



## Improving the diagonal rods.

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The Diagonal rods are the weak point of the printer kit. All six rods had a different length. I noticed this first after I mounted the delta triangle to the delta towers and the triangle was far from being parallel to the printing bed. From other users I read that this is a common issue. And I can just can confirm that. I had differences of up to 2.5 mm in the length of the diagonal rods.

When I tried to adjust the length of the rods, first I broke one. Though they look like as if they are made of steel, they are not, so I ripped one off. From the weight it feels like steel because the ball joints are made of steel and heavy. Therefore you see one of my rods is thicker - means I used an old umbrella stick tube to join the ball joints.

I took quite a bit of time to improve the diagonal rods:

1. I cut them off and glued them all again together to 198 mm using a short piece of tube with a inner diameter of 6mm. I glued them all at the same time to keep the length identical. When two of them have the same length, the others can be adapted, by putting a 6 mm shaft to all of the joint eyes at the same time with the rods of the same length at the outer sides.
2. Some of the ball joints were going hard some others wobbled awfully. So I made the wobbling ones going harder by pressing them together using two modified old piston pins of the correct diameter using a bench vise. The hard going ones I moved over a longer period using a drilling machine. Finally I got them working smooth and precisely, but I have to admit, it would have been better to buy something more accurate.