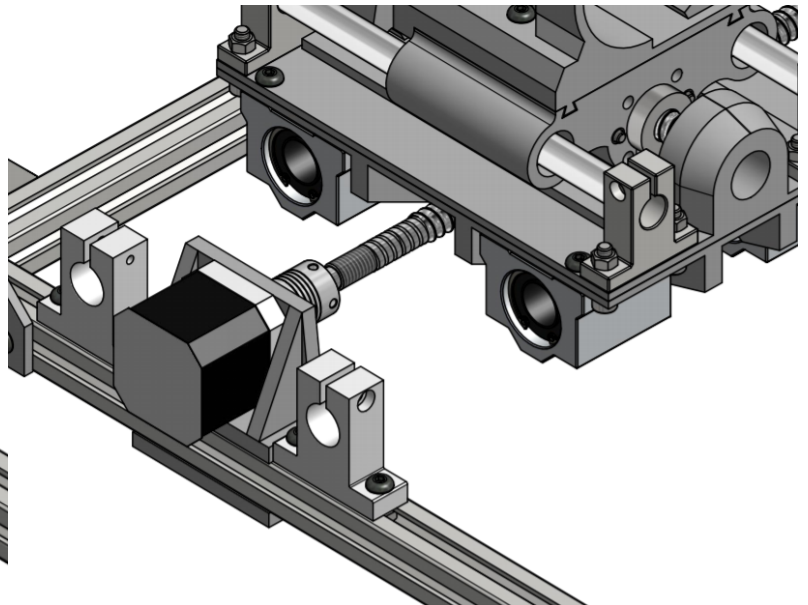
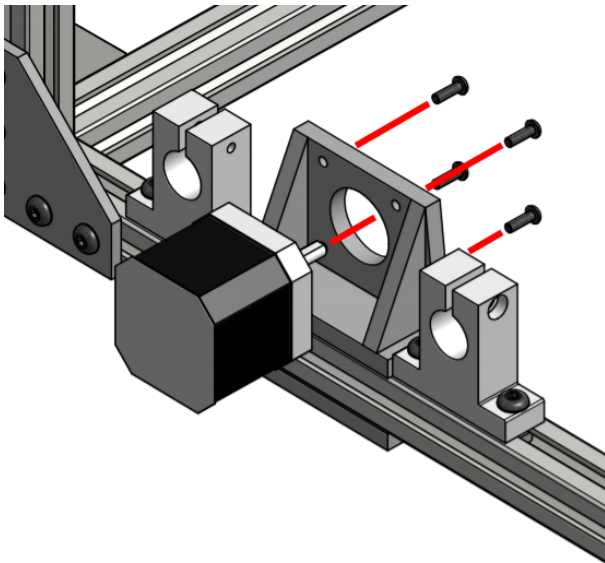
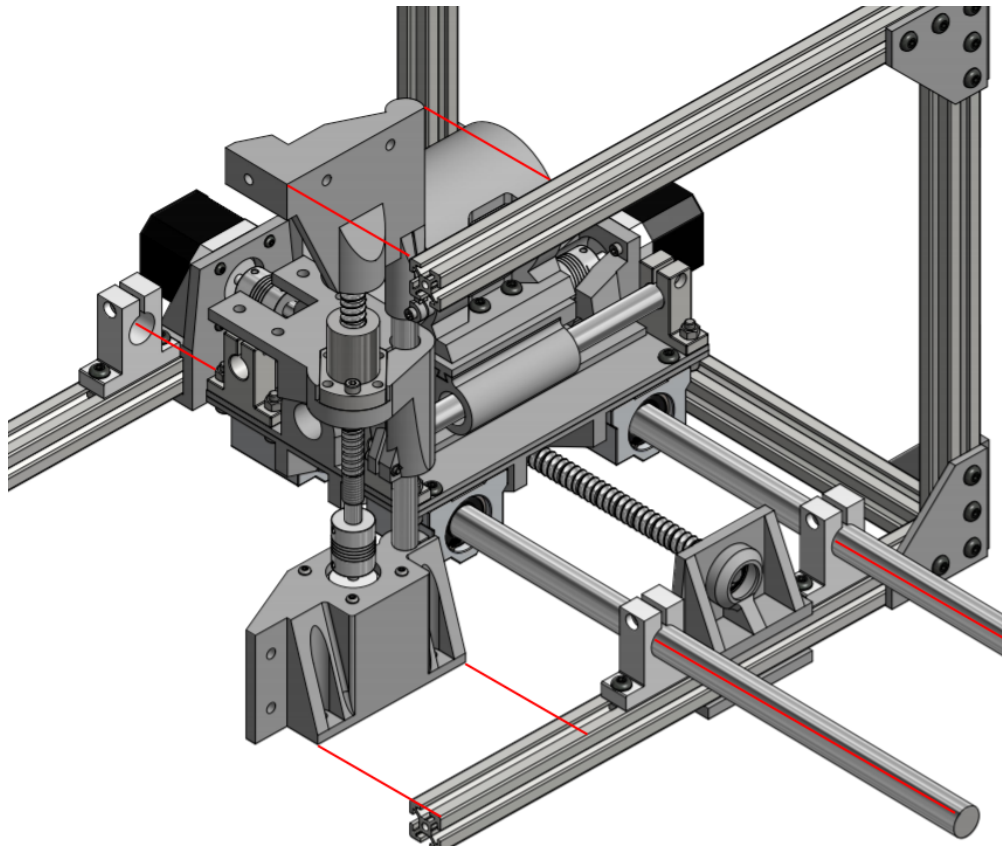


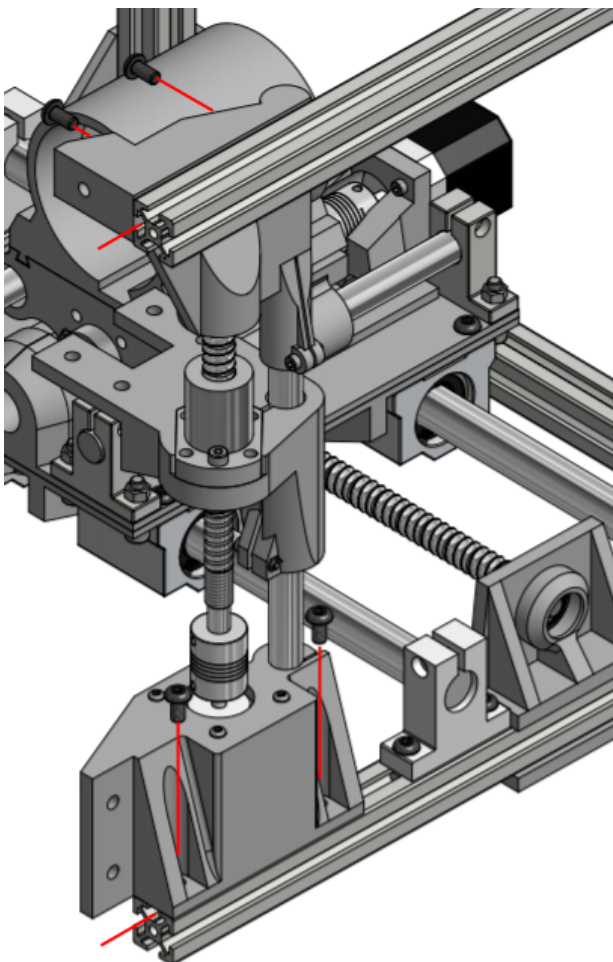
- (1) With the **Frame Sub-Assembly** upside down, insert the driven end of the ballscrew attached to the **YZ Assembly** into the opening of **Y-Mount**. Then, after placing the idle end of the ballscrew to be supported by the **Y-Idler** bearing, feed the **YZ Assembly** onto the linear shafts, rotating the ballscrew as necessary to move the carriage along until it is suspended with both sets of bearings riding on the linear shafts.



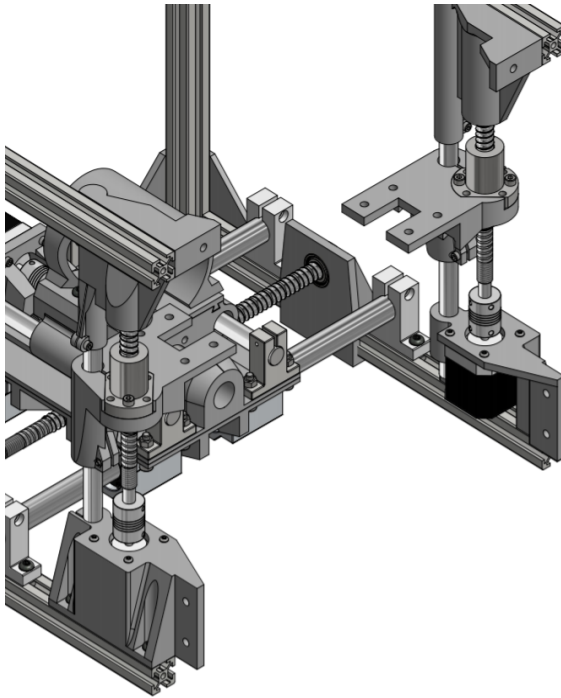
- (2) With the driven end of the ballscrew clear of **Y-Motor**, fasten a **NEMA 17 Stepper Motor** to the mount using **Qty. 4 M3x10 BHCS** (using a **2mm driver**), placing a **5x8mm Shaft Coupling** between the motor shaft and ballscrew end. With both in place and the stepper fastened, tighten the coupling retention grubs down.



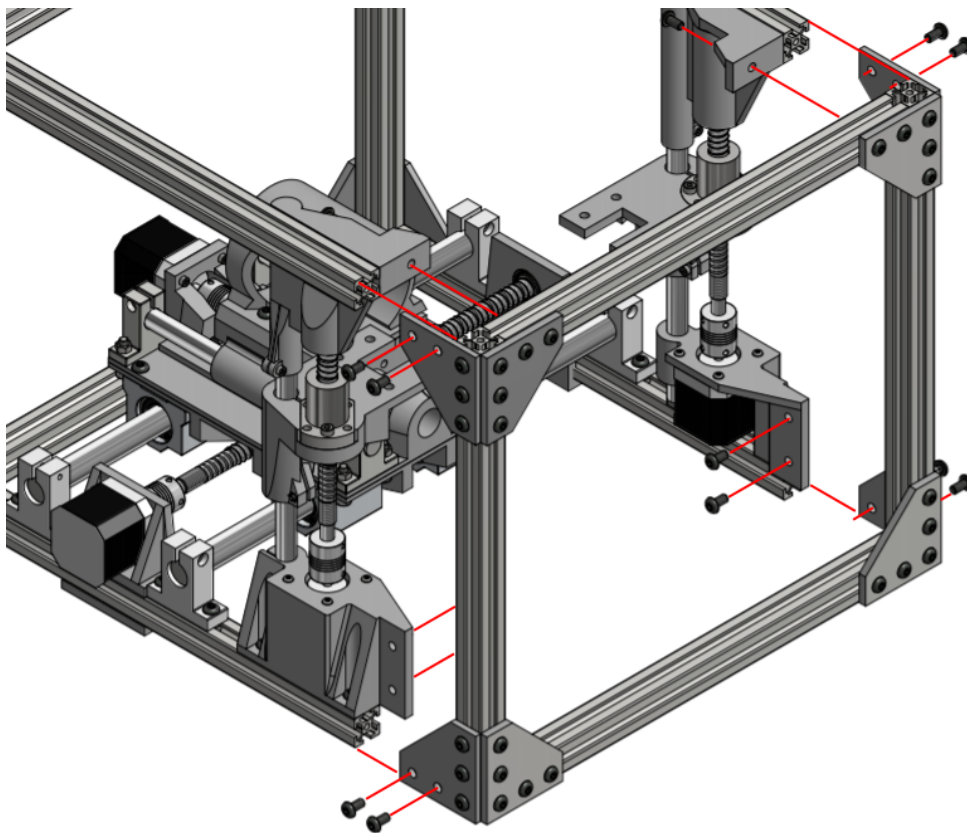
- (3) Loosen up the **SK16 Shaft Supports** in order to feed the **16mm Linear Shafts** fully through to the shaft supports on the other side, then tighten them back down to lock the shafts in place. Set the completed **Left X-Axis Assembly** on top of the bottom extrusion and inside of the top as pictured, holding it in place.



- (4) Making sure that the top and bottom printed mounts are flush with the ends of the extrusion, fasten the **Left X-Axis Assembly** in place by sliding **Qty. 2 M5 Slot Nuts** into the inside slot of the upper extrusion and **Qty. 2 M5 Slot Nuts** into the top slot of the lower extrusion as pictured, then fastening in place with **Qty. 2 M5x10 BHCS** for each pair (using a **3mm driver**).

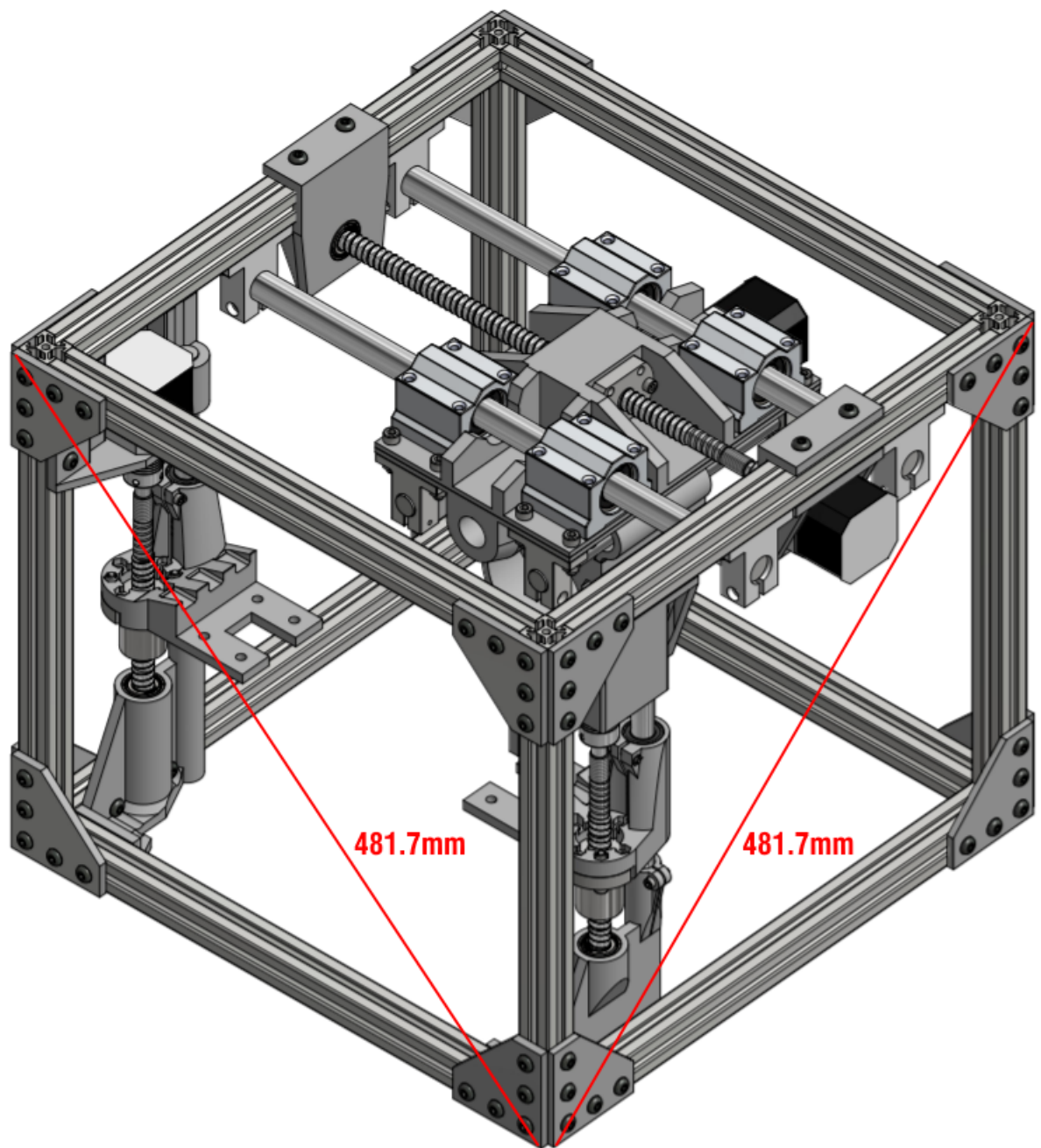


(5) Repeat this process for the **Right X-Axis Assembly** using another two sets of **Qty. 2 M5 Slot Nuts** and **Qty. 2 M5x10 BHCS**, ensuring both are relatively square and flush to their respective extrusion mounts.



(6) Slide the completed **Frame Super-Assembly** onto the open end of the **Sub-Assembly** extrusions, adjusting the **X-axes** and distances between extrusions as needed to fit. Wherever possible, assume that the Sub and Super assembly corners are more accurate. Fasten the top corners with **Qty. 2 M5 Slot Nuts** and **Qty. 3 M5x10 BHCS** each (attaching the inner fasteners through **X-Base-Right** and **X-Base-Left** to the spare nuts left in the Super-Assembly), and the bottom corners with **Qty. 4 M5 Slot Nuts** and **Qty. 4 M5x10 BHCS** each (the internal slot nuts may be slid in from the top of the extrusion via the open slot).





(7) Flip the entire assembly over. Any of the frame parts that are out of square may be easily adjusted at this point, provided that the entire assembly is on as flat a surface as possible. A perfectly squared and plumb frame will measure **481.7mm (18 31/32")** from the corner of each L-plate to the corner of the opposite L-plate on each of the vertical faces. This figure varies significantly with the accuracy of the physical parts and should not be the end-all of an accurate build; typically as long as each pair of diagonals is within  $\pm 5\text{mm}$ , the machine will be able to position accurately and not run out any more than  $.005"$  along any one axis provided proper calibration procedures are observed.