

Overview

- The MACRObotics lab is equipped with a Form 3+ [stereolithography \(SLA\) printer](#)
- A good summary of the features and specifications of the Form 3+ printer can be found [here](#)
- The Form 3+ is capable of printing a variety of resins; in this lab we mostly use Grey, Draft or Durable (flexible resins are also available)
- Consult the relevant datasheets to select the appropriate resin

Part Approval Process

- Please send a Teams message to Professor Sedal with an estimate of the volume of your print (obtained through the [Form slicer](#)) and some screenshots of your part
- External inquiries should be directed to audrey.sedal@mcgill.ca (Professor Audrey Sedal) for more information

Important Details

- Keep the Form workspace clean-the resin is very sticky but can be washed off surfaces using IPA
- We have many micro-fibre cloths in the workspace which can be used to clean parts and tools or wipe down surfaces
- Put all tools back in their proper place and clean them after every use
- If in doubt, please ask Wilfred or contact wilfred.mason@mail.mcgill.ca; it is best to be safer than sorry, FormLabs replacement parts are expensive and re-calibration is time-consuming
- Please note that unlike in a fused deposition modelling (FDM) printer, you **can not easily modify the infill density** in SLA parts (the reason being that internal fill patterns will inevitably trap resin); with that in mind, please be mindful about the volume of your parts-they will be entirely solid
- The printer's resin tank contains a thin and very delicate film through which laser light is projected and upon which, layers of resin are cured
- Never use sharp tools to attempt to remove debris from the resin tank, doing so may pierce the film and result in resin pouring directly into the [Light Processing Unit](#)
- It is critical to carefully inspect the resin tank before and after each and every print since debris, such as partially cured or support materials, can be dragged along the film by the [mixer arm](#)
- To inspect the tank (note: you should always wear gloves, the resin is hard to wash from hands);
 1. Gently remove the resin tank from the printing bay
 2. Next, gradually tilt the resin tank by approximately +/- 30 degrees perpendicular to its long axis and inspect the tank for debris
 3. If you identify debris, first follow the instructions [here](#), which detail the use of the FormLabs custom scraper tool
 4. If you are encountering difficulties removing debris, follow the step-by-step instructions in the FormLabs UI
- It is also good practice to thoroughly clean the build plate after **every** print using IPA
- Some resin may stick to the bottom of the build plate in the form of ~1 cm diameter nodules, these may be partially cured and should also be discarded (use the metal scraping tool)

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Last update: **2024/04/22 20:47**

