



# ROLAND GS-24 VINYL CUTTER

RIT

The Student Hall for  
Exploration and Development

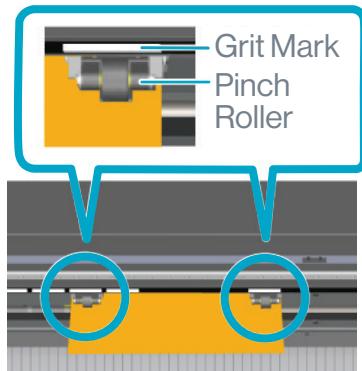
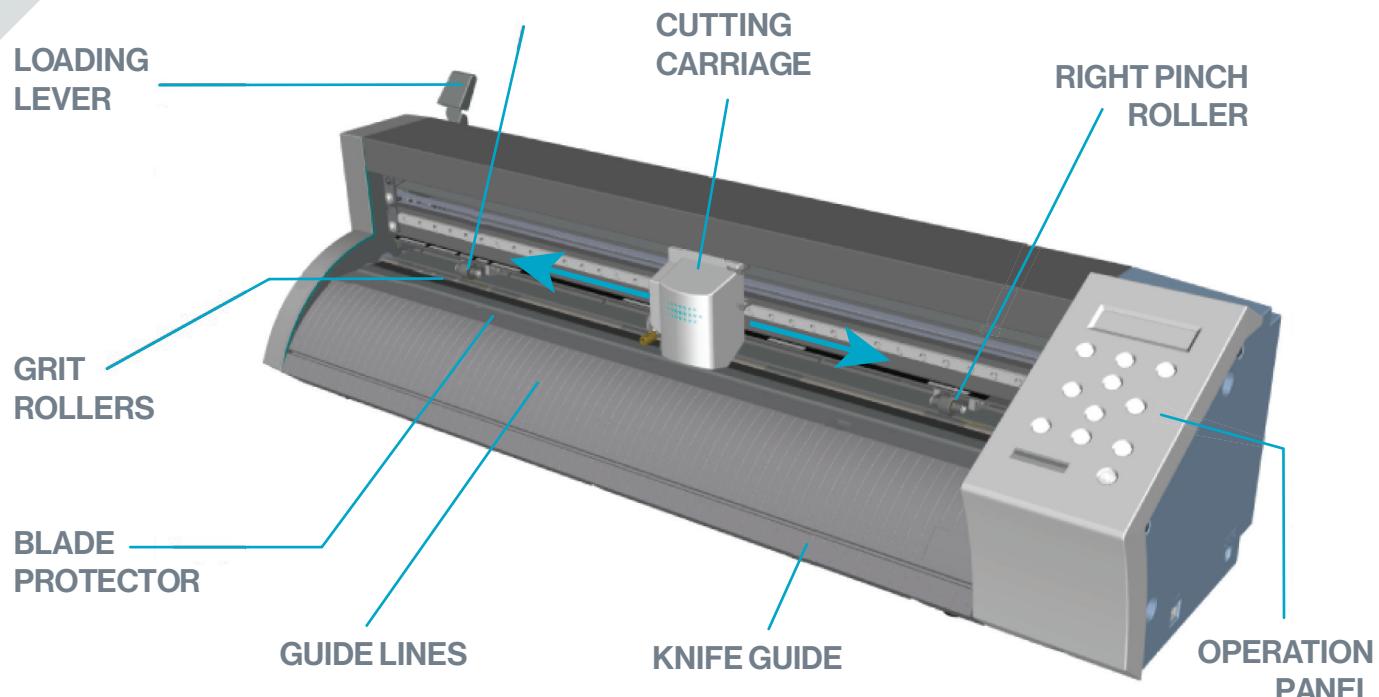
# ROLAND GS 24 VINYL CUTTER

THE VINYL CUTTER CUTS OUT IMAGE AND TEXT OUTLINES

## MACHINE INTRODUCTION

P.2

VERSION #



## MATERIALS

### ALLOWED MATERIALS

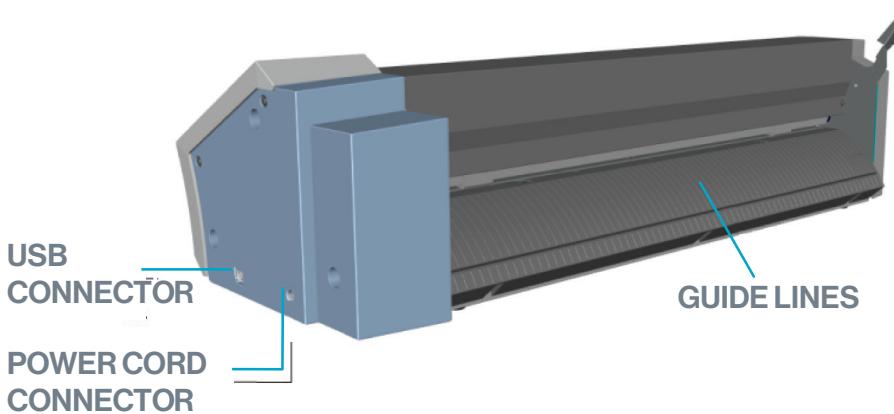
- + Vinyl Rolls
- + Paper

### BANNED MATERIALS

- Fabric
- Most Veneers
- Metal Sheets

### CONSULT MAKERSPACE STAFF FIRST

- + All other materials



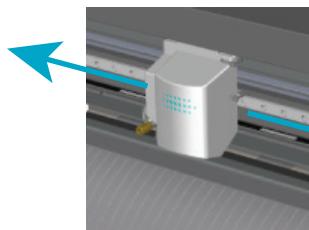
# ROLAND GS 24 VINYL CUTTER

TAKE PROPER SAFETY PRECAUTIONS WHEN OPERATING VINYL CUTTER

## SAFETY

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VERSION #



Keep your hands free of the machine when the cutting carriage is in motion.



- Wear short sleeves or roll up long sleeves
- Secure any loose clothing (zip up jackets, tuck in strings, etc.)
- Tie up and tuck in long hair
- Remove jewelry and lanyards, etc.
- Do not wear gloves



Avoid touching the blade.

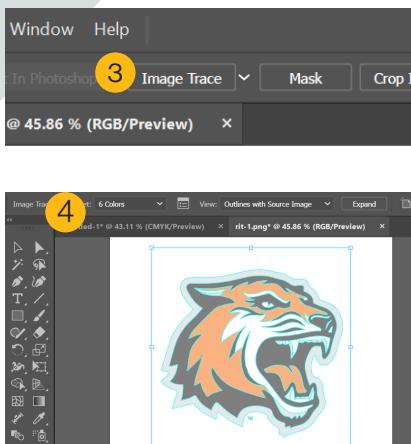
# ROLAND GS 24 VINYL CUTTER

TURNING IMAGES AND TEXT INTO A READABLE FILE FOR THE MACHINE

## PREPARING YOUR FILES (ILLUSTRATOR)

P.4

VERSION #

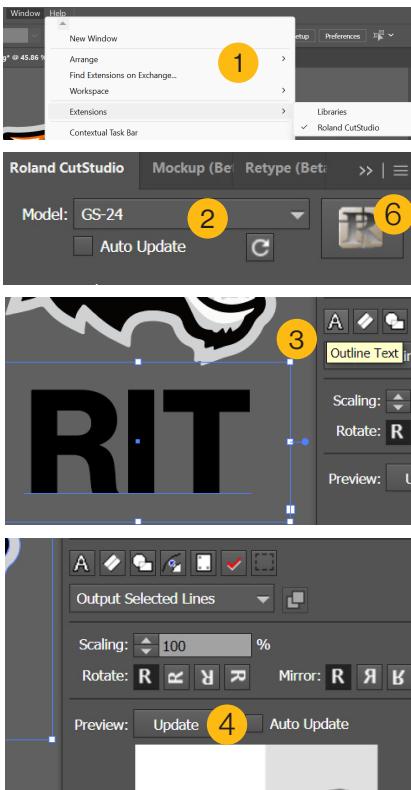


### CONVERTING AN IMAGE FILE

1. Click on the **Windows** tab and set your **Workspace** to **Essentials Classic**.
2. Open your JPG or PNG in Adobe Illustrator.
3. Select your image and click on the **Image Trace** button on the top menu bar.
4. Set the **View** settings to **Outlines with Source Image** and adjust the **Preset** settings until it reads the image to the best of its abilities. This will vary by image. Click **Expand** once the settings are to your liking.

### FINE TUNING THE IMAGE

1. Ungroup the image (Ctrl + Shift + G).
2. Use the Selection, Curvature, and Pathfinder tools to adjust your design as needed.
3. If you want to add text, now is the time to do so.
4. The size of your design can also be adjusted at this time.



### SENDING IT TO ROLAND CUTSTUDIO

1. Click on the **Windows** tab, then **Extensions**, to open **Roland CutStudio**.
2. Make sure the Model is set to GS-24.
3. Select any text you have and then click on the **Outline Text** button on the Roland Cutstudio plug in panel.
4. Drag to select everything that you want cut out of the vinyl.
5. Click the **Update** button next to **Preview**. Make sure no lines are missing during this step.
  - If using heat transfer vinyl (HTV), make sure to click on the middle button for the **Mirror** prompts.
6. Once the preview is to your liking and isn't missing any lines, click on the Roland CutStudio logo button to send the design to Roland CutStudio for the final adjustments.
7. Go to PREPARING YOUR FILES (CUTSTUDIO) (page 6), bottom section PREPARING YOUR DESIGN TO BE CUT for the next steps.

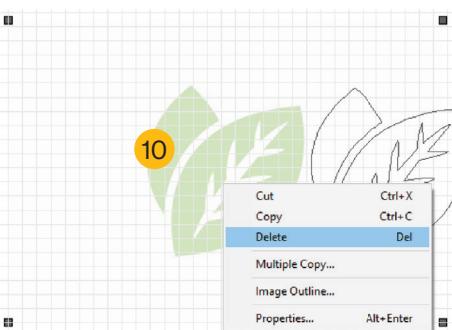
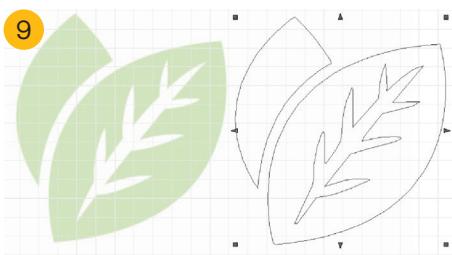
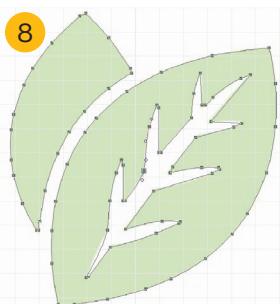
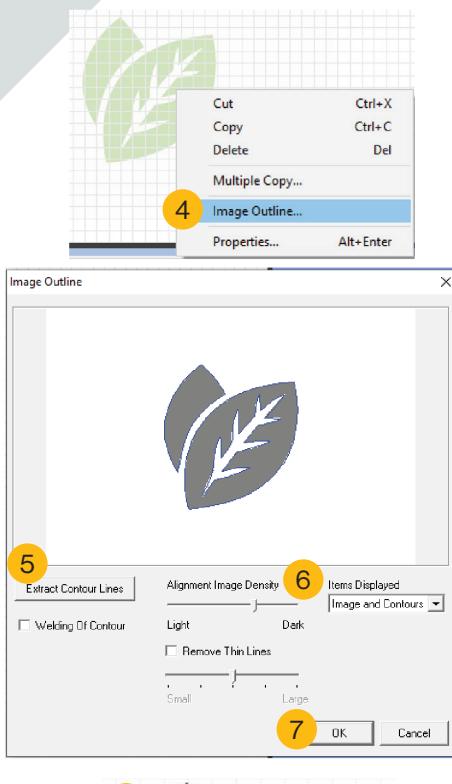
# ROLAND GS 24 VINYL CUTTER

PREPARING YOUR DIGITAL DESIGNS FOR THE VINYL CUTTER

## PREPARING YOUR FILES (CUTSTUDIO)

P.5

VERSION #



### Accepted file formats:

JPG, PNG, SVG, CST



### CHECKING AND ALTERING THE FILE

1. Open Roland CutStudio.
2. Import your image files by using the Import function
  - The “Open File” function is only for CST files.
3. Select your imported image and right-click on it.
4. Click “Image Outline”.
5. Click “Extract Contour Lines”.
6. Adjust Image Density and Remove Thin Lines until your desired Image Outline shows.
  - Click “Extract Contour Lines” as you make each adjustment to see the updated preview.
7. When satisfied hit “OK”.
8. If individual lines and points need to be adjusted, double click on the contour to make it editable. Select individual points to move them.
9. When finished click on the Select tool and move the contour lines off of the base image.
10. To remove the base image, right click on the image and then click “Delete”.

### SAVING YOUR FILES

If you want to save your CutStudio files for future use you can save it to your flash drive as a .CST file.

- You will not need to repeat any of the preparation work next time this way.

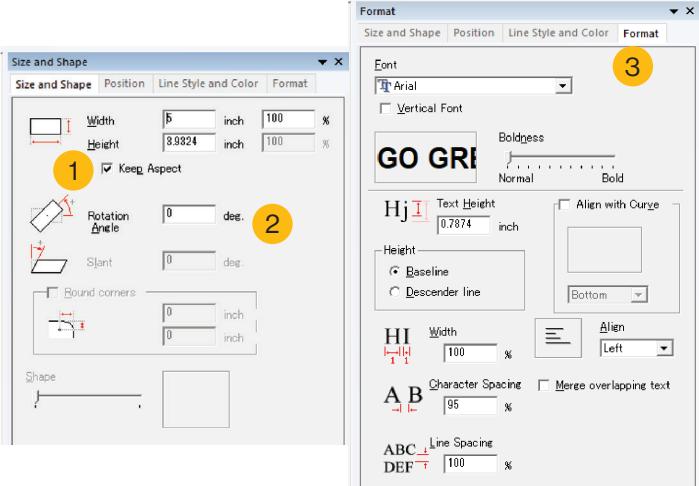
# ROLAND GS 24 VINYL CUTTER

FINE TUNING YOUR DESIGN BEFORE CUTTING IT OUT

## PREPARING YOUR FILES (CUTSTUDIO)

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VERSION #

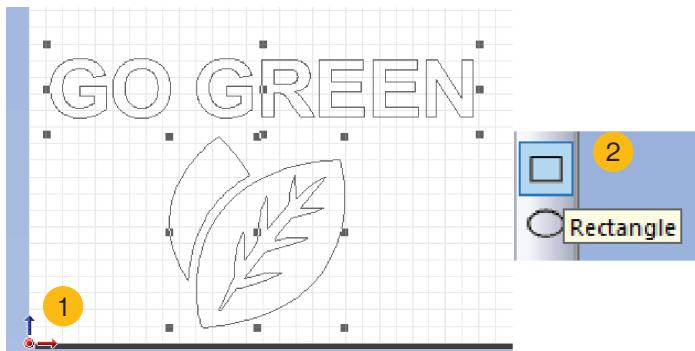


### ADDING TEXT AND SIMPLE SHAPES

1. Text, simple shapes and symbols can be made with the text and shape tools in the left sidebar.
2. Select a tool and then click a spot on the screen to start adding text and drawings.

### ADJUSTING SIZE AND FORMATTING

1. Checking the “Keep Aspect” box under “Size and Shape” (right side toolbar) will keep the proportions when adjusting measurements.
  - You can input exact dimensions in inches here.
2. The “Size and Shape” tab also allows you to adjust the rotation angle and slant of anything that is selected.
3. The “Format” tab allows you to adjust font style, height, width, and spacing. Only groups of text can be selected for this tab to work.



### PREPARING YOUR DESIGN TO BE CUT

1. Move everything as close to the bottom left corner as possible (where the red dot is located).
2. Make a box framing everything that will be cut. This will make it easier to remove the vinyl later.
3. Load the Roland with your vinyl. (P. 6)
4. Update the cutting area dimensions. (P. 6)

# ROLAND GS 24 VINYL CUTTER

TOOLS AND MATERIALS NEEDED

## WHAT TO BRING

P.7

VERSION #



## MATERIALS

- **What we offer**
  - Vinyl
    - Stick on
    - Heat transfer (HTV)
    - Stencil
  - Transfer tape
- **Common places to buy these materials**
  - Michaels
  - JoAnn's
  - Walmart
  - Dollar Tree
- **Material parameters**
  - Max 2 ft vinyl width
  - Max 23 in usable cutting width, infinite length
  - Max cutting thickness up to 0.1 mm
  - Max material thickness up to 0.3 mm
  - 1 mm can be loaded depending on the blade
  - All rolls and sheets of vinyl are allowed (HTV, stick on, etc.)

*If bringing your own material, you must provide a receipt or MSDS as proof of what it is*



## TOOLS

- **What you need**
  - Weeding tool kit
    - X-Acto knife
    - Squeegee
    - Tweezers
  - Heat press or iron
- **Where to get your own**
  - Michaels
  - JoAnn's
  - Walmart
  - Dollar Tree

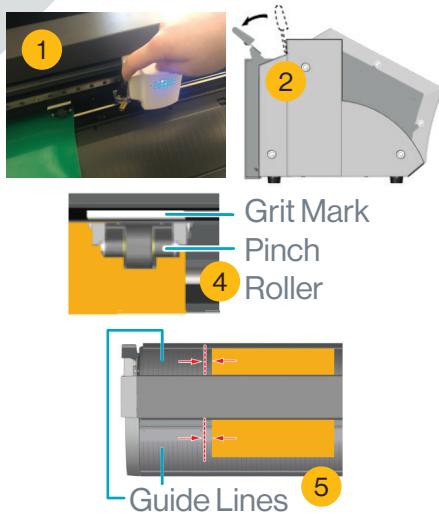
# ROLAND GS 24 VINYL CUTTER

GETTING STARTED ON THE VINYL CUTTER

## BASIC MACHINE SET UP

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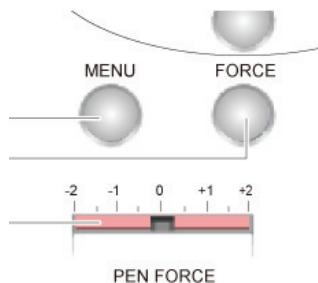
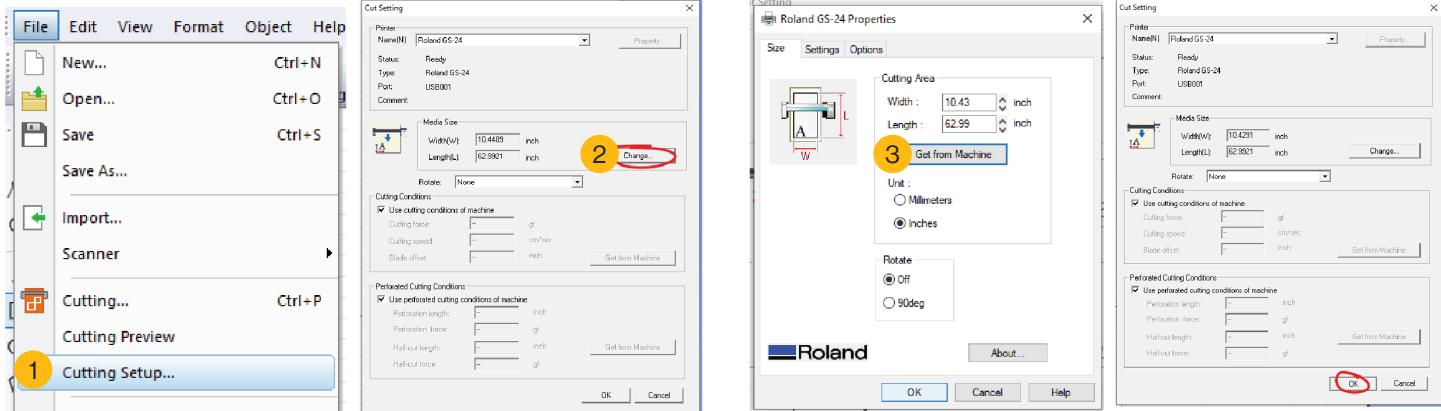
### LOADING AND SECURING MATERIALS

1. Gently push the cutting carriage to the side and away from the vinyl.
2. Lift the rollers by pushing the loading lever down.
3. Insert your vinyl until the front edge is just past the blade protector strip.
4. The rollers MUST be on the vinyl and under a grit mark.
  - The left roller must be under one of the first 4 on the left.
5. Align the left edge of the material with the guide line nearest to it.
  - Use the matching guide line on the back to make sure it's straight.
6. Lower the rollers by lifting the lever from before.
7. Return to the computer.

### ADJUSTING THE CUTTING AREA

1. Go to File → Cut Setup
2. Go to Media → Size Change
3. Click on the “Get from Machine” button and then OK, then OK again when back in the Cut Settings.

- You may need to reposition your design to accommodate for the change in space.



### PEN FORCE (MAKERSPACE STAFF ONLY)

The pen force determines how much pressure is applied by the blade.

- It can be changed with both the slider and the Cut Settings window in Roland CutStudio.
- There are very few cases where it should be adjusted.

# ROLAND GS 24 VINYL CUTTER

WEEDING AND TRANSFERRING YOUR DESIGN TO COMPLETE THE PROJECT

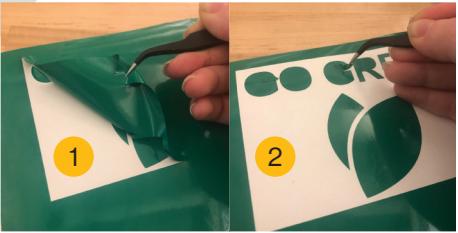
## TRANSFERRING YOUR DESIGN

P.9

VERSION #

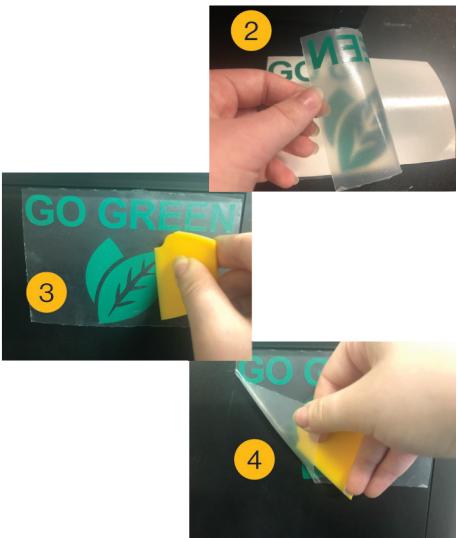
### PREPARING VINYL FOR TRANSFER

1. Use tweezers or an X-Acto knife to remove the framing rectangle you prepared earlier, going slowly to make sure your design doesn't come up.
  - If it starts to come up, then hold that part down with the corner of the squeegee.
2. Repeat for all unneeded negative spaces.



### STICK-ON VINYL ONLY:

3. Slowly apply the transfer tape, using the squeegee to prevent air bubbles as you go.
4. Use the squeegee to make sure your design has properly adhered to the transfer tape.



### APPLYING STICK ON VINYL

1. Clean the surface where you will be applying your vinyl.
2. Slowly peel the transfer tape off of the vinyl backing.
  - If individual parts of your design are sticking to the backing instead of the transfer tape, put it back down and use the squeegee.
3. Carefully position your design over the surface.
4. Once placed, use the squeegee to keep the design adhered to the surface as you slowly peel off the transfer tape.
  - Vinyl will stick to some surfaces better than others, so take your time.



### APPLYING HEAT TRANSFER VINYL (HTV)

1. Position your design over where you want to apply it, making sure the clear transfer tape is facing up.
2. Following the directions on your vinyl, enter those settings into the Cricut Heat Press.
3. Once it has heated up, use it to apply a firm pressure on top of your design for the designated amount of time.
  - Wait a minute for it to cool down before checking to see if it adhered.
  - You may need to use a longer time and/or higher temperature. Use a scrap piece to check in an inconspicuous area first.
4. Remove the clear backing when it has cooled down.

# ROLAND GS 24 VINYL CUTTER

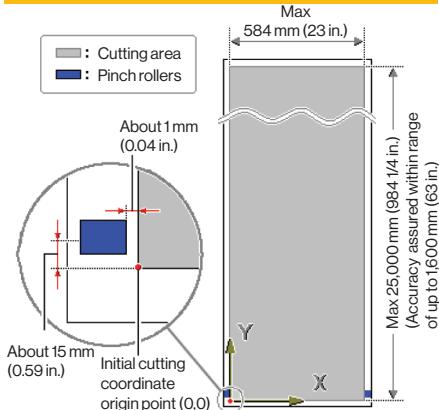
HOW TO USE THE VINYL CUTTER

## RUNNING THE MACHINE

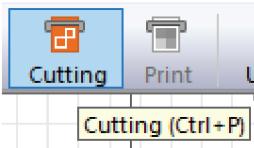
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### ALWAYS UPDATE THE CUTTING SIZE AREA



### PEN FORCE SHOULD BE SET TO 0



### USE THE FRAMING BOX TO HELP DETERMINE WHERE TO CUT



### QUICK CHECK BEFORE STARTING

1. Check that your vinyl has been loaded correctly and the pinch rollers are lowered.
  - If using HTV, the clear plastic side should be on the bottom.
2. Check that your cutting area is about the same as your material dimensions.
  - The cutting area measures the space between the pinch rollers, so expect the width to be slightly smaller than the actual dimensions.
3. Make sure there's a border around your design for easy removal during weeding.

### DURING THE JOB

1. Click on the "Cutting" button once you are ready to cut out your design.
2. Click "OK" to cut out your design when ready. Watch the start of the cut to make sure it's not cutting through the backing paper.
  - If it's cutting through, press the PAUSE button immediately and call a Makerspace Staff over for help with adjusting the pen force.

### CLEANUP

1. Lift the pinch rollers using the loading lever.
2. Gently push the cutting carriage to the side and away from the vinyl.
3. Pull the vinyl forward so that your framing box is past the cutting strip.
4. Cut the vinyl with scissors or an x-acto knife, using the knife guide to help guide the cut.
5. Prepare the vinyl for transferring of your design.



### CUT IS TOO DEEP/SHALLOW

- The pen force needs to be adjusted.
- The blade may need to be cleaned or replaced.
- If using thicker material, make sure the cutting quality is set to HEAVY.

**Speak to Makerspace Staff for help, do not attempt this on your own**

### MACHINE NOT RUNNING

- Check that the vinyl cutter is plugged in to both a power source and the computer.
- Make sure the vinyl cutter is turned on.
- Ask Makerspace Staff for help if the problem persists.



### MATERIAL SLIPPING FROM ROLLERS WHEN CUTTING

- Make sure the loading lever is raised towards you and the pinch rollers are locked down, holding the vinyl in place.
- Check that the material is parallel to the guide lines.
- Ask Makerspace Staff for help if the problem persists.

**WHEN IN DOUBT ASK A MAKERSPACE STAFF**

**ADDITIONAL MACHINE INFO CAN BE FOUND HERE:**

