

Print and Cut Process

These lasers are designed to engrave images on objects with relatively accurate placement and cut out parts, not necessarily cut out *precisely* around an object printed on another machine, but they **can** be made to work that way.

Items needed:

Xacto Knife

Masking Tape

Scotch ATG 714 Tape Gun (*optional – but it's easier to use*)

1. Set up a new file in either Adobe Illustrator or Inkscape, with the artboard set to be the exact size of your paper, and a **landscape** orientation.

(This is necessary at the time this is being written because the current print bed on the laser is not a full 11 inches and you cannot rotate the entire file because of it. Once the size of the print bed changes, the landscape orientation will no longer be necessary.)

2. In your drawing software, place the image jpeg and **embed** it.

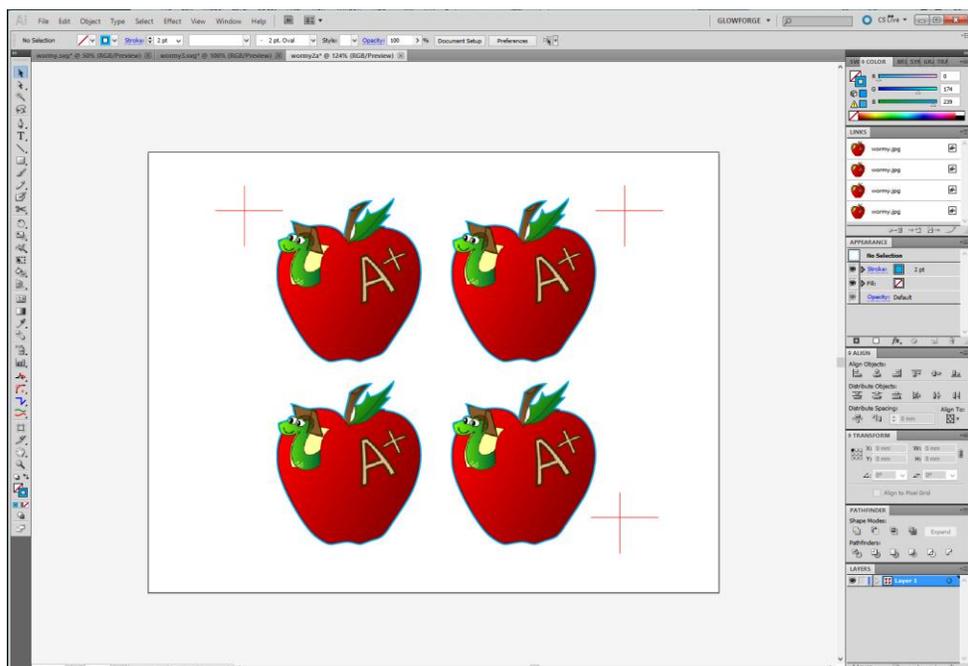
3. Do a **Live Trace** to create a vector path around the jpeg image. Make it as close or far away from the image as you want it to be. Give it **no Fill**, and either a color that you want to use for the stroke, or you can use White as a stroke color and give it a very thin stroke size. The path is going to be cut down the center of the stroke, which is printed full size, so the choice here just depends on how you want the results to appear. *(A wider stroke (2 pixels) in black will hide a multitude of sins.)*

4. **Group** the Image and the Stroke together.

5. Copy and paste as many copies of the group as you want to cut. *(Keeping in mind that the further out from the center you get, you **might** introduce a slight discrepancy.)*

6. Add three sets of crossed lines to the file, in the orientation shown. *(The closer that you can get these to the actual images, the less trouble you will have with correcting for the camera distortion.)*

7. Set the stroke color for the crosses to be something different from what you chose for the image outlines, but it needs to be visible. (Not white).

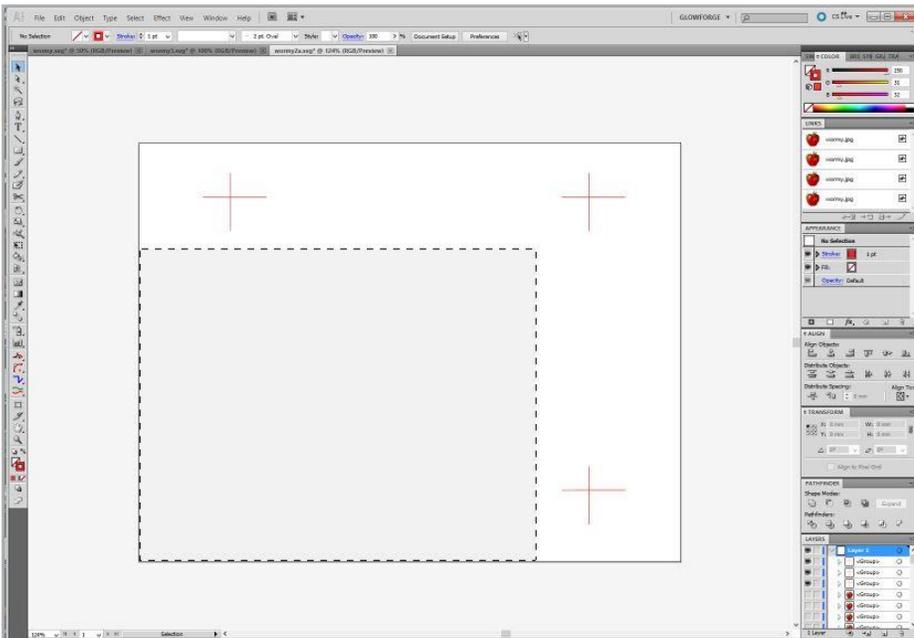


8. Print as many copies of that page as you want to cut on your printer, plus **one extra copy***. Make sure the orientation is **landscape** and do not **Shrink to Fit** or **Scale** the images to fit on the page.

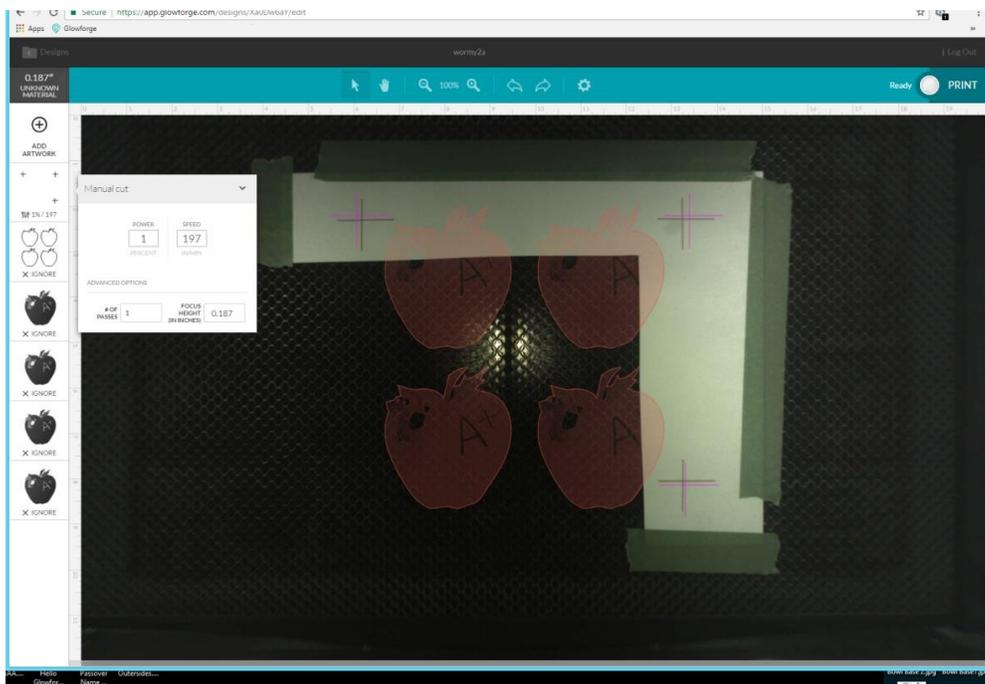
* An alternative is to turn off the visibility of the images and just print a copy of the crosses. You are going to cut that page up, so you can save some ink by turning the images off. After you print the crosses, you need to turn the visibility back on for the images.

9. Save the file as an SVG. Make sure you have **Embed Images** checked in the pop-up options for the SVG file.

10. Using the Exacto knife, cut the bulk of the images out of one of the printed pages, or out of the one that just had the crosses on it. Tape that down onto the Glowforge cutting bed, on all sides, with the masking tape. (*Center as closely as possible.*)



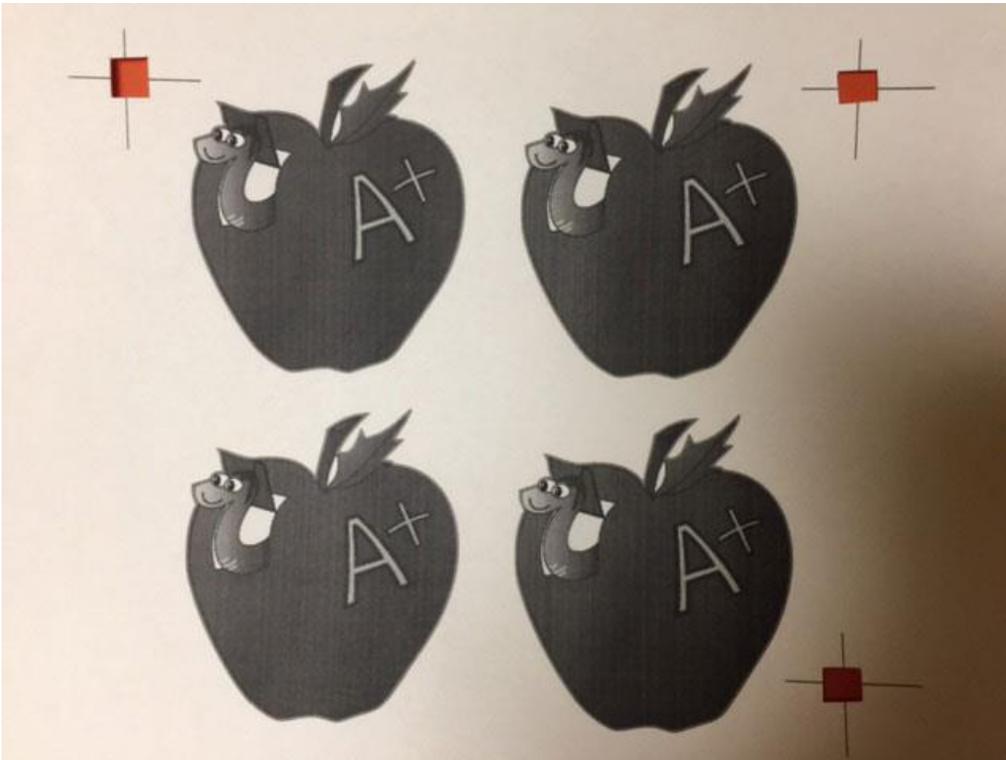
11. Load the SVG file into the Glowforge interface.



12. Select everything, including the crosses, and try to align those as well as possible, centering them around the printed crosses.

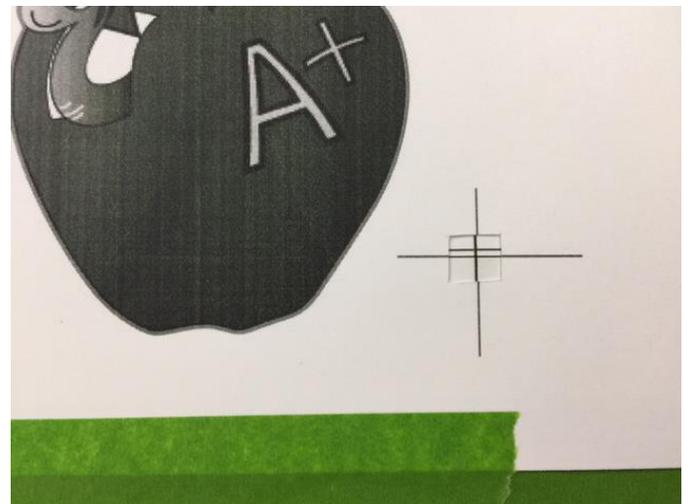
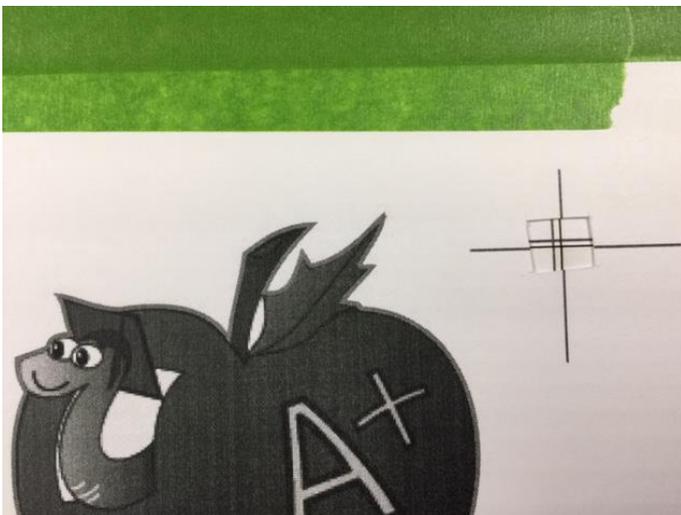
13. Set everything but the crosses to **Ignore**. Set the crosses to be **Manually Cut at the fastest speed**. Cut the crosses. They will likely **not** line up exactly with the printed crosses on the sheet.

14. Take one of the remaining printed pages and cut a small square out of the center of each cross with the Exacto knife, as shown below:



(At this point, it is a good idea to either apply a small strip of Scotch ATG double sided tape to the back of each image, or a doubled piece of masking tape, to hold the cutouts down when they are lasered. Either works fine to keep the cutouts from flying around, and can be removed from the back afterwards by gentle rubbing.)

15. Line up the crosses with the three **LASERED** marks (not the original printed marks) on the sheet in the Glowforge bed. **Tape the edges of the paper down.** (If it blows up into the path of the beam it can catch fire.)



16. Change the settings on the crosses to **Ignore**. Set the outlines of the images to **Manual Cut** using the correct settings for your paper.

17. Cut the images out.



18. If you want to cut another sheet of images out, repeat steps 14-17.

Some things to watch out for.....

1. If you have a situation where the laser cut marks absolutely cannot be made to line up with the cutout squares, it's likely because your printer feed is set too loosely around your paper and they are shifting around during the printing. Tighten it up and try to get the sheets to feed consistently. *(You can try to align **between** the printed mark and the lasered mark to see if you can still get a few good cuts out of it.)*

2. Don't turn off the laser or close the program until you have completed all of the sheets that you want to cut. Closing the program will make it necessary to redo steps 8 through 13. The initial cut of those crosses establishes a relationship between the crosses and the images that the laser uses to orient itself. If you close the software, you have to re-establish the relationship for the next set of cuts.

3. You can try to cut a jig for the entire sheet of paper, it is an alternative, but I found that because the printer can shift the paper around when it prints, the results are usually not as precise as doing the steps above.