



UT ARLINGTON  
**FABLAB**

# Screeny McScreenpress

Part 2: Vinyl Cutting & Adhesive Preparation



UNIVERSITY OF  
**TEXAS**  
ARLINGTON

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# Introduction

This part of the manual will teach you how to set up and upload your image into the vinyl cutter, “weeding” the vinyl design, and applying the transfer tape.

Once you have your design prepared in Illustrator, you can make a sticker using the vinyl cutter. You can then use this sticker on the screen press to transfer your design onto your shirt, poster, board, etc. When you use the screen press, the design of your sticker will determine where ink will be allowed to transfer to your material; the sticker will prevent the ink from transferring, the holes allow it to pass through. First, you need to print your design on the vinyl cutter from Adobe Illustrator. Then move your prepared vinyl piece to the table, where you will lift off pieces of vinyl (weeding). Finally, you will use transfer tape to apply the sticker to the screen press without distortion. The next sections of this guide will cover the calibration and use of the screen printer.

## Precautions:

**Pen Force Setting** - This is the most subjective art involved in Vinyl cutting. If the Pen Force Setting is too low, then the vinyl will not cut all the way. If the setting is too high, then material will pile up on the cutting tool and damage your material. Additionally, as the blade dulls, the setting needs to be raised, so there is no real guide to its optimal settings. If your design is cutting improperly, inform the FabLab staff and they will help you calibrate the machine.

**Have your design fully vectorized!** - This is of vital importance, if your design is not vectorized than it will not cut correctly. For directions on how to do this, see Part One of this guide.

# Cutting the Vinyl

Cutting the vinyl involves loading the vinyl roll onto the machine, making sure you have set Illustrator properly, and printing of the design onto the vinyl. Most of these steps are straightforward. Be sure to follow the directions precisely so the process happens correctly.

## Loading the Roll

1. Decide which color of vinyl you want to use.
2. Load the piece from the back. The 2 clamps need to line up with the grey markers, the vinyl needs to go over the sensors (see Figure 1).



Figure 1: Alignment & Clamps

## Setting Up Illustrator for the Cutter

1. In Illustrator, press **Ctrl+P** > **Setting** > **Preferences**.
2. In the **Preferences** window, press **Get from Machine**.
3. The vinyl cutter will automatically set the length to 3.5". Set the length to the length of your design. The length should be 1 inch longer than your artboard.

*Note: If you are using a piece instead of a roll, the machine will input the correct measurements automatically.*

## Printing the Vinyl Design

1. Press done on the **print** windows.  
**DO NOT PRESS PRINT!**
2. Reopen the print window. Now the settings should match the size of your design.
3. Press print.
4. After the process is finished, rerun the printing (redo step 3) so as to ensure the cut is clean.
5. Use the down arrow to feed out the vinyl so your entire design goes past the groove (see Figure 2).
6. Then press and hold the sheet cut button.



Figure 2: The Groove

## Weeding Your Design

Weeding is the process of removing the extra pieces from the cut vinyl so that only your design will remain. Weeding is the most precise part of the procedure, and requires patience and accuracy. You are better off working slowly and deliberately when weeding your piece, rather than trying to rush through this process. You will be weeding the positive print (i.e. you will be taking away the part that you want printed on the shirt). The screen printing process is different than making a sticker. You are printing on a shirt, so the negative space is going to be printed (as seen in figure 3).

**WEED THE POSITIVE, NOT THE NEGATIVE.**



Figure 3: Negative vs. Positive Weeding



## Precautions

- Make sure to remove the positive space of your vinyl design. You will remove the part of vinyl that you want to be displayed onto your final product.
- If you want to weed an irregular or large shape, use an X-acto knife to cut the vinyl piece into smaller, more manageable sections. This process will allow you to take away small pieces which helps you avoid pulling off huge section that then get stuck on our vinyl and ruin the image (see Figure 4).

*Materials (in Weeding Kit): X-acto knife with blade and nib*

1. Move your vinyl piece to the cutting surface next to the adhesive roll.
2. Using your nib, start at the tightest corners of your shape and loosen the corners inwards.
3. Slowly pull the vinyl piece away from the rest of the vinyl leaving an empty place where you want your image to be.
4. Continue this until your vinyl is completely weeded.



Figure 4: Small Cuts

# Applying the Transfer Tape

The stretch of the vinyl will distort your design on the screen press if you do not use transfer tape. After applying the transfer tape, the backing can be removed from the sticker without distorting your design.

## Precautions

The tape is sticky. Be sure to use caution to prevent creases, air-bubbles, or overlap of the tape on itself.

*Materials: X-acto knife, scraper*

1. Set your weeded design to the far edge of the ruler on the table, nearest to the roll
2. Pull out enough transfer tape to reach 4 inches past the design.
3. Tighten the roll while holding the transfer tape.
4. Stick the transfer tape to the table, then loosen the roll.
5. Use your scraper to spread the adhesive tape across your vinyl design to make sure you have **no** air bubbles or folds.
6. Use your X-acto knife to cut off the roll and any excess tape.

## Conclusion

This process can take a long time to complete. Depending on how detailed your design is, the weeding process will take huge chunks of time. Prepare in advance for the intricate weeding process.

Like all FabLab projects, this one could take multiple tries to get right. Do not be discouraged. Try your best and do it again and again to get it right.

This finishes Part 2 of the FabLab Screen Printing manual. The vinyl is cut and prepped for placing on the screen press. Now that the vinyl cutting and adhesive preparation is complete, the next step involves setting up the screen for printing and the registration process. This information will be found in the manual marked "*Screenpress Part 3*".

This next part will involve placing the vinyl onto the screen and "registering" or maneuvering the screen press until all the parts line up for the ink pressing. This next section will require some intricate steps and therefore make sure to block out enough time to complete it correctly.

Remember to ask the FabLab for help at any time throughout the screen pressing process. They love helping students learn the FabLab equipment.