Laser Cutter Training

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Learn how to use the laser cutter at Makerspace!
Department of Defiance
LASER SAFETY OFFICER

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No Escort Required
About the Laser Cutter

- Make: HL-Yeah
- Model: HL-ZXP 1060 100W
- 975 mm x 600 mm working area
- Reci W2 (90-100W) CO2 laser tube
- Ruida controller “RDC6442S-B(EC)”
- Lifting platform (200 mm) work table
- D&N CW5000 chiller
- Optional rotary axis
Check the wiki!

The wiki page has information about the laser cutter and links to resources for materials and designs.

https://wiki.makerspacenananaimo.org/Laser_Cutter
Laser Cutter Materials

There is a wiki page with a list of materials allowed in the laser cutter. Make sure the material you use is on the ‘safe materials’ list!

https://wiki.makerspacenanaimo.org/Laser_Cutter_Materials
Laser Cutter Materials

Cut:
- Wood
- Acrylic
- Plexiglass
- Paper
- Cardboard

Engrave:
- Wood
- Acrylic
- Plexiglass
- Glass
- Ceramic Tile
- Anodized Aluminum
- Painted Metal

NO VINYL!
NO PVC!

Beware of fumes that may be created when burning materials.

Beware of fire risks from burning materials.
Preparing a File in RDWorks

- Use the **RDWorks V8** program to prepare files.
- Import .AI or .DXF files into RDWorks.
- Use colours to select a layer for each path.
  - *Note: RDWorks has no concept of ‘layers’ when importing files. Use colours to denote layers.*
Setting Cut and Scan Parameters

Cutting:
- Typically you will use high power (60%) and set speed to get a clean cut with limited burning.
  - Example: 60% @ 20 mm/s will cut \(\frac{5}{8}\)" wood.

Engraving:
- Typically you will use high speed (500 mm/s) and set power level to get the desired engrave depth.
  - Example: 500 mm/s @ 8% will engrave paper.
Setting Cut and Scan Parameters

Tested cut and engrave settings for various materials have been saved in RDWorks:

- Check the Parameters library.
- Laser Cutter Materials page on wiki
  - Boss Laser settings
  - Thunder Laser settings
Using the Laser Cutter

● You will use your **Makerspace fob** to start the machine.
  (the same blue fob used to open the front door)
  ○ *Your fob will be activated for the laser cutter after you complete this class and demonstrate that you are able to use the machine safely.*
SAFETY

CAUTION!
DO NOT STARE INTO LASER WITH REMAINING EYE
Safety

● Switch the laser ‘OFF’ when not in use.
● Do not defeat any safety interlocks.
● Never leave the laser cutter operating unattended.
● Do not touch the mirrors or laser lens.
● Do not alter system parameters in the software.
● If an unexpected problem occurs:

   *Press the emergency stop.*
Using the Laser Cutter

There is a wiki page ‘Using the Laser Cutter’. A step-by-step process for using the laser cutter is given.

https://wiki.makerspacenanaimo.org/Using_the_Laser_Cutter