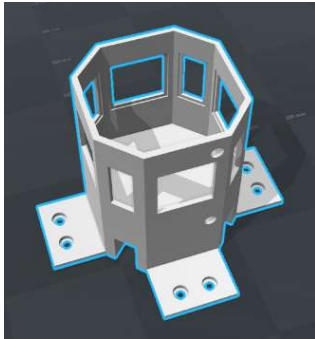


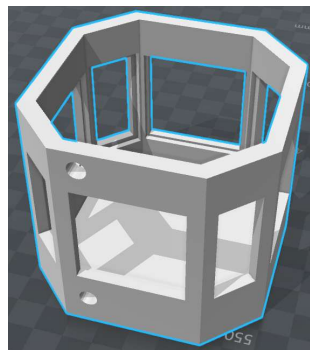
3D-Printed Parts

Rabbit Tissue Chamber



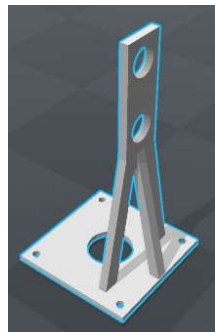
The tissue chamber was designed to contain a rabbit's heart as well as the perfusion solution. 8 screws (2 on each side) would situate the chamber to a magnetic table. The 4 big windows were created so the cameras would be able to view the heart as it is in the chamber. The smaller windows allow light to pass through, increasing the visibility of the heart during experimentation. The two holes on the side are for the inflow and outflow of the perfusion system.

Mouse Tissue Chamber



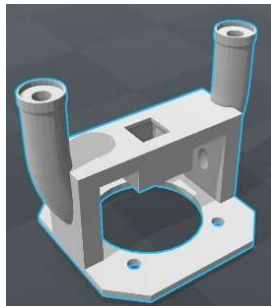
This tissue chamber uses a similar design to the rabbit tissue chamber with the 4 big windows and 4 smaller windows. The difference is that the chamber does not secure onto a magnetic table with screws, but is placed on top of an object to be in the same plane as the cameras.

Bubble Trap Mount



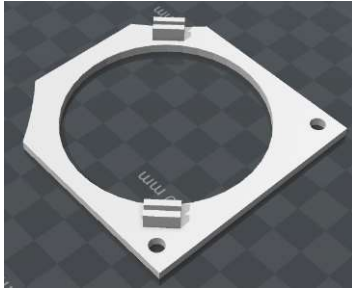
The mount was designed to place a bubble trap on top of the rotation stage to prevent air bubbles from entering the heart through the cannula. The exact height is determined by comparing pressure and flow rate. Long screws would allow this to attach to the top plate of the heart platform, putting the rotation stage in the middle.

Cannula Holder



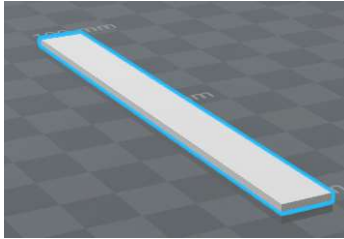
The cannula mount was designed to attach the rotation base to the heart via a cannula. The cannula would be inserted in the center, and the base of the holder would be screwed to the part of the rotation stage that rotates. This allows the heart to rotate as well, useful for geometry acquisition. Ag-AgCl electrodes are inserted in the round holes to record pseudo-ECG, and the wires are passed inside towards the center.

Top Plate



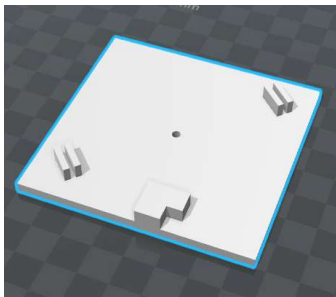
This plate helps situate the heart platform to prevent movement while in solution. The long screws from the bubble trap mount pass through this plate, and nuts secure it all together. There is a pillar that goes into the slit to attach the platform to this plate.

Pillar



This pillar attaches the top plate to the platform.

Heart Platform



This platform is designed to fix the apex of the heart to prevent swaying as it is in the perfusion solution. A suture is passed through the apex and through the hole, brought back around the corner and clipped to the side using a binder clip. The pillar is used to attach the platform to the plate to make it sturdy.