3D SYSTEMS University

Cube 3D Printer

"Lesson – X axis motor and belt replacement"

Revision date: 10/20/13

Objectives

After completing this lesson you will:

- ❏ Be able to remove the old X belt and motor.
- ❏ Learn to install the new X belt and new motor.
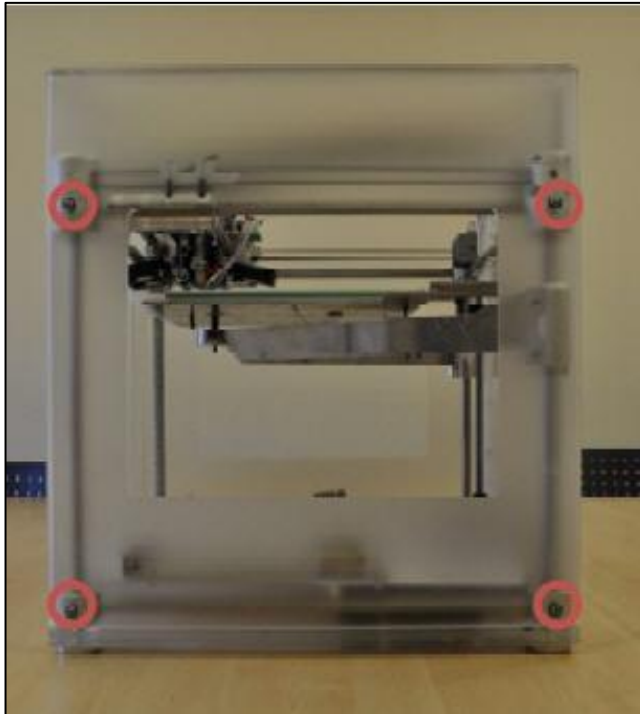- ❏ Know how to tighten the X belt and check the tension

What You Will Need

- ❑ Replacement X axis motor and belt
- ❑ 3mm Hex Driver
- ❑ 2.5mm Driver
- ❑ Pliers
- ❑ 5mm wrench

Before beginning this process please ensure that the print pad is lowered to the bottom of the machine and all cartridges have been removed. Unplug the CubeX from mains power.

Removing the Case and Floor Panel

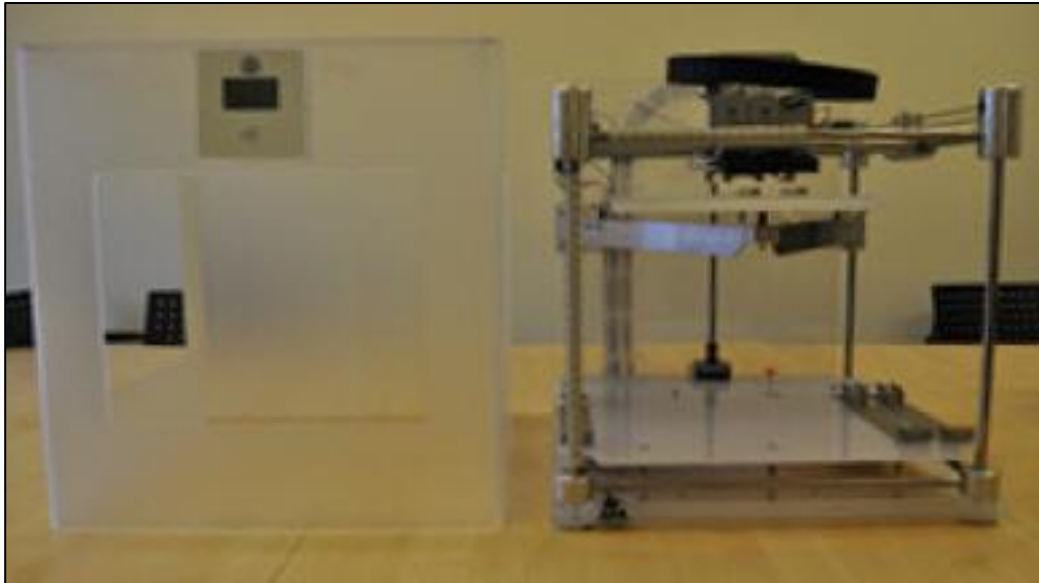Use the 3mm hex driver to remove the 8 case bolts (4 on either side of the machine).
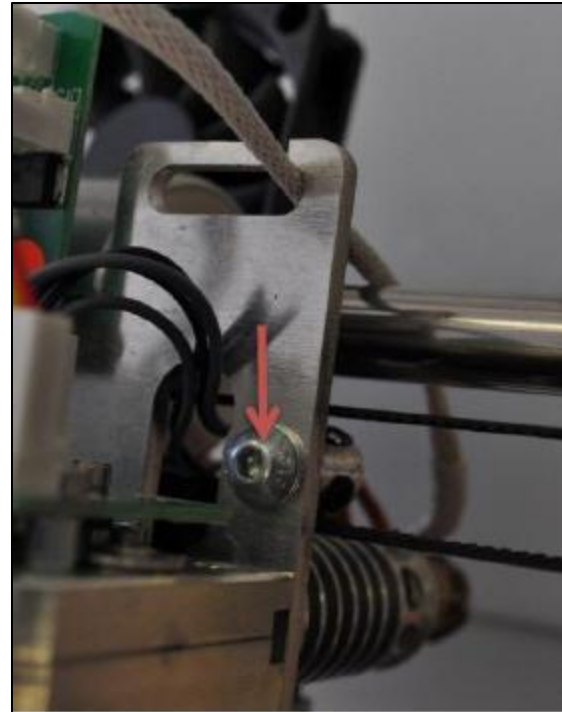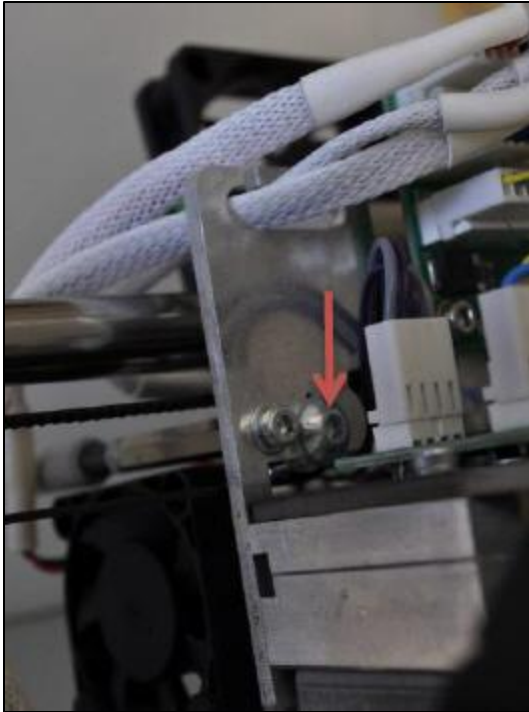
Unplug the CubeX screen.

Removing the Case and Floor Panel

Lift the case up off the CubeX.

Removing the Old X Belt

Use the 3mm hex driver to remove the X belt fastener bolts to free the X belt from the Print Jet carriage.

Removing the Old X Belt

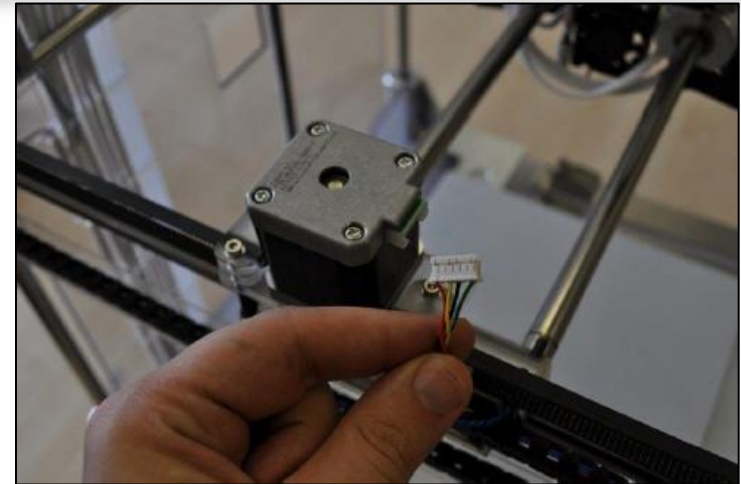Using the 2.5mm driver, remove the X belt fasteners from each end of the belt.
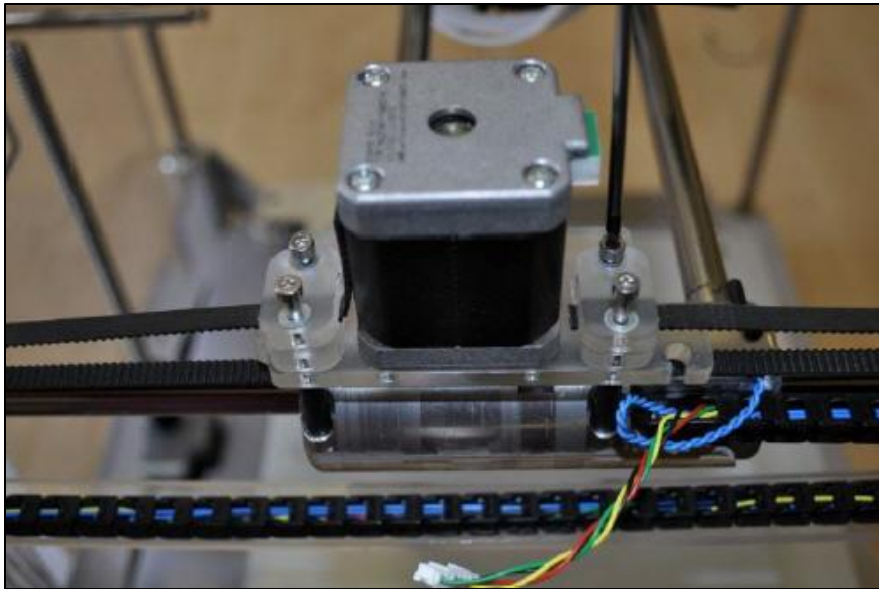
Gently pull the X belt from the machine.
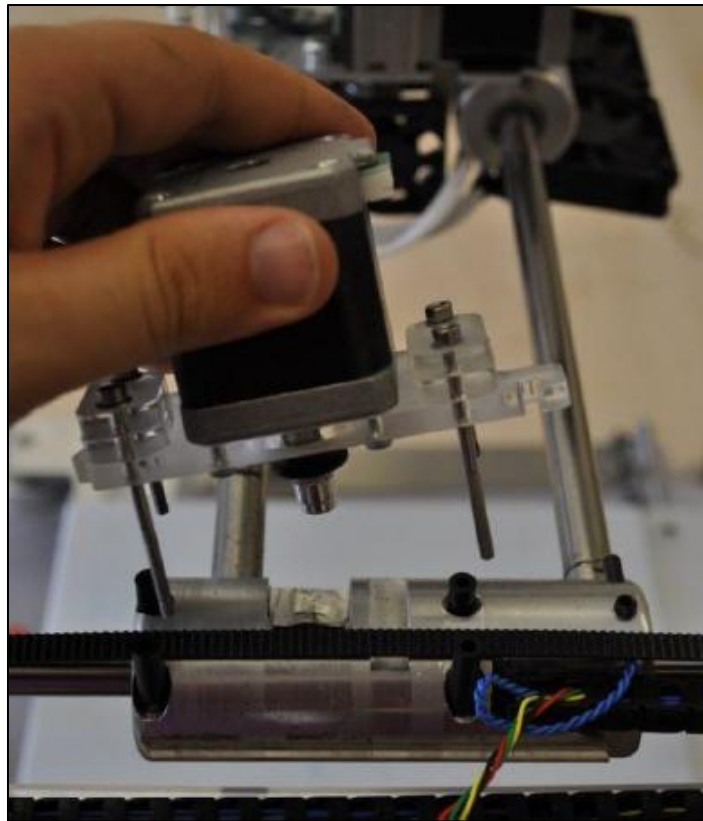
Removing the X motor

Unplug the motor wire

Unfasten the motor mount bolts using the 2.5mm hex driver and remove the
assembly from the machine (this will result in an unfastened Y belt).

Removing the X Motor

Example image of assembly being removed from the machine.

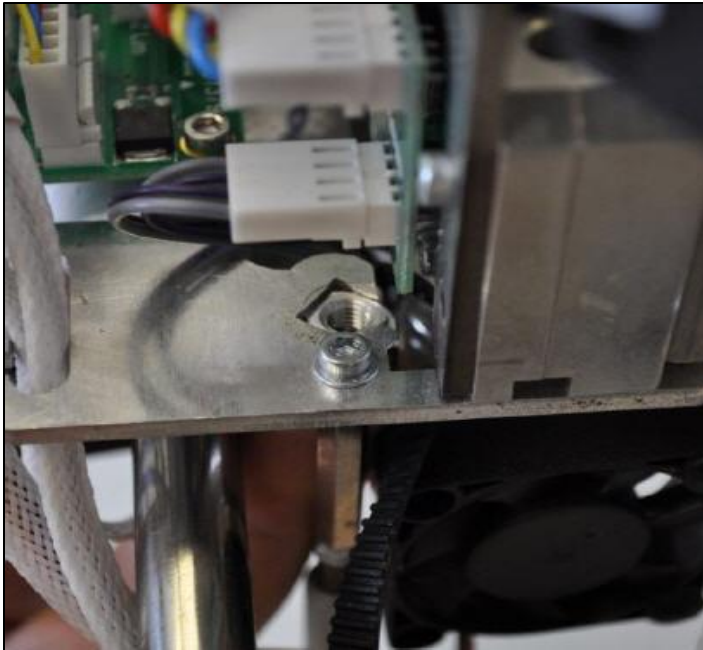Remove all fasteners and keep safe as these will be required again later in the manual.

Attach one of the X belt fasteners to the machine. Note the orientation pictured; The set screw biting into the teeth of the belt, the length of the belt leaving the right hand side of the fastener with the octagonal side of the fastener facing up.
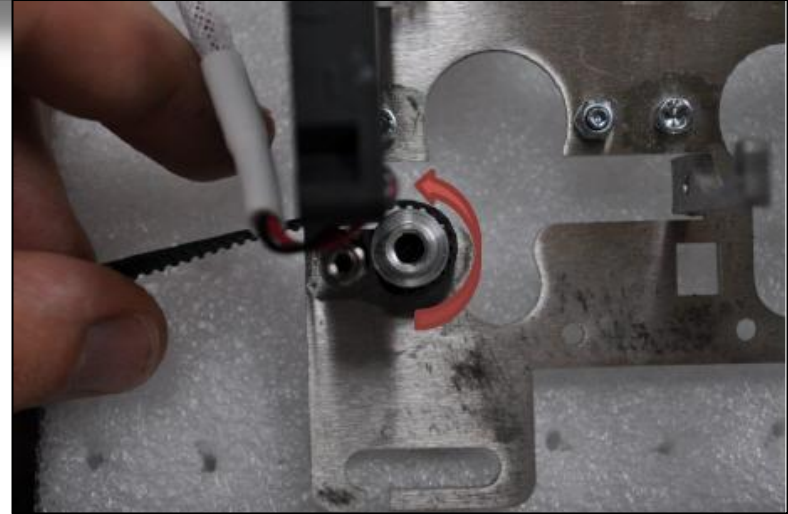
Installing the New X Belt

Loop the belt around the fastener.

Attach the fastener hex side up to the left hand side of the Print Jet carriage.

Installing the New X Belt

Ensure the loop is still present when the fastener is attached.

Thread the belt under the Print Jet carriage.

Installing the New X Belt

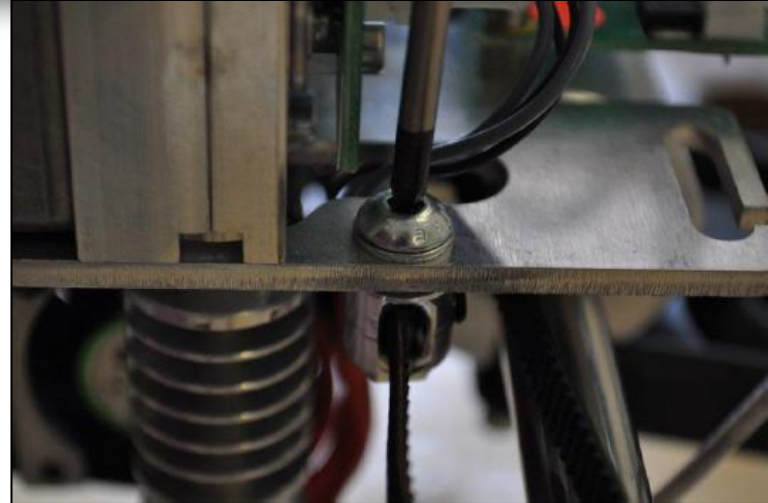Thread the belt around the X idler bearing

Attach the second belt fastener again noting the orientation; The set screw biting into the teeth of the belt, The length of the belt leaving the left hand side of the fastener with the circular side of the fastener facing up.
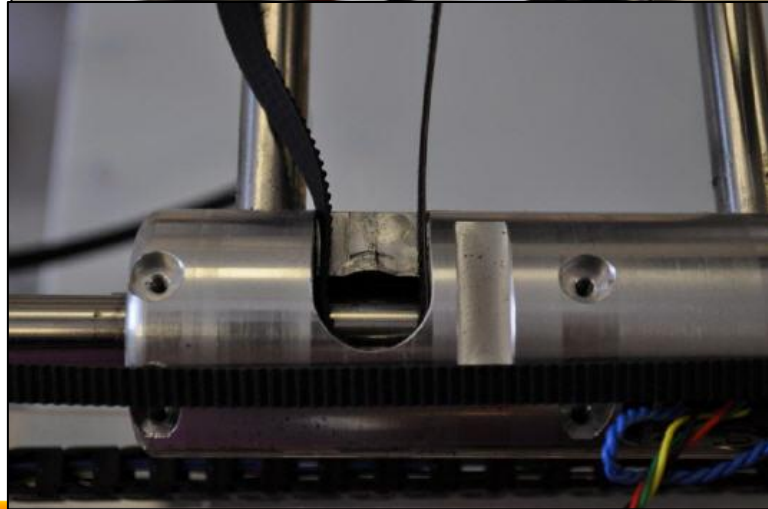
Installing the New X Belt

Attach to the right hand side of the Print Jet carriage but do not fully fasten.
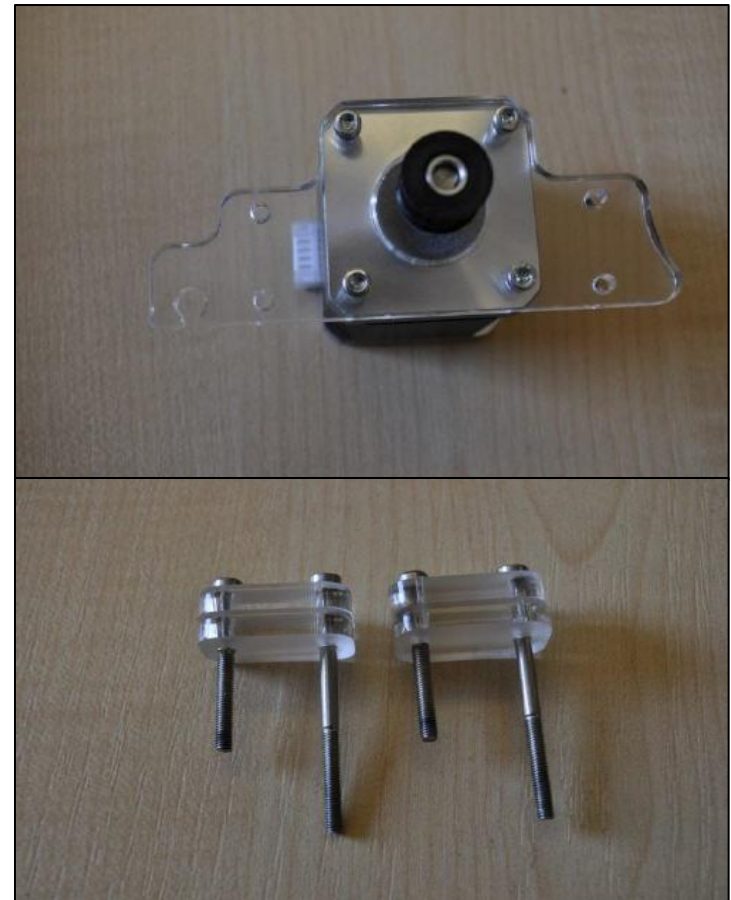
Place the belt in position to pass around the X motor

Attaching the New X Motor

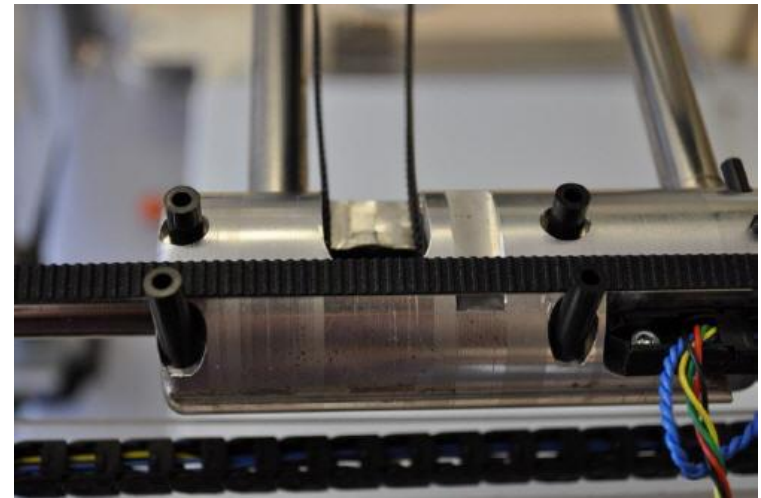Attach the X motor mount to the X motor noting the orientation pictured.

Place one of each of the leftover bolts through the Y belt clamps.

Attaching the New X Motor

Place the Y belt clamps either side of the X motor mount with the longer bolts at the back of the mount as pictured.
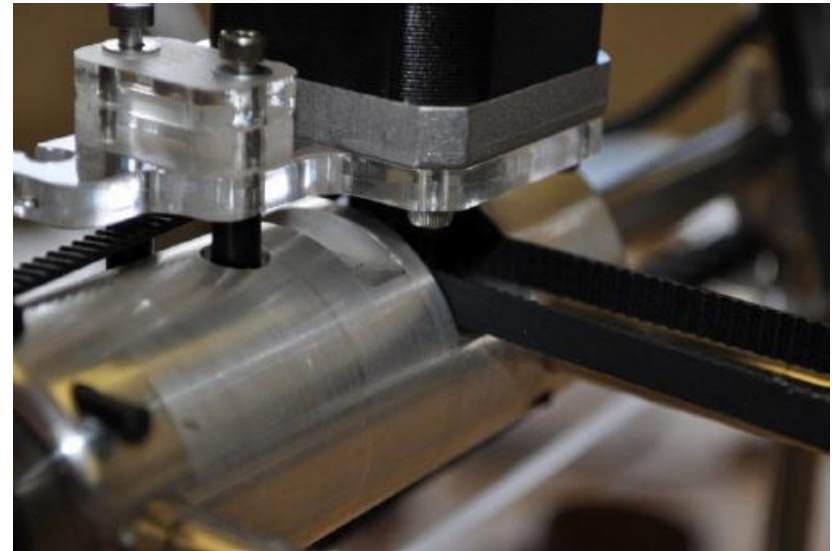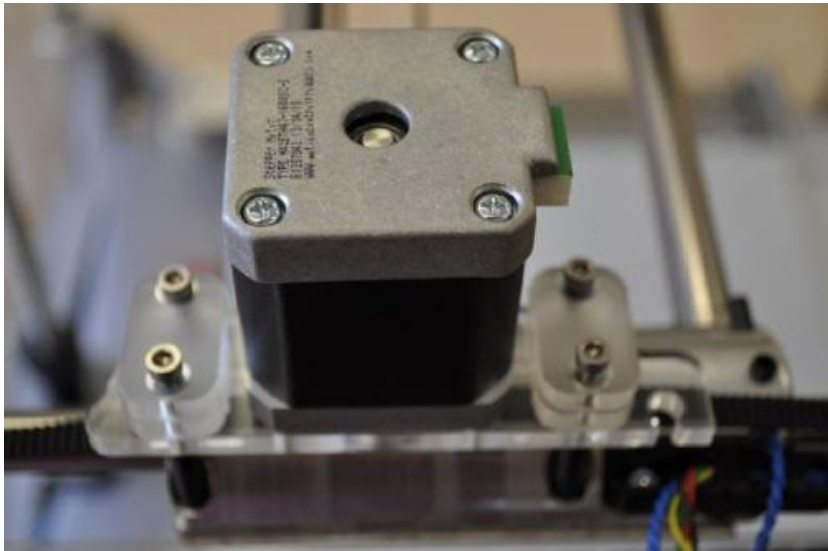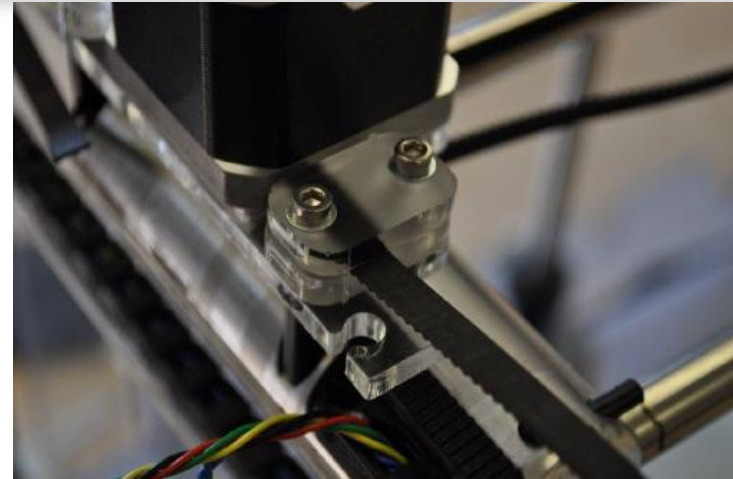

Place the spacers into the block as pictured.

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Attaching the New X Motor

Place the X motor assembly onto the block and fasten loosely ensuring that the X belt travels around the X motor pulley.
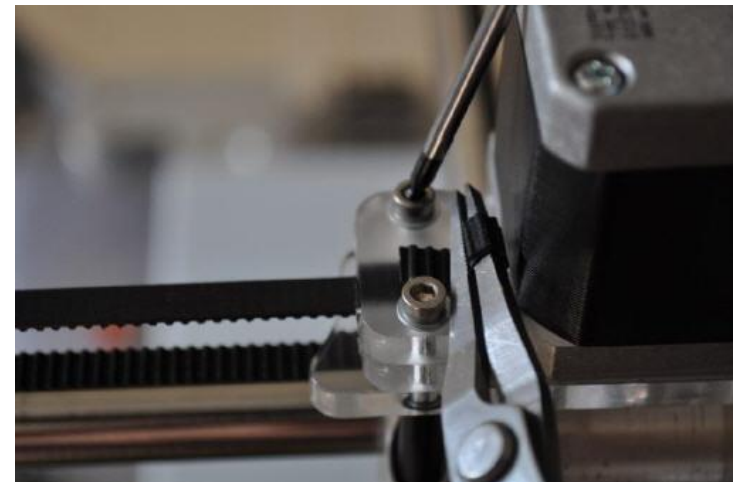
Attaching the New X Motor

Fasten one side of the Y belt by placing it between the Y belt clamps and fastener the two bolts. Apply equal pressure to each bolt to ensure the X motor mount stays flat.
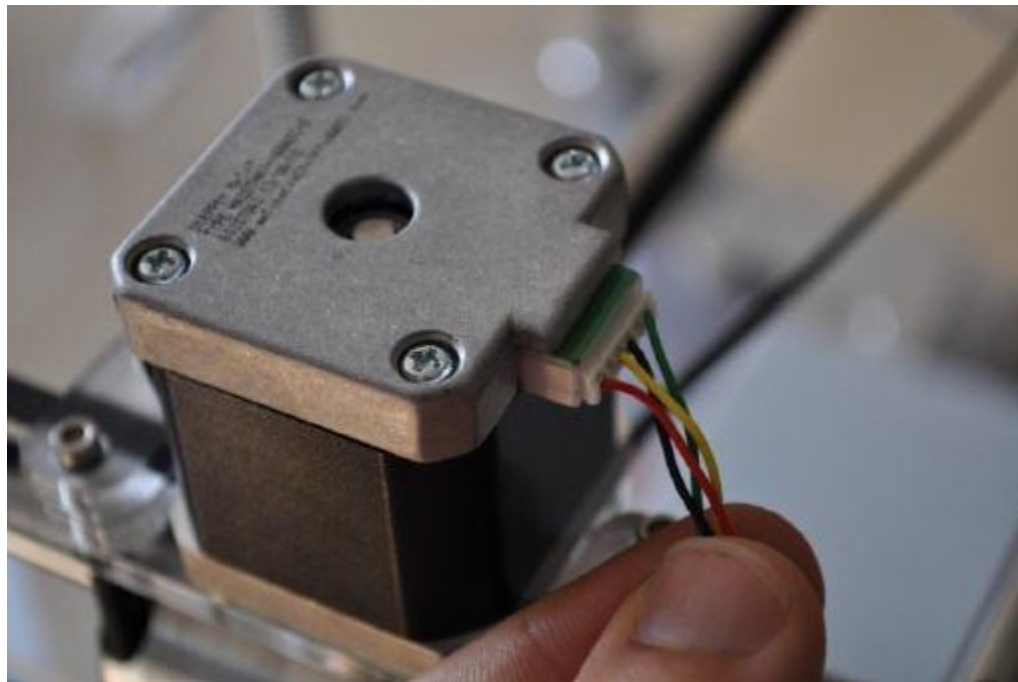

Pull the unfastened side of the Y belt through its corresponding clamp, pull it taught with pliers and fasten the two bolts, again applying equal pressure to each bolt to ensure the X motor mount stays flat.
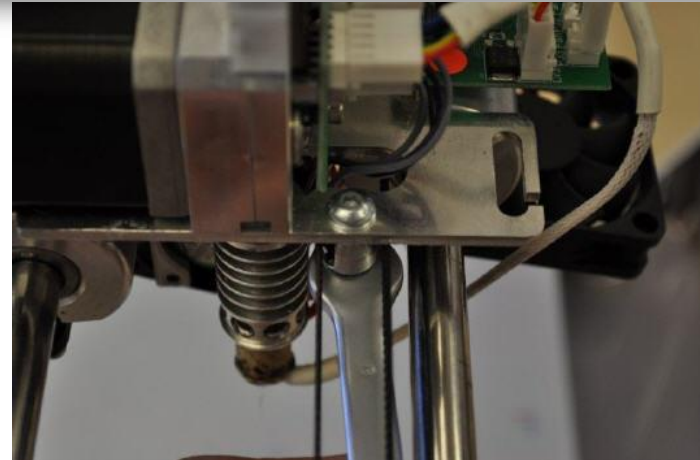
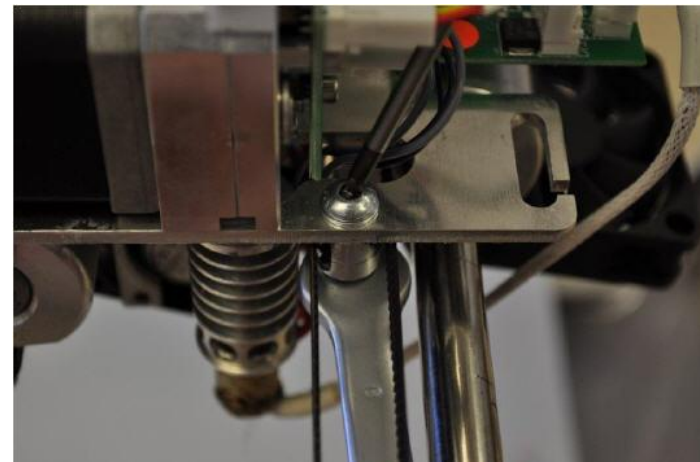Plug the X motor wire into the X motor

Tightening the X Belt

Use an 5mm wrench to turn the loose X belt fastener until there is tension on the belt.
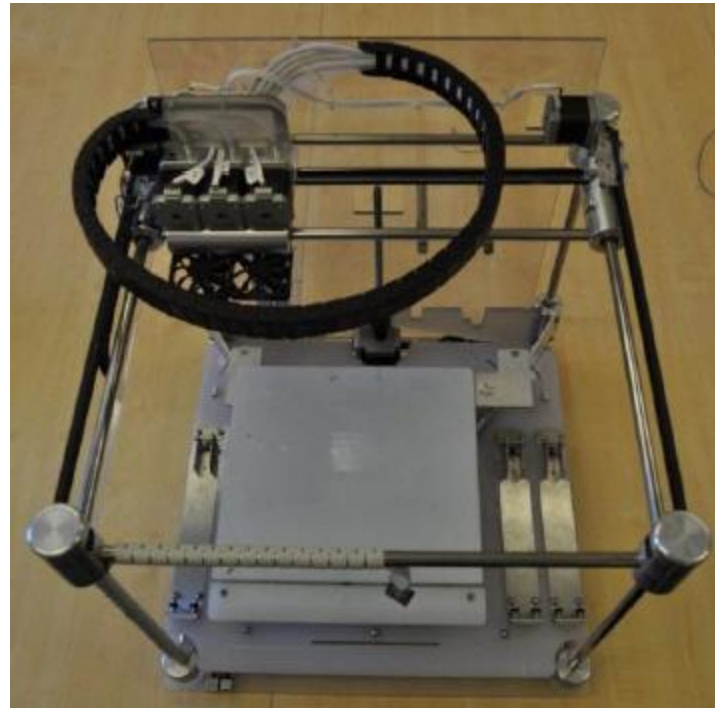
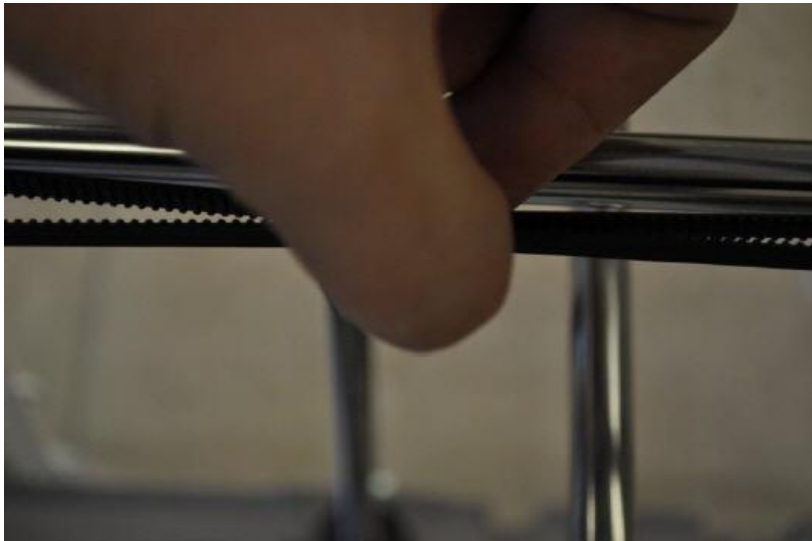Use the 3mm hex driver to fasten the X belt.

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Checking the Belt Tension

Move the Print Jet carriage to the back left hand corner of the machine.

Checking the Belt Tension

The belts should have some tension on them but you should be able to comfortably touch the belts together (as pictured) when the machine is in this position.

Reassemble the CubeX

Follow the disassembly instructions in reverse to reassemble the CubeX:

1. Slide the case onto the CubeX and plug in the CubeX screen.

2. Use the 3mm hex driver reattach the 8 case bolts.

3. You may now power up your CubeX.