

Quick-to-Print Workflows

Top Tips for Good Results

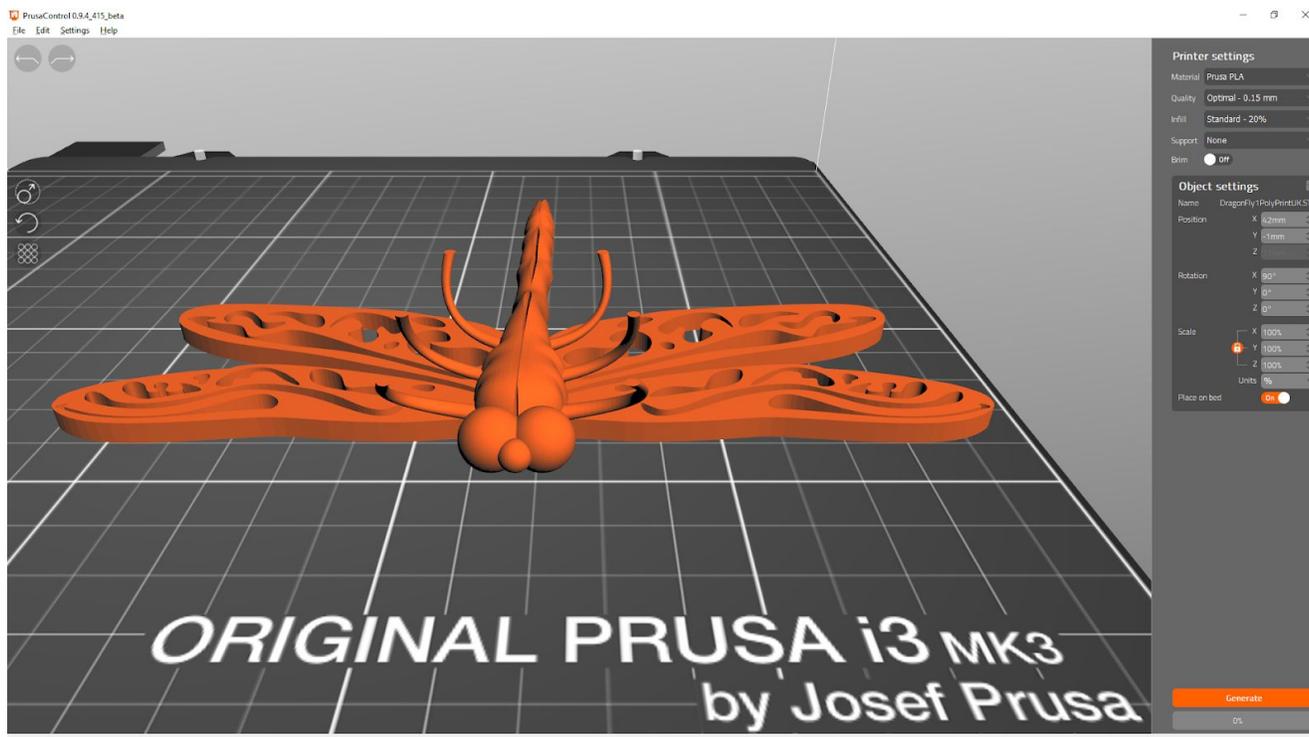
- **Level Bed and Z-offset:** having proper head spacing across the bed is key!
- **Use Print Support:** choose this option when print overhang is >45 degrees.
- **Print Sticking:** alcohol swab bed to clean prior to printing, add brim if needed.
- **Use Proper Tools:** spatula to remove print and angle cutter for filament tip.
- **Filament Feeding:** cut filament end at a 45 degree angle before insertion.

Changes from Model to Print

The stages of moving from a design model in software to a 3D printed object include:

1. **Designing:** use design software to define a 3D object to be printed.
2. **Slicing:** the design file is next sliced into layers which the 3D printer will build.
3. **Encoding:** a sliced model needs to be converted into gcode and put in an STL format file.

Prusa Control: The software path from Designing *to Slicing to Encoding* to STL on SD Card.

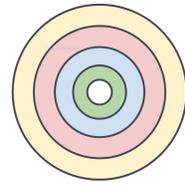


File Menu: *Import Model File* to get started.
Save Project for later reuse.
Reset to clear the workspace.

Object Settings: *Position & Rotation*, as needed.
Scale to change size, note the lock.
Place on Bed will autolocate to bed.

Printer Settings: *Material* is always Generic PLA.
Quality & Infill, time versus quality.
Support & Brim, use if needed.

Code Buttons: *Generate* → *Save G-Code* → *Back*
Gcode Preview: Has slider to visually render print.
PRINT INFO Box: Shows time to print & filament use.

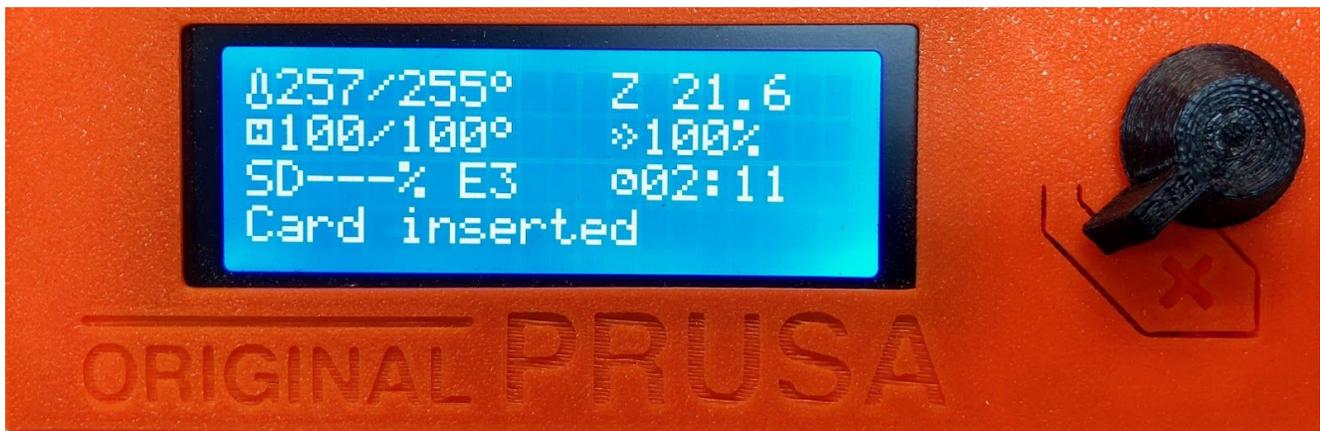


Workflow #1: SD Card

This process is for when using an existing **STL file on the printer's SD card** for printing.

1. Turn the printer on (switch is on right), clean bed, and switch on overhead LED lamp.
2. Depress the rotary dial, spin dial to select "Print from SD", find file and depress button.
 - a. Printer won't start till both the bed and hot end are to temperature for PLA plastic.
 - b. Printer will conduct its automatic zeroing and bed leveling routines before extruding.
 - c. Printer will extrude a preliminary strip along the bed's front before starting to print.
3. Sit back and watch the magic ensue!

Info Screen



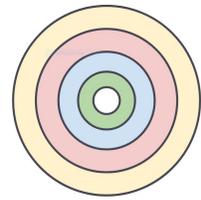
257/255 - hot end current temp/target temp
100/100 - print bed current temp/target temp
SD--- - progress percent through SD file
Card inserted - "Status Bar" with many conditions

Z 21.6 - current position of hot end over print bed
100% - printing speed
02:11 - elapsed printing time

System Menu (on Info Screen depress black button to arrive here)



Info screen - navigates to the next level up in the menu
Preheat - starts heating bed and hot end before start of printing
Print from SD - will list all files on SD for easy selection
Load filament - starts feeding filament in when hot end temp is right

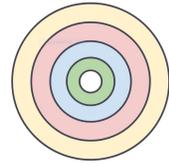


Workflow #2: TinkerCAD

This process is for when using a **standard STL file** from Thingiverse.com for printing.

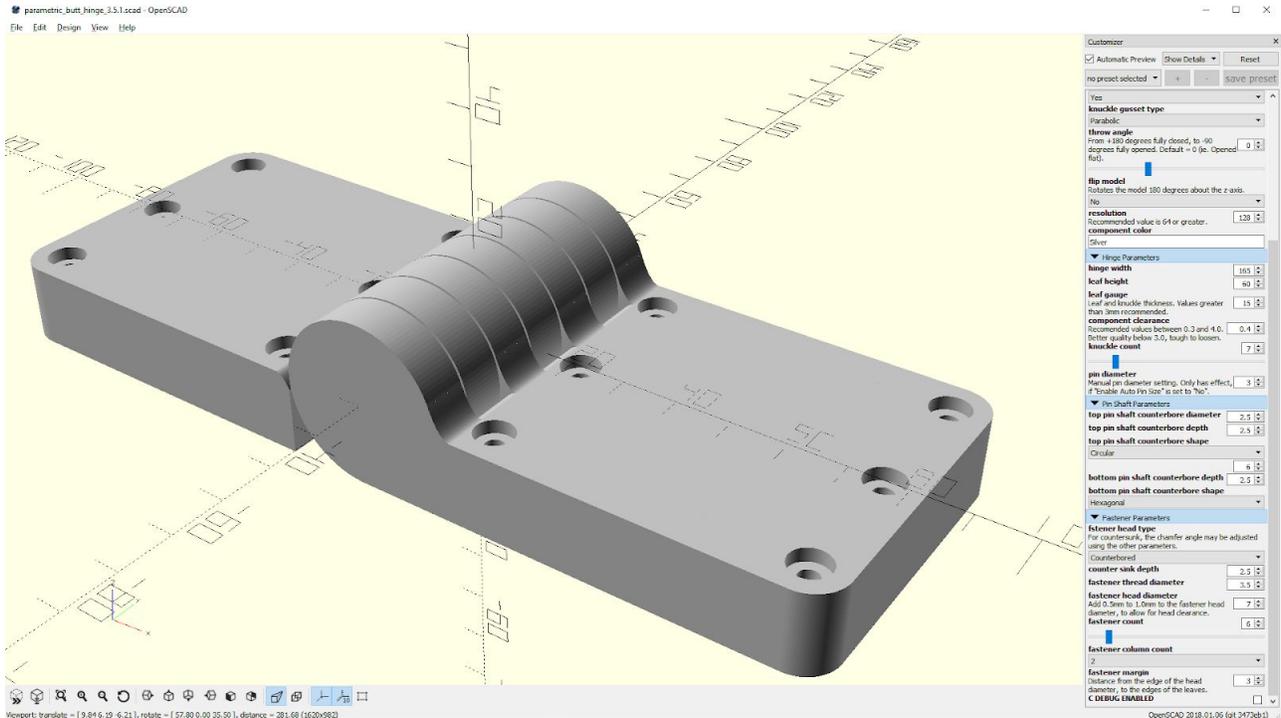
Overview:

1. Find an object on Thingiverse, click on Thing Files tab and review download file options.
2. Download the STL format file for printing standard objects (not customized).
3. Launch **Prusa Control** and import the downloaded STL file (*File > Import Model File*).
4. Choose settings for this specific print:
 - Printer Settings:** *Material* is always Generic PLA.
Quality & Infill is time versus quality.
Support & Brim use if needed (>45°).
 - Object Settings:** *Position & Rotation* as needed.
Scale to change size (note the lock).
Place on Bed will autolocate surface.
5. Click the **Generate** button to have **Prusa Control** slice the model and generate the gcode.
6. Click the **Save G-Code** button (was previously **Generate** button), choose SD Card and save.
Note: Just to the left will appear a **PRINT INFO** box with print time and filament use estimates.
7. Click **Back** button to revert to desktop of **Prusa Control**.
8. Launch **Windows Explorer**, navigate to your SD Card, and right click on card to choose **Eject**.
9. Remove SD Card from computer and continue to **Workflow #1**.



Workflow #3: OpenSCAD

This process is for when using a *customized SCAD file* from Thingiverse.com for printing.



Overview:

1. Find an object on Thingiverse, click on Thing Files tab and review download file options.
2. If available, download the SCAD format file for a custom print using **OpenSCAD**.
3. Launch **OpenSCAD**, *Open* your SCAD file and open *Parameters* list in *Customizer* window.
Notes: If *Customizer* isn't visible then reveal it in the View menu (uncheck *Hide Customizer*).
If *Parameters* aren't visible then openit (click on the triangle next to the label).
4. Iterate the following until you have the model customized to the way you want it:

Adjust <i>Parameters</i>	Input value changes into the parameter fields.
Click <i>Preview</i> Button	F5 key or first button in bottom left series of icons.
Click <i>Render</i> Button	F6 key or second button in bottom left series of icons.
Repeat this Sequence	When what-you-see is what-you-want then move to Step 5.

5. Save your model for printing (*File* > *Export* > *Export as STL*)
6. Launch **Prusa Control** and import the saved STL file (*File* > *Import Model File*).
7. Choose settings for this specific print:

Printer Settings: <i>Material</i> is always Generic PLA. <i>Quality & Infill</i> is time versus quality. <i>Support & Brim</i> use if needed (>45°).	Object Settings: <i>Position & Rotation</i> as needed. <i>Scale</i> to change size (note the lock). <i>Place on Bed</i> will autolocate surface.
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8. Click the *Generate* button to have **Prusa Control** slice the model and generate the gcode.
9. Click the *Save G-Code* button (was previously *Generate* button), choose SD Card and save.
Note: Just to the left will appear a *PRINT INFO* box with print time and filament use estimates.
10. Click *Back* button to revert to desktop of **Prusa Control**.
11. Launch *Windows Explorer*, navigate to your SD Card, and right click on card to choose *Eject*.
12. Remove SD Card from computer and continue to **Workflow #1**.