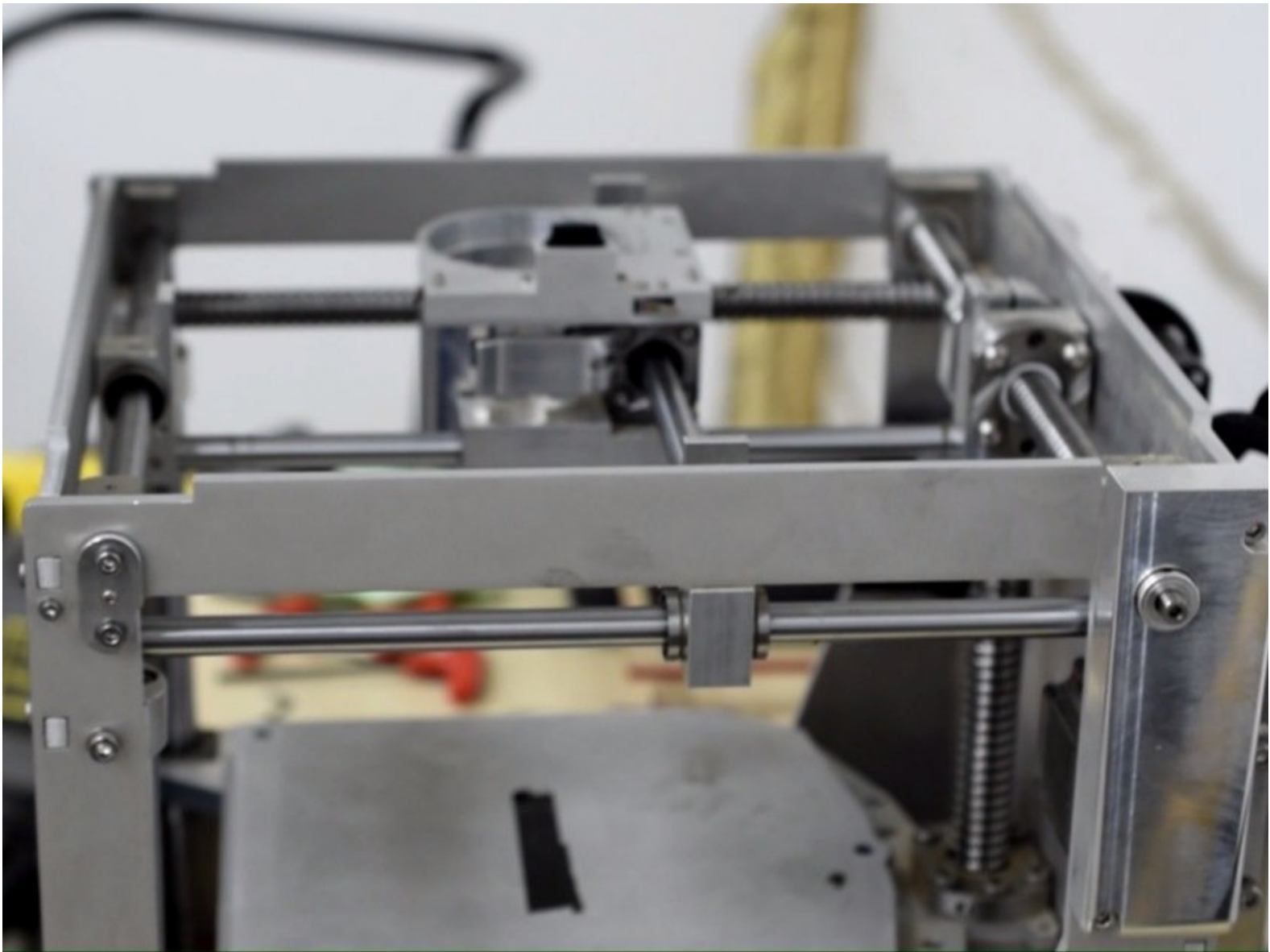




Bearing Maintenance

This guide will show you a method to removing your linear rails and bearings to inspect and grease them.

Written By: BoXZY

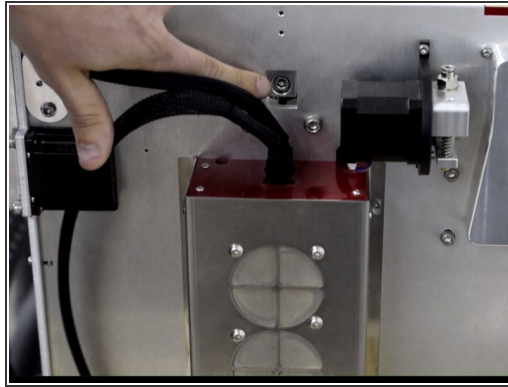
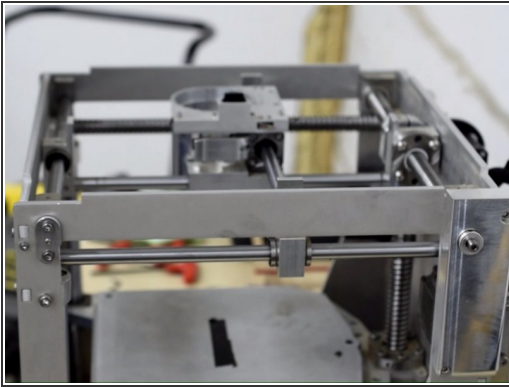




TOOLS:

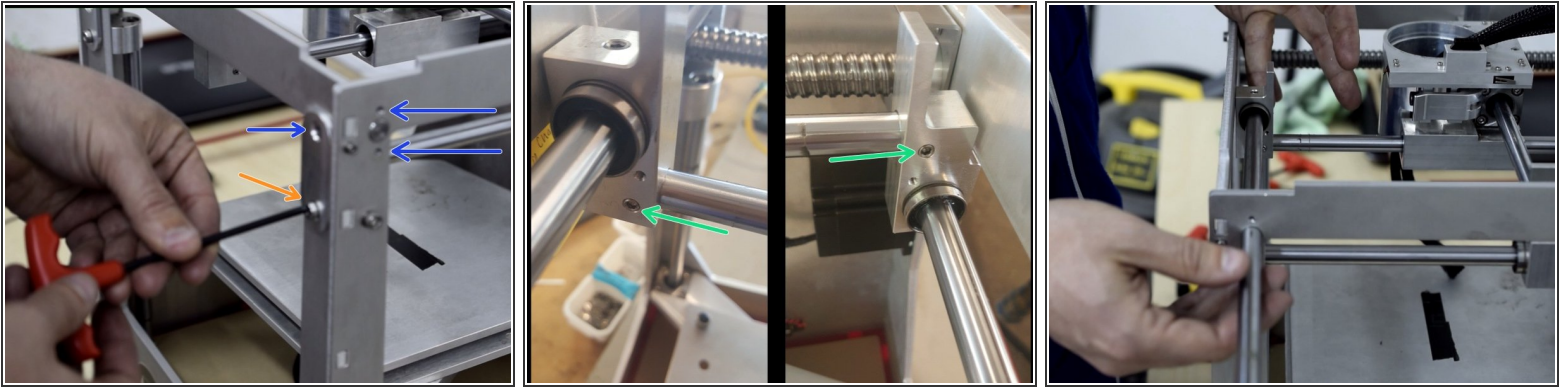
- [Engine Assembly Lube with Moly-Graphite](#) (1)
-

Step 1 — Accessing the bearings on the gantry rods



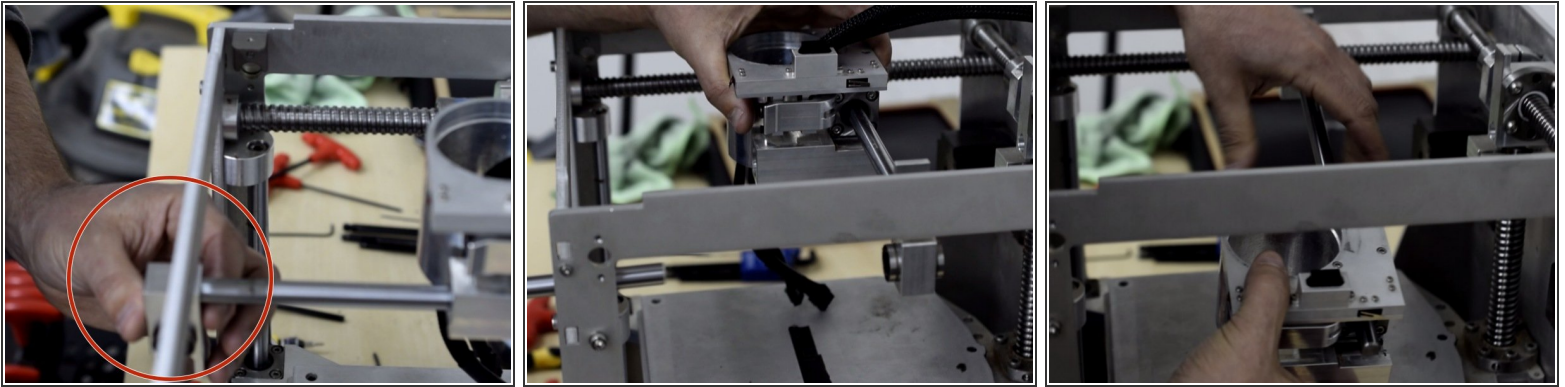
- *First*, press the **e-stop** on your BoXZY power supply to remove power and *disconnect* the **USB** cable from your computer
- *Remove* the Acrylic cover from the top of your BoXZY by unscrewing the bolts in each of the four corners
- *Next*, with your hands, turn both ball screws to move your Rapid Change mount to the **center of the machine**, align the **X axis** bearing mount so that its nut is visible through the *square hole* at the back of the machine
- *Then remove* the X axis bearing mount **bolt** through the square hole with an *Allen wrench* and make a note that the rod that this bolt is attached to is the only threaded rod so when you get to re-assembling the gantry remember to use this exact rod.

Step 2 — Removing the Flanges to access the gantry rods



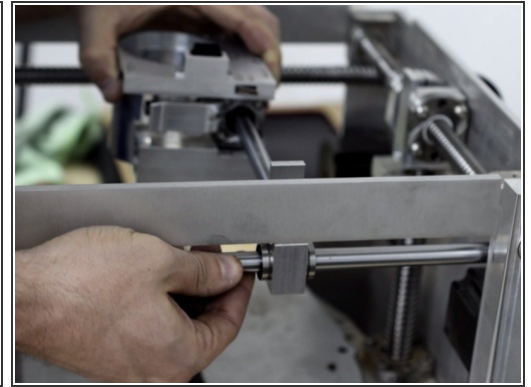
- **Remove** the *flanges* from the *front right corner* of BoXZY, by removing the **nuts** as indicated by the *blue arrows* in the image
 - Be sure to keep any washers that may fall out after removing the flange
- **Loosen** the **nut** at the *bottom* of the front facing flange, as indicated by the *orange arrow* in the image, so that the flange may be turned *180 degrees*
- **Loosen** the *Set Screws* on each of the bearing mounts that ride on the rods, they are indicated by *green arrows* in the image. **Do not** remove the Set Screws
- *Next*, **remove** the **front X axis rod** by sliding it all the way out of the bearing and the aluminum body

Step 3 — Removing the Rapid Change mount



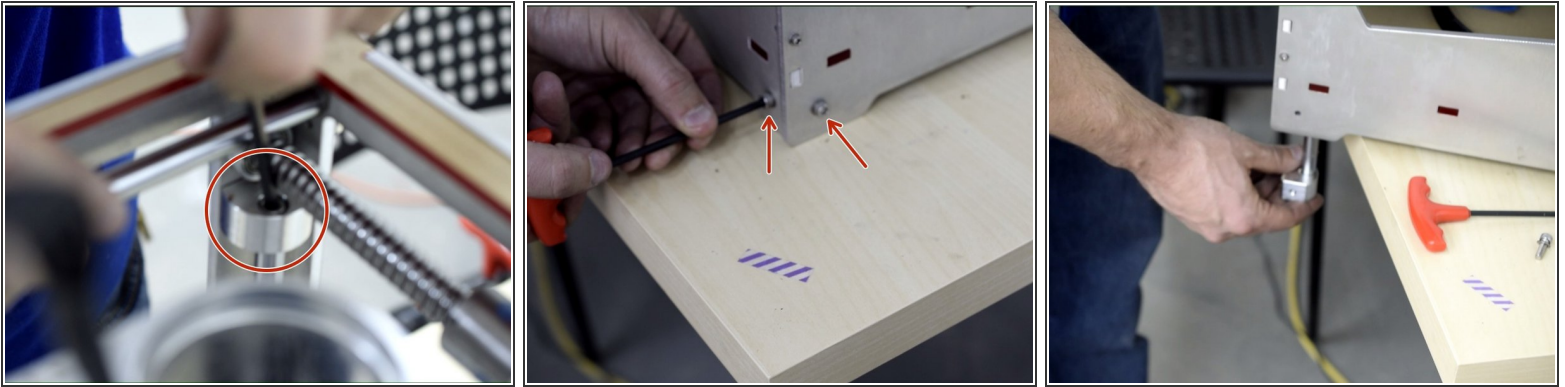
- **Remove** the **bearing mount** from the end of the *Y axis* Rapid Change mount rod by rotating it downward and pulling it off, if it is very hard to remove loosen the set screw a little more
- **Hold** the Rapid Change mount and **pull** the *Y axis rod* all the way out
- **Continue holding** the Rapid Change mount and remove the *X axis rod* from the right side
- **Remove** the **bearing mount** from the end of the *X axis* Rapid Change mount rod by rotating it downward and pulling it off
- **Slide** the *Rapid Change mount* **off** of the *X axis* Rapid Change rod

Step 4 — Greasing the Rod Bearings



- Use your **Engine Assembly Lube with Moly-Graphite**. Check your local auto-parts store or go online
- Wipe your X and Y axis rods with a clean soft cloth so that they are clean and there is no debris on them
- Squeeze a penny size amount of the Engine Assembly Lube into your bearings mounts and the Rapid Change attachment bearings and slide a rod through the bearing turning it while you push in and out
 - Grease will be left on the rods and this will be a messy operation so be careful not to drop the rods or bearing mounts when handling them
- Re-attach your **Rapid Change mount** and the **X axis rod** and **bearing mount**
- Re-attach your **Y axis Rapid Change rod** and **bearing mount**
- Re-attach the **flanges** and **set screws**, the set screws only need to be a quarter turn past hand tight

Step 5 — Accessing the Z axis rods and bearings



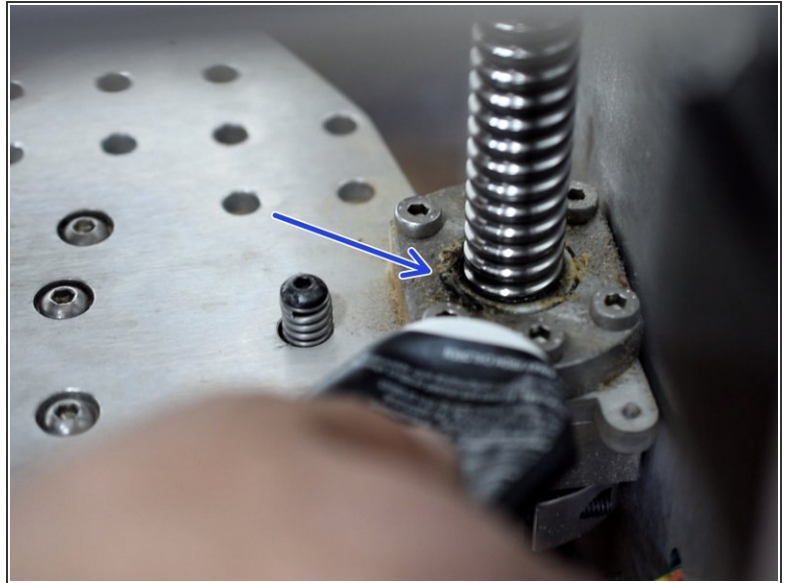
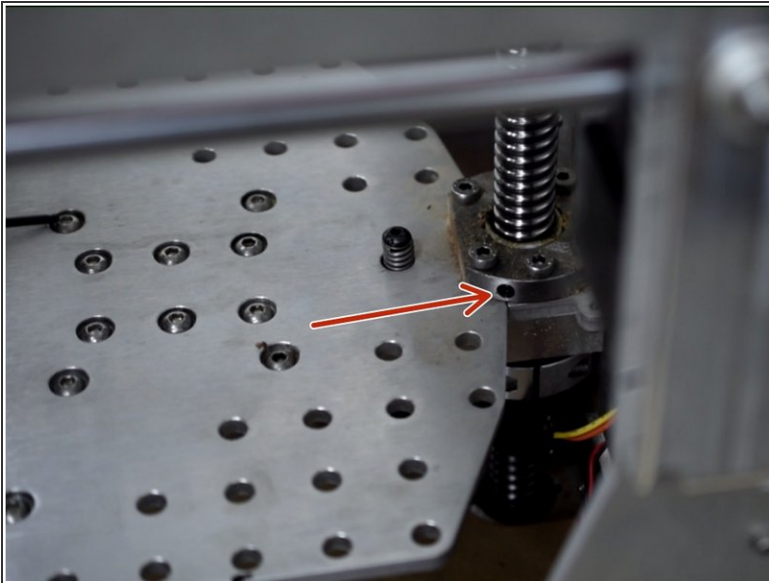
- Using a *Ball Ended Allen wrench* **loosen** the bolts located at the top of both of the **Z axis rod mounts**, as indicated by the red circle in the image
- *Next*, remove the **bolts** at the bottom of the BoXZY aluminum body, as indicated by the *red arrows* in the image.
 - While holding the Z axis rod, remove the bolt from the top of the Z axis rod mount, from the first part of this step
- *Next*, move your BoXZY so that the corner of the Z axis rod is hanging over the edge of your surface and pull the rod out of the bottom of the BoXZY
- Wipe your Z axis rod with a clean cloth and re-insert the bearing rod into your BoXZY through bottom but stop when the top of the rod is just breaching the Build plate Z bearing mount
- *Squeeze* your Engine Assembly lube with Moly-Graphite in a ring around the outer edge of the top of the Z axis rod inside the bearing mount and slide the rod in and out of the top of the bearing mount to spread the lubricant
- *Next*, push the rod into the top Z axis bearing mount and loosely tighten the top bolt
 - Bolt the bottom bearing mount into the BoXZY aluminum body, then tighten the top Z axis mount bolt a quarter turn past hand tight and do the same for the bottom Z axis mount bolts

Step 6 — Greasing the X and Y axis Ballscrews



- *First*, move your BoXZY Rapid Change mount to the center of the Ballscrew
- *Next*, **remove** the **set screw** from the bottom of the X and Y Ballscrew Ballnut mount, as indicated in the image by the *red arrow*
- *Next*, squeeze your Engine Assembly Lube with Moly-Graphite into the hole where you removed the set screw
 - With your hands, manually turn the ball screw and move the Ballscrew Ballnut away from the Home corner then move the Ballscrew Ballnut back to where you began this step, as indicated by the *blue arrow* in the image
- *Re-Insert* the set screw into the Ballnut on the Ballscrew and your BoXZY Ballscrew bearings will be greased and glide smoothly

Step 7 — Greasing the Z axis Ballscrew



- *First*, move your BoXZY build plate down to the bottom of the BoXZY, but not all of the way down
- *Next*, **remove** the **set screw** in the build plate Ballscrew Ballnut, as indicated by the *red arrow* in the image
- *Squeeze* your Engine Assembly Lube with Moly-Graphite into the hole the set screw was in. Squeeze the lubricant until you see it come out of the top of the Ballscrew Ballnut, as indicated by the *blue arrow* in the image
- With your hands, manually turn the Z axis Ballscrew so that the build plate moves up about 2 inches
 - Squeeze lubricant into the set screw hole again and then move the build plate up 2 inches again
- *Replace* your **set screw** and you will be finished greasing your bearings and Ballscrews