

Stenciling a Logo with Paint and a Low-power (2W) Laser

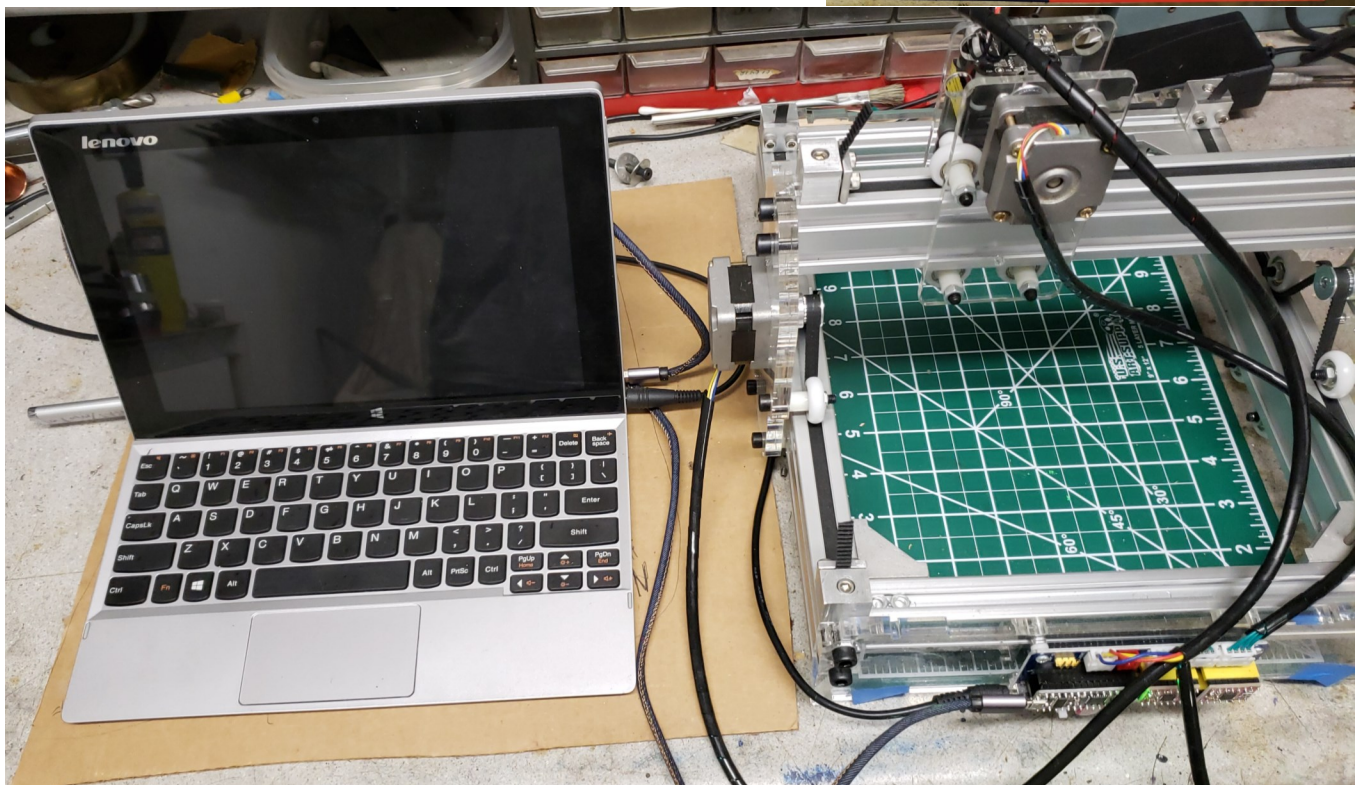
I originally used an electrochemical etching kit (shown below) for the logo, but I didn't like the results. I typically garnet blast finished blades and when I would etch them, capillary action would cause the etchant liquid to spread around the area being etched. I would then have to buff the area with steel wool to get rid of the discoloration, but that affected the finish. Blasting after etching would diminish the contrast.

There were other issues, alignment time, slipping and having to make new masks periodically or when I wanted to etch another pattern. Also, the photo-sensitive film and other consumable supplies were expensive (cheaper at McMaster-Carr). When I wanted to etch hot blued knives, I had another problem—the etchant would strip away the bluing where it leaked. So I decided to search for other options.

I already had a low power laser that I had been tinkering with, but I knew it didn't have the power to etch metal. More powerful lasers could etch metal, but they were expensive. I had already been experimenting with burning our names, and other stuff, through the neon green powder coat on our handles—it worked perfectly. That led me to try the laser with spray paint to create a mask for etching our logo. It works like a charm.

Tools required:

- Cheap 2W LASER (shown below)
- LaserGRBL free software (and a computer)
- Masking tape
- Black paint—any kind of flat black seems to work well
- Tooth brush or similar
- Lacquer thinner, or anything that removes just paint
- Etching kit (no photo sensitive paper required)

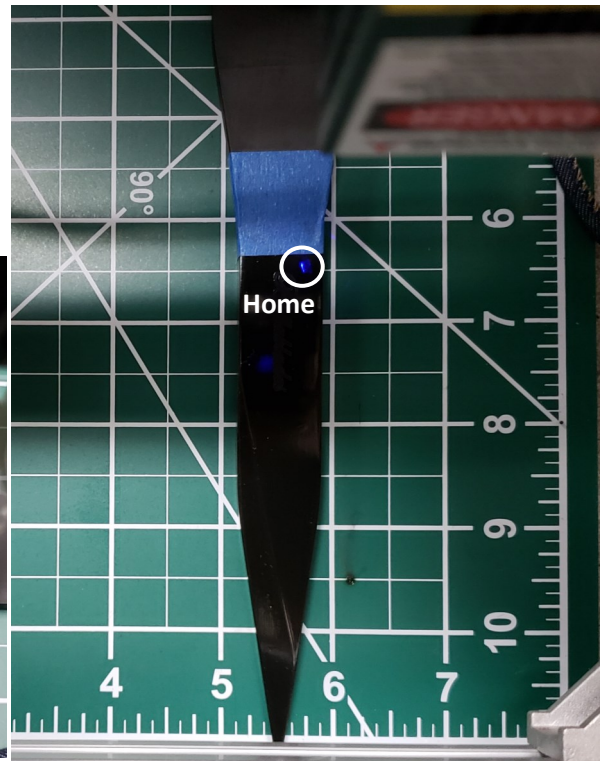
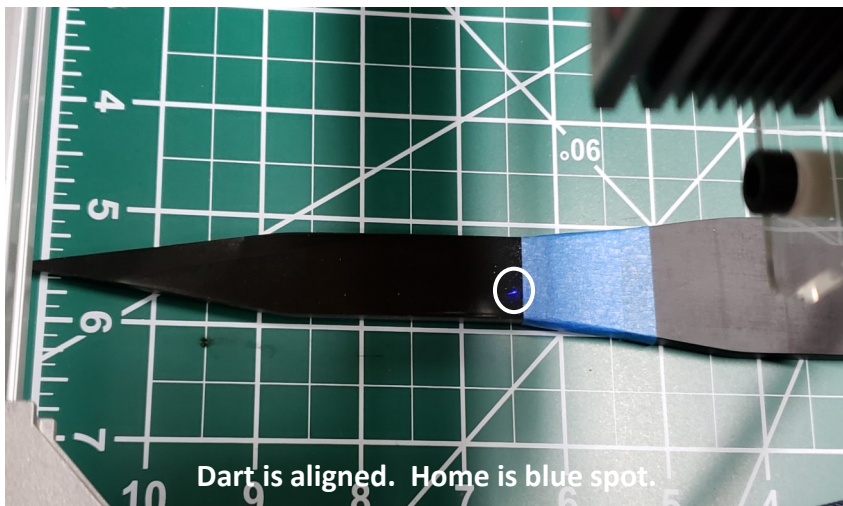


Steps in the process:

1. Create the pattern to be etched. I use PowerPoint and save as a picture. Any drawing program will do.
2. Mask non-logo areas to save time removing paint when done.
3. Spray paint the area to be etched, using black paint (Other colors will probably work as well).
4. Let the paint dry.



5. Set up the laser: load image, adjust size and speed, set to max power (I use LaserGRBL software).
6. Align the object (knife) to be engraved.
7. Set the "Home" point (blue dot in photo).
8. Start laser and walk away.



9. When the laser is done, use a brush (I use a tooth brush) and cleaner and gently clean the Logo area.

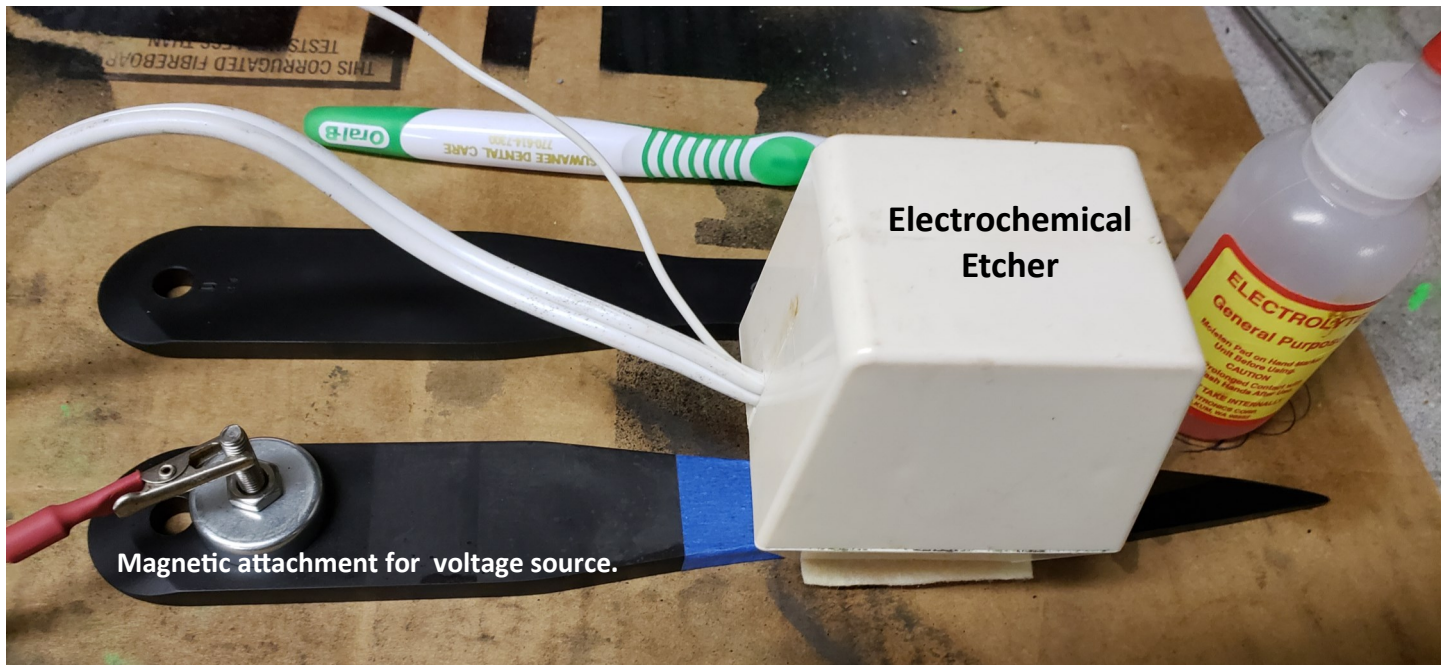


Painted blade after laser etch.



A closer look

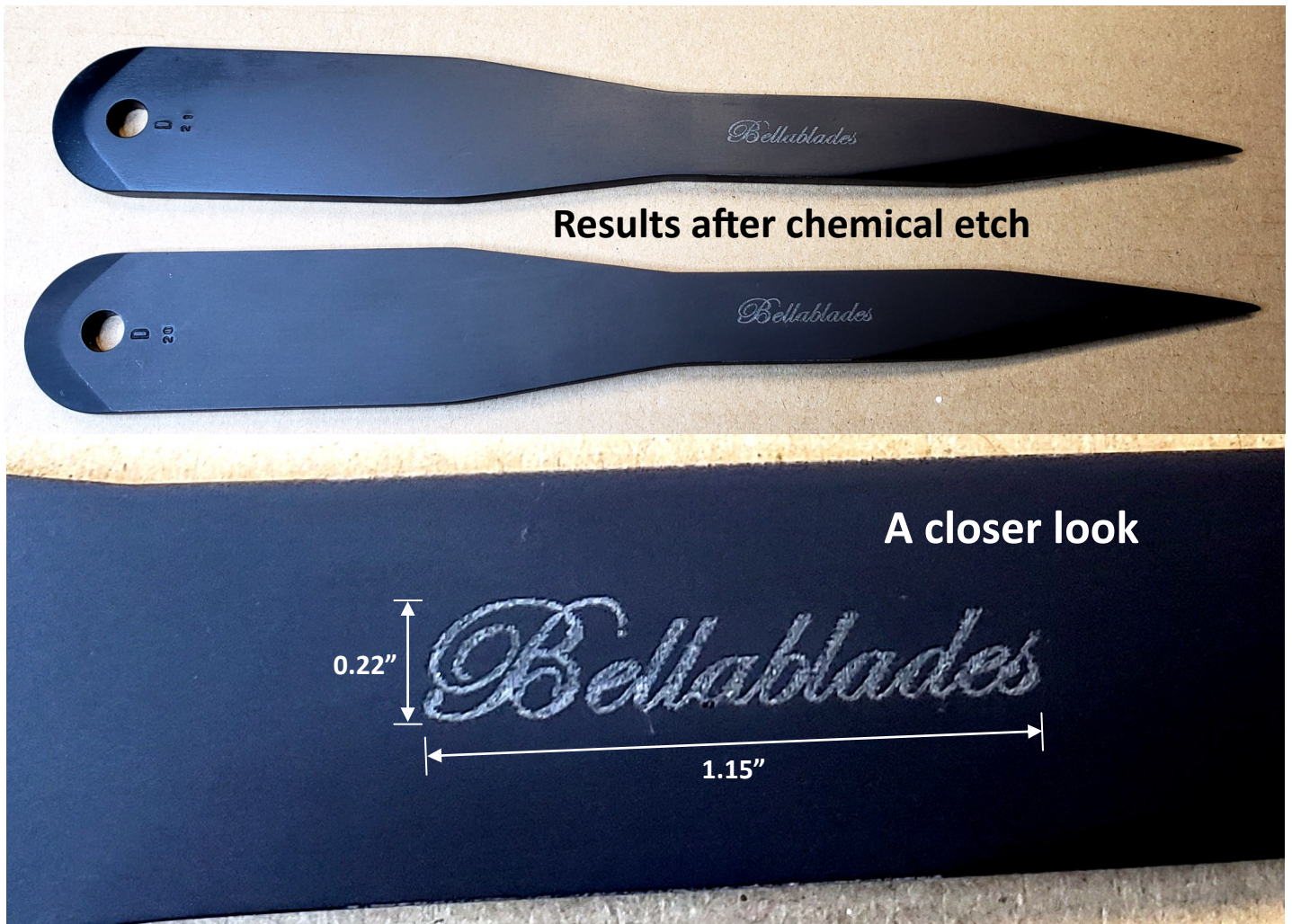
10. Use an electrochemical etcher to etch the pattern into the metal (I etch for ~3 minutes).



Electrochemical Etcher

Magnetic attachment for voltage source.

11. Rinse with water and neutralize the chemical etchant (part of kit).
12. Using lacquer thinner to wipe off all of the paint.
13. Lightly oil and you're done.



Once you're set up, you can do one after another. What I really like about this process is the ability to develop different drawings and quickly implement them, without having to chemically develop a mask. Here are some I've been playing with, just for fun, for our personal throwing knives:

*Throw naked! That'll
upset the neighbors!*

Throw a good knife,
drink a good beer!

Old R.A.T.

NO SPAIN

Bearded R.A.T.

RAT