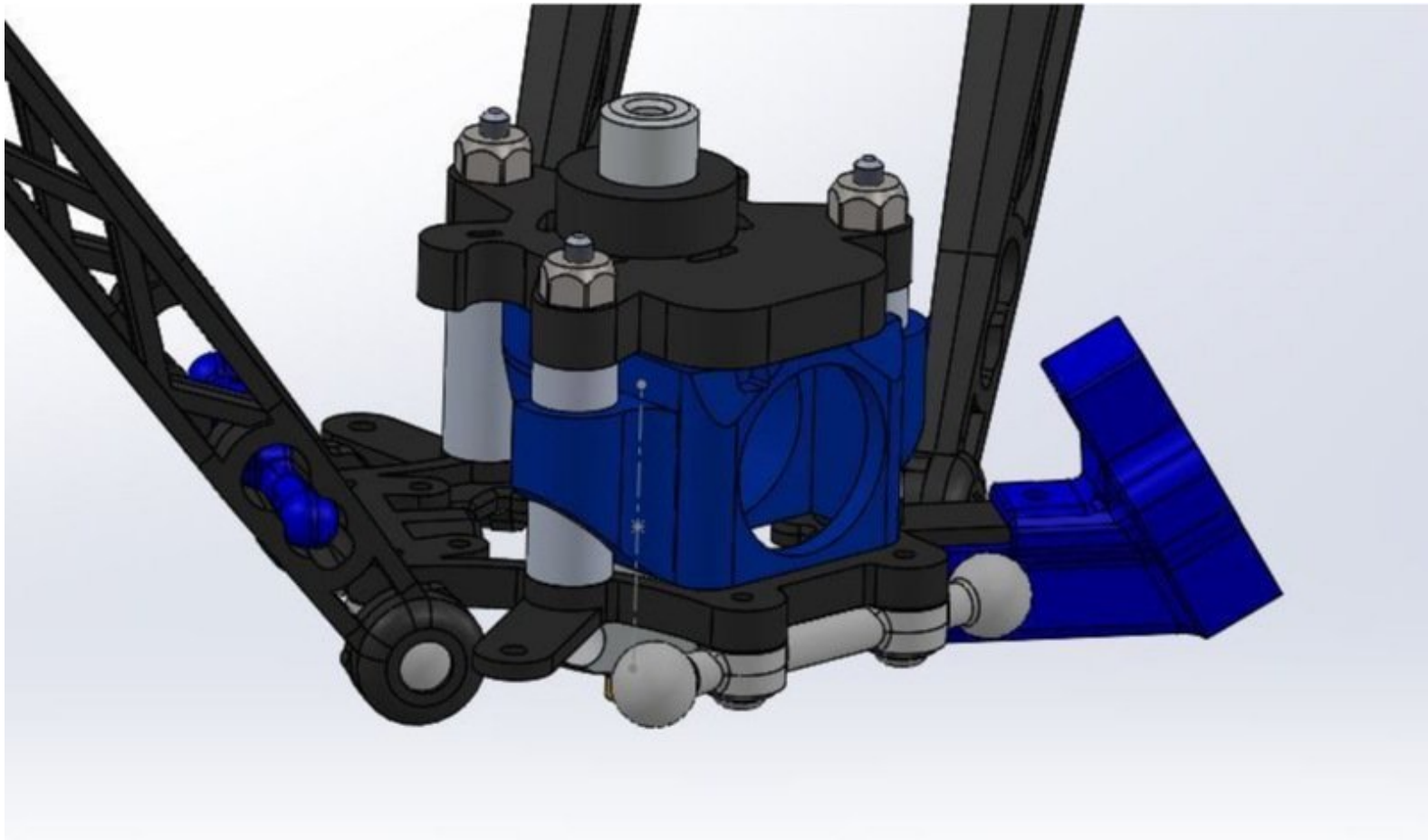


SeeMeCNC Guides

Installing the Ball-Joint Delta Arms (new 10/15)

This guide will show you how to install the new Ball Joint Delta Arms on your Rostock MAX v1 or v2 3D printer. Note that you must have the new injection molded carriages installed BEFORE you can install this upgrade!

Written By: geneb



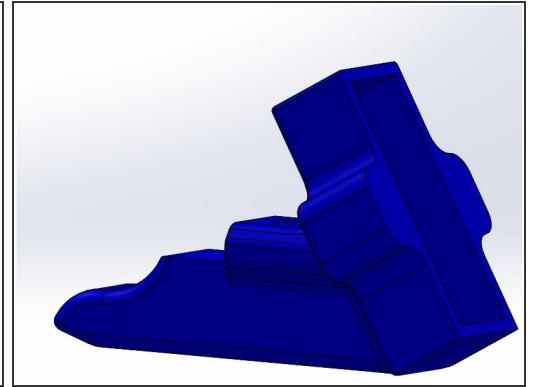
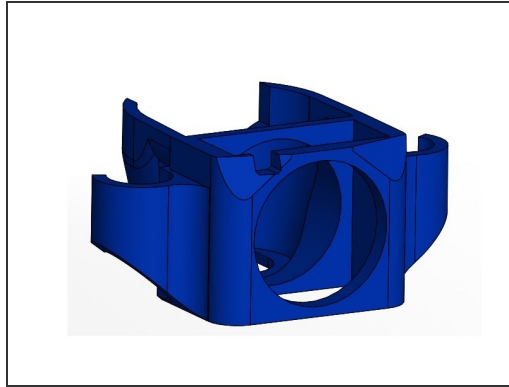
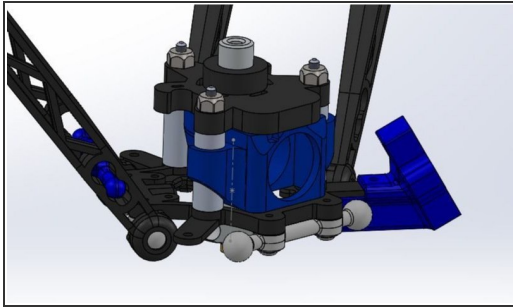
 **TOOLS:**

- Phillips Screwdriver, size P1 (1)

 **PARTS:**

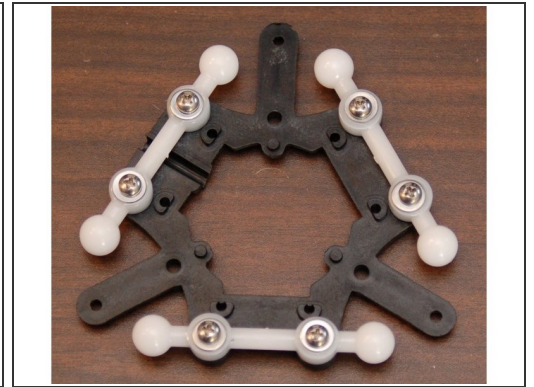
- 290mm Ball Joint Arm (6)
- Ball Arms (6)
3 of the 6 should already be installed on the Injection Molded Carriages!
- Hot End Platform Spacer (3)
These are machined Aluminum
- Tension Spring for IM Ball Joint Arms (6)
Injection molded with a tiny ball on each end and a squiggly "spring" in the middle.
- #6-32 x 1.75" Phillips Pan Head Screw (3)
- #6-32 Nylon Lock Nut (3)
- #4, 3/8" Sheet Metal Screw (6)
These should have been used to install the Ball Joint Arms.
- #4 Flat Washer (6)
These should have been used to install the Ball Joint Arms.
- Ball Joint Platform (1)
- Hot End Adapter for the Ball Joint Platform (1)
This part is laser cut Melamine.

Step 1 — New fan shrouds!



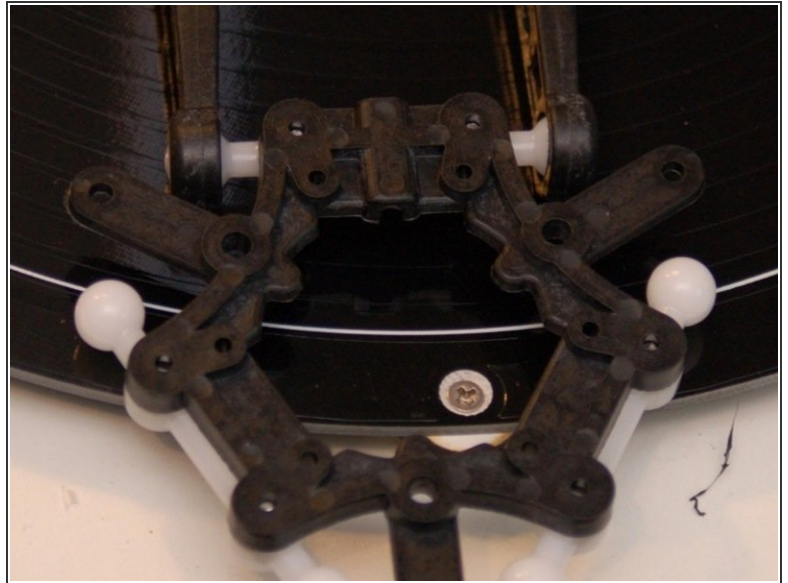
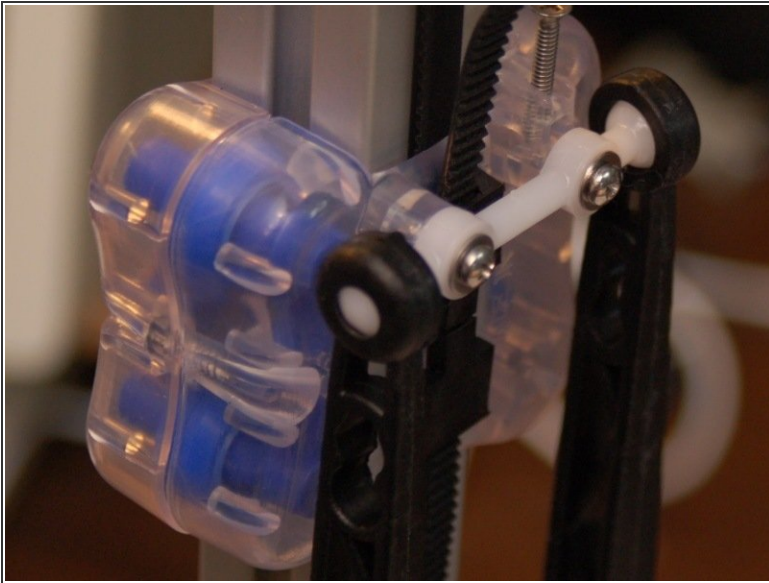
- The new platform design requires that you print both a new PEEK and Layer fan shroud. Print both of these now, BEFORE you tear your printer apart. :)
- The PEEK fan shroud can be found here: [PEEK FAN SHROUD](#)
- The Layer fan shroud can be found here: [LAYER FAN SHROUD](#)

Step 2 — Prepping the Ball Joint Platform



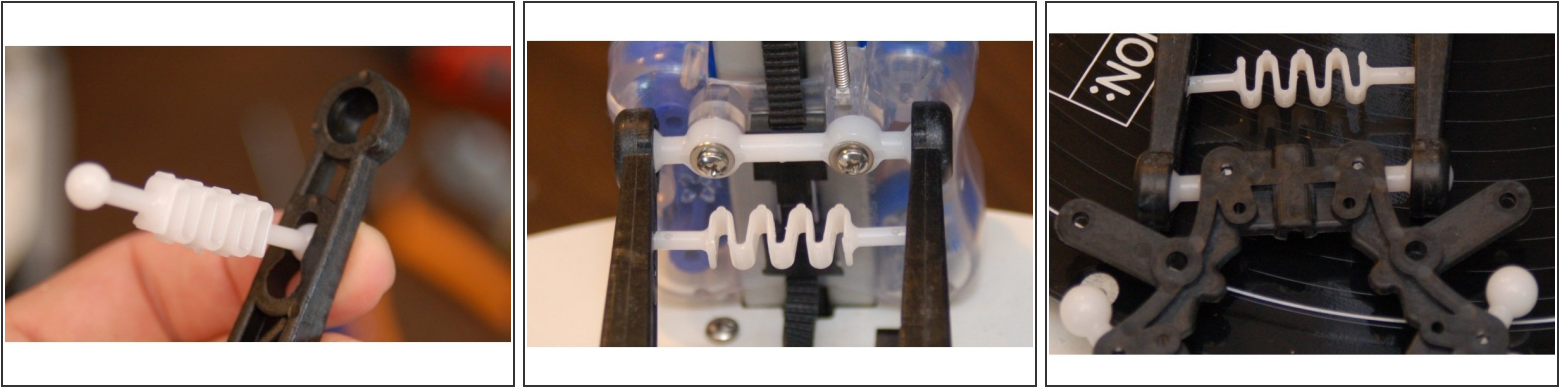
- Press a Ball Joint Arm on to two of the mounting posts on the under side of the Ball Joint Platform.
- Fix in place using two #4, 3/8" sheet metal and two #4 flat washers.
- Repeat for the other two mounting locations as shown in the third image.

Step 3 — Mounting the Ball Joint Arms



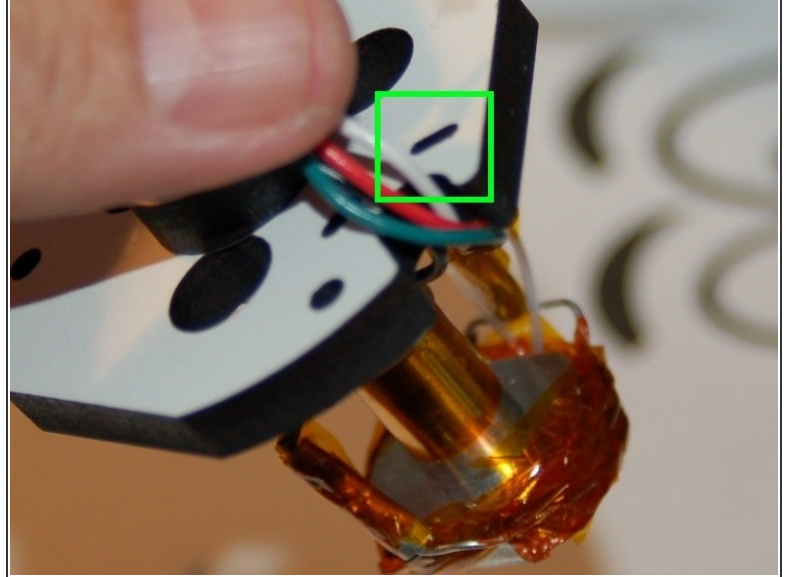
- Attach a Ball Joint Arm to the ball joints on the carriage as shown. As you press the socket over the ball on the carriage, you'll hear a faint "click" as it locks into place.
 - Attach the Ball Joint Platform you assembled previously to the other ends of the arms as shown.
- i** If you're using a hot end other than the older one shown in this guide, you may want to install the effector platform with the ball-arms facing up. This will provide additional clearance between the effector platform and the heated bed, which is required by some hot end designs like the HE280 or E3D v6.

Step 4 — Install the Tension Springs



- Insert the end of the tension spring into the keyhole notch in the arm as shown.
- Gently stretch the spring across to the opposite arm and latch it into the keyhole notch.
- Perform this step at both tension spring locations - the "top" end at the carriage and the "bottom" end at the Ball Joint Platform.
- Repeat this and the previous step for the other two pairs of arms.

Step 5 — Change Hot End Adapter (If Included)



- Remove the hot end from the old-style platform and install it into the new style.
- Tie the wires to the strain relief using a 4" wire tie in the notch shown.
- Install the hot end on to the new platform.
- This new arm upgrade has significantly changed the geometry of the printer. Because of this, you'll need to recalibrate. In order to do this successfully, you'll need to change your Horizontal Radius to 140 (if you haven't already) and the Diagonal Rod length to 290.8.
- If you're upgrading an Orion, you'll want to set the Horizontal Radius to 89 as a starting point. The Diagonal Rod length is 179.0
- You're done!