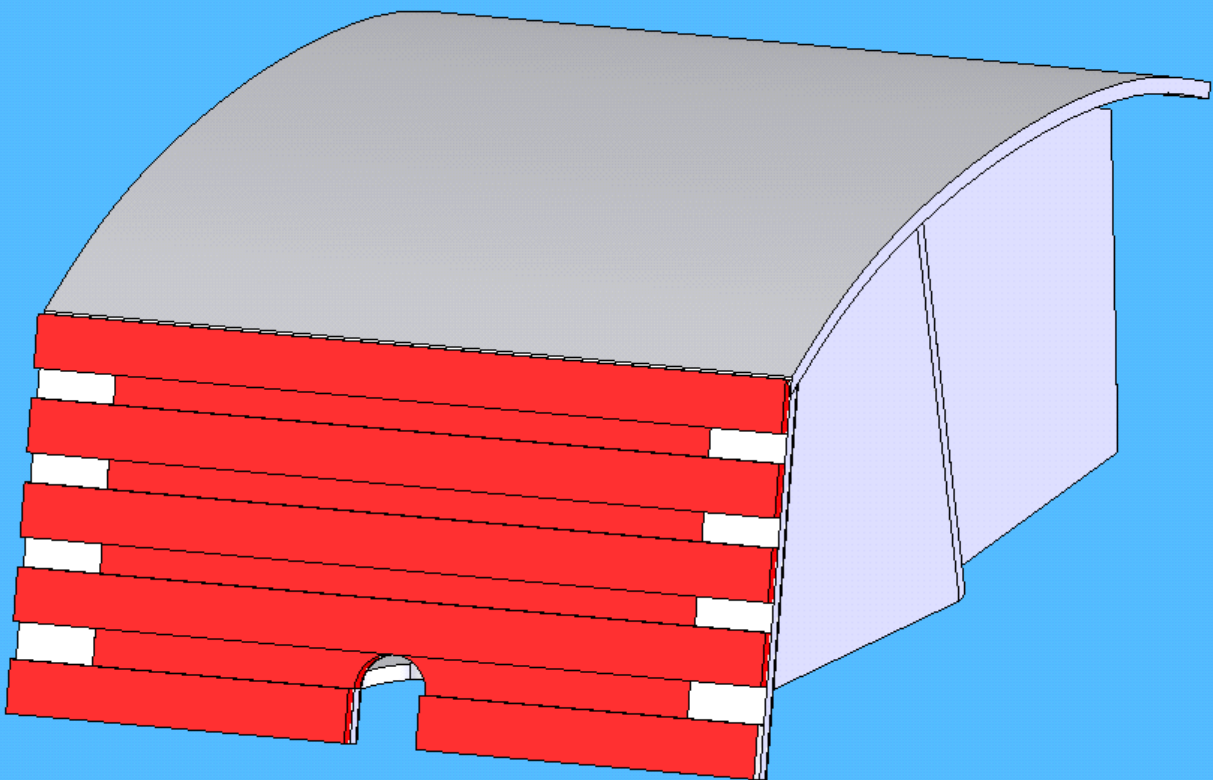


K9 Head Construction

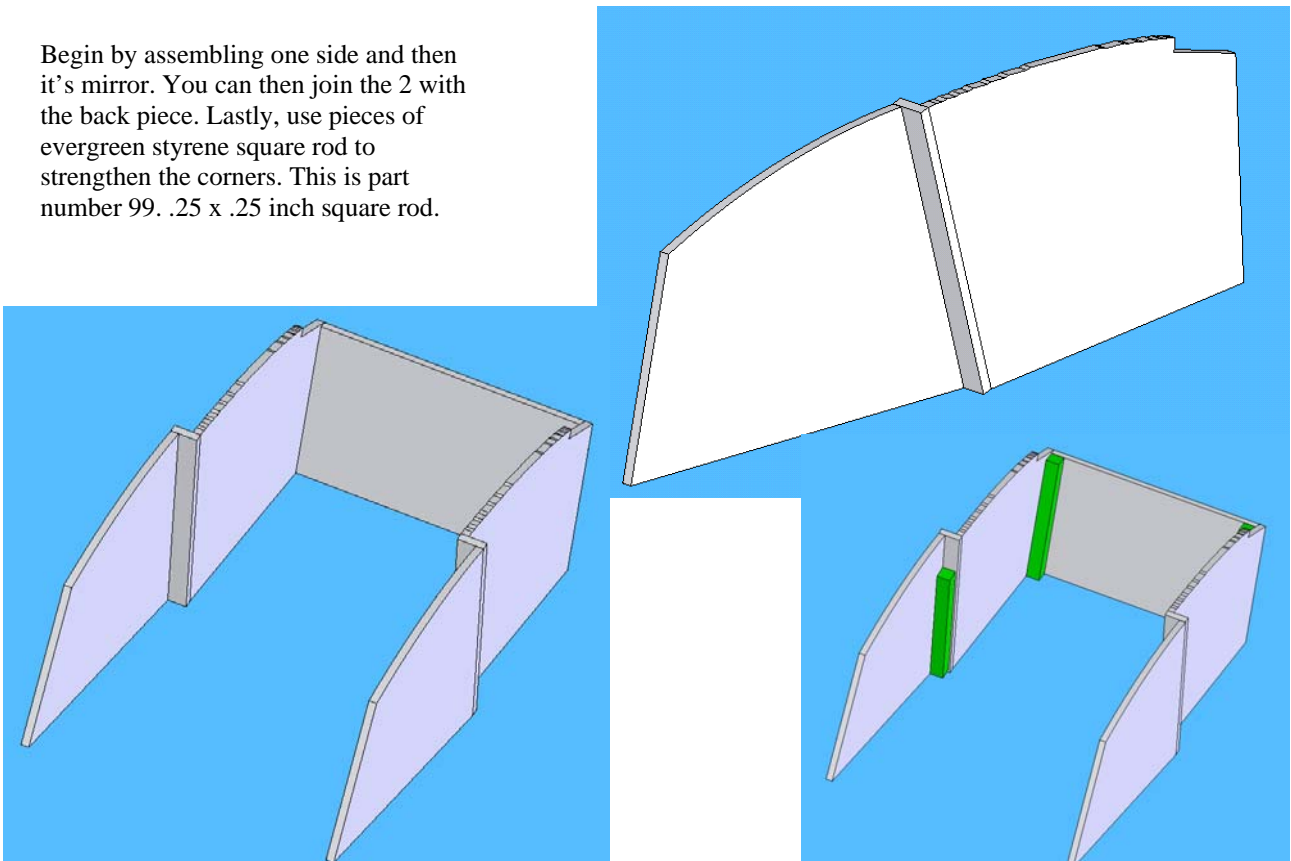
Part 2

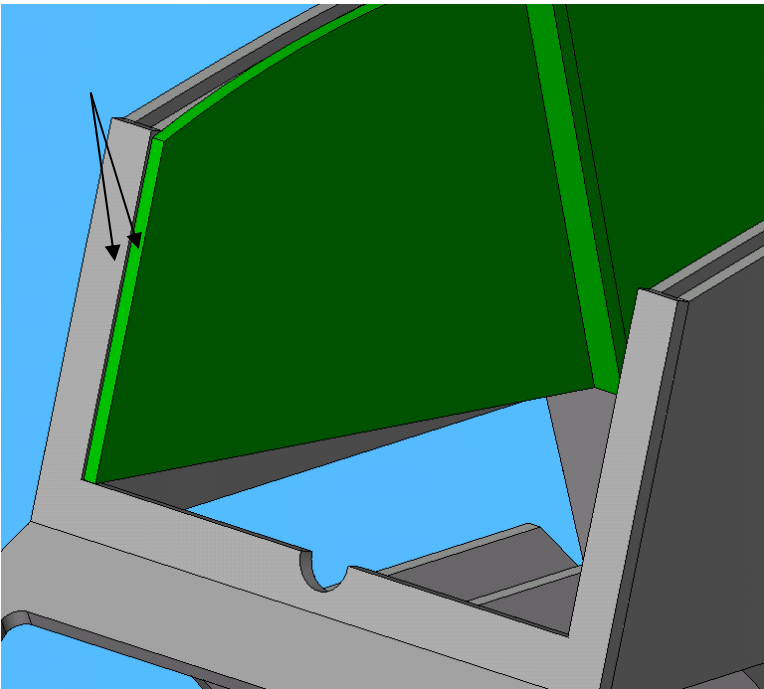


Head Top Assembly

There are many steps in this part, lots of test fitting and filing in place to make sure the top sits flush with the rest of the head. I made the front part 3 times and the lens system twice. I have also painted it 3 times and I'm planning on a fourth.

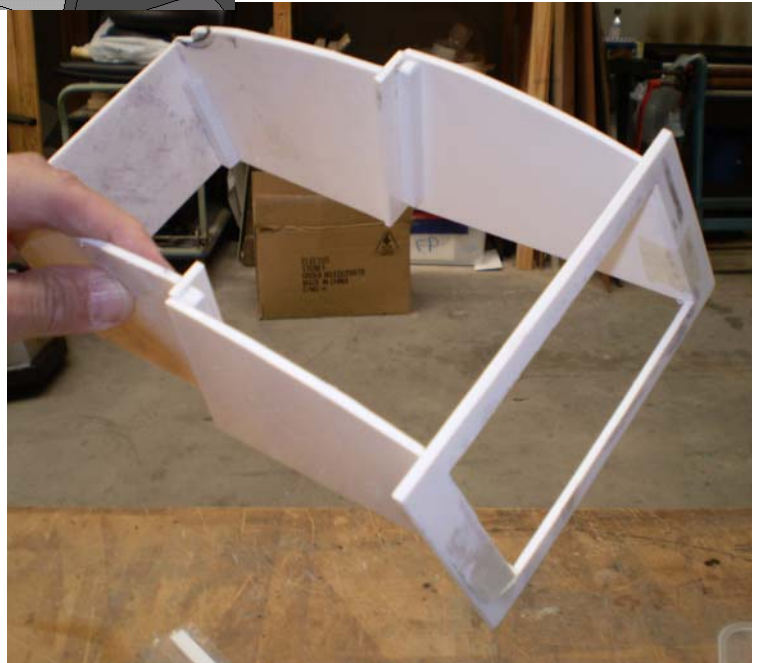
Begin by assembling one side and then it's mirror. You can then join the 2 with the back piece. Lastly, use pieces of evergreen styrene square rod to strengthen the corners. This is part number 99. .25 x .25 inch square rod.



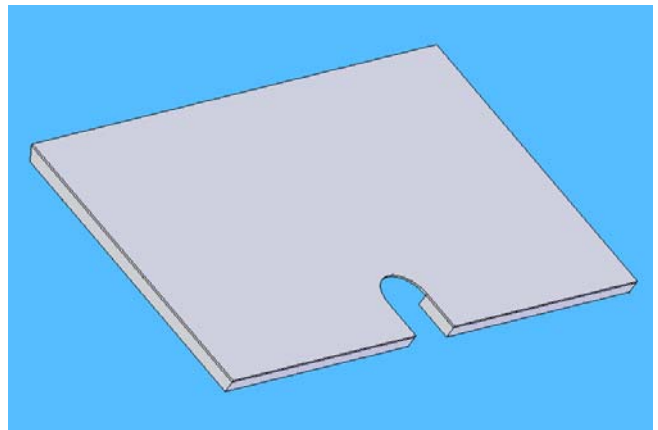
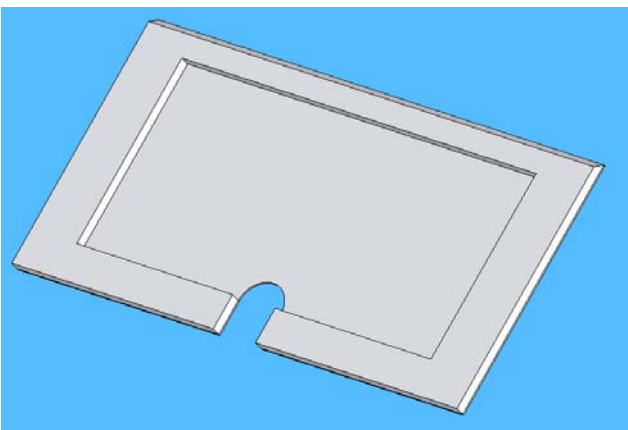


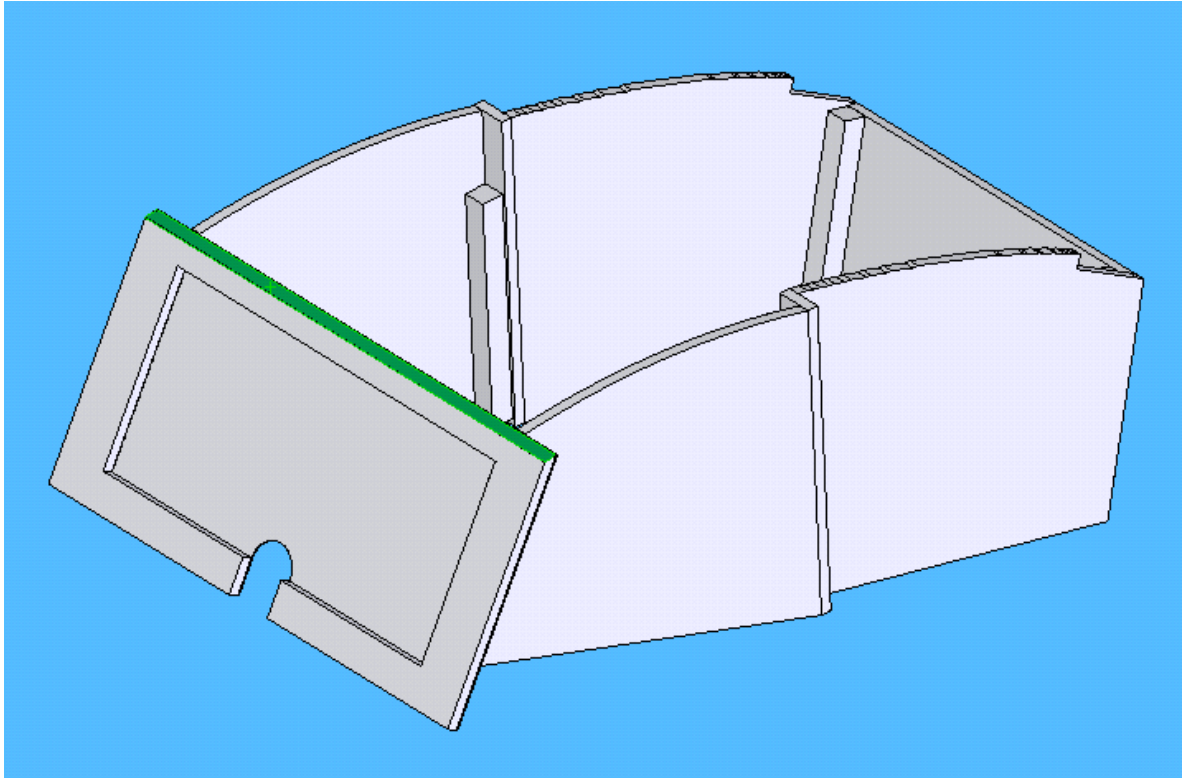
Clamp the assembly so far into the head frame and check it's fit, it should fit snugly and the curve edges should line up with the head frame accurately. If not, file them until they do. With the back clamped tightly, check that the arrowed parts appear to be flush, both left and right sides.

Now tape the front bezel surround in place and check the fit. You may need to file the top edge to get a good match. Take time on this otherwise the 1mm skins will not sit down properly.



Now glue a 0.5mm sheet to the back of the bezel surround as in the images below and glue the whole thing to the top frame. Make sure you don't get any glue on the 0.5mm styrene. You will be shining 2 eye LEDs through this as a diffuser and glue marks look terrible.

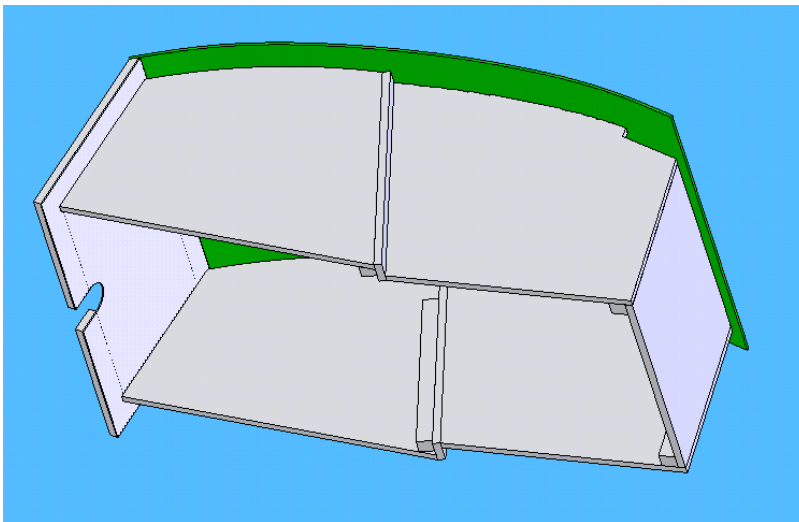




The head top should now look like this. Check it in the head frame again and make sure everything is ok.

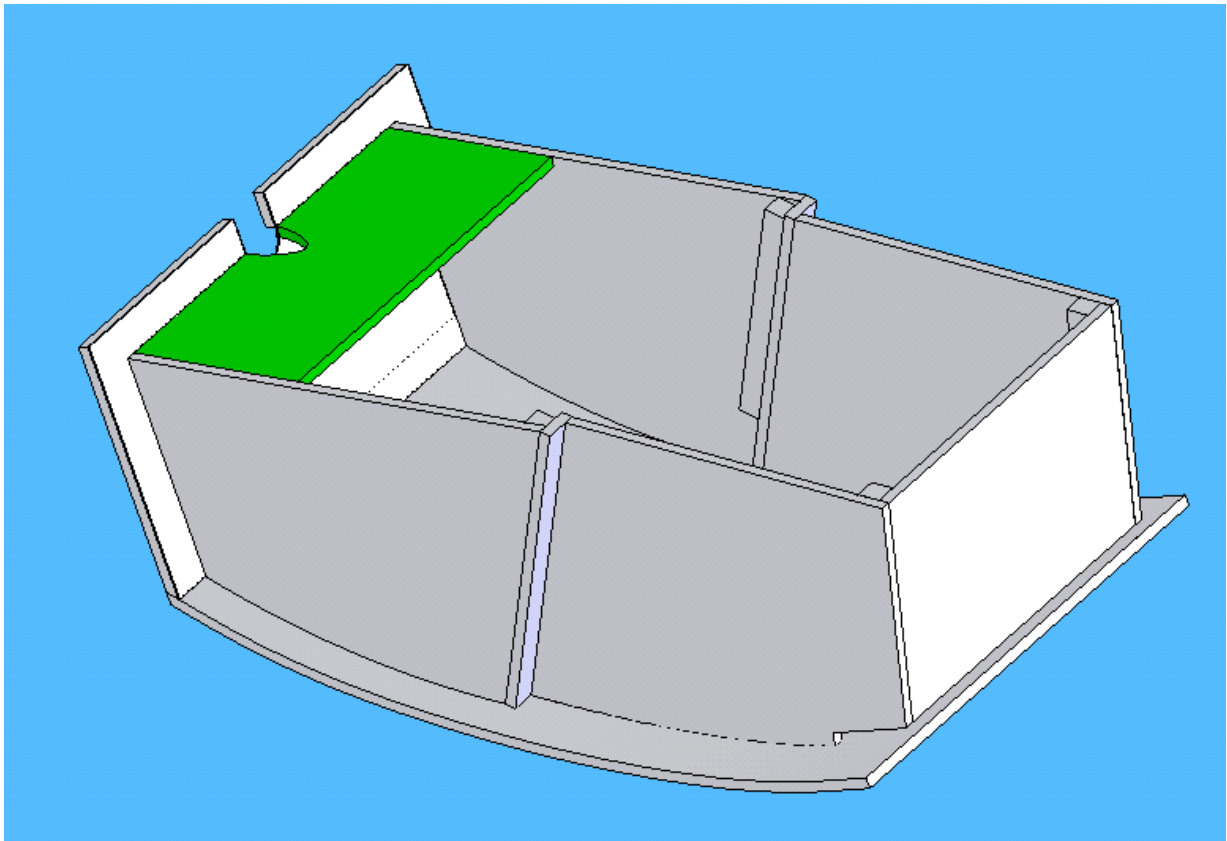
The top skins are 3 layers of 1mm styrene. Start with a square or rectangular piece larger than you need. Make sure at least one edge is straight and glue that edge to the top of the Bezel surround (the edge marks in green).

Once this is set, work your way along each side edge gluing the 1mm styrene in place.



The first skin should look something like this. Now put the whole thing into the head frame, turn upside down and carefully trim the 1mm skin until it is flush with the actual head.

Repeat the process 2 more times so you have a 3mm laminated skin all trimmed up, then finally sand the edge to get rid of the layers.



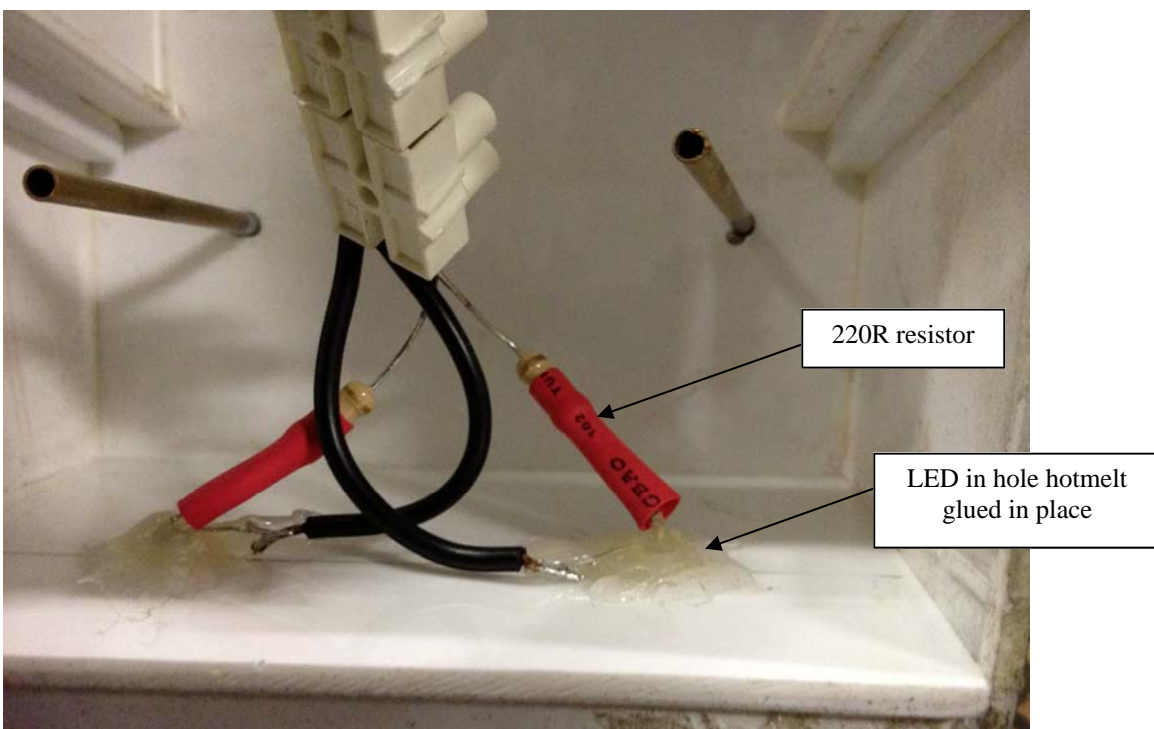
Now glue in the Eye light box bottom. This has a cutout in it to allow the antenna clear access.

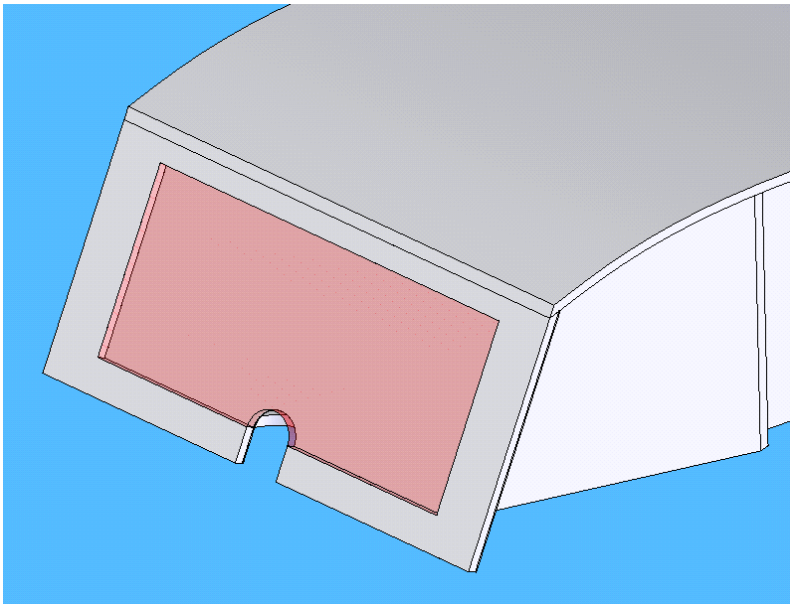
Next you can install the eye lights themselves.

I used 2 5mm cree LEDs. These are new and extremely bright. I tried many different LEDs including star luxeon and the 1 watt cree leds. They were all too bright. The effect I was looking for was to light up the panel but still have 2 distinct round eye bright spots.

I also tried many lenses on the 1 watt LEDs. However they all looked too perfect or had artifacts. The optimum result is 2 slightly fuzzy circles of light. This is what I finally achieved.

The Jaycar part number for these LEDs is ZD0293, they have a brightness of 23500mcd. You will need 2 220R 1 Watt resistors, one for each LED.





Now cut and file a piece of red Perspex (3mm thickness) (I got mine at Jaycar) to fit snugly into the space in the bezel surround. When you are happy, file out the antenna space as well so it matches the cutout. Leave the protective paper on the Perspex as you will have to paint the head before going further.

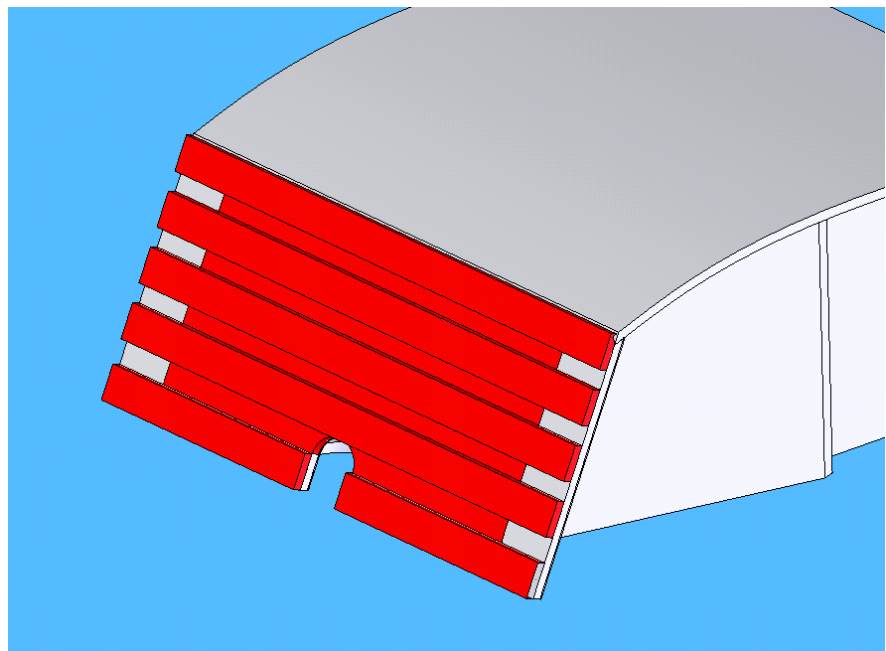
Once painted, you can remove the paper and continue.

Cut 5 strips of Perspex each 10mm wide. They should be long enough to cover the whole front face of the head.

One piece is cut down to form the 2 short pieces at the bottom of the bezel.

Get them as true as you can, then using clear double sided tape, stick them to the bezel surround evenly.

Tape gives the best result, gluing can look odd when the light shines through.



I was lucky enough to have another local builder make me some ears. The ears are on brass rod.



On top of the head I eyeballed the position for the ears, then drilled through the head slightly angling in so the ears will look right.

Then I got 2 golf tees, filed the head at a slight angle and cut off the stabby part. Most plastic tees are hollow down to where you need to cutoff, so they make a natural hole for the ear rod to go though.

I used Selleys AllFix to glue the tees to the

Keep building up the filler until you have the right kind of shape, then wetsand the hell out of them to get them looking good.



I then redrilled the hole through the tee and the head just slightly larger than the diameter of the ear rods.

You may notice the last shot shows no eye bezel, this is because I remade the front of the head to include the 0.5mm diffuser.



The ear mechanism will come later. I have a scheme to use one servo, but in reality, you need to make a lot of custom hardware to do it nicely. I will be presenting a 2 servo method, which is much easier.

Next up will be the nose section.