VMD Tutorial #2: Using the Shape Library

Before you can begin cutting with your new machine, you must have a job to cut. Luckily, the VMD software comes with a shape library! The shape library consists of 28 configurable shapes that can easily be turned into job files. In this tutorial we will cover how to use the shape library to create a job file for a plasma cutter.

Before You Start:

Make sure that VMD can connect to the Accumove controller, and that you've properly configured the Accumove controller for your machine. If you have questions about this, read 'VMD Tutorial #1: Machine Configuration.'

Power up the controller and launch 'Torchmate Visual Machine Designer.' Make sure the controller is connected and the Run screen is displayed before starting the tutorial.

Selecting a Shape from the Shape Library:

1. The shape library can be accessed from the utilities menu. To view the Utilities menu, just press the 'Utilities' button from the Run Screen.

2. Click on the 'Shape Library' button in the Utilities screen to launch the shape library.

3. The shape library displays all of the available shapes. For this tutorial, select the 'Rectangle with Circular Hole,' and press 'OK.' You can also just double click the shape you want to create.
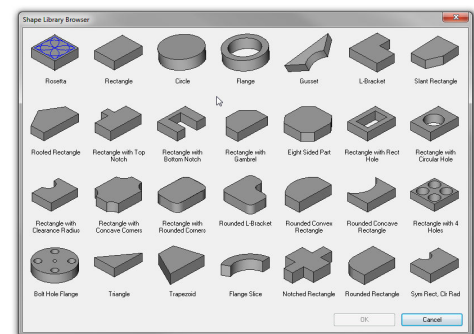
Configuring the Shape:

Once a shape has been selected, the shape wizard is displayed. The shape wizard provides you with options for selecting your tool and feedrate to be used on the final job, along with several dimensional inputs related to the selected shapes. There are four sections to the shape wizard: the tool parameters, the shape definition, the shape preview and the lead in/out definition.
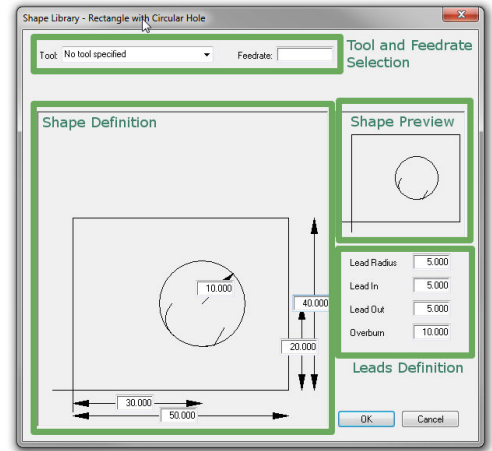

1. Always start the wizard by selecting the tool and entering the feedrate in the tool parameters section. If the tool is not selected, then no tool will be used during the final job execution. If the federate is omitted, the job will be run at the maximum machine speed.
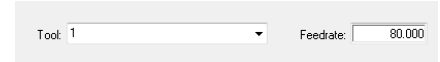
   For this tutorial we will be using the plasma cutter; by default the plasma cutter is assigned to tool 1. Select '1' from the tool list, and type *80* for the federate.

2. After assigning the tool and feedrate you can begin entering the dimensions for the shape in the shape definition section. The dimensions available in the wizard depend on the shape that was selected.

   This shape has five dimensions to configure: the radius of the hole, the width and height of the rectangle, and the distance from the left edge and bottom edge from the rectangle to the center of the hole. As you enter in the desired dimensions, the preview will update to reflect your changes. For the purpose of the tutorial, enter the dimensions shown in the image above.
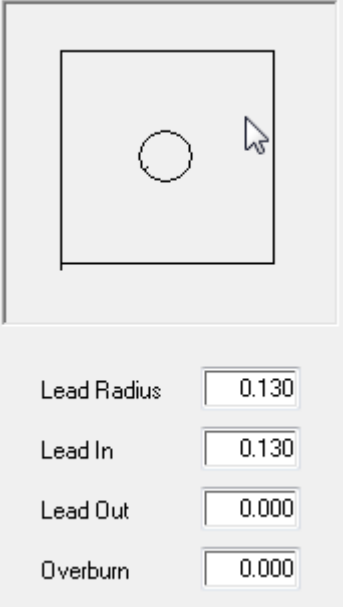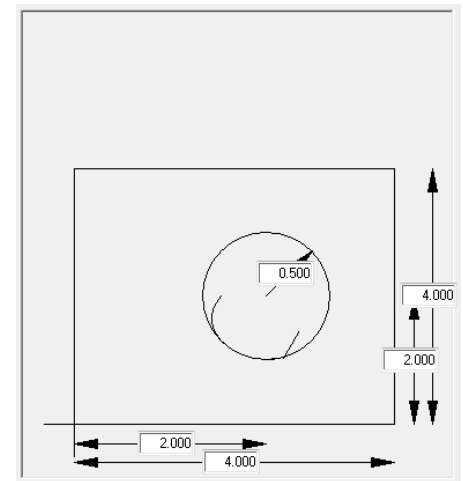
   Don't let error messages in the preview window prevent you from entering all of the dimensions, the errors will disappear after all of the dimensions are entered. Learn about the error messages and what they mean in the FAQ section of the guide.

3. Finally, adjust the lead in and lead out parameters so they are suitable to your shape. Generally it is recommended to have a lead in that is twice the length of your kerf. For example, if the kerf of the cutting tool is 0.06", a good lead in length would be 0.12".

   If no lead ins or lead outs are desired, just enter 0 for these values. For the sake of this tutorial, enter the values shown in the image above.

Lead Radius	0.130
Lead In	0.130
Lead Out	0.000
Overburn	0.000

IMPORTANT: Make sure a tool and federate are entered before completing the wizard. The finished job will not cut if these values are not entered.

That's It!

Press the 'OK' button and VMD will prompt you to save the new shape. It is recommended to save the file to the 'Jobs' folder so that it's easier to find later. Once the file is saved, the G code will be generated to cut the shape you've defined.

Play around with the different shapes in the shape library. Each shape has a different set of dimensions and parameters to define. The best way to learn how to use them is to just explore!

In tutorial #3 we will cover how to get ready to cut your job!