

Foam Cutter Tutorial

Digital Media Lab Equipment Tutorial 2003 - 2004

The foam cutter cuts by a moving heated wire. It can cut a maximum volume of 96" x 96" x 48". The foam cutter can cut white expanded polystyrene foam, blue ridged foam, and pink ridged foam.

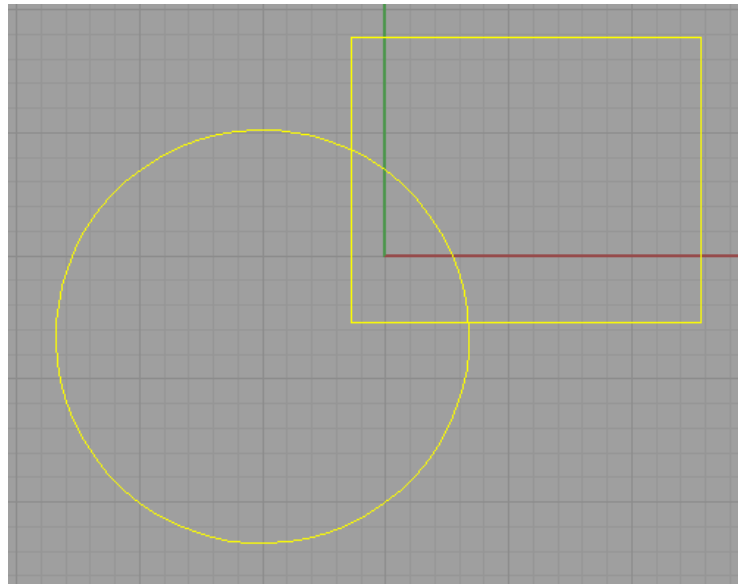
Note: - All 3D objects cut on the foam cutter are derived from 2D shapes. This will require you to calculate the 3D object into 2D shapes.

- All 2D shapes to be cut on the foam cutter need to be exported as a .dxf file.

- 2D shapes can be created in any 2D or 3D modeling or drafting application such as AutoCAD, Rhino, Maya, Form Z, Vectorworks, Illustrator.

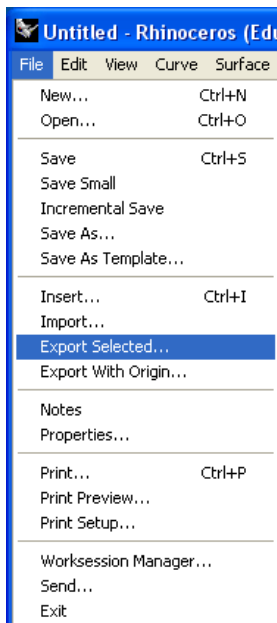
Step 1: Create your 2D profiles:

2D shapes drawn in a 3D modeling program.

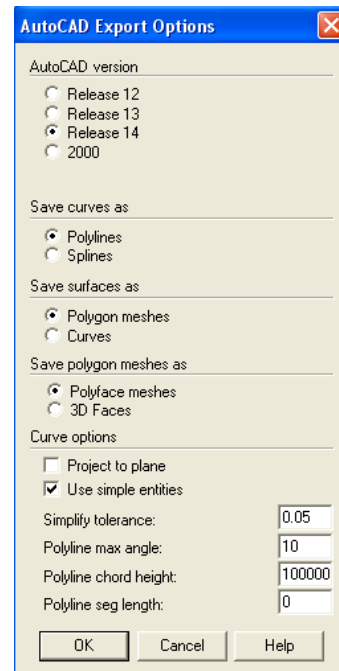


Step 2: Export the 2D shapes as a .dxf file:

1 - Select File - Export Selected.

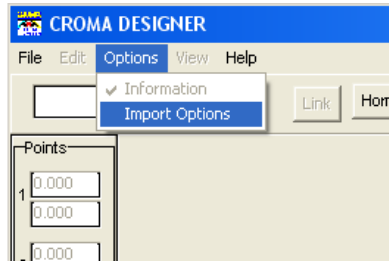


2 - If the application gives you an export option, save the .dxf file as **Release 14** or earlier.



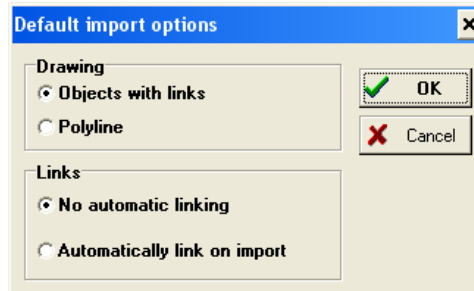
Step 3: Import .dxf file into Cromia Designer:

1 - Set the Import Options first.

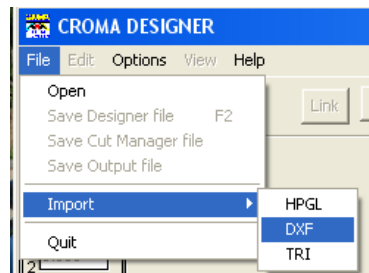


2 - If you have multiple shapes that need to be linked together, select **Objects with links**.

If you have a continuous line without breaks, select **Polyline**.



3 - Select File - Import - DXF.

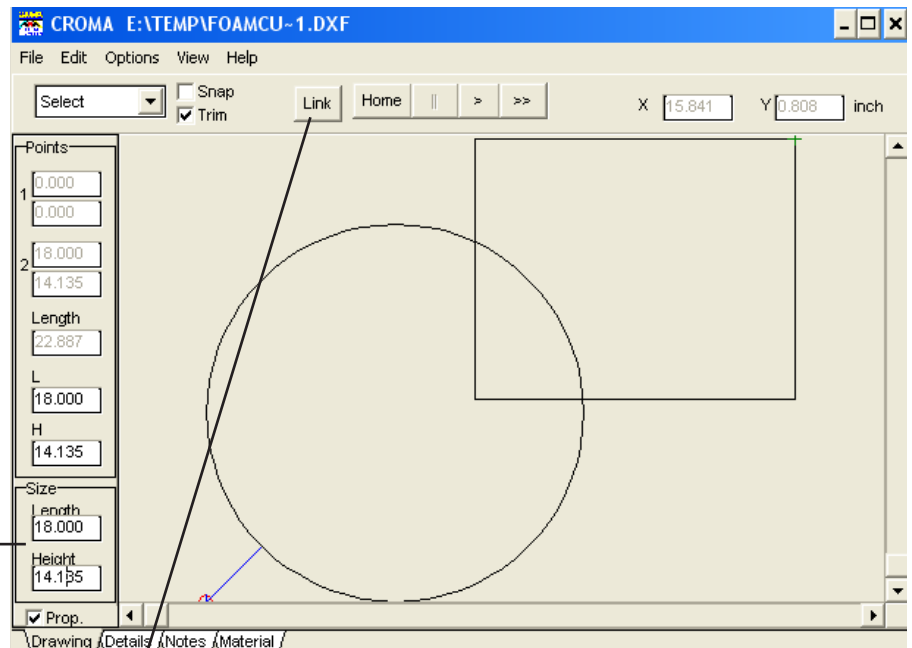


Step 4: Adjust file settings in Cromia Designer:

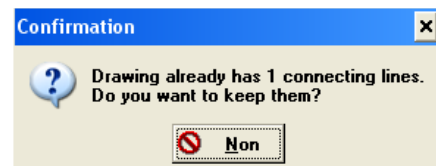
1 - Verify your shapes are accurately represented in the window.

2 - Adjust the scale of your shapes.

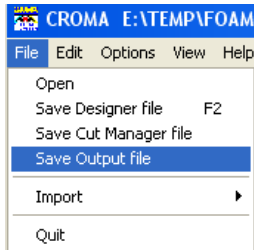
3 - If your .dxf file contains multiple shapes, select Link to rework the links between the shapes.



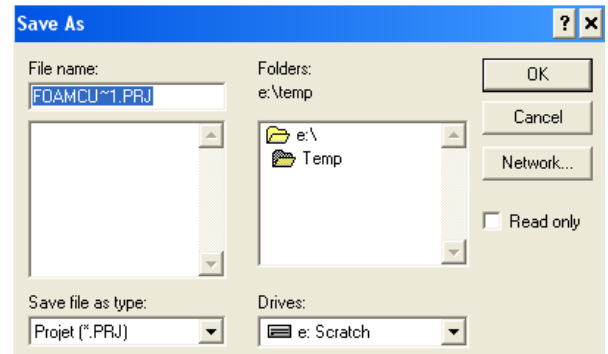
Hit enter at his prompt.



Step 5: Save the Croma Designer files:



Save the file as a Project .PRJ file.

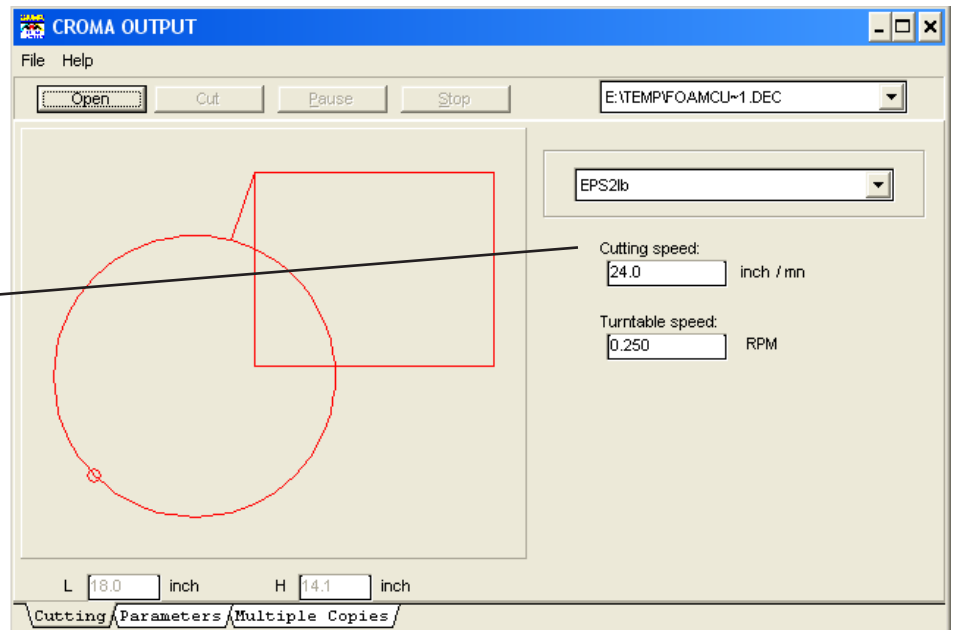


Step 6: Cut the profiles with Croma Output:

1 - Open Croma Output. Load the Project file just saved.

2 - Select your material type, which determines the correct feed rates of the foam.

(blue, pink, or white styrofoam - the white styrofoam is indicated by the EPS1lb, EPS2lb, or EPS3lb options - this refers to the pound densities of the foam.)

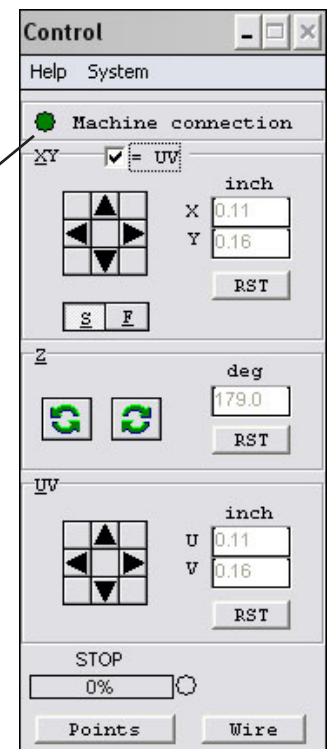


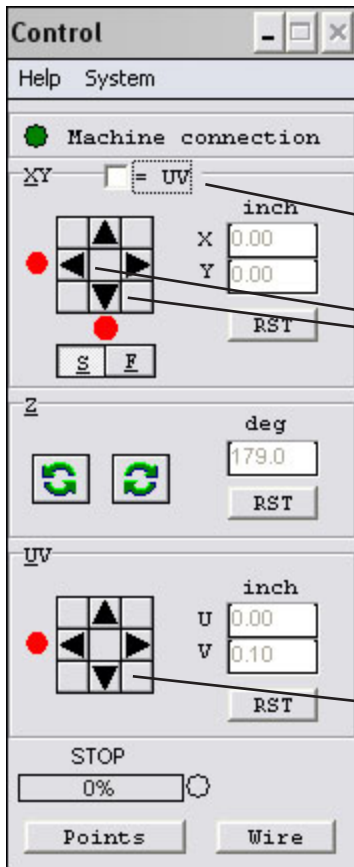
Step 7: Connect to the Foam Cutter:

1 - Position your foam on the Foam Cutter platform. The foam should be standing on its own, and the platform should be clear of any other objects.

2 - Turn on the Foam Cutter.

3 - Connect the Croma Output software to the Foam Cutter by selecting System - Connect. If connection is successful, you'll see a green dot with the words "Machine connection."





The control panel is used to manually move the wire. Before proceeding with your cut, you should make certain that the wire is square and level.

Step 8: Level the Foam Cutter Wire:

Make sure the **XY = UV** checkbox is checked. This makes the left and right sides of the wire are moving in tandem. **Leaving this unchecked could break the wire.**

Use the left and down arrows in the **XY** pane to move the wire as far to the left and bottom as it will go. You will see a red dot appear next to the arrows when the wire has reached its limit.

*NOTE: you can click the **F** button to move the wire faster, but only when not cutting. Moving the wire fast though foam when cutting can break the wire.*

When the wire has been moved to the bottom left, you should see red dots next to the left and down arrows in both the **XY** and **UV** panes. If you do not see a red dot, that means the wire is not at its limit. If this is the case, uncheck **XY = UV**, click **S**, and click the arrow that does not have a red dot until the dot appears.

For example, In the image to the left, we would click the **UV** down arrow until the dot appears to level the wire.

Once you see red dots next to both sets of left and down arrows, the foam cutter wire has been squared and leveled, and you're ready to proceed with your cut. Check the **XY = UV** checkbox and continue.

Step 9: Cutting with the Foam Cutter:

- 1 - Make sure the plastic doors of the Foam Cutter are closed.
- 2 - Using the control panel, position the wire to the starting point of the cut (indicated in Croma Output by the small circle).
- 3 - Click on Cut to start cutting your file.

