

Assembling the XY translational plane:

1. Cut the stainless steel rods to size (or have ordered the rods to exact sizes)
 - a. There should be one (1) rod cut to 216 mm, one (1) to 224 mm, and two (2) to 325 mm.
 - b. The two shorter rods will be used for vertical translation and the two larger for horizontal translation.
2. Attach all bearings to the two vertical bars and the plate support.
 - a. Each of the vertical bars have two bearings and the plate support has four.
 - b. Make sure the bearings are attached to the side opposite of the etched teeth.
 - c. The bearings require M4 screws.
 - d. Attach the smaller timing belt to the vertical bar with teeth and the plate support.
3. Place the wood so that the longer sides are horizontal and shorter sides vertical.
4. Mount the support for pulley on the top left corner of the wood, making sure 8 mm hole on the side is facing towards you.
5. Put the 224 mm rod through the 8 mm hole.
6. Run the rod through the bearings attached to the vertical bar with teeth and attach the other end of the rod to the support for motor and pulley and mount the support.
 - a. The holes on the side of the vertical bar should be facing to the right, parallel to the long edge of the wooden board.
 - b. The bearings should be on top of the bar.
7. Attach the two 325 mm rods to the holes on the side of the vertical bar.
8. Run the rods through the bearings attached to the plate support.
 - a. The bearings should be below the plate support and the etched teeth should be on top.
9. Attach the other side of the two rods to the holes on the side of the vertical bar with motor. The bearings should be above the vertical bar.
10. Run the 224 mm rod through the bearings attached to the vertical bar (without teeth).

11. Attach the ends of rod to the two standard supports and mount the supports.

Mounting the pulleys and motors and attaching the timing belt:

1. Mount a M4 screw into the hole on the vertical bar with teeth and attach a pulley with the smooth half below that with teeth.
2. Mount the stepper motors onto the vertical bar with motor and support for motor and pulley.
 - a. Make sure the shaft of the motor points downwards.
3. Attach the pulleys to the shafts of the motors.
4. Loop the timing belts attached to the vertical bar with teeth and plate support around the pulleys placed about each axis.