

## Introduction

Congratulations on purchasing the Spirit Goggles Afterlife cosmetic upgrade kit that is used to your Spirit Halloween Light-Up Ghostbusters Ecto Goggles look like the goggles used in the Ghostbusters Afterlife movie.

A Spirit Halloween Ecto Goggles (not included) shown with the Spirit Goggles Afterlife Kit installed:



# Installation

## *Parts Identification:*

The first step is to remove the components from the bags and make sure you know where each item is located.

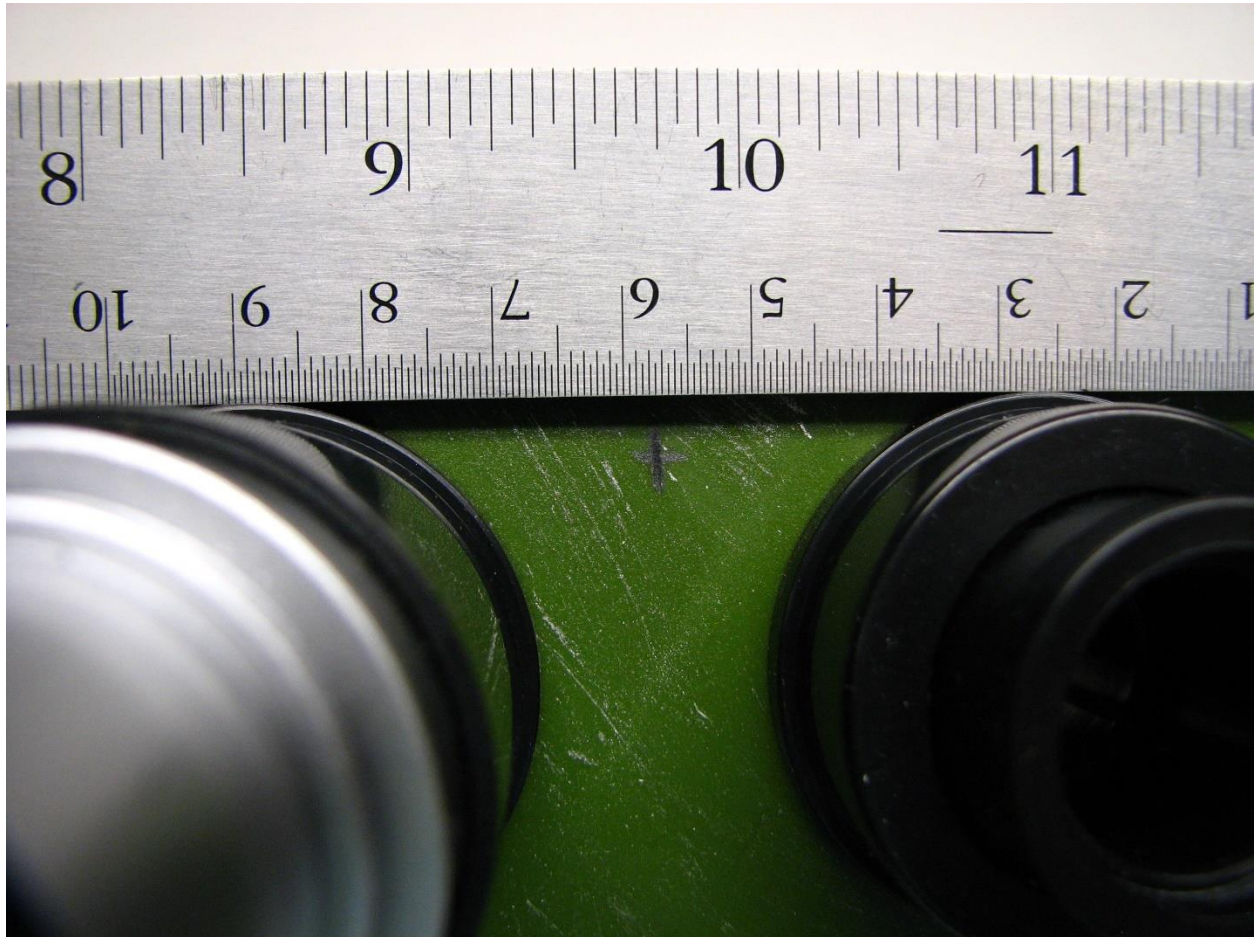


The Spirit Goggle kit contains multiple parts to be installed on the Spirit Ecto Goggles.

- 1) 2 – Large Front lens rings. They look identical but one is slightly larger than the other
- 2) 2 – Small Front Lens Rings with mounting hole for handle (#3), two different sizes
- 3) 2 – Handle for Small Front Lens Ring (#2), no hole in the top of these parts so are different that the threaded post (#11)
- 4) 1 – Glow-In-The-Dark front face button
- 5) 1 – Left side base
- 6) 1 – Right side film opening
- 7) 1 – Right side top
- 8) 1 - Left side display head
- 9) 3 - Lens pieces, 1 clear acrylic with brown protective paper, 1 black acrylic with brown protective paper and 1 diffuser material
- 10) 8 – Small screws, 3/8” long, 4 black, 4 shiny
- 11) 2 – Probe pieces for Right side top (#7): one threaded post and one black screw that is 1/4” so is shorter than the 4 black screws included in item (#10)
- 12) 1 – lenticular lens for Right side top (#7) with blue protective tape

*Installing the center button:*

The front face button (#4) that was made with glow-in-the-dark material. Mark where you want to place the front face button. It should be centered between the two main lenses, but the height is somewhat arbitrary. Here is where I place mine, about 5.75cm from either side and down about 0.5cm from the ruler sitting on the two lenses:



Drill a 5/16" hole, test fit the part and then put a small amount of glue in the hole edges (I used super glue) and hold the part in place.





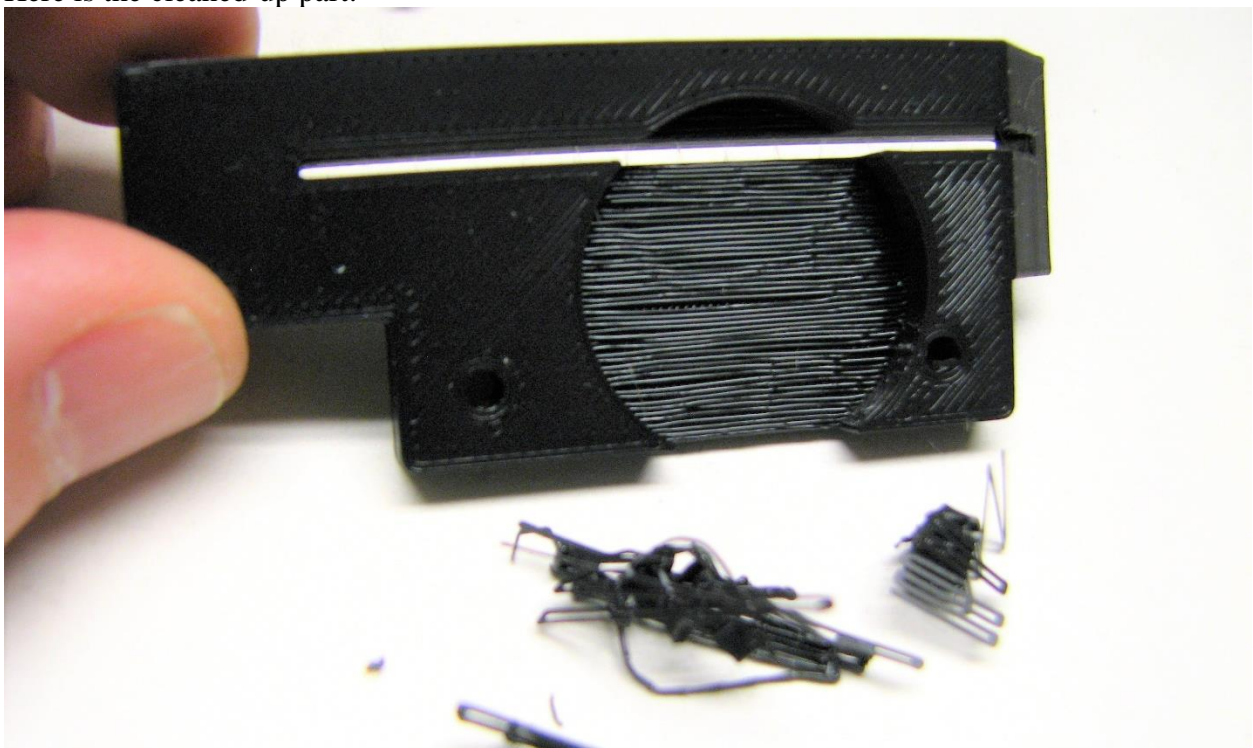
*Preparing the black 3D printed pieces (#5, #6 and #8):*

Several of the black 3D printed pieces need to be cleaned up before you place them on the goggles. To print the pieces some additional scaffolding is added that you need to remove that. You will also need to perform some cleanup/smoothing of edge faces to make sure the parts will fit together smoothly.

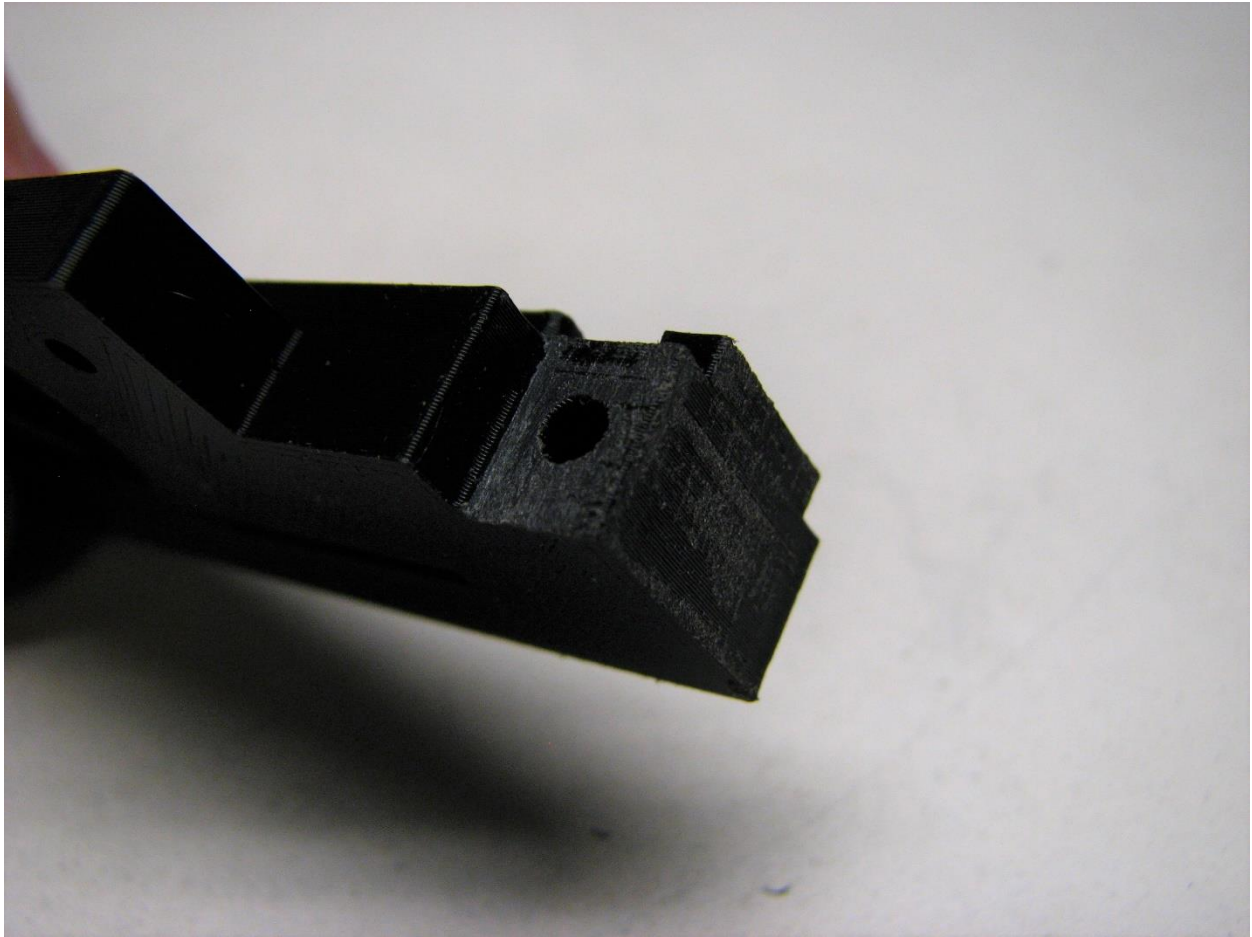
The bottom side of the right-side film opening (#6) has a couple of places on the bottom where scaffolding needs to be removed. I like using pliers to grab larger chunks of the scaffolding and pull it from the part. See the final part to know where the scaffolding is and what portion of the part needs to stay (so don't grab the part you want to leave with the pliers!)



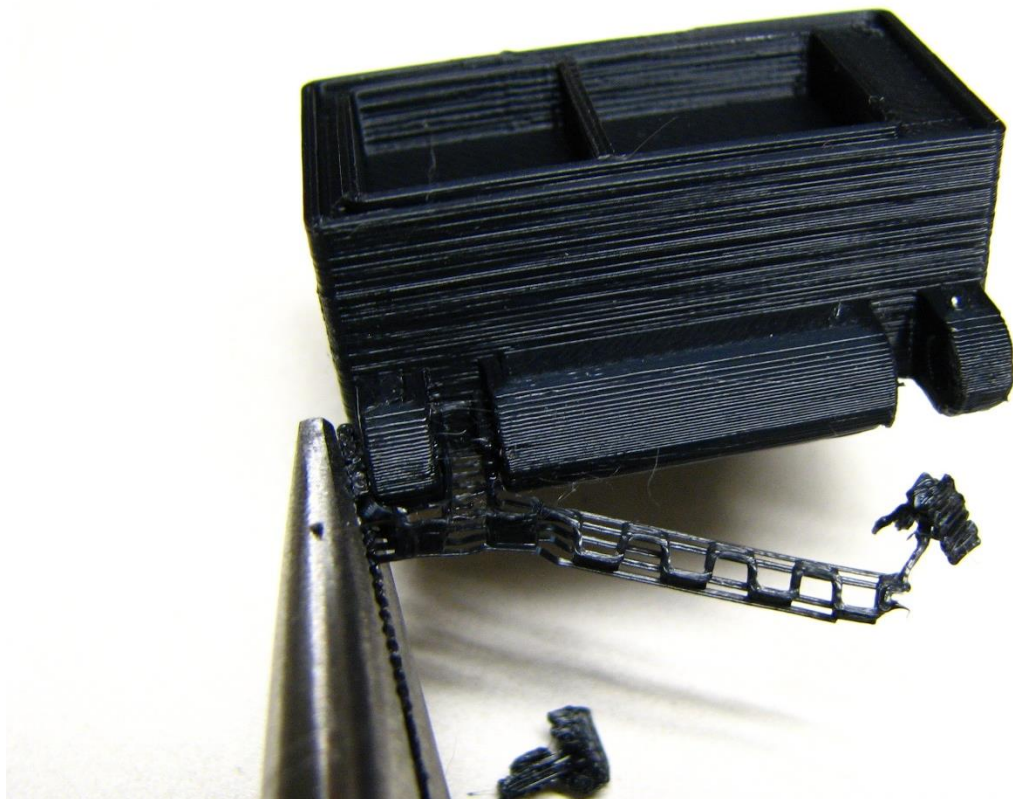
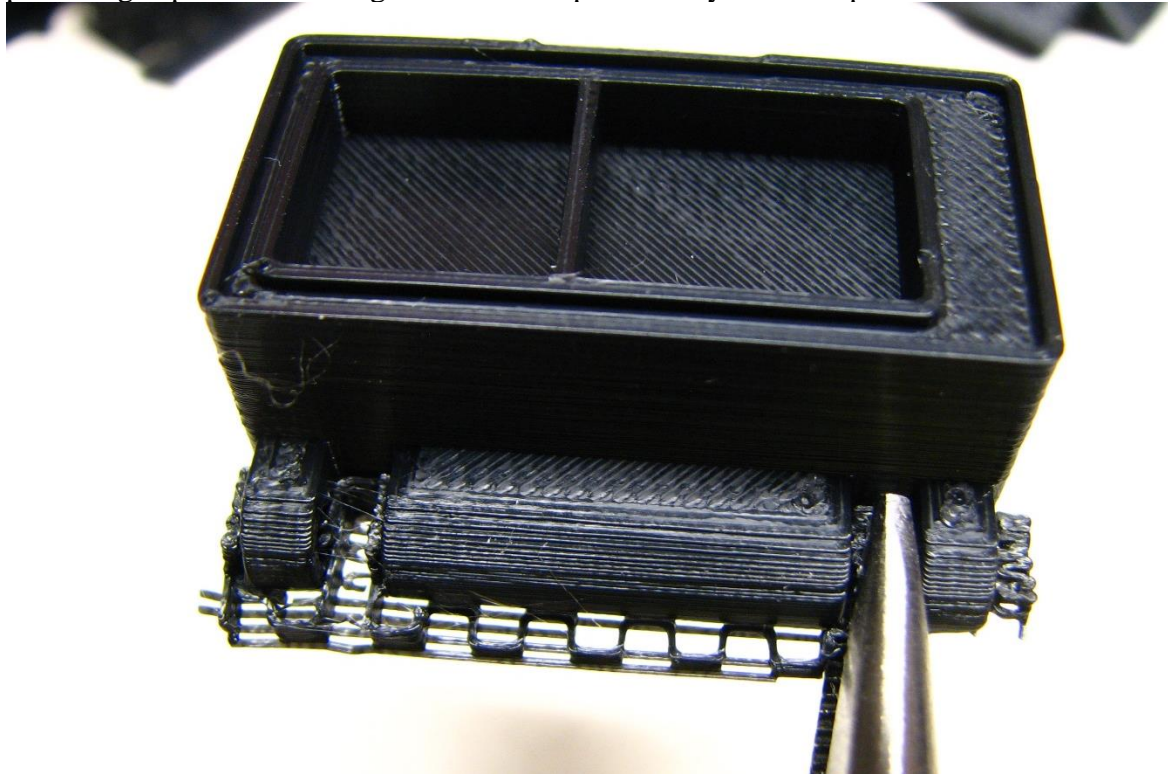
The slot should be cleared and there may be some extra material in one of the mounting holes. Here is the cleaned-up part:



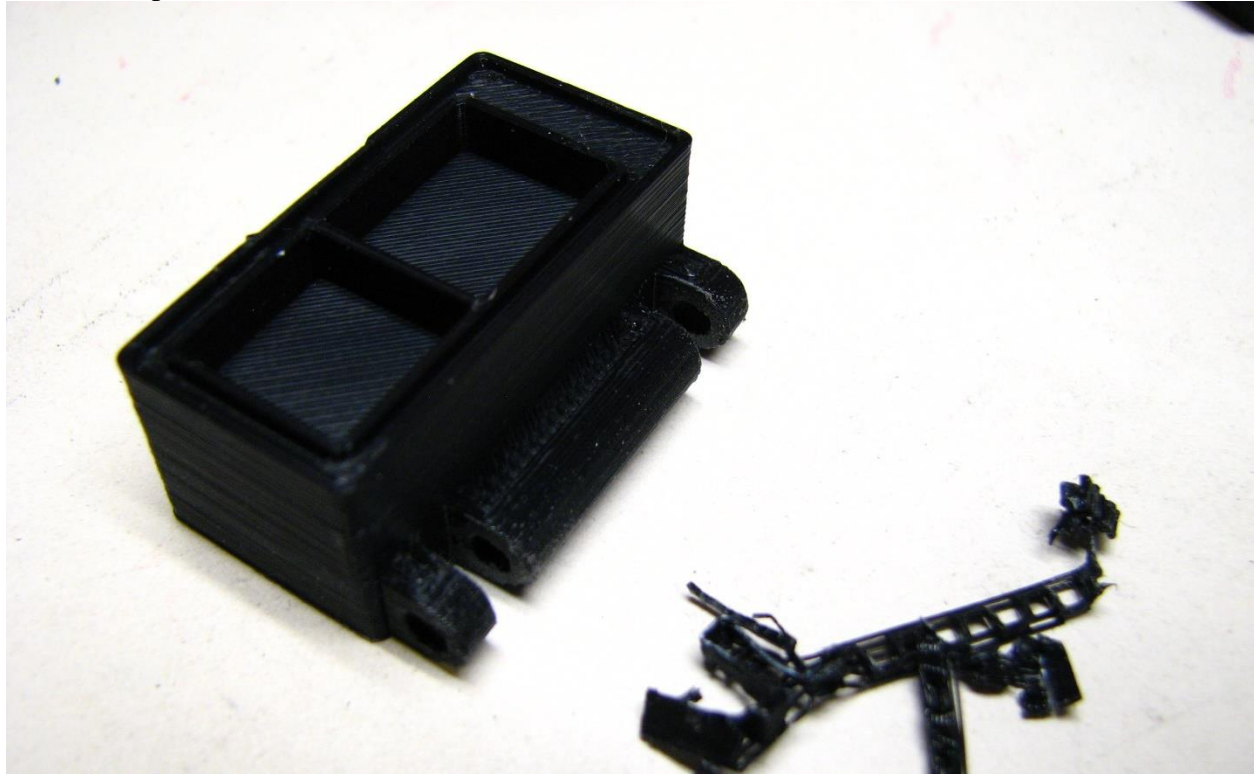
To finish up this piece, you need to lightly sand the surfaces that will be up against the right-side top piece. The two surfaces are on the right hand side of the image below and are the flat surfaces with a hole for a screw and the surface to its right, which will end up touching the bottom of the right side top piece (#7). Shown here after sanding:



The left side display head (#8) has scaffolding to support the pivot mechanism, both on the outside and the inside where the screws will be placed. Again, I like using some needle nose pliers to grasp the scaffolding and twist and pull it away from the part.

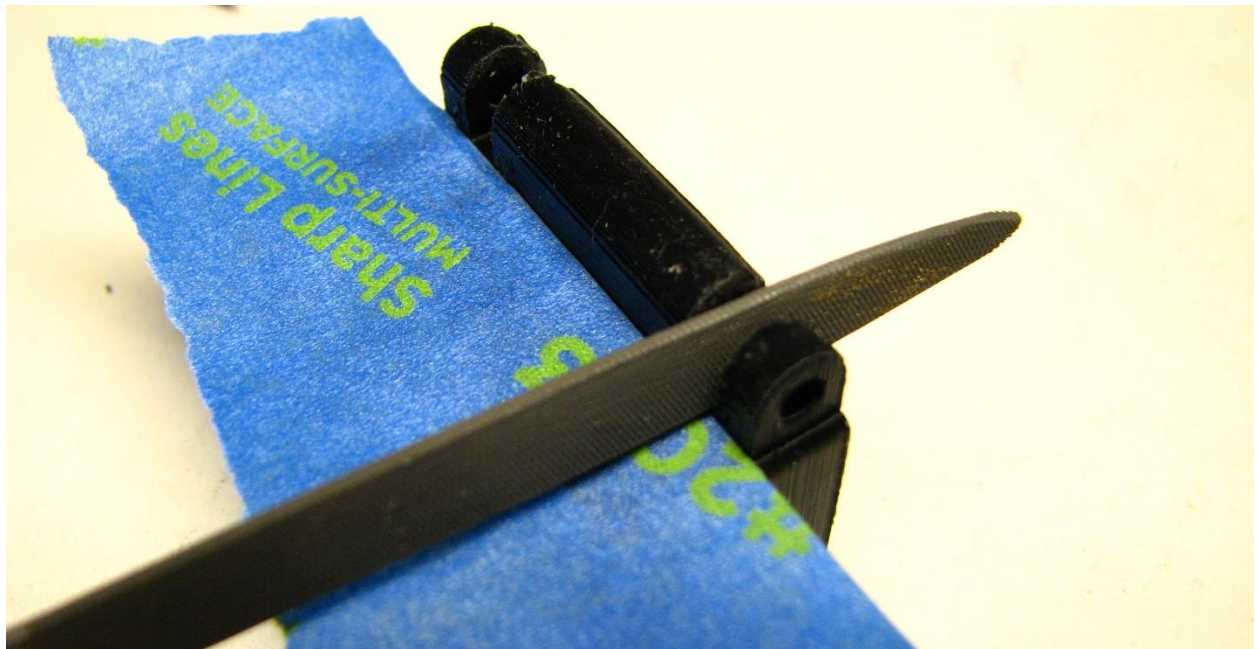


Here is the part when finished:



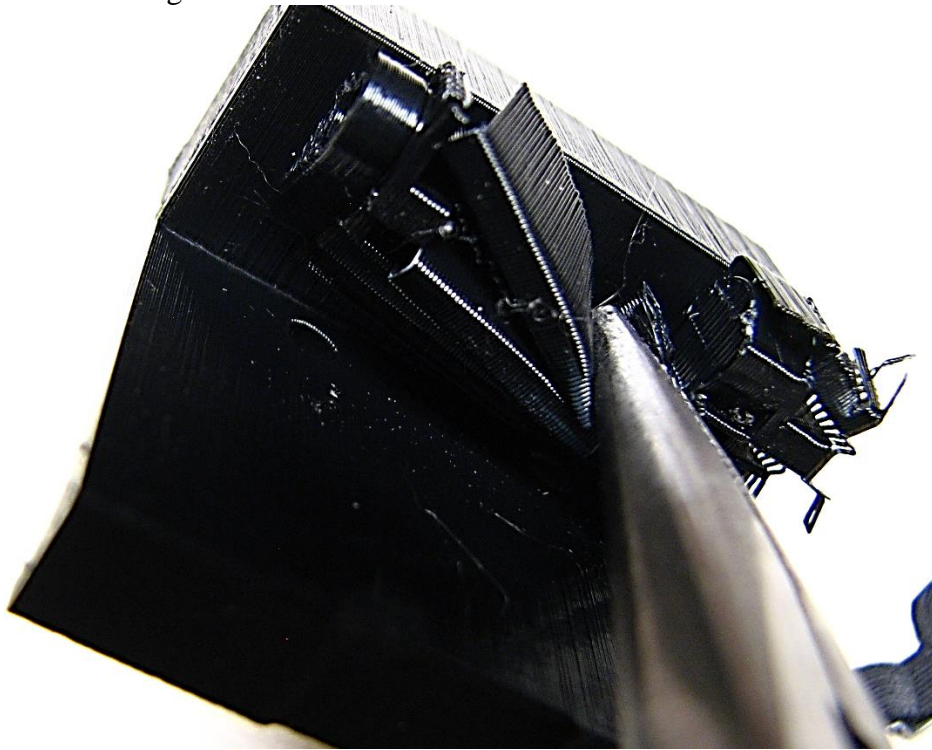
If you have some leftover scaffolding inside the holes, you can use a smaller drill bit to remove the scaffolding. Take care not to make the holes larger, since you do want to make sure the screws will hold the parts together. I use a 1/16" bit if clearing out is needed.

The base will have two support posts that go between the slots in the bottom of this part, so a small flat file can be used to make sure those surfaces are free from scaffolding remains. You can use some tape on the surface next to where you are sanding just to protect the surface that is not intended to be sanded.

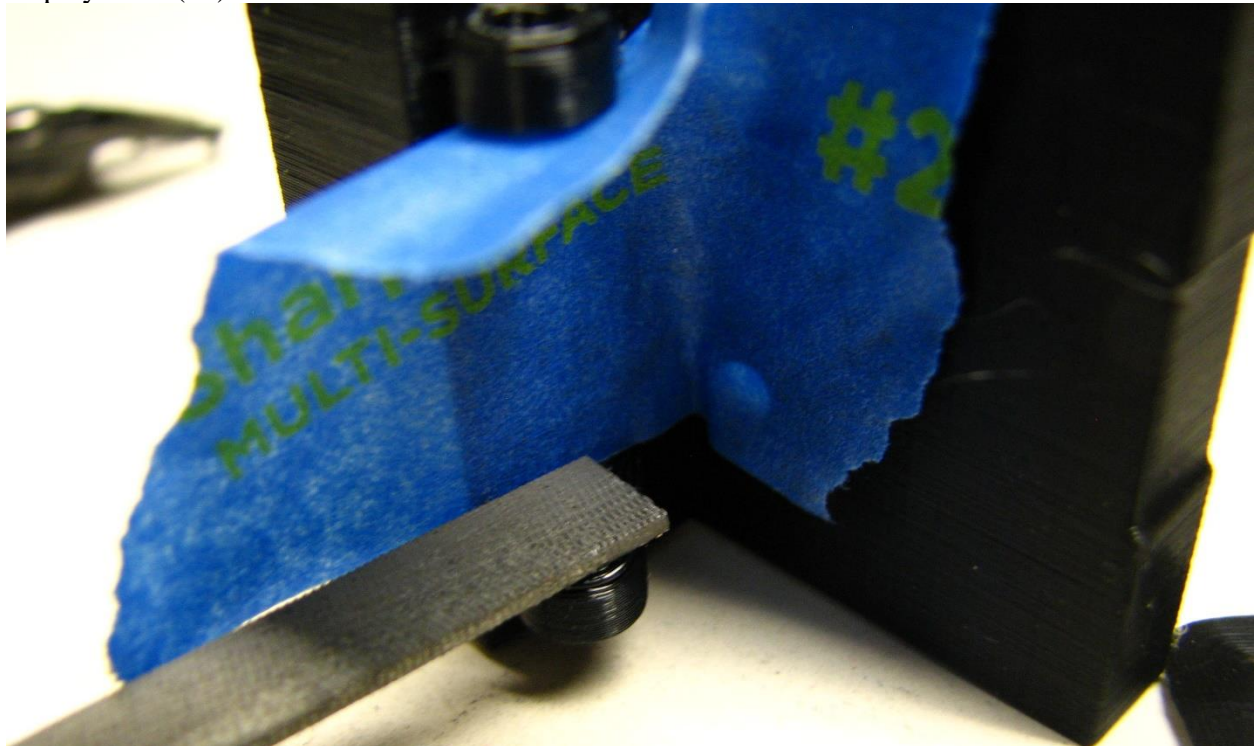




The left side base (#5) has two sections of scaffolding. Shown here the pliers are grabbing a large chunk of the scaffolding between the two supports and the twisting motion is removing a large amount of the scaffolding:



Remove the two sections and then sand down the two inside surfaces that will mate with the left display head (#8):



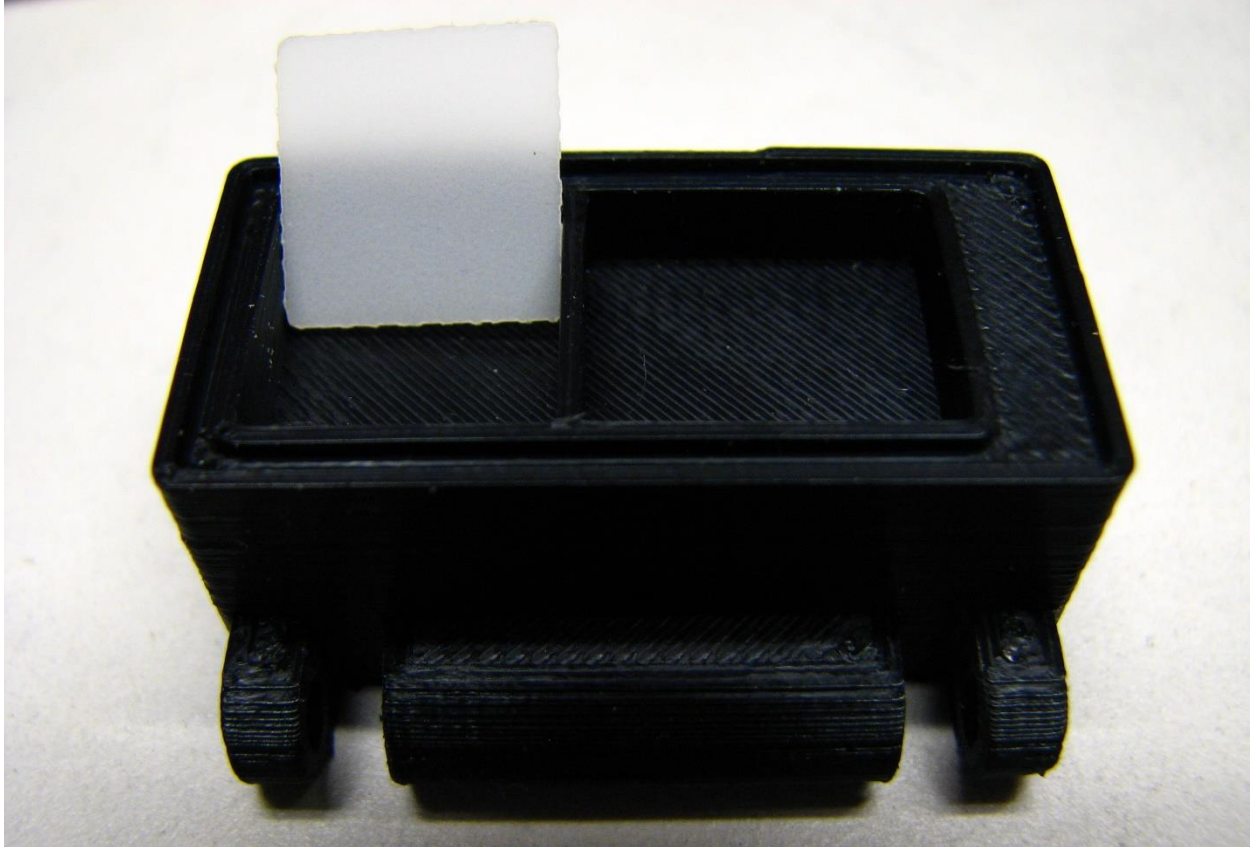
You can now try a test fit of the left side base and the left side head to make sure they will fit together. When properly aligned, you can see all the way through the hinge where you will later be installing the screws.



*Installing the left display head lenses:*

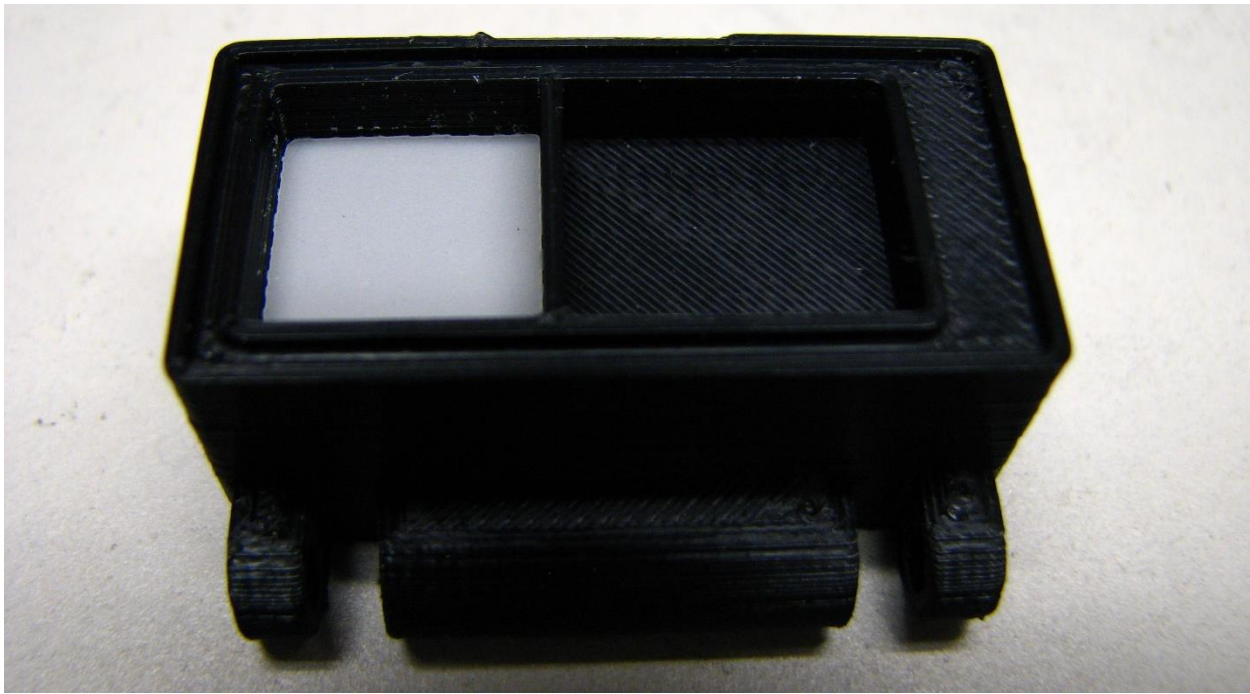
Remove the left display head (#8) from the left base (#5) so it is easier to work on. Next you will be installing the 3 lens pieces (#9).

The white diffuser and white acrylic will go on the left side. The hole appears to be square, but it is taller than it is wide. There are rounded corners on the left side and square corners on the right. The lens pieces also have two sides that are rounded and two that are square, but it is hard to tell them apart. You can test the parts to see which way they can fit by standing them up inside the cavity in the display head where they are to go. Once you press the material in place, it is unlikely that you can remove it without destroying it, so make sure the orientation is correct before you press it in place.



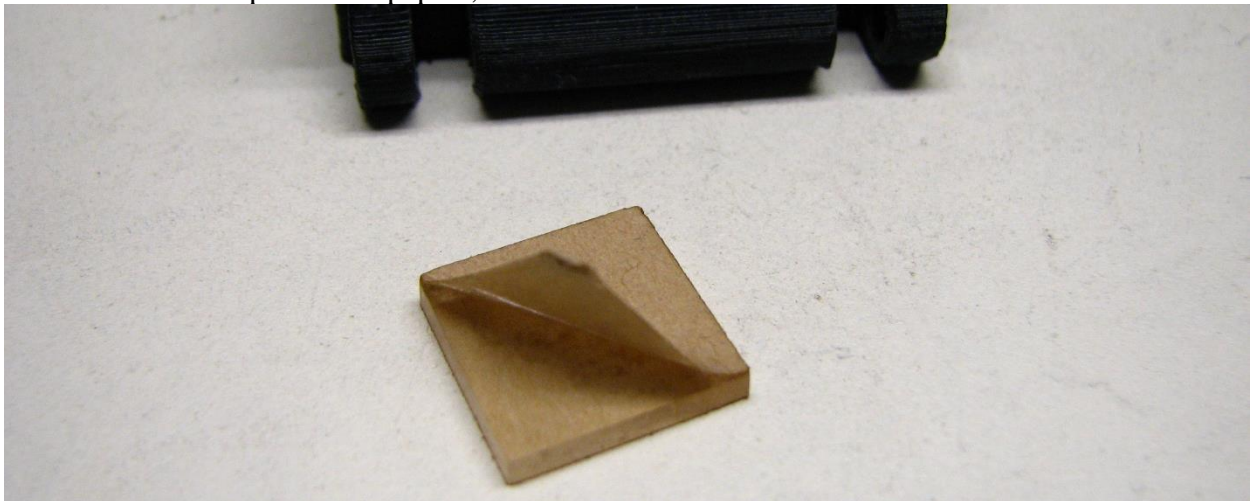
The diffuser has rough edges that you can lightly sand to make smooth if you so desire. This may make the part fit more loosely, so *may* be able to fall out. You could glue this in place, but it will be behind the clear acrylic so really has no place to go!

Gently press the diffuser material in place.



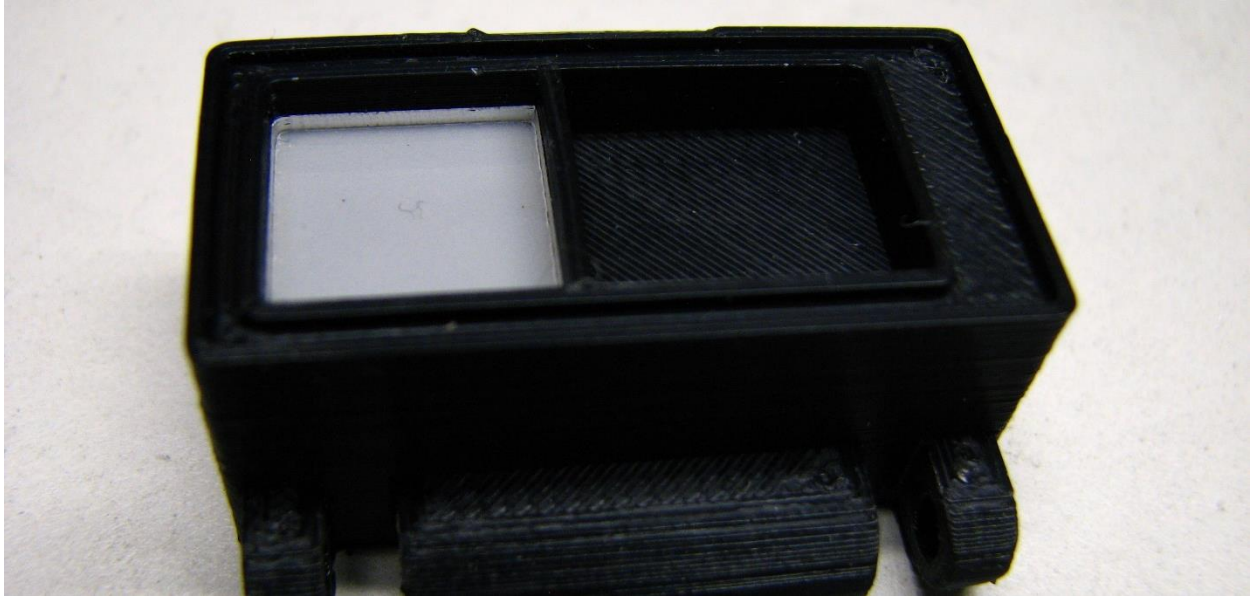
Next is the clear acrylic piece. Test fit the piece vertically in both directions to make sure you know which way to orient the piece. If one direction is too tight no matter which side of the acrylic you use you may need to sand the edge of the part to make it a bit smaller before you later press it into place flat against the diffuser material.

I did this without gloves on my first part and left a fingerprint on the inside of the acrylic so it could not be cleaned up. After that, I used gloves so I would not muck up the inside surface! Peel off the brown protection papers,



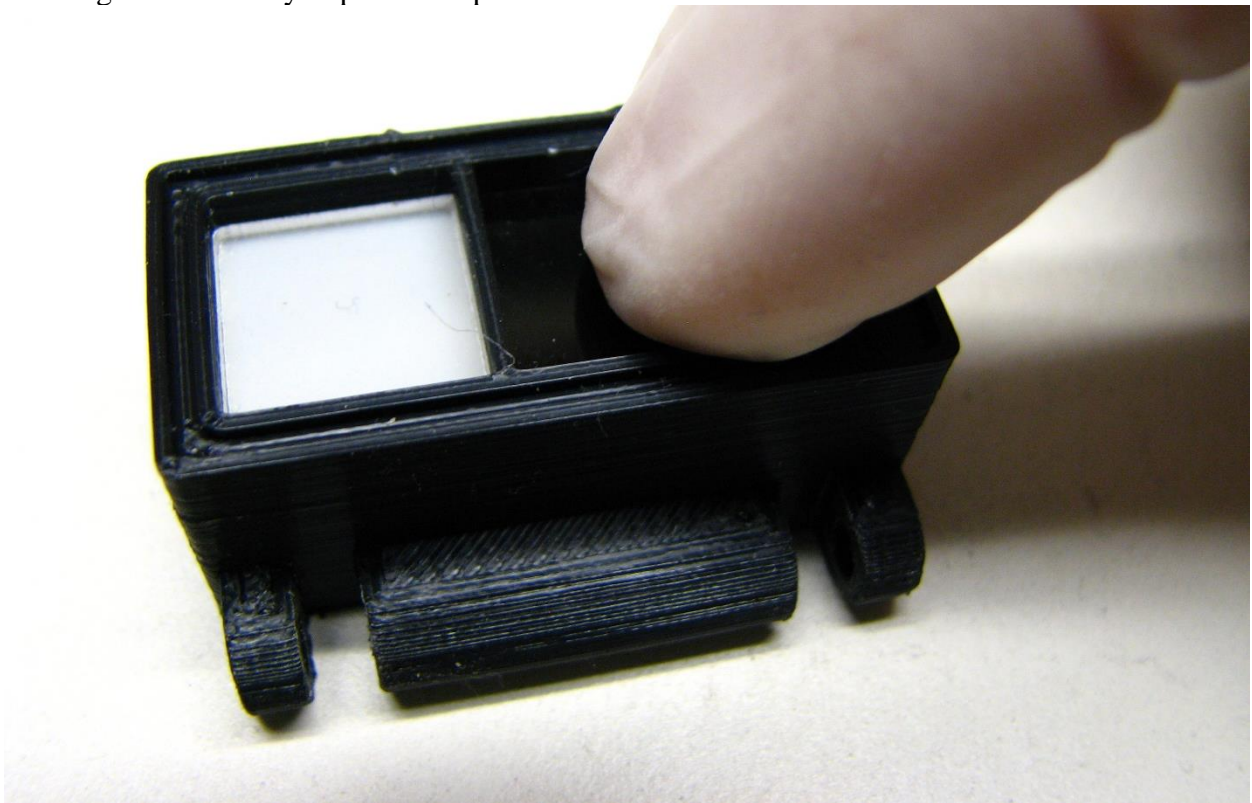
get the orientation correct, and then press into place. If you want, you may add some glue along the walls in the corners, but it does hold very securely even without the glue. It may be nearly impossible to remove, so you do need to decide before you place the part in the left-hand side over the diffuser paper.

With the clear acrylic in place:



Do the same with the black acrylic piece: test fit by placing it vertical in each direction to make sure it is not overly tight, sand edge if needed, glue if you must then peel off the protective layers and press into place.

Pressing the black acrylic piece into place:



*Attaching the left side base to the goggles:*

The left side base (#5) needs to be attached to the goggles before the left side display head (#8) is attached since it will block access to the screws we use for the base. You will need two of the black screws (#10).

Place the part on the goggles on the left-hand side and drill one hole with a 3/32" drill bit. Then use a 1/16" hex key to loosely tighten the screw. The screws are going into plastic, so do not overtighten. If you do strip it out and the screw is no longer held, you can remove the screw, add a drop of glue into the hole and then put the screw back in. You can also glue the base to the goggles if needed, but the screws usually are enough to secure the pieces.

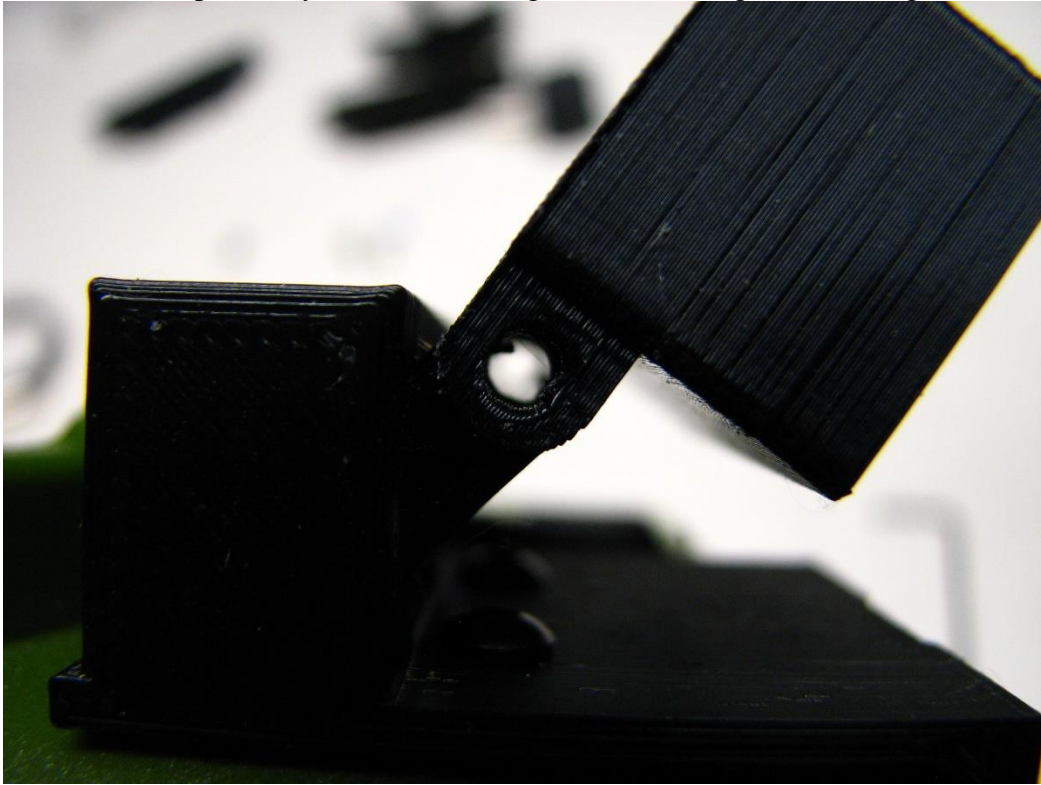


Press and hold the base while you drill the second hole. Then screw in the second black screw (#10). Now the base is attached to the goggles,

*Attaching the two left side pieces together:*

The left side base (#5) and left side display head (#8) will be held together with two of the bright shiny metal screws (#10).

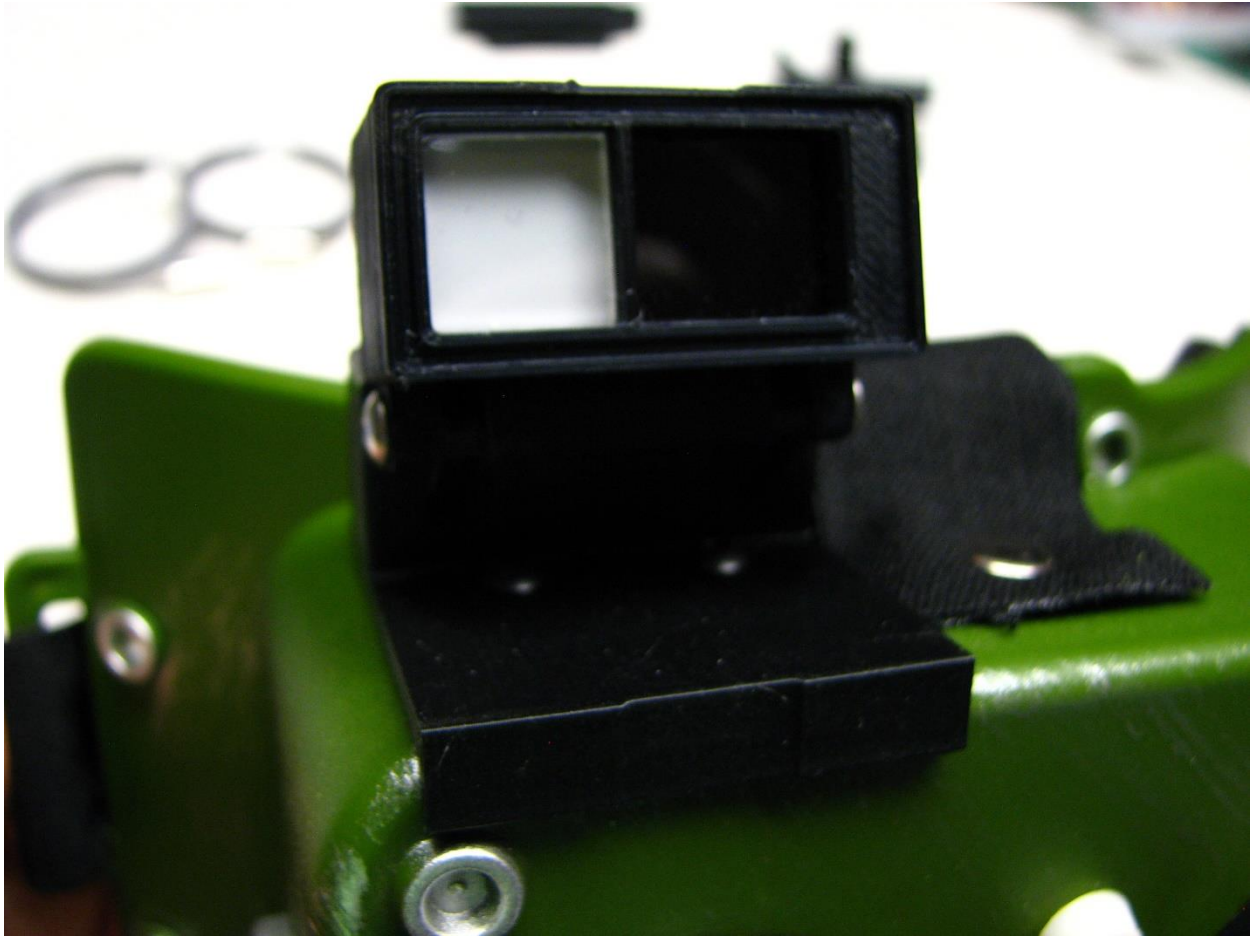
Align the two left side parts so you can see through the entire length of the hinge:



Then insert one of the bright screws #10 and screw it in with the 1/16" hex key:



Next insert the second shiny screw (#10) and the left side is now complete.

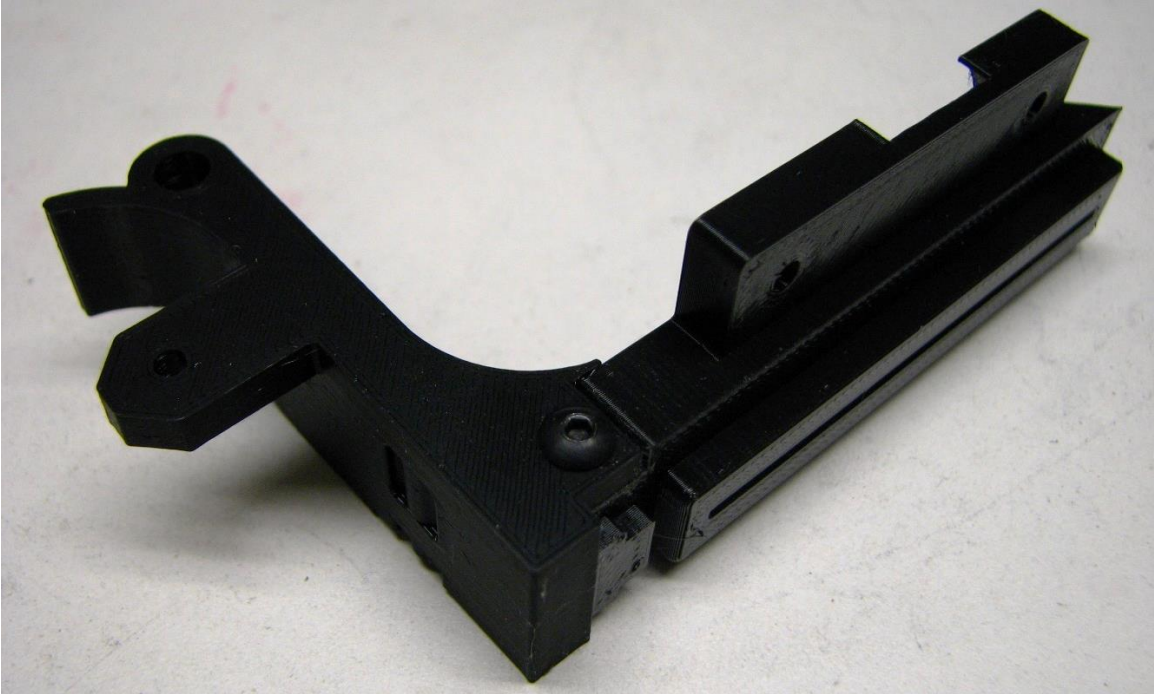


This has a working hinge: the display head can be rotated into the above orientation or placed fully face down onto the base.



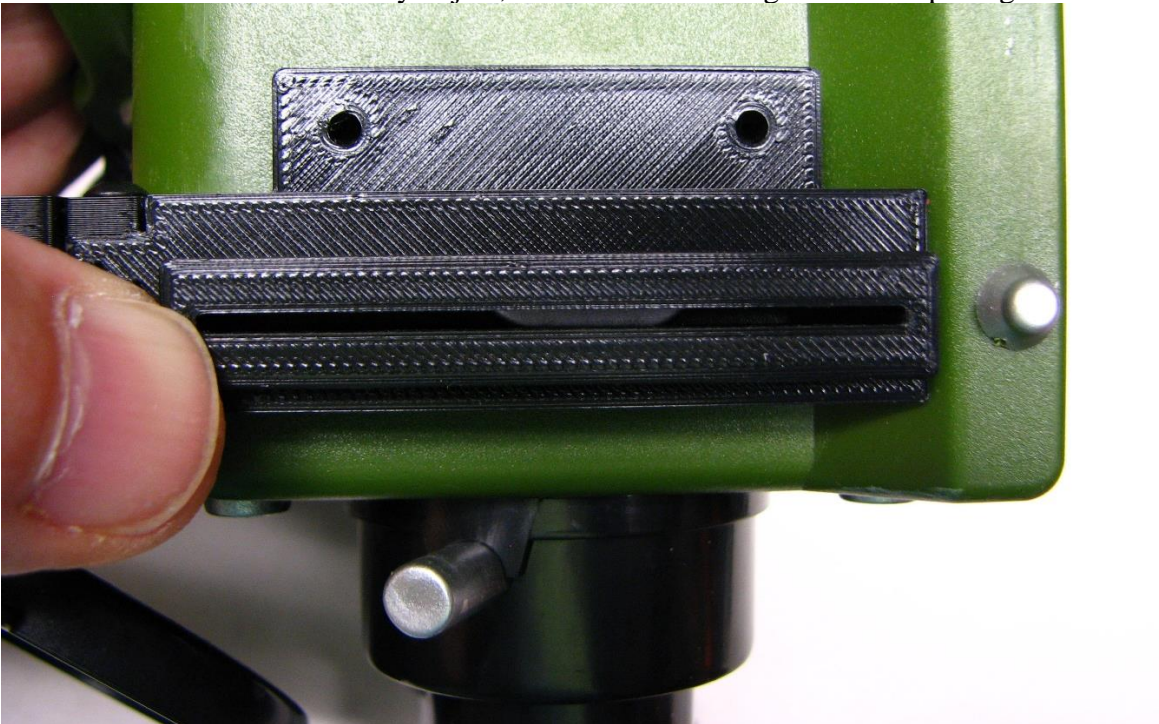
*Attaching the two right side pieces together:*

The right-side film opening (#6) and the right-side top (#7) will be held together with one of the black screws (#10). Screw them together:



*Preparing the right side of the goggle:*

The right side of the goggle (when looking at the front of it) has a fake knob that does not do anything. This will be mostly covered up by the right-side film opening part (#6). Since the knob that will be covered is a shiny object, it can be seen through the film opening slot:



You can leave it as is, or paint the area that can be seen black and also paint the entire knob black if you do not want it to be easy to see through the slot and from the back.

Two examples of what I have done: simple “painting” on the left and modifying the goggle case on the right:



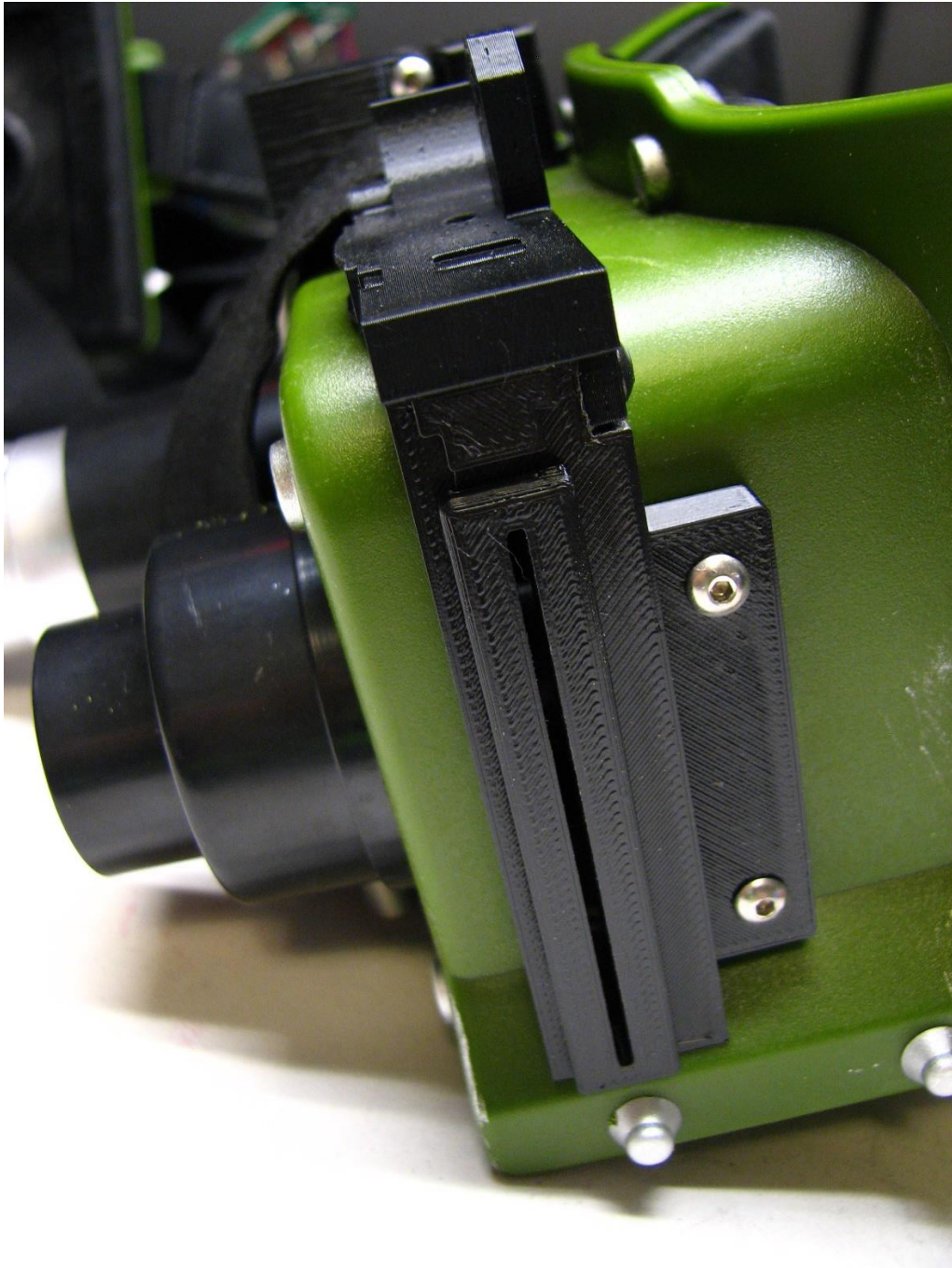
On the left, I just used a sharpie to make the knob and case disappear in the slot. On the right I cut out the slot so that the opening would go down into the goggles. The depth from the top of the right-side film opening part is about 1 inch deep when the case and knob are cut out of the way.

You can ignore this and if it bothers you later just remove the right-side pieces and sharpie, paint or modify the goggle case and then reattach the right-side pieces.

*Attaching the right-side parts to the goggle:*

The right-side pieces (#6 and #7) will now be attached to the right side of the goggles. First test fit the joined parts and make sure they are flat against the sides of the goggles. Also try and make sure the curved edge of the goggle is pressed against the parts and that the bottom of the right-side film opening 45-degree bottom edge is also up against the case. Also make sure that the right-side piece (#6) is parallel to the front face and not at some odd angle.

While holding the piece in place, drill the two side holes with a 3/32" drill bit. Then use the last two shiny screws (#10) to hold the right-side film opening (#6) in place and tighten with a 1/16" hex key. Alternatively, drill just one hole, screw that one down, then drill the other and screw it down.



Now move to the top piece #7. While holding the piece firmly in place (minimize the gap between the top piece and the curved edge of the case and also keep it parallel to the front of the case) drill the top mounting hole with a 3/32" drill bit and then screw in the last black screw (#10) with the 1/16" hex key.



To finish the right-side top (#7), screw the single shorter black screw into the end of the threaded post (#11) using the 1/16" hex key:



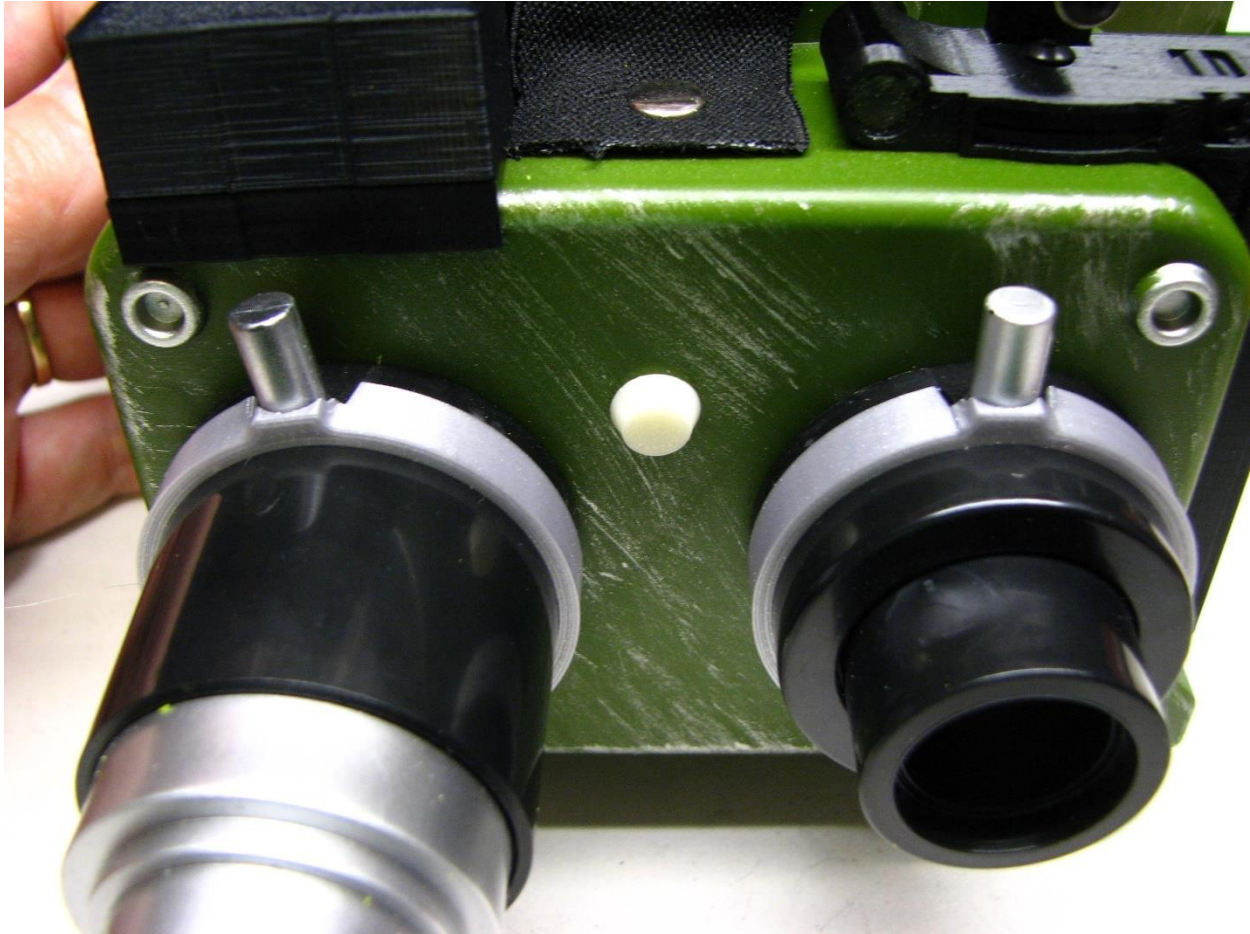
Now using the 1/16" hex key again, screw the assembly (#11) into the rising "tombstone" portion of the top piece:



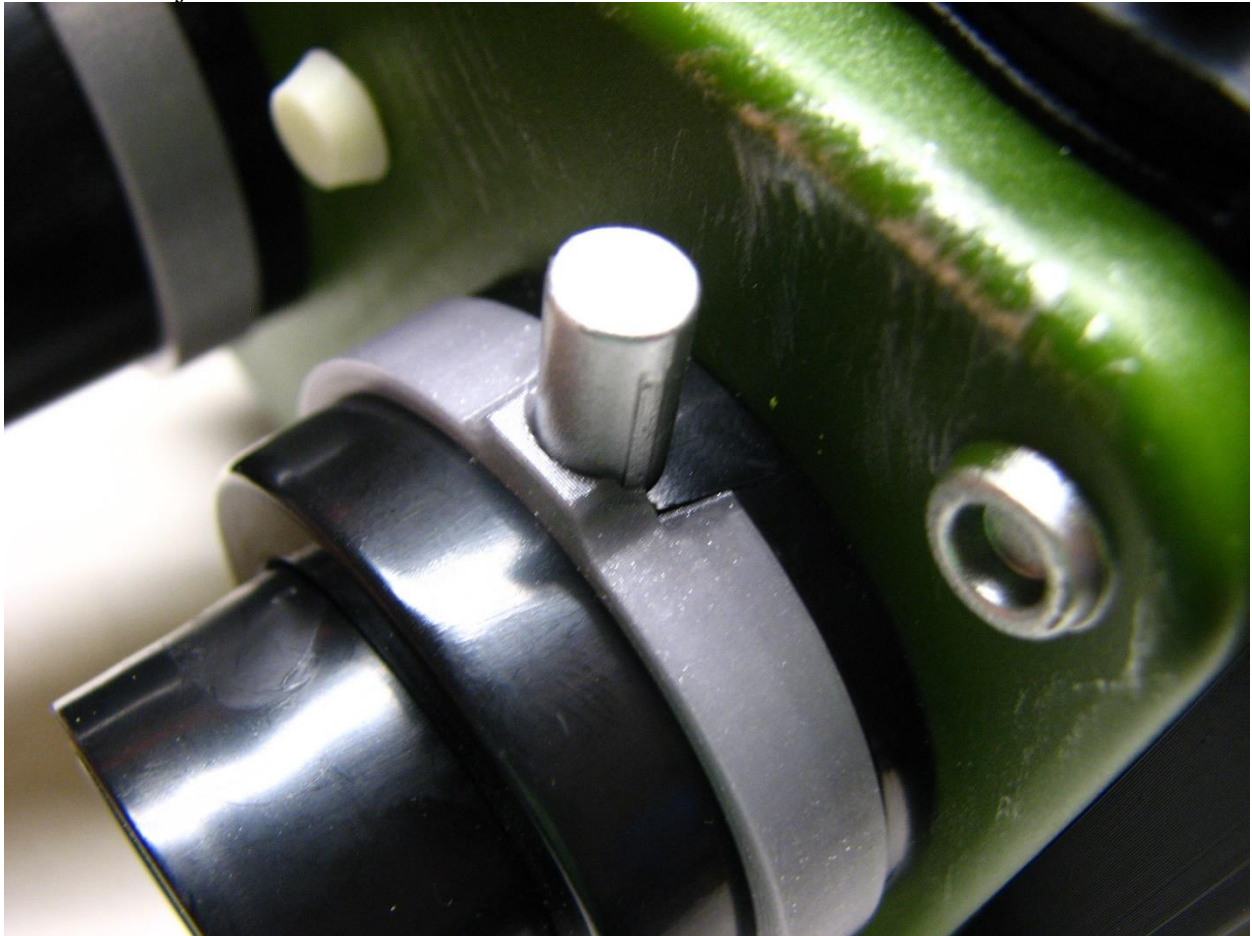
*Attaching the lens rings:*

There are two larger lens rings (#1). Though they look almost identical, but one is slightly larger. Try test fitting the two parts on the left side lens and see which fits better. One should be snug and the other should not easily go on – and do not force fit it since it is smaller and is designed to be snug on the right-side lens!

Each ring only goes on one way: the open notch of the ring should be facing the knob so that it can go around the knob when fully seated.



Looking closely at the area around the knob, you can see that there is a small black portion still visible. If desired, you can mask it off and paint this silver to make the silver ring appear to wrap around the adjustment knob:



I did not paint this one!

The large rings are probably snug and may not need to be glued in place. Removing them may also make it easier to paint if you wish to improve the looks around the adjustment knob.

The large rings do not inhibit the rotation of the large lenses, so no functionality is lost.

The two smaller lens rings (#2) are similar but the size difference is much more noticeable than for the large rings. Take the posts (#3) and screw them into the tops of the each of the smaller lens rings (#2). I do this by hand so the posts do not get scratched. Do take care to thread them into the top of the lens ring as straight as possible. They are easy to thread in at an angle and then they look a bit “off”. Do not screw them in so far that the threaded end of the post sticks out into the inside of the lens ring. This will not allow you to slide the rings onto the lenses.



The rings can go on either way and once mounted they do not move like the larger rings knob sections of the goggles can. Orient the posts in the desired direction before you slide them on.

I also found that repeatedly sliding them on and off can scratch the silver paint on the lens so you may not want to do this repeatedly.

They are fairly tight, so you have 3 main options:

- 1) Just push them on and they are somewhat secure
- 2) Screw the post down until it starts to go into the lens to hold the ring in place  
This does shorten the threaded section and I don't like the look as well as showing the threads (like in the goggles used in Afterlife)
- 3) Glue them in place. A small amount of glue on the lens and slide the ring over the glue. Just a small amount since the fit is tight it may bunch up a bit at the back of the ring as you slide it on. This is permanent whereas the other two methods above are not.



This shows the positions of the lens knobs that closely resemble an outdoor scene from the Afterlife movie trailer:



I used a Dale Resistor Volume Knob to prop up the goggles, so there no black knob would be attached to the bottom of the goggles.

## Congratulations!

You have completed the installation and should now go out and look for some ghosts...