



## X-Max (X-Plus) Z-Axis Linear Rod Base Plate

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### Summary

The stock X-Max (X-Plus) Z-Axis linear rod spacing does not match the upper Z-Plate rod spacing.

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On my Qidi X-Max Gen 3 (see below for my interpretation of X-Max generations), the Z-Axis linear rods are 1mm wider apart at the base as compared to the Z-Plate at the top. The correct spacing should be 180mm. That extra 1mm causes a lot of wear on the brass lead screw nut as it has to force the bed plate to move to the bottom of travel. I found that after about a year of hobby use, the fit of the brass nuts on my printer allowed for almost a millimeter of vertical play (yes, I regularly cleaned and lubed them). If the steel bed plate can be moved up and down by hand more than 0.1mm, then the nuts probably need to be replaced.

### Printing

If the printer is used for high temp filaments, then these parts need to be printed with PC, PETG, or similar with the best option being PC with CF. Otherwise enhanced PLA is sufficient. I printed with supports enabled.

### Assembly

Replacing the base plates requires removing the Z-Axis linear rods. Removing the rods requires taking off the upper Z-Plate. Taking off the upper Z-Plate requires removing the side, front, and back plastic panels. With the rods removed, it is now possible to remove the base mounting plates. Removing the base plates requires removing the stepper motors. You don't have to remove the lead screws and shaft couples, but it might be easier.

There is one critical step when reassembling. While the rod spacing from front to back is determined by the mounting plate, the rod spacing at the top from side to side is determined by the location of the Z-Plates within the frame rails. The holes in the frame rails are actually short slots that allow for about a millimeter of left to right alignment. The easiest way to ensure that the Z-Plates are spaced properly is to move the steel bed plate to the upper limit of travel while the Z-Plate screws are loose. Then use a thickness gauge to create equal amounts of space between the Z-Plates and frame rails. Ensure the bed moves freely throughout the travel range, then tighten the screws with the bed at the top of the travel range. It is easier if the lead screw nuts are temporarily disconnected.

### **Qidi X-Max Generations Primary Differentiators:**

Gen 1: 8mm Gantry Rods

Gen 2: 10mm Gantry Rods

Gen 3: All Metal Hot End

Gen 4: X-Max II

## **Model files**



**x-max-z-rod-and-motor-mount.stl**

☐ Print with support enabled

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