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Tutorials

This section is under development.

Basic calibration

Homing X and Y

- With the machine unplugged position the carriage in the back right corner of the build area.
- Plug in the machine and it will be at home until a problem such as a skipped step occurs at which time you will need to repeat step 1.
- As long as you do not power down the machine it will always know where home is and return to it before the next print starts.
- To return to home after stopping a print you can press the home button in the "Prepare" menu of the LCD.

Setting Z home

- 1. With the bed in the home position as set in the bed levelling section of the build guide we are going to lower the endstop switch until it makes a clicking sound.
- 2. Tighten the endstop bolt until the bracket is snug on the smooth rod.

Do not over tighten; it can render the switch inoperable.

- 3. Using the LCD and encoder, enter the "Prepare" menu and select "Home".
- 4. Using a sheet of paper as a feeler gauge again, test the space under the nozzle. We want the nozzle to touch the paper and apply some friction.
- 5. If the nozzle did not touch the paper or the paper tore when trying to move it, adjust the endstop position and test again until it is correct.
- 6. Download Kisslicer from

Kisslicer.com

Download the Kisslicer configs and place them in the same folder as the Kisslicer executable.

<u>↑TOP↑</u>

INTERNET ARCHIVE	ttp://www.tah@Bis.org/Tutorials.html Go AUG FEB MAR Download the calibration object.
27 May 12 - 21 Feb 15	20x20x10 cube. 2014 2015 2016
	. Start Kisslicer and open the config for your current Hotend
	size (Black = 0.5 mm / White = 0.35 mm).
	3. The only value you need to change before slicing the
	20x20x10.stl file is the filament diameter. For high-end
	filament this is usually 2.8-2.9mm and for economy filament
	this can be anywhere from 2.8-3.1mm. Be sure to measure
	your filament before calibration.
	9. Slice the 20x20x10.stl file.
1). Put the Gcode file on the SD card.
	• You can simply drop the file on the SD card in the root
	folder or create folders to organize your files.
	• You can open it in Pronterface and send the file to the
	SD card while it is in the machine.
	Note this is known to be slow.You can open the gcode file in Pronterface and print
	directly over the USB cable.
1	1. Be sure the filament is loaded as explained in the setup
1	process of the build guide.
1	2. Using the LCD and encoder, enter the "Card menu" and press
1	refresh if necessary.
1	3. Select the 20x20x10.gcode file and press the encoder to start
1	the print.
1	4. The machine will take just under one minute to heat up
-	before it starts the print.
1	5. It will start by trying to print an outline and then a 20mm
	square. At this point we will be watching to see if the
	filament is sticking to the bed or if the nozzle is dragging on
	the tape. What we are looking for is to have it draw a line on
	the tape in molten plastic.
	If the hotend is too close to the bed and starts to cut into the tape, you
	should unplug the machine and proceed to lower the endstop position as in step 5.
1	5. Once the print has started it will do one of the following
1	things. After any of the following behaviours has been
	observed you will need to select "Stop Print" from the LCD
	menu:
	It will take a few moves to stop after pressing "Stop print".
	 Prints an outline that is really squished and smeared.
	We want to increase the "Negative Z-offset" in
	Kisslicer under the Gcode prefix tab in increments of
	0.05mm and re-slice the file and test again.
	 Prints an outline that is not sticking to the bed and
	looks a little like thread coming out of the nozzle. We
	want to increase the "Positive Z-offset" in Kisslicer
	under the Gcode prefix tab in increments of 0.05mm
	and re-slice the file and test again.
	• Prints a nice outline that is stuck to the bed but not
	squished. We can proceed to the E axis calibration.
	The nozzle is too close to the bed far from the bed far from the bed

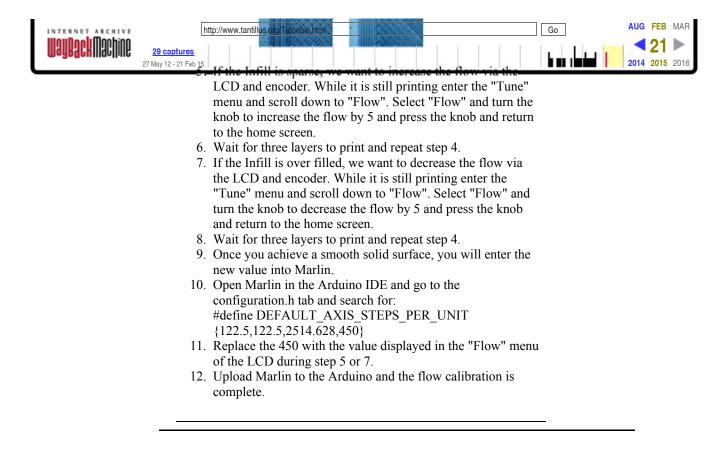
Calibrating the E axis

http://web.archive.org/web/20150221130223/http://www.tantillus.org/Tutorials.html

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 4. Wait for it to reach the slected temerature. 5. Get a piece of filament at least one metre long ready to load into the machine. 6. Using the LCD menu enter the Prepare menu. 7. While pressing the filament into the back of the extruder select Load filament from the Prepare menu. 8. Now that we have the filament loaded we can proceed to calibrate the E axis.
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8. Now that we have the filament loaded we can proceed to calibrate the E axis.
calibrate the E axis.
9 Affach a small piece of tape to the filament coing out of the
front of the machine as close the case as possible. 10. Using the LCD menu enter the Prepare menu.
11. Select retract 5mm of filament and press the encoder 10
times being careful that each press has been recognized.
12. Measure the distance between the tapes new location and
where it started out. If it is 50mm you can proceed to step 18.
If it is anything other than 50mm you need to write it down
and continue on to the next step.
13. Using the LCD menu enter the Prepare menu.
14. Select purge 5mm of filament and press the encoder 10 times
being careful that each press has been recognized. This
should have returned the tape to the original location. If it did not that means it did not recognize one of the button presses
and you need to go back to step 9.
15. We then need to take the requested length and divide it by the
actual distance it moved.
• Example 1: $50 / 45 = 1.111111111$
• Example 2: 50 / 55 = 0.909090909
16. We then need to take the current steps per mm and multiply it
by the number we got from the last equation. We can find the
current value by entering the "Tune" menu and scrolling
down to "Flow". • Example 1: 450 * 1.111111111 = 500
• Example 2: $450 \times 0.909090909 = 409.091$
17. Repeat step 11 and 12.
18. Once you have achieved a 50mm movement, you will enter
the new value into Marlin.
19. Open Marlin in the Arduino IDE and go to the
configuration.h tab and search for:
#define DEFAULT_AXIS_STEPS_PER_UNIT
{122.5,122.5,2514.628,350}
 Replace the 350 with the value displayed in the "Flow" menu of the LCD during step 16.
21. Upload Marlin to the Arduino and the flow calibration is
complete.
22. If you had to adjust this value a lot you may want to repeat
the "Setting Z home" instructions
Calibrating the Retraction Speed
• The retraction speed is limited by the firmware and not by
$\uparrow TOP \uparrow$) Kisslicer. • Please leave Kisslicer's retraction speed set to 1000mm/s.
• Please leave Kisslicer's retraction speed set to 1000mm/s. This is to allow you to lower the print speed via the menu of
the LCD without having retractions slow down.

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