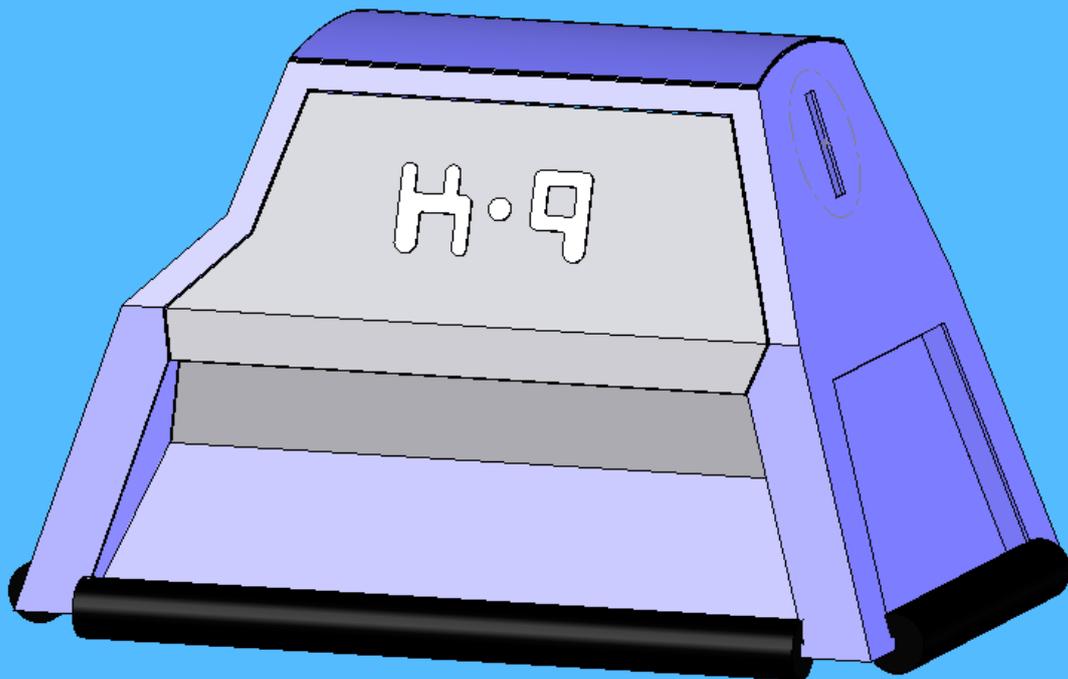


# K9 Body Construction



Before starting make sure you read the tools and techniques tutorial. It covers how the drawings are meant to work, how to cut them out, chamfer, glue and finish them.

Study each component tutorial before you get started. If you have questions post them on the forum and someone will be able to help you out.

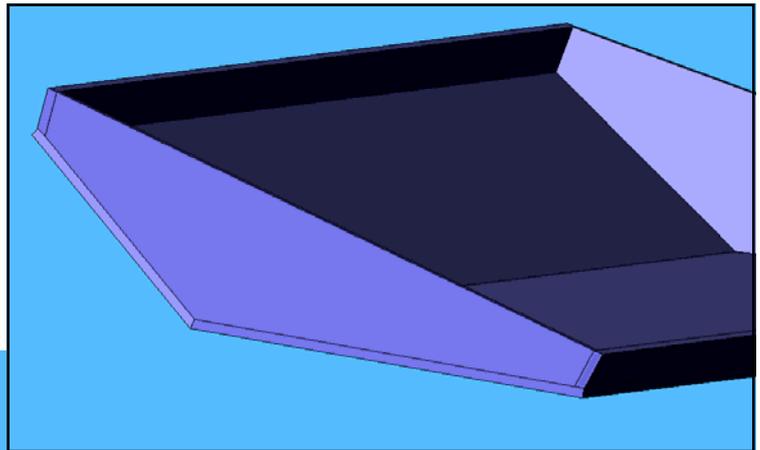
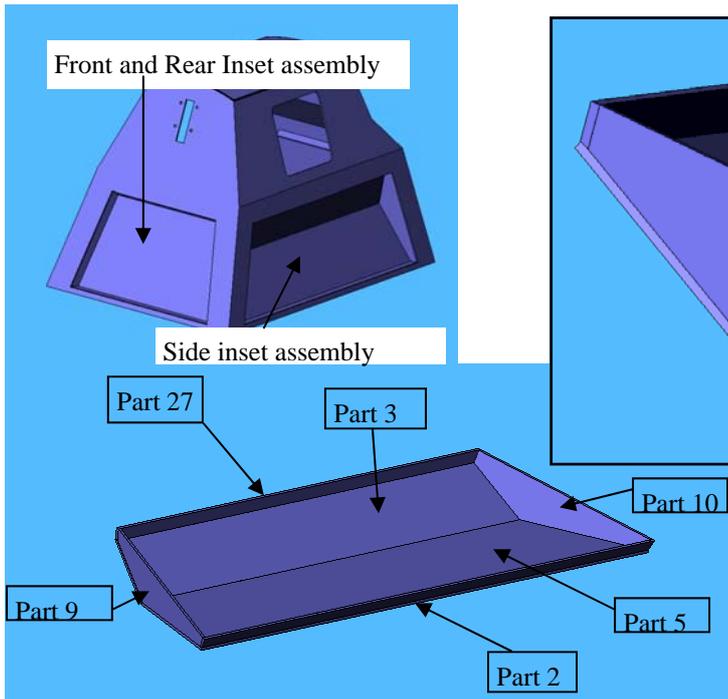
Take your time. Your biggest enemy is rushing. Remember you want to build a robot you can live with for a long time, not one you need to make excuses for every time you show it to someone.

Try to avoid short cuts. They have a habit of costing you more time and effort later on. If you have suggestions I'm always happy to hear them and incorporate them into the plans and tutorials if I like them.

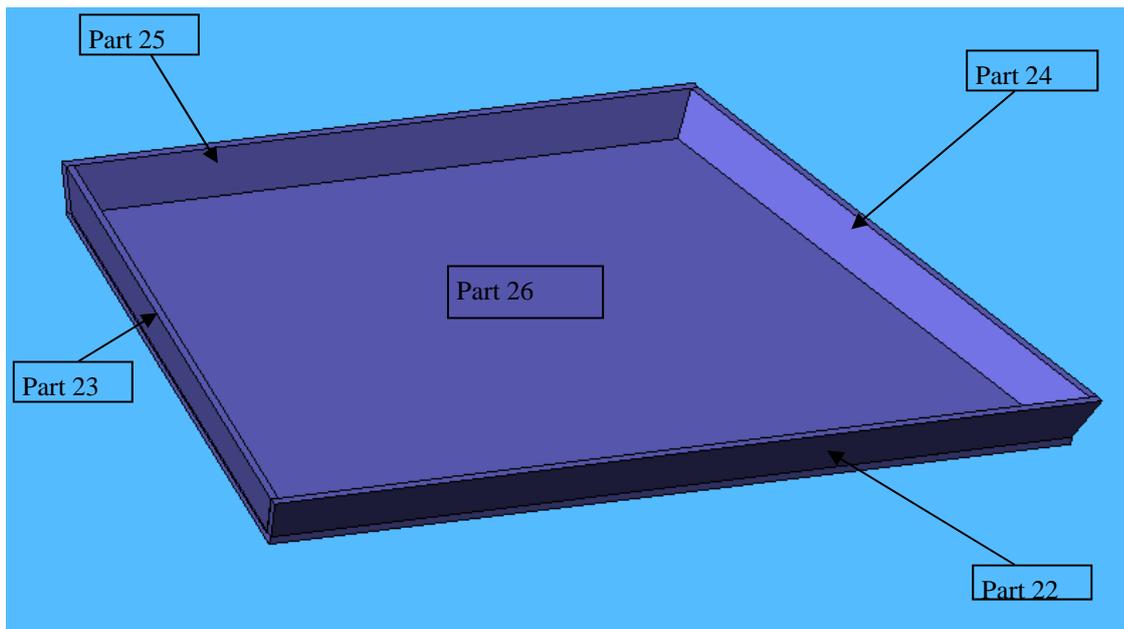
I started out by examining drawings posted on the internet. After about 6 months spent studying photos, looking up everything I could find on K9, talking to other builders and completely refitting a K9 for a friend, I finally settled on the dimensions in these plans.

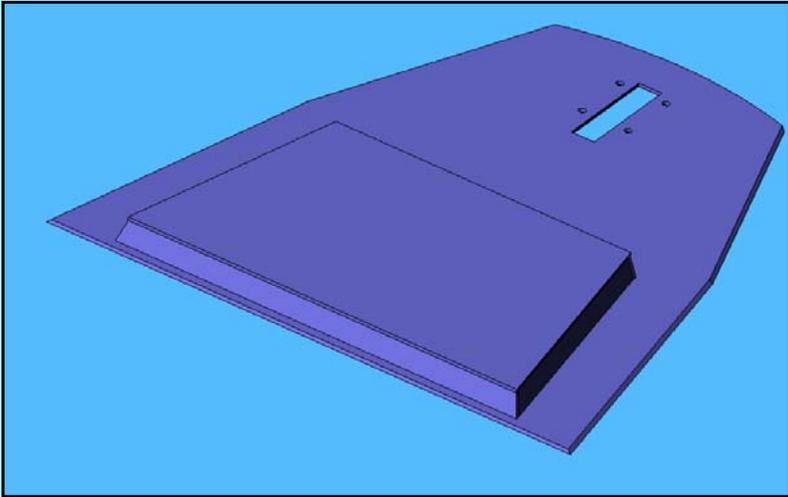
I'd especially like to thank Isabella Von Lichtan in Tasmania for all her K9 knowledge and Dayle Hemsley who's K9 I refitted. Without either I would not have completed this project.

Begin by assembling the side inset assembly for the monitor side of K9. Look at the detail image to see how the pieces fit together. Assemble the door side inset assembly as well. The Door side assembly does not have parts 3 or 27 as



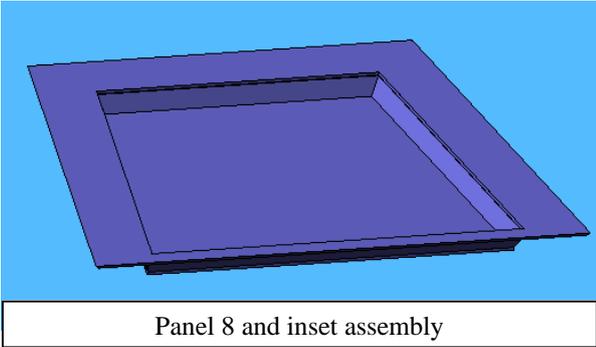
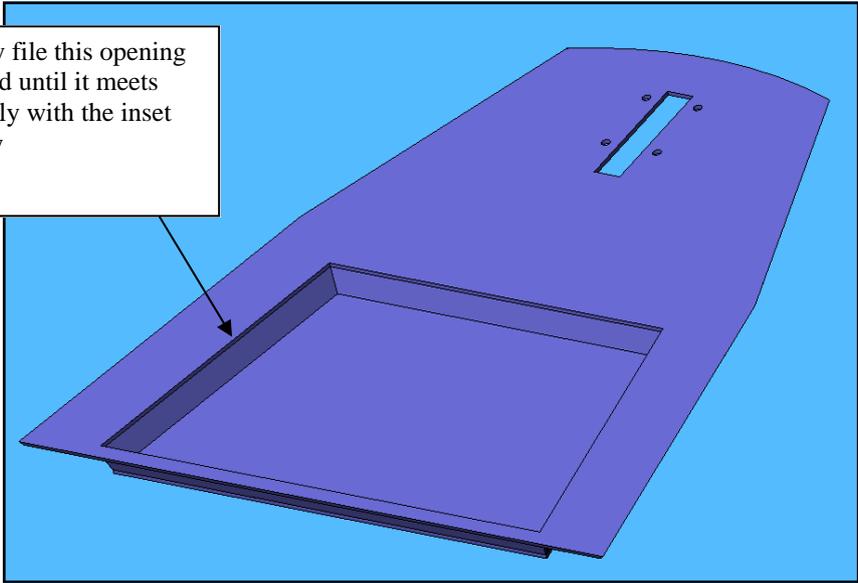
Assemble the front and rear inset assemblies, paying attention to the layout as shown in the image. When these assemblies are complete they should appear to splay out slightly. This “draft” is accurate to the original K9 as it needed drafts for fiberglass moulding.



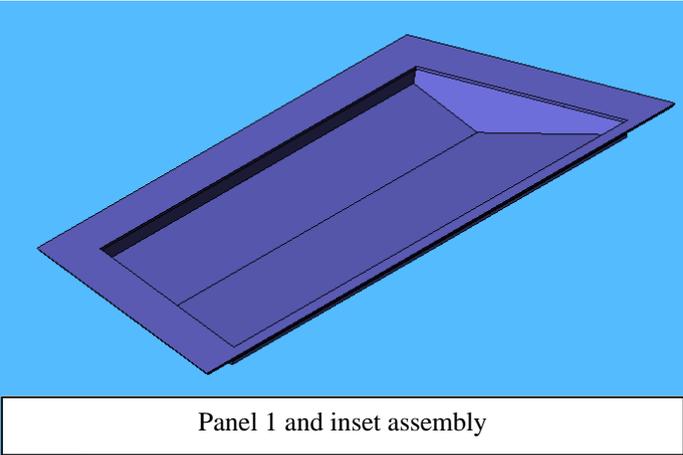


Now cutout and chamfer Panel5. Don't cut out the inset hole completely, leave a few millimeters around. Glue in the inset assembly, turn the whole thing over and carefully file the inside edges until they smoothly meet with the inset assembly. Repeat the process with panel 8 (the rear panel) and the side inset assembly in panel 1 (monitor side) and Panel 3 (door side)

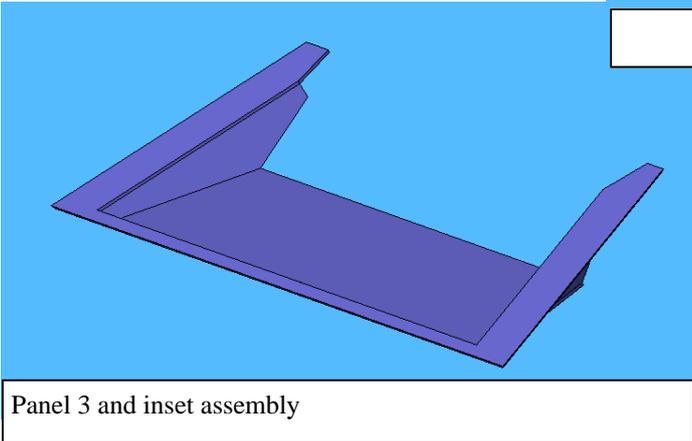
Carefully file this opening all around until it meets seamlessly with the inset assembly



Panel 8 and inset assembly

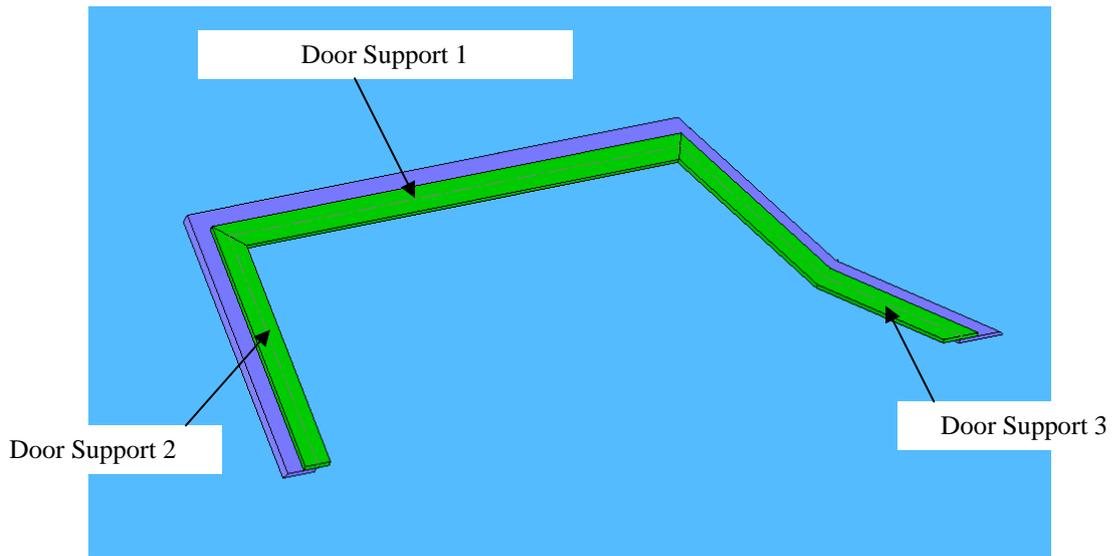


Panel 1 and inset assembly

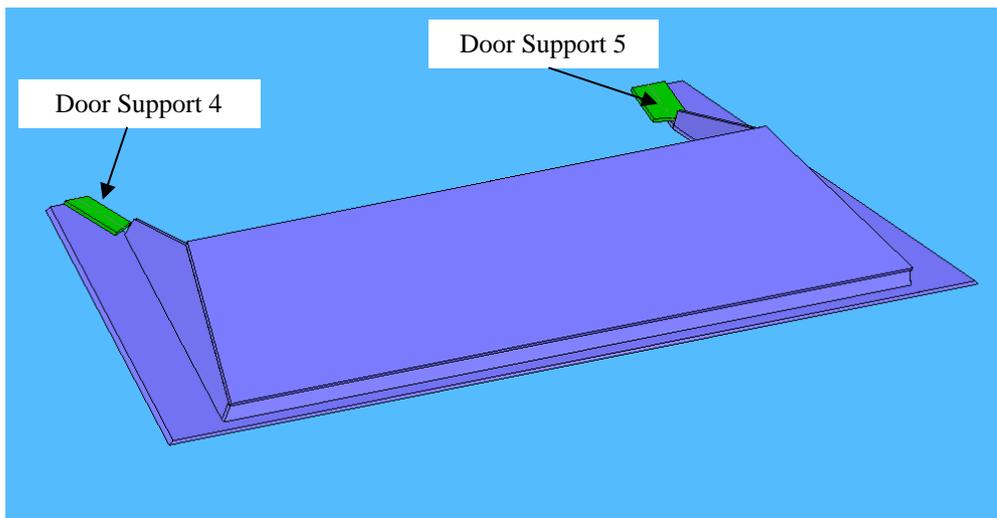


Panel 3 and inset assembly

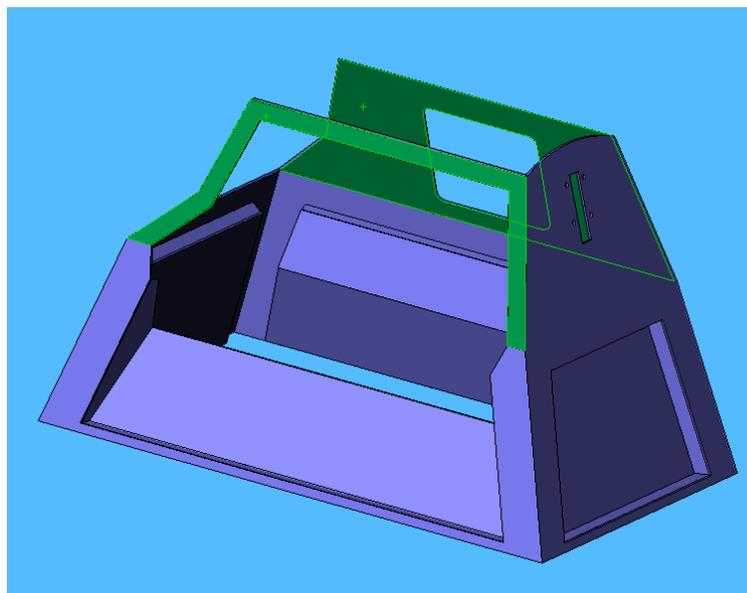
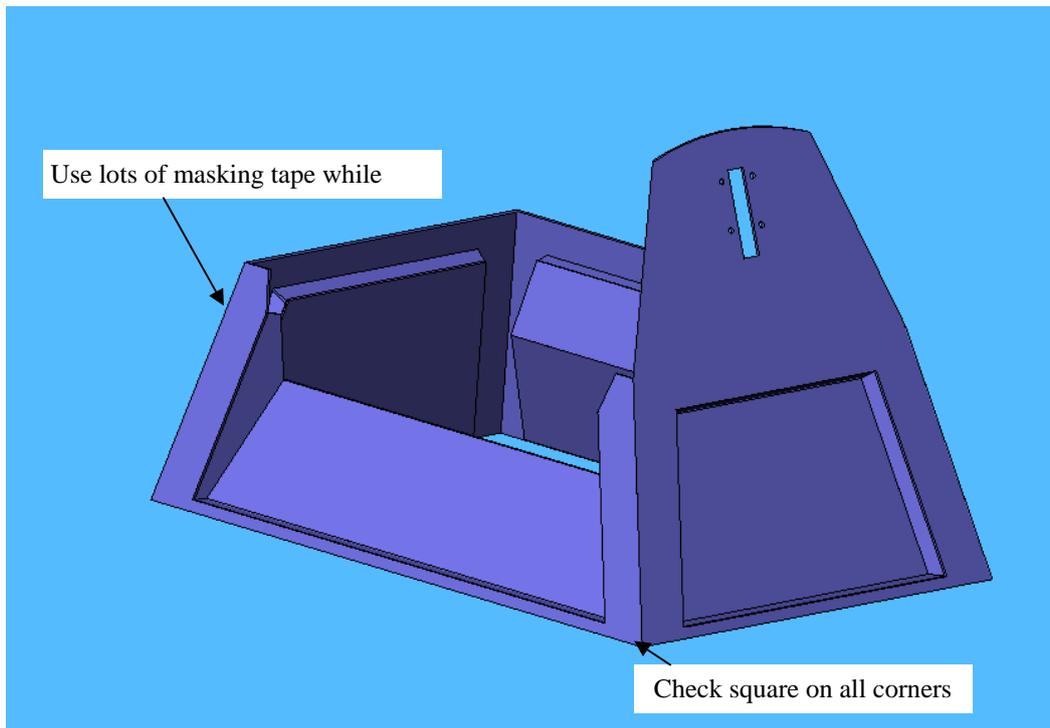
Glue in the door support pieces for panel 4. Make sure they are on the inside of panel 4, not the outside. The alignment line will help you position them correctly so a 10mm lip is created for the door to sit against.



Do the same for door supports 4 and 5 on Panel 3



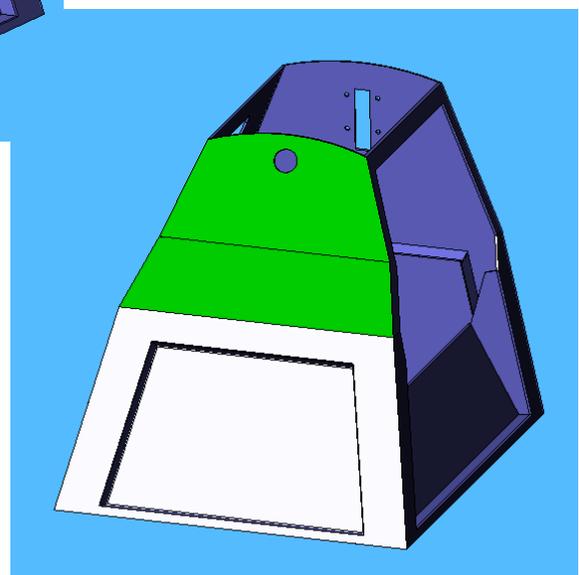
Now you can begin to assemble the side pieces together. Use plenty of masking tape to hold the pieces together as they set and keep an eye on the square of the parts. If you have a set square handy, put it against the bottom edges as they set. This will limit and stress on the parts when you glue in the base section later.



Now glue in panels 2 and 4. Panel 4 has the cutout for the door, and panel 2 has the cutout for the monitor.

Things may be a bit wobbly at this stage, the pieces are very big and have little support, this will change as things progress. Once these are set, glue in panels 6 and 7 as shown below.

Let everything set up for at least an hour before moving on to the next stage.

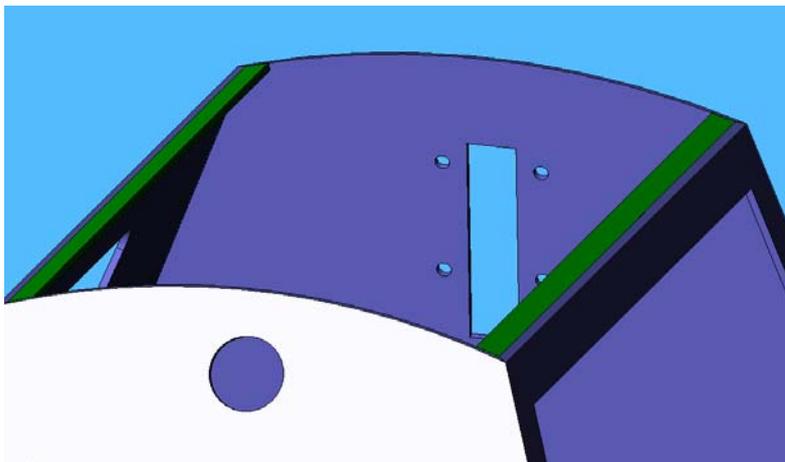


Next step is to install the Top Curve Supports. These not only keep the body sides straight while the top curve section is glued in, they also provide a good gluing surface for the curve pieces.

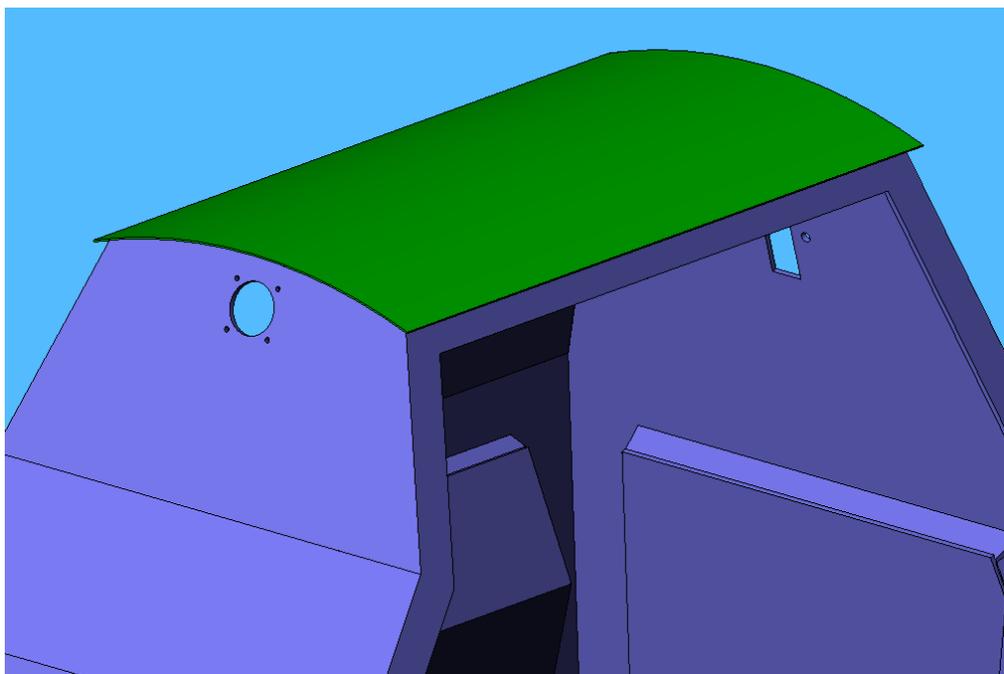
The long chamfered edge glues to the side panels, and the short edges should be flush with the curve edges of the front and back panels.

It's important you check that the long edge is straight as the side panels will glue to it and take the shape of that edge.

Again, let these pieces set up before moving on.



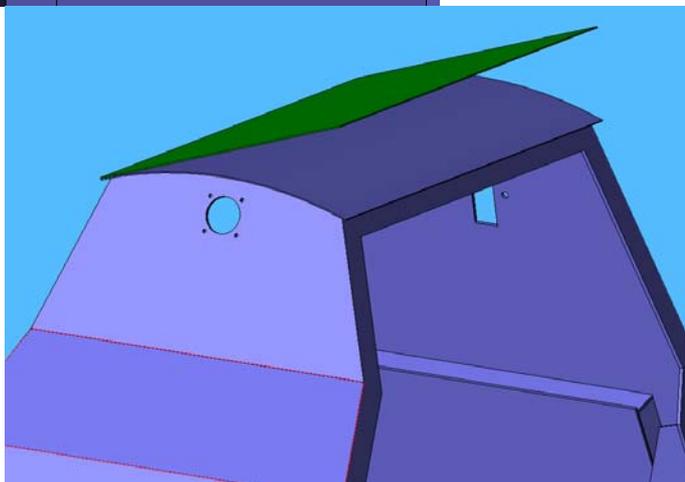
Cut 3 pieces of 1mm styrene to 430mm x 225mm. These will form the curved top section of the body. Start with one piece, let it overhang the body a bit. Glue one long edge down and make sure it is flat along the edge. Now pull the piece tight around the curves of the front and back plates and run glue along the edge. Hold the piece until it has set up a bit, then you can finish off with the long edge. If you screw up, pull it off, file the surfaces and try again. The look of this detail rests with getting the first piece right.



Now trim off the excess edges before fitting the 2nd piece. This is easier than trying to trim 3mm of thickness later on. Get a new paint brush, and paint the 1mm piece you just glued on, with styrene glue, then working from one long edge, roll the next piece on top. You only get one shot at this because the glue will take hold immediately.

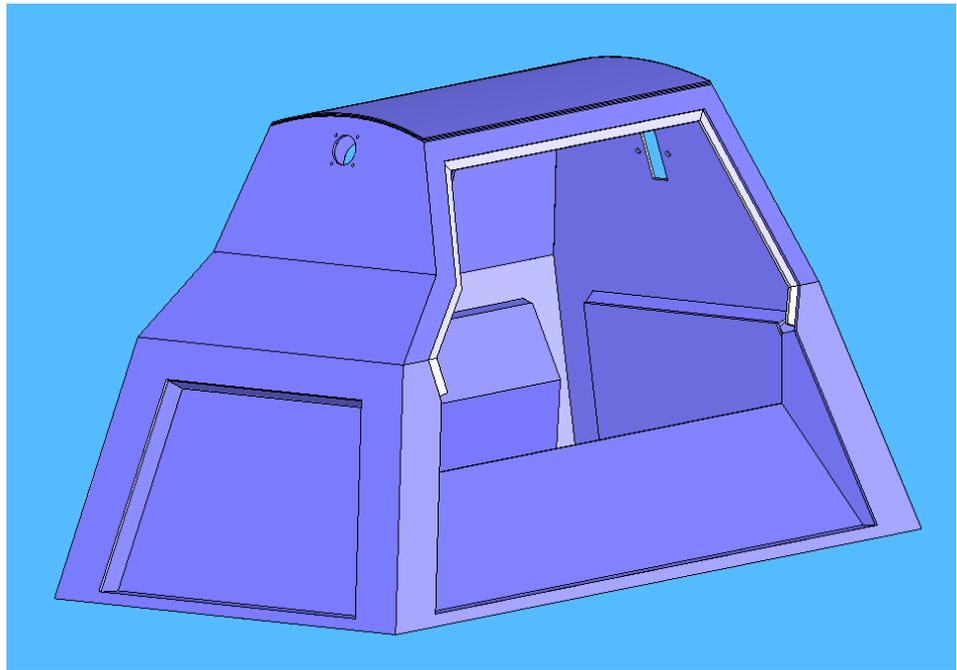
Don't press down too hard in the centre or you will bow the skin inward, I did that on my first attempt and had to cut the whole section off and start again.

Tape it down for 10 minutes, then trim the excess and repeat for the final 1mm piece. You now have a 3mm thick curve section that is very strong.



The body should look like the image to the right.

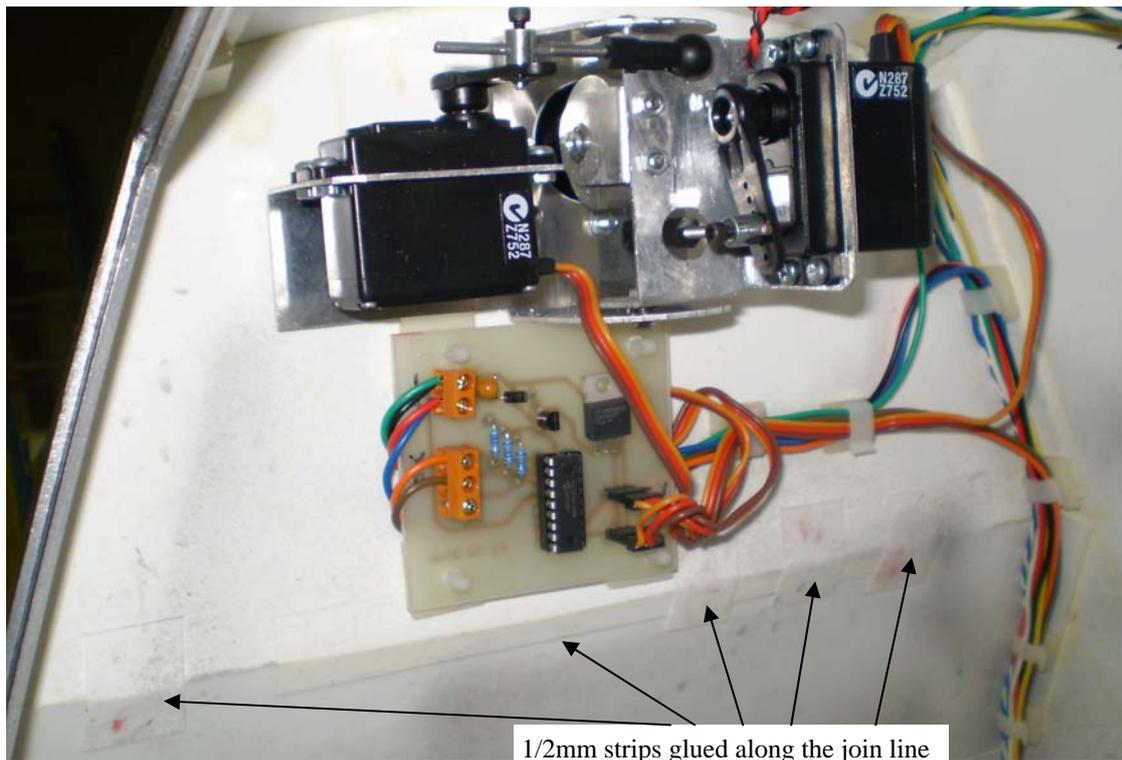
If it doesn't you may be building a different robot.



At this stage perform another square check on the body. After you are satisfied it is square, we can add some strength to the 90 degree joints with strips of 3mm styrene.

I used 1/2mm styrene to join parts that are at angles to each other, like the rear sections (see picture below). 1/2mm styrene bends around easily. I found narrow pieces worked better than a wide strip. These strips help connect the panels together as your chamfering may not be perfect.

This image shows the inside of my K9 body. You can see the side inset assembly and front inset assembly. Note the strips of 3mm styrene used to stiffen and strengthen the corner joints



That completes the Body. The only remaining component is the door, that will be a separate set of drawings and tutorials.

When I built my body, I did not have a separate door, I figured this would make the body stronger. However in the interests of accuracy and convenience I decided I needed one.

I actually cut the door out of the finished body, trimmed it up and glued in door supports afterwards. It took a day to cut the door out, working very carefully and slowly. While it can be done that way, I think the separate door build is a better idea.