Laser Cutter Training

Wednesday March 20th 2019

Learn how to use the laser cutter at Makerspace!

MAKER SPACE

NANAIMO
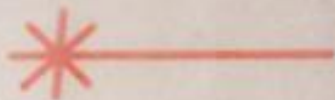
About the Laser Cutter

- Make: HL-Yeah
- Model: HL-ZXP 1060 100W
- **975 mm** x **600 mm** working area
- Reci W2 (90-100W) CO_2 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.makerspacenanaimo.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 ⅝" 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