



# Installing Module - Frame XZ Assembly

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## TOOLS:

- [1.5mm Allen Driver](#) (1)
- [2.5mm Allen Driver](#) (1)
- [3mm Allen Driver](#) (1)
- [Side cutter](#) (1)
- [Zip tie gun](#) (1)



## PARTS:

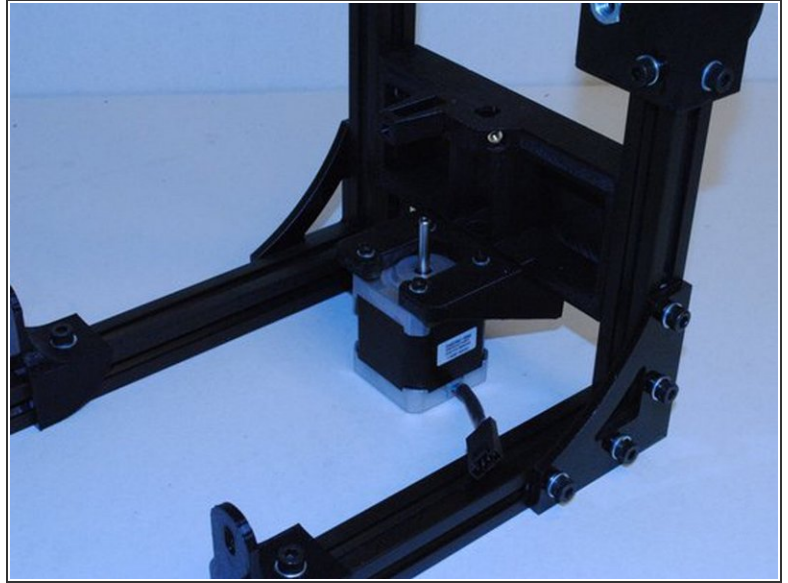
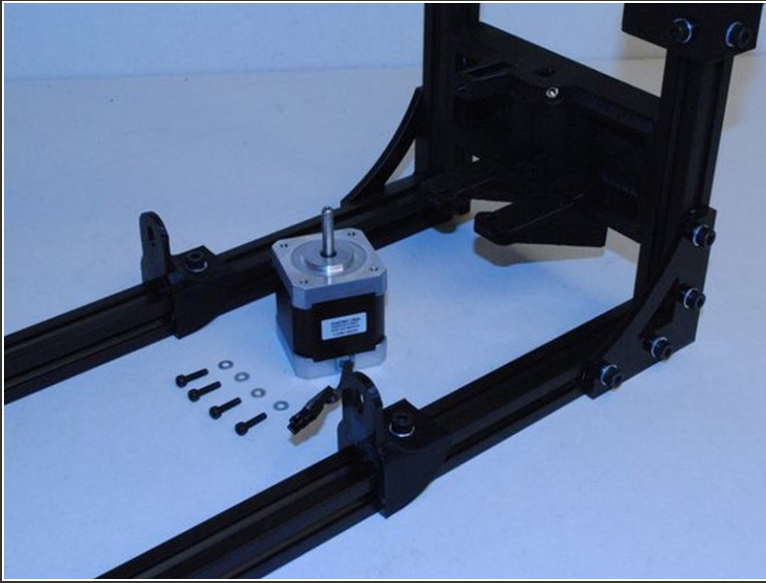
- [Frame Assembly](#) (1)
- [LCD Case Assembly](#) (1)
- [Electronics Case Assembly](#) (1)
- [X end Idler](#) (1)
- [X End Motor](#) (1)
- [X Carriage](#) (1)
- [Print Head Assembly](#) (1)
- [Drive Rod Sub Assembly](#) (1)
- [Motor - 1](#) (1)
- [Motor - 2](#) (1)
- [10mm smooth rod, 500mm long](#) (1)
- [Large Zip ties](#) (1)
- [GT2 belt](#) (1)
- [M3 x 6 set screw](#) (1)
- [M3 x 12 SHCS](#) (1)
- [M3 Washer](#) (1)
- [M5 x 8mm BHCS](#) (1)
- [M5 Washer](#) (1)
- [M5 T-nut](#) (1)

## Step 1 — Frame XZ Assembly



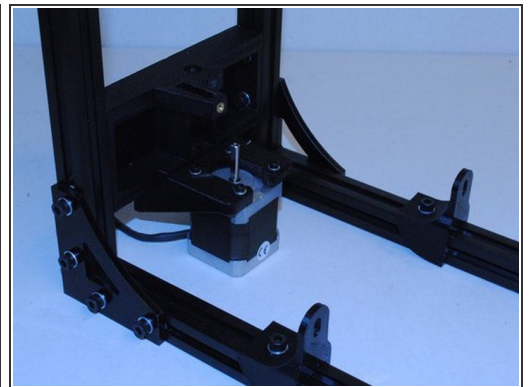
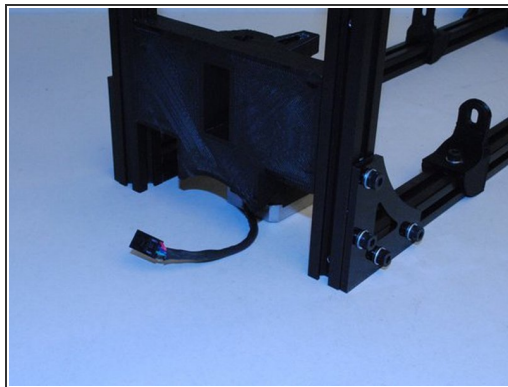
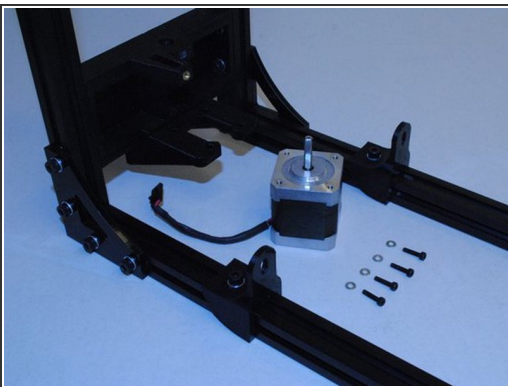
- GATHER PARTS FOR FRAME XZ ASSEMBLY
- 3mm Allen Driver
- Side Cutter
- Zip Tie Gun
- 1.5mm Allen Driver 2.5mm Allen Driver 4mm Allen Driver

## Step 2



- INSTALL RIGHT Z MOTOR
- Install a Motor -2 using 4x M3 x 12 SHCS and M3 washers.
- Take note of wire orientation.

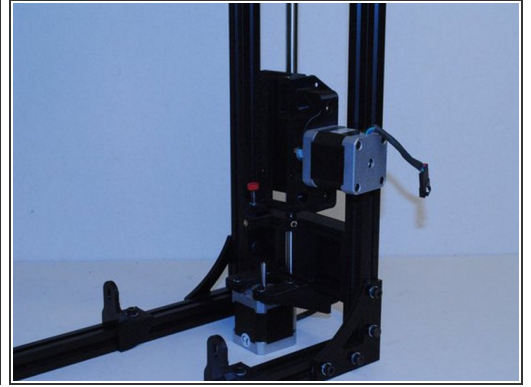
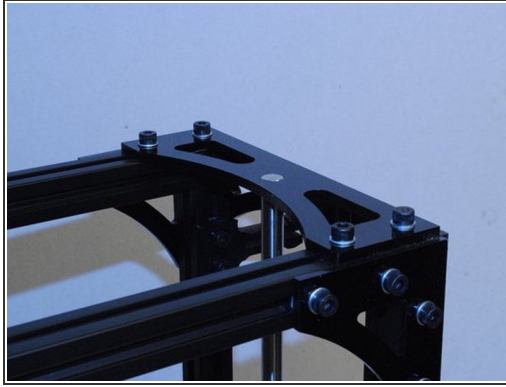
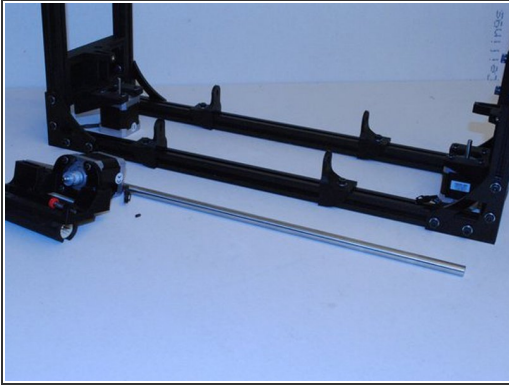
## Step 3



- INSTALL LEFT Z MOTOR
- Install a Motor -1 using 4x M3 x 12 SHCS and M3 washers.
- Take note of wire orientation.

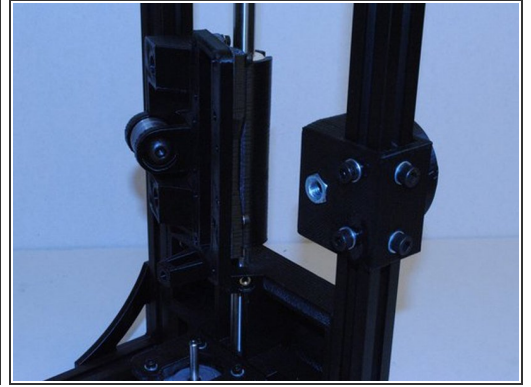
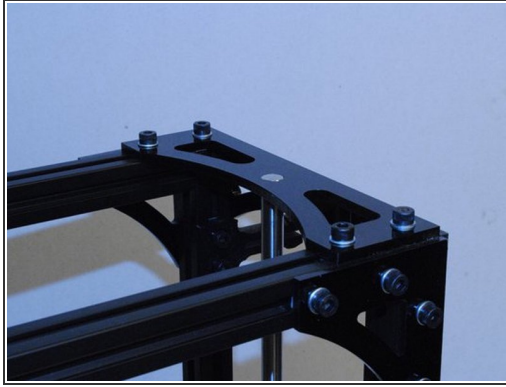
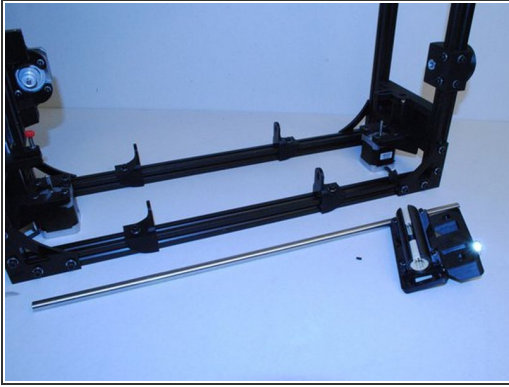


## Step 4



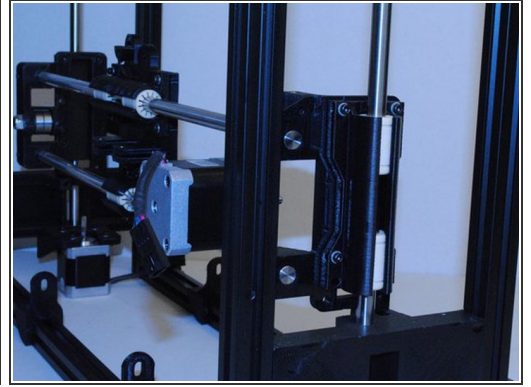
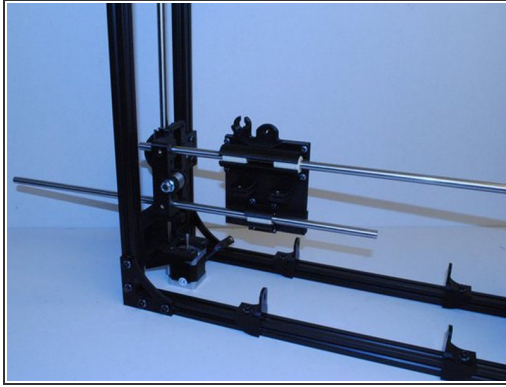
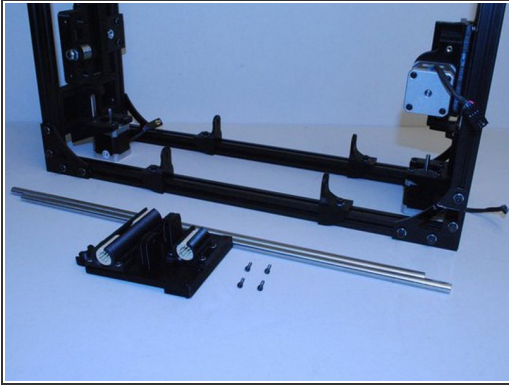
- INSTALL SMOOTH ROD AND X END MOTOR
- Slide a 10mm smooth rod up through the bottom of the left Z motor mount.
- Once you get it started, put the X end motor onto the 10mm rod.
- Slide the rod in until the end is flush with the top of the Z top flat plate.
- Use a M3 x 6 set screw to secure the rod in place.

## Step 5



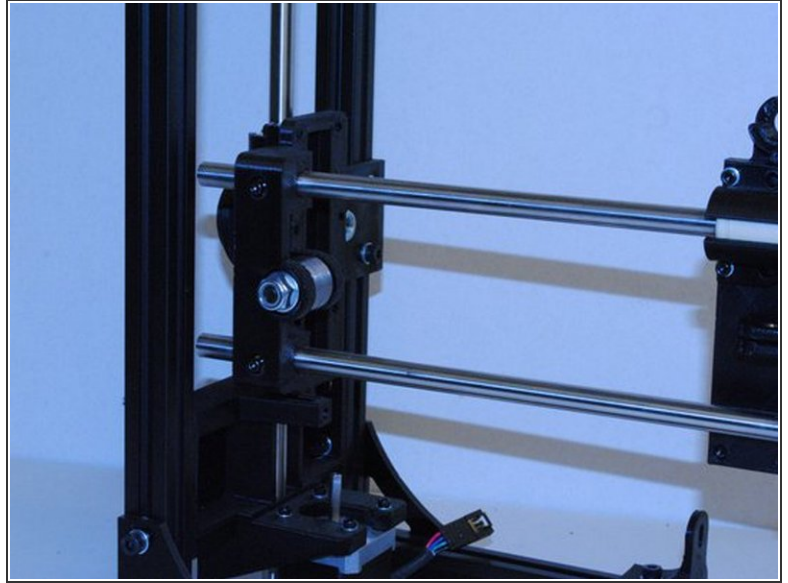
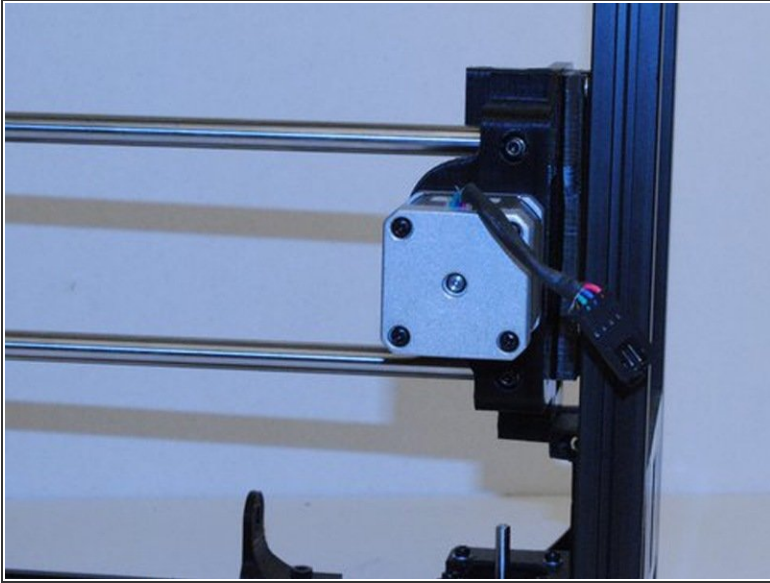
- INSTALL SMOOTH ROD AND X END IDLER
- Slide a 10mm smooth rod up through the bottom of the right Z motor mount.
- Once you get it started, put the X end idler onto the 10mm rod.
- Slide the rod in until the end is flush with the top of the Z top flat plate.
- Use a M3 x 6 set screw to secure the rod in place.

## Step 6



- INSTALL X CARRIAGE AND GUIDING RODS
- Slide a 10mm rod through one of the two holes in the X end idler.
- Once its through far enough, put the X carriage on the rod.
- Finish sliding the 10mm rod through until it's also inserted into the X end motor.
- The rod will be flush with the outside of the X end motor.
- Repeat with the second 10mm rod in the second set of holes.

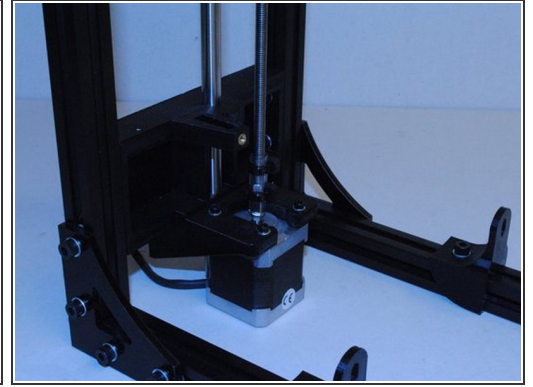
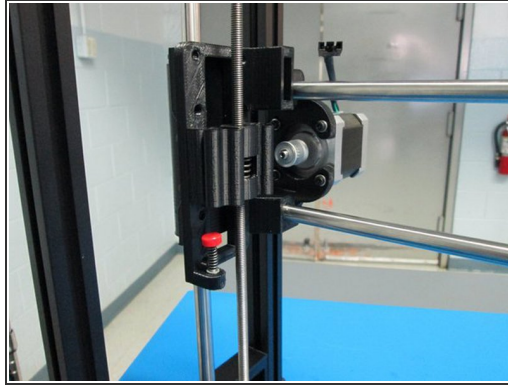
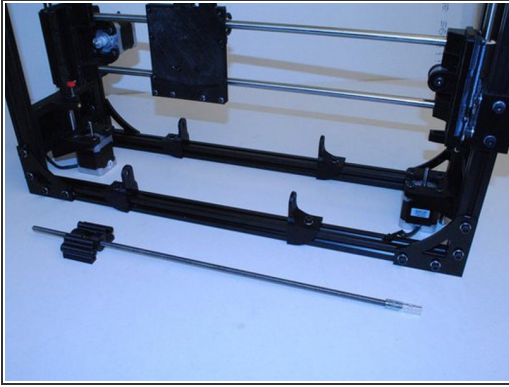
## Step 7



- INSTALL X CARRIAGE AND GUIDING RODS (continued)
- Using 4 M3 x 12 SHCS, lock the rods in place at the X ends.
- Tighten the bolts holding the bearing holders on the X carriage making sure it still slides freely back and forth.
- Tighten the bolts holding the double bearing holders on the X ends at this point as well.
- Does the x carriage slide smoothly back and fourth?
- Did you tighten all the bearing holder bolts?



## Step 8



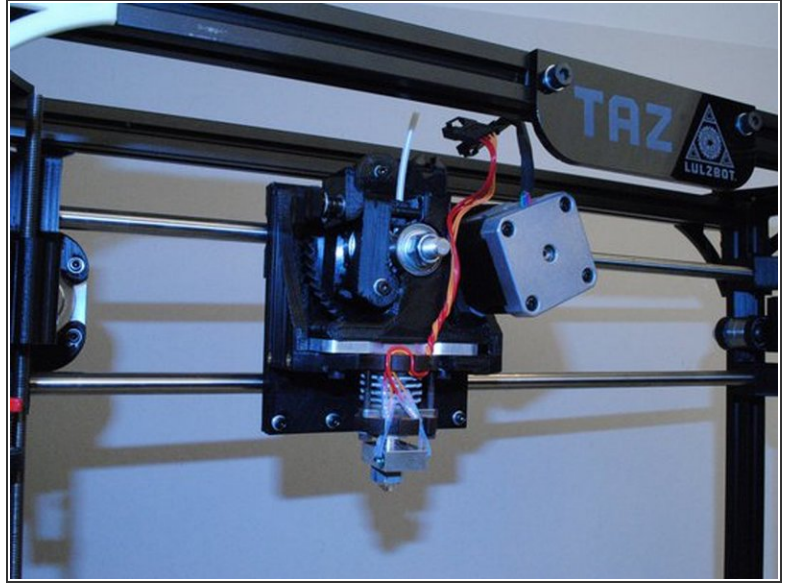
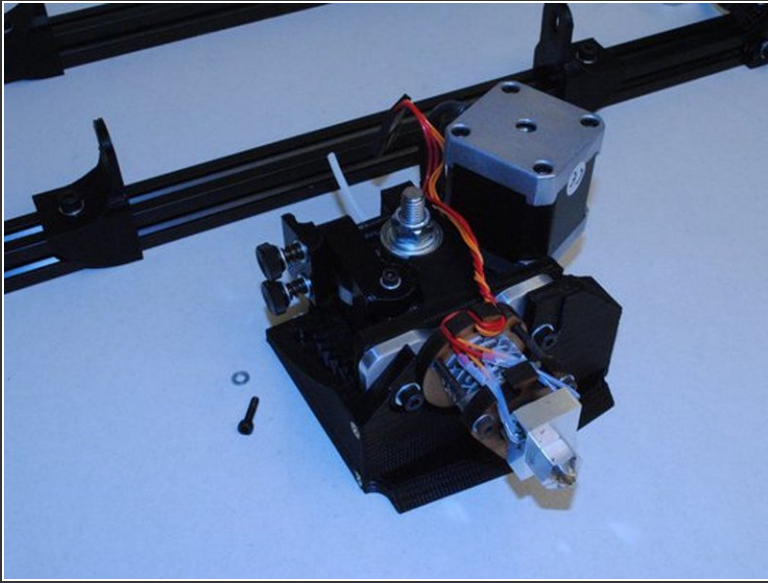
- INSTALL LEFT DRIVE ROD
- Push the end of the coupler tube down onto the Motor shaft.
- Lift up the X/Z axis until you can bolt the Z nut holder to the X end motor.
- Using 4x M3 x 12 SHCS and M3 Washers, attach the Z nut holder to the X end motor.
- Install large zip ties on the end of the drive rod and on the motor shaft as shown.
- The zip ties must be tight enough that you can't pull the drive rod off vertically.
- Did you pull up on the drive rod to check the zip ties?

## Step 9



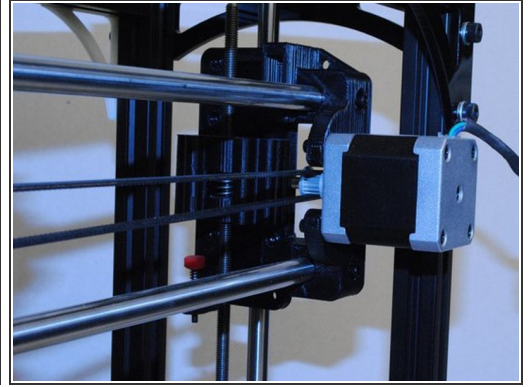
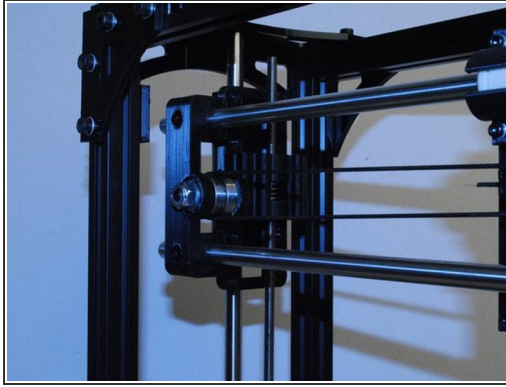
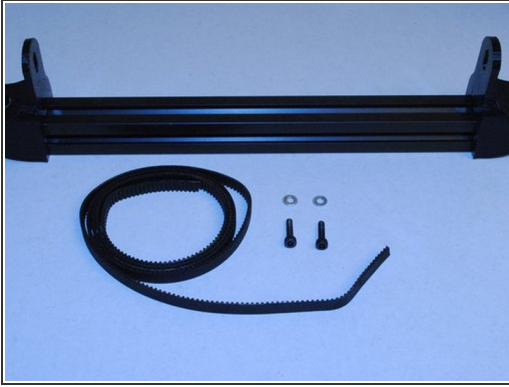
- INSTALL RIGHT DRIVE ROD
- Push the end of the coupler tube down onto the Motor shaft.
- Adjust the height of the Z nut holder by spinning it to get it close in height to the X end idler.
- Using 4x M3 x 12 SHCS and M3 Washers, attach the Z nut holder to the X end idler.
- Install large zip ties on the end of the drive rod and on the motor shaft as shown.
- The zip must be tight enough that you can't pull the drive rod off vertically.
- Did you pull up on the drive rod to check the zip ties?

## Step 10



- INSTALL THE PRINT HEAD
- Take the print head assembly and seat the bottom of it down into the X carriage assembly.
- Using a M3 x 12 SHCS and M3 washer, bolt the top of the print head assembly to the X carriage.
- Is the print head seated all the way into the X carriage guide?

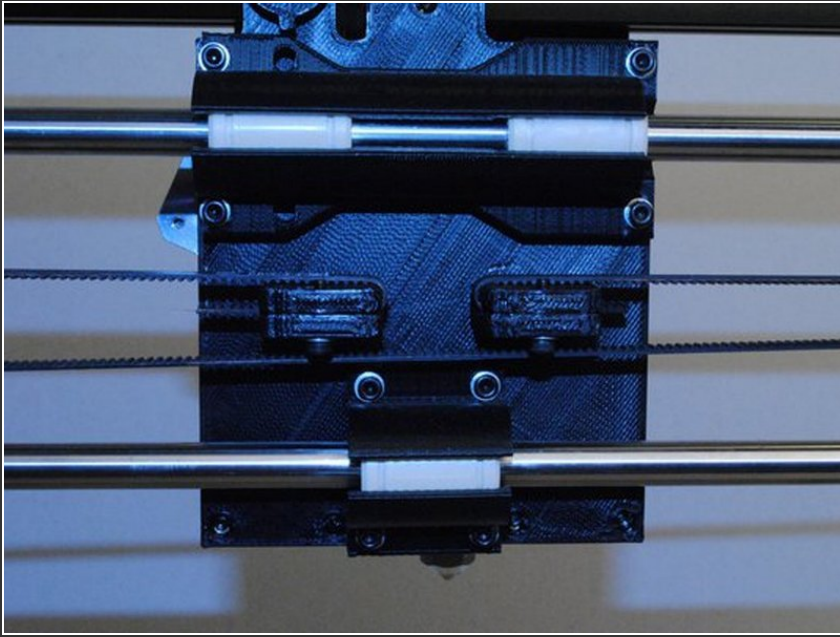
## Step 11



- INSTALL THE X BELT
- First cut the belt with a side cutters.
- Route one end through the X carriage as shown and clamp down with a M3 x 12 SHCS and M3 Washer.
- Next route the belt around the pulley on the X end motor and the bearings on the X end idler.
- Finish routing the belt back at the X carriage.

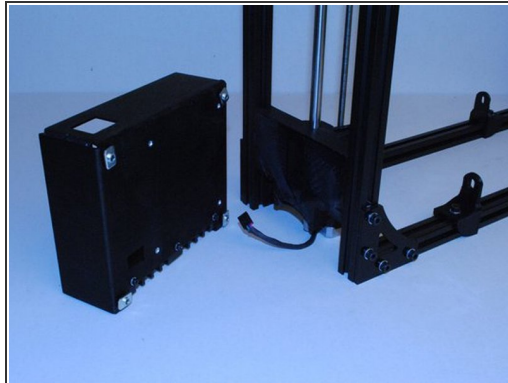
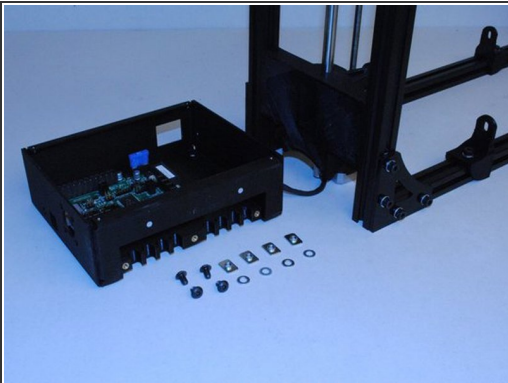


## Step 12



- INSTALL THE X BELT (continued)
- Pull tight and clamp down with a M3 x 12 SHCS and M3 Washer.
- Trim the ends of the belt so they do not interfere with the pulley or bearings.
- Check for belt rubbing as you move the X carriage back and fourth. Adjust as necessary.
- Is the belt nice and tight?
- Does the belt rub anywhere?

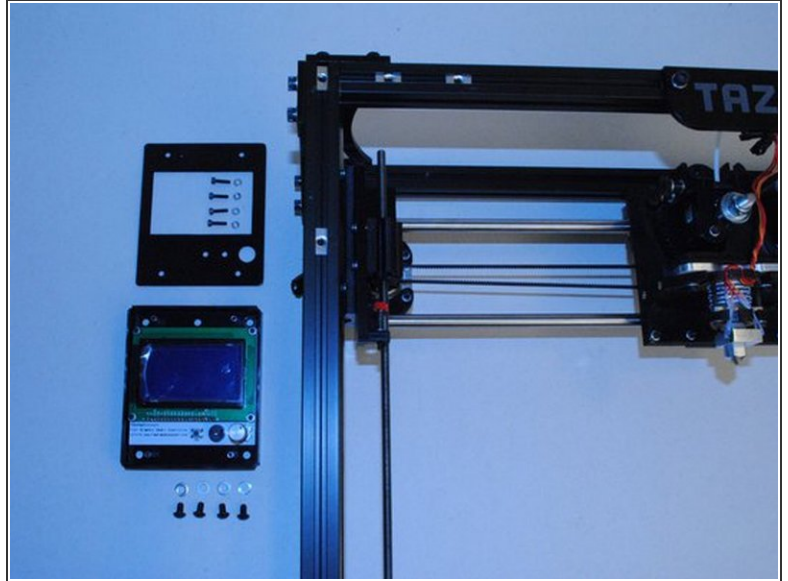
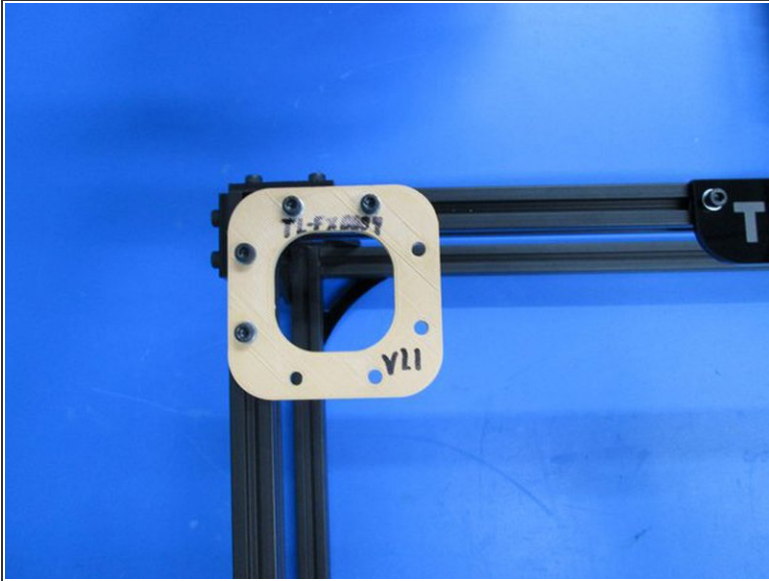
## Step 13



- INSTALL THE ELECTRONICS CASE ASSEMBLY
- Using 4x M5 x 8 BHCS, M5 Washers and M5 T-nuts, attach the Electronics case assembly to the frame.
- Set the bottom of the Electronics case flush with the bottom of the assembly.

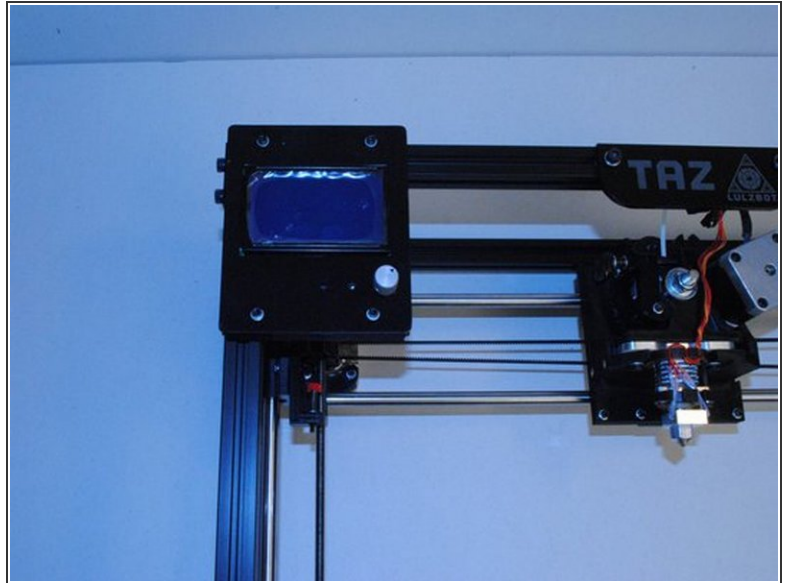
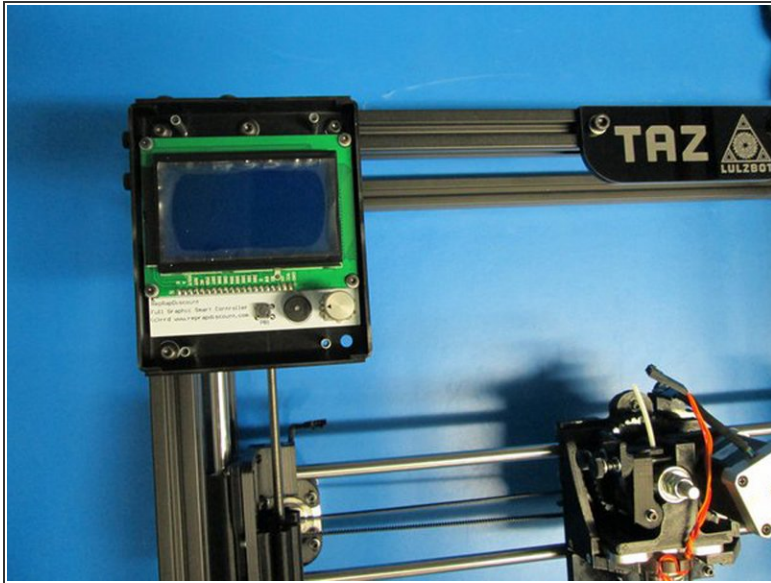


## Step 14



- INSTALL THE LCD CASE ASSEMBLY WITH COVER (not this model)
- Remove the assembly fixture TL-FX9999 from the corner of the frame.
- Using the already installed M5 T-nuts along with 4x M5 x 8 BHCS and M5 Washers, attach the LCD case assembly to the frame.
- Set the edge and top of the LCD case flush with the outside of the frame.

## Step 15



- Using 4x M3 x 12 SHCS and M3 Washers, attach the LCD cover.