

USCutter SC2 28” Vinyl Cutter



Introduction

Our vinyl cutter traces a thin knife along the surface of a sheet of vinyl, cutting out a design. It can be either an adhesive backed sticker, or a heat transfer design. Either option will be a single color when completed, though you can layer and stack colors to create multicolor designs.

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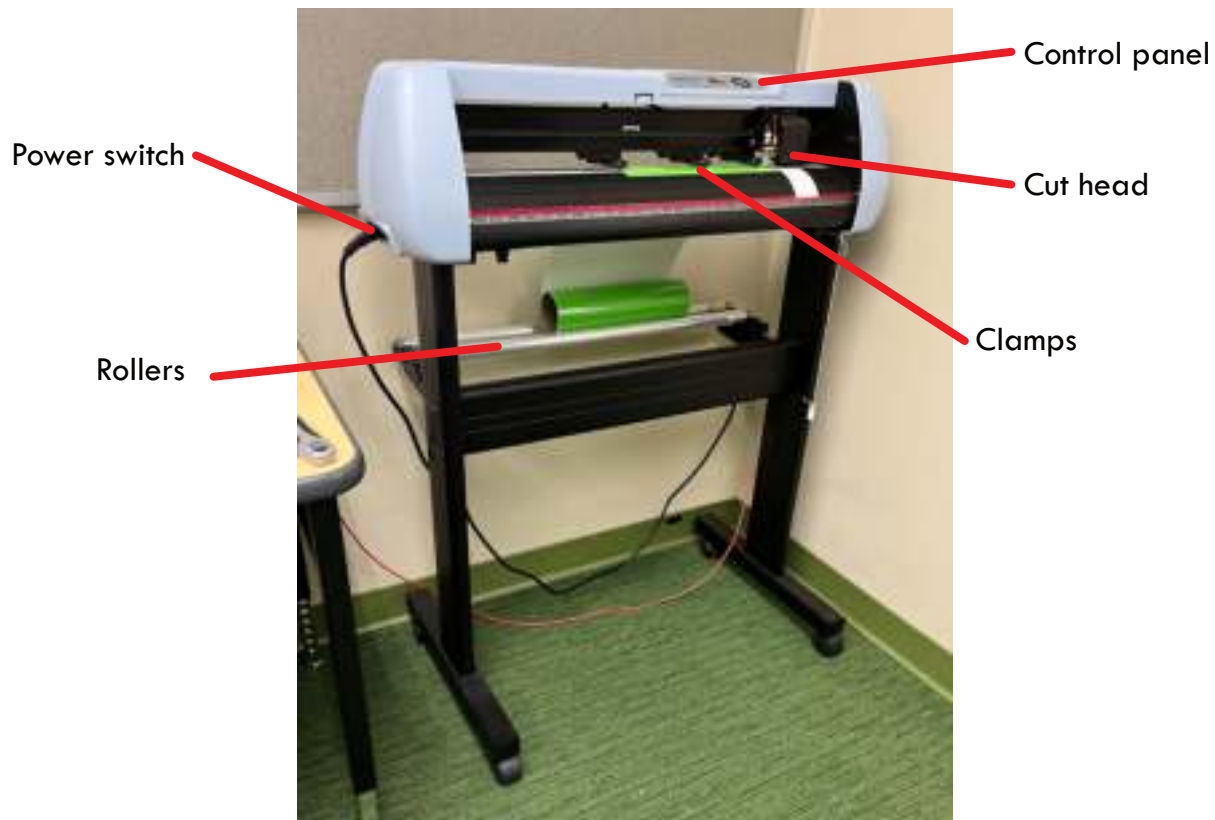
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
1. Types of vinyl

The vinyl cutter has two types of vinyl we typically use. The first is decal vinyl, a sticky backed vinyl that comes in either a glossy “permanent” variety or a matte “removable” variety. The other kind is a heat transfer vinyl that fuses to fabric through heat. This vinyl cutter only works with single color vinyl, not printable vinyl. To use printable vinyl, use the Wide Format Printer.




2. Parts of the Vinyl Cutter



- Control panel - Mostly used to adjust speed and pressure, though there is a reset button that will cancel a job.
- Power switch - Used to turn the machine on and off.
- Rollers - This holds the vinyl rolls in place and lets it turn freely as needed. Should be placed so that the end of the roll comes up over the back side of the roll.
- Clamps - These hold the vinyl roll in place. When placing clamps, avoid the spot marked with the  as the rollers on the clamps won't have grip in that location.
- Cut head - The tiny knife that moves back and forth to create your image. It can be adjusted manually. Note that the knife drops down when the power is off, so if you move it across a roll of vinyl while it is off, it will cut the vinyl.

3. Loading vinyl

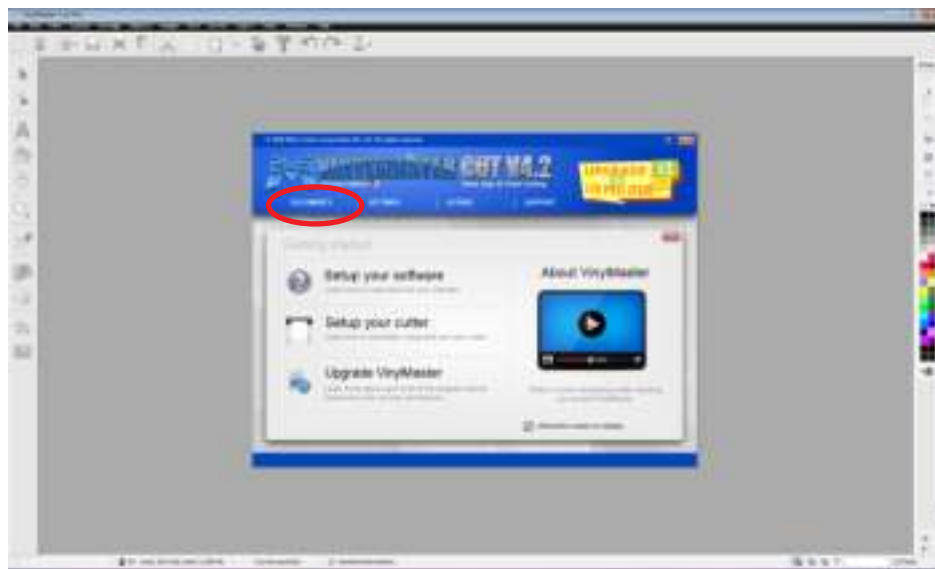
To load a roll of vinyl onto the vinyl cutter, there's one key thing to remember. The roll needs to have the cut side face up. To do that, set the roll on the rollers behind the machine. Place it so that the roll feeds out the back of the roll. From there place the paper under the clamps and feed it out the front so that it reaches past the gray strip near the blade. You may need to adjust the vinyl left or right to ensure you miss having the edge of the vinyl directly on the  portion. Clamp the rollers down on the vinyl with one about 1/2-1" from each edge and one in the middle if using a piece of vinyl at least 6" wide. With the machine turned on, move the cut head by hand so that it's sitting just inside the right corner of the vinyl sheet.



4. VinylMaster Cut

VinylMaster Cut is the software used to cut vinyl decals from our single color vinyl.

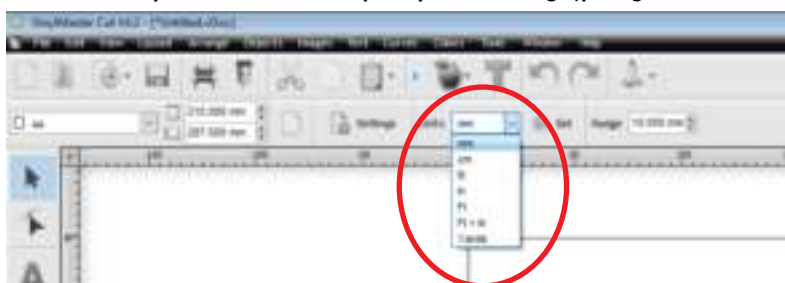
1. Open VinylMaster Cut. Once it finishes loading you'll see the open screen. Click on the Documents tab.



2. Click new document on the next screen.



3. Switch to inches if you need to adjust your sizing (program defaults to millimeters.)



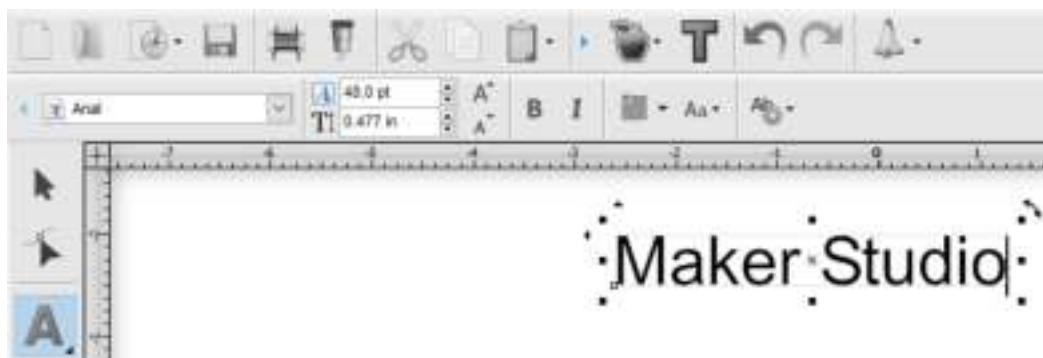
4. Click File > Import, then select the design you want to turn into a decal.

a. If your design is not a vector image already, follow the steps under the section “5. Vectorize” to prepare it. Otherwise proceed to step 5.

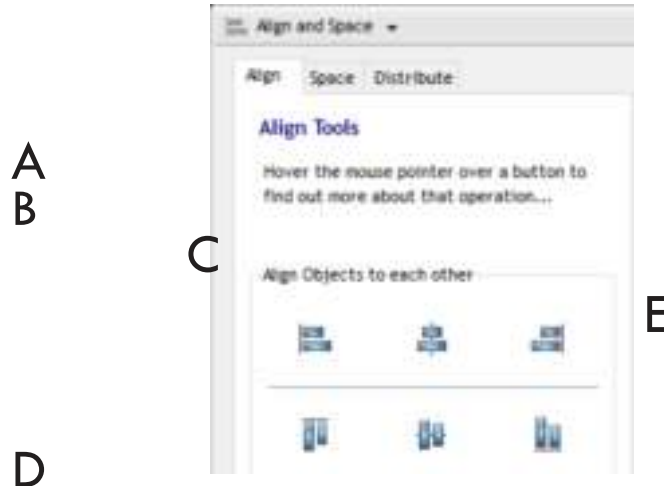
5. It will display your image at your cursor and you can then click to place it onto the document.



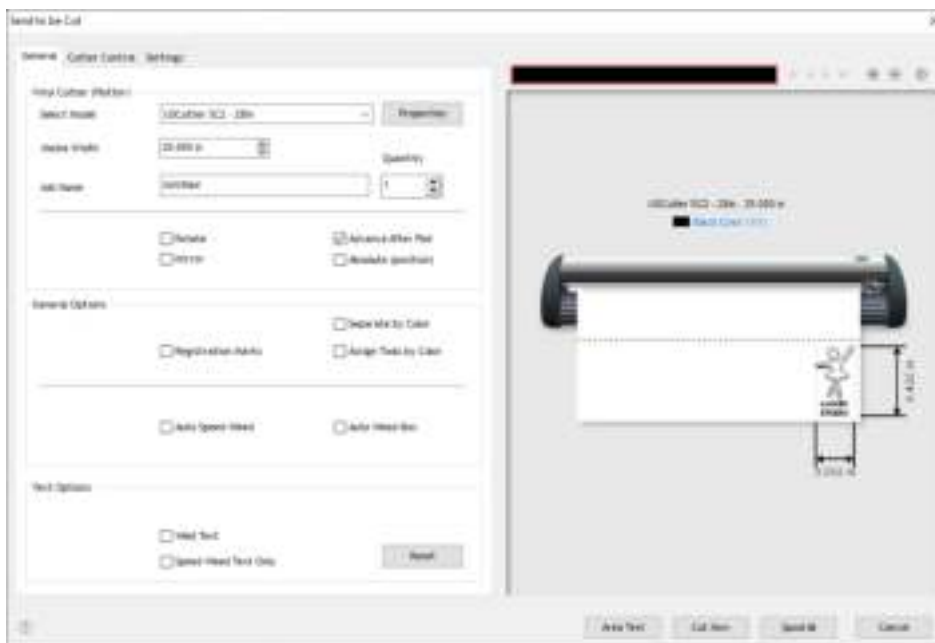
6. If you need to add text, you can do so with the text tool. Click the A on the left side and then click on your document to start typing. As you type you can change the font and size on the top bar. You can also change the alignment as well.



7. If you need to accurately align multiple objects together, you can use the alignment tools found on the right hand bar under “Align and Distribute.” This will let you align your selected elements based on the center or sides of each element.



8. When ready to cut your design, click the “Send to cutter” button on the top bar.
 9. Here you can see the size of your design and apply a few settings.



- a. **Rotate** – Will rotate your design 90 degrees.
 - b. **Mirror** – Will reverse your image. Necessary for heat transfer and if a design is intended to go on the inside of a window.
 - c. **Separate by color** – Used when a design will me a multi-color project (See “Multi-color decals” for more information.) When changing between colors in a multi-color decal, you can use the settings in the long orange box on the top right.
 - d. **Weld Text** – If using a script font or just have overlapping text, select this item to fuse all the letters together rather than remaining as individual letters. Here you can see the font on the bottom has the e, l, and d overlapping, and without welding the text would cut as three separate letters.
 - e. **Image preview** – Here you can see how your image will appear when cut on the roll. To get an accurate representation of this, ensure that your media width is set to whatever size roll you’re using.
10. With your vinyl loaded and ready (see “Loading vinyl” below), you can perform an Area Test to ensure that the outer edges of your design fit within your vinyl. This is especially useful when using scraps.



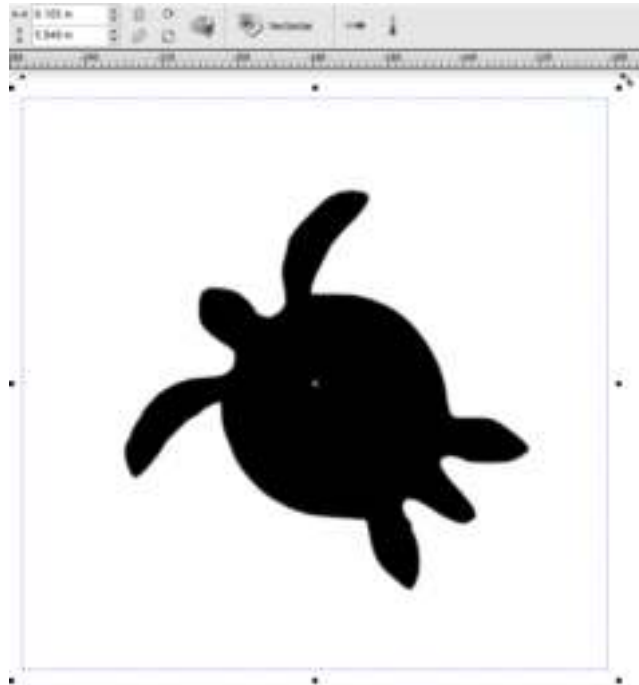
11. If your design is ready, press Cut Now and say “Yes” when it asks you to Proceed with Cutting.

Note: The color of your design does not matter for the purposes of your final cut decal. If your design is all black, but you put a roll of red vinyl on the cutter, your finished decal will be red. Only use the color on the screen for your own design purposes, but know it will not be directly applicable to the finished piece.

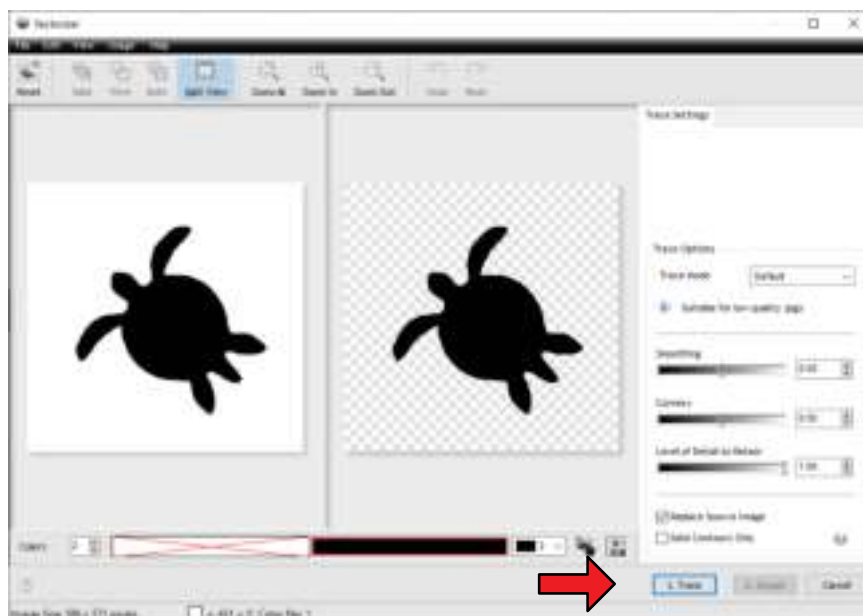
5. Vectorize

To cut a decal, the image must be a vector image. However, VinylMaster can convert a raster image to a vector image using a tool called Vectorize.

1. Import your raster image into the page. It will display a box that follows your cursor. Click to place the image.
2. Select Vectorize on the top bar. This will scan your image and present you with some options.



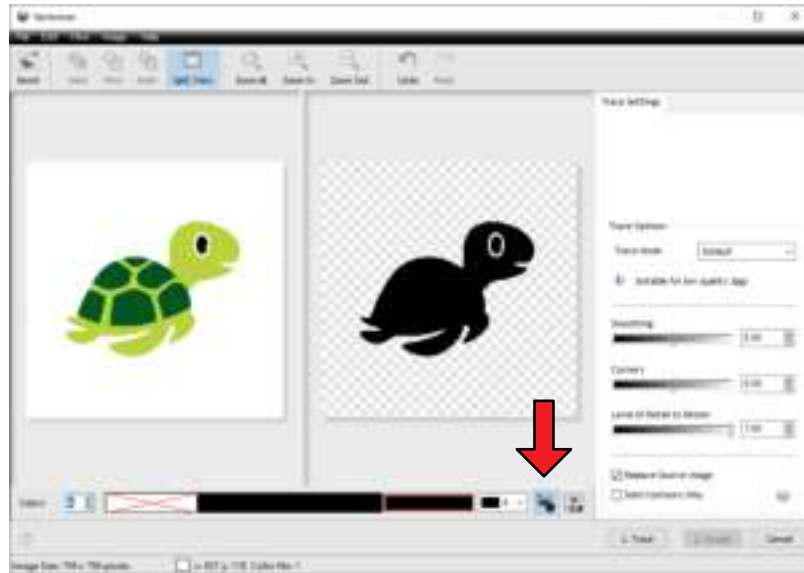
3. With a single color design, you should be set to click Trace and then Accept once those steps are done.



- For an image with multiple colors, you may need to select an increased number of colors on the bottom left. You can toggle these on and off by right clicking on a selected color.



- If you have two colors you want to convert to a single color, select the apple button beside the color drop down (teal box). This will convert your entire image to black.






- You can adjust the settings slightly using the sliders on the right side. If you do this, you have to click Trace again each time you make changes.
- Occasionally, your image may import with the background overwhelming the image and no image visible on the preview. To fix this, add a color or two until your design appears, and toggle off all the other colors you don't want to include.

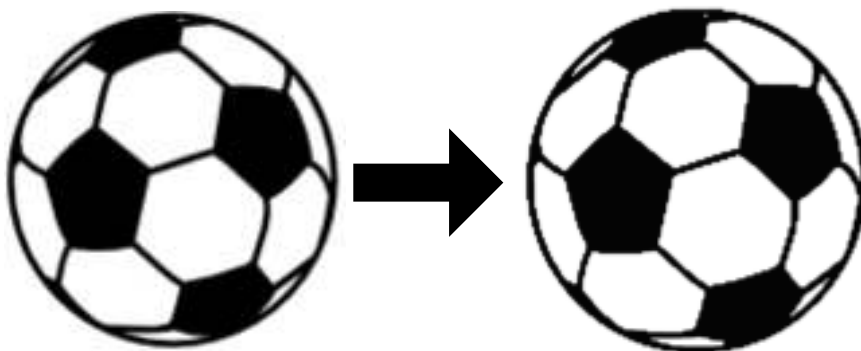


6. Images that work better

With our vinyl cutter, the broader the shapes the better the finished product will be. Below are some images of a soccer ball. They are arranged from worst to best and reasons are given for the ranking.

		
Worst	Good	Great
<p>This image has a lot of hand drawn elements with the fill of the shapes. Depending on the size of the finished product, it may not cut those details well.</p> <p>Note: If this was a large scale design, something like this could work well.</p>	<p>This soccer ball is good. It has big broad shapes, however the edge lines are a bit thin. That's not to say this won't work, but having a thicker outline would help with the finished product.</p>	<p>This is a great soccer ball image. The lines are thick, the shapes are filled in, and overall it would be easy to work with and produce a great finished product.</p>

The other thing to consider is having a high quality image. One that is pixelated will not translate well through the vectorize process. This advice does not apply to images that are intentionally pixelated as a design feature. This mostly refers to a lower quality image that wasn't intended to look pixelated to begin with.



7. Weeding vinyl

After your design is cut, you'll need to weed the excess vinyl around your design.

1. Set your cut vinyl on a cutting mat and select your weeding tool. Either a weeding hook or a craft knife will do.



2. Starting at one corner and working your way at a 45 degree angle, peel away everything from the outside of your design first.



3. Then carefully remove the interior shapes until your design is completely weeded.
 - a. Note: It can be helpful to take a craft knife and make some shallow relief cuts around your design to help break large portions of vinyl into smaller, easier to weed sections.



8. Applying transfer tape

Once your design is fully weeded, you may need to apply a transfer tape. This is a large sheet of masking tape applied evenly across the entirety of a single color decal. Note, heat transfer vinyl does not need a transfer tape applied to it.

1. Place the roll of transfer tape on the table and unroll enough to cover your design. Leave the tacky side face up.



2. Place your weeded decal face down on the tacky side of the transfer tape. Set it with just one side down first and lower the rest of it down from one side to the other.



3. Take a squeegee and press from the center of your design outwards in all directions to remove air bubbles.



4. Cut the transfer tape with a little margin around your design to free it from the roll.



5. Flip your design over and squeegee it again from the front, once again going from the center outwards in all directions.



6. Using a knife or scissors, cut the excess transfer tape off from around your design. This can help to prevent the transfer tape from getting stuck on something else before your ready to apply your design.



9. Applying your decal

When you're ready to apply your decal, follow these steps.

1. Peel the transfer tape off the vinyl backing paper. Do this slowly. If a part of your decal does not come off with the transfer tape, replace the transfer tape and press it down once again to get the transfer tape to stick.



2. Place your decal with the transfer tape onto your desired surface. Once again place it starting at one edge and working your way to the other side. Squeegee it down using a hard edged object (like a credit card).



3. Peel off the transfer tape from the surface. Do this slowly. If a part of your decal doesn't peel off of the transfer tape, place the transfer tape down once again and press it some more until it releases cleanly.



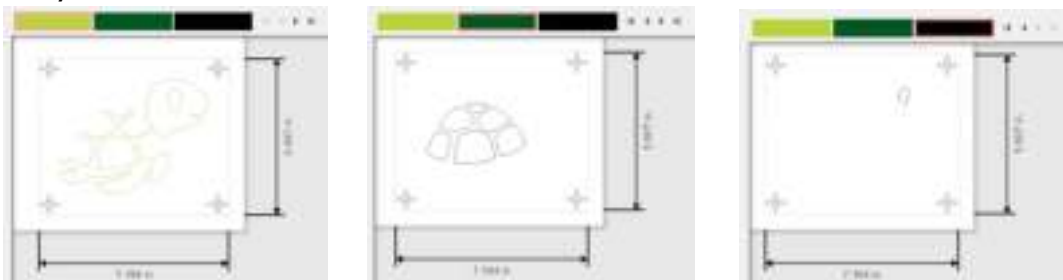
10. Multi-color Decals

Decals can be created using more than one color, by either layering vinyl, or by cutting out exact vinyl shapes and aligning them. Regardless of the approach, use the clear transfer tape. This will allow you to see where you're placing your pieces rather than the opaque standard transfer tape.

1. Prepare your file just as you would with a single color design. If it's a non-vector image, vectorize it but keep as many colors as needed to complete your design.
2. When you go to cut the project, select "Registration Marks" and "Separate by color" under General Options.



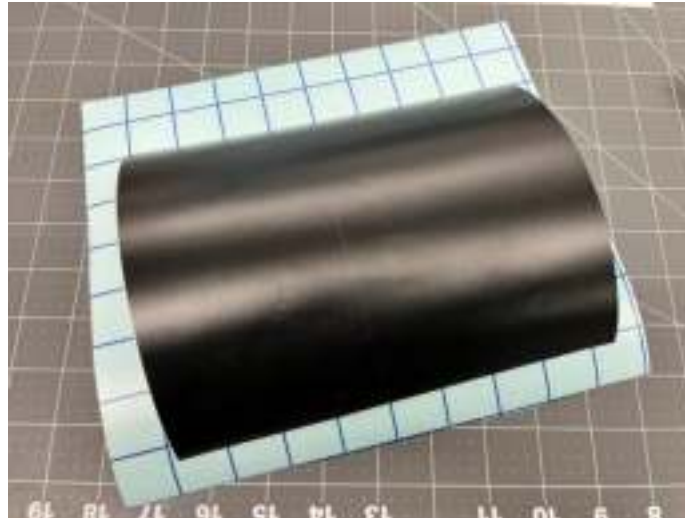
- a. Registration marks are used to help align each color to the next one. Each cut color will have a set of them at the identical spot to help with alignment.
3. Here you will want to print each color individually on their own color. (Once again, the color on the design doesn't matter, it's the color of the vinyl roll you're using.) To do this, click on each color located in the preview to select which color your are choosing. Or use the drop down under "Separate by color."



4. After each color has cut, weed them each, keeping the registration marks in the corners of each color for alignment.



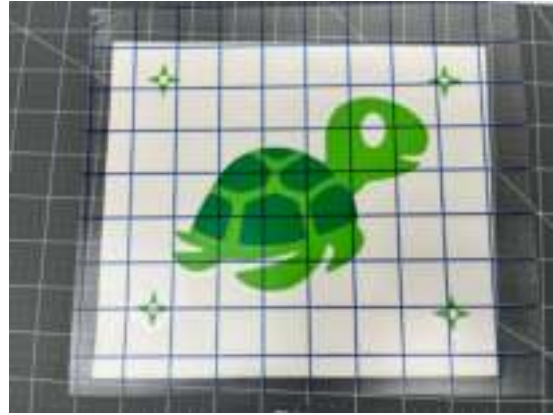
5. Cut a sheet of the clear transfer tape slightly larger than your overall design. The clear transfer tape has the gridlines printed onto the clear side.



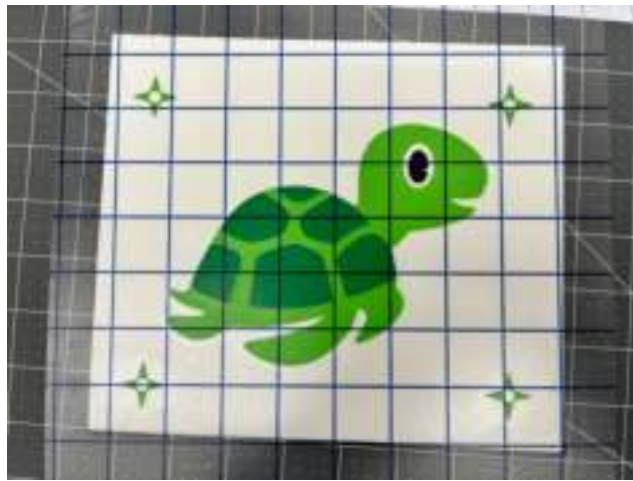
6. Selecting your “top color” as in the one that takes up the most space, place the transfer tape on it just like you would a single color design.



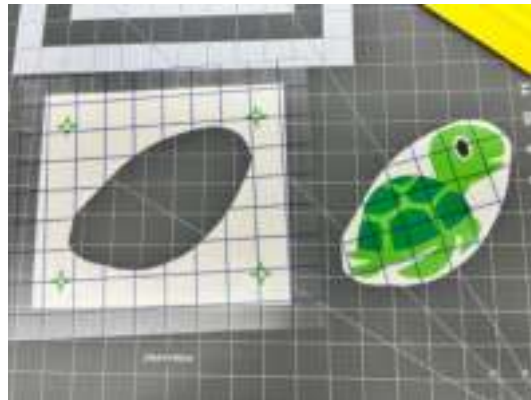
7. Peel that design off the backing paper, and then carefully apply it over your next color. Begin by aligning one set of registration marks, then a second. Lay your design down the rest of the way. If done properly, you shouldn't see more than a sliver of the second color showing underneath the top color.



8. Repeat until all of your colors have been aligned and added to the overall design.



9. Cut out the design from the overall project so that you leave behind the registration marks and all the excess material.



11. COM Port Set Up

If the vinyl cutter ever ceases to show as installed, follow these steps to get it functional again.

1. Click Tools > Plugins & Modules > Vinyl Spooler.
2. This will provide an "Install Cutter Driver" option. Choose "USCutter" under Make and "USCutter SC2 - 28 in" under Select Cutter. Then click Install.
3. On the next screen you should be on the Connection tab. Select that if you are not. Under Port Type choose "Direct COM Port" and under Port Name select "COM4."