Prusa I3 Mk3S Protocol

**A picture containing graphical user interface

Description automatically generatedGraphical user interface, text, application, chat or text message

Description automatically generatedConvert a CAD file into a STL file**

To do this in Solidworks, select File -> Save As and change the file type to STL. For circular objects, you might need to increase the resolution of the STL file. To increase resolution, select File -> Save As -> Options and change the resolution from custom to fine. This only needs to be done if your STL looks like a hexagon instead of a circle.

**Import STL file into slicer**

Increase STL Resolution

A picture containing graphical user interface

Description automatically generatedUse either Prusaslicer or Cura since they have the printer built into the software. To import an STL into Prusaslicer, select the box with a plus sign and navigate to the STL file’s location. To import an STL into Cura, select the folder Icon and navigate to the STL file’s location. For both pieces of software, you can also drag the file into the program. Currently, the CashLab uses Prusaslicer. Prusaslicer Link: <https://www.prusa3d.com/page/prusaslicer_424/>

PrusaSlicer Import

Cura Import

A picture containing text, orange

Description automatically generated**3D Printer Setup**

Table

Description automatically generatedThis step is only for users who justed downloaded Prusaslicer or Cura. Select printer that will be used. Prusaslicer should automatically launch the configuration wizard upon startup. If it doesn’t do this, select Configuration -> Configuration Wizard. The only settings you need to worry about are with printer you are using and which material you are using. After that you can save and close the wizard. For Cura, you select the “select printer” button. By default, Cura loads an Ultimaker printer. Afterwards, you select and “Add printer” and “Add Non-Networked Printer”. You then scroll down until you see Prusa. Select the appropriate printer from the Prusa Tab.

PrusaSlicer Setup

**Graphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generatedOrient Parts in the Slicer**

Cura Setup

See the 3D printing guidelines presentation for general rules. If still unsure, consult a 3D printing expert.

**Select Settings**

Prusaslicer has pre-built profiles for each of their printers. For beginners, do not modify the pre-build profiles. They are in the top right corner of Prusaslicer under Print Settings. For Cura, use a quality of 0.2mm, Infill of 10% and Gyroid, and Build Plate Adhesion set to skirt.

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Prusaslicer Profile Location

Cura Settings Menu

Graphical user interface, application, table

Description automatically generated**Slice STL into G-Code**

Text

Description automatically generatedTo turn the STL into G-Code, click to Slice button.

Cura Slice Button

Prusaslicer Slice Button

Graphical user interface, application

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**Export G-Code**

Graphical user interface, text, application, chat or text message

Description automatically generatedGraphical user interface, text

Description automatically generatedClick the Export G-Code Button and save to an SD card. PrusaSlicer has a button to the right of the export G-Code button that looks like a SD-Card. Clicking it results in the SD-Card file directory being brought up. Save G-Code to SD-Card. For Cura, an arrow will appear next to export G-Code that will allow you to export to an SD-Card.

Prusaslicer Export G-code Button

Cura Export G-Code Button

**Remove SD-Card**

Graphical user interface

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Description automatically generated with medium confidenceClick to arrow button in Prusaslicer to eject. A popup will appear to Cura allowing you to eject the SD-Card.

Prusaslicer Eject

Cura Eject Popup

Graphical user interface, calendar

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**Load G-code file onto machine**

Insert SD card into 3D printer and navigate to file. Select File. To navigate, use the black nob. To move up and down, rotate the nob. To select a file, press the nob. Do not press the X. That will factory reset the printer. Afterwards, watch the first two layers go down. If nothing looks wrong, then 3D printer can be left unattended.

Correct SD-Card Orientation