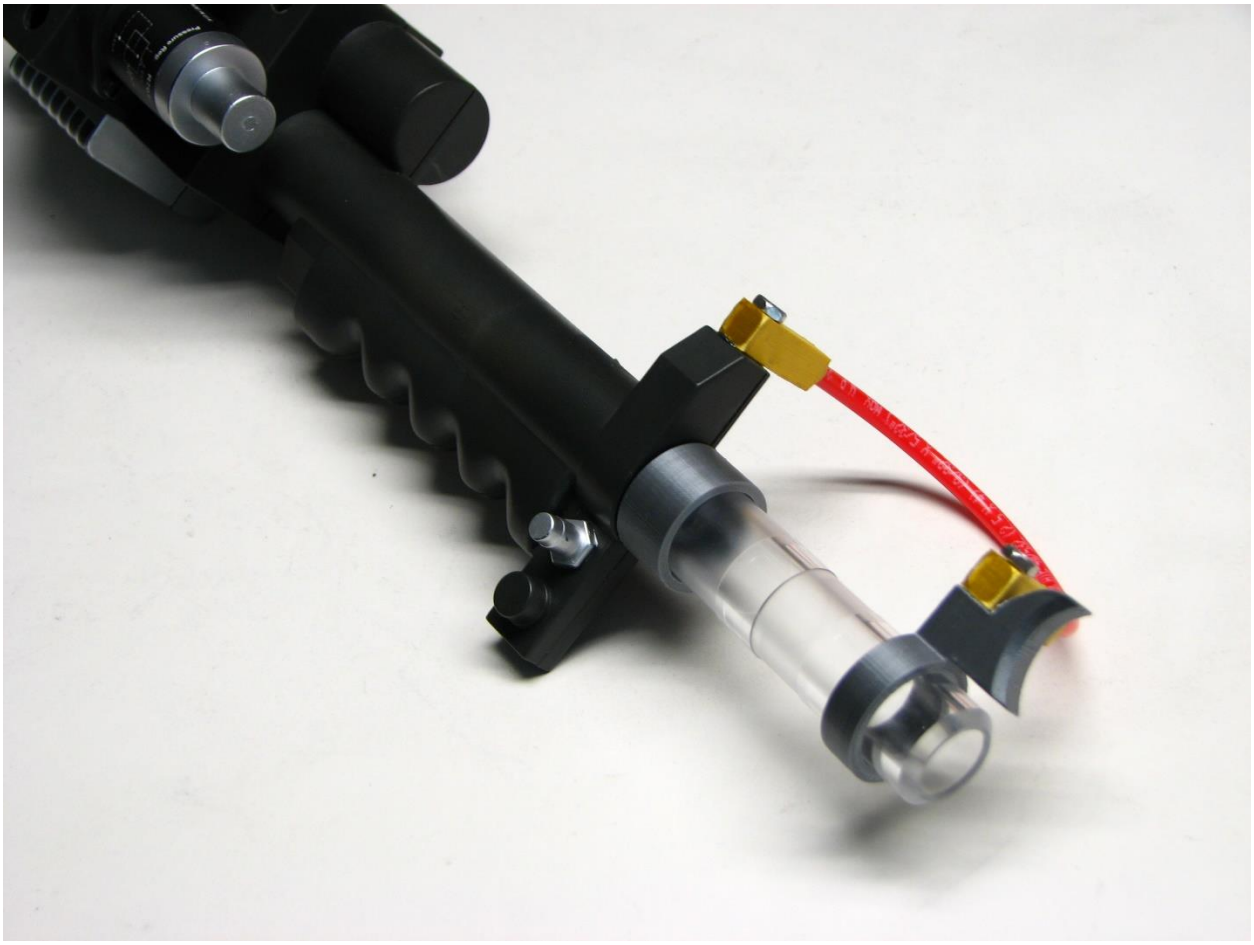
Introduction

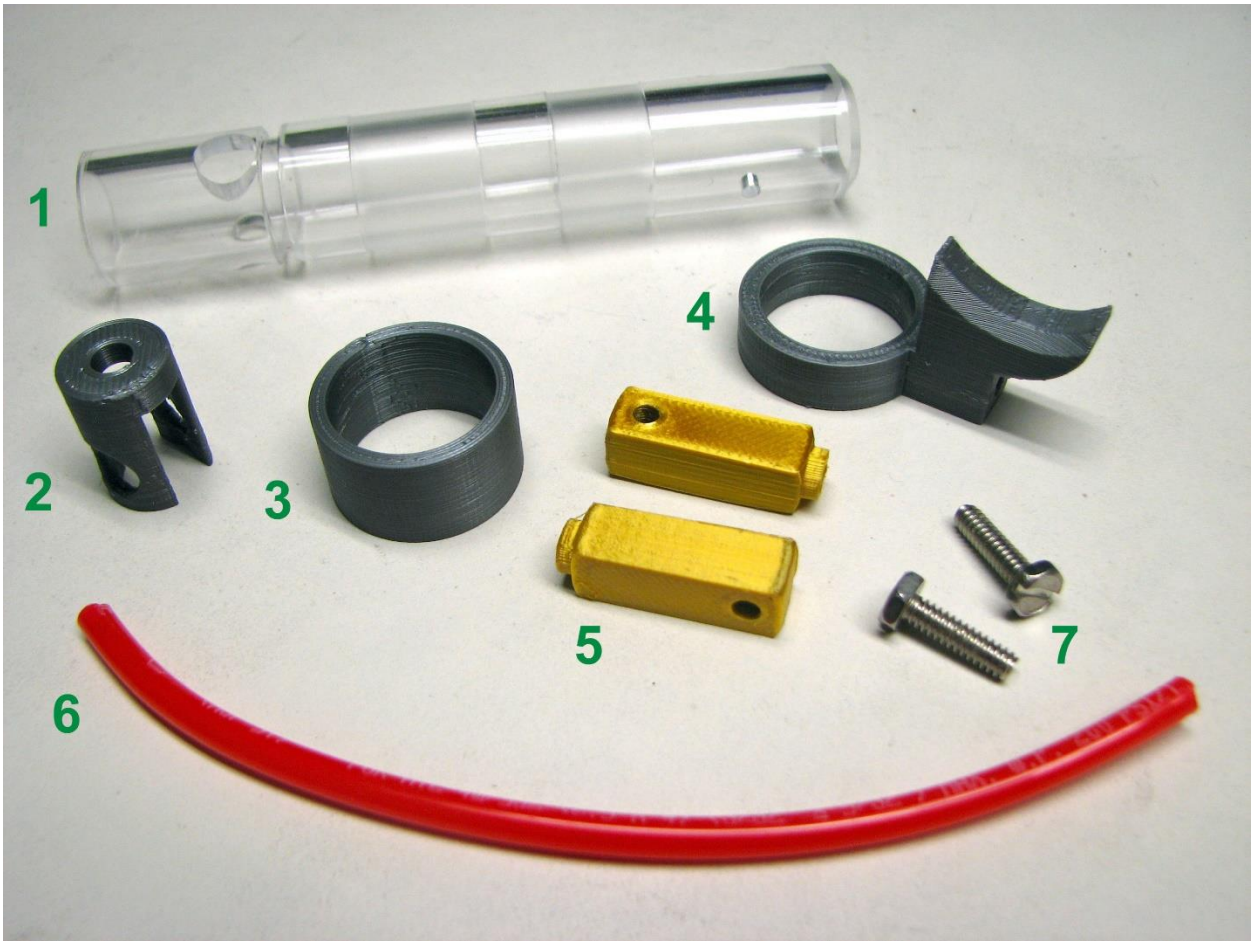
Congratulations on purchasing the Spirit Wand Tube Kit that replaces the white wand tip with a clear acrylic tube and multiple support components that will make your wand look much more like the wands used in the Ghostbusters movies.

A Spirit Halloween Deluxe Proton Pack Wand (not included) shown with the Spirit Wand Tube Kit installed:



Installation in the Spirit Wand

Parts Identification:
The first step is to remove the components form the bag and make sure you know where each item is located.

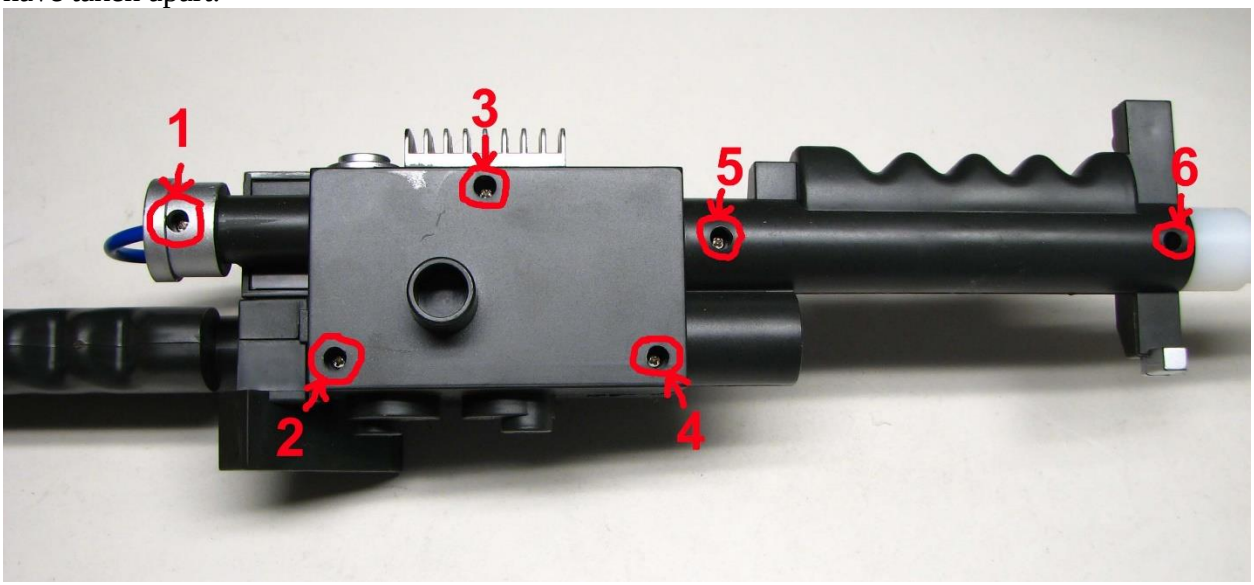


The Spirit Wand Lights kit contains multiple parts to be installed in the Spirit wand.

1) 1 - Frosted Tube with beveled end and machined mounting slot and holes
2) 1 - Gray/silver LED Holder
3) 1 - Gray/silver Back Ring
4) 1 - Gray/silver Trigger Ring
5) 2 - Brass-ish Banjos
6) 6" - Red tubing
7) 2 - slotted hex head screws for mounting banjos
8) 1 - set screw to hold the Trigger Ring in place (not shown, but in the bag with the screws (#7))

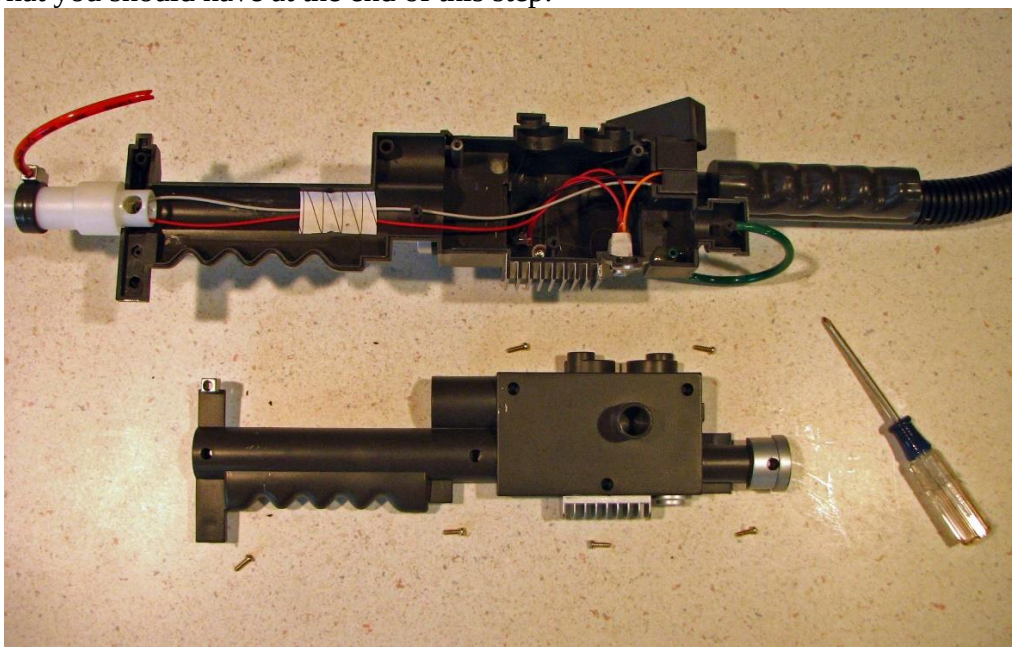
Opening the main wand body:
The first step is to open up the wand to access the original White WandTip tube. For just the tube upgrade, there is no need to remove the handle.

There are six Philips head screws to remove (and do not lose since they will need to be put back when you are done). These screws were the same as the ones used in the handle on the wands I have taken apart.



You can now separate the bottom of the wand from the main wand. The front pieces fit tightly around the front white plastic wand tip. Take care in separating the parts so that you do not stress that front mechanical connection. The white plastic part can be easily cracked, though that may not have a big impact on the tip. I used a tiny flat screwdriver to carefully pry the two halves apart up near the ear piece at the end of the front handle. Once open, carefully remove the white wandtip part from the other half, again taking care not to stress the part near the holes cut for the posts used to screw the wand body parts together.

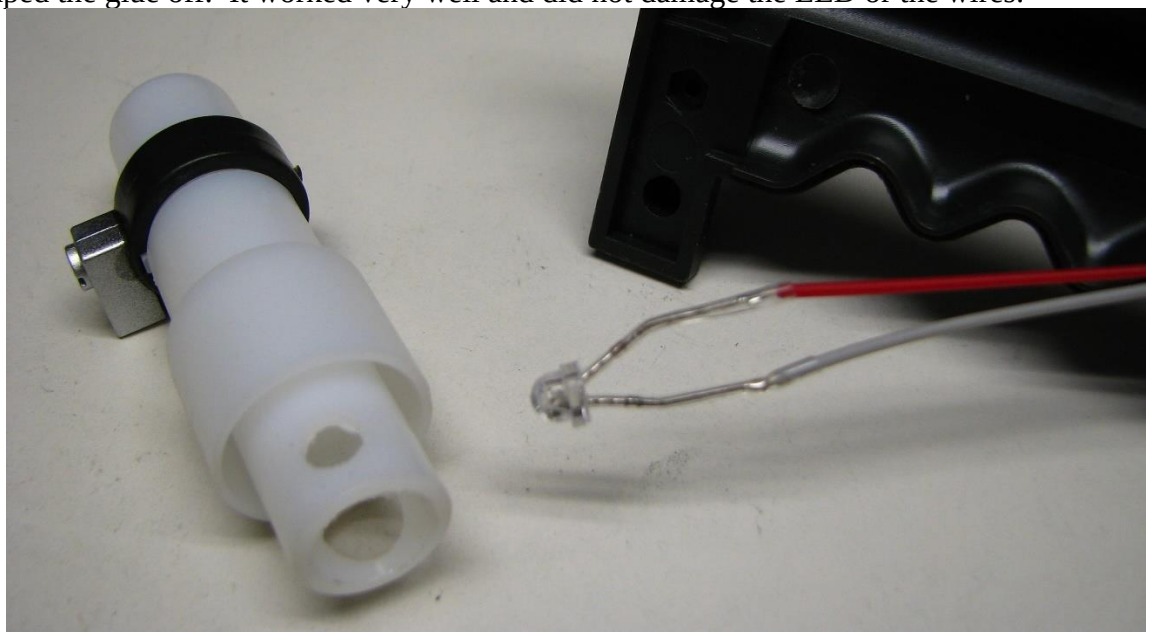
Here is what you should have at the end of this step:



Removing the wand tip LED:
Next, we need to remove the want tip LED from the front plastic wand tip. It is glued in place, but so far the glue has been easy to remove. I used a tiny flat jeweler's screwdriver to scrape the glue from around the LED. The glue is a bit darker than the white plastic and can be seen in this image:



After scraping the glue off, the LED was still snug. I tried pushing it out from the other side, but it didn't budge for me. I then used the screwdriver to pry the LED out from the side we just scraped the glue off. It worked very well and did not damage the LED or the wires:



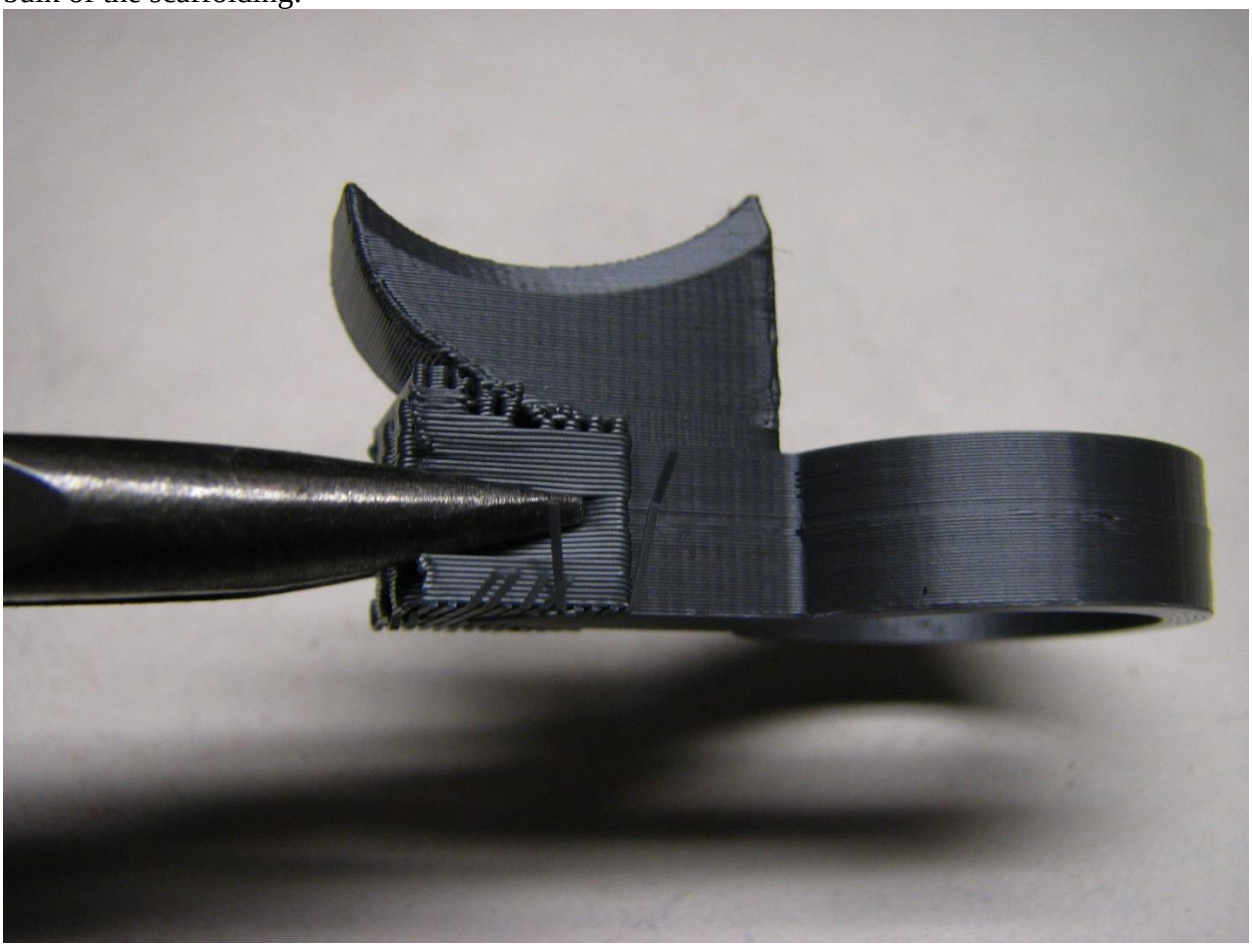
Preparing the 3D Printed parts

The 3D printed parts may include some additional support material that has to be removed by pulling on it, using needle nose pliers, and using a drill.

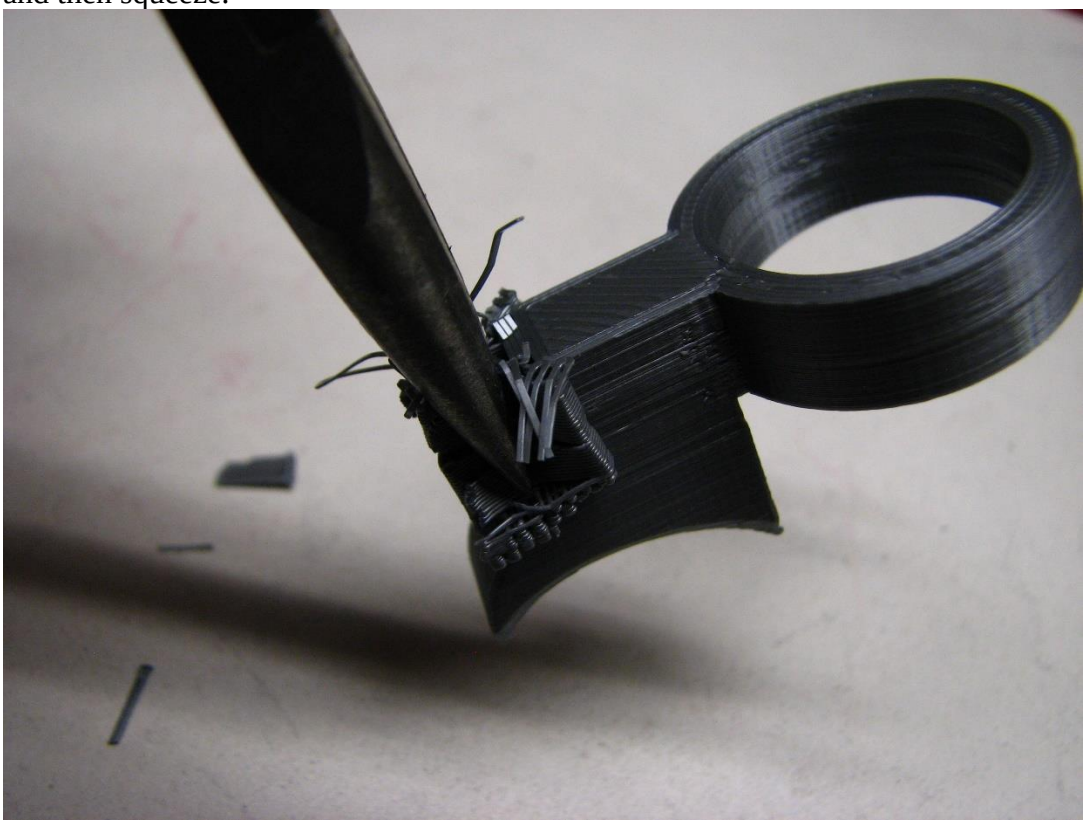
The LED holder (#2) and Tube Ring (#3) should not need any cleanup.

The Trigger Ring (#4) could have some external support on the end where the Tube goes in. This should easily be pulled off. I used pliers to grab the bulk of it (below the trigger) and just pulled it off. The main mole that a large screw (#7) is used to attach a banjo with should be fine and does not need to be perfectly round. The tiny set screw (#8, not shown) needs a better hole, and I found drilling it out with a 3/32" bit worked well. You may have to ream the hole out larger but will just need to test fit the set screw and see if you can get it to extend past the inside diameter of the ring. I had to try several times and made the hole slightly larger each time as the set screw would start fine, but then jam before it made it through the ring. The set screw (#8) goes way inside the larger hole and when the Trigger Ring is mounted on the tube, the set screw can be turned and lock the ring in place. There is a matching hole in the tube near the beveled end tip that is to be aligned with the this set screw. A 0.05" hex key (Allen Key/ L-Key Hex Key) is needed to drive the set screw.

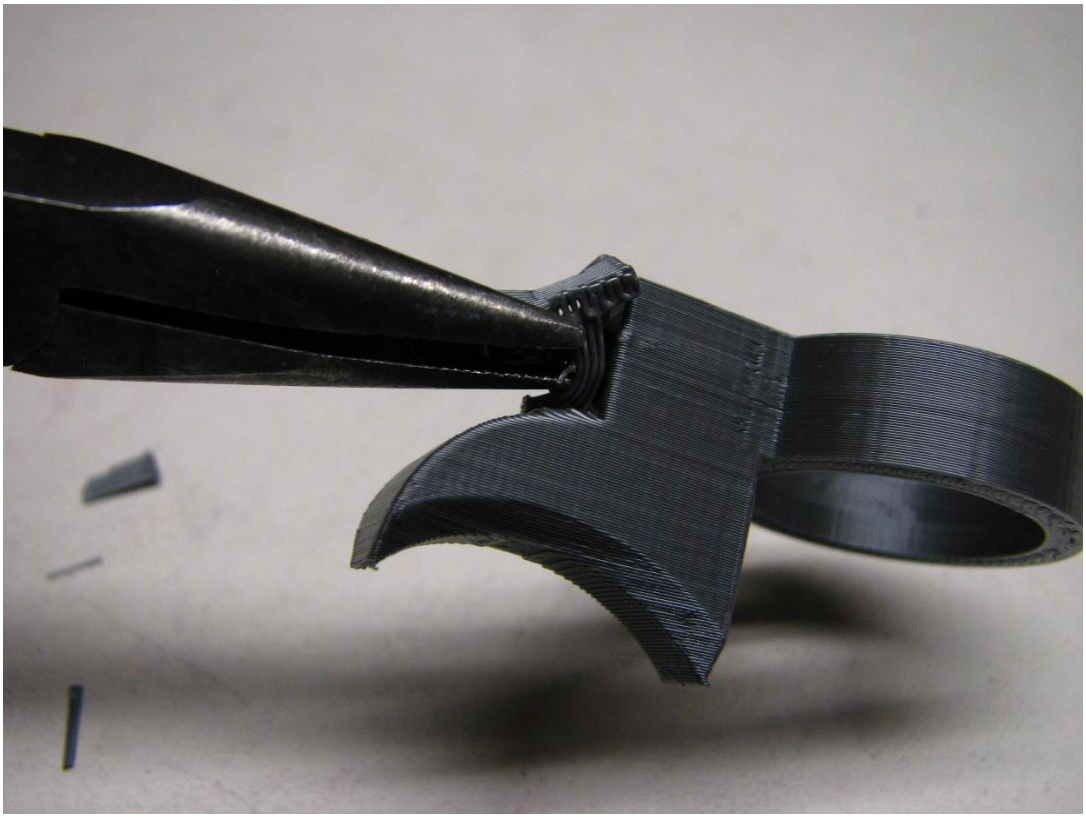
Here are some photos of the removal process. Start with needle nose pliers and grab on to the bulk of the scaffolding:



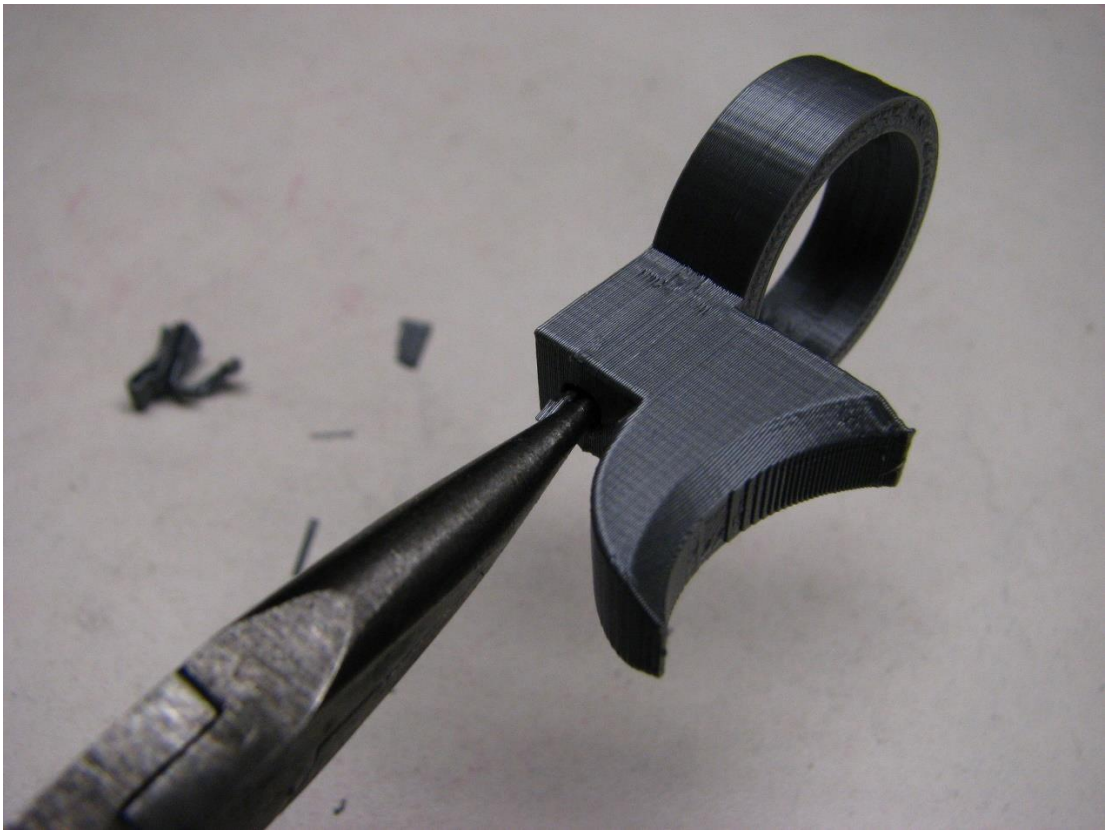
and then squeeze:



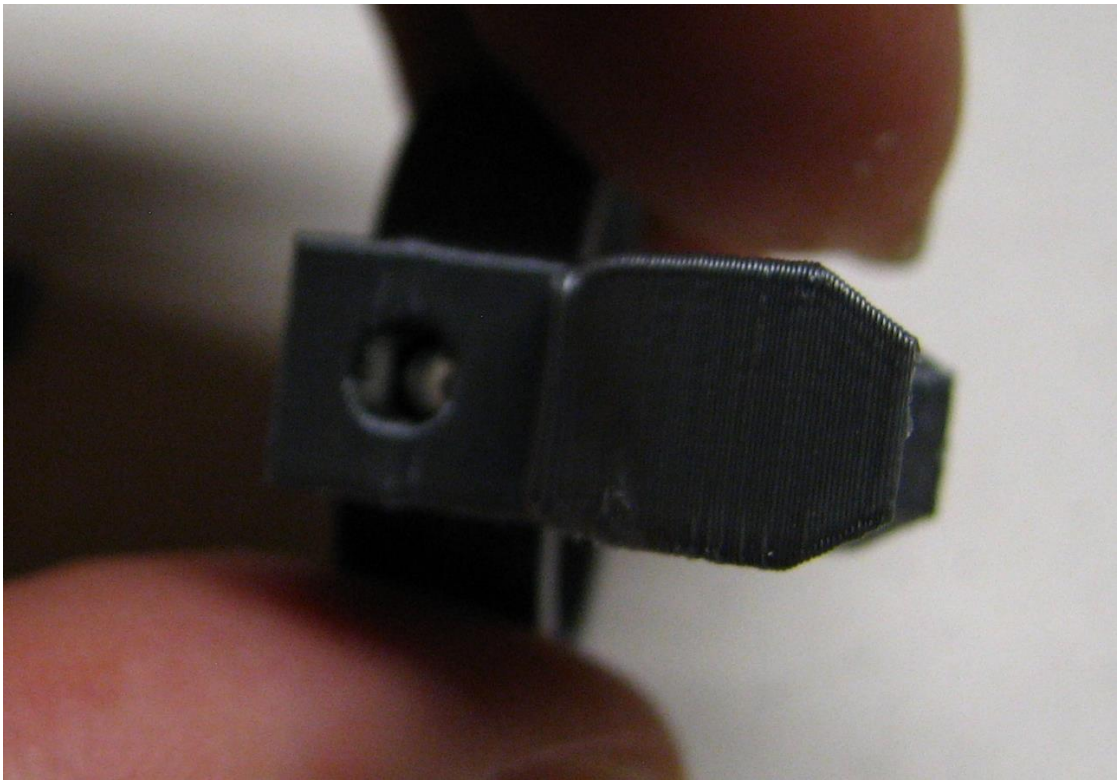
and twist:



Narrow tips make it easier to get the scaffolding inside the hole, but you will still probably need to drill some of that out.



When cleared, you should have a view through the place where the set screw will need to be added



The real brass banjos do not need cleanup, but if you have the plastic brass-ish banjos (#5), they could have some external support on the end where the Tube goes in. This should easily be pulled off with just your fingers. There is also some internal support where the tube goes, and for me it was easiest to remove with a drill. I used a 1/8" bit and drilled into the hole and it affectively just removed the internal support structures. The holes is larger than the drill bit and the intent is not to drill out or change the size of the hole, just get the support structures out of the Banjos!

Preparing the wnad parts for the Wand Tube installation

Many versions of the spirit pack do not need additional modification to get the wand tube to fit, but a new version added some additional internal ribs that need to be removed before the tube will properly fit inside.

Here is the older version that does not need any modification:



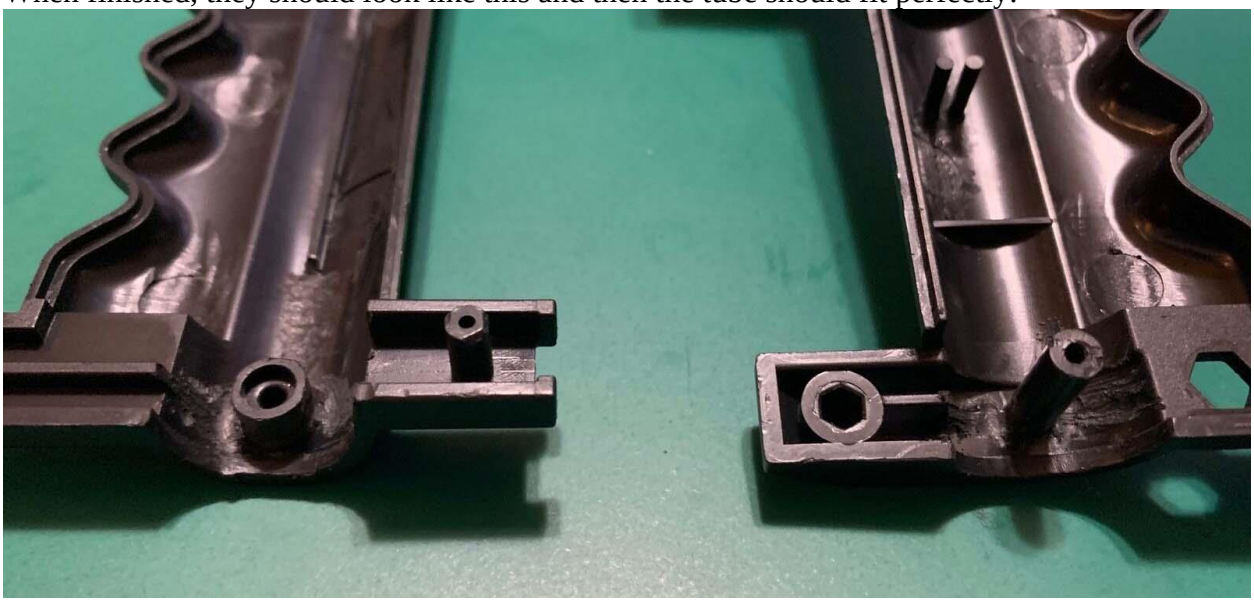
Here are the newer parts that have additional in ternal ribs:



The ribs need to be sanded/ground down in the areas highlighted in yellow:



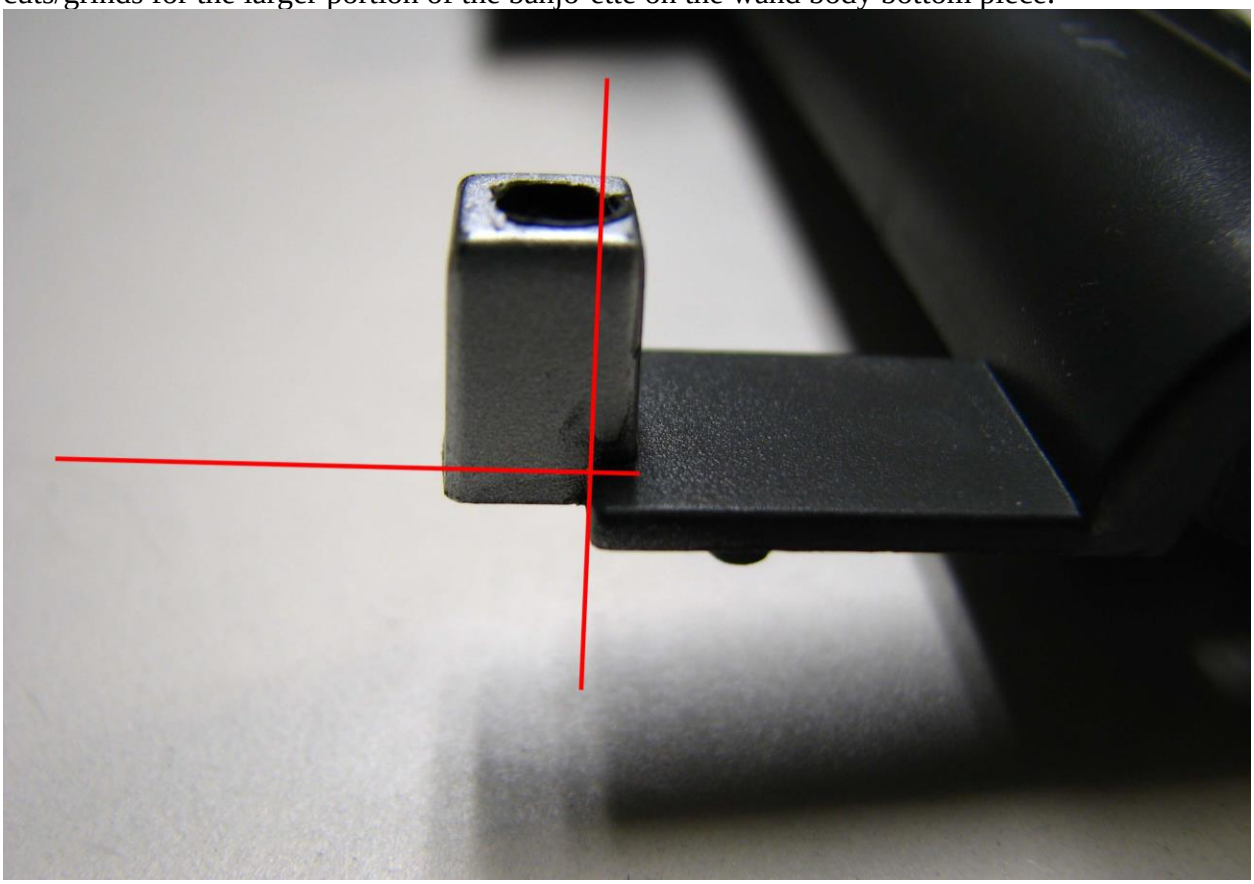
When finished, they should look like this and then the tube should fit perfectly:



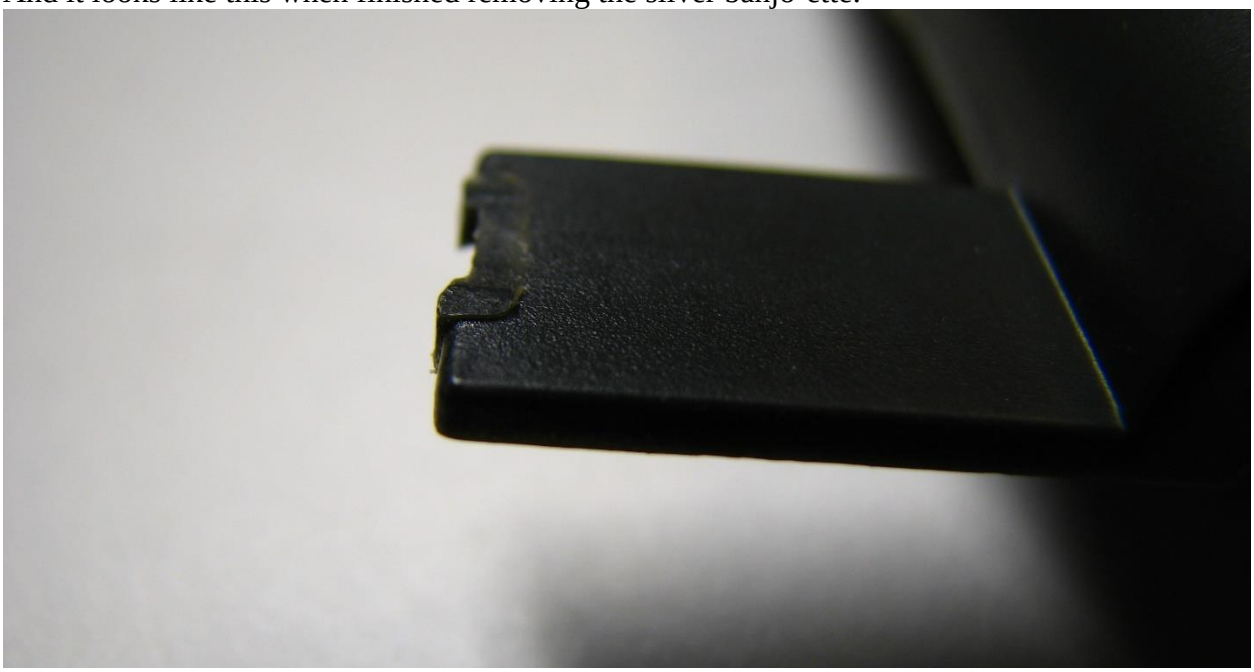
Thanks Lance J for finding the issue and providing the images!

Removing the original molded in Banjo-ette from the two parts of the wand body:

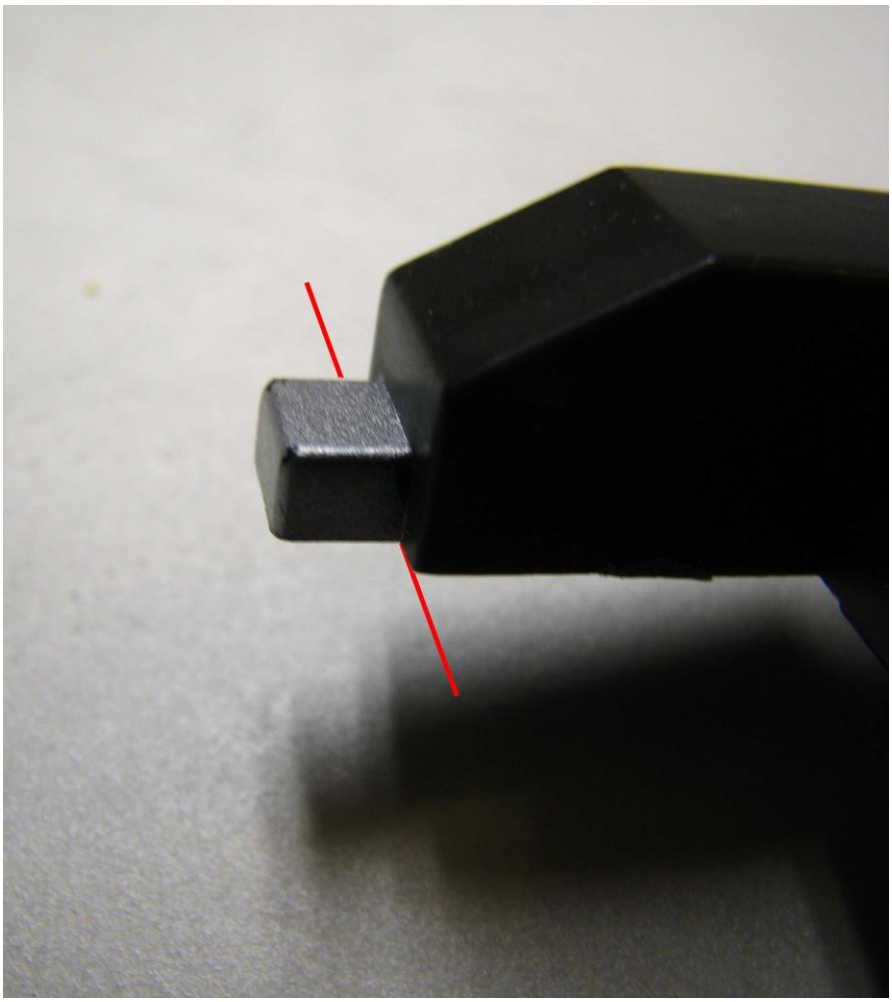
I used a Dremel (roto-tool) to cut off and then lightly grind the stubble flat. There are two cuts/grinds for the larger portion of the banjo-ette on the wand body bottom piece:



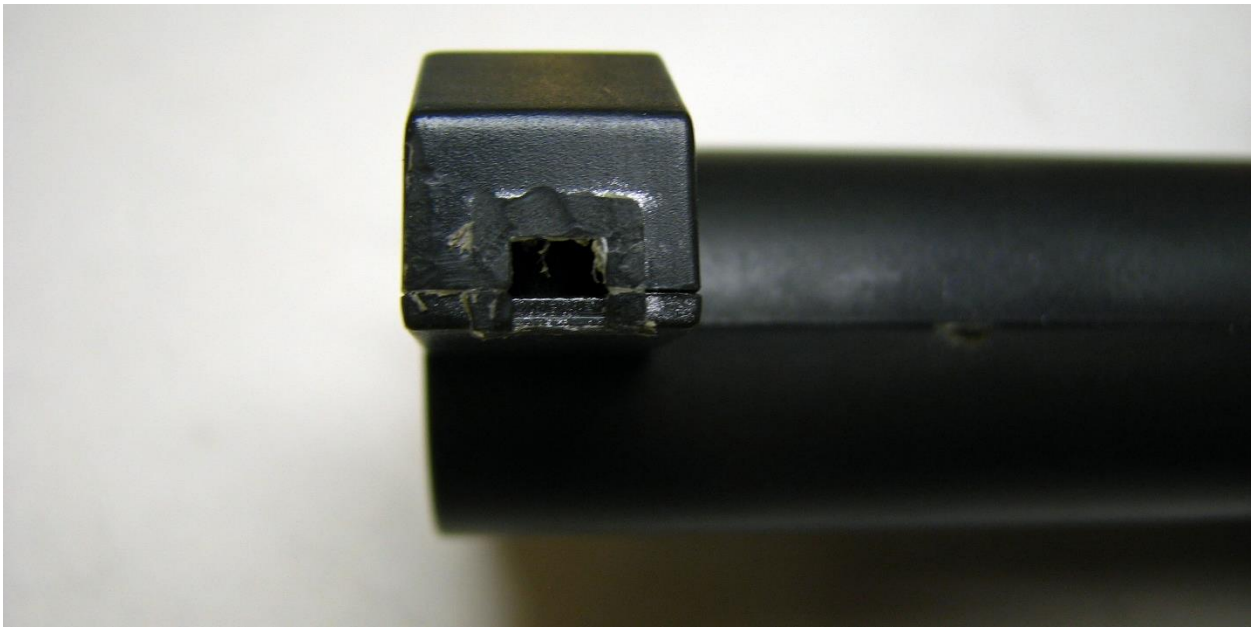
And it looks like this when finished removing the silver banjo-ette:



The wand body top piece has a smaller portion of the banjo-ette that can be removed in a single cut:

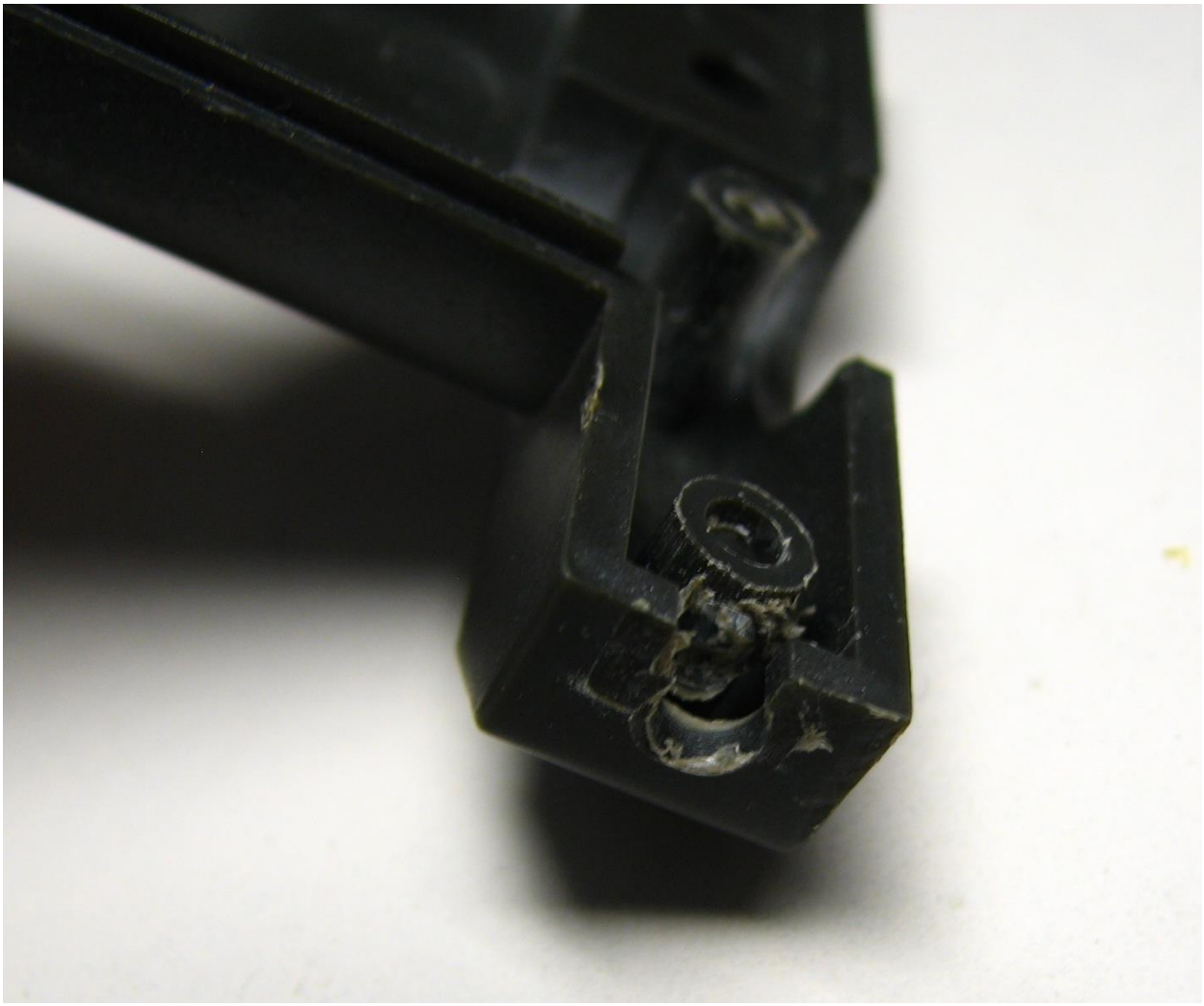


Here is what the parts look like placed back together after the bango-ette has been removed. There is no need to put the two parts together yet, this is just to show both parts completed.



We do need to mount a Banjo (#5) to the top portion of the wand body and there is a rectangular hole that is not what we would prefer, so we are going to do some drilling and gluing.

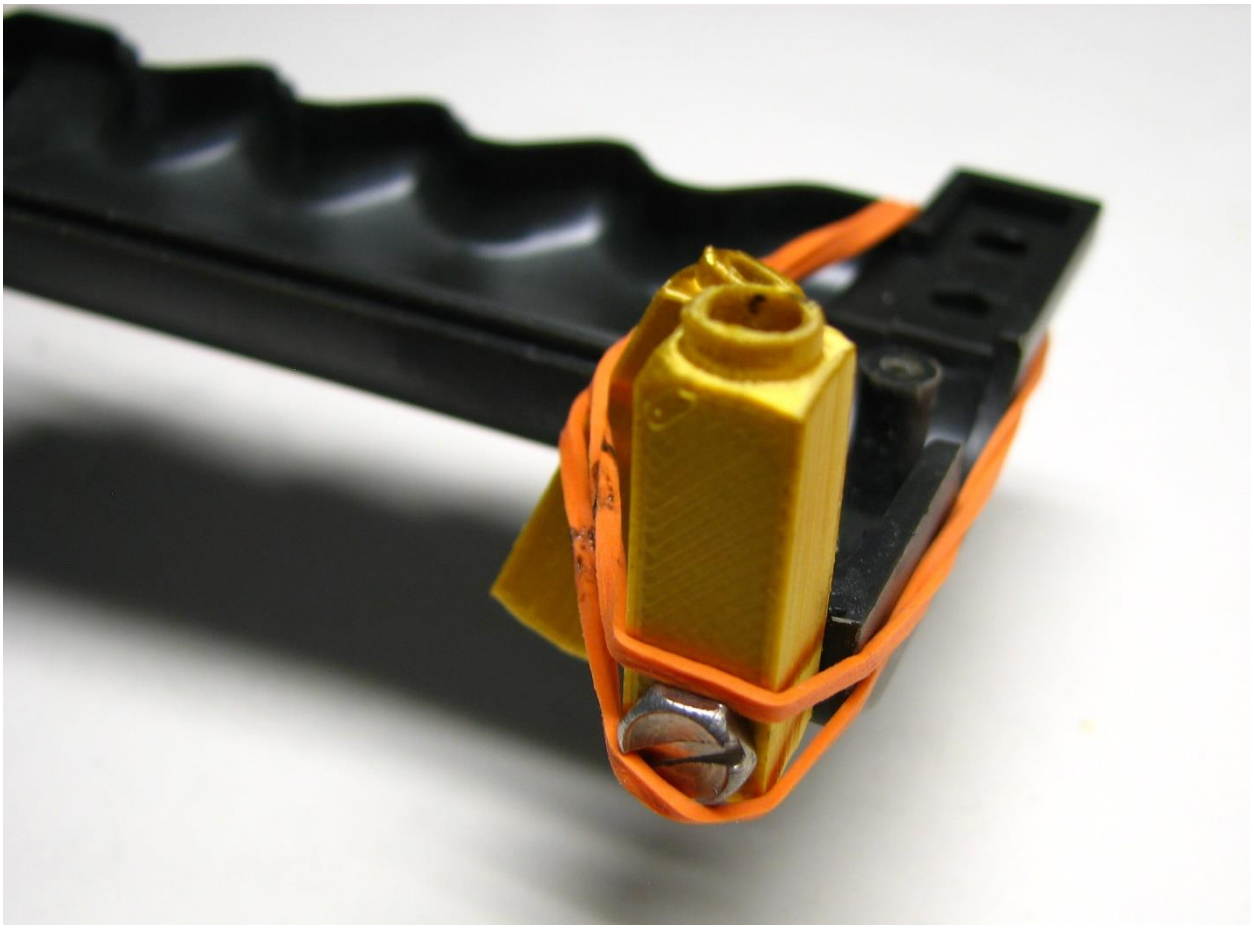
First drill a hole with a 1/8" drill bit roughly in the center of the side face, as if the face did not have that annoying rectangular hole. Drill slightly into the round mounting post as shown in the photo below, but not all of the way into the mounting post (like I did). I found that when I went to glue this, glue got inside the round cylinder and would interfere with the mating of the other wand body part so I continually dug out the seeping epoxy from inside the cylinder with a toothpick. Luckily the epoxy sets fairly fast so I only had to do this for a few minutes…

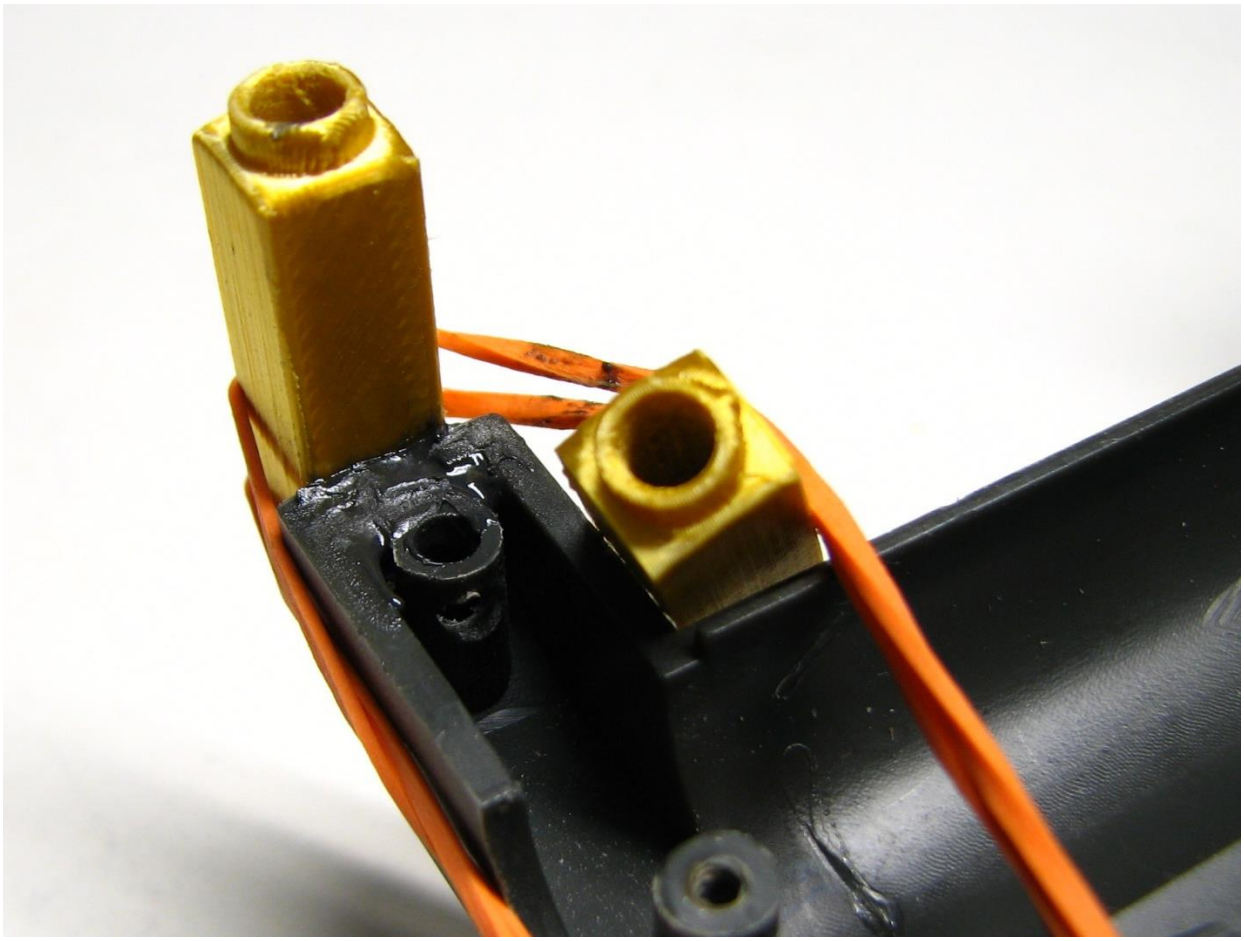


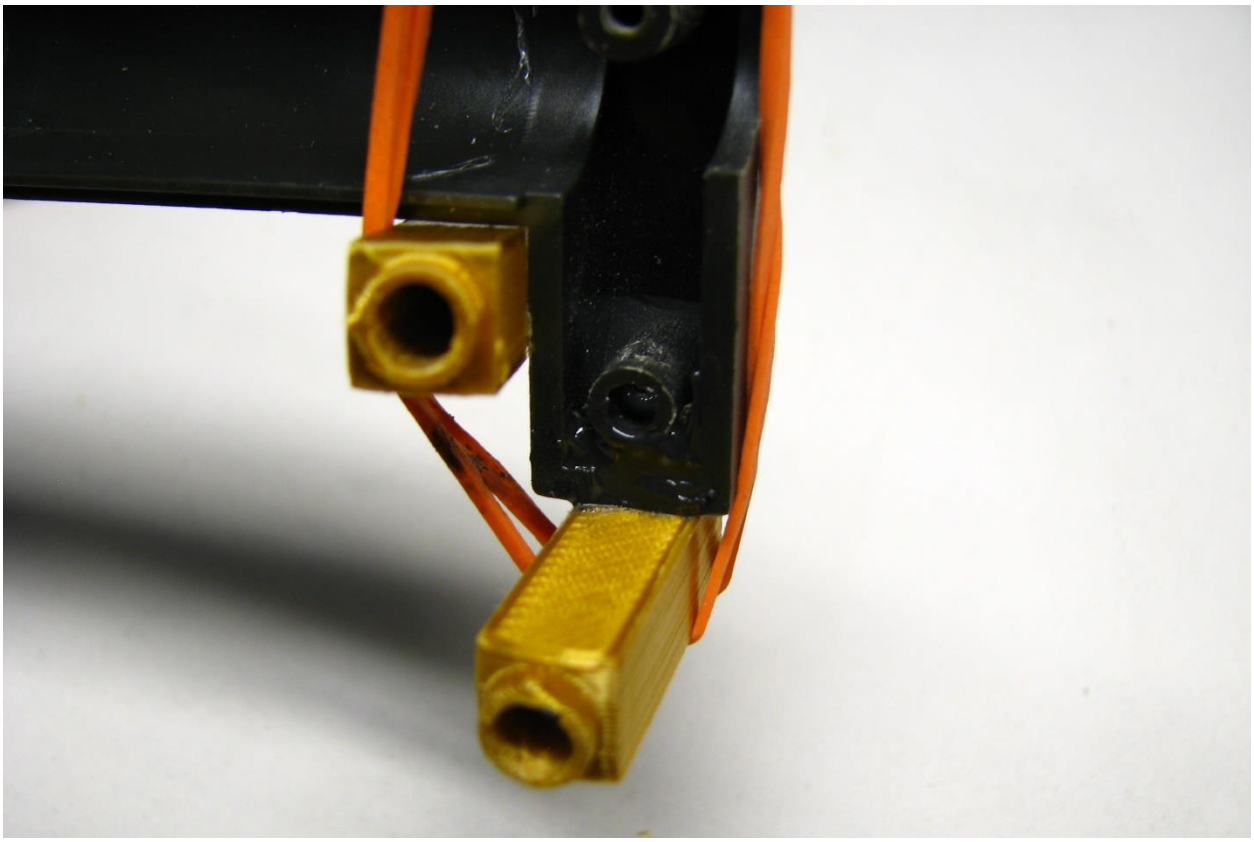
Next screw in a hex head screw (#7) all of the way into one of the Banjos (#5) and test mount the part with the main portion of the Banjo (#5) sticking up (referenced to the above photo).

When you are satisfied that the positioning is good, I used an epoxy (J-B Weld, KwikWeld 2-part epoxy) and first filled in the bottom portion, then placed the screw/Banjo in and then filled around the screw and made sure it was level. If the epoxy goes over the edges or raises the height any it will interfere with the other wand body part when you eventually put them back together. And be sure the mounting post hole does not get any epoxy inside!

I used a rubber band to hold everything in pace, and the rubber band got into the epoxy, so I used another part just to keep the rubber band out the epoxy.



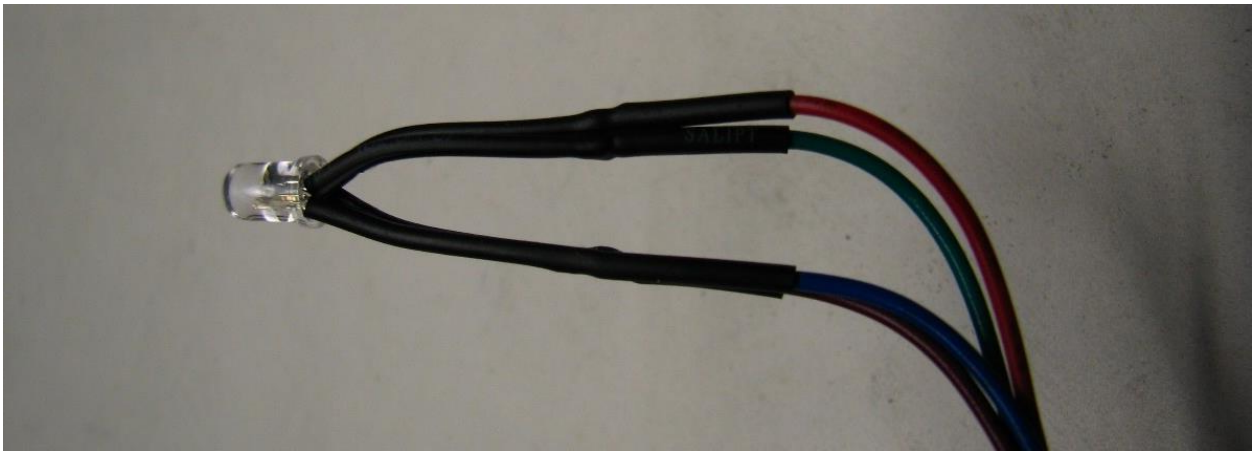




Installing the LED Lights

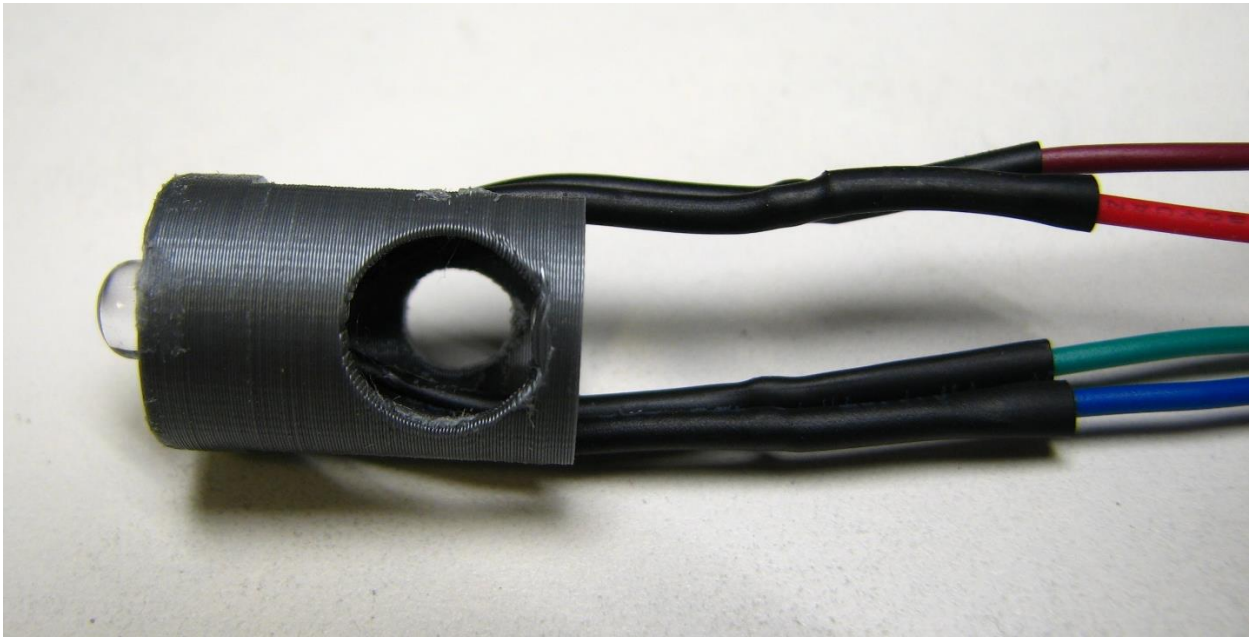
Now we are going to install the LED light cable (1) that has the RGB wand tip LED and three other 5mm LEDs to illuminate the body of the wand.

The RGB LED (four wire connections) need to have the leads dressed so that it can go into the wand tip and not get the wires crushed. Do this gently and slowly since we do not want to break any leads! Repeated bending and sharp bends will also be problematic, so do not adjust too much!



The LED does need to go into the LED holder (#2). Be gentle with both the holder (it can break near the large orientation holes) and the LED (repeatedly and aggressively bending the wires can cause them to break). You do want this to be snug fit, and you may consider gluing it in after you test fit and make sure the wires are placed where you want them.

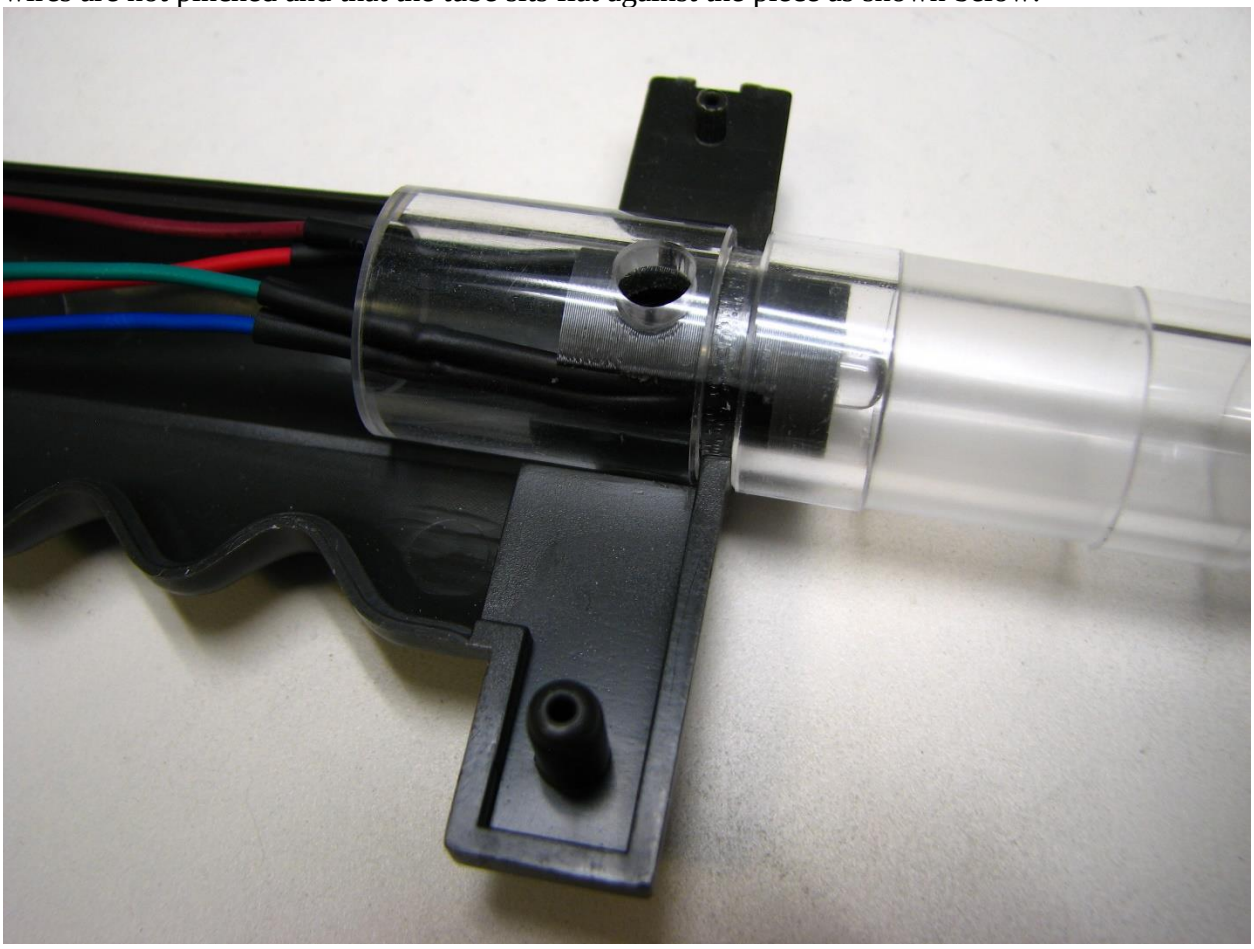
You need to only press on the plastic 5mm LED case, not the wires. Before pressing the LED in place, the LED should be rotated so that the wires will not block the holes and you should not press the wires.



Now place the Wand Tip in the tube and align the mounting holes:



Now place the tube with the large mounting hole in the removed gun bottom and make sure the wires are not pinched and that the tube sits flat against the piece as shown below:



Finishing the installation:

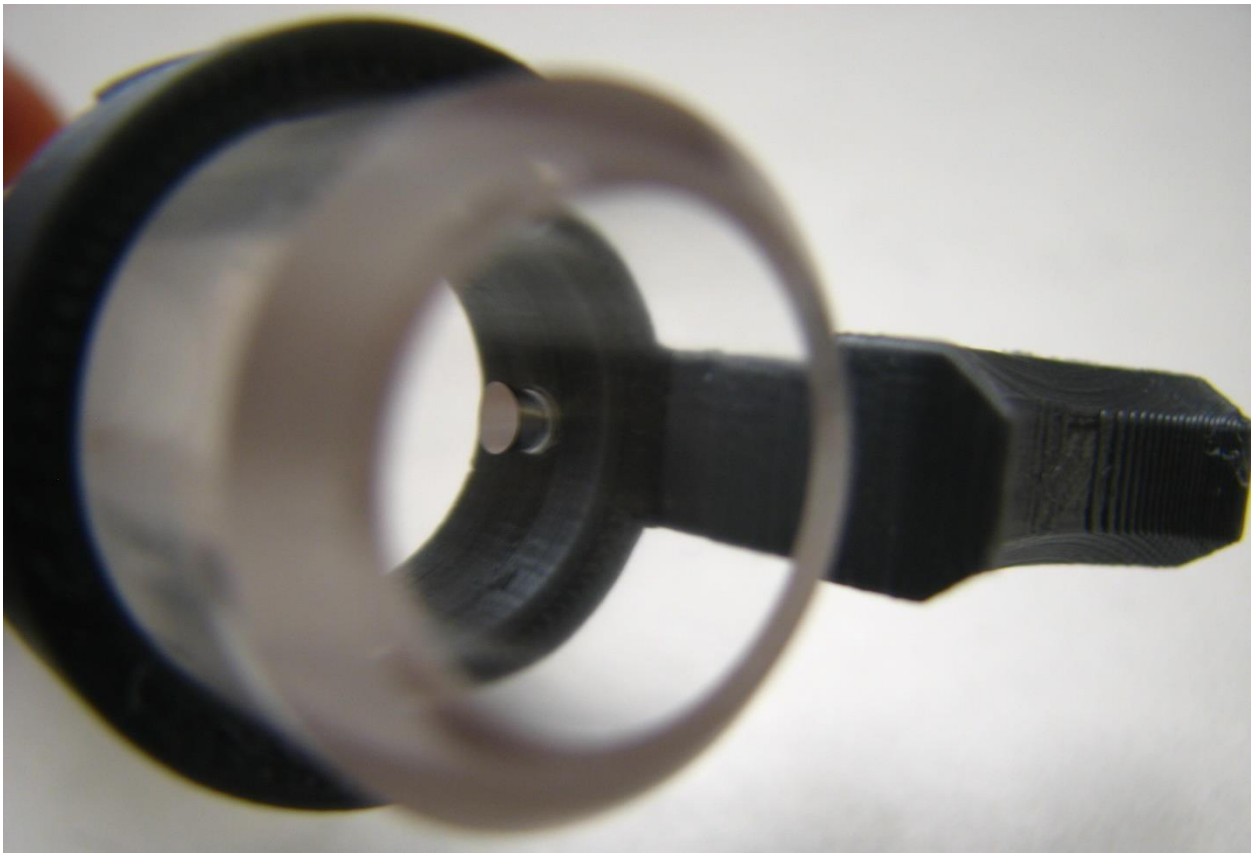
Next, you can connect the two main wand parts together and make sure all of the wires are contained inside and do not get trapped between two pieces. You can use tape to hold the wires in place if that helps. Carefully press the pieces together. Once everything looks good (no captured wires and no gaps between the two main parts, screw back in the 6 screws that will hold it all together.



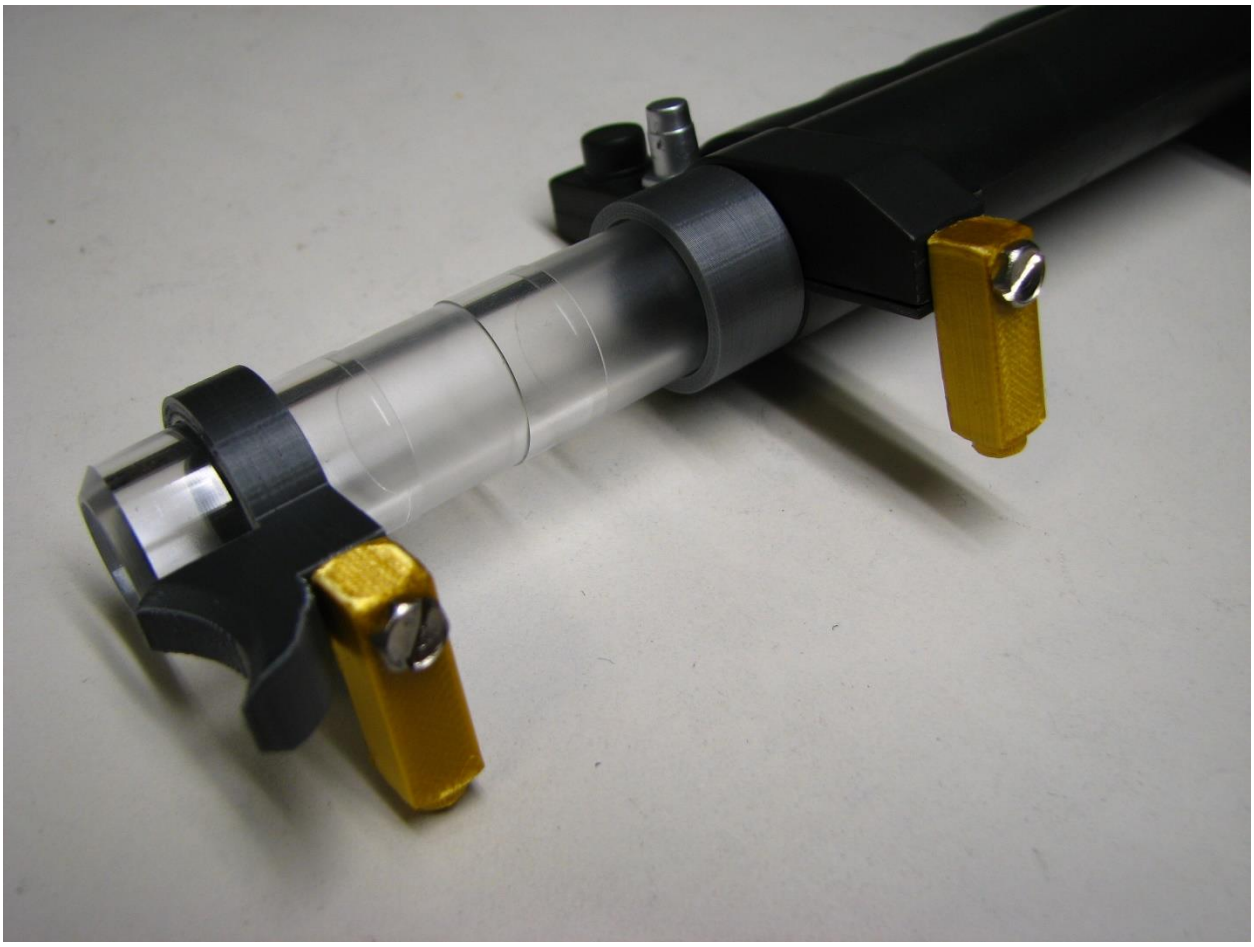
Next slip on the Ring (#3) and slide it all of the way back up against the wand body. You can glue this in place if desired. Just make sure not to have so much glue that it glues the ring and or the tube to the wand body! You can glue this beforehand but be careful to place it properly so there is not a large gap between the ring and the wand body when the tube is in place.



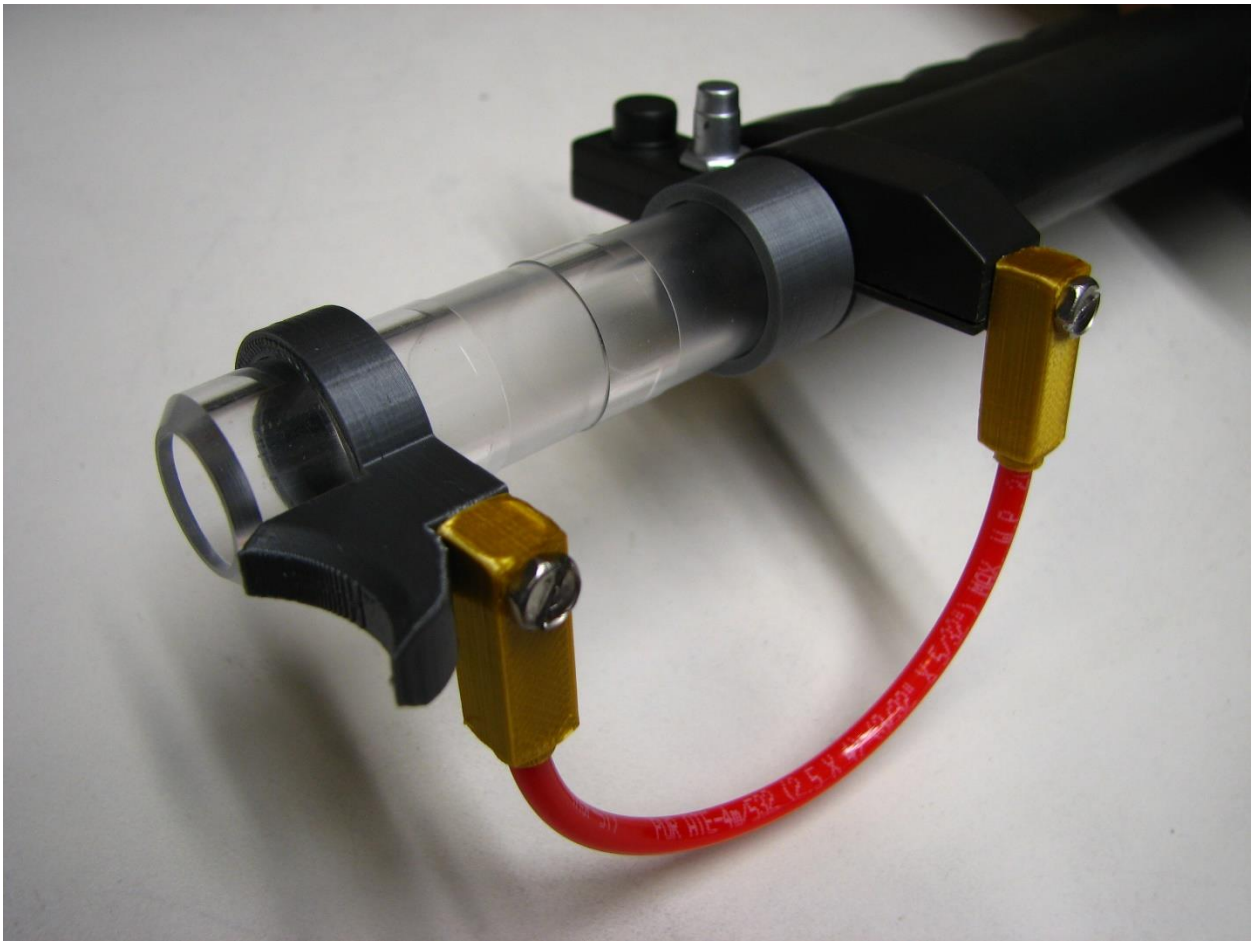
To make this easier later, I screwed in the banjo (#5) with a hex head screw (#7) before I attached the Trigger Ring (#4). This does not allow access to the set screw so it must be removed. By doing this once before it is mounted, it makes it easier to do again once mounted. So now remove it and we can put the Trigger Ring in place and secure it with the set screw:



Once the Trigger Ring is secure, use one of the hex head screws (#7) and secure the Banjo (#5) to the ring. The Banjo (#5) should face the same direction as the Banjo mounted (glued!) on the Wand Body. The holes must face the same direction so the red tubing can loop between them.



The Red tubing (#6) should be pressed into each of the Banjos (#5) and friction holds it in place. If you want, you can put some glue in the banjo first and then insert the tubing if you want.



Congratulations!

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