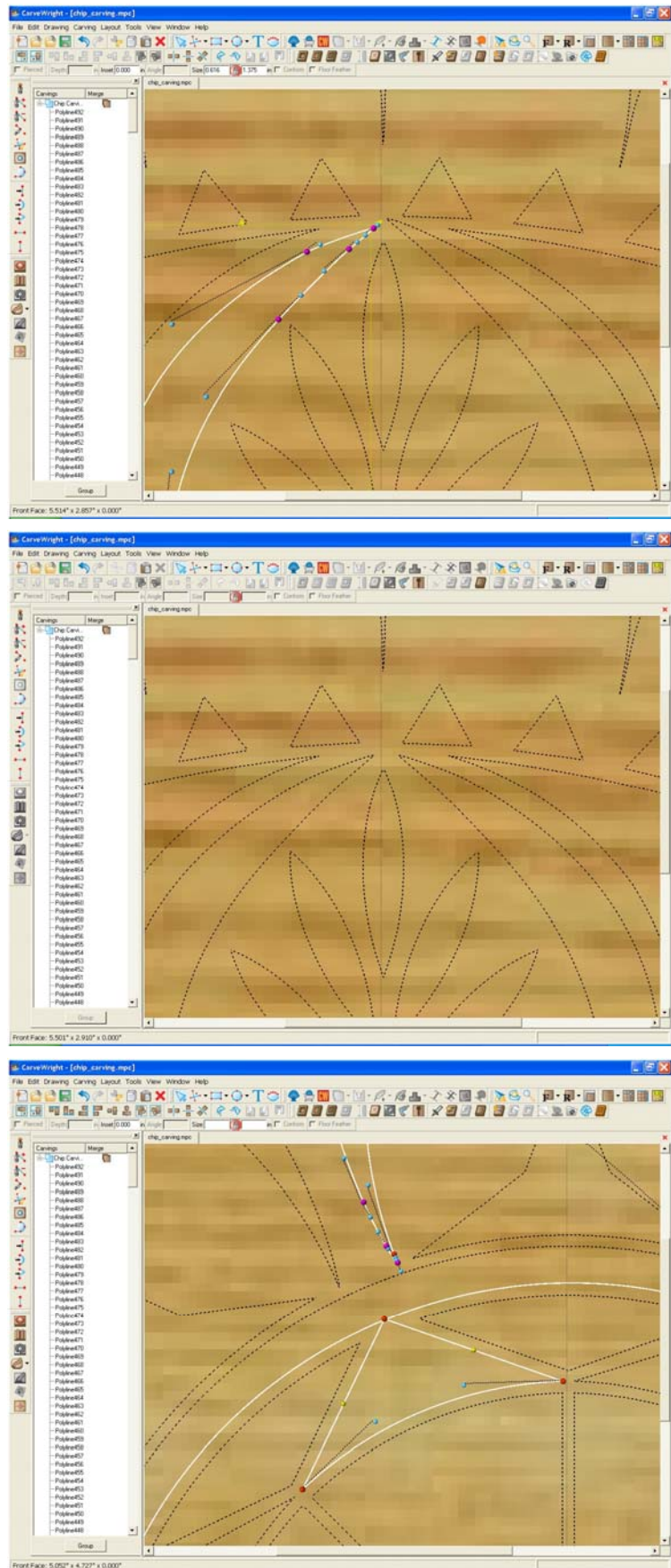
The first intersection (or touching in this case) occurs at the tips of two crescents.



Click the pointer in an open are on the board so that all items are de-selected. Then select one of the two crescents. Move the end point of the selected path away from the other. Another way to do this is to remove the vertex at the very tip of the path. Highlight the path and right click on the control point at the very tip of the crescent. In the menu that appears select **Remove Vertex**.

Repeat this step for the other path so that the change is symetric.

The second intersection occurs where the triangular path touches the larger circle.



The fix for this intersection is to simply move the tip of the triangle away from the circle.

Reselect all of the paths and select the **Make Vector Group** icon on the 3D toolbar. This time the paths are all closed and non-intersecting.

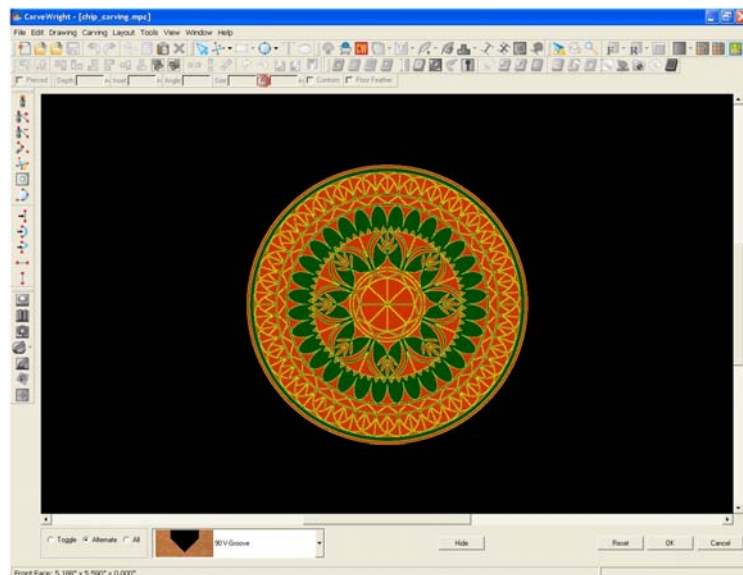
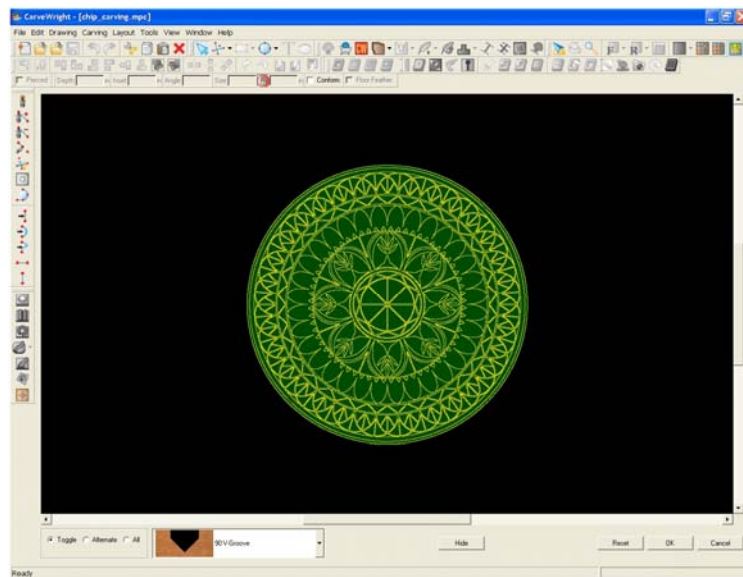
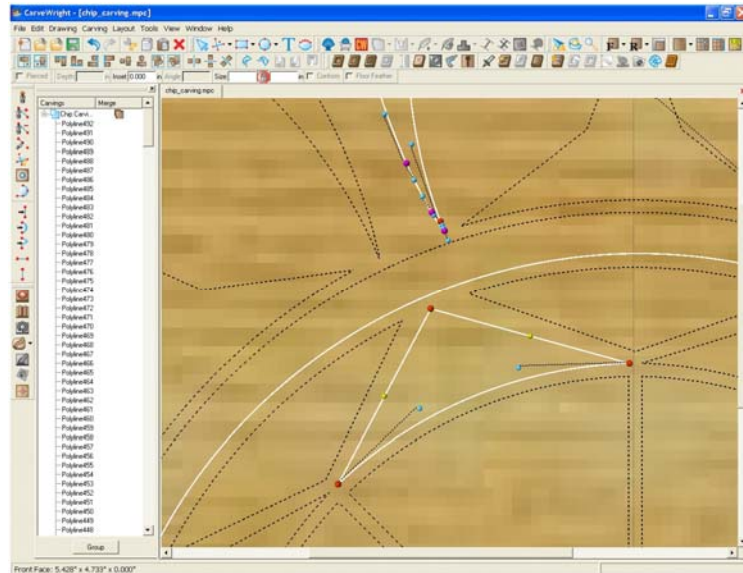
➤ SELECTING THE AREAS TO BE CARVED FROM THE VECTOR GROUP

Once the vector group is created successfully, the 2D vector group window appears. This is where we can then specify what areas will be removed during carving.

First start off by selecting between the 60 and 90 degree V-bits.

Next, use the selection mode radio buttons to select the areas to be carved. In our case we will use the **Alternate** mode and select one of the large pie shapes in the center of the pattern. The **Alternate** mode will select the interior of every other adjacent closed path for removal.

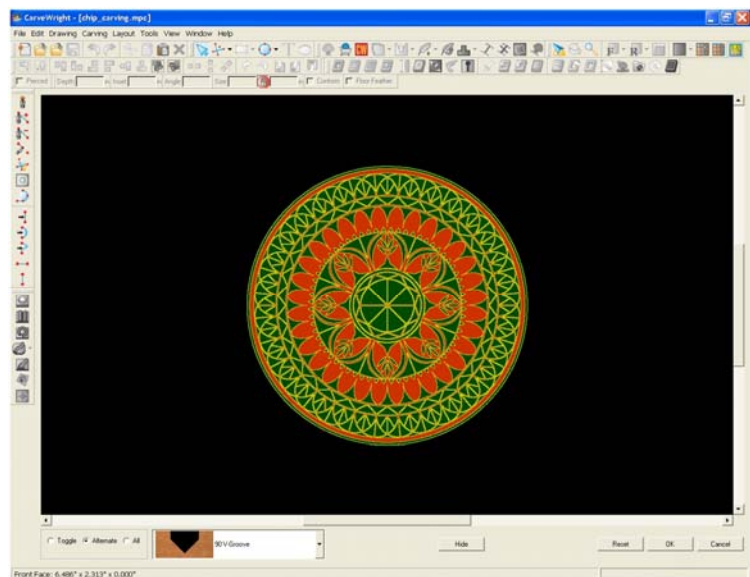
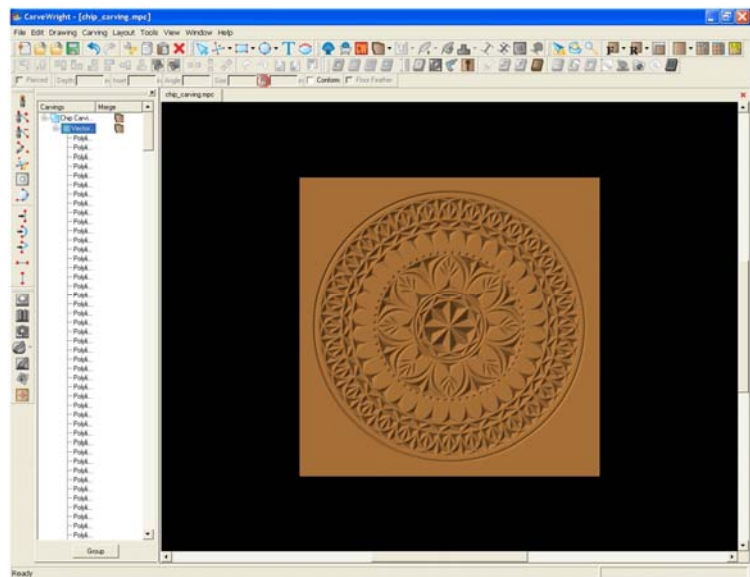
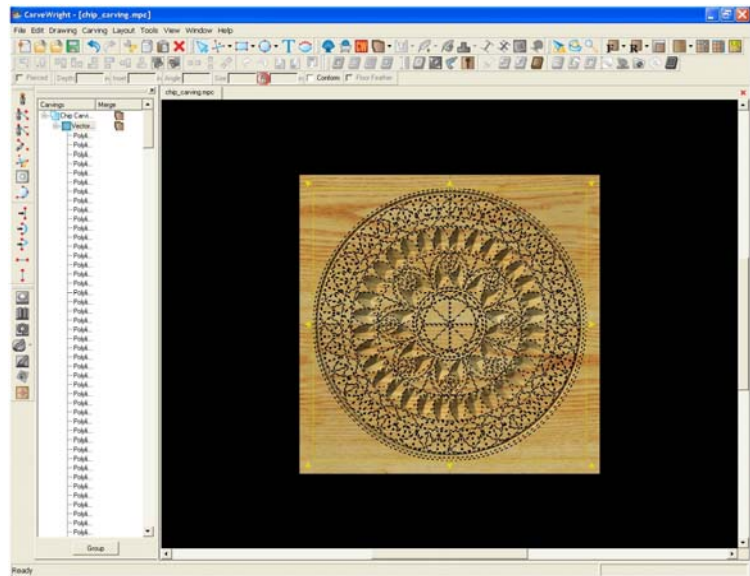
Once happy with the displayed configuration, click "**Finish**" to proceed.



The project board will now be displayed with the carved pattern.

For best viewing turn the board grain off and hide the construction lines.

To change the carving pattern, go back into the Vector Group tool and select an adjacent vector path to the one selected in the above example (while still in the Alternate mode).



The carving looks very different from the previous design with only one click of the mouse.



Select "File", "Save"

*****IMPORTANT*****

Name file and click "Save" to hard drive.



Select "File", "Upload"
Save to memory card.

