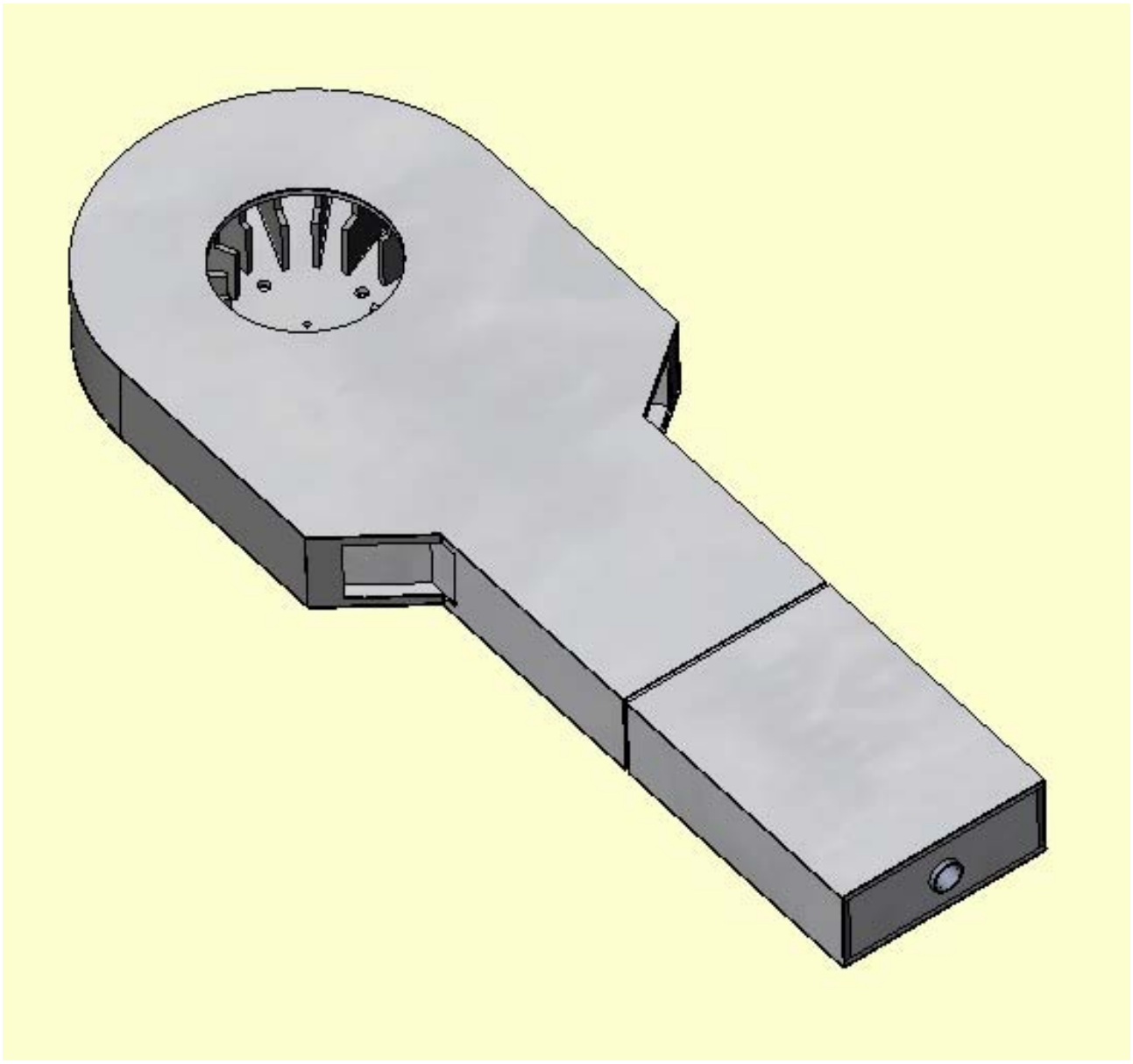
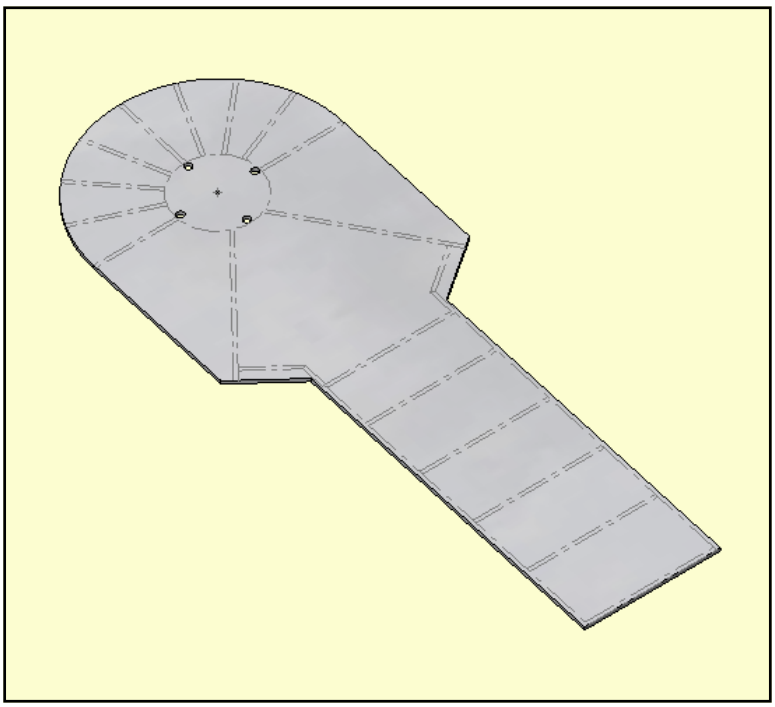
Legs

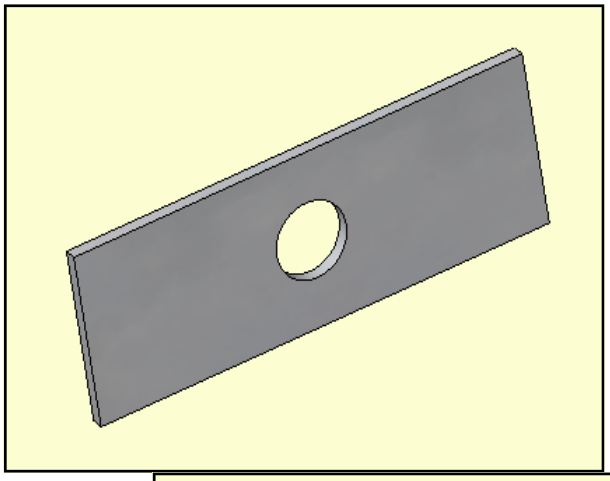


The leg parts are on 2 copies of 2 drawings. Begin with the drawing “LEG COMPONENTS 3MM”.

First cut out the large front and back leg blanks and mark the alignments on each. I used my router tool to cut the curve at the top of each leg blank. Put the one with the least number of alignments aside for the moment, this is the top piece. All parts are built up on the back piece.

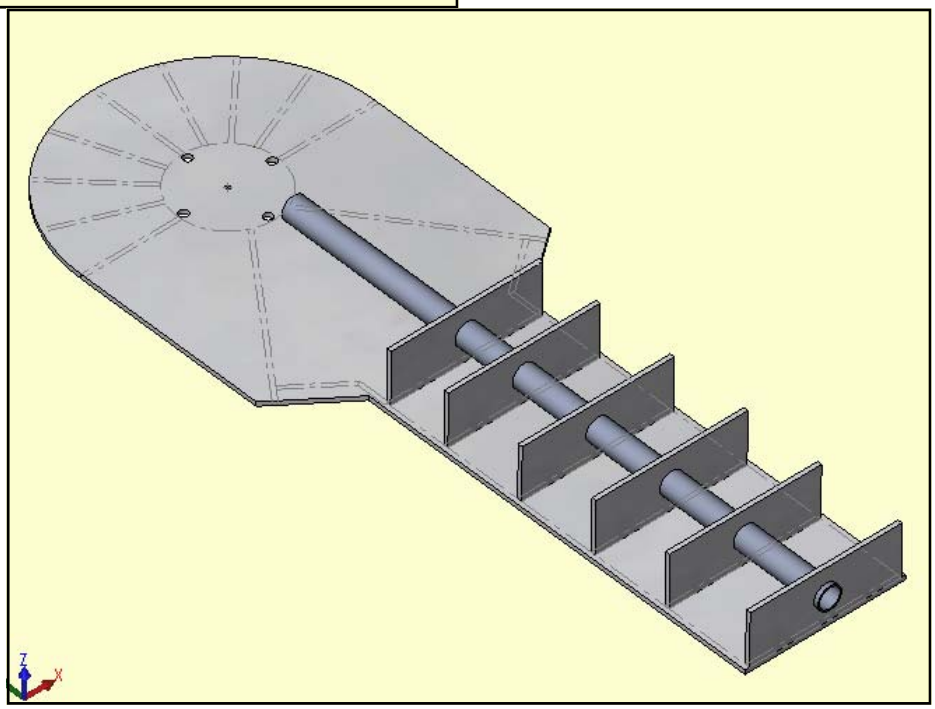
Drill the holes to 6mm for now. You will need the centre hole for alignment of the top piece, then when the leg is finished you'll cutout the hole for the shoulder hub detail and cable access.

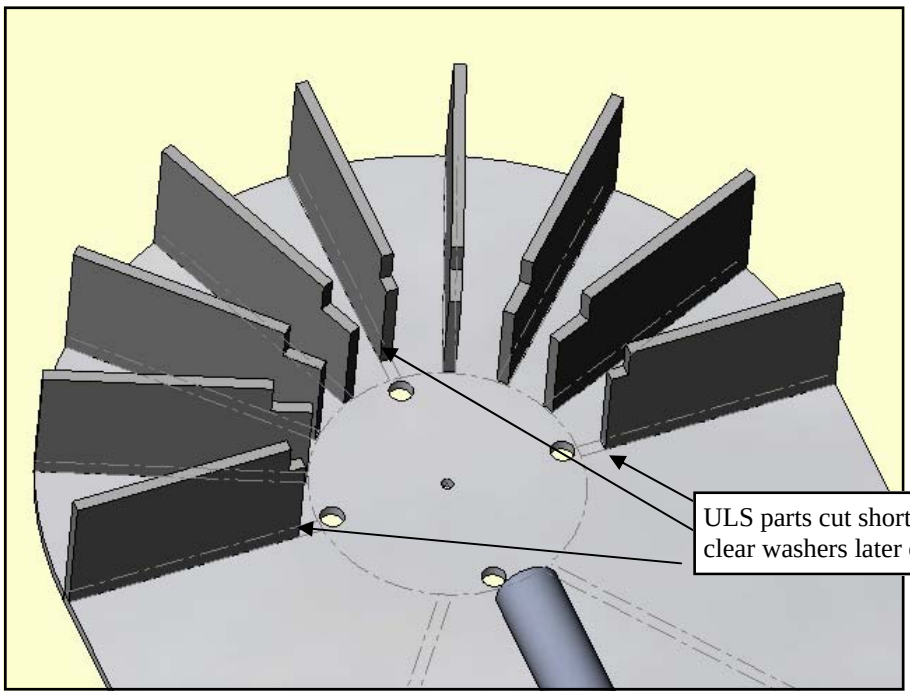




Next cut out and square up the Main Leg Bulkheads. Drill the centre hole to 3mm for now. Screw all 6 pieces together and check they are square and all the same size as close as possible. It's important to get the heights as close as you can so the leg will have more strength.

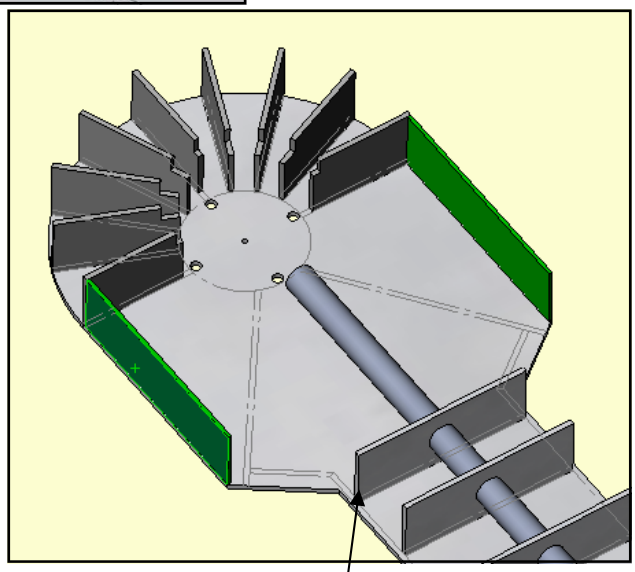
When you are happy, drill out the centres to 16mm and insert a 16mm pipe either PVC conduit or chrome steel towel rail. I used conduit in mine, but towel rail should give more strength. Then spread out the pieces and glue them to the alignments on the leg blank. The towel rail should be tight in the holes, not loose. The towel rail should project out the bottom of the leg by 3mm, this will help align it into the ankle later.

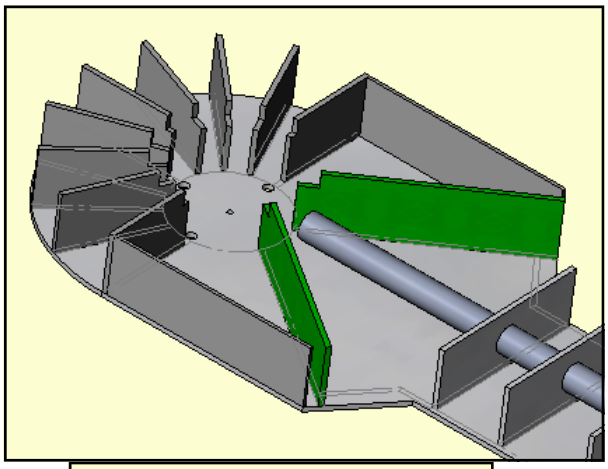




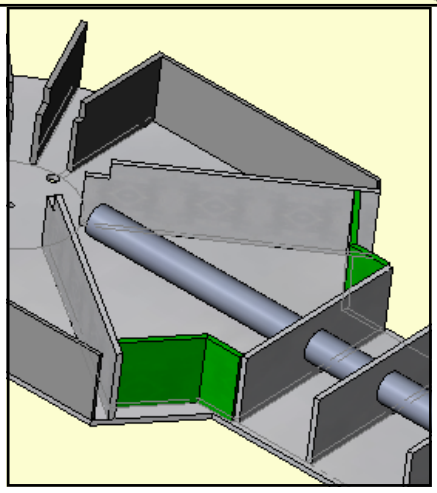
Next glue on the Man Leg Upper Supports marked ULS on the drawing. Note that the sutouts are on the inside and facing up. These form a shelf for the shoulder hub detail piece to sit on. Make sure the pieces are flush with the outer edge of the leg blank and that you cut the end off the ones that sit near the holes as marked. This is to provide clearance for washers and nuts when mounting the leg.

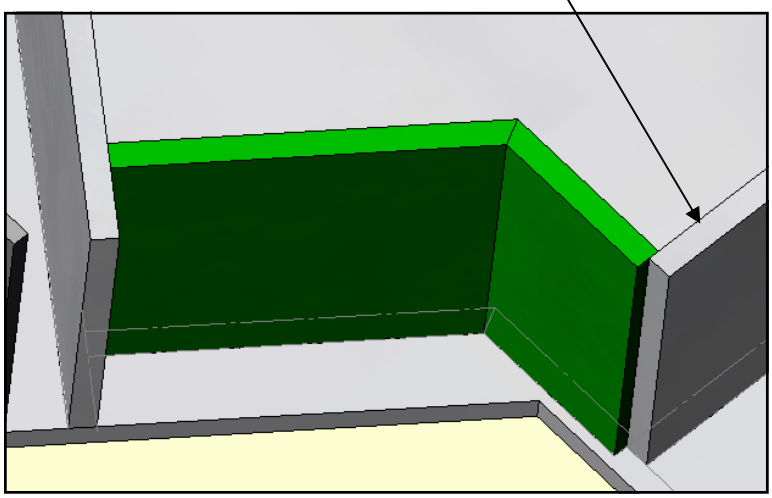
Next glue in the pieces marked ULE. They butt up against the horizontal ULS pieces as shown. Then glue in the parts marked EDGE 2. Follow this with MLDBT and MLDBF pieces. Chamfer them first to fit. They sit just on top of the uppermost of the MAIN LEG BULKHEADS as shown in the last photo.



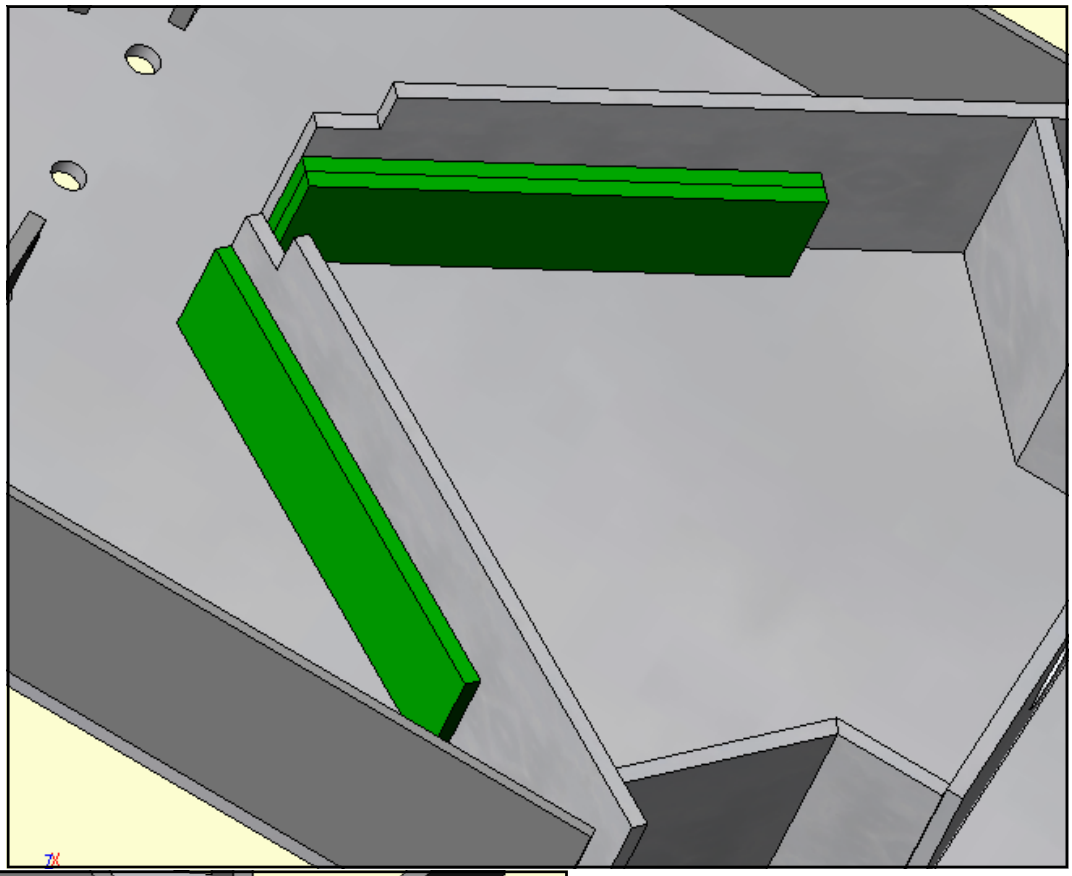


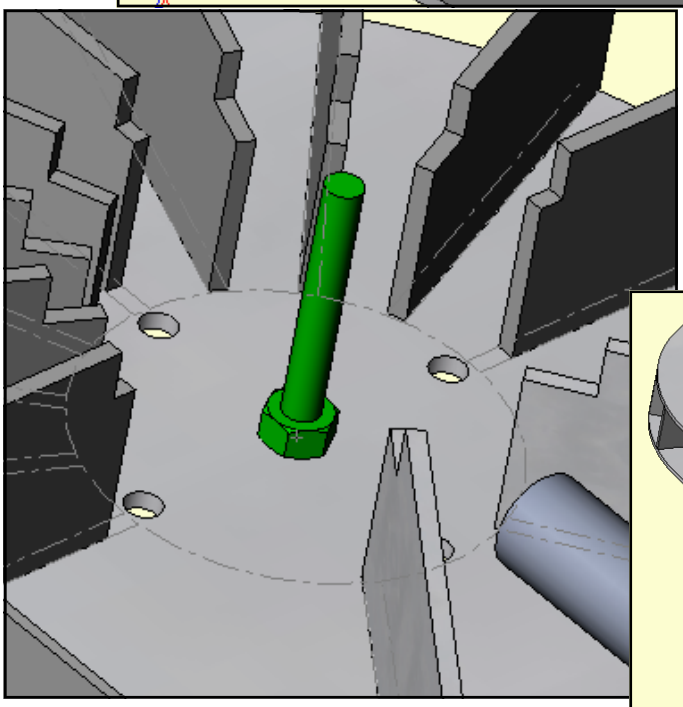
Main Leg Bulkhead





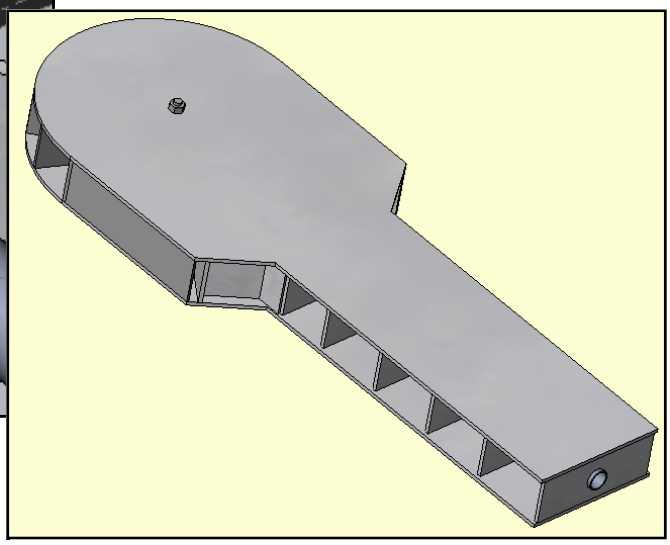
Now comes a step of the utmost importance. You will need to fit some strengthening strips along the edges as shown by the arrows. I have found that the major stress point on the legs is just below the screws that hold it to the shoulder hub along these edges. Fit several strips to the inner faces and one strip on the outer faces, they must glue to the bottom leg blank and to the EDGE2 faces. There are no plans for these parts, just use offcuts.



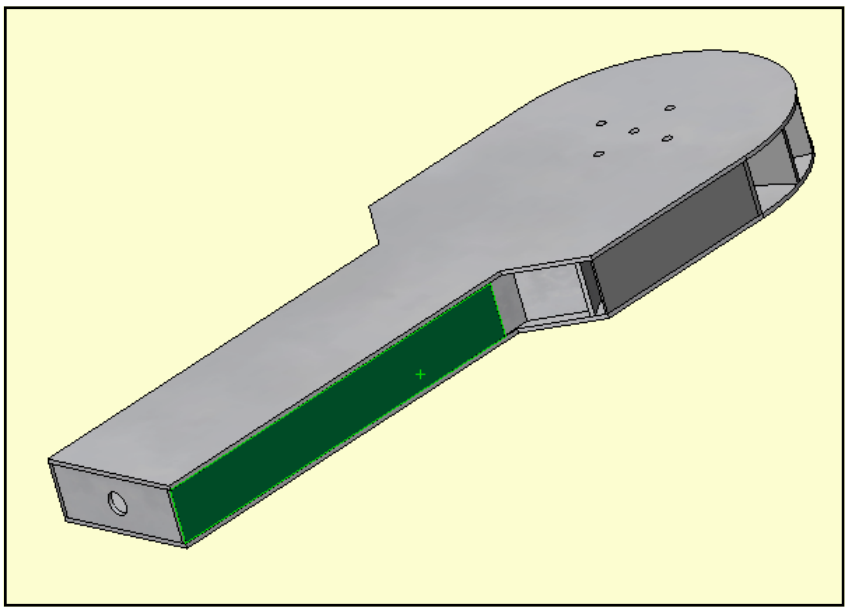


Now insert an M6 screw through the central hole. Do it up with a nut so it is square to the leg blank. This will align the top blank that we are gluing in next.

The top blank is then placed on the screw and another nut done up. Look over the leg so far and make sure the top blank is touching all the uprights. If some are too high, file them down now.



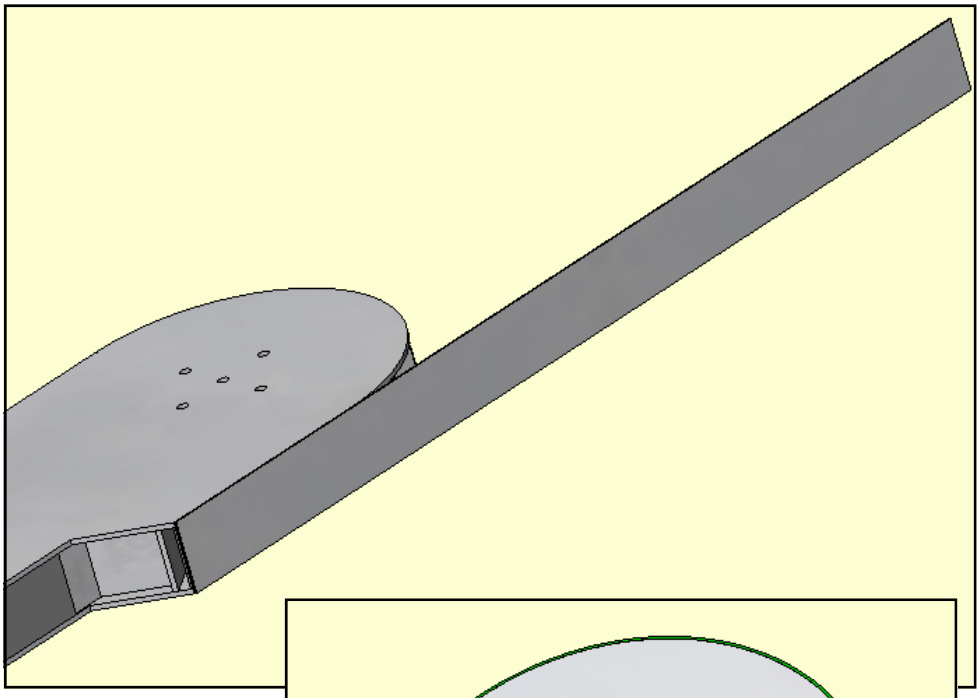
When you are happy with the parts, turn the whole thing over so the top blank is now flat on the table. I found I had to drill a clearance hole in the table for the screw head to sit it so the leg sat flat. You can now get glue into everywhere the uprights touch the top blank. Place weights on the leg and give it an hour to harden.



Now you can glue in the parts marked LLE. That concludes the 3mm parts. The rest is completed in 1mm pieces.

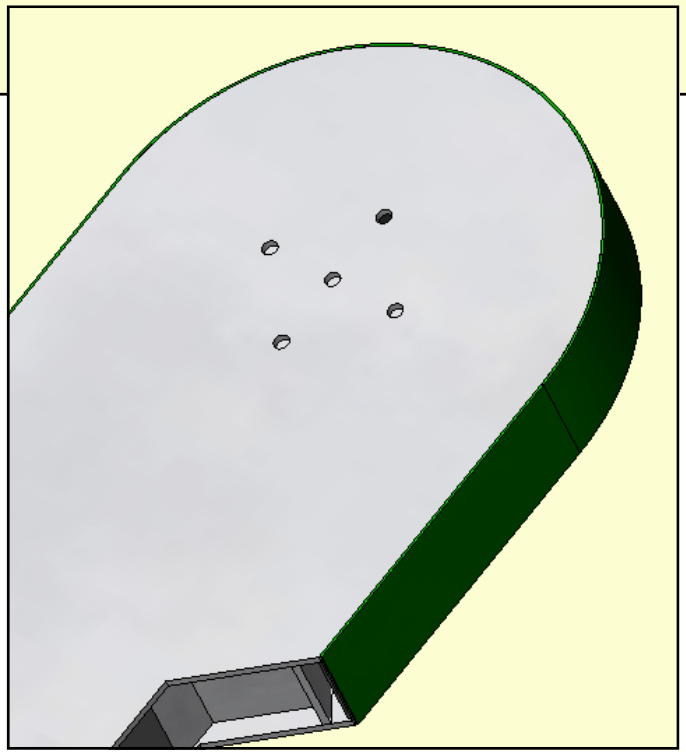
Start with the 2 long strips on the lefthand side of the sheet. Cut them wider and longer than shown. It will make fitting easier and you can trim off the excess later on.

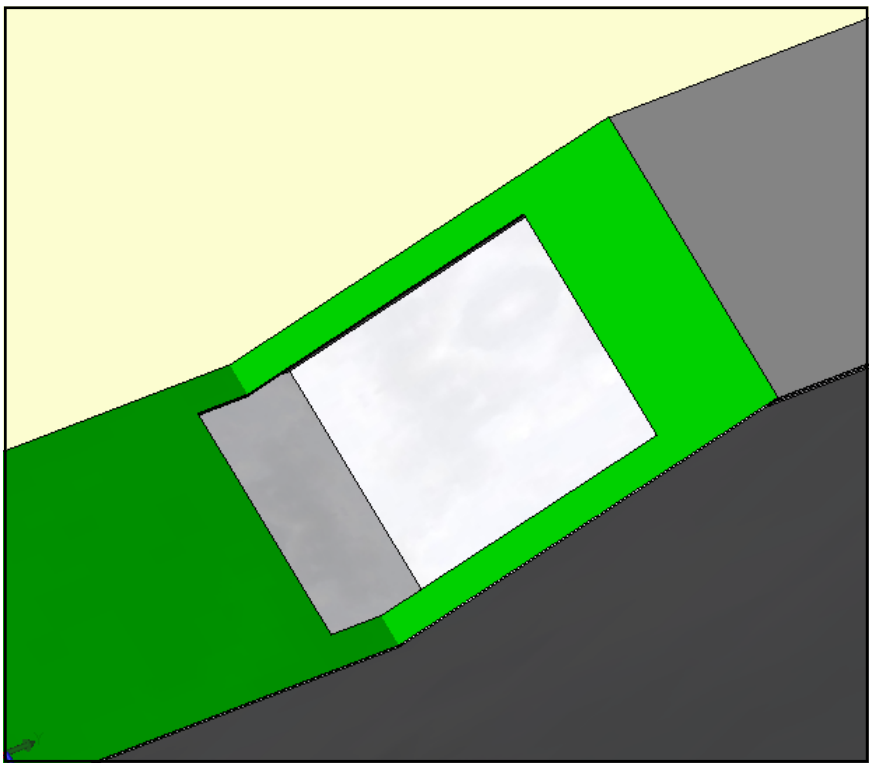
Check the top of the leg and make sure none of the parts are sticking out beyond the edge of the leg blanks themselves.



The first strip glues to the side of the leg upper edge. Let is protrude below the corner slightly and trim it later.
Once the strip is set on the side, pull it around tight, adding glue as you go then glue down to the other edge and tape the strip in place until it's set.

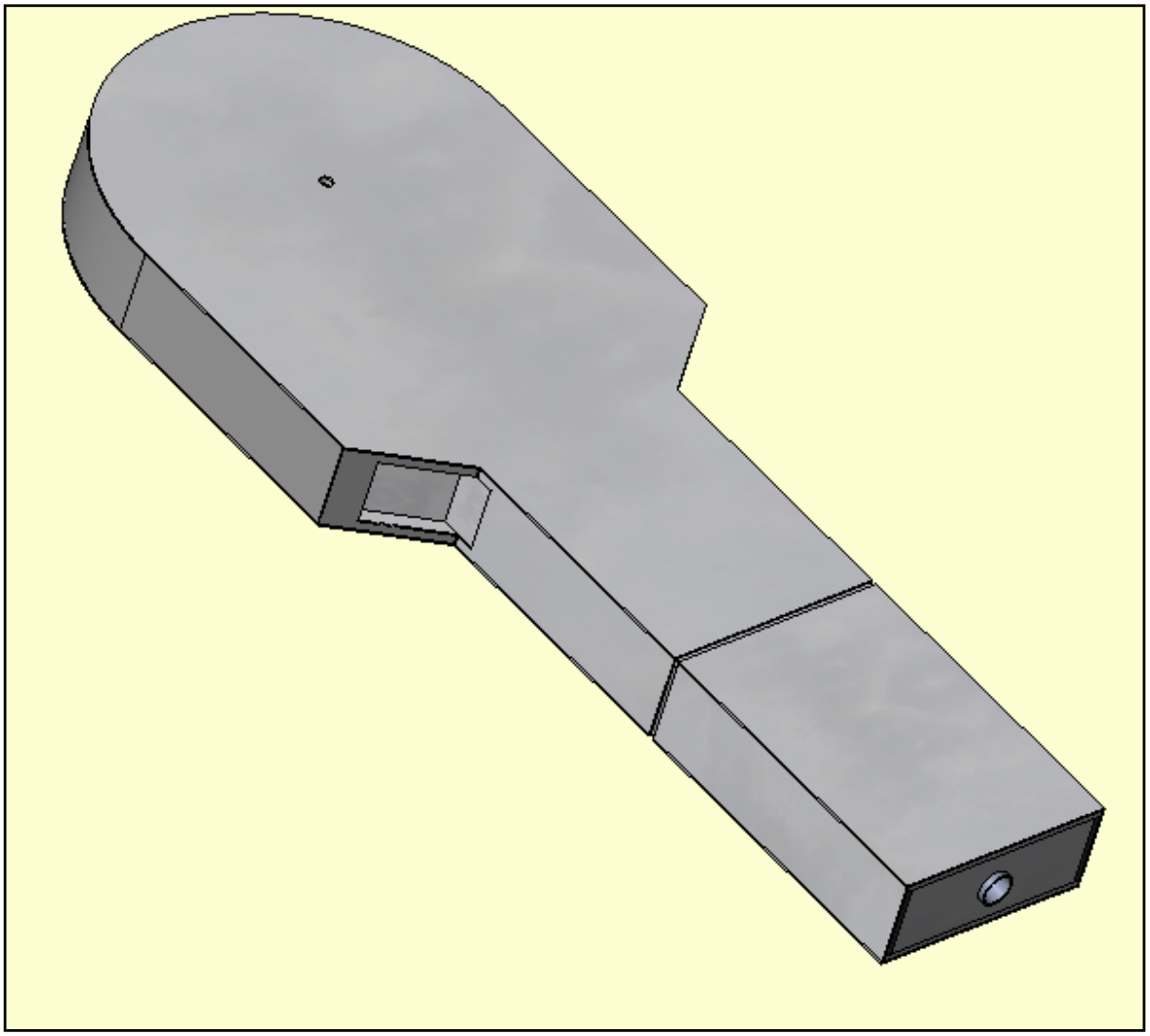
Now trim off the excess so the top and bottom edges are flush with the leg blanks themselves and repeat with the second strip. This makes the top edge of the leg 2mm thick, just enough to stop some little kid poking his finger through your droid.





Now you can cut and glue on the parts that form the under shoulder pocket. Then glue on the face parts for the front and rear of the leg. Note that there should be a gap as denoted by the alignment mark on the top blank. This will line up with the groove in the booster cover later on.

Get lots of glue around the holes where the 1mm skin meets. If you don't, the skin will pull away a little and scraps of styrene might get stuck underneath when you drill. This will mean the leg never sits truly flat against the shoulder hubs.



The leg fully skinned, now only needs to have the large hub access hole cut, the mounting holes on the rear face and the cable access hole. I used the router table to cut out the detail hub hole accurately.