

# General 3D Printing

Place for stuff that applies to more than one type of 3D Printing

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# 3D Model Repositories

There are many great places to find models!

All these sites have quality 3D models available although not all 3D models are printable.

- **Thangs** - <https://thangs.com>
  - Kind of a 3D model search engine, but they require free account login to download anything :(
- **Printables** - <https://printables.com>
  - All models are free and most tend to be of high quality
- **Thingiverse** - <https://www.thingiverse.com/>
  - This is easily the largest collection of printable models available anywhere, with all models free
- **MyMiniFactory** - <https://www.myminifactory.com/>
  - Great high-quality models, but not all models are free and some can be quite costly
- **Scan the World** - <https://www.myminifactory.com/scantheworld/>
  - People scan things, often art and sculpture, and make them available to the world, although not all of the models can be printed as downloaded
- **YouMagine** - <https://www.youmagine.com/>
  - Similar to thingiverse.com with 15,000+ printable designs
- **Cults3D** - <https://cults3d.com/>
  - This site bills itself as a social network for fans of the 3D printer world and has 80,000 models although many of those overlap with thingiverse.com
- **Smithsonian 3D Digitization** - <https://3d.si.edu/>
  - A group of technologists working within the Smithsonian Institution Digitization Program Office, although not everything is printable as it is provided
- **U.S. Department of Health and Human Services National Institutes of Health** - <https://3dprint.nih.gov/>

- The NIH 3D Print Exchange provides models in formats that are readily compatible with 3D printers, and offers a unique set of tools to create and share 3D-printable models related to biomedical science.
- **TraceParts** - <https://www.traceparts.com/>
  - Design library of models for hardware, gearing, etc. that is available through a huge list of catalogs, a great resource for sizing a print to interface with the real world
- **PinShape** - <https://pinshape.com/>
  - This site has both Free and costly models, but the quality is typically excellent
- **Yeggi** - <https://www.yeggi.com/>
  - A search engine for 3D printable models that indexes many sites
- **CGTrader** - <https://www.cgtrader.com/>
  - A search engine for costly models, although not all of the models can be printed as downloaded
- **GrabCAD Community** - <https://grabcad.com/library>
  - Tons of CAD files that can be printed, although not all of the models can be printed as downloaded
- **Fab365** - <https://fab365.net/>
  - "3D Printing Model Marketplace" that has many high quality designers posting new designs
- **NASA Model Site** - <https://nasa3d.arc.nasa.gov/models/printable>
  - NASA's 3D printable model site
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# Raspberry Pi's for Octoprint

## Octoprint is Awesome!

Octoprint is Free and Open Source!

...and We should **donate**(if we can) to help keep it awesome!

**<https://octoprint.org/>**

"Recommended hardware: Raspberry Pi 3B, 3B+, 4B, or Zero 2. Expect print artifacts and long loading times with other options, especially when adding a webcam or installing third party plugins"

### • Raspberry Pi Zero 2 W

- Heat is rarely a problem if "stick-on" Heatsinks are used with some vent holes in the case (No Fan)
  - <https://www.thingiverse.com/thing:3572030>
- Micro-USB OTG USB hub with power input (Allows accessories to plugin)
  - <https://www.amazon.com/TUSITA-Adaptor-Charging-Adapter-Raspberry/dp/B00LTHBCNM>
- Logitech c270
  - <https://www.amazon.com/Logitech-Widescreen-Correction-Noise-Reducing-FaceTime/dp/B01BGBJ8Y0/>
  - <https://www.thingiverse.com/thing:3081838>
- Raspberry Pi Camera Module V2
  - <https://www.amazon.com/Raspberry-Pi-NoIR-Camera-Module/dp/B01ER2SMHY>

### • Raspberry Pi 3B+

- Heat is rarely a problem if stick on Heatsinks are used with some vent holes in the case (No Fan)
  - <https://www.thingiverse.com/thing:2620241>
- Logitech c270

- <https://www.amazon.com/Logitech-Widescreen-Correction-Noise-Reducing-FaceTime/dp/B01BGBJ8Y0/>
- <https://www.thingiverse.com/thing:3081838>
- Raspberry Pi Camera Module V2
  - <https://www.amazon.com/Raspberry-Pi-NoIR-Camera-Module/dp/B01ER2SMHY>

## • Raspberry Pi 4

- Great aluminum housing/heatsink for the Pi 4
  - <https://www.amazon.com/Geekworm-Raspberry-Computer-Aluminum-Compatible/dp/B07VD568FB/>
- 5v fan screwed(M3) into the fins of the heatsink and plugged into the GPIO pins
  - <https://www.amazon.com/Noctua-Cooling-Bearing-NF-A4X10-FLX-5V/dp/B00NEMGCIA/>
  - <https://www.thingiverse.com/thing:4837562>
- Logitech c270
  - <https://www.amazon.com/Logitech-Widescreen-Correction-Noise-Reducing-FaceTime/dp/B01BGBJ8Y0/>
  - <https://www.thingiverse.com/thing:3081838>
- Raspberry Pi Camera Module V2
  - <https://www.amazon.com/Raspberry-Pi-NoIR-Camera-Module/dp/B01ER2SMHY>

My Resin printer does not work with Octoprint, so I used a Raspberry Pi Zero W to make a windows SMB shared folder that is accessible wirelessly and connects to the USB thumb drive port on the Resin Printer (see Resin Printing section)

# Octoprint Plugins

## To each their own

Every printer and setup is different, and everyone has different uses and priorities!

## Prusa Mk3s+ (Modified for higher enclosure temperatures)

- Cancel Objects <https://plugins.octoprint.org/plugins/cancelobject/>
- DisplayLayerProgress <https://plugins.octoprint.org/plugins/DisplayLayerProgress/>
- Enclosure Plugin <https://plugins.octoprint.org/plugins/enclosure/>
- Exclude Region <https://plugins.octoprint.org/plugins/excluderegion/>
- File Manager <https://plugins.octoprint.org/plugins/filemanager/>
- Firmware Updater <https://plugins.octoprint.org/plugins/firmwareupdater/>
- Fullscreen Plugin <https://plugins.octoprint.org/plugins/fullscreen/>
- MultiCam <https://plugins.octoprint.org/plugins/multicam/>
- Octolapse <https://plugins.octoprint.org/plugins/octolapse/>
- Preheat Button <https://plugins.octoprint.org/plugins/preheat/>
- Pretty GCode <https://plugins.octoprint.org/plugins/prettygcode/>
- PrintTimeGenius <https://plugins.octoprint.org/plugins/PrintTimeGenius/>
- Progress Title [https://plugins.octoprint.org/plugins/progress\\_title/](https://plugins.octoprint.org/plugins/progress_title/)
- Prusa Leveling Guide <https://plugins.octoprint.org/plugins/PrusaLevelingGuide/>
- PSU Control <https://plugins.octoprint.org/plugins/psucontrol/>
- PSU Control - TPLink [https://plugins.octoprint.org/plugins/psucontrol\\_tplink/](https://plugins.octoprint.org/plugins/psucontrol_tplink/)
- Resource Monitor [https://plugins.octoprint.org/plugins/resource\\_monitor/](https://plugins.octoprint.org/plugins/resource_monitor/)
- Restore Leveling After G28 <https://plugins.octoprint.org/plugins/restorelevelingafterg28/>
- Slicer Thumbnails <https://plugins.octoprint.org/plugins/prusaslicerthumbnails/>
- Themeify <https://plugins.octoprint.org/plugins/themeify/>
- Timelapse Purger <https://plugins.octoprint.org/plugins/timelapsepurger/>
- TP-Link Smartplug <https://plugins.octoprint.org/plugins/tplinksmartplug/>
- TpLinkAutoShutdown <https://plugins.octoprint.org/plugins/TpLinkAutoShutdown/>

## Prototype Printer (Bed slinger style Low specs)

- Bed Visualizer <https://plugins.octoprint.org/plugins/bedlevelvisualizer/>
- Cancel Objects <https://plugins.octoprint.org/plugins/cancelobject/>
- DisplayLayerProgress <https://plugins.octoprint.org/plugins/DisplayLayerProgress/>
- Exclude Region <https://plugins.octoprint.org/plugins/excluderegion/>
- File Manager <https://plugins.octoprint.org/plugins/filemanager/>
- Firmware Updater <https://plugins.octoprint.org/plugins/firmwareupdater/>
- Fullscreen Plugin <https://plugins.octoprint.org/plugins/fullscreen/>
- Octolapse <https://plugins.octoprint.org/plugins/octolapse/>
- Preheat Button <https://plugins.octoprint.org/plugins/preheat/>
- Pretty GCode <https://plugins.octoprint.org/plugins/prettygcode/>
- PrintTimeGenius <https://plugins.octoprint.org/plugins/PrintTimeGenius/>
- Progress Title [https://plugins.octoprint.org/plugins/progress\\_title/](https://plugins.octoprint.org/plugins/progress_title/)
- PSU Control <https://plugins.octoprint.org/plugins/psucontrol/>
- PSU Control - TPLink [https://plugins.octoprint.org/plugins/psucontrol\\_tplink/](https://plugins.octoprint.org/plugins/psucontrol_tplink/)
- Resource Monitor [https://plugins.octoprint.org/plugins/resource\\_monitor/](https://plugins.octoprint.org/plugins/resource_monitor/)
- Restore Leveling After G28 <https://plugins.octoprint.org/plugins/restorelevelingafterg28/>
- Slicer Thumbnails <https://plugins.octoprint.org/plugins/prusaslicerthumbnails/>
- Themeify <https://plugins.octoprint.org/plugins/themeify/>
- Timelapse Purger <https://plugins.octoprint.org/plugins/timelapsepurger/>
- TP-Link Smartplug <https://plugins.octoprint.org/plugins/tplinksmartplug/>
- TpLinkAutoShutdown <https://plugins.octoprint.org/plugins/TpLinkAutoShutdown/>

# Adhesives for 3D Printed Parts

- This is a PDF document created by the Loctite Company describing their various adhesives and which ones provide the best results under various conditions:
  - <https://dm.henkel-dam.com/is/content/henkel/loctite-3d-printing-bonding-guide-english>
  - I learned a bunch about adhesive use: gap requirements for certain glues/epoxies to get desired results, usable temperature ranges, and which types of glues or epoxies are most likely to work with various 3D printed plastics.
  - Even though this is a Loctite branded document, all adhesive manufacturers have equivalents with likely similar properties and requirements. A great resource in my opinion.