

3D Printing Using the MakerBot Replicator Plus

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Note: The MakerBot Replicator removable media is full size USB memory stick. The USB stick must be **less than 2GB** in capacity.

Slicing the 3D Model

1. MakerBot Print slicer.
2. Open .STL file (File > Insert File>
3. Hold the right mouse button and move mouse to change 3D viewpoint of model. Use the mouse wheel to zoom in and out.
4. Click the Gear icon (Print Settings)
5. Set Print Settings to desired settings, typically
 - Extruder Type = Smart Extruder+
 - Print Mode = Balanced (typically)
 - Click the Custom Settings button to set the following as desired:
 - Infill
 - Supports
 - Layer Height
6. Click the Clock icon to find the estimated time to print and generate a preview. You can use the slider on the left side of the screen to preview each layer.
7. Click the Export button and save the .makerbot file onto the USB stick.
8. Close the MakerBot Print program. Typically, you don't save the build plate file.
9. Using the File Manager, eject then remove the USB stick.

Printing the 3D Model

1. Turn on the printer. Switch can be found on the lower left side on the back of the machine.
2. Scrape the print bed with the plastic "razor" blade then clean with alcohol.
3. You may need to use a glue stick if the print is not sticking to the bed.
4. Plug the USB stick into the front panel.
5. If needed, rotate the round knob to highlight Print.
6. Press in the round knob.
7. Highlight USB Storage and press knob to select.
8. Rotate knob to highlight desired file and press knob to select.
9. Once the extruder reaches the required temperature, the machine will auto-home in the X & Y, and then lift the print bed to determine the Z position.

It will then draw a line of filament along the front of the print bed. If this line of filament doesn't stick to the bed, it may be necessary to have the MakerSpace staff manually re-level the bed.

10. Verify that the skirt and first layer prints correctly and sticks to the bed. If not, you have to abort the print and manually level the bed.

Aborting the Print

1. Press the knob. Rotate clockwise to highlight “Stop print”.
2. Press the knob to select.

Changing the Filament

Note: MakerBot uses only uses PLA filament 1.75 mm in diameter.

1. Rotate the knob to highlight “Filament” and press knob to select.
2. Rotate to “Unload Filament” and press again. Wait until the extruder reaches the required temperature. Then the extruder will push out the filament.
3. Push down the tab at the rear of the printer and lift the filament tray upwards until it locks into place.
4. Wind the filament out of the tube and back onto the spool.
5. Replace spool of filament.
6. Feed new filament through the tube allowing 6 inches to extend beyond the end of the tube.
7. Push down on the tab and lower the filament tray.
8. Rotate the knob to highlight “Load Filament” and push knob to select. Wait for the extruder to reach the desired temperature.
9. When prompted, insert the new filament into the top of the extruder. Normally the extruder will pull the filament, but should it stop, push the filament downwards until it extrudes out the nozzle.
10. Continue feeding the filament until the new color is cleanly extruding through the nozzle. It may be necessary to select “Load Filament” again.
11. Once complete, push the top button to return to the main menu.
12. You can now proceed to print your model.

Possible Error Messages:

Should you get one of these errors, please ask a MakerSpace staff member for help.

Homing Error

A homing error occurs when the extruder nozzle doesn't re-seat properly after pressing against the build plate during homing.

<https://support.makerbot.com/s/article/Homing-Errors>

Filament Slip

A Filament Slip notifies you that there is something preventing filament from extruding at the rate that it is meant to be. This problem often occurs after loading filament. Unload and re-load the filament, paying special attention to steps #9 and #10 above.

If that doesn't work, Google “makerbot replicator plus filament slip” for numerous suggestions and YouTube videos.

Leveling and Adjusting the Print Bed

NOTE: These procedures should only be done by MakerSpace staff

Calibrating the Z Offset

<https://support.makerbot.com/s/article/Replicator-How-to-calibrate-the-Z-Offset>

Manually Adjusting the Print Bed

<https://www.raverobot.com/how-to-level-the-makerbot-replicator-3d-printer-flex-build-plate/>

Assisted Leveling

<https://support.makerbot.com/s/article/Replicator-5th-Generation-How-to-level-the-build-plate>