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Cricut Maker Training SOP

Last edited: Furst (10/08/20)

Instructor:

Date:

Attendees:

Name Group or Company Signature

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Overview:

- This training provides an introduction to using and operating the Cricut Maker including:
 - File Types
 - Software
 - Cricut Use
 - Cricut Maintenance
 - Changing cutting Heads
 - Cleaning
- The Cricut is currently set up in the window sill of 2448 and is attached to the Carbide computer
- Work by cutting a thin part in plane to create complex 2D shapes in a repeatable and precise manner.

Safety

- The cutting heads are very sharp, caution should be taken whenever replacing or switching out the Cricut cutting head
- As with any automated machinery make sure that your body is clear of the moving parts to avoid injury.

Job Setup

1. At the Computer::

- 1. Parts can be designed beforehand and brought into the lab in .PDF or .DXF file form and imported into Cricut software or parts can also be designed within Cricut's software
- 2. Click "new" to enter a new design work space
- 3. Shapes, text, or pre designed files can now be imported using the menu to the left of the screen
 - 1. Shapes can be resized by clicking and dragging on the bottom right corner or exact

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dimensions can be set using the width and height boxes on the top menu bar.

- 2. If importing a .PDF image file select "Upload" from the left side menu
 - 1. Upload image and select image quality. The higher the quality the harder to modify the image within the software
 - 2. This will bring up the option to erase sections based on color or objects from the PDF if desired
 - 3. Click to remove any parts of the image that are not desired to be cut out: this includes the backgrounds
 - 4. Uploading .DXF files will simply cut along desired lines as .DXF files are typically 2D hairline drawings already

2. At the Cricut:

- 1. Remove the protective plastic from the adhesive mat
- 2. Carefully adhere layer to be cut to the adhesive mat
 - 1. Make sure the layer to be cut is as flat and uniform as possible
 - 2. Position the material in the top right corner of the mat to make positioning the cut as easy as possible
- 3. Follow the instructions on the Carbide computer
 - 1. Load the mat using the double arrow button
 - 2. Make sure the correct head and set up has been compleated
 - 3. Press the Cricut button to start the print

3. Post Processing:

- 1. Press the double arrow button to unload the mat
- 2. Remove the excess material from the mat. Use tweezers or a X-Acto knife to carefully remove the cut material from the mat

Maintenance and Cleaning

Cricut Quick Review

Tool Lead: Andrew Furst

Contact: Andrewfurst@ucsb.edu

Safety Concerns

- Both print heads and bed are heated during operation. Do not attempt to clean, remove, or adjust without allowing for adequate cool down time.
- Keep hands clear of printer during operation. Pause print before clearing or adjusting print.

Safe Operating Procedures Review

- 1. Launch Cura version 4 (blue icon)
- 2. From connected printers, select IW-Ultimaker3
- 3. Select File → Open Files → Open desired project (.STL file type)
- 4. Using task bar on the left hand side, position model as desired
- 5. From print settings, select slice height, infill percentage, and support

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6. Support can be generated using ether nozzle, typically nozzle one holds build material with nozzle two printing with dissolvable support material.

- 7. Setting can be fined tuned using the "Custom" option from print settings
- 8. Within custom settings, nozzle and build plate temps can be adjusted (build plate temps should be based off of build material)
- 9. Save the file from Cura on a thumb drive
- 10. Connect thumb drive to printer → select desired file → select print

Note: Adjusting settings may lead to more (OR LESS) successful prints. Contact Workshop Wizard responsible for Ultimaker if print fails or knowledge of advanced settings is desired.

Maintenance

- Bed should be cleaned with IPA between prints
- Print heads and silicone head protector should be cleaned as needed
- Filament should be dried before use if printer has been idle for several weeks
- Bed leveling should be completed every time print cores are swapped
- Print cores should be swapped or purged after clog or to change print line width. Used print heads should be kept for spare parts

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