

# Vinyl Cutter

Digital Fabrication Lab | College of Design, Iowa State University

## **Cutting & Printing**

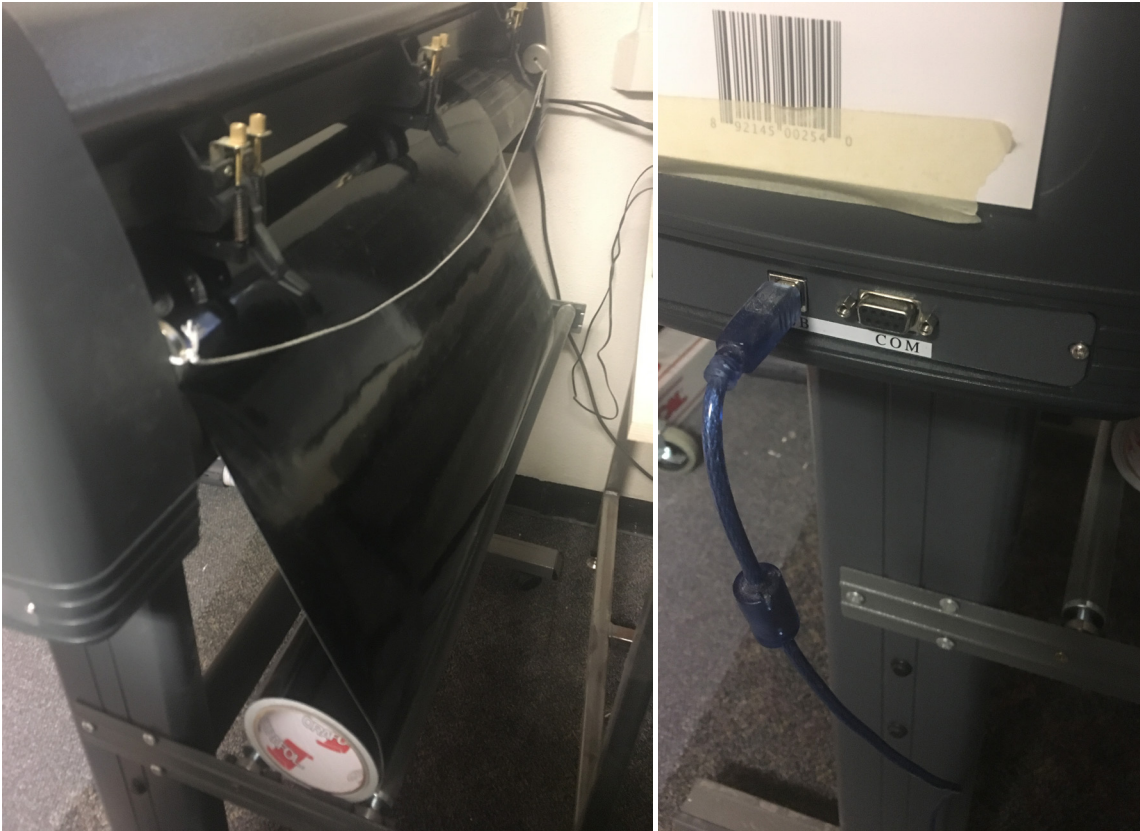
- Vinyl cutting uses a plotter to cut designs & text into material.

-Terms to Know

-Weeding-Removing excess material

-Taping-Applying tape to front of Vinyl after weeding to help remove it from backing & apply to wall.

## Equipment



## Vinyl Cutter

- Contour Cutting
- Pre printed graphics

- Uses a small knife to precisely cut the outlines of a picture into a sheet or piece of vinyl.  
- The knife moves side to side and turns while vinyl is moved beneath the knife  
- Material is then "weeded" where excess parts are removed

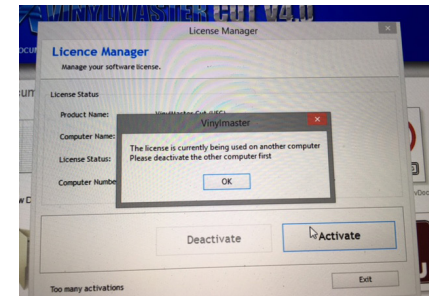
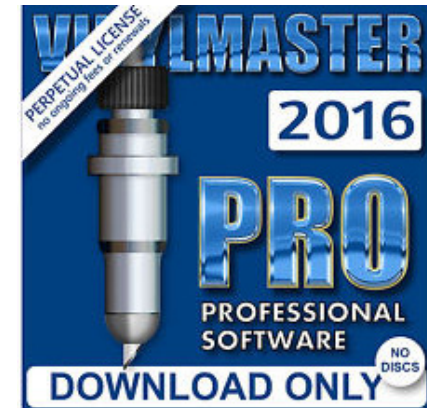
## Material



## Material

- 20 Gauge Vinyl
- Blade Set: 30, 40 and 60 degree angles

# Software



# Design Setup

- Rhino, Illustrator, Gimp
- A range of software can be used to setup the initial design files to be cut.
- Export files in .SVG formatt (scaleble vector graphic) or as JPEG

# VinylMaster Cutter

- Sizing, Rotation, Layout adjustments of Files
  - Cutter Machine measures in Millimeters
  - DEACTIVATE WHEN NOT IN USE!!
- Otherwise other people cannot use the license.

# Design Setup

-Illustrator etc.

-Find or make an Image you want to cut or make into a sticker

-Open your file in Illustrator.

-Use Image trace function to make vector lines on image.

-To convert text to outlines, select the text & go to Text > Create Outlines.

-To convert strokes to outlines, select the stroke & go to Object > Path > Outline Stroke.

-Put box, circle or oval around image to make it easier to separate later.

-Save file as illustrator .SVG

## TROUBLESHOOTING

### STROKES

What you see  
(10pt stroke)



What the cutter sees




With strokes outlined



What it should look like



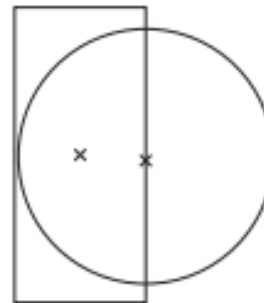
If you're strokes look like this, simply find your Pathfinder Window, select your outlined strokes and click  under Shape Modes to unite the shapes

### CLIPPING MASKS

What you see




What the cutter sees



What it should look like



If you're using Clipping Masks, go to Object > Clipping Mask > Release. Then, with the mask shape and object selected, click  in the Pathfinder Window.

# Loading Material

- Lift Rollers using the lever on the back of Machine

-Move the rollers by hand to where you will place the edge of your material.

-If blade is in the way move it to the right

-Place material so it aligns with edge of white bar and blue tape as indicated by the red in the image on the far right.

-Place material under rollers and use lever to put rollers down, holding material in place.

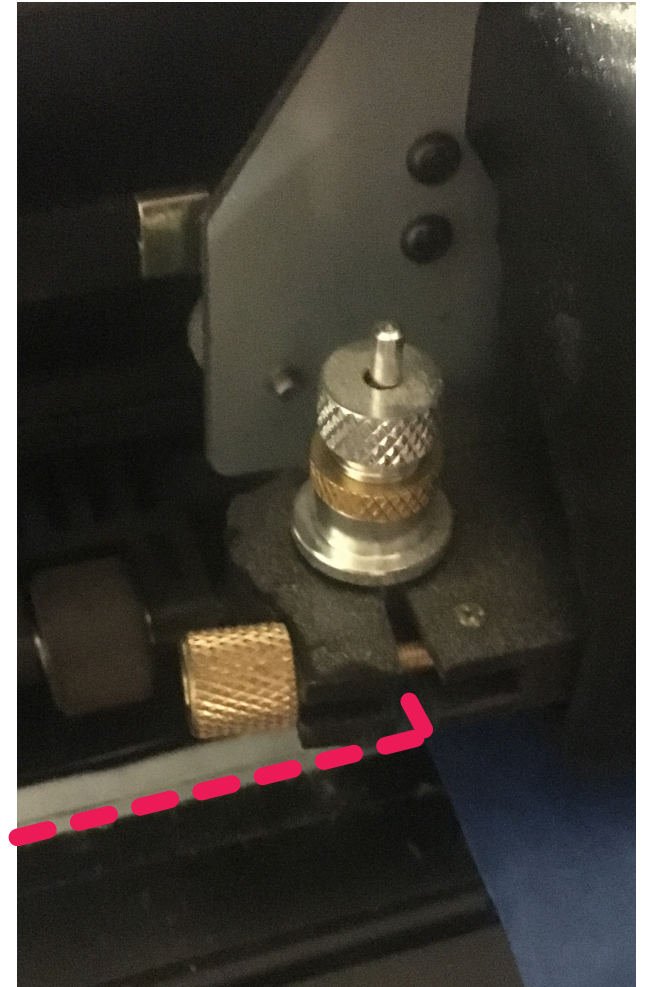
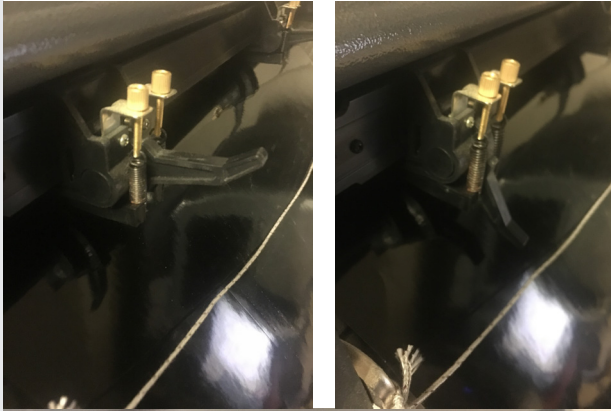
When Prompt (message about sheet unloaded)

-Select "piece" and machine will measure length and width of your piece

-Use arrow keys to determine Origin

-Origin located at bottom left corner

-Press and hold origin button until message appears in display that origin is set



# Troubleshooting: Blade

## - Force and Velocity

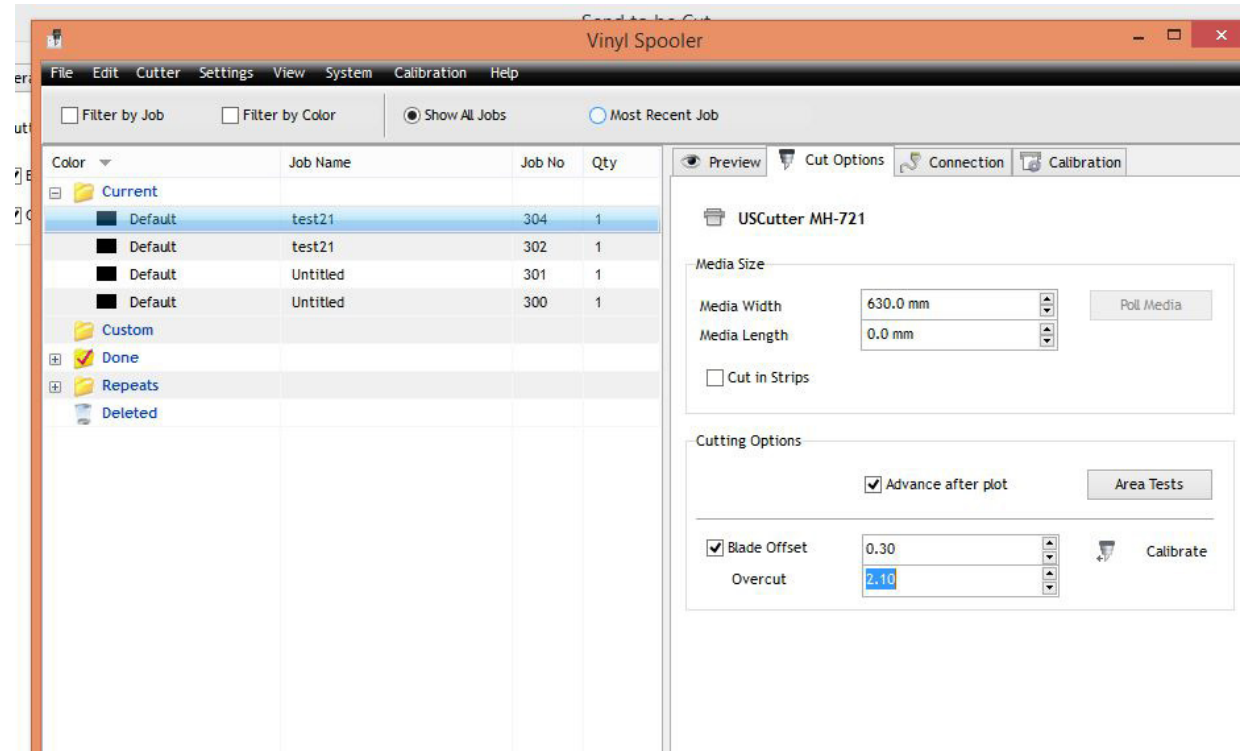
-Most likely use presets

Force = 25 Velocity=2

-If Material can't be separated then force is too low

-If material is mangled force is too high (or blade is dull)

-Choose type of blade: 30, 40 or 60 degree.



# File Setup for Print/Cut

Software download information is on side of Vinyl Cutter. Download to windows side (it's not supported on mac side).

1. Set dimensions of material using.

2. Important Illustrator File to Document.

-Dimension, resize or rotate accordingly.

**REMEMBER** if you want the sticky side of vinyl on back of your image. Mirror image before print other wise sticky side will be on front.

3. Hit cut or print icon to open up print/cut window.

-Insert dimension of material into media width category.

-Insert number of copies into Quantity box.

5. Hit area check button to double check cutter stays on material.

6. Connect computer to vinyl cutter via USB or HDMI cord.

7. Turn on machine on far left side.

8. Choose option UScutter MH-721 to connect to machine and hit connect.

9. Hit send to cut when file is ready.

