

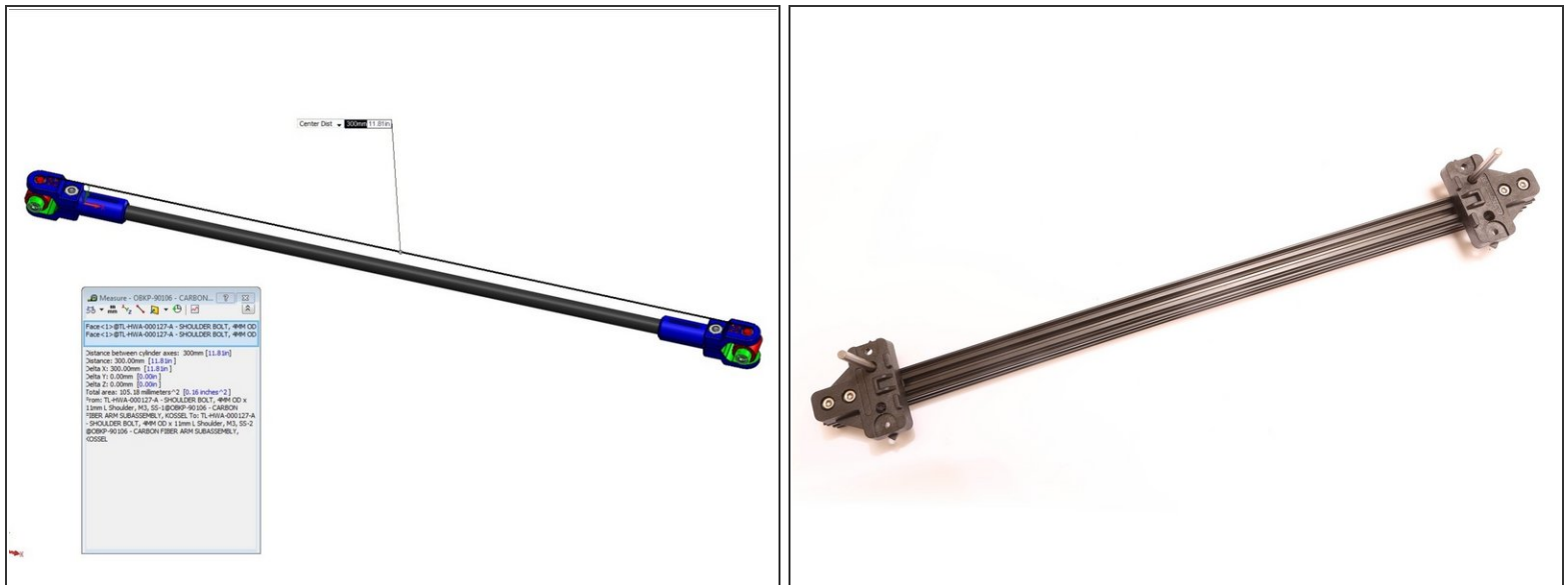
MatterHackers

1. Ball Joint Fixture

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Step 1 — Background



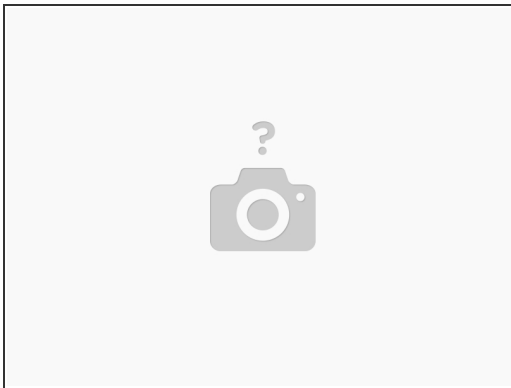
- On a Delta Printer, the center-to-center distance on the ball linkages are critical.
- New line.They must be built with a high degree of repeatability, (ie, all very close in measurement) or the printer will not print correctly; the end effector relies on equal length arms to stay parallel to the print surface during motion).
- New line.For an accurate printer, the length of the center-to-center distance must be matched to the value stored in the printer’s firmware too. Failure to do so will result in a non-flat print surface.
- New line.To ensure that the ball joints are glued precisely (all roughly the same length) and accurately (all as close to 300mm center-to-center distance) as possible, we provide you with parts to build a fixture.
- New line.Borrow a piece of 360mm OpenBeam extrusion from the OpenBeam Kossel Pro Extrusion Set for this fixture.

Step 2 — Pre-Thread Screws onto Fixture Block



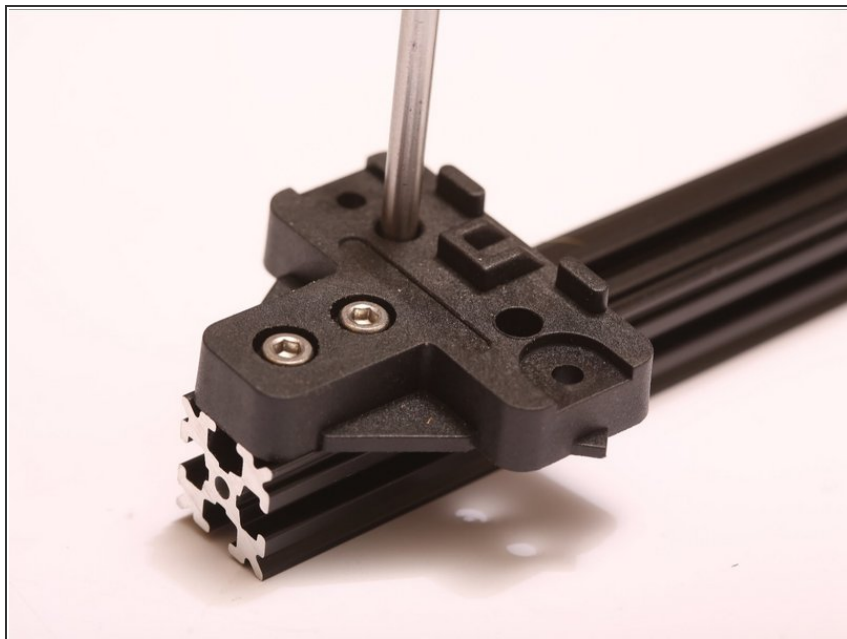
- To make things easier for assembly, we are going to pre-thread screws onto the fixture blocks.

Step 3 — Press Dowel Pin into Fixture Block



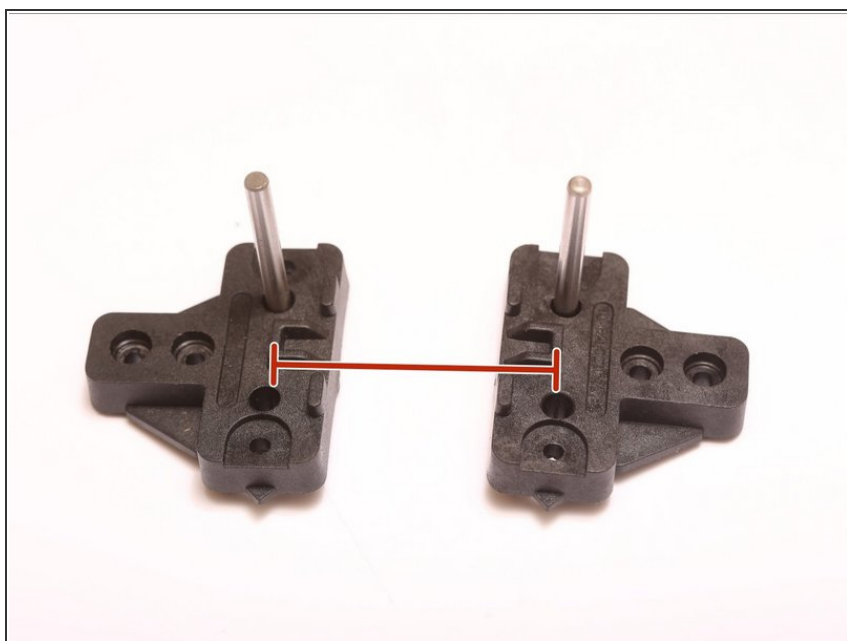
- The extrusion that you pick is determined by the 3D Printer you are building.
- For the Kossel Pro, borrow a piece of 360mm length extrusion from the Kossel Pro extrusion kit.
- Press Dowel Pins into Fixture Block, in mirrored pair configuration as shown on the left.

Step 4 — Setting Distance Without Calipers



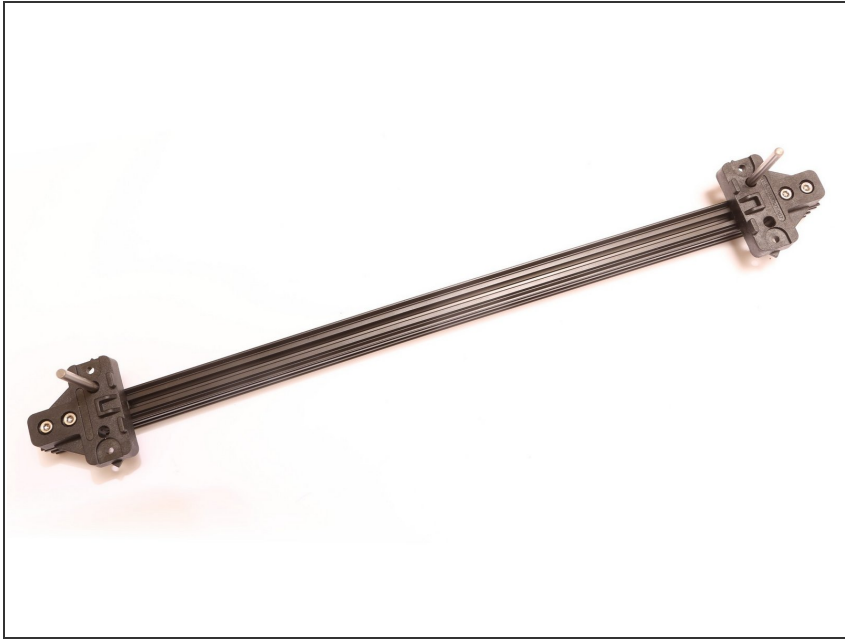
- Since most people do not have calipers that can measure 300mm (~12"), we've designed the fixture block to space the pin centers correctly when attached to a piece of 360mm extrusions (the width of the Kossel Pro triangular extrusions).
- Line up the edge of the plastic bracket to the cut face on the extrusion. This will set the pin centers to be 300mm +/- 0.3mm (cut accuracy on the extrusion).
- Secure fixture blocks with M3 x 8mm SHCS.

Step 5 — Setting Distance With Calipers



- Load one end of the fixture onto a piece of OpenBeam, secure with 2x M3 x 8mm SHCS
- Set Calipers to 300mm (or distance desired) and lock the other block down.

Step 6 — Finished Fixture



- Done.