## The Nesting Process

Nesting is the most complex and time consuming of the features in the Torchmate Cad program. The primary reason behind this is that each piece of the nest will be adjusted to the parameters that you set forth, thus the process can be short or lengthy simply by what you want the result to be. The following is an example of a simple nesting program, followed by some programs that show much more complex nesting.

To start the process, Import an image or part to the material sheet of the Torchmate Cad.
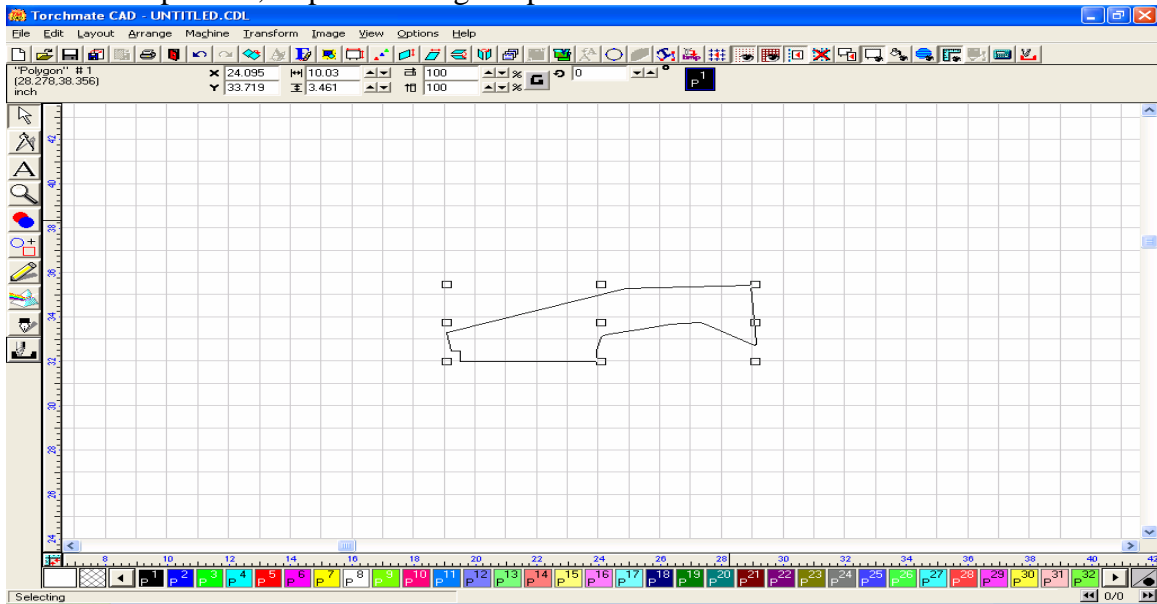
Once the part has been successfully imported, create a Male tool path, and then delete the original geometry of the image. You will be left with a single part ready to cut.
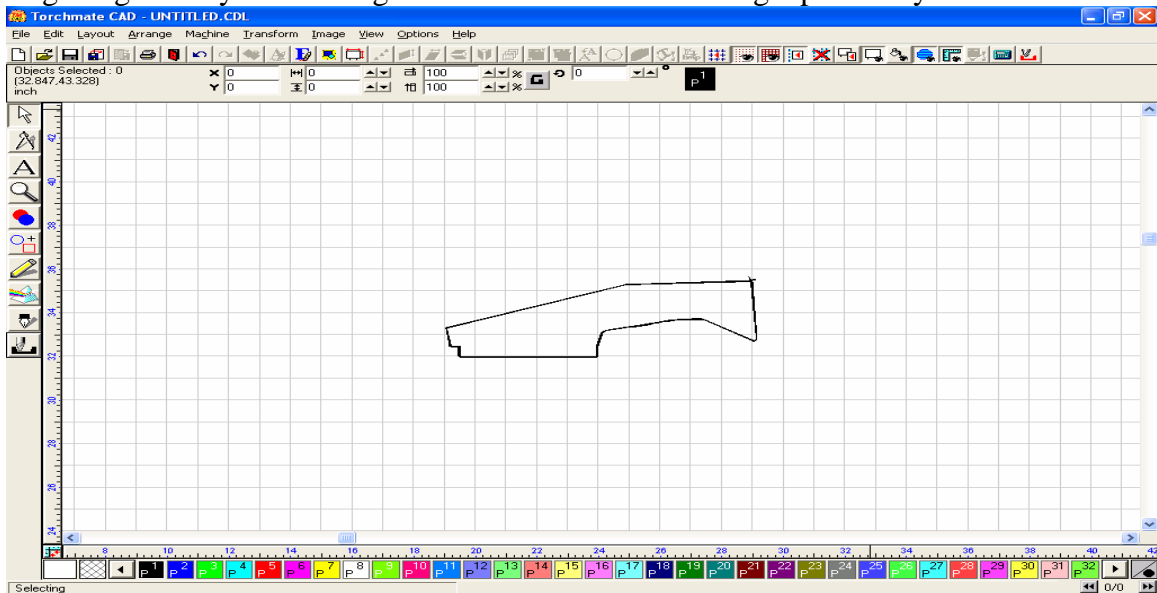
The next process will be to create multiple images of your part. To do this, you may use one of two methods, the Array, or the Badges tools. Each tool will create multiple images, although they each have different parameters for making the multiple parts. We will discuss the **Array** feature first. With your part selected, open the Layout menu, and scroll down to the Array option. The window below will appear upon choosing the option.
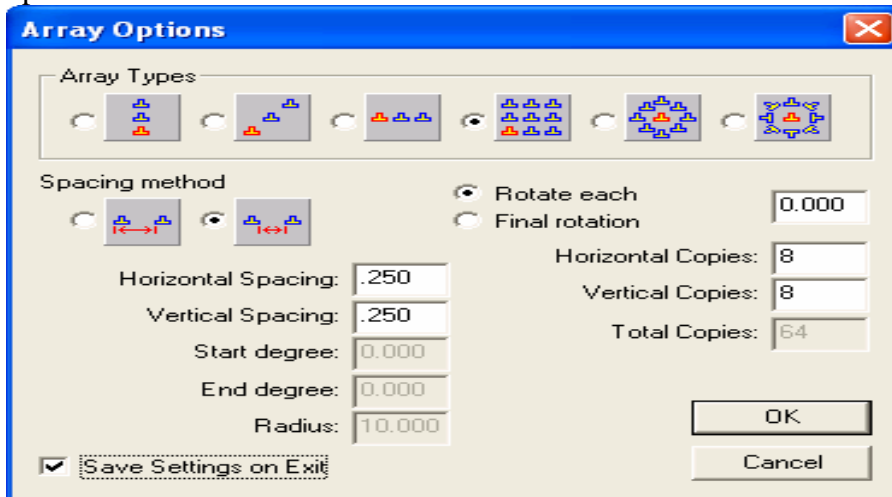
You can now select the method of direction or group of the Array, the Spacing, the Rotation, and the Number of Copies to be made. The original part is included in the total number of parts created. Using the parameters shown in the window above, the Array yielded the parts shown in the window below.
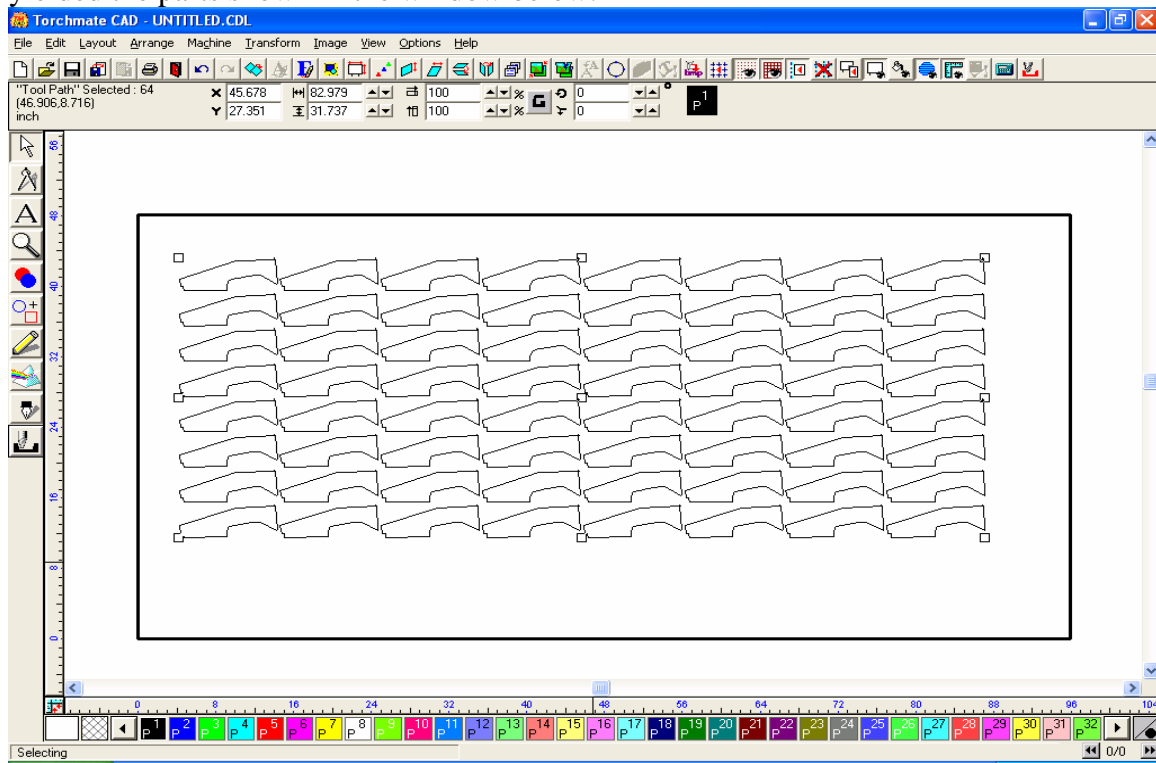
With the Array complete, we can now focus on the Nest. Open the Arrange menu, and scroll to the bottom of the drop-down menu, and select Nesting. Upon choosing the Nesting option, the window below will appear. The Nesting widow offers specific tool usage to allow for the Orientation, Rotation, Spacing from edge of the material, Spacing between parts, Error Factor, and the use of special formats to make you nest as precise as possible. Refer to page 2-161 in the User Guide for more information on each of the tools available.
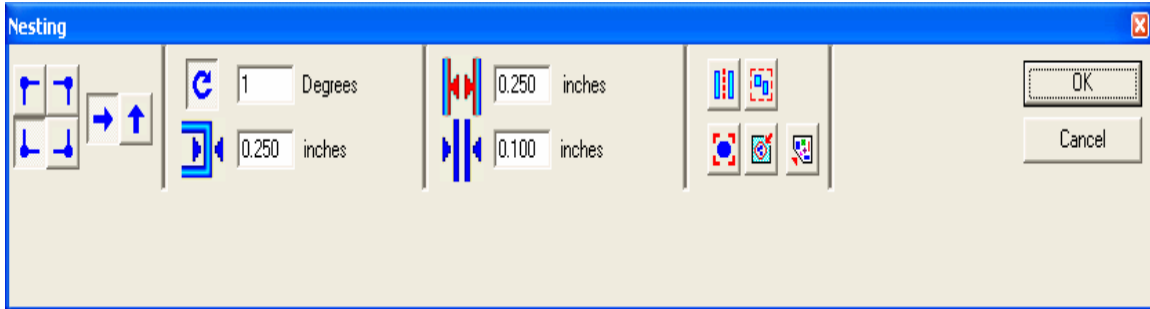

Once the OK button is pressed, **DO NOT ATTEMPT TO SPEED THE PROCESS ALONG**, as this may result in the program not responding, or causing your nesting program to **FAIL**. The Program needs time to accurately adjust each part to the parameters set by you, and this process may take a few minutes, so please be patient.

When the nesting program is complete, the nested parts will be arranged in the corner and direction chosen. If you are not happy with the results, you may Undo the last program, and restart using different parameters. Often a change in the amount of rotation will yield the better results.
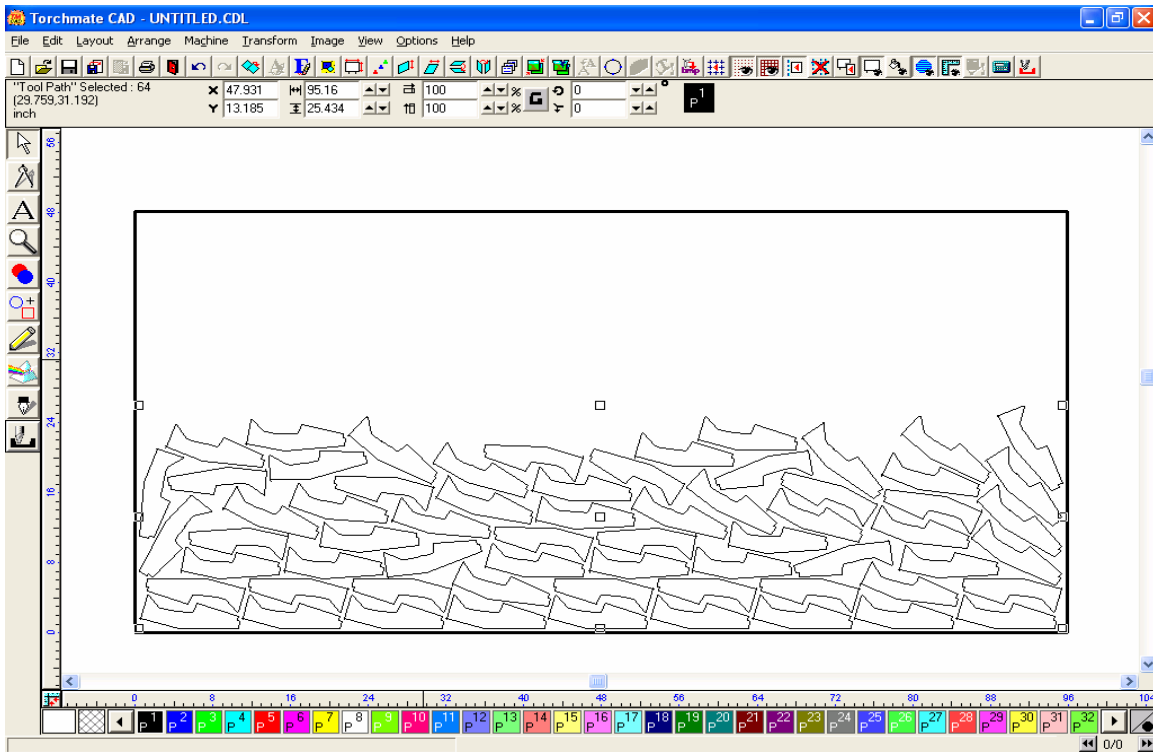
You may also want to try nesting in a different direction to see if this will yield a better use of your material. Below the spacing and direction were the only two areas where changes were made.
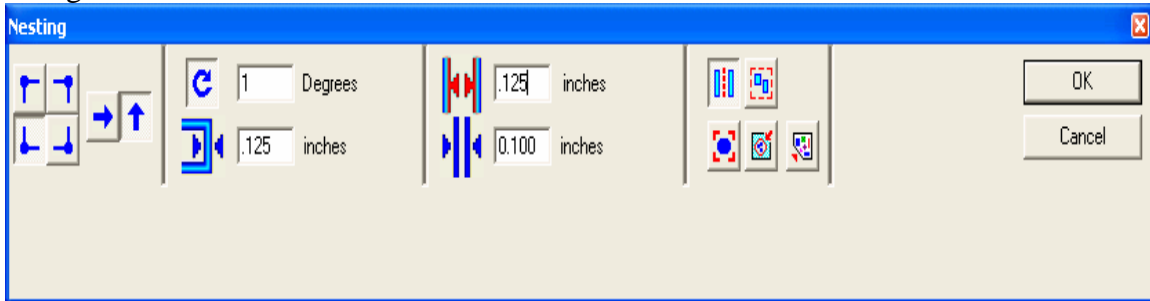

The results were only slightly different, but may be closer to what you originally intended.
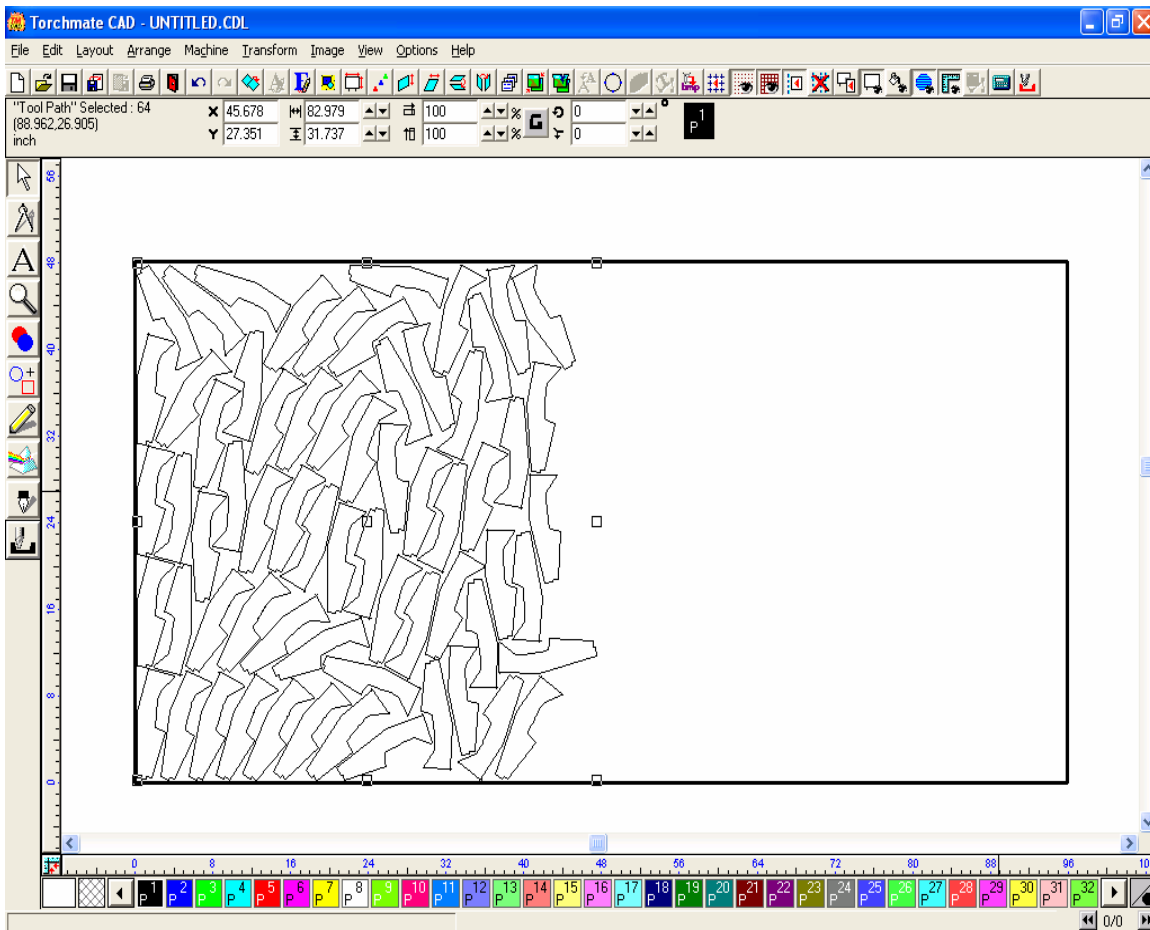

The Badges feature is similar to the Array feature in that it allows you to make multiple parts, however the way it creates these parts can often yield much more favorable results. The Badges tool also allows you to view the number of parts that you can create on a given material sheet before actually employing the tool.

With you original tool path selected, open the Layout menu, and scroll down to the Badges tool towards the bottom of the page. Upon choosing this option, the window below will appear. As you can see you are still able to select the manner in which the parts are arranged vertically and horizontally, however you can not specify rotation or a particular grouping. Instead, the page preview will show you how many parts can be created based on a vertical or horizontal direction.
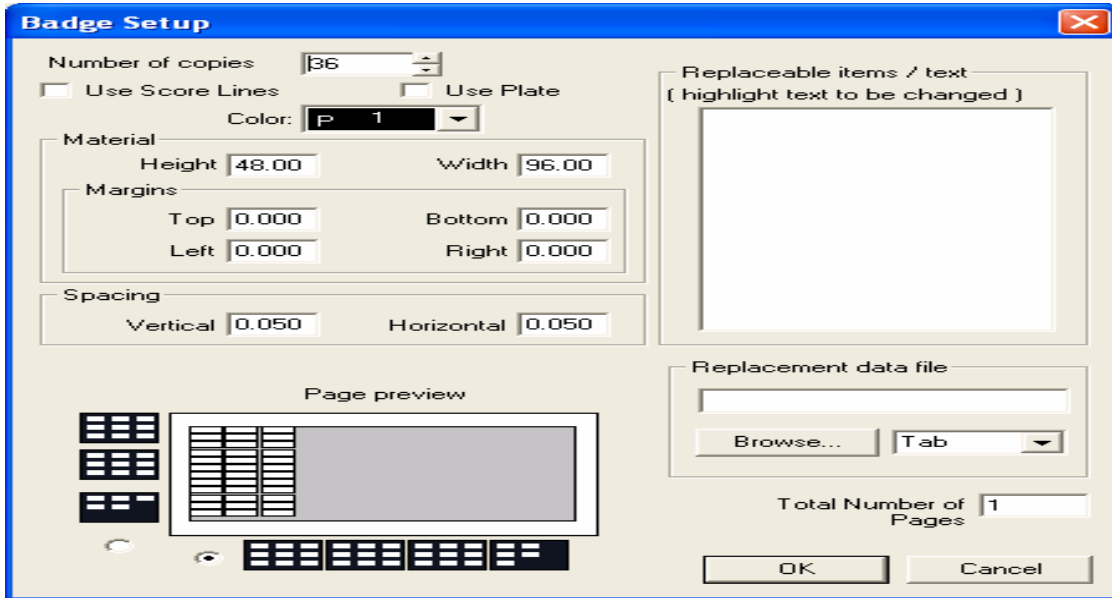

The Badge tool yielded the following results, based on the parameter set. The nice thing about the badges tool is that it will also keep your parts as close together as possible, which is similar to what the Nesting feature performs.
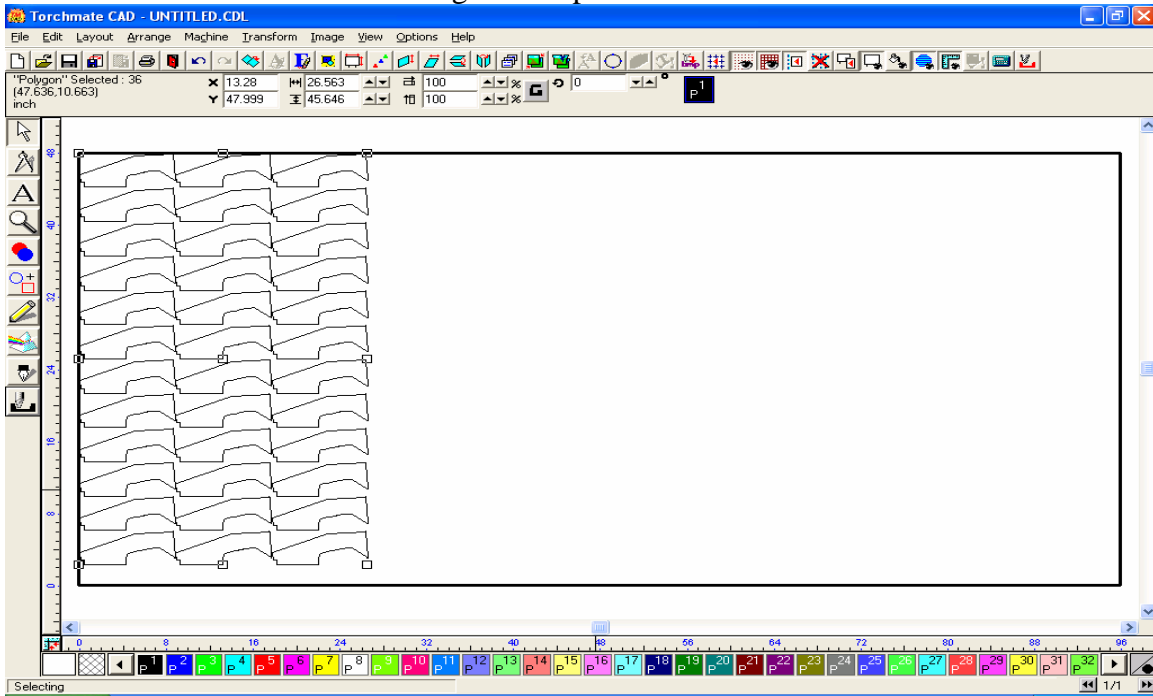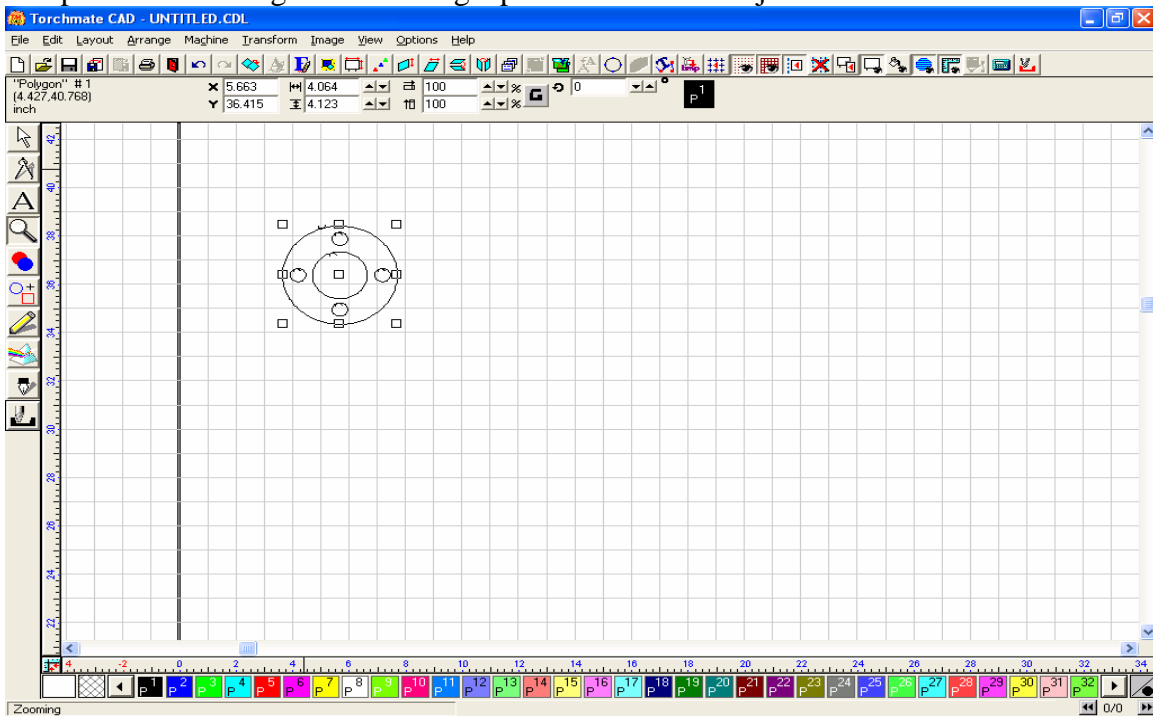
Multiple Part Nesting

The next exercise will show two different methods of nesting multiple parts, utilizing the Array, and the Badges tools. To start, import your first DXF file to the material sheet.
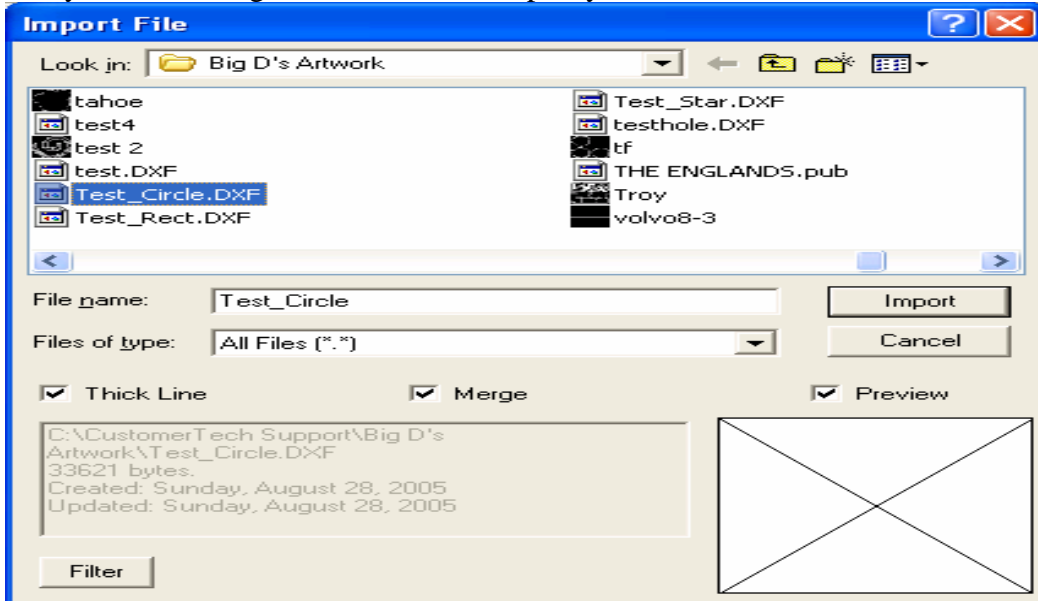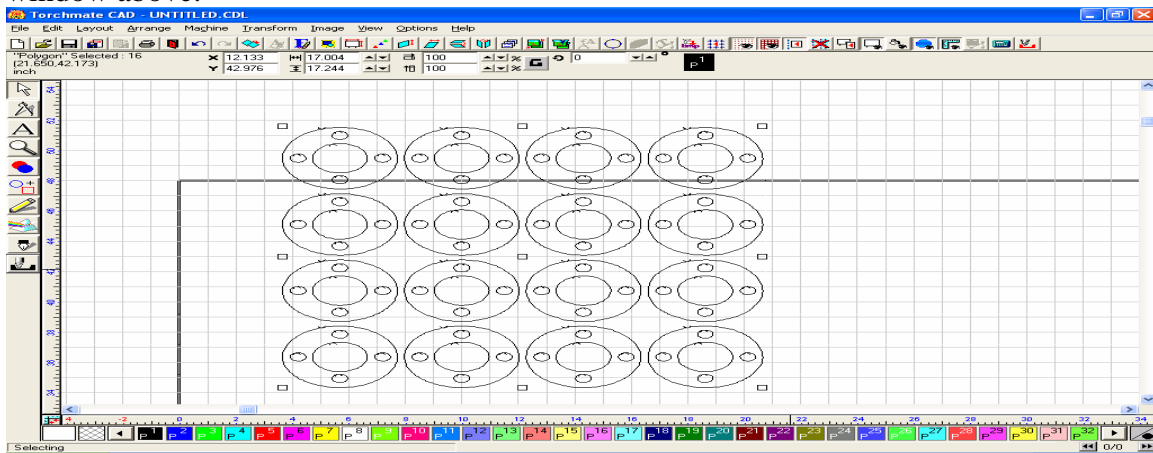

Place the part on the screen, and then Make Path on the part to be sure all the interior components are recognized as being a part of the whole object.
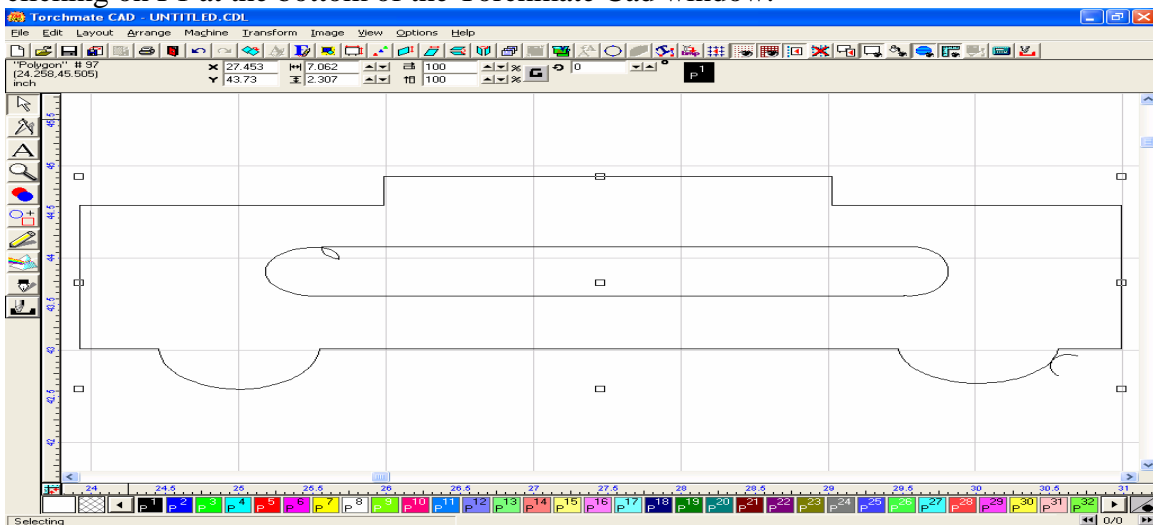
Create your Array for the first part.
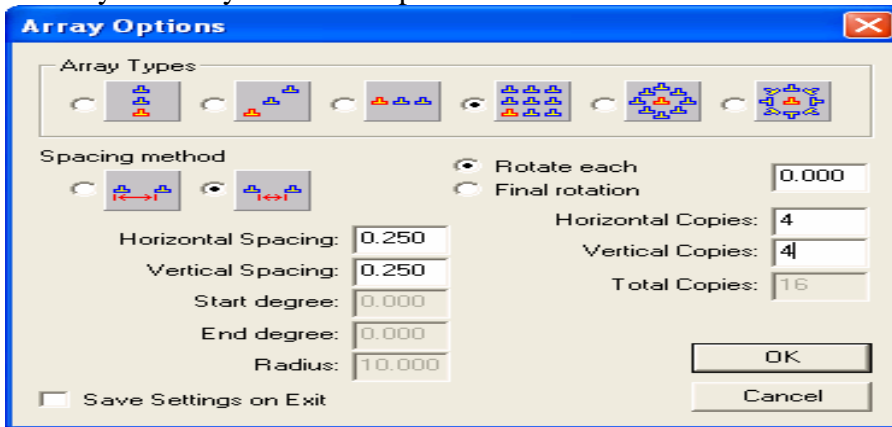
The Array will create the parts in a group, as prescribed by the parameters set in the window above.
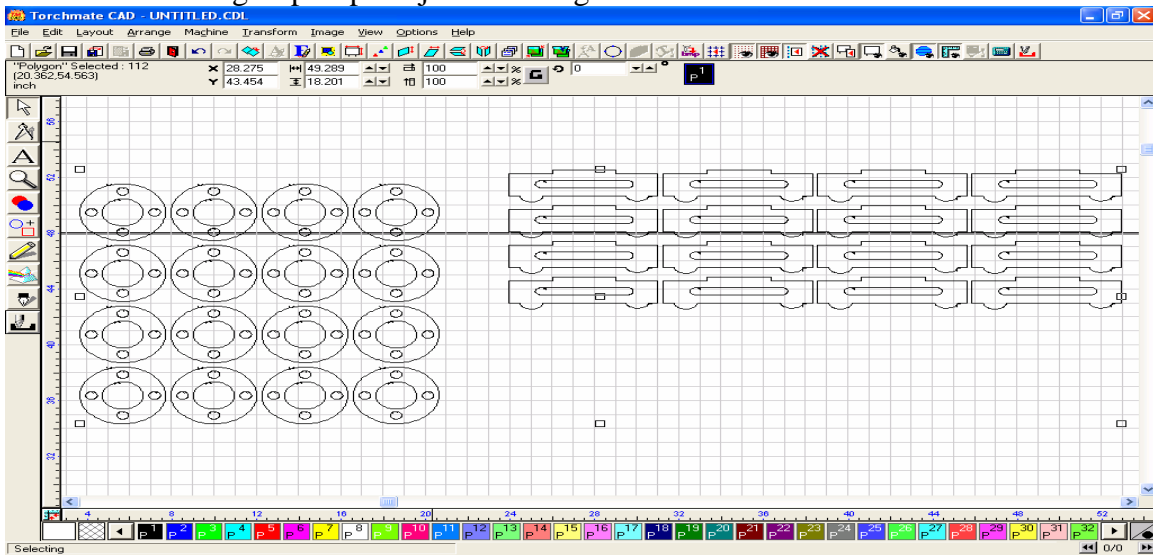

Import your second part, and Make Path on the part after it appears on your screen. If the colors of the parts change, select them all, and change the back to the Black color by clicking on P1 at the bottom of the Torchmate Cad window.
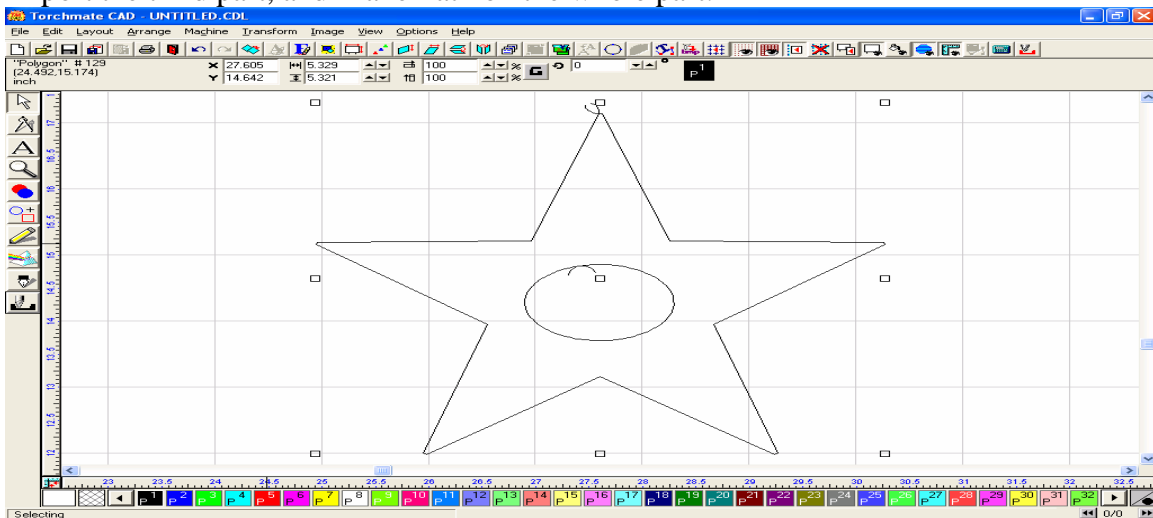
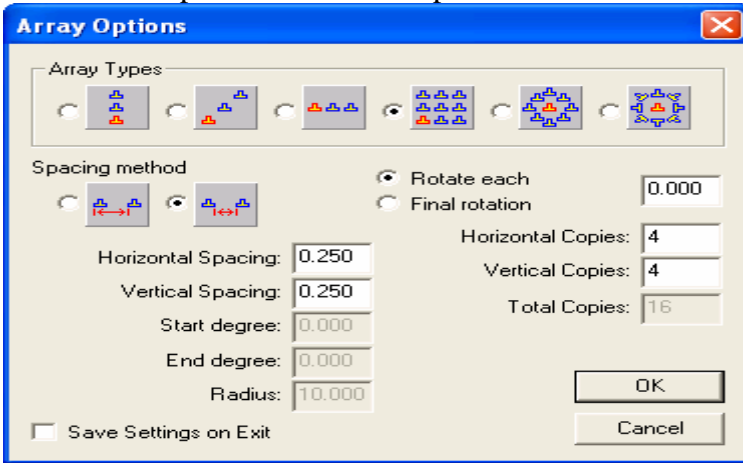Perform a similar Array to the first program.
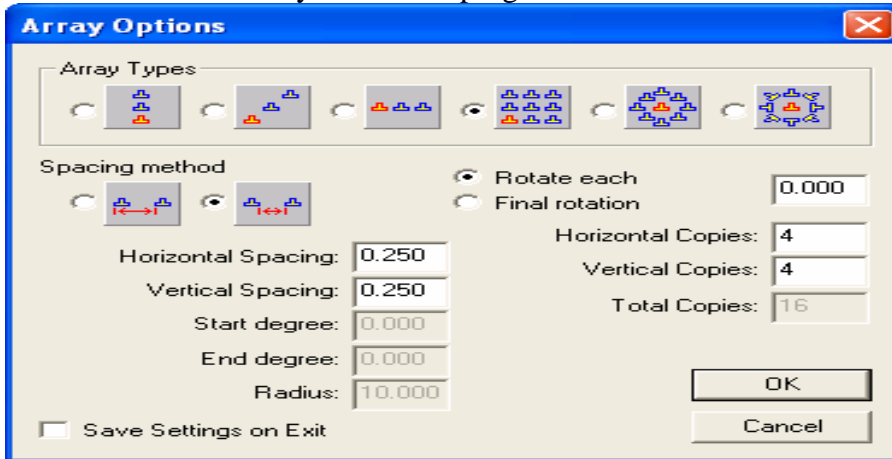
Move the second group of parts just to the right of the first.

Import the third part, and Make Path on the whole part.

For this example I used the same parameters for all three array programs.

Once all three parts have been arrayed, and are displayed on the material sheet, check to be sure that each part is recognized as an individual, but that it also contains its own inner parts as well. This is necessary to prevent the interior pieces from being removed from the part, and nested as a separate part of the whole nesting process. If this step is not completed, the resulting nest may separate each interior cut from its original part, and nest it as a completely separate part.
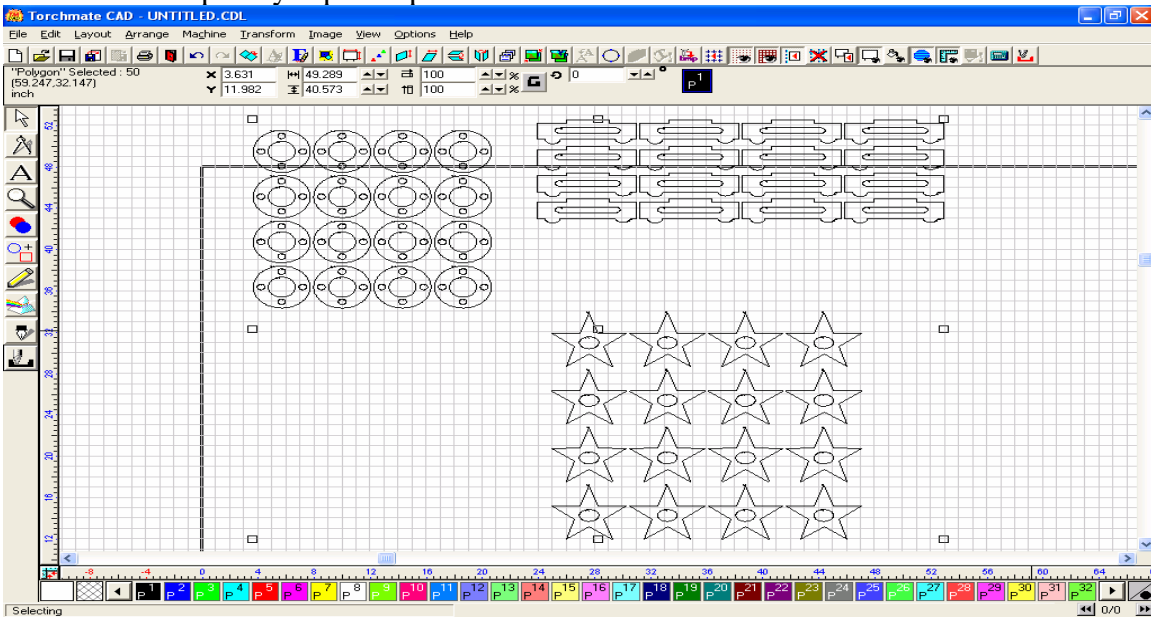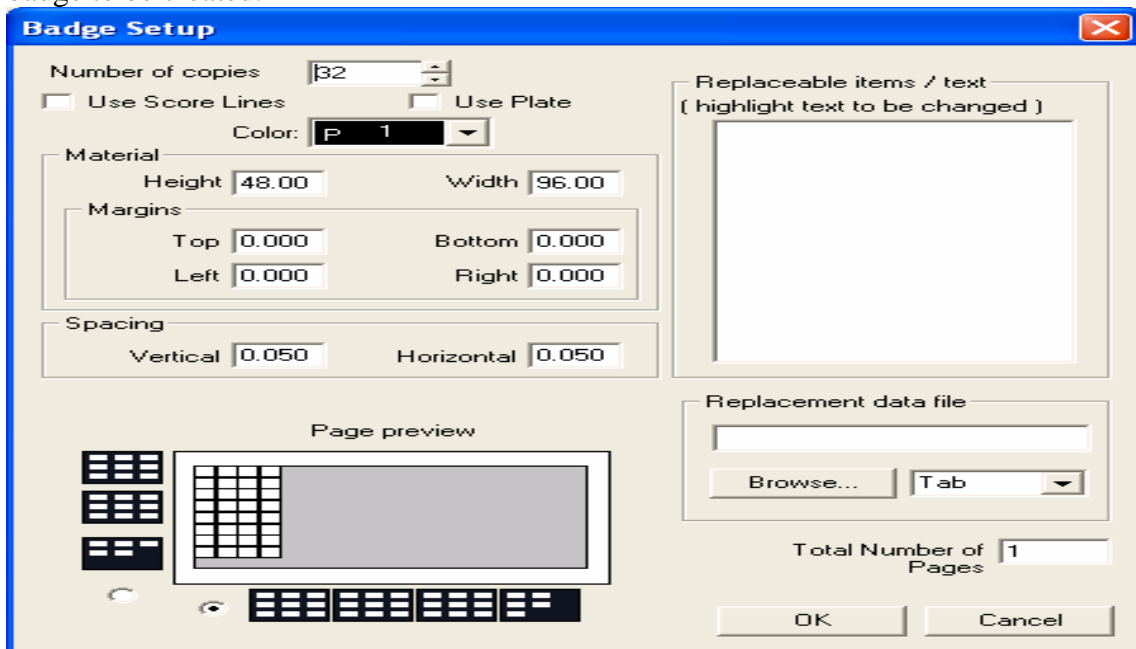

For this nest, I used these parameters.
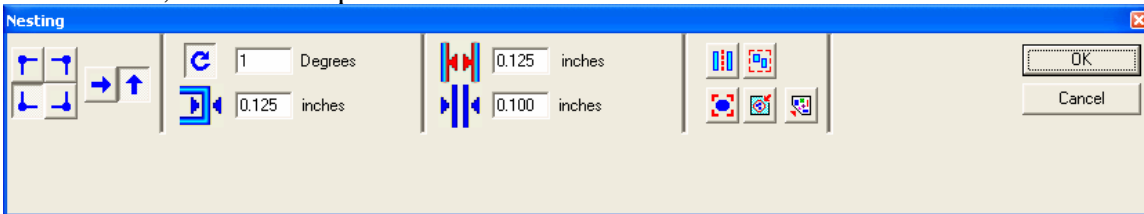
This completed nest yielded the results below. Changes may be necessary to get more precise results.
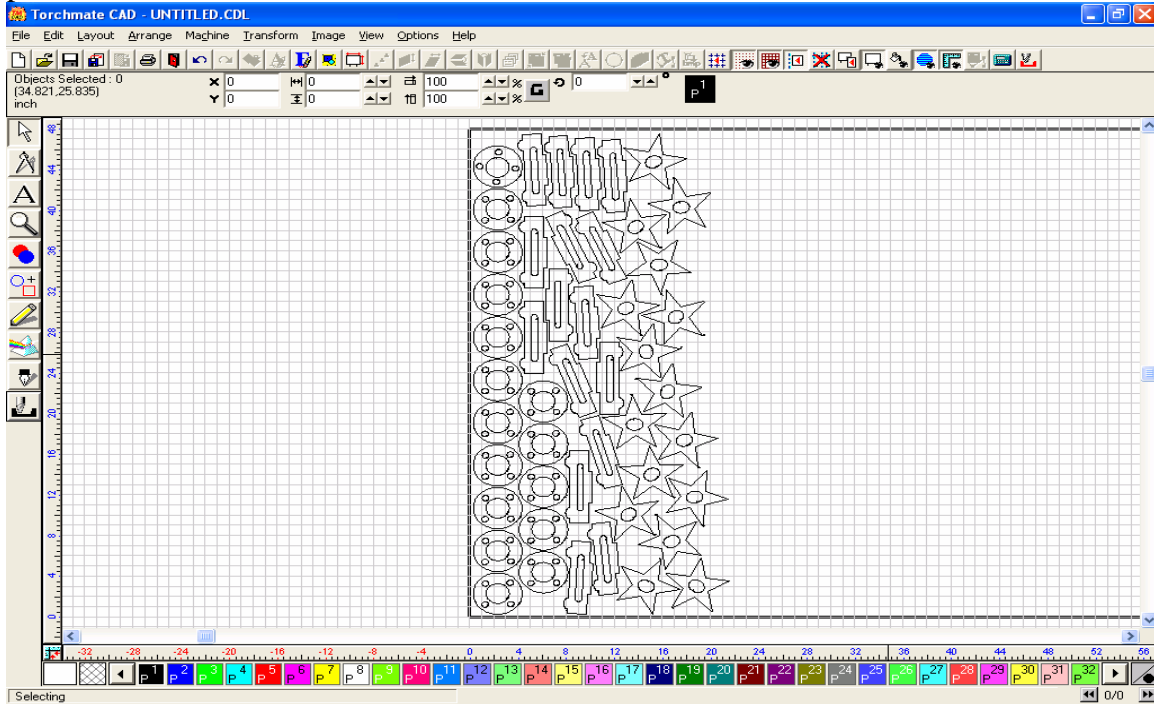

You can also use the Badges tool to create each set of your multiple parts, but be sure to move each group off to the right after its creation, to allow enough room for the next badge to be created.

Again, check to be sure that each part is recognized as an individual, as it may separate the interiors cuts from their own parts when nesting. Once all the sets have been created using the Badges tool, Select all, and start the Nesting process.
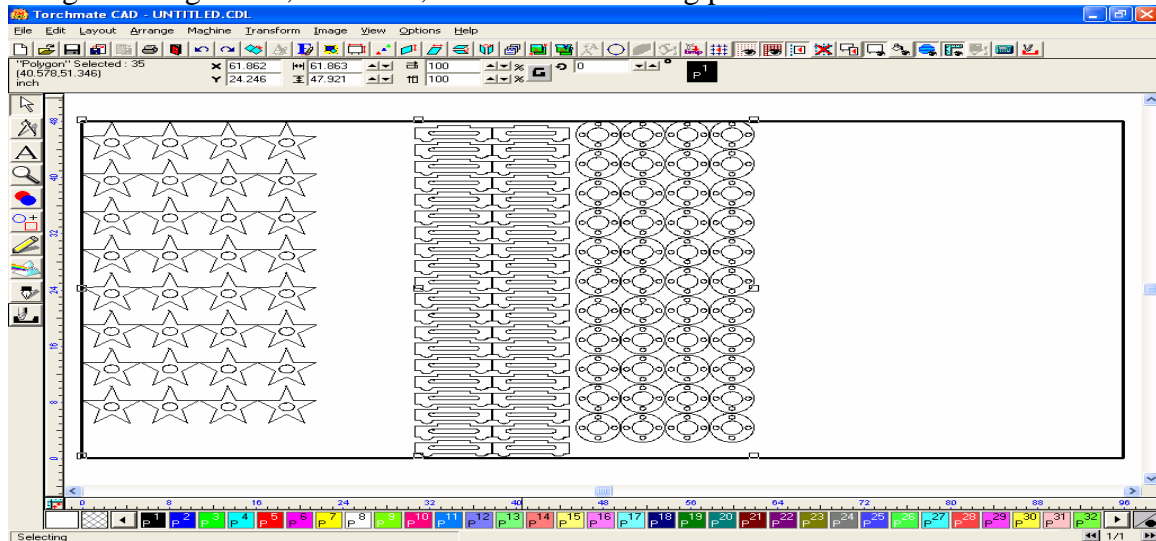
The results of this nest were only slightly different from what the Badge tool yielded, but modification of your Nesting Parameters may give you better results.
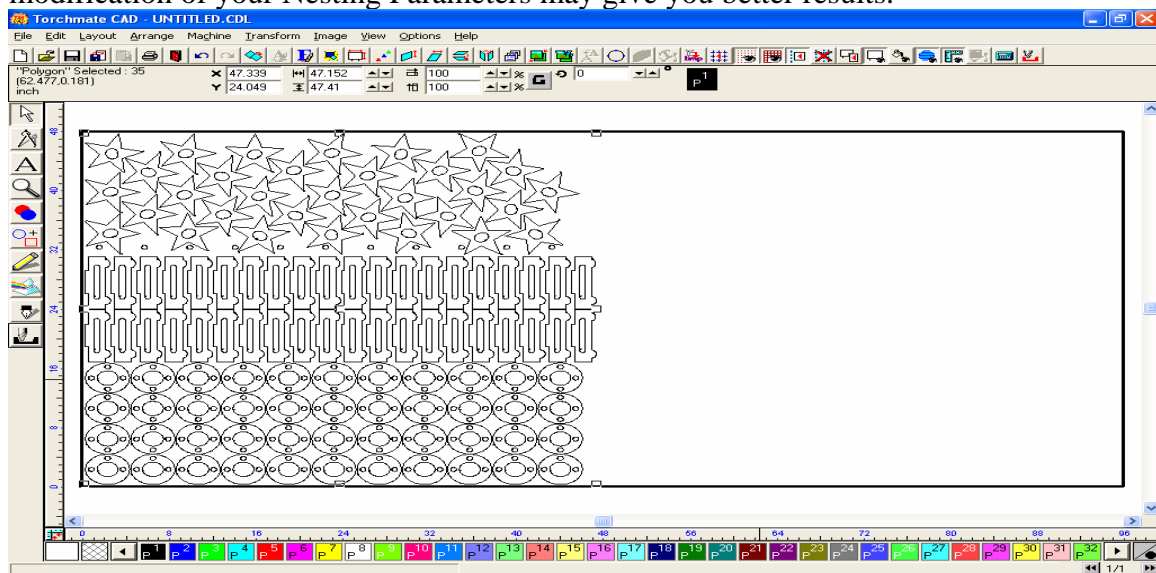
Nesting is the one feature of the Torchmate Cad program which we all want to utilize, but one that can also be the most frustrating to learn, and difficult to master. The best thing you can do to get a better handle of what the nesting program can do for you is to simply play with it, be patient with yourself and the program, be willing make mistakes, and learn from your mistakes, failures, and successes.

I hope that this walk-through has allowed you to see a few different ways to creating multiple parts, shown you some examples of how to go about nesting these parts into a simplified programs, and how to maximize the usage of your material.