



# MAKER LAB Safety Instructions

## Specialty Tool Training: Epilog Laser Cutter



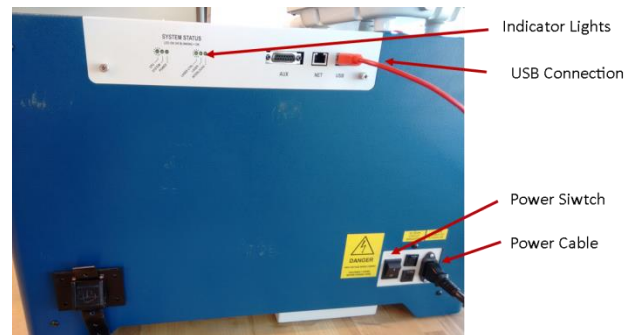
**Note:** All the instructions from Basic Training apply to Specialty Tool Training. If you have not completed Basic Training, do so before you complete Specialty Tool Training.

### Epilog Laser Cutter

The Epilog Laser Cutter uses a high power laser for accurately engraving and cutting materials. Its operating modes consist of raster engraving, vector cutting, or combined modes. Raster engraving is used to create graphic images by engraving a series of high resolution dots. Vector cutting is a continuous path that follows the outline of an image and is generally used for cutting completely through a material. The Epilog Laser Cutter is controlled by a computer.



Top View



Right Side View

This Maker Lab Safety Instructions and Safety Training module only covers the use of the Epilog Laser Cutter. Individual equipment training is performed for usage of Specialty Tool Training equipment. The full list of Specialty Tools can be found on the Maker Lab Website.

**Disregarding lab rules or working unsafely will result in suspension or revocation of lab privileges depending on the severity of the infraction.**

**In an Emergency:**

**Call 4444 from the lab phone (or 408-554-4444 from a cell phone), or 911 from a cell phone.**

The Maker Lab is located in Guadalupe Hall, 3<sup>rd</sup> Floor, Room 301

**Maker Lab Website:** <http://makerlab.engr.scu.edu>

**Maker Lab E-mail:** [scumakerlab@gmail.com](mailto:scumakerlab@gmail.com)



# Specialty Tool Training: Epilog Laser Cutter Safety Guidelines

## Emergency Information

1. **Injuries:** For immediate help notify Campus Safety at x4444 (408-554-4444) and follow their direction. Do not attempt to remove foreign objects from the eye or body; it is better to have trained medical personnel remove foreign objects from the eye or body.

## Being ready to work

2. **Do not operate** equipment unless you have been properly trained to do so. If you're unsure about the safe operation of a tool or any aspect of a job – ask for help. **If you can't do a job safely, don't do it!**
3. **Never work when you are impaired.**
4. **Be prepared** and have your file ready before coming to the Maker Lab.

## Personal Protection

5. **Must wear safety glasses with side shields.**

## Shop and Tools

6. **Always keep aisles, exits and access to emergency equipment** (fire extinguishers, fire alarms, first aid kit) clear at all times.
7. **Become familiar** with how the Epilog Laser Cutter works and the dangers before using it. Ask for help!
8. **Verify** the overall condition of the equipment (e.g., damaged power cord, debris buildup, or defects in the tool housing or anything that would compromise the safe use of the Epilog Laser Cutter).
9. Keep the area around the machine clean and free of clutter.
10. Keep the floor around the machines clean, dry, and free from trip hazards.
11. **Never let the Epilog Laser Cutter operate while it is unattended.**
12. Do not leave the Laser Cutter lid open.

*Sign and date in space provided, verifying you have received a copy of and have read and understand the safety instructions.*

**Name:** \_\_\_\_\_

**SCU ID:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_



## Specialty Tool Training: Epilog Laser Cutter

You may not operate the Epilog Laser Cutter without the requisite training and approval from the Maker Lab Staff.

1. Always wear safety eye protection (safety glasses).
2. Never let the laser system operate while it is unattended.
3. Keep the area around the machine clean and free of clutter, combustible materials, explosives, or volatile solvents such as acetone, alcohol, or gasoline.
4. Always use the Air Curtain when vector cutting.
5. Be careful! When vector cutting, many materials have the potential to burst suddenly into flames – even materials that may be very familiar to the user. Always monitor the machine when it is operating. If material is on fire, open lid to immediately shut off the laser.
6. Only use approved materials. Never engrave or cut any material containing PVC or vinyl.

### Specifications

- Workspace: 12 inches x 24 inches
- Input Format: Any file type compatible with CorelDraw; including PDF, JPEG, AI, DXF, DWG
- Approved Materials: wood, acrylic, anodized aluminum, glass, laserable plastic, leather, marble, mat board, melamine, stainless steel with cerdec coating, rubber, and more

### Operation

A User Manual is available which goes into more detail about machine operation and settings.

1. Setting up equipment
  - a. Set up a drawing in the software program (CorelDraw). Note: Line thickness set to hairline will vector cut and line thickness set to 0.5 pt or greater will raster engrave.
  - b. Turn on the power to your laser and wait for a “Beep” to note the machine is initialized.
  - c. Turn on the air curtain if vector cutting. The exhaust will turn on automatically.
2. Setting up material
  - a. Place your material on the table in the upper left corner
  - b. Focus the laser by pushing *Focus* button on keypad, then use *Up* and *Down* arrows until spring is touching material without compression, and push the *Reset* button.
3. Setting up printing
  - a. From CorelDraw click on the *File* pull down menu to print.
  - b. Select *Print*. Make sure your Printer Destination is the “Epilog Engraver Win32 Zing”.
  - c. Click Properties to go to the Dashboard to set Speed, Power, etc., for the material you are using. See the Speed and Power Recommendations section of the manual.
  - d. Click *OK* to exit out of the Dashboard driver with the settings in place.
  - e. Click *Print* to print the page to your laser and the job is shown in the LCD display.
4. Printing
  - a. When the job to be run is displayed in the LCD Display Panel, press *GO*. To run a previous job, press the *JOB* button on the keypad and then scroll through the sent jobs by pressing the *UP* Arrow key or the *Down* Arrow key. The corresponding job names will be displayed in the LCD Display Panel.
  - b. The job will now start.
5. Once completed, remove your material from the table, turn off the air curtain if necessary, and power off the laser cutter.