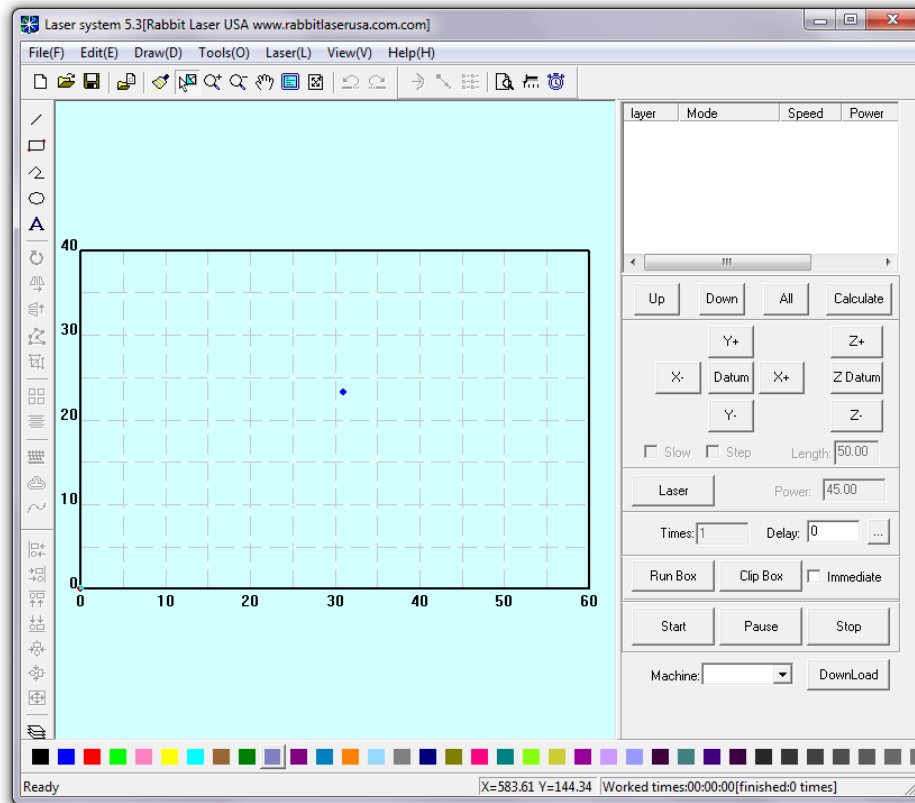




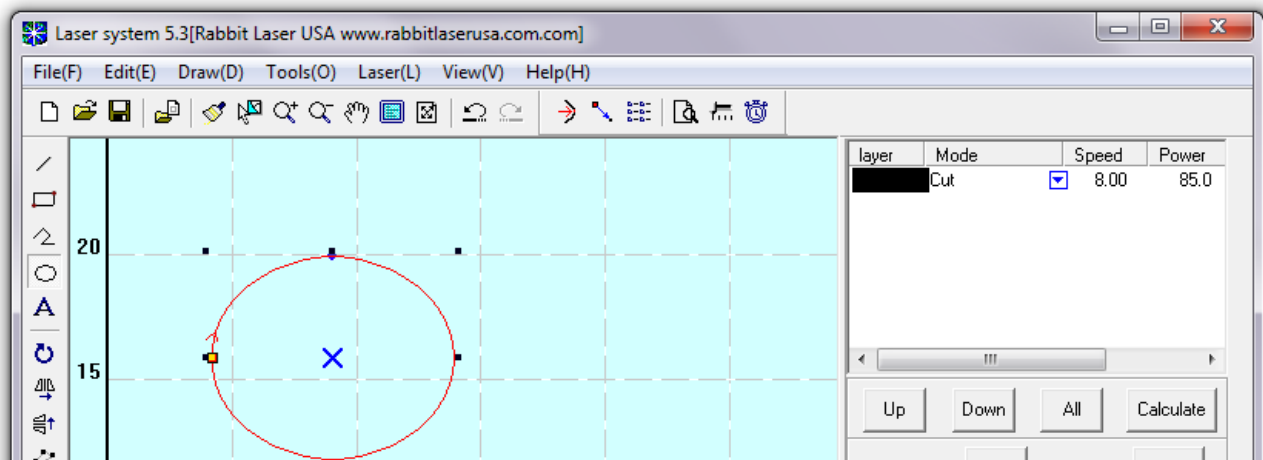
Project: Making a key identification tag.

Objectives: We will be using this project to demonstrate some tools and features of the LaserCut application.

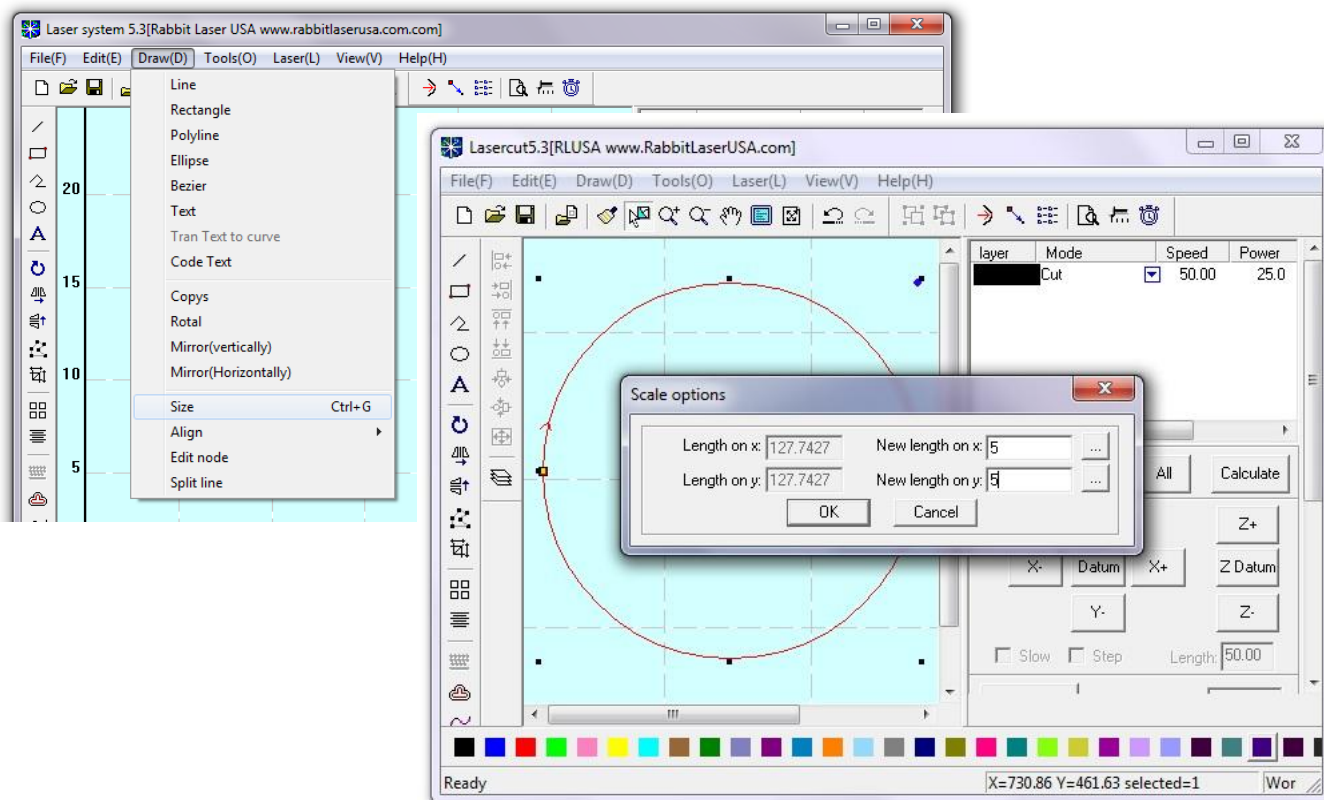
Complete the following steps:



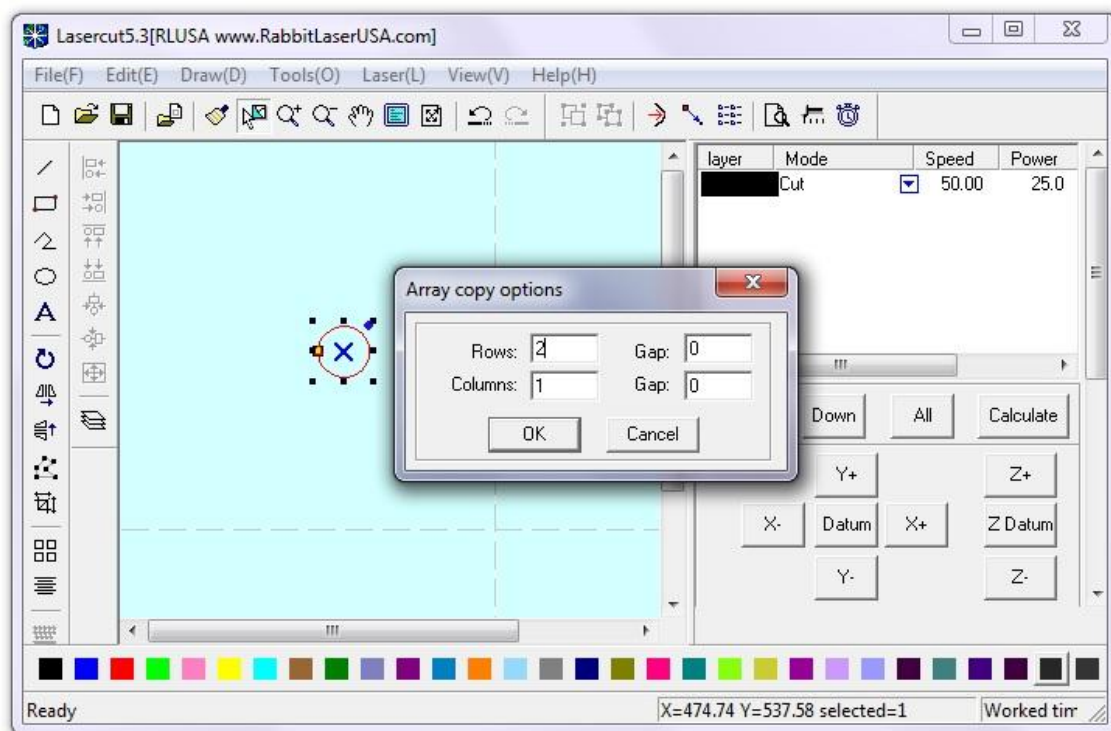
Open the LaserCut 5.3 application. Your LaserCut window will show the working size for the space available inside your laser machine.



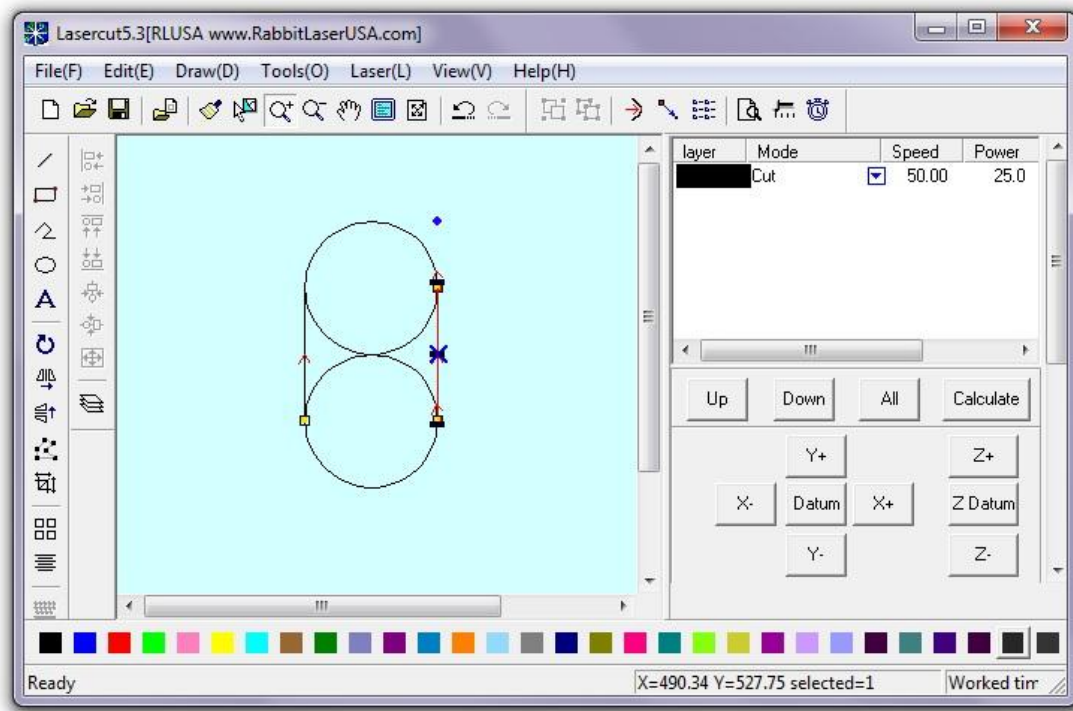
Use the “Ellipse” tool to select that we want to draw a ellipse or circle. To draw a circle on the work space, click on the work area, drag the mouse to the opposite corner of the circle, and then click the left mouse button again.



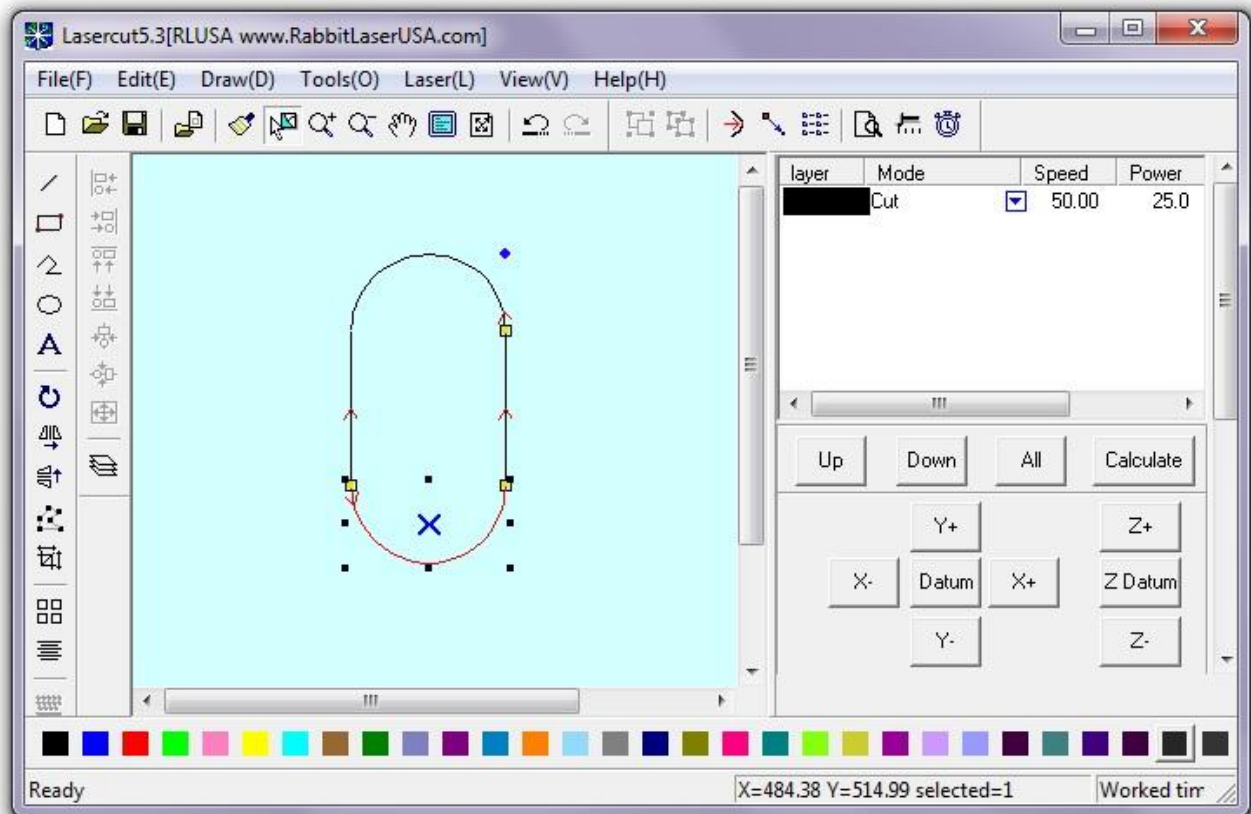
Use the “Draw – Size” menu command to change the size of the circle to 5mm x 5mm.



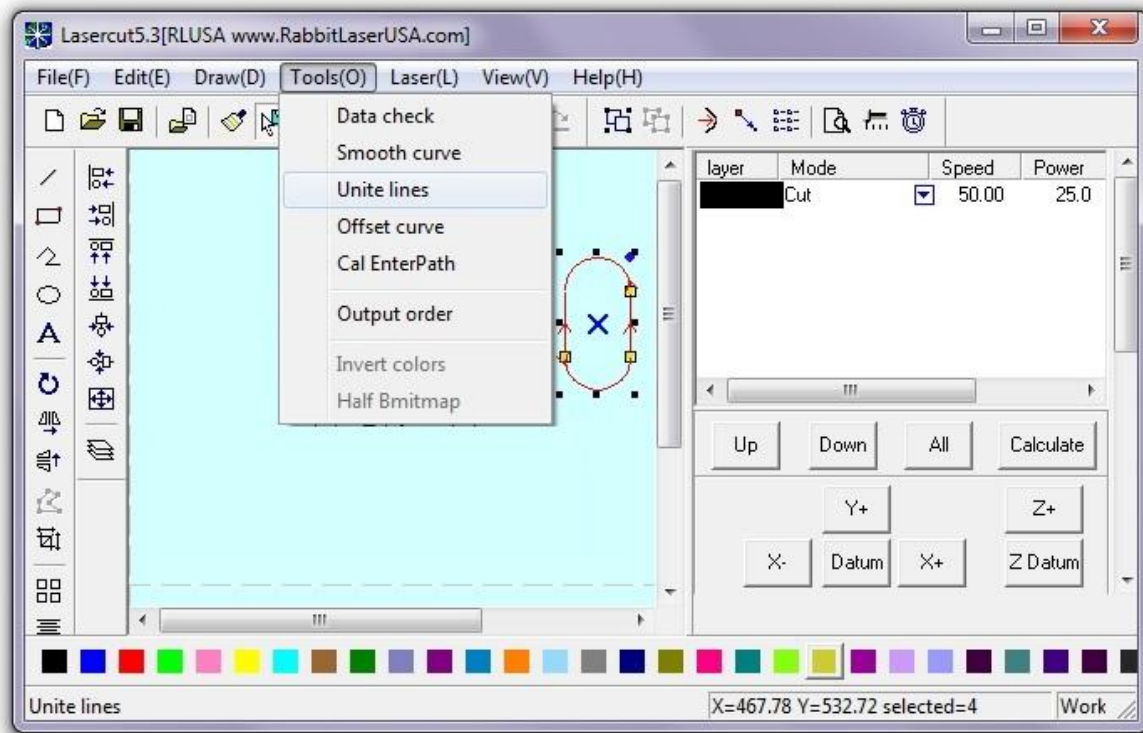
Select the circle. Use the menu command of “Draw – Copies” to create another copy of the circle above the original one. We want to have two (2) circles when we finish this command, so we select to have 2 rows and one column. The “Gap” values are left at “0” because we want the circles to be touching. These two circles will form the slot that our key ring will fit through. A slot allows the key ring to twist more and prevents the metal ring from twist-breaking the plastic/wooden tag.



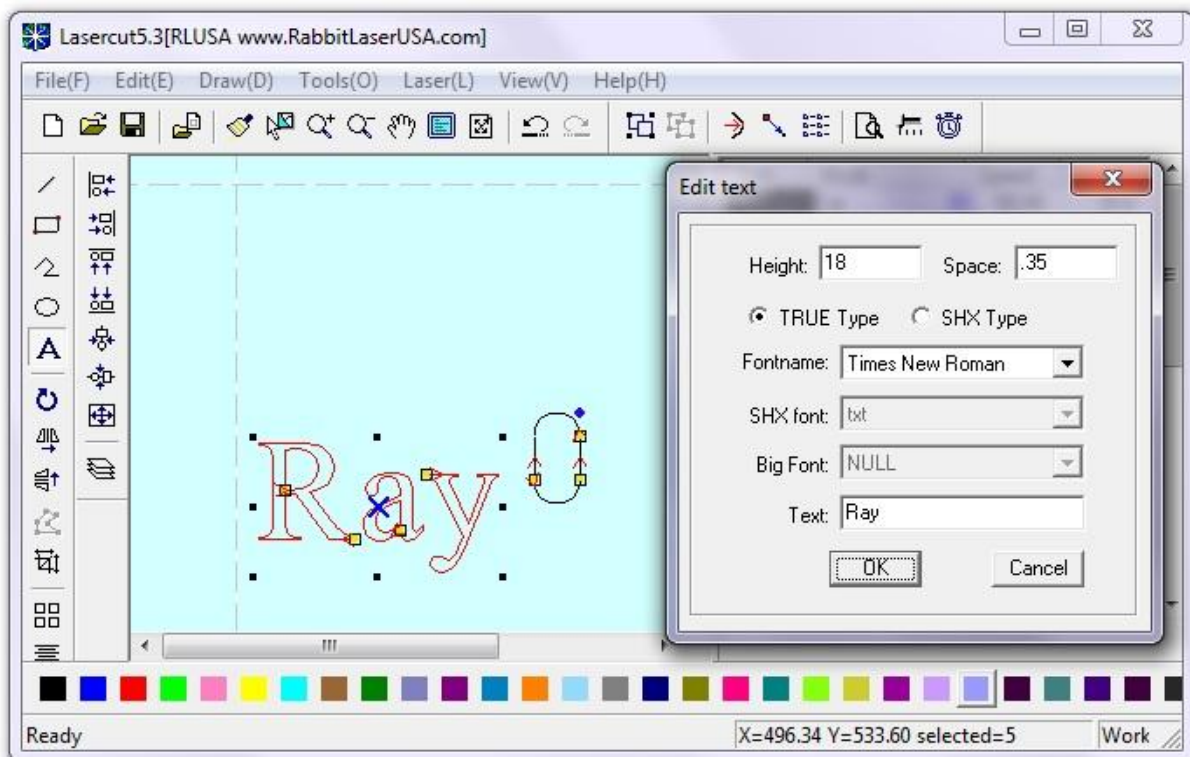
Select the “Draw-Line” tool. Use the snap points to help select the circle start point nodes. Then create the second line by selecting the right set of node points.



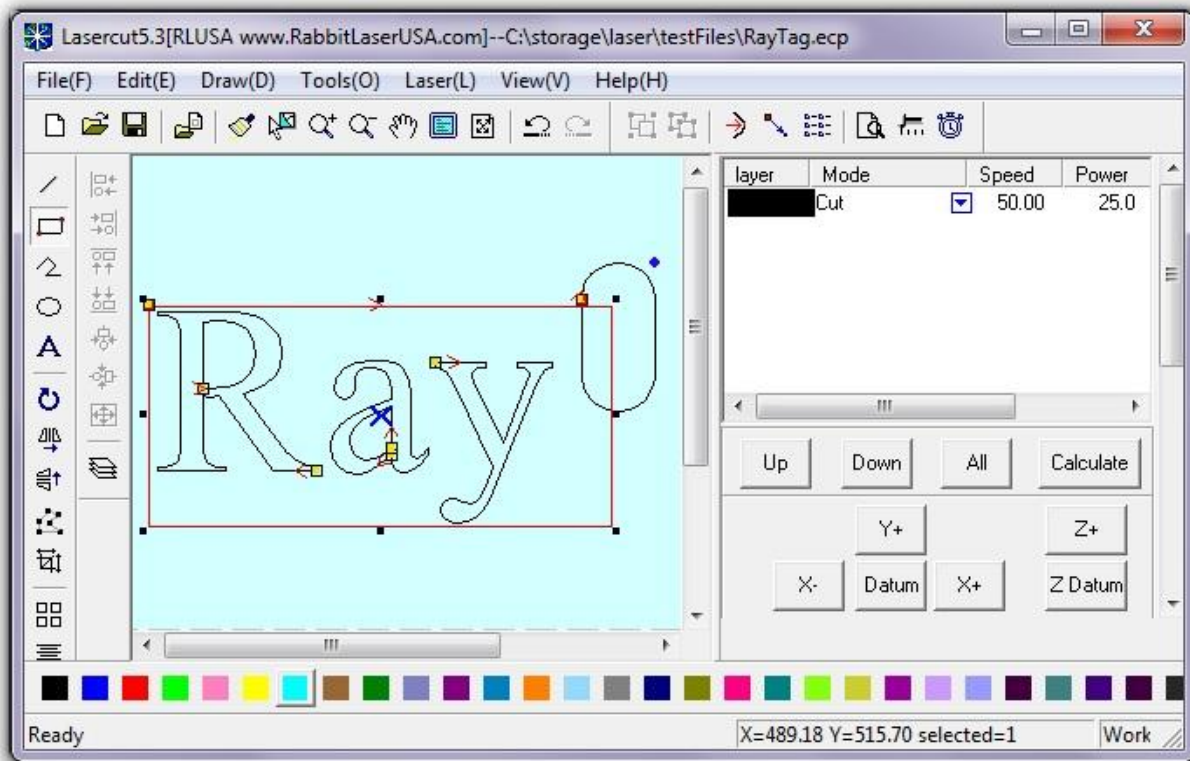
Use the “Draw - Split Line” tool to break the circles apart. Separate the circles at the left and right edges. Once the circles are broken apart, delete the line segments that we do not need.



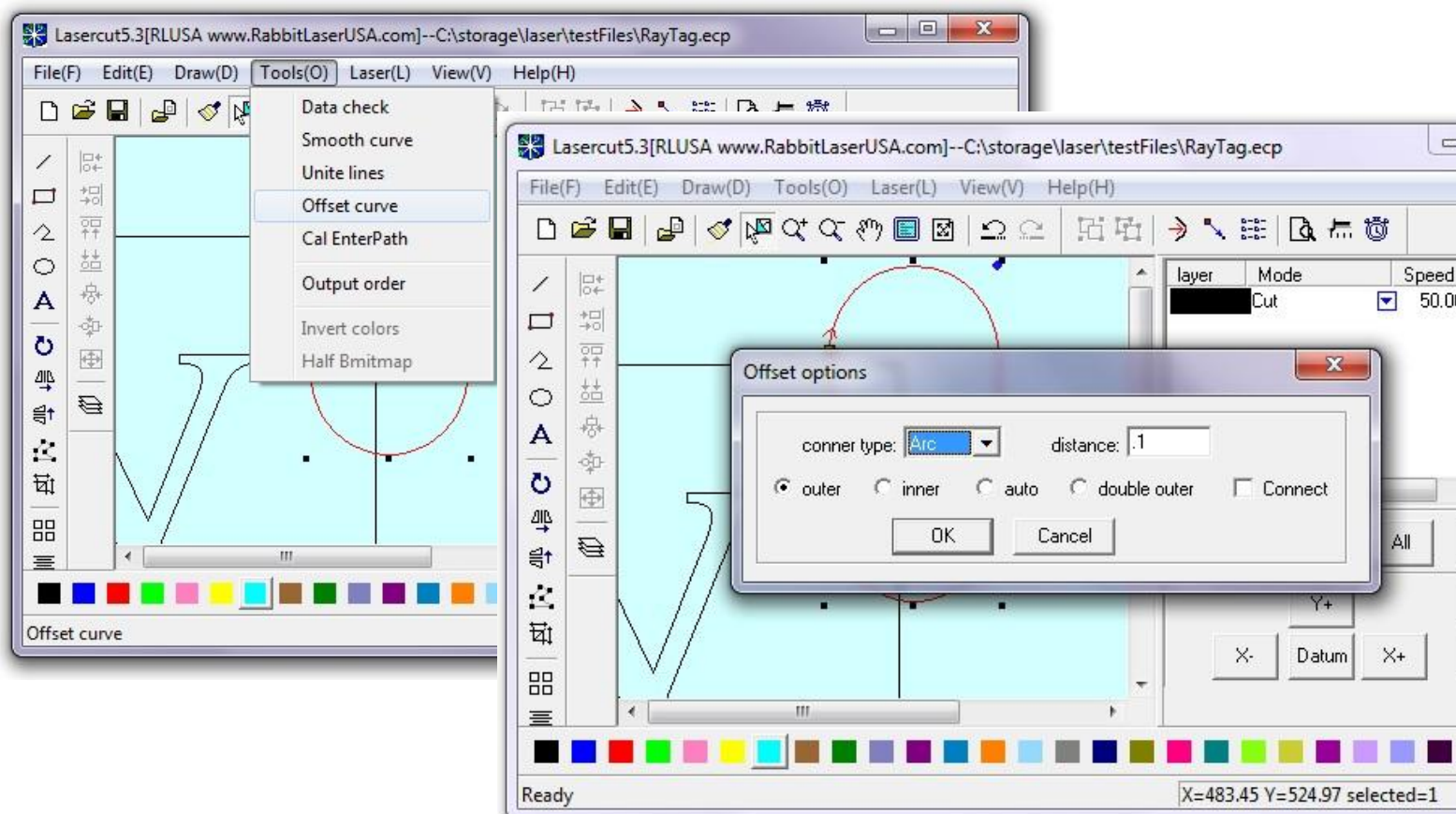
Select all the line segments for the slot. Use the “Unite Lines” command to make these segments into one polyline.



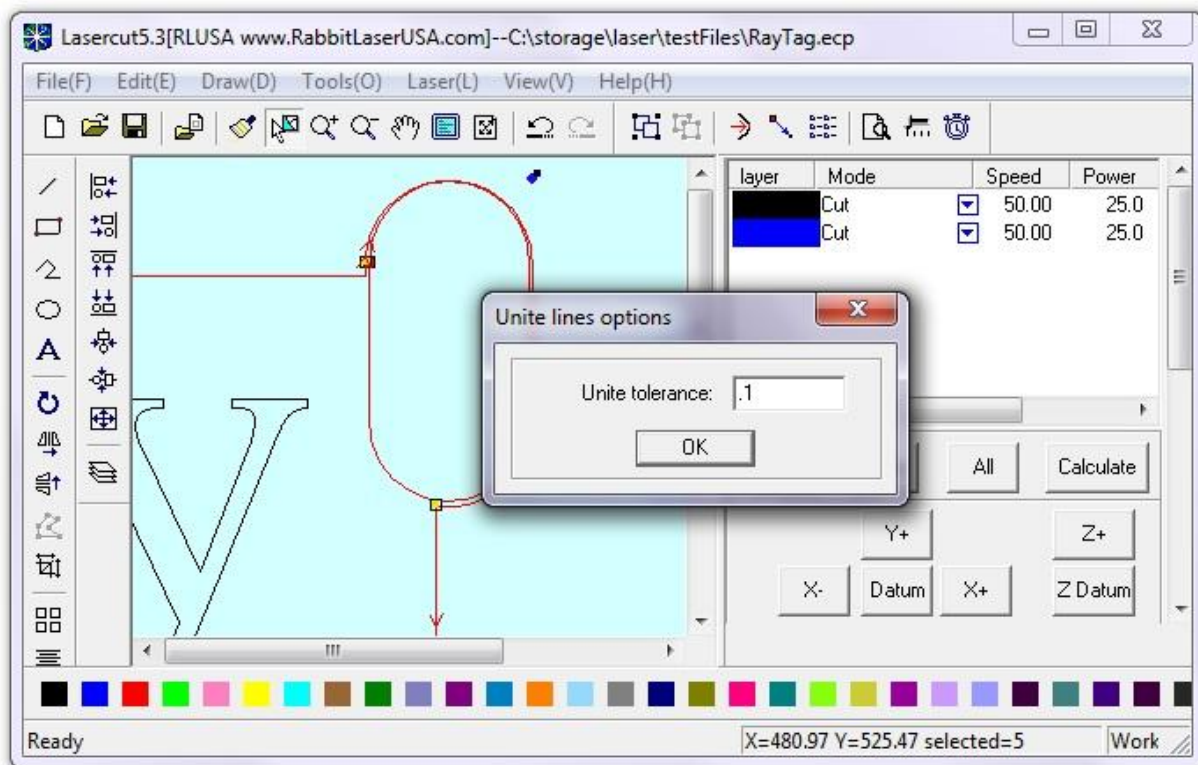
Add the name for the tag.



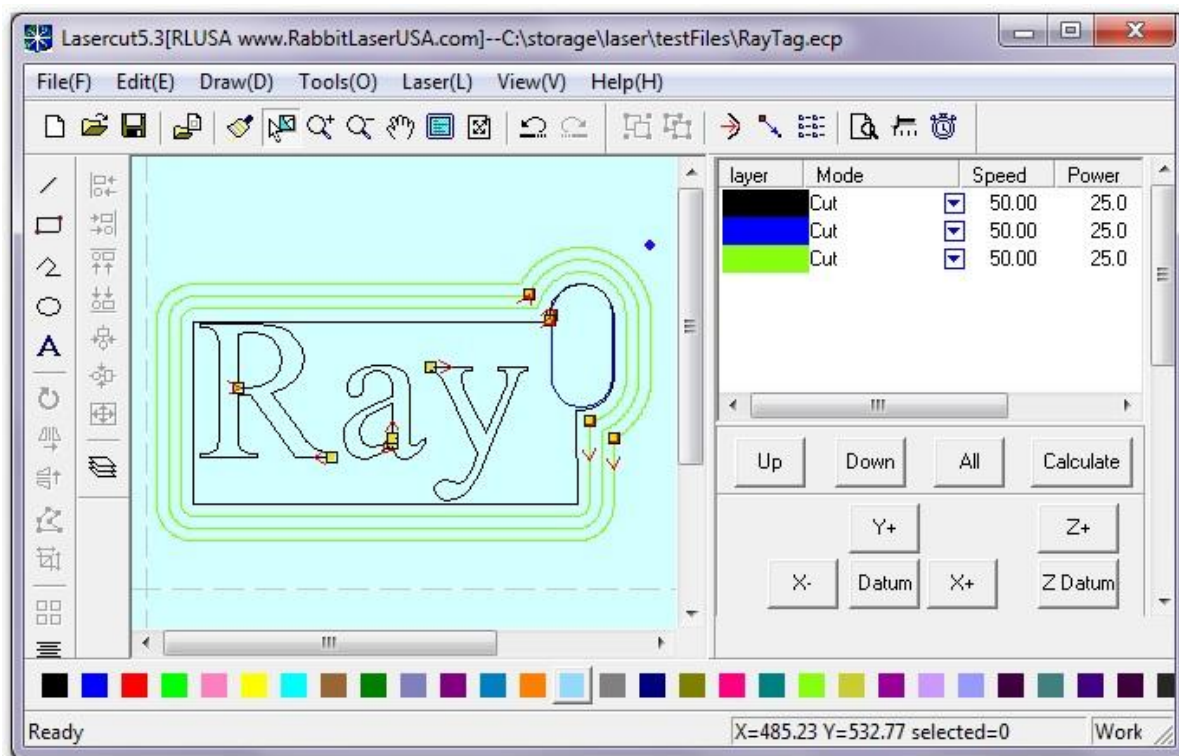
Draw a rectangle around the name. This rectangle will be used as part of a guide for the rest of the project. Make sure the rectangle does not cut off part of the name or leave too much awkward space.



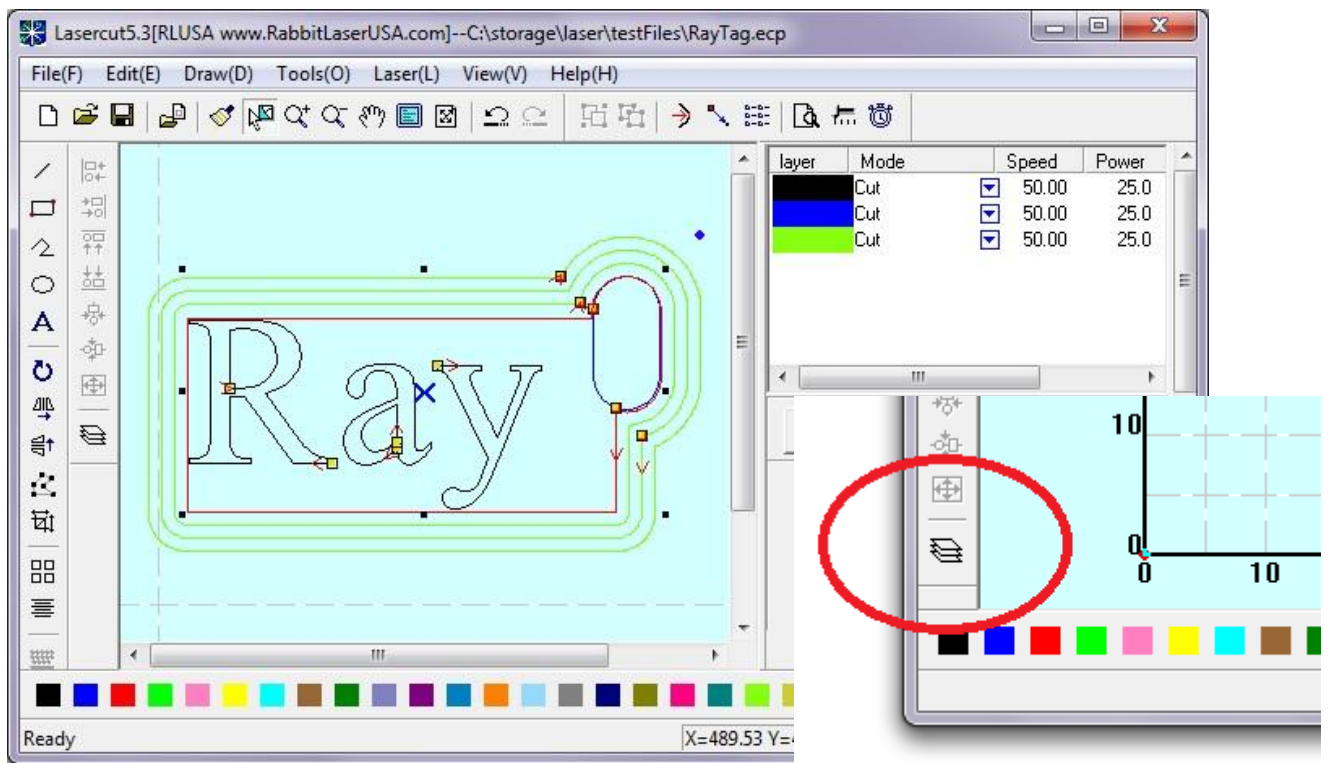
Select the slot shape. Use the "Offset Curve" menu command or the toolbar button to create another slot. Use an offset distance of only 0.1 mm for the new offset distance. The shape that we will create will be an arc on the outside of the existing shape. The new slot will be used as a guide for other parts of the project.



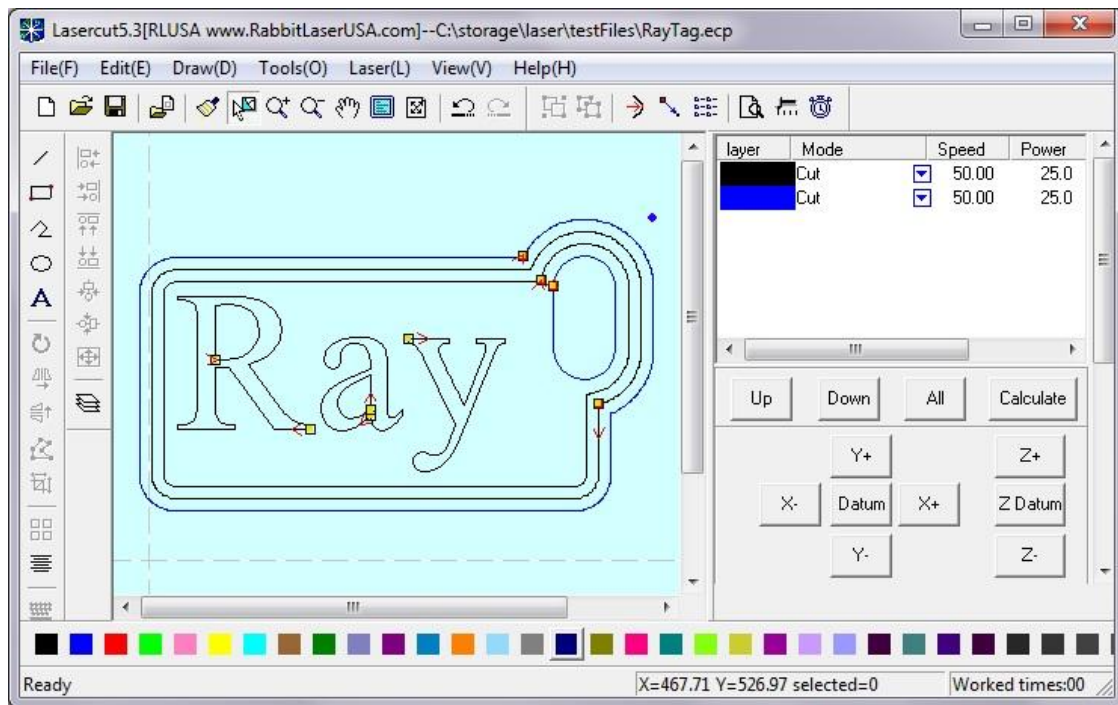
Remember how we used the “Split Line” command. Split the outer slot and the rectangle guide. Use the “Unite Lines” command to make the rectangle and slot into one polygon. This new polygon is our best guide for finishing the tag boundary.



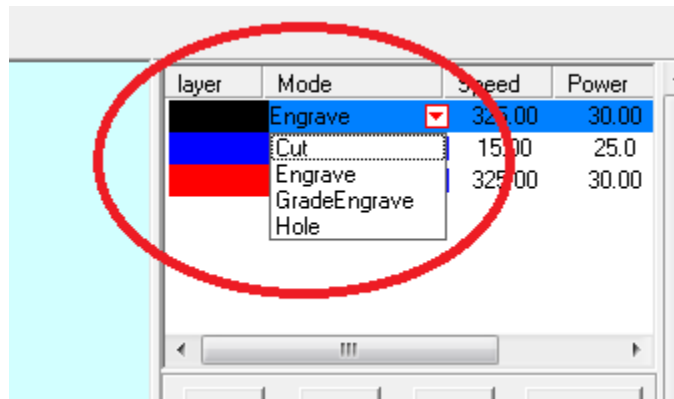
Use the “Offset Curve” menu command or the toolbar button to offset the new guide shape three times. The offset distance should be about 1mm.



The guide object is no longer needed. We can delete this object or make it a new color such that the new color layer can be turned off, locked, frozen, or hidden. I normally choose to hide the guide object in a different color layer. The “Layer Control” button is located at the bottom of the left toolbar.

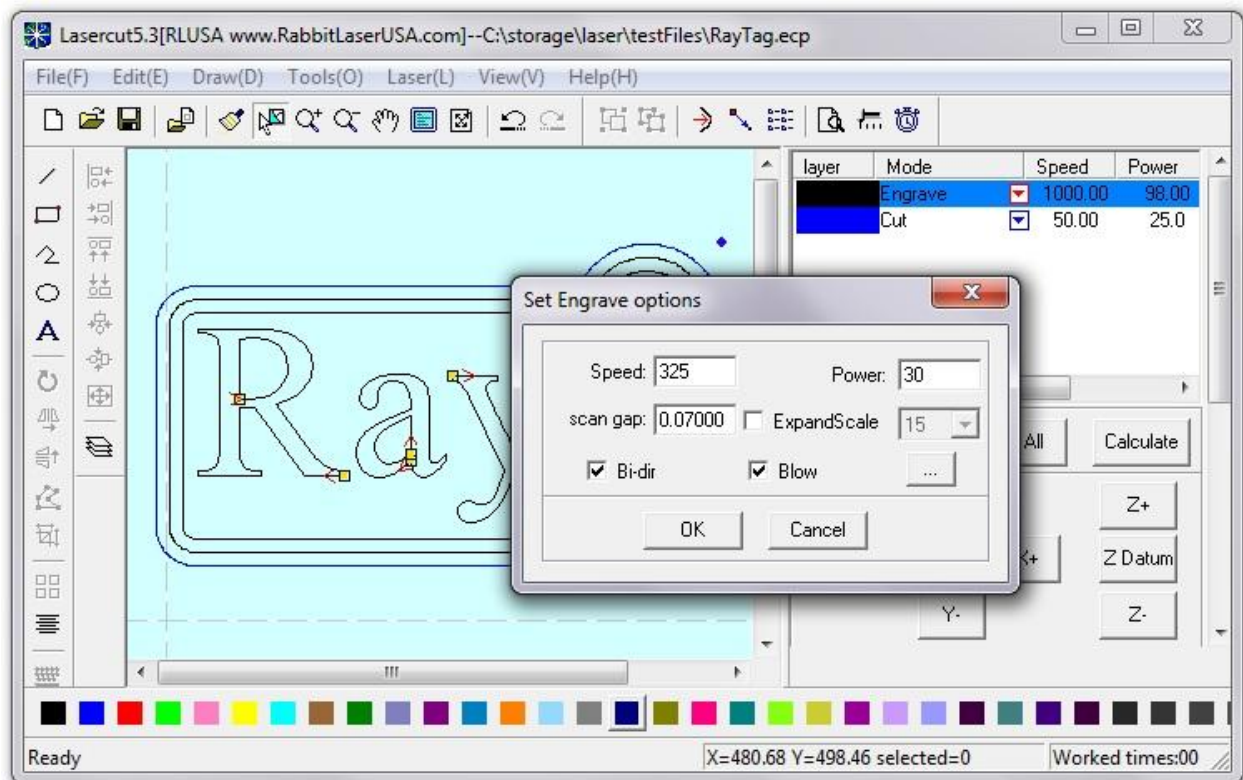


Now the guide shapes are “gone”. We need to continue with what the remaining shapes are used for. We know that the slot and outside shape will be cut through the plastic (or whatever material you are using). The name and “beauty ring” will be engraved. It should be easy to select all the shapes and set the color to black. The black color (in this situation) is planned for engraving. Select the slot shape and set that color to blue. Select the outside key-tag shape and set that color to blue. The picture above shows our planned color scheme. Our plan does not yet show the designated function for each color layer.

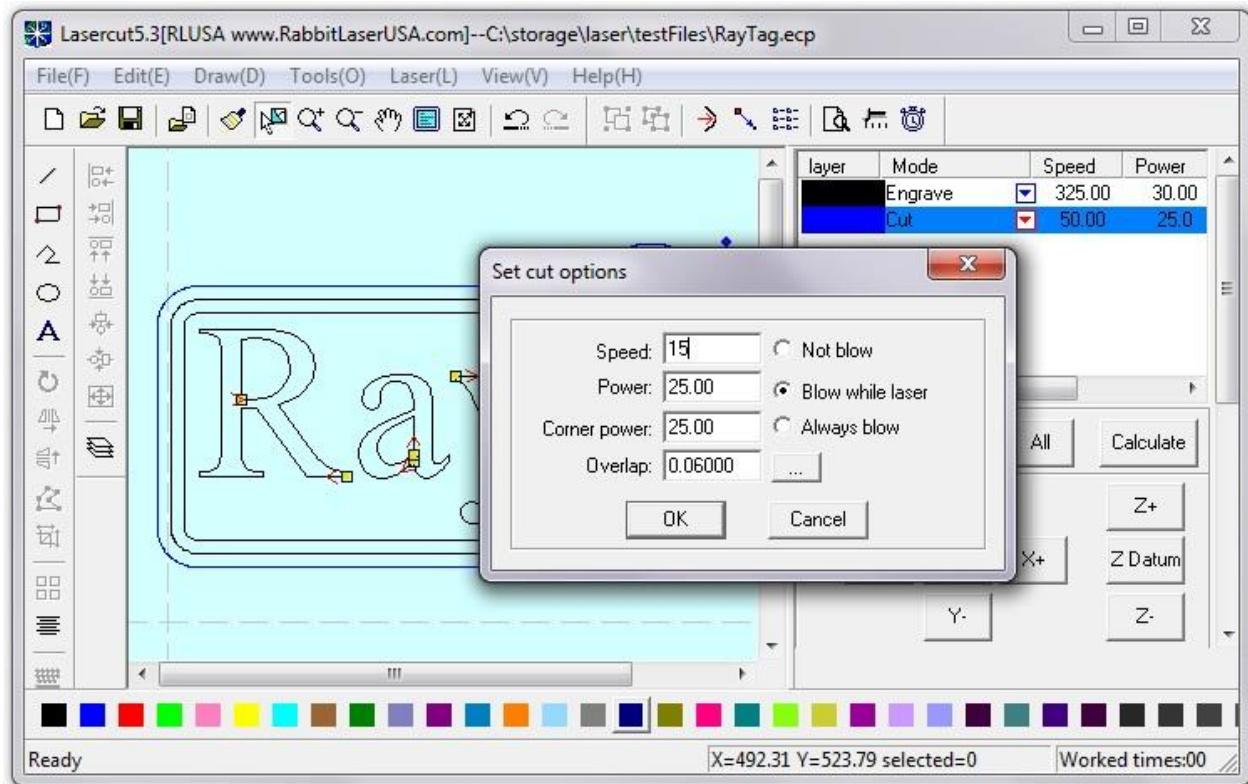


Click on the triangle inside the “Mode” parameter of the black layer. This will expand a small menu of modes that can be used for this layer. You are not required to use any specific color for cutting, engraving...etc. Each project can designate what mode is used on that color layer. For this project, make sure the black layer is used as ENGRAVE by clicking on the “Engrave” option.

Click on the triangle inside the “Mode” parameter of the blue layer. This will expand a small menu of modes that can be used for this layer. For this project, make sure the blue layer is used as CUT by clicking on the “Cut” option.



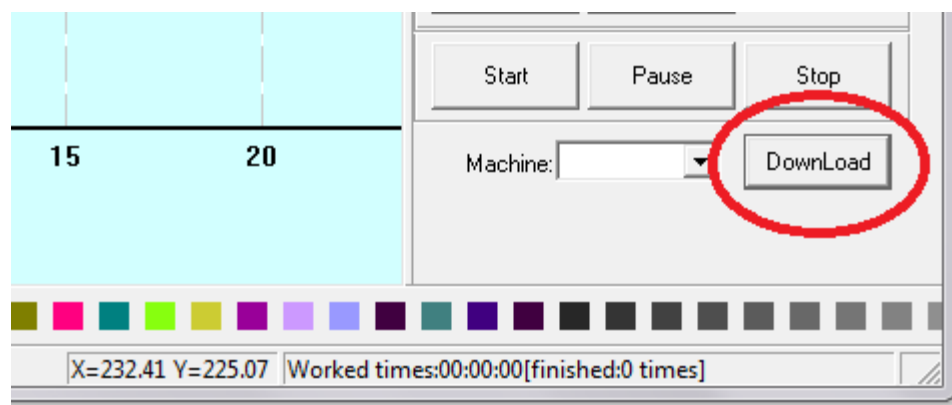
Since the BLACK color layer is set to the “Engrave” function, we need to choose some values for the speed, power, and scan gap. These values will be determined by your laser machine capabilities and the material properties. The picture shows good starting values for the project. Speed:325, Power:30, and ScapGap:0.070



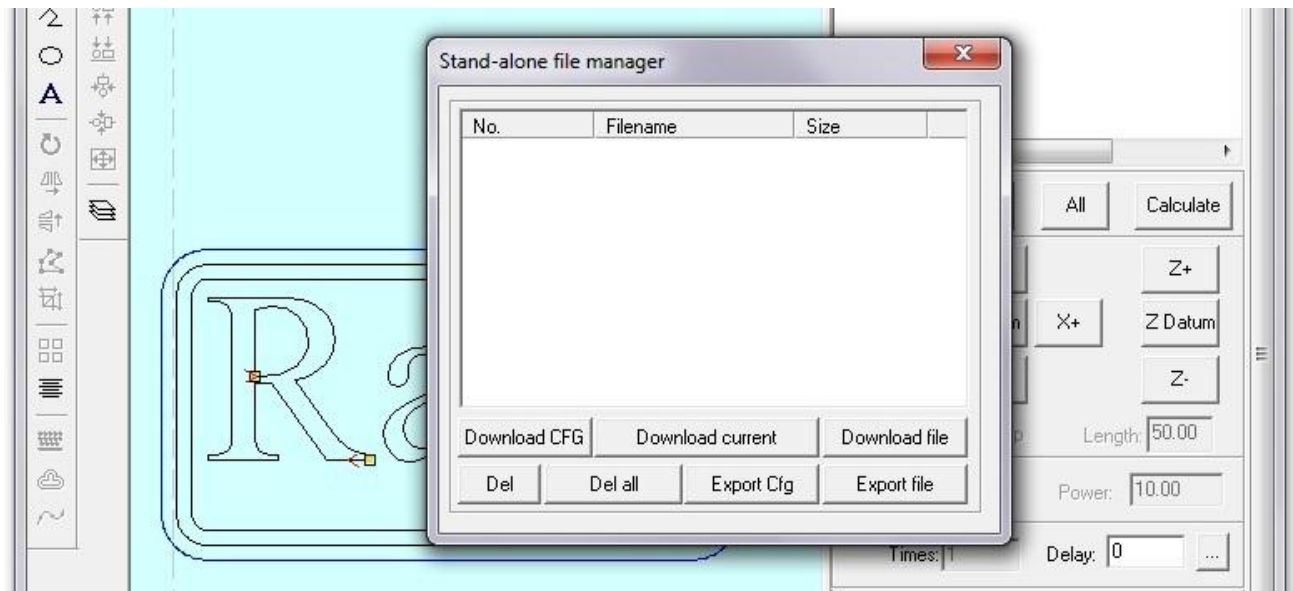
Since the BLUE color layer is set to the “Cut” function, we need to choose some values for the speed, power, and corner power. These values will be determined by your laser machine capabilities and the material properties. The picture shows good starting values for the project. Speed:15, Power:25, and Corner Power:25. The overlap would be used with materials that might have a cut lag while cutting or you are trying to eliminate a laser mark from the start-end cut operation.

Save the project to the computer. Make sure to save a filename that uses numbers and letters only. Do NOT use spaces, underscore, dash or any special characters in the filename.

This file has been saved with name of “RayTag.ecp”. The *.ecp file extension is for this program and does not denote any other software file format.



The project is drawn. The laser settings are made. The design project has been saved to file. The next step is “Download” the design into the laser machine. Make sure that the computer is connected to the laser machine by USB cable and that the laser machine is turned on. The computer should already have the drivers loaded.



The “Download” command will start a new connection with the laser machine through the “Stand-alone file manager”. It is a good practice to delete all files in the laser machine and to download only the current design project. Click on the “Del all” button to erase the laser machine memory. Click the “Download current” to load the circetest.ecp from the LaserCut 5.3 software into the laser machine. The compiled file should be read as xx.mol file extension.

The laser machine should be ready to cut... Please remember to check focus and proper cutting material space.

Now that you have finished your custom tag with this tutorial, try to make a tag with some variations. You could import vector graphics such as DXF, HPGL, NC, Tajima, ... You could also import a JPG, BMP, or other style raster image. Try to experiment with the engraved areas so that the letters of the name become raised rather than engraved.

