Melbourne Metro Tunnel Lamp Assembly Guide

Materials

Printed parts

Qty	Part	Notes
1	WALL_MOUNT	
2	ARM_SPLIT_1	*Or simply use 2x ARM_WHOLE if you have a big enough print bed.*
2	ARM_SPLIT_2	
2	ARM_SPLIT_3	
2	ARM_SPLIT_4	
2	ARM_SPLIT_5	
1	JUNCTION	
2	JUNCTION_CAP	
1	JUNCTION_SHIM	
1	JUNCTION_COVER	
1	ROD_VERTICAL	
1	LAMP_BRACKET	
2	LAMP_BRACKET_RIVET	
1	LAMP_TOP	
1	LAMP_RING_UPPER	
1	LAMP_RING_LOWER	
2	LAMP_DOWEL	
1	LAMP_SHADE	
1	LAMP_INSERT	
1	LAMP_BOTTOM	

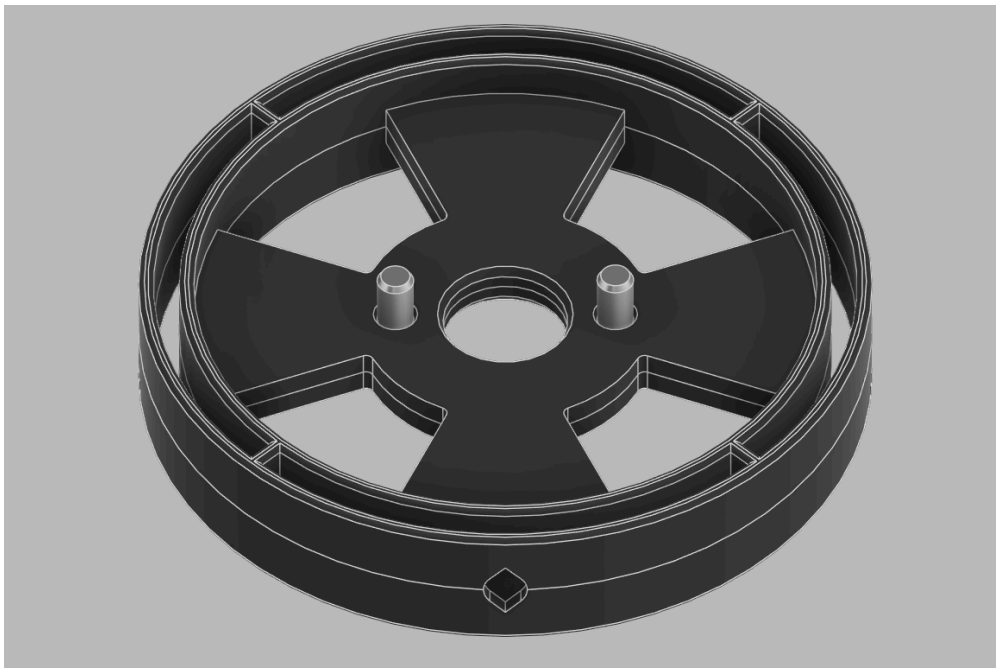
Hardware

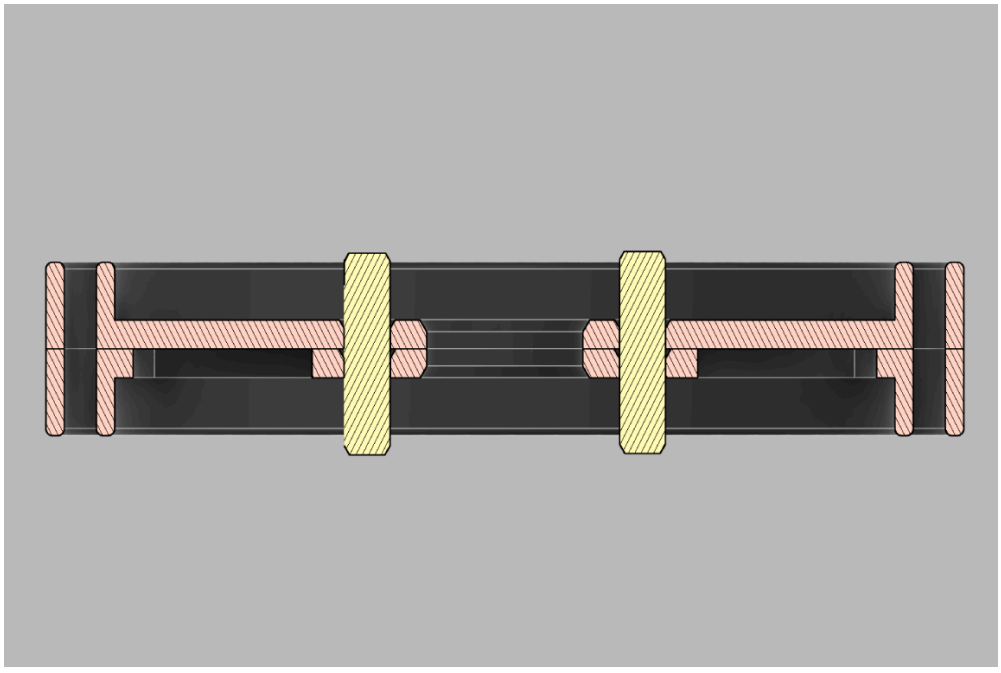
Qty	Part	Notes
1	12 x 1mm Aluminium Round Tube	Cut to ~340mm length with a hand saw.
4	M6 x 12mm Connector Cap Nut	*The bottom 2 in the assembly are structural, while the top 2 are purely decorative.*
1	M6 x 60mm Threaded Rod	*Together with the bottom 2 Cap Nuts, this holds the two arms of the lamp together at their base.* *I just purchased an M6 x 100mm bolt and cut it to length with an angle grinder.*
4	M3 x 10mm Round Head Bolts	
2	10G x 50mm Low Profile Cabinet Screws	*For wall mounting into studs.*
1	Clear Epoxy Glue	*Or something similar.*

Instructions

Step 1

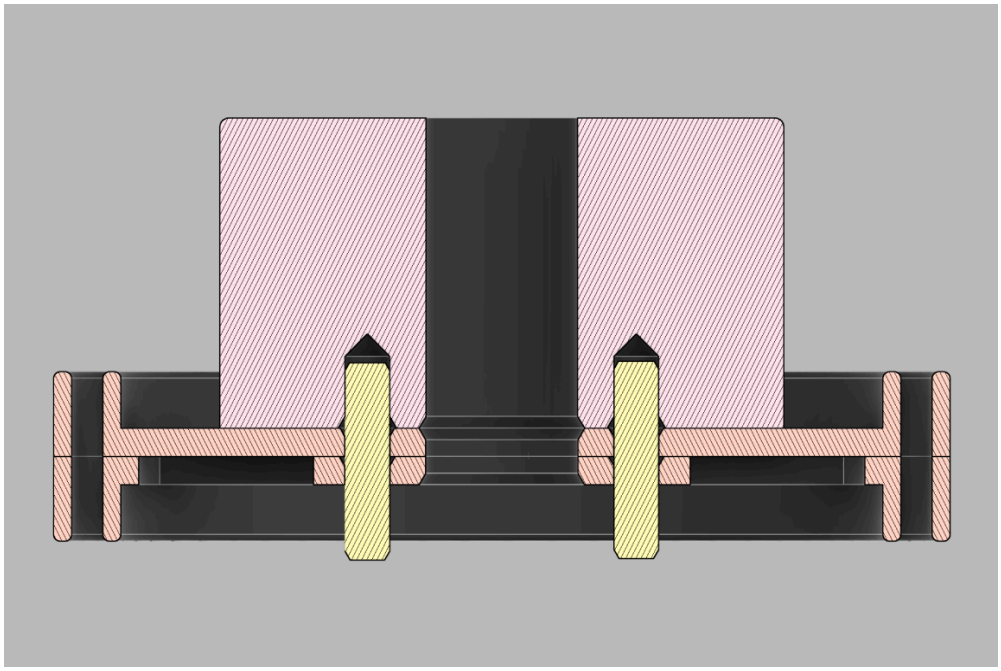
Sandwich the LAMP_RING_UPPER and LAMP_RING_LOWER parts together. Align the 2 holes on each part and press-fit the (2x) LAMP_DOWEL parts. Leave a roughly equal length of the dowel protruding from each side.

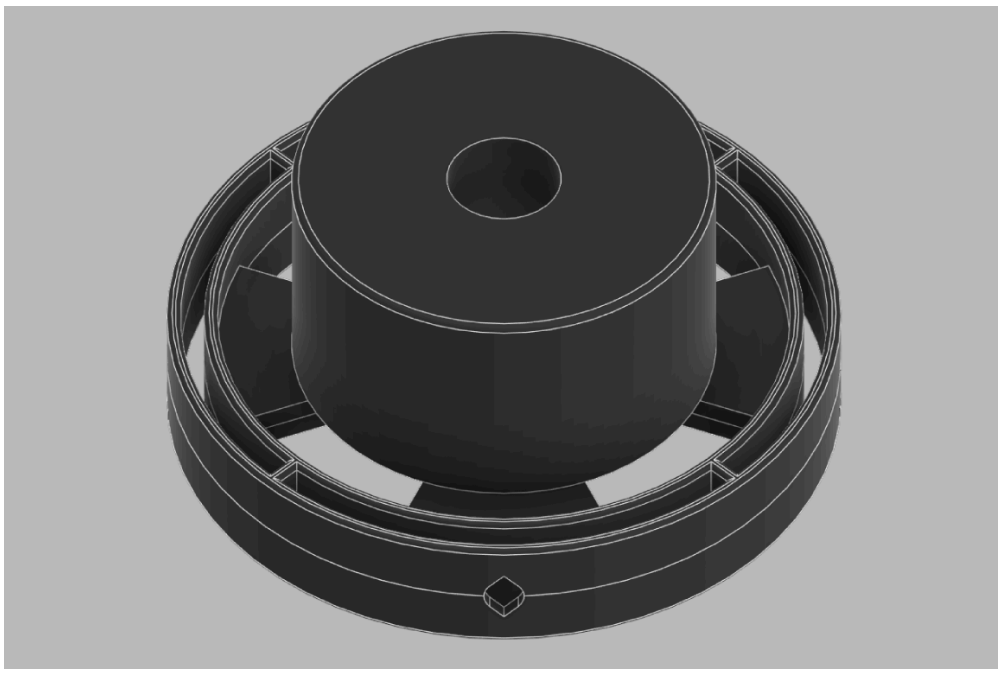




Step 2

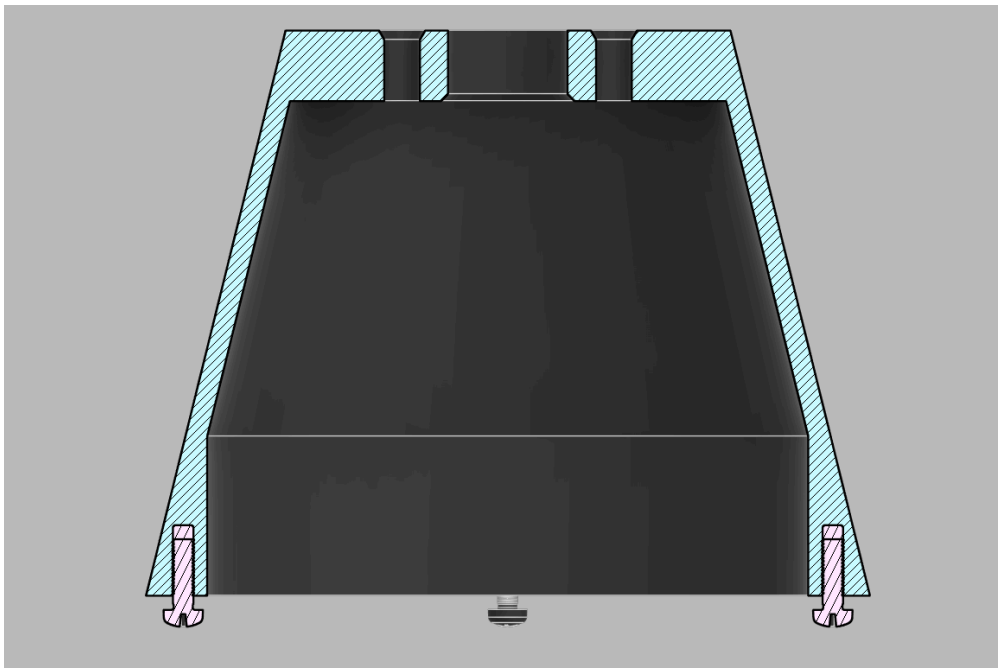
Press-fit the LAMP_TOP part onto the top of the assembly.





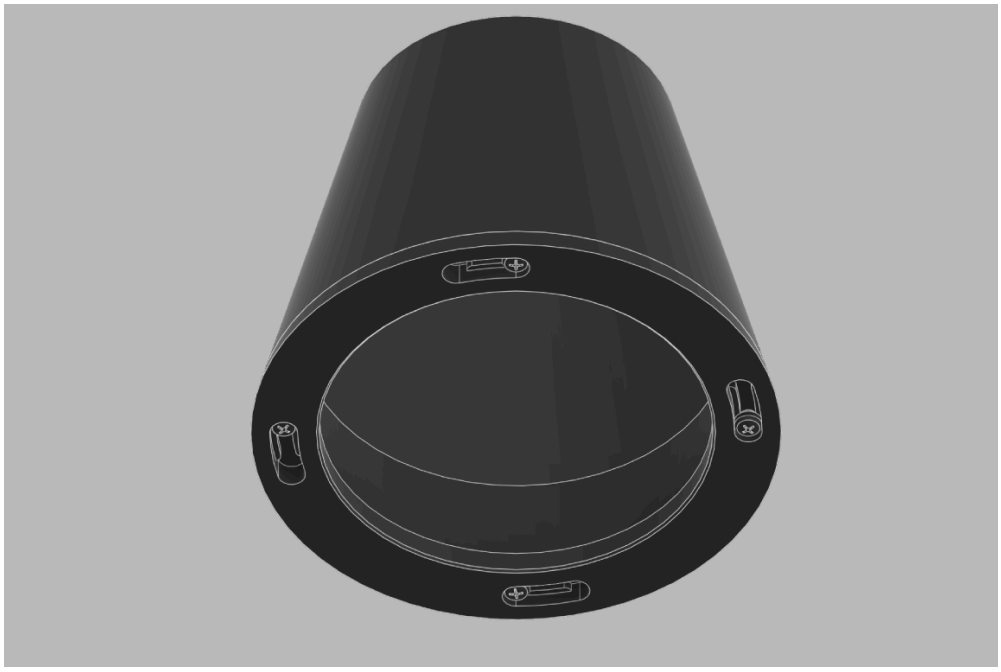
Step 3

Screw the (4x) M3 x 10mm bolts into the threaded holes at the bottom of the LAMP_SHADE part. Leave a ~3mm gap between the head of each screw and the part.



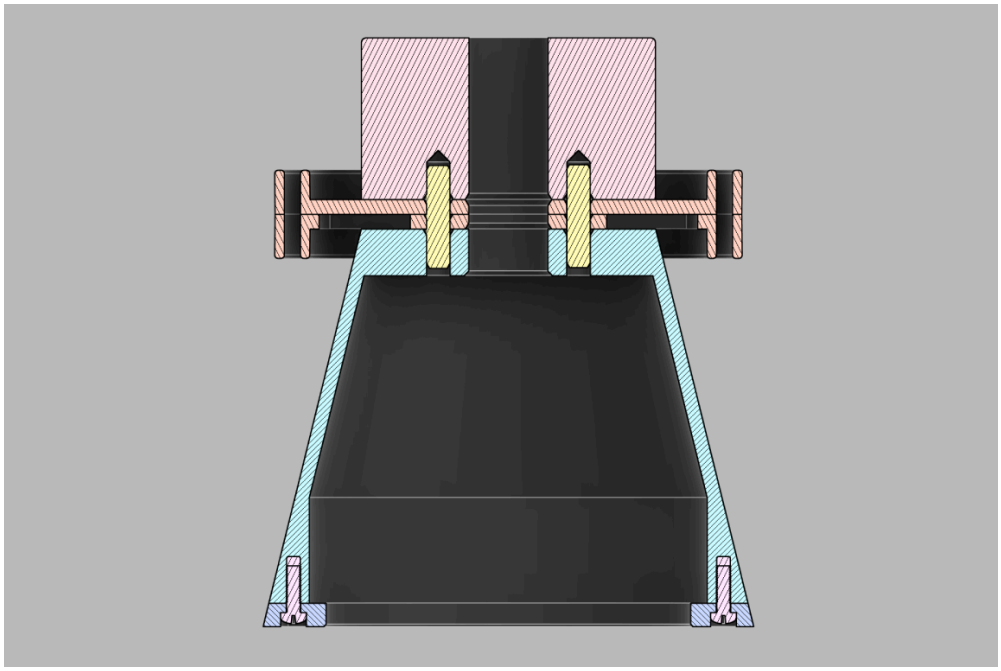
Step 4

Fit the LAMP_BOTTOM part over the (4x) M3 bolts and rotate it into place. Tighten the bolts further as necessary.



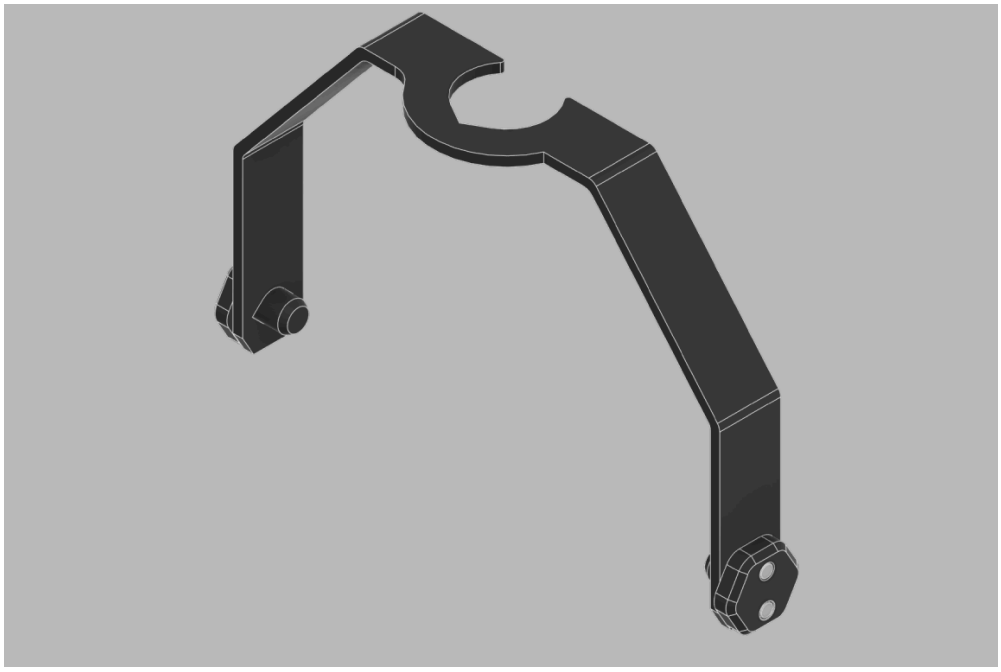
Step 5

Press-fit the LAMP_BOTTOM part on to the assembly.



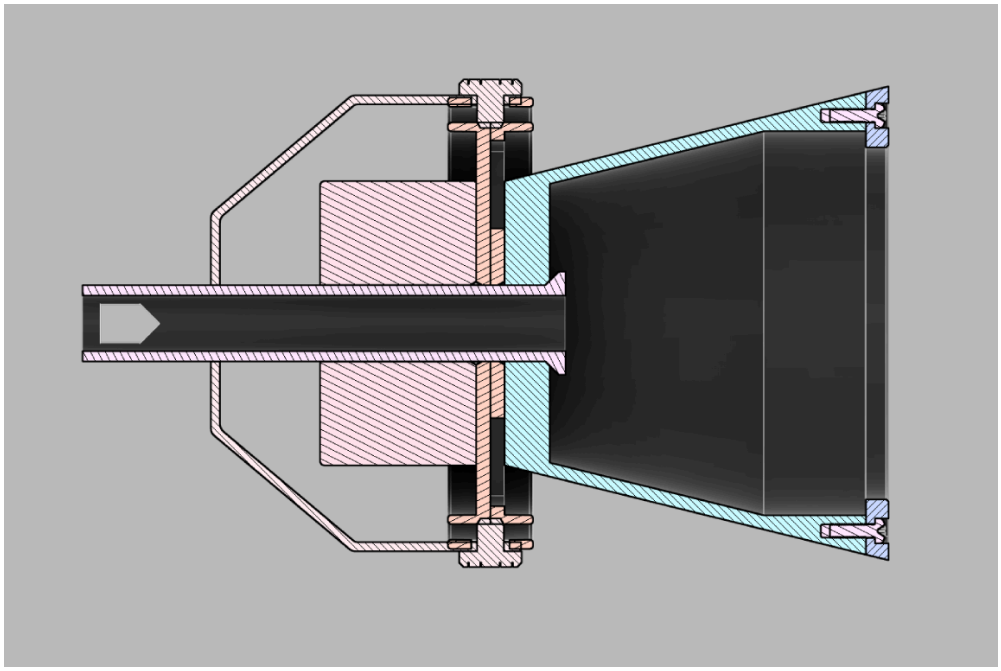
Step 6

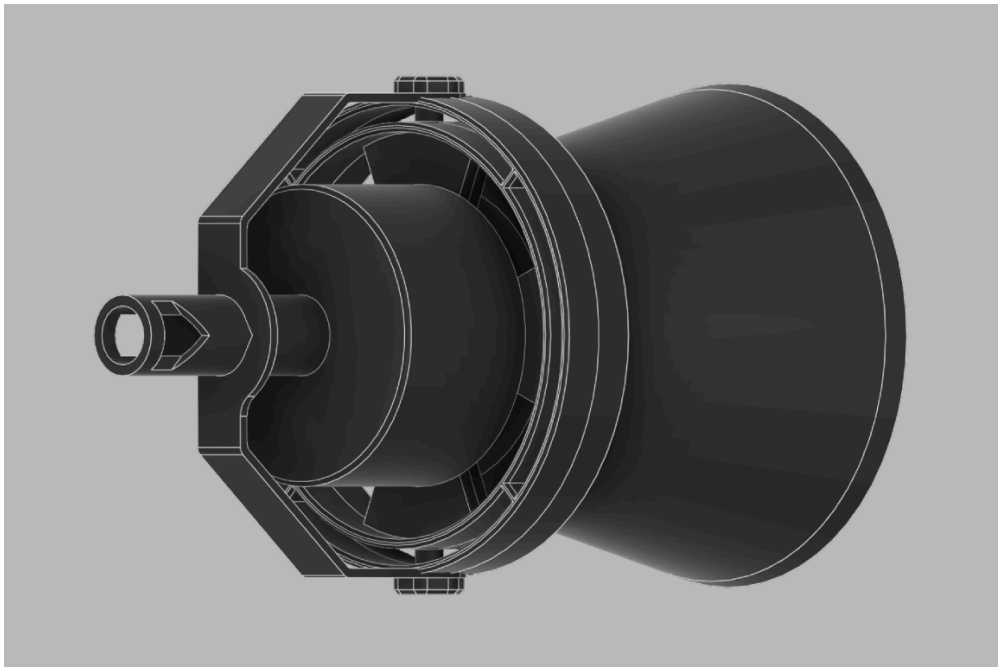
Insert the (2x) LAMP_BRACKET_RIVET parts into the LAMP_BRACKET part.
Glue if necessary.



Step 7

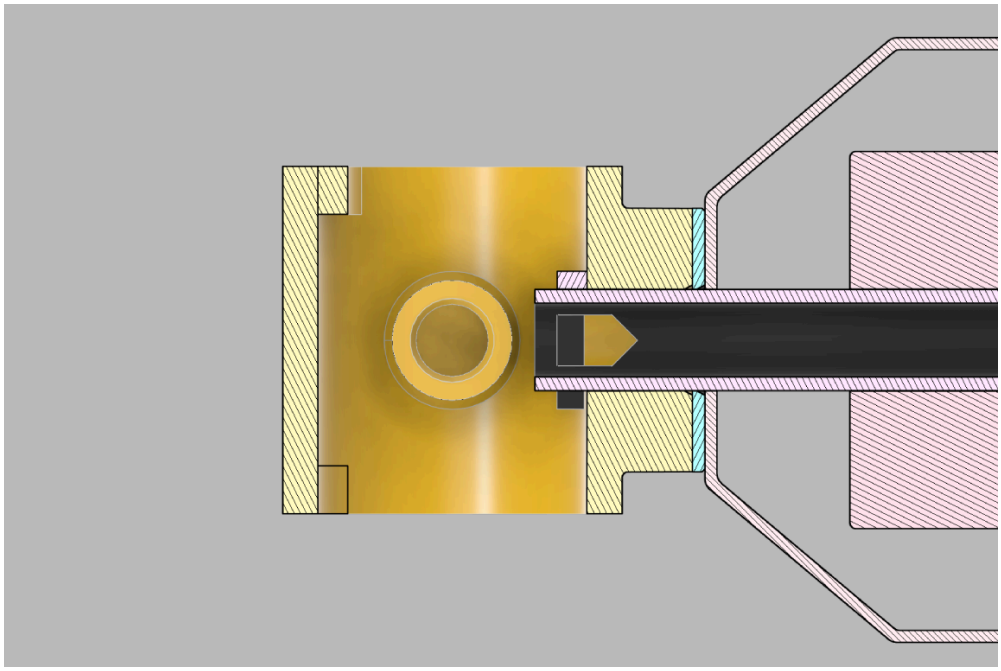
Insert the ROD_VERTICAL part through the bottom of the assembly.
Then, slide the LAMP_BRACKET part down the ROD_VERTICAL part.
Snap the ends of the LAMP_BRACKET_RIVET parts into the holes in the exterior lamp ring.

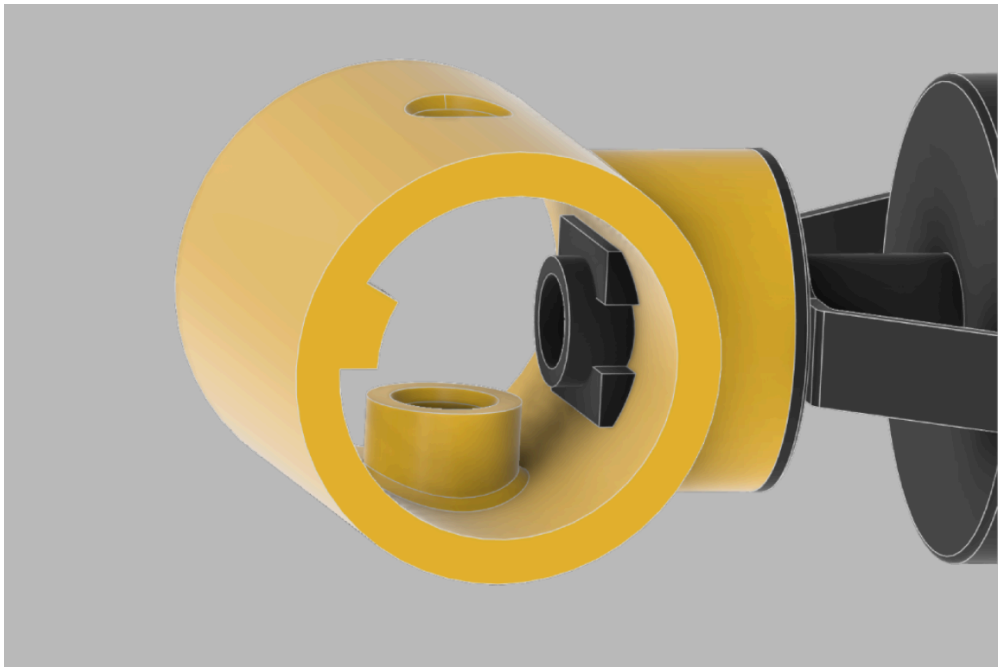




Step 8

Slide the JUNCTION_COVER part onto the ROD_VERTICAL part.
Then slide the JUNCTION part onto the rod.
Then insert the JUNCTION_SHIM part from the side, to hold the rod in place.

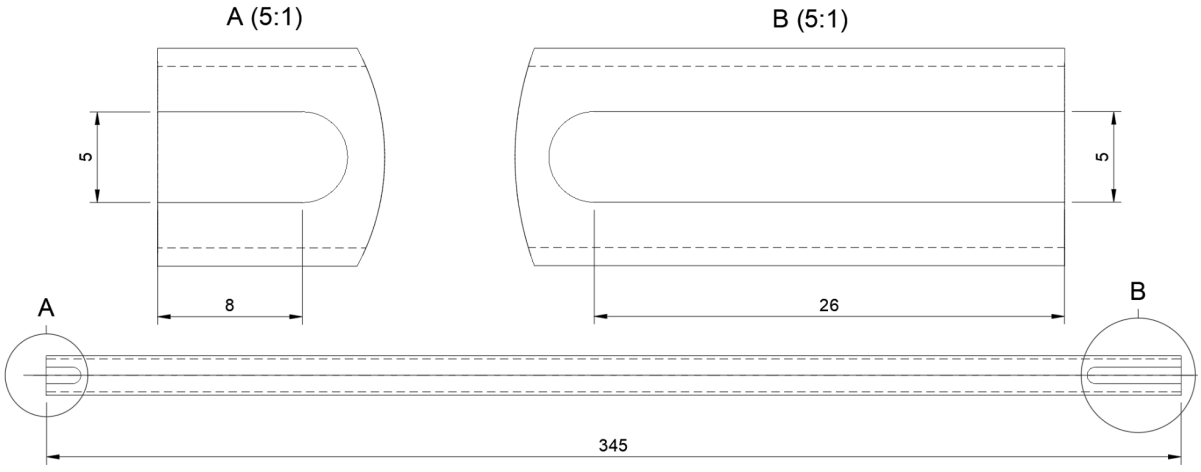




Step 9

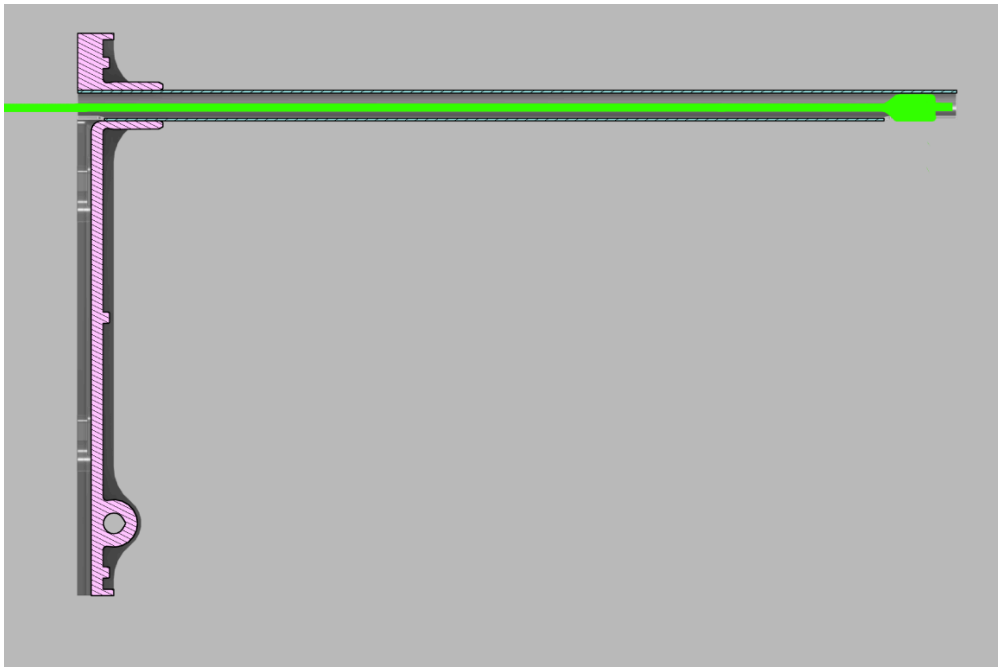
Cut the aluminium tube to a length of ~345mm.

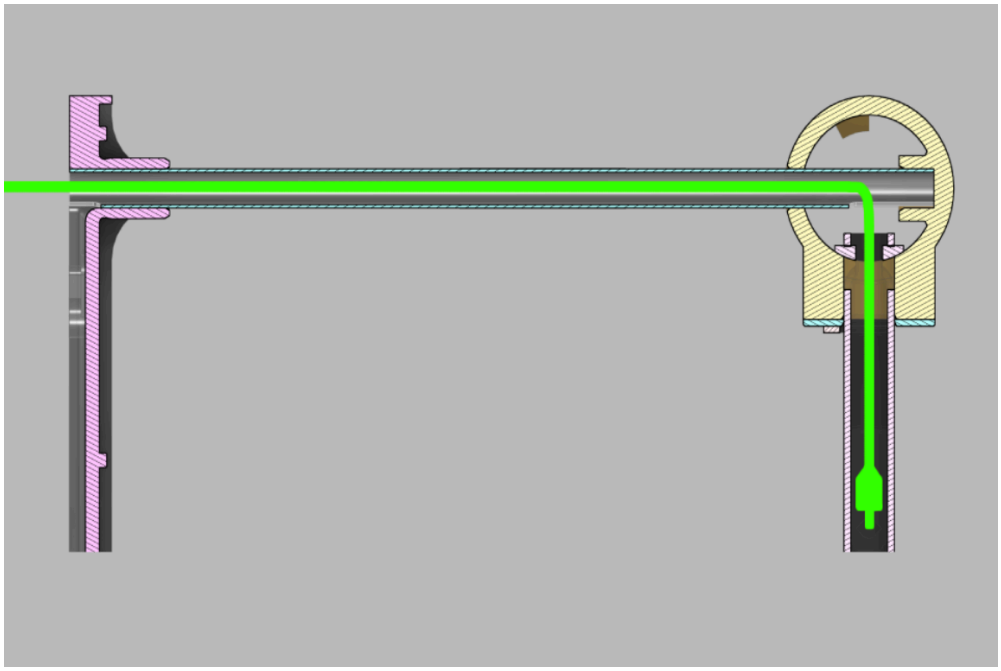
Cut slots into either end of the tube for the wiring, to the rough dimensions pictured below.
I achieved this by drilling a series of 5mm holes down the length of the slot and then sanding the edges to a flat surface.



Step 10

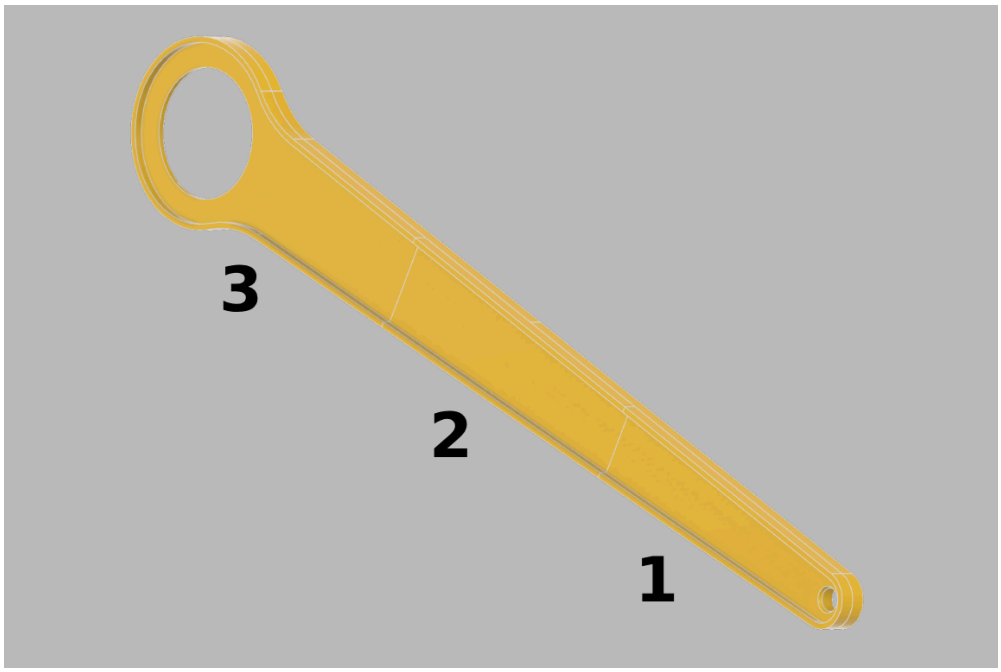
Insert the end of the aluminium tube with the *shorter* slot into the WALL_MOUNT part.
Feed the cable through the tube and down through the lamp assembly before inserting the tube fully into the JUNCTION.

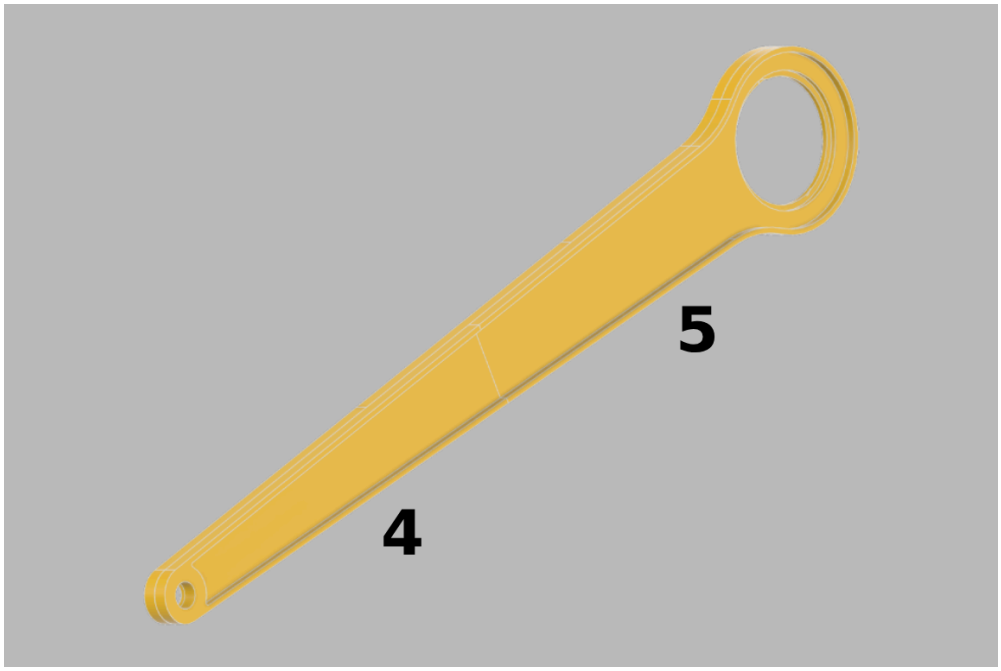




Step 11

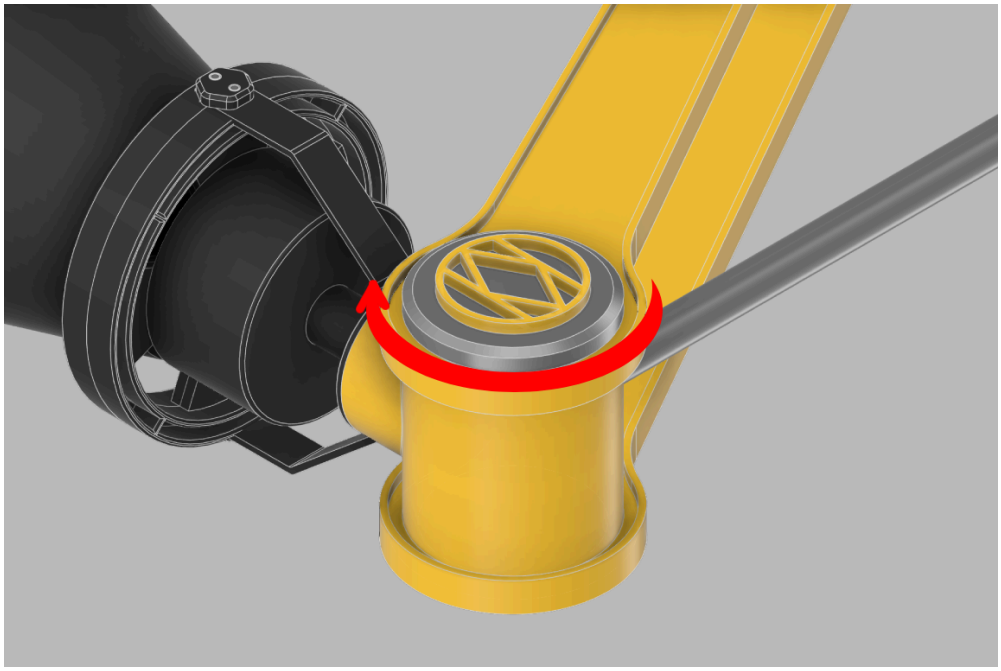
If you printed each ARM in pieces due to bed size constraints, glue the pieces together.
I used clear epoxy glue for this.

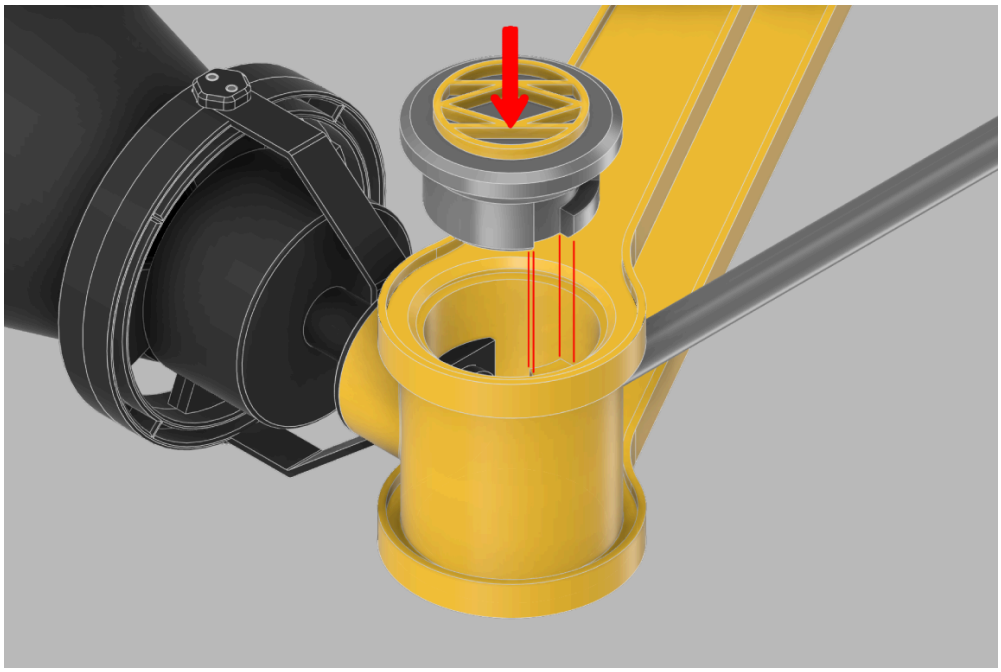




Step 12

Hold the large end of the ARM part against the JUNCTION part. The chamfered edge should be facing outwards. Align the channel of the JUNCTION_CAP part with the protrusion on the JUNCTION part and insert them into one another. Twist 45 degrees to lock in place.

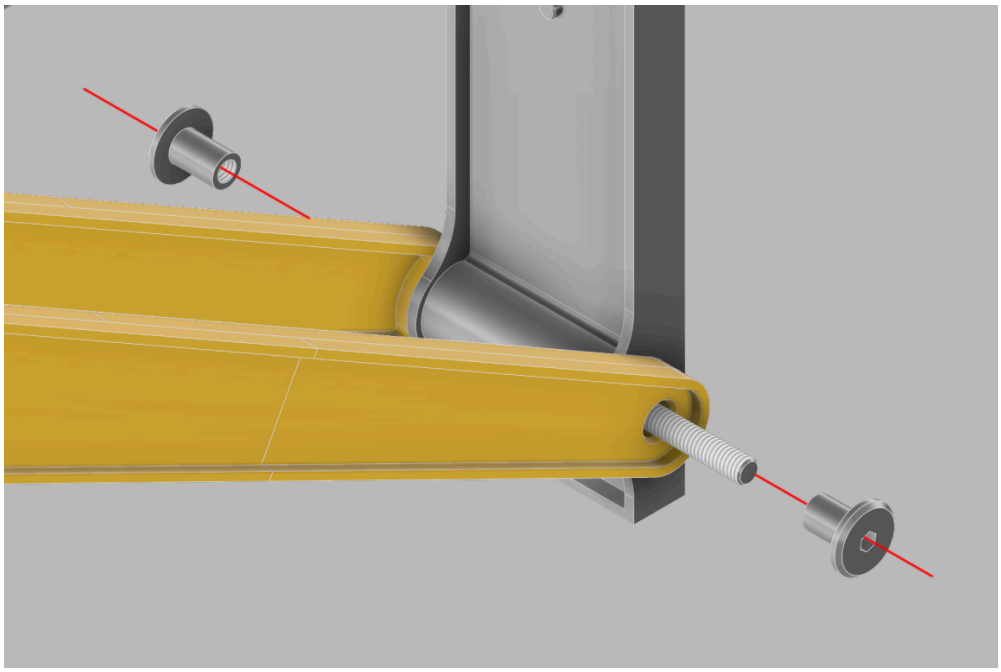


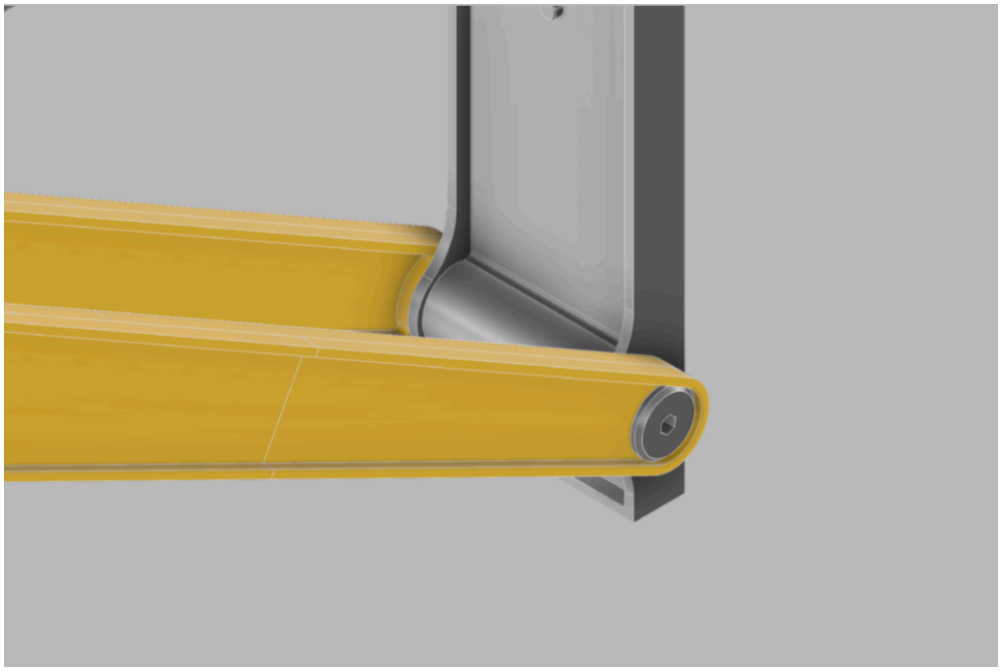


Repeat for the other ARM.

Step 13

Align the holes at the other end of each ARM with those in the WALL_MOUNT part. Insert the M6 x 60mm threaded rod and fasten an M6 x 12mm cap nut on each end.





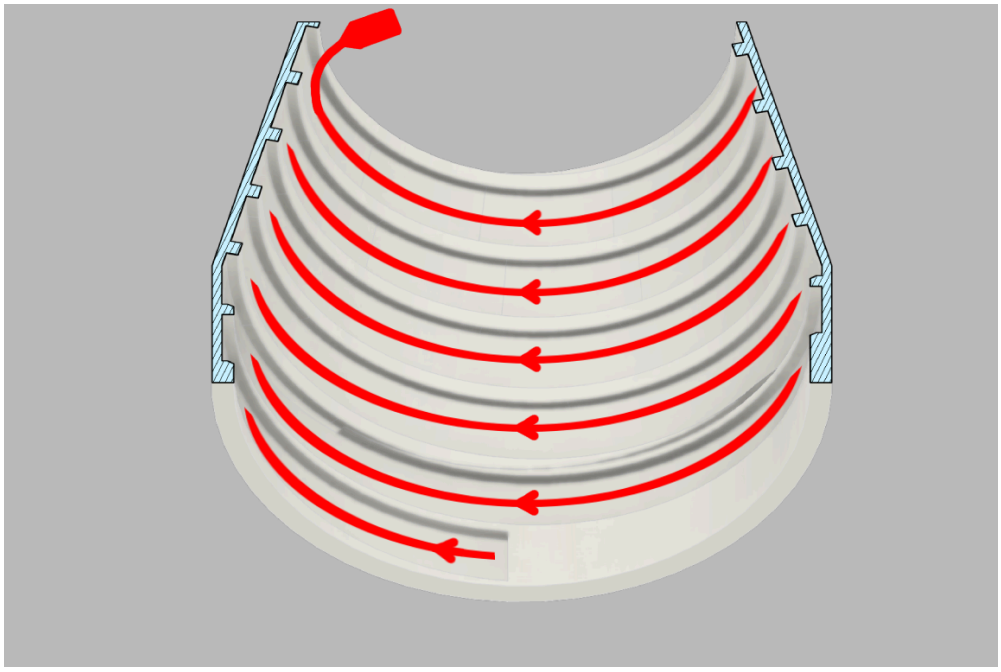
Insert and glue the remaining two cap nuts into the top two holes of the WALL_MOUNT part.

Step 14

The design uses a 12V LED strip which is struck to the inside of a ~9mm wide, ~1130mm long spiral groove in the LAMP_INSERT part.

The strip I used had an adhesive backing, but I used small amounts of clear epoxy glue in places to ensure a strong hold.

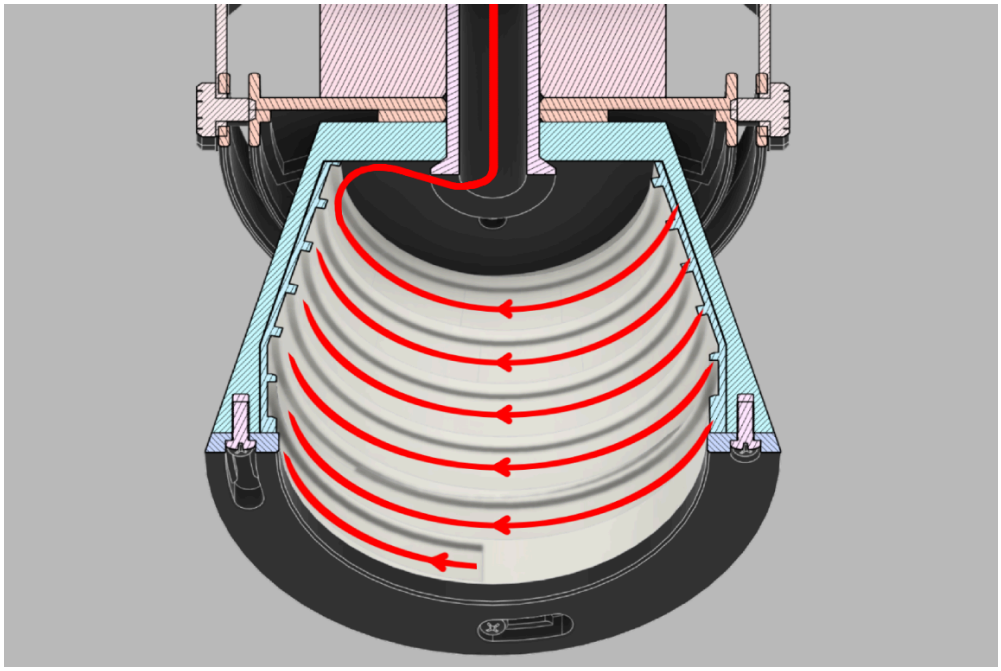
Cut the LED strip to length and stick it down to the LAMP_INSERT part. Start at the bottom with the cut end of the LED strip, and work your way up.



Step 15

Twist off the LAMP_BOTTOM part, insert the LAMP_INSERT part into the lamp, then twist the LAMP_BOTTOM part back on.

Connect the cable.



Step 16

Mount the assembly to the wall.

I used (2x) 10G x 50mm low profile cabinet screws which I screwed directly into studs. I used diagonally opposite holes in an attempt to distribute the load more evenly.