

Hot Stepper Motor/Correct Current Guide

To use the **LGX**®, **LGX**® Lite or **LGX**® Lite Mirrored, run the stepper motor with currents between **~0.45 and ~0.65A**.

This current interval is just a recommendation and it should be optimal to keep the stepper motor running with enough torque and low enough surface temperature.

Be vigilant regarding the stepper motor surface temperature. **Keep it cool enough to touch**. Lower the current otherwise.

If the stepper motor is cool and loosing steps you need more torque. In this case increase the current.

To adjust the LGX's stepper motor current use one of the following methods:

1) Change the current using Vref on a multimeter:

It is very hard to read the current being fed to stepper motors. To determine that current we rely on the Vref value. The Vref value is a voltage reference measured in VDC that can be read using a multimeter. It helps us setting the current output of the stepper motor driver.

Different 3D printer mainboards use different stepper motor drivers. Each type of stepper motor drivers has its own formula to calculate the required Vref to get a specific current.

You can learn how to adjust the Vref by watching the video or by following this guide as example:

- Current adjustment on Creality units

2) Change the current without a multimeter

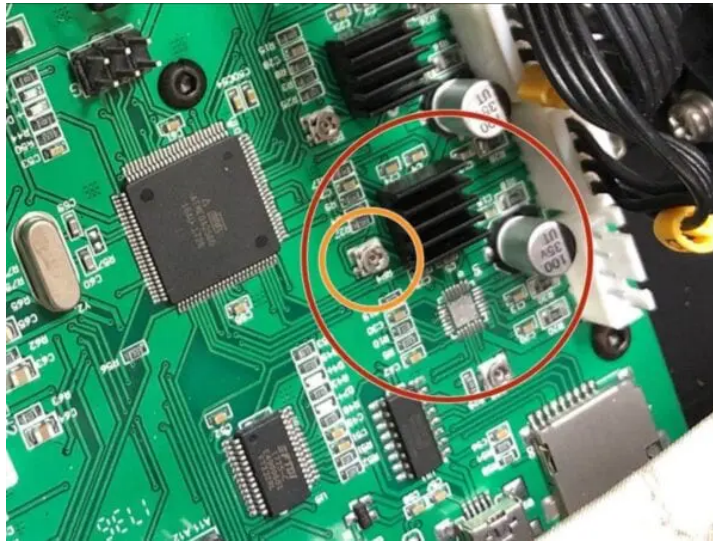
If your printer doesn't have DigiPOTs, and in case you don't have a multimeter to visualize the Vref you may still adjust the current fed to the LGX stepper motor by trial and error.

Use the analog potentiometer (inside yellow ring) next to the extruder's stepper motor driver (below the heatsink inside the red ring), and turn the potentiometer a few degrees at a time.

Rotate it counter clockwise to lower the current, or clockwise to increase it.

Between each iteration, use the printer and check if the stepper motor is not getting hot neither it is loosing steps.

- Lower current if stepper motor is too hot to touch.
- Increase current if stepper motor is loosing steps.



3) Change the current using DigiPOTs

DigiPOTs are digital potentiometers which resistance can be varied by digital communication instead of turning a knob, like seen above.

On a 3D printer with a mainboard carrying DigiPOTs, you may use the user interface of the unit (if that feature is available) or even Gcode commands to set the current of the different stepper motors.

On RepRap units with DigiPOTs, the M906 command may be used to change the Extruder stepper motor current `M906 Ennn`, where `nnn` is the amount of milliamps desired.

Marlin also uses a similar command. `M906 Ennn` sets the current on TMC drivers. On stepper motors with other drivers and DigiPOTs, you may also set the current in milliamps using the command `M907 Ennn`