



# Sci-Fi Metropolis

## 24" Jupiter 2 Kit

### Building Instructions



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# Sci-Fi Metropolis - 24" Jupiter 2 Kit

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## Document Information and History

The contents of this document are proprietary to Sci-Fi Metropolis.

Version	Date	Author(s)	Comment/Summary of Updates	Authorization
1.0	8/01/2005	Norman Sockwell	Draft	

# Sci-Fi Metropolis - 24" Jupiter 2 Kit

## JUPITER 2 BUILDING INSTRUCTIONS

Thanks for purchasing this, our first, kit. You will find this to be a cutting edge product, made from the finest materials. Some may not be familiar with the acrylic (plexi-glass) and ABS materials used, but they are quite easy to work with. Wash all resin parts with soap and water to ensure a good bond with the paint. Please keep in mind that the acrylic parts are strong, but are quite brittle. Also, if filed to an edge, it will be quite sharp and may cut you. Please use care. The following will give you an overview of how we construct our built-up pieces. Please note that all dimensions given are approximate. Due to the nature of some of the parts, there will be slight differences from kit to kit. Check for proper fit on all parts.

### ***EXTRA MATERIALS NEEDED***

For assembly you will need the following:

Super Glue, Super thin, if available....For use on the aluminum landing gear parts, and resin parts.

Ambroid Pro Weld.... Used on acrylic and ABS parts.

Five minute epoxy.... Used to attach the 'D' ring to the landing gear strut

Paints....This is left to the builder's preference. For the overall color, we used Odds 'n' Ends Aluminum spray enamel, by Plasti-kote, number 109S, and number B30, silver, for airbrushing. These colors are a good match for the original color. Check your reference sources for suggested colors for the interior.

Sheet plastic....Clear, Used for the main view ports. Regular sheet plastic used for supporting the aft edge of the interior floor plate. Other materials may be used for this, as well.

Aluminum Tubing....One each of 3/16 and 7/32, and two each of 1/4 inch sizes will be needed. These will be used for the landing gear struts. Brass tubing can also be used. It is stronger, but harder to work with. We used aluminum, with a wooden dowel rod inserted to provide extra strength.

1/8 inch Dowel rod (acrylic or ABS) ... Just a short piece is all that is needed. This will be used to make the 3 alignment pegs for the upper and lower hull rings.

Wire Coat Hanger.... Used to make the T bar for the landing gear strut.

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## *CONSTRUCTION*

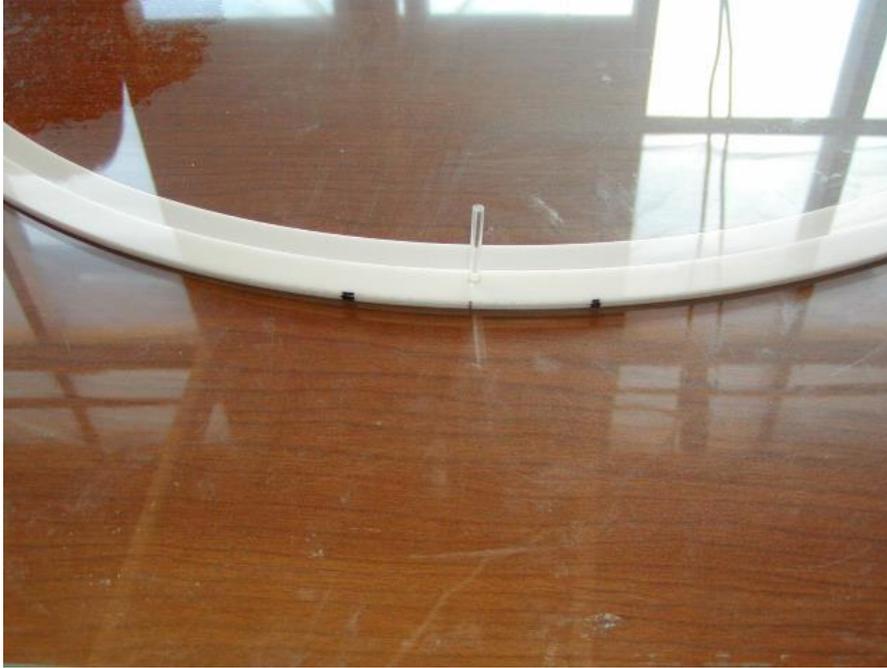
### **HULL**

Start off by sanding the edges of the upper and lower hull. See picture. This is where the acrylic rings will be attached. This can be best done by using contact cement to glue sand paper to a piece of plate glass. If hand sanding, use care to make sure that the edge stays even and flat.

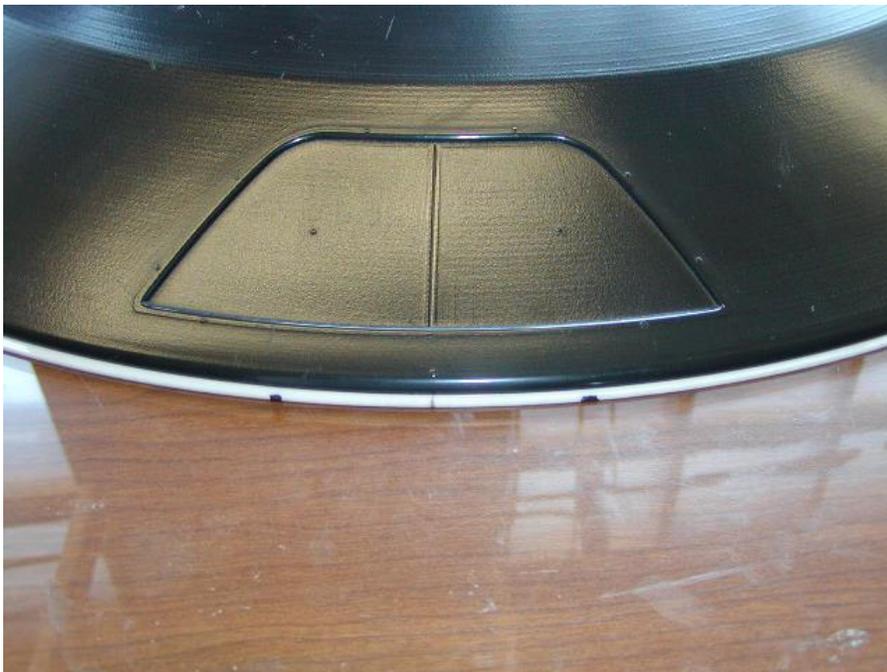


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Use the 1/8 inch rod and align the upper (narrow) and lower (wider) rings. Make a mark on both rings. This will be used as a guide to attach the hull halves. See picture.



Attach the lower ring to the lower hull. It is best to do this on a glass table top to ensure that the ring stays true and flat. Center the hull half on the ring aligning the mark made earlier with the center of the lower view port. See picture.



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Now attach the 1/8 inch alignment pegs. The ones used here are of acrylic rod which can be found at most hobby and craft shops. See picture.



Attach the upper hull half to the upper ring. Align the center the hull with the mark made on the ring half. Make sure to center the hull half on the ring. Align the mark with the center of the main view port. See picture.



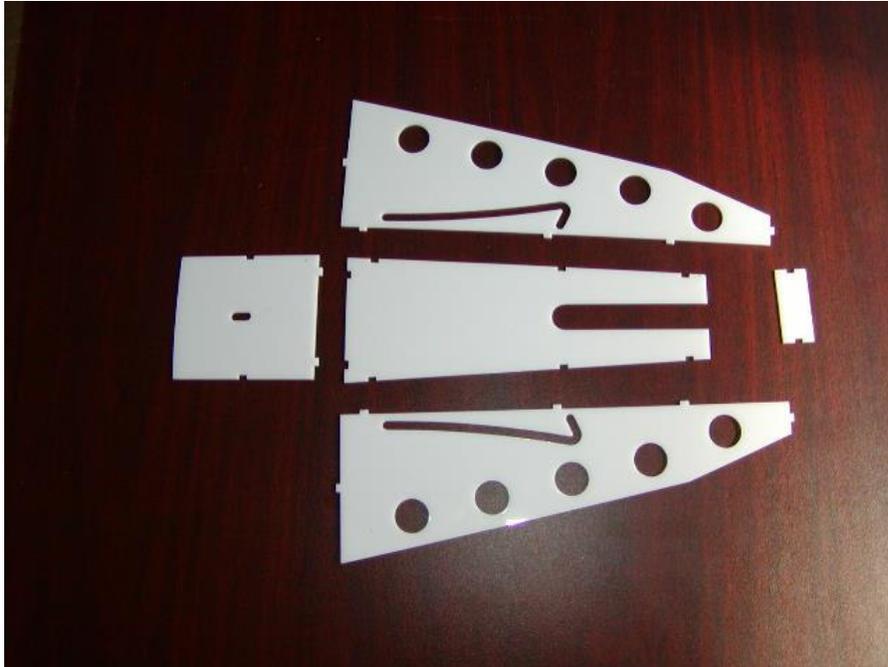
Cut out and trim the openings for the landing gear and the main view port. Make outline drawings of the main view port openings after they are finished. These will be used to cut out clear parts later.

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## LANDING GEAR AND GEAR WELLS

Assembly for one gear and well is shown.

Locate the parts for the gear wells, as shown. See picture.

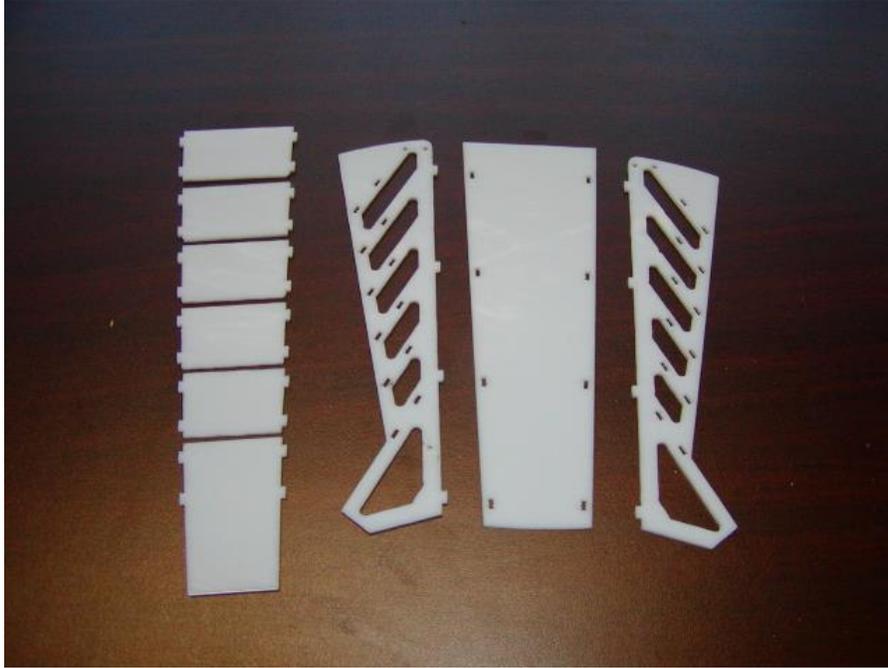


Glue the well walls together, using the well top to make sure that they are square. Do not attach the well top yet, as it will be easier to assemble the struts without it in place. See picture.

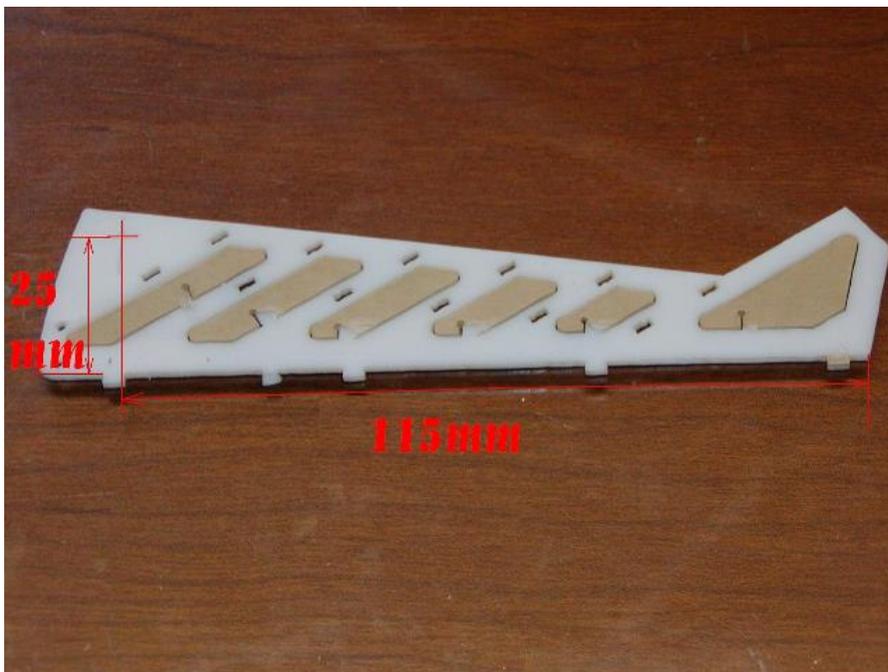


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Now, get all the parts for the landing gear, see picture. Note that there is a slight difference in the steps and they have to be assembled in the correct order.

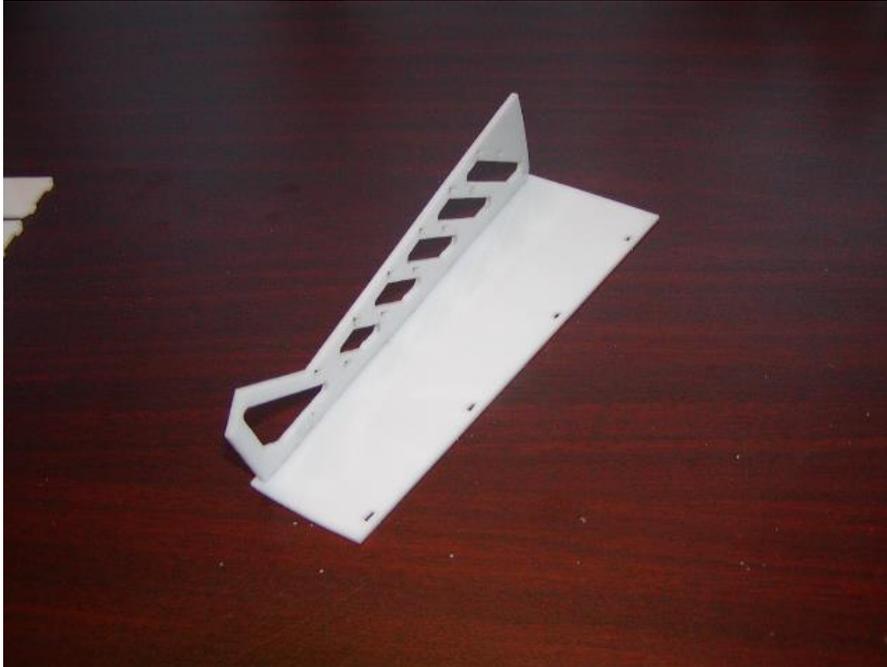


Look at the step side walls. You will need to check the location of the holes. If you are planning on installing the spring loaded retract mechanism, you will need to drill holes in the location shown on all the side walls.



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Attach one side wall to the back plate as shown. Make sure that it is square.



Locate all the steps to the side wall, and then attach the other side wall, trapping the steps between. Now apply glue to all the joints. See picture.



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The two small rectangular plates are installed now. One has two slots in it, the other is plain. The side ends will have to be filed slightly to fit between the two side walls. Attach the one with the slots first, setting it flush with the wall edges. The plain one is used as a backing plate. Now attach the two small 'D' rings to the plates. See picture for the assembled configuration.



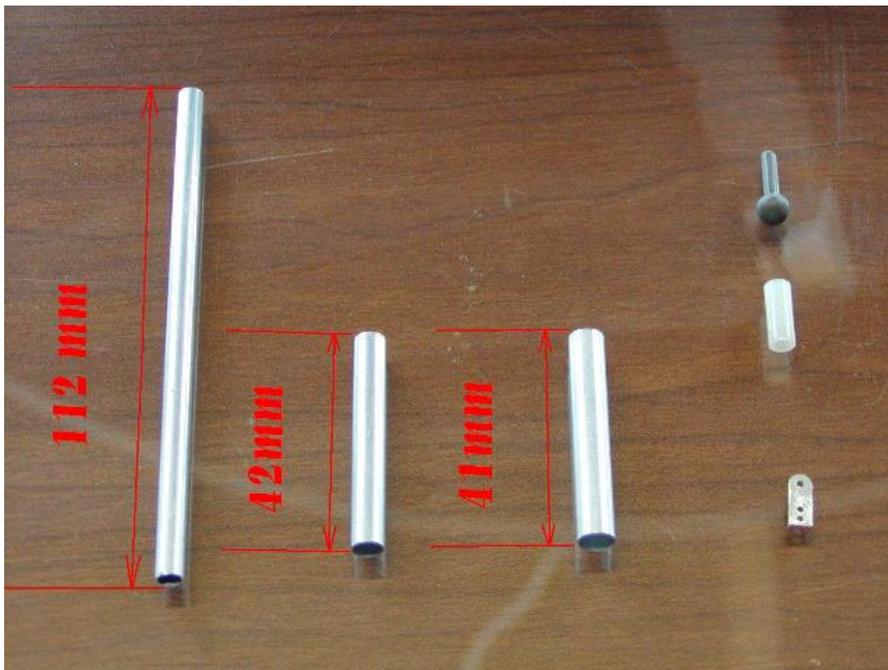
Ensure a good glue joint on these parts as this will be the connecting point between the landing gear and the gear strut.

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Now attach the assembled gear wells to the lower hull half. Use pieces of sheet plastic to close off the round holes. Glue the sheet plastic to the side walls as well as to the hull. This will strengthen the joint. See picture.



Now, cut the tubing for the landing struts. Cut three of each piece. 3/16 tubing, 112mm long. 7/32 tubing 42mm long. 1/4 tubing 41mm long. Also shown is the swivel ball and bushing for the foot pad, and the 'D' ring that attaches to the gear. These parts and the lengths are shown in picture.



Slide the two short pieces of tubing over each other. There should be 1 mm of the smaller diameter tubing sticking out of one end and the other ends should be even. Use a small amount of super glue to bond the

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two together.

Measure 31 mm from the even end and make a mark. This is the point that the hole for the aluminum 'D' ring will be made. It will be about 2 mm wide and 4 mm long. The 'D' ring will slide into the tubes and rest against the far side.

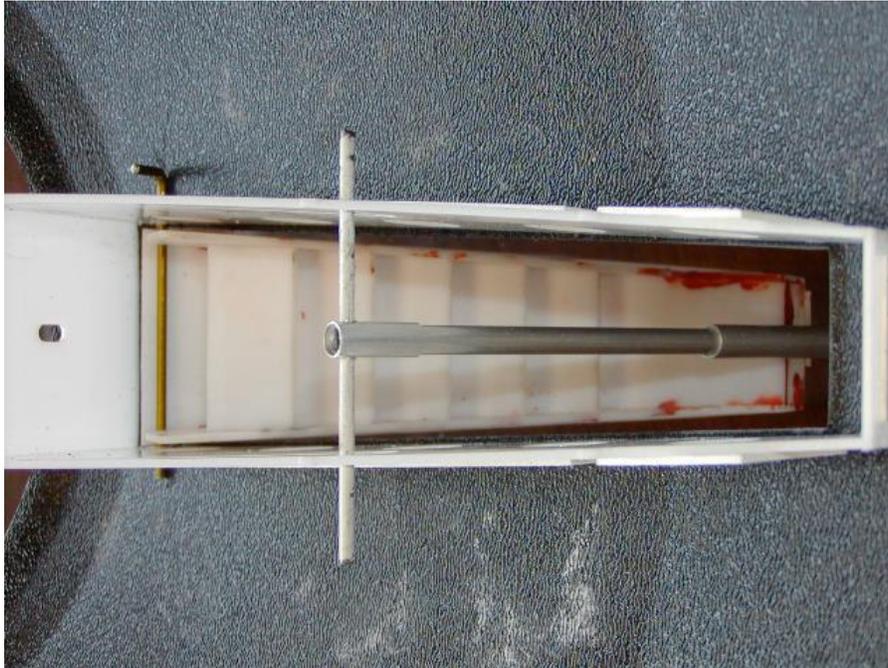
Now slide the longest tube into the two shorter ones. It should rest against the 'D' ring. Take the swivel ball and bushing and put them into place as shown. Trim as needed to get the proper lengths. Picture shows the lengths and assembled configuration. Remove the 'D' ring and mix up a small amount of 5 minute epoxy. fill the space between the long tubing and the swivel ball bushing. Insert the 'D' ring before the epoxy sets and make sure everything is aligned properly.



Measure up 115 mm and drill a small hole through the top of the strut. This hole should be at a right angle to the 'D' ring. This will be for the T bar, made from a piece of wire coat hanger.

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Pictures show the assembled gear and strut. The pivot pin is installed through the well walls. This hole is about 10 mm from the inner end of the well wall. It is drilled at the bottom of the wall, next to the hull. The swivel ball will just snap into the foot pad. We drilled a small hole in some of the round pieces left over from the well walls. These keep the gear from slipping out of the well tracks. The pin to attach the strut to the gear on our build ups is made from styrene. This will shear before the acrylic parts do, hopefully. You can make your pin out of whatever material suits you best. Most of the weight of the kit is carried by the strut; the gear just holds it in position.

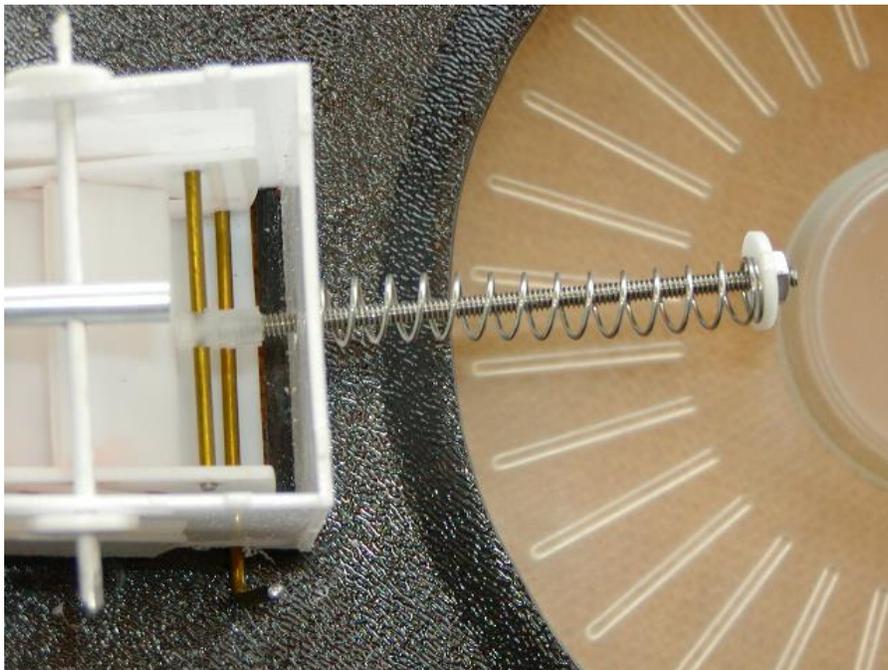


When you're happy with the operation of the gear, install the top of the gear well. It is best to paint the interior of the wells before attaching the top.

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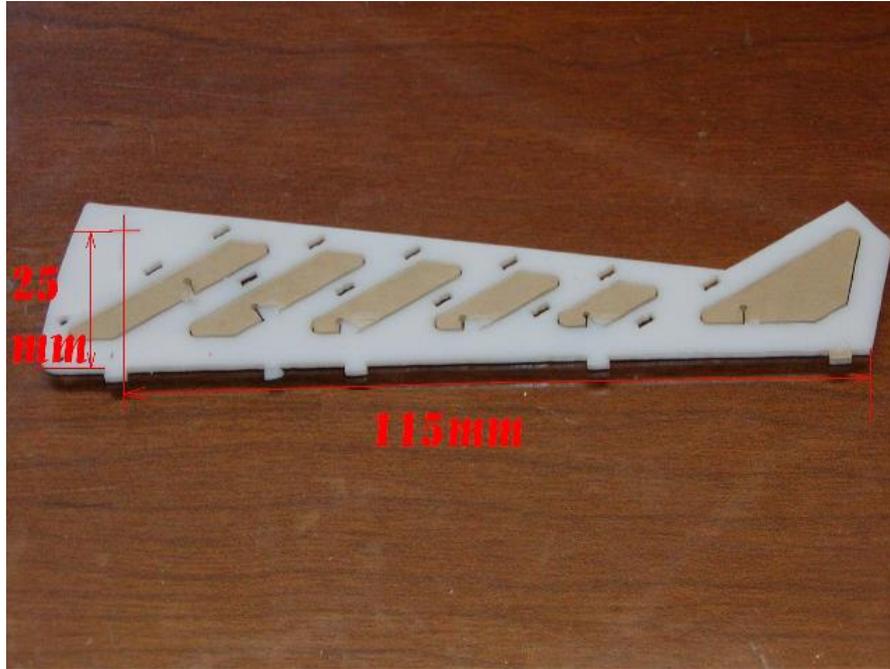
### SPRING LOADED RETRACT MECHANISM

Pictures show the mechanism we use on our build ups. This holds the gear in either the up or down position with only one spring. It enables the ship to be picked up and handled without the gear flopping around.



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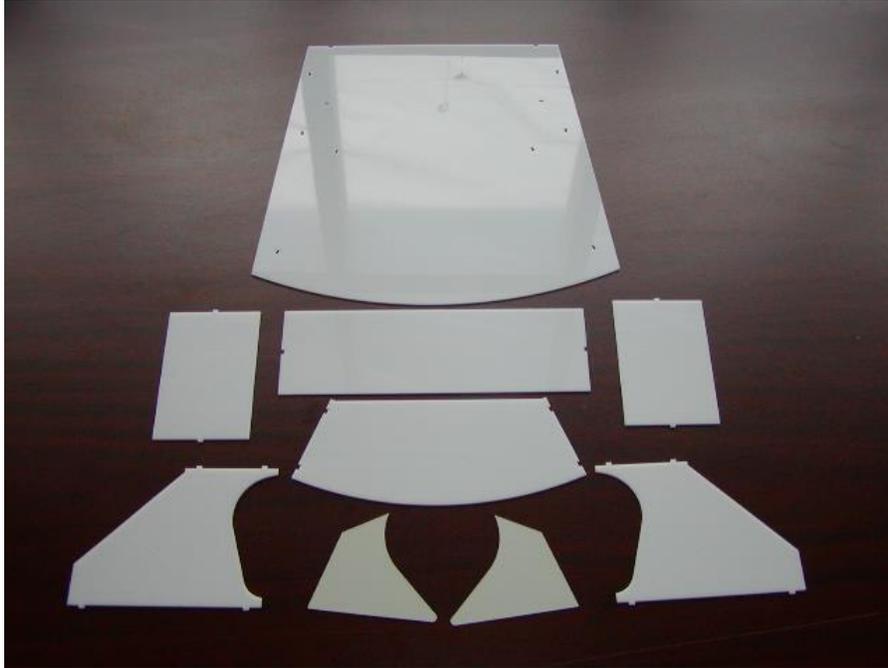
The T bar is fitted to the upper holes in the side walls as shown in picture. The rest is 4-40 all-thread, 70 mm long, and some fittings. The springs were found at a local hardware store. Change this to fit what parts you come up with.



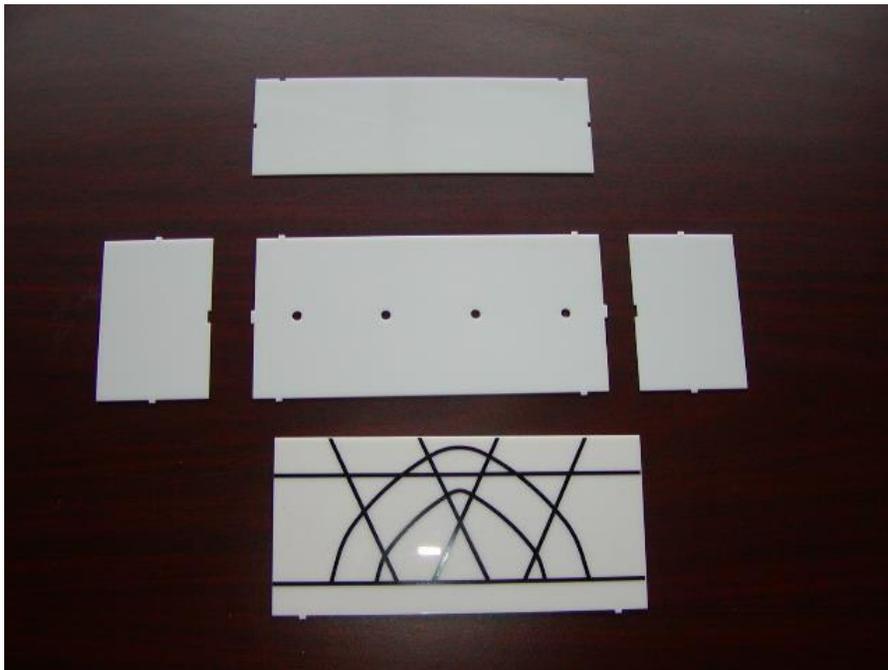
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## INTERIOR

It would be best to paint these parts prior to assembly. Picture shows the acrylic parts for the interior,

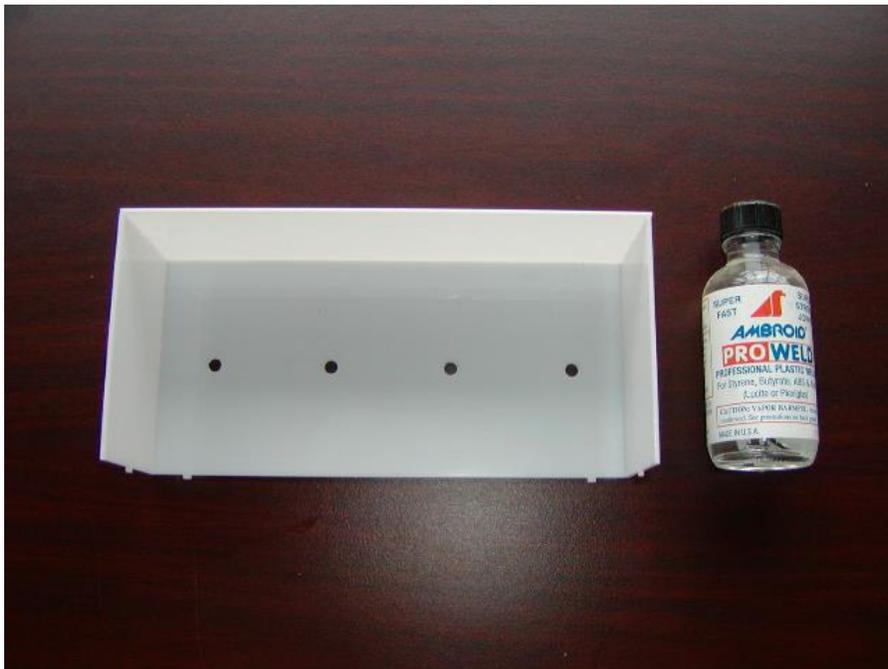
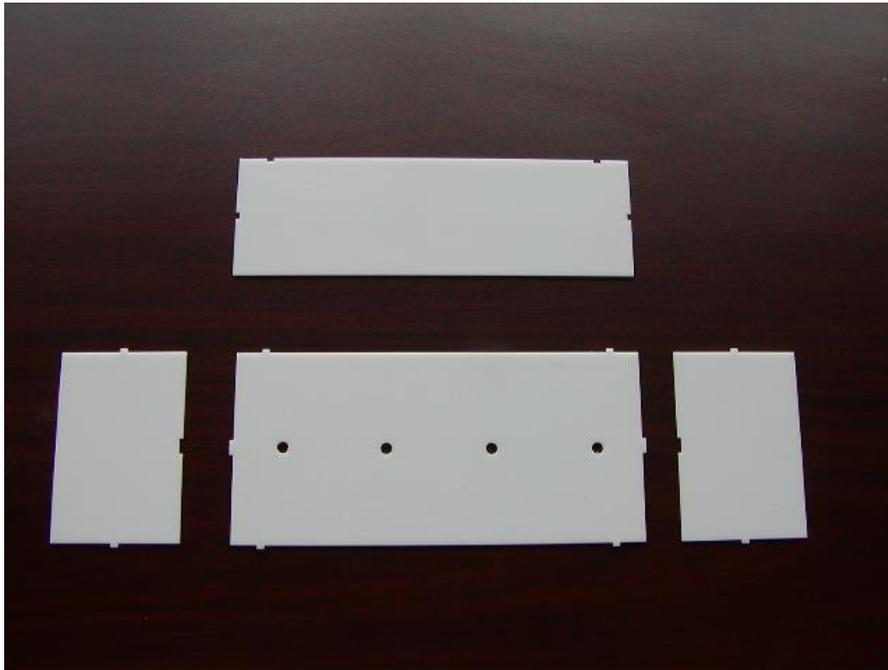


and picture shows the parts for the interior back wall, with the black lines, and light box. Note the differences between the light box pieces as they are similar to some of the other interior parts. The light box back piece is drill for LED's, if you decide to light it.



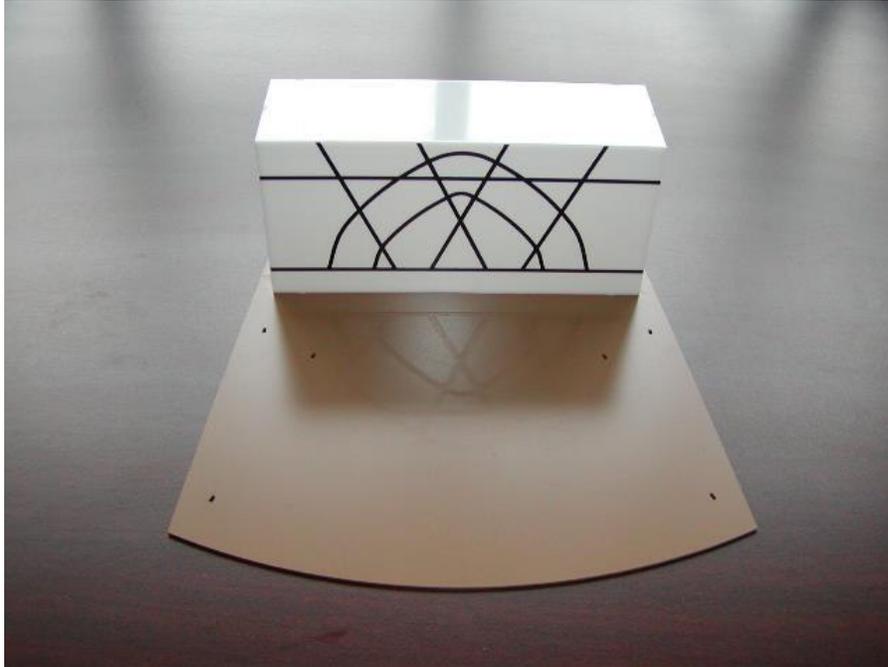
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Pictures show the parts and assembled light box.

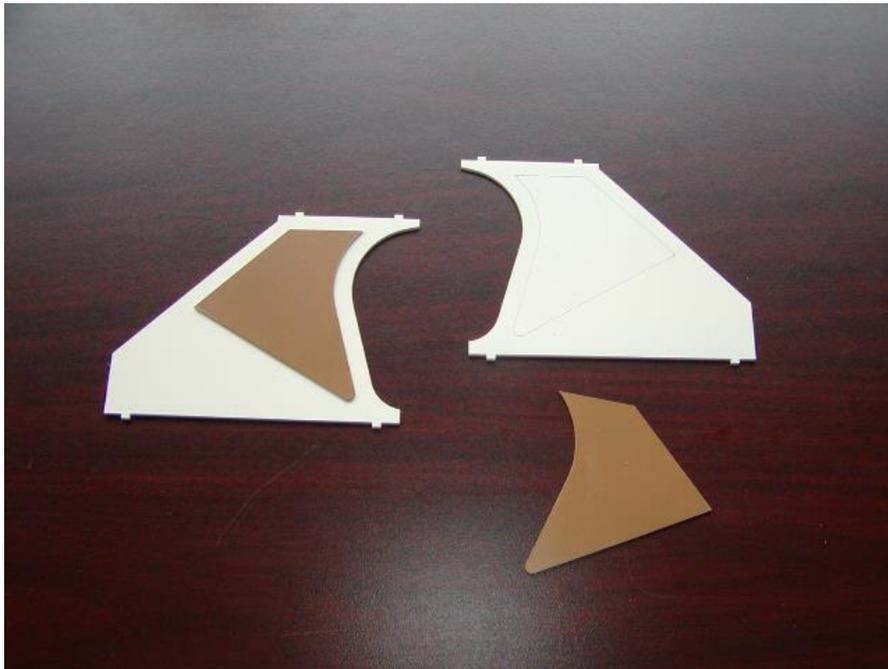


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Attach the interior back wall and light box to the interior floor plate, see picture.



Locate the interior side walls and assemble as shown in picture.



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The side walls are attached to the floor plate and the ceiling is installed, see picture.



The final plates are used to close off the rest of the interior. These were painted a dark gray primer, and then installed, see picture.

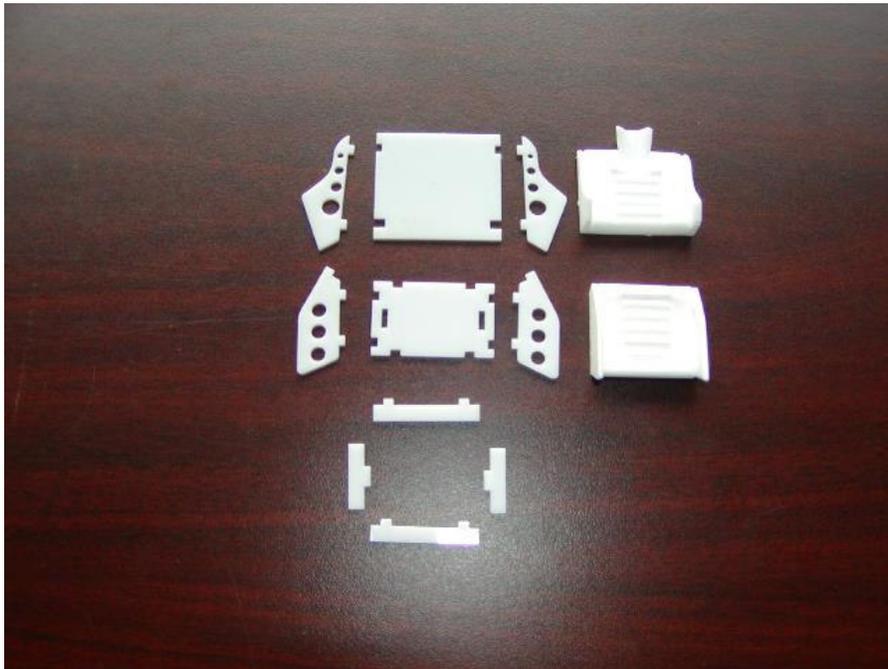


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Picture shows the finished interior plate, so far.



Now for the seats. Picture shows the parts for a seat.

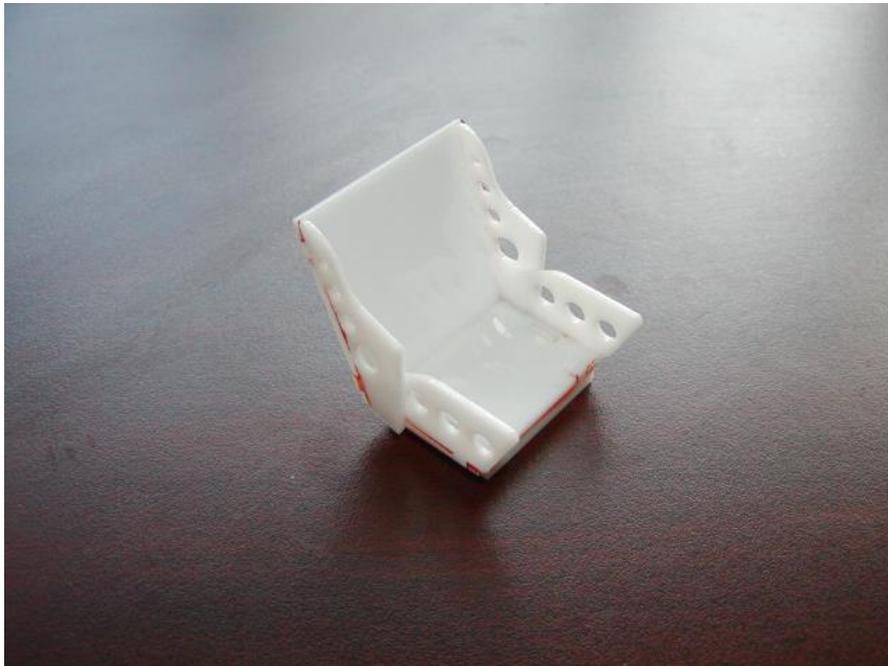


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This is laid out as they are assembled. Picture shows the assembled bottom and back,



and picture shows the completed frame. The resin cushions are painted and installed after the frames are painted.

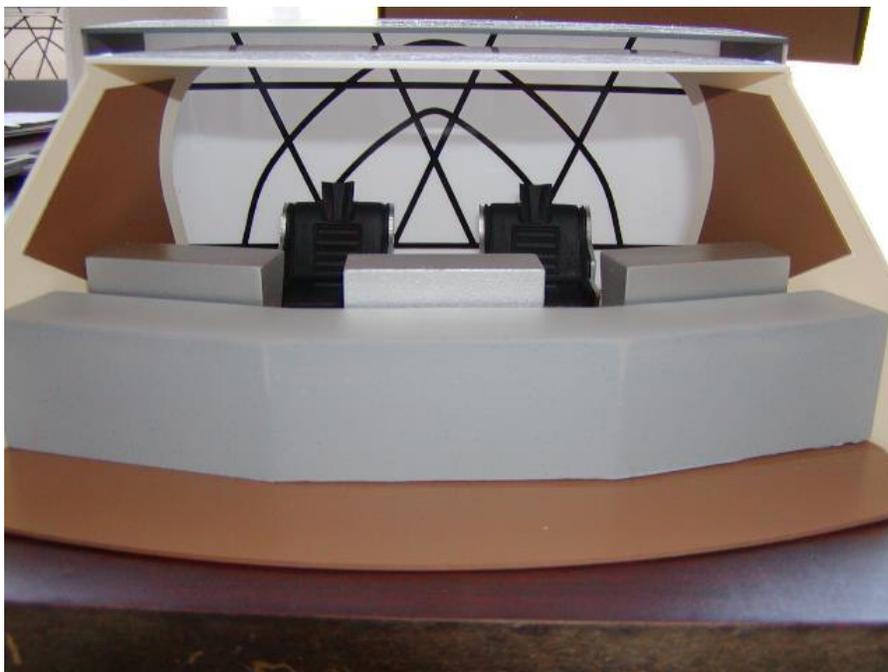


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Picture shows the painted console and computer units. The console has markings showing the correct placement of the computer units. Pieces of sheet plastic were used to fill the panel holes. These panels were left open so that you may detail them as you wish.



Picture shows the completed interior unit. The console is placed up against the side walls and should line itself up. The seats are placed as shown.



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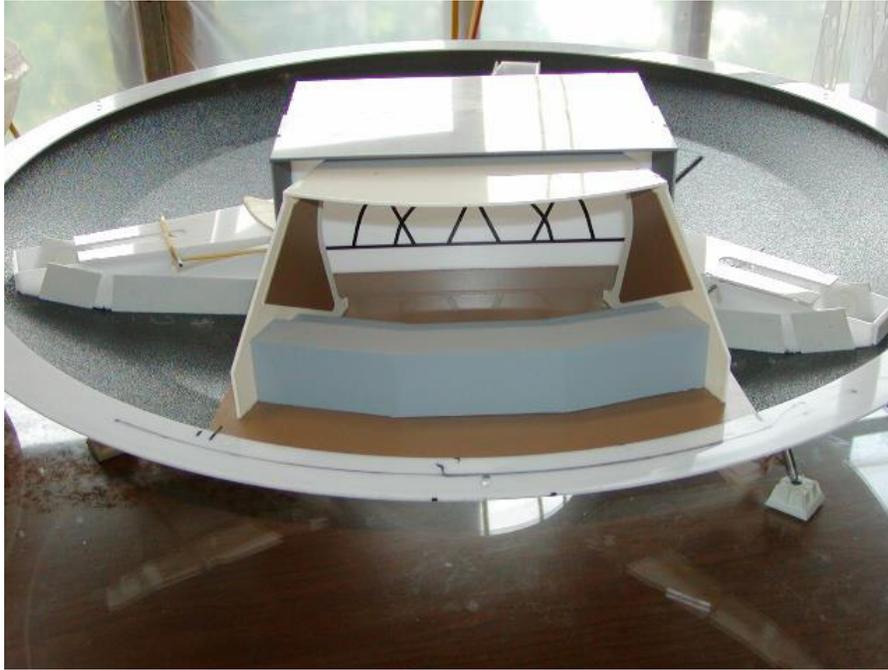
## FINAL ASSEMBLY

Locate the small square pieces included with the landing gear and attach them to the under side of the ring on the lower hull. Make sure of a good bond, as this will be supporting the forward part of the interior. See picture.



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Pictures show the interior in place with a brace made from scraps of sheet plastic for the back end. Do not attach the interior yet.



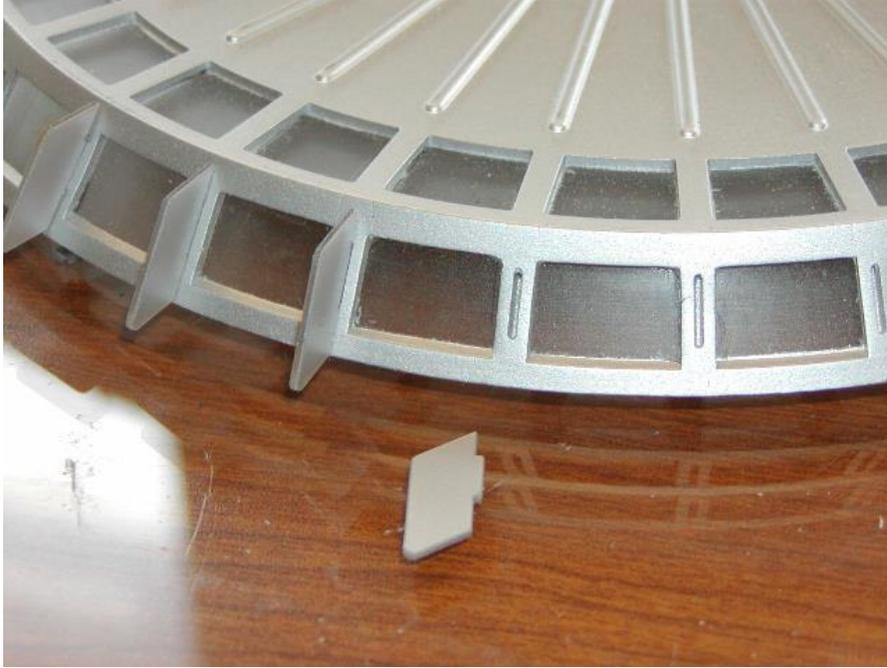
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with the interior in place, install the upper hull half and check the placement of the interior. Make sure that it's lined up with the main view port. Pictures show this. When satisfied with the placement, remove the upper hull and affix the interior. Using the drawings made earlier, cut out clear sheet plastic for the main view port. Make the pieces slightly over sizes. They can be attached with epoxy, or some sort of white glue. It would be best to attach them with an adhesive that remains flexible. This will keep them from popping loose when the upper hull flexes.



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The fins for the fusion core are glued into the small slots between the small windows. It is best to attach these after masking and painting. Picture shows this. Use very small amounts of super glue to mount the fins. The fusion core can be mounted in any of several ways. If you plan on installing lighting at a later point you will want to make it easy to remove the core. Drill holes and attach with small screws. Use what method works best for you.



Cut out and attach the top dome to the center of the upper hull. Check your reference pictures to determine the height of the dome.