



# Ender 3 Dual leadscrew Mechanical Gantry Alignment Endstop



Rafa

[VIEW IN BROWSER](#)

updated 1. 8. 2023 | published 1. 8. 2023

## Summary

Endstop for Ender 3 to use mechanical gantry alignment with dual lead screw.

[3D Printers](#) > [3D Printers - Upgrades](#)

Tags: [ender](#) [endstop](#) [leadscrew](#) [gantry](#)

Just print 2 of those and snap on the top of the printer. Now you can bump the gantry on them to mechanically align your gantry.

You will also need 1 T-Nut and equivalent screw.

Ideal for Enders with 2 leadscrew but just 1 stepper driver controlling both motors. For Marlin you have to recompile firmware to enable Mechanical Gantry alignment. For Klipper you can use the following macro:

```
[gcode_macro MECHANICAL_GANTRY_CALIBRATION]
```

```
gcode:
```

```
### SET THIS DEFAULT CAREFULLY - start really low
```

```
{% set my_current = params.CURRENT|default(0.3)|float %} ; adjust crash  
current on the fly :D
```

```
###
```

```

{% set oldcurrent = printer.configfile.settings["tmc2209
stepper_z"].run_current %} ; TODO: Find runtime current settings
{% set z_max = printer.toolhead.axis_maximum.z %}
{% set x_max = printer.toolhead.axis_maximum.x %}
{% set y_max = printer.toolhead.axis_maximum.y %}
{% set fast_move_z = printer.configfile.settings["printer"].max_z_velocity
%}
{% set fast_move = printer.configfile.settings["printer"].max_velocity %}
{% if "xyz" not in printer.toolhead.homed_axes %}
G28 #Home All Axes
{% endif %}
G90 ; absolute
G0 X{x_max / 2} Y{y_max / 2} F{fast_move*0.8 * 60 } ;put toolhead in
the center of the gantry

G0 Z{z_max} F{fast_move_z*0.8 * 60 } ; go to the Z-max at speed max z
speed
SET_TMC_CURRENT STEPPER=stepper_z CURRENT={my_current} ; drop
current on Z stepper
G4 P200 ; Probably not necessary, it is here just for sure

SET_KINEMATIC_POSITION Z={z_max - 10} ; Trick printer into beleiving the
gantry is 12mm lower than it is

G1 Z{z_max} F{fast_move_z*0.5 * 60} ; try to move 10mm up
G4 P200 ; wait
G1 Z{z_max*0.2} F{fast_move_z*0.8 * 60} ; move 4mm down
G4 P200 ; same as the first one
SET_TMC_CURRENT STEPPER=stepper_z CURRENT={oldcurrent}

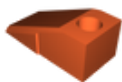
G4 P200 ; same as the first one
G28 Z ; we MUST home again as the ganty is really in the wrong place.

[gcode_macro G34]
gcode:
MECHANICAL_GANTRY_CALIBRATION

```

## Model files

**endstop.stl**



# License

This work is licensed under a  
**Creative Commons (4.0 International License)**



## **Attribution-NonCommercial**

---

- ✗ | Sharing without ATTRIBUTION
- ✓ | Remix Culture allowed
- ✗ | Commercial Use
- ✗ | Free Cultural Works
- ✗ | Meets Open Definition