These notes provide a very brief summary of some of the constructions steps for the servo driven chair model. Detailed instructions are not available.

A sketchup rendering titled ChairModelV2.skp shows all the acrylic pieces and how they go together.

The three support arms are made from a sandwich of four laser cut parts. As can be seen in the sketchup drawing, half the pieces have slots to take a bolt and nut, these are the inner two pieces of the sandwich. Two M3 nuts are placed in slots at the bottom of the arm for later attaching to the base. Two M3 nuts are placed in the upper slots for attaching the arm links. M3 machine screws attach the links through a small spacer with three holes (the middle hole is not used). The supports sandwich is held together with two M3 bolts through the four pieces (these bolts are not shown in the rendering).

Slot the base parts together, note that the piece with holes for connecting cable go to the back of the base (see rendering).

The platform holding the chair is sandwich of three acrylic layers and six servos. The bottom has a hole for the wires connecting the Arduino (serial, 5v and ground). You can connect these to a TTL to USB adapter under the base. Note that, like the full size chair, the attachment points are not symmetrical. The middle layer holding the servos needs to be oriented so the six mounting holes are aligned. Place the servos in the slots noting the orientation of the output shafts . The servos can go in two ways and if not oriented as shown in the rendering, the errors in geometry will result in incorrect movement of the platform.

These are the servos I used: <http://www.hobbyking.com/hobbyking/store/__31877__HobbyKing_8482_HK15148_Analog_Servo_2_5kg_0_14sec_17g_UK_Warehouse_.html>

The Arduino board is the Pro Mini : <https://www.arduino.cc/en/Main/ArduinoBoardProMini>

This fits snugly inside the square cutout inside the platform. There is also space for a small PCB with six servo header pins. Vero board can be hand wired to provide connection to the servo connectors.

Servos use pins 9,4, 5, 6, 7, 8 and should be connected in the order from the servo to your right (if you were sitting in the chair) going around clockwise. The strange order provided the shortest wiring path from the Arduino to the servo headers.

It can be tricky getting all the wire inside the platform but it can be done. The platform sandwich is held together with six M3 bolts.

The connecting rods are M2 soft steel but any stiff metal that fits into the ball links can be used.

I used ball links similar to these: <http://www.hobbyking.com/hobbyking/store/__37438__Nylon_Ball_Joint_M3_x_24mm_x_3mm.html>

The Arduino Sketch is named PlatformSim3. It expects the chair protocol as serial messages. These can be generate using the effector sim from here: <https://github.com/mdxdesigneng/MDXeMotion/tree/master/PlatformEffector/emulator/Processing>