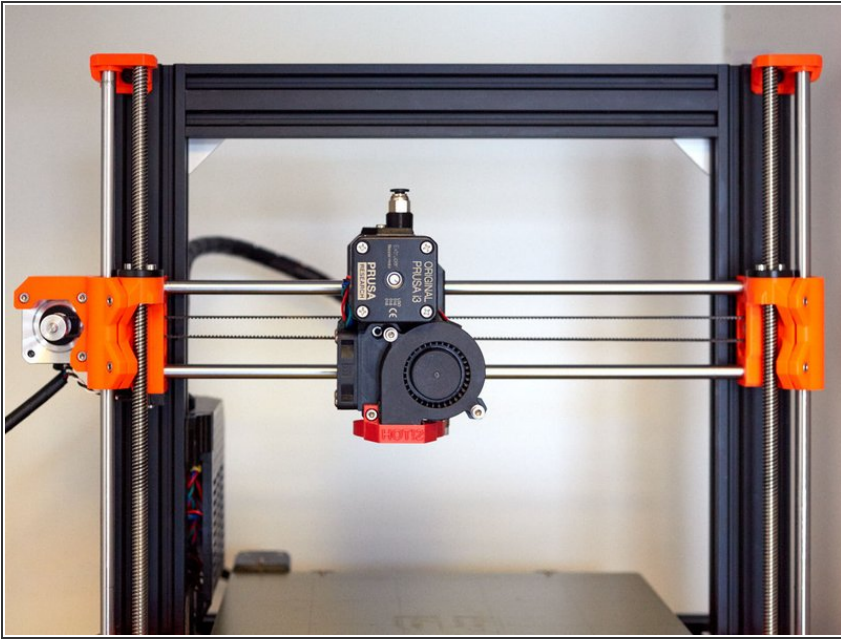


Bear Lab

1. Preflight check and disassembly

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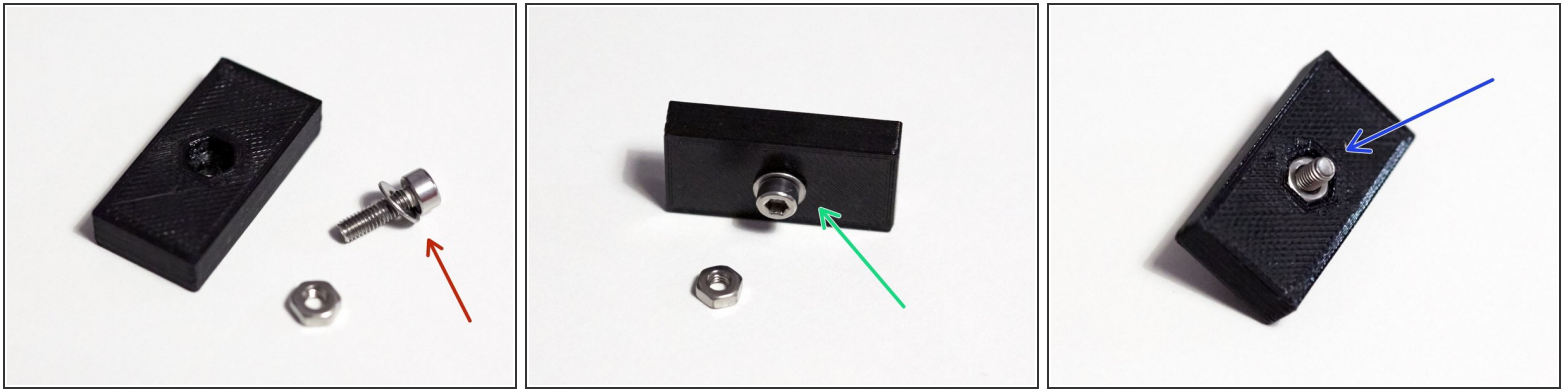
Step 1 — Introduction



⚠ The Bear X-End and Bear Extruder are matched to each other and cannot be used separately. As a unit, they are completely compatible with stock Prusa MK2.5, MK3, Bear Upgraded MK2.5, and Bear Upgraded MK3

- ① If you are upgrading an existing Original Prusa or clone, you need to first disassemble the x-axis and extruder. Save all the parts as some will be reused. Check the smooth rods for wear or damage. Now is a good time to replace worn rods and linear bearings.
- ① To save time later, check all the printed parts. Check that screw holes are clear to allow the screws to slide in without excessive pressure. Once the electrical components have been added, you don't want to be struggling with a tight screw which increases the risk of damaging a wire.

Step 2 — How to insert nuts



① **Inserting Hex Nuts:** To assure that hex nuts are properly seated, do the following:

- Insert a screw through a washer.
- Insert the screw through the hole on the flat side (not the hex cavity side).
- Add the hex nut on the screw and tighten the screw.
- ⚠ Ensure the hex nut is aligned with the hex cavity while tightening.
- When the nut is full seated, you need to remove the screw being careful not to dislodge the nut.

① **Inserting Nyloc Nuts:** You can use the same method as hex nuts.

① **Inserting Square Nuts:** They tend to fall out if the piece holding them is inverted. After they are inserted, check that they are properly seated by inserting a screw to engage that nut.

Step 3 — Disassembly



- 1. Unload the filament and allow the hot end to cool. Turn off the printer and remove the power plug.
- 2. Protect the printing surface and use a tray to catch small components that might fall during the disassembly.
- 3. Remove the m3x40 screw securing the Rambo/Einsy cover and disconnect all connectors from the extruder cable.
- 4. Cut the zip ties and remove the screws clamping the extruder cable and remove the 3mm nylon filament. Completely unwind the cables.

⚠ Be careful to not cut the cables while cutting the zip ties.

Step 4 — Disassembly



- 1. Cut the zip ties holding the extruder assembly to the linear bearings.
- 2. Remove the timing belt. Replace if worn or damaged.
- 3. Carefully pull the wires through the x-end assembly
- 4. Tear down the entire extruder by reversing the assembly instructions provided by Prusa.
- 5. All the printed parts will be replaced. Most of the electrical parts and fasteners will be reused.
- 6. Check all wires and connectors for possible damage
- 7. Check the PTFE tubes for possible damage.

Step 5 — Disassembly



- 1. Remove the screws holding the z-tops in place.
- 2. Pull the z-tops off the smooth rods.
- 3. Remove the screws securing the trapezoidal nuts and spin those nuts to the top of the lead screws and remove them. They will be reused.
- 4. Lift the x-end off the z-axis rods.
- 5. **MK2s and MK2.5 only:** Remove the two M2x12 screws securing the x-end limit switch.
- 6. Remove the three screws holding the x-end motor.
- 7. Replace the rod tensioning screws with fully threaded M3x30 screws and drive out the smooth rods from the x-end-idler.
- 8. Pull the rods out of the x-end-motor.

Step 6 — Next chapter



- Congratulations you have finished this chapter :-)
- Go to the next chapter: [2. X axis](#)