

NAME TAG LASER CUTTING WORKSHOP

Presented by **TERRAPIN**  **WORKS**



Students please sign in
for the TW Workshop!

SCAN THE QR CODE →

<https://go.umd.edu/TWSP25>



INTRODUCTION

In this workshop, you will be learning how to cut and engrave custom name tags out of plywood using a CO2 laser cutter

We will be using the 75W Epilog Fusion Pro 32

The goal is to provide you with a conceptual understanding of the design and manufacturing process for laser cutting



WHAT IS LASER CUTTING?

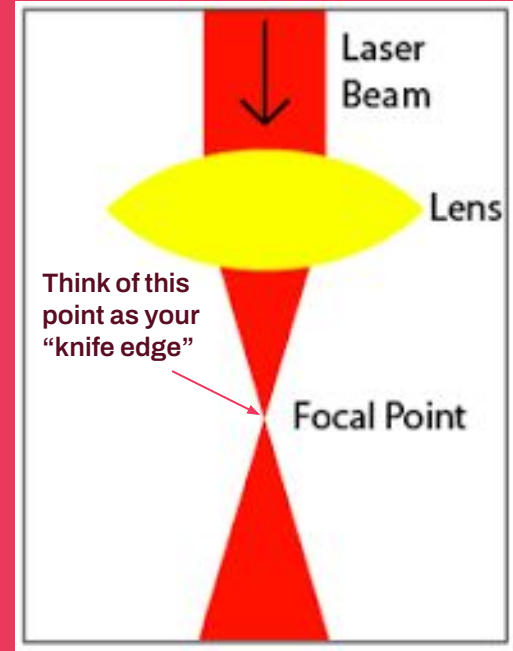
The overarching concept is simple; aim high energy focused light along specific paths to vaporize material in those locations

The laser light creates an hourglass shape when focused using a lens

The thinnest point is called the focal point – this is where the energy density, or fluence, is the highest

A major part of the process involves ensuring that this point is touching the top of your material. This is called focusing the laser

The focal point acts like the edge of a knife and is the “sharpest” point so to speak, so focusing the laser is crucial to achieving good quality cuts



Why Choose Wood?

AESTHETIC APPEAL: Natural look, can be stained, painted, or left raw.

DURABILITY: Wood provides a long-lasting, quality feel.

CUSTOMIZATION: Wood is easy to work with and can be engraved with high contrast for personalized designs.

SUSTAINABILITY: Option for eco-friendly wood types (e.g., bamboo).



ADVANTAGES OF LASER CUTTING

Precision and Accuracy

Minimal Material Waste

Speed

No Need for Tool Changes

No Tool Wear or Deterioration

EPILOG LASER SYSTEM WORKFLOW



Power On
Check Exhaust &
Air Assist, Turn
on Laser

Markup
Set Fill & Stroke
Properties in
Adobe Illustrator



Print
Send file from AI
to Epilog job
manager

Set
Position File, Set
Focus & Adjust
Laser Settings



Autofocus
is usually
sufficient



Laze
Send Prepared
File to Laser

LASER SAFETY

List of Prohibited Laser Cutter
Materials:



Fumes from Unsafe Materials

- As the laser vaporizes material, dangerous gasses can be produced by an unsafe material.
- Always check with staff before cutting a material not supplied by TW
- Some commonly forbidden materials are: PVC, ABS, Fiberglass

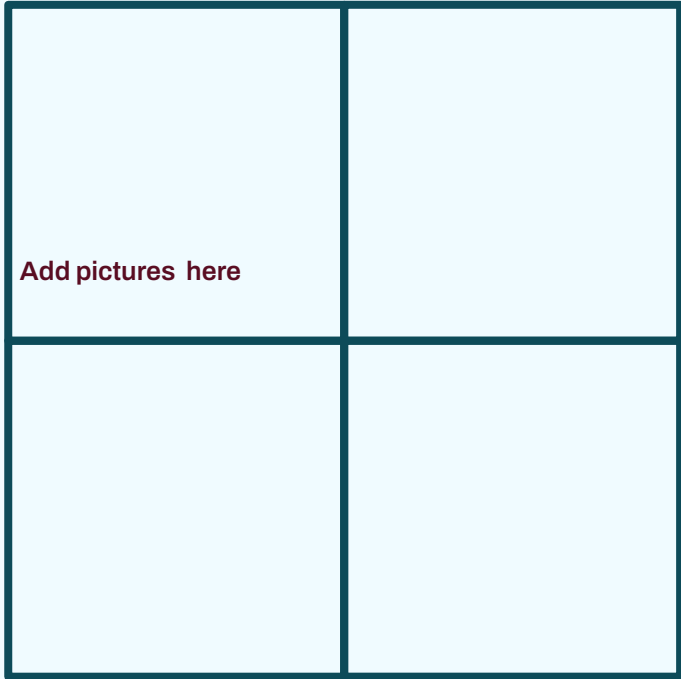
Fire

- During usage of the machine, the cutting process poses a fire risk. **WHENEVER YOU ARE CUTTING, YOU ARE REQUIRED TO STAY WITH THE LASER.** Never operate the laser system while unattended.
- The air assist system and ventilation system work together to clear combustion gasses from the tool.
 - Small flare ups may occur, If you see spreading flames pause the job and open the lid.
 - Alert staff immediately and do not turn off the ventilation system.
- If you see smoke collecting without spreading flames:
 - Pause the job and double check the ventilation system is on.
 - Keep the lid closed.

Laser Radiation

- The polycarbonate windows block infrared radiation from the laser itself, however the combustion of the material produces a bright light in the visible spectrum that can damage your eyesight if stared at.

Final Product Examples



QUESTIONS?



**THANK
YOU!**