Congratulations on purchasing one or more of the upgrade kits for your awesome Spirit Halloween Deluxe Ghost Trap (and Pedal).

The installation instructions provided here are for each of the following kits:

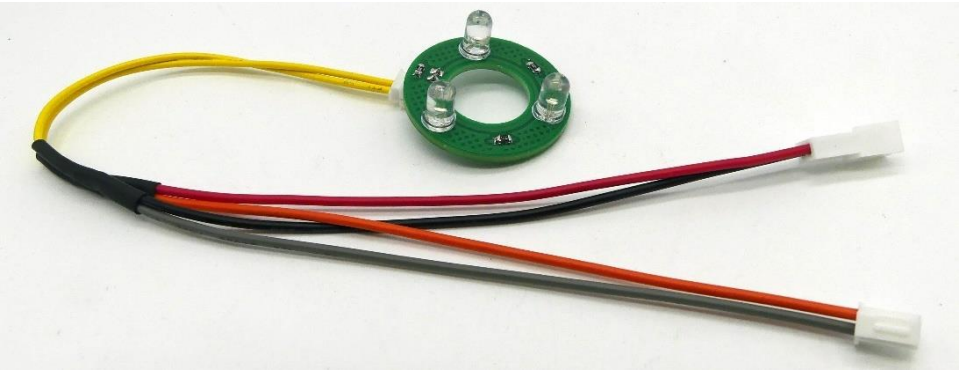
Trap Standard Kit:



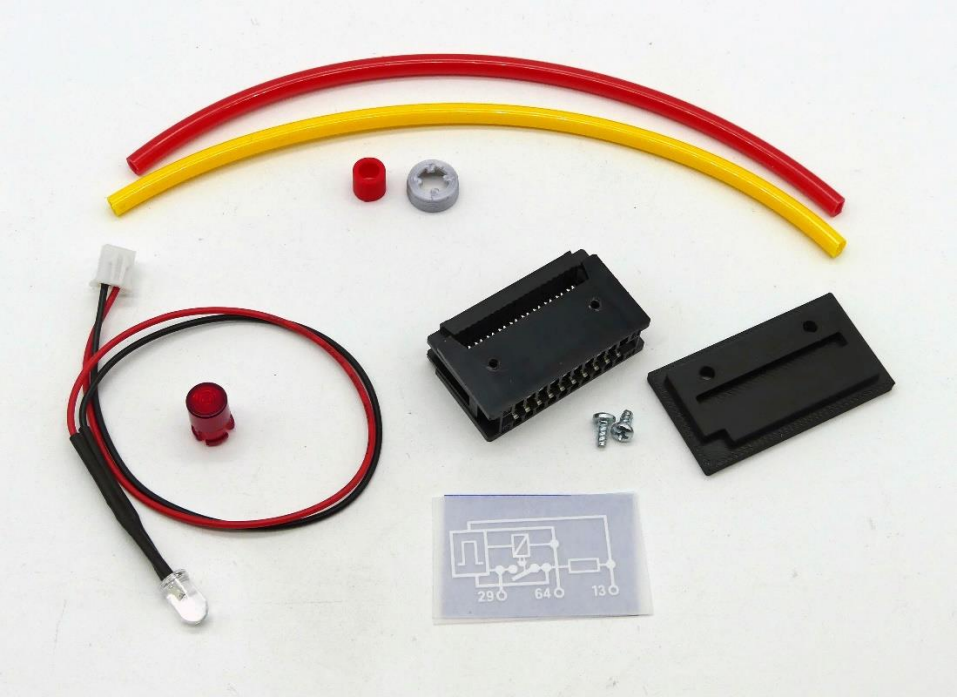
Trap Deluxe Kit:



Trap Mist Illuminator:



Pedal Standard Kit:



Pedal Deluxe Kit:



Most of the parts will require that you open up and disassemble some portion of the Spirit Halloween Deluxe Trap or Pedal. Some parts require drilling and/or grinding/filing to allow the installation of parts. NO SOLDERING will be needed as all electrical connections are plug-n-play with the proper cable and connectors already attached.

Contents

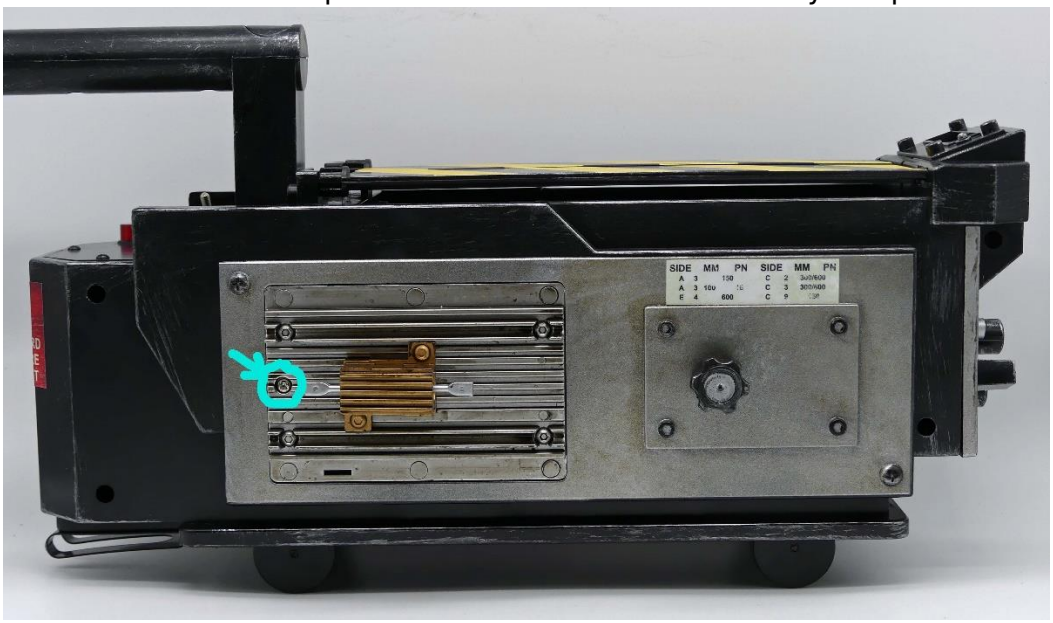
Opening the Trap 4
Installing the Trap CAL-R resistor 11
Installing the Trap Bar Graph Display Upgrade 15
Installing the Trap Top Plate Screws 22
Common Prep for Installing the Trap Toggle Switch 25
Installing the Trap *Standard* kit Toggle Switch 32
Installing the Trap *Deluxe* kit Toggle Switch and Indicator 38
Installing the Trap Red Labels on the Front Panel 54
Installing the Trap Mist Illuminator 59
Closing the Trap 65
Opening the Pedal 66
Installing the Pedal Cable Upgrade 72
Installing the Pedal *Standard/Deluxe* Indicator Upgrade 80
Installing the Pedal *Standard* Tubing Upgrade 87
Installing the Pedal *Deluxe* Tubing & Brass Upgrade 94
Installing the Pedal *(Deluxe)* Relay Upgrade 102
Installing the Pedal Dry Rub Transfer 110
Closing the Pedal 112

Opening the Trap

Tools:

- Small Phillips screwdriver
- Small Pliers

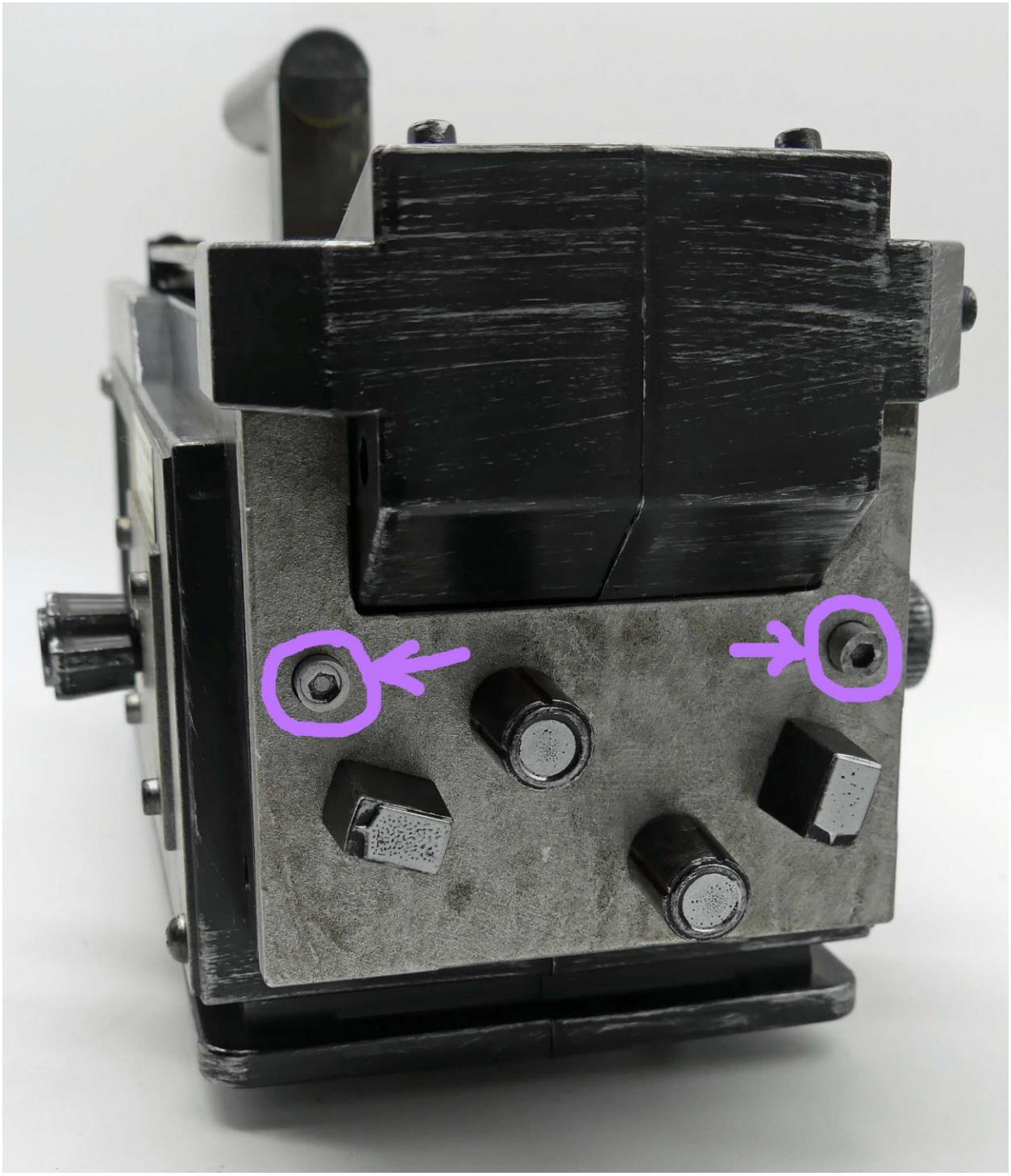
Unscrew the Silver Philips head screw that holds the battery compartment in place:



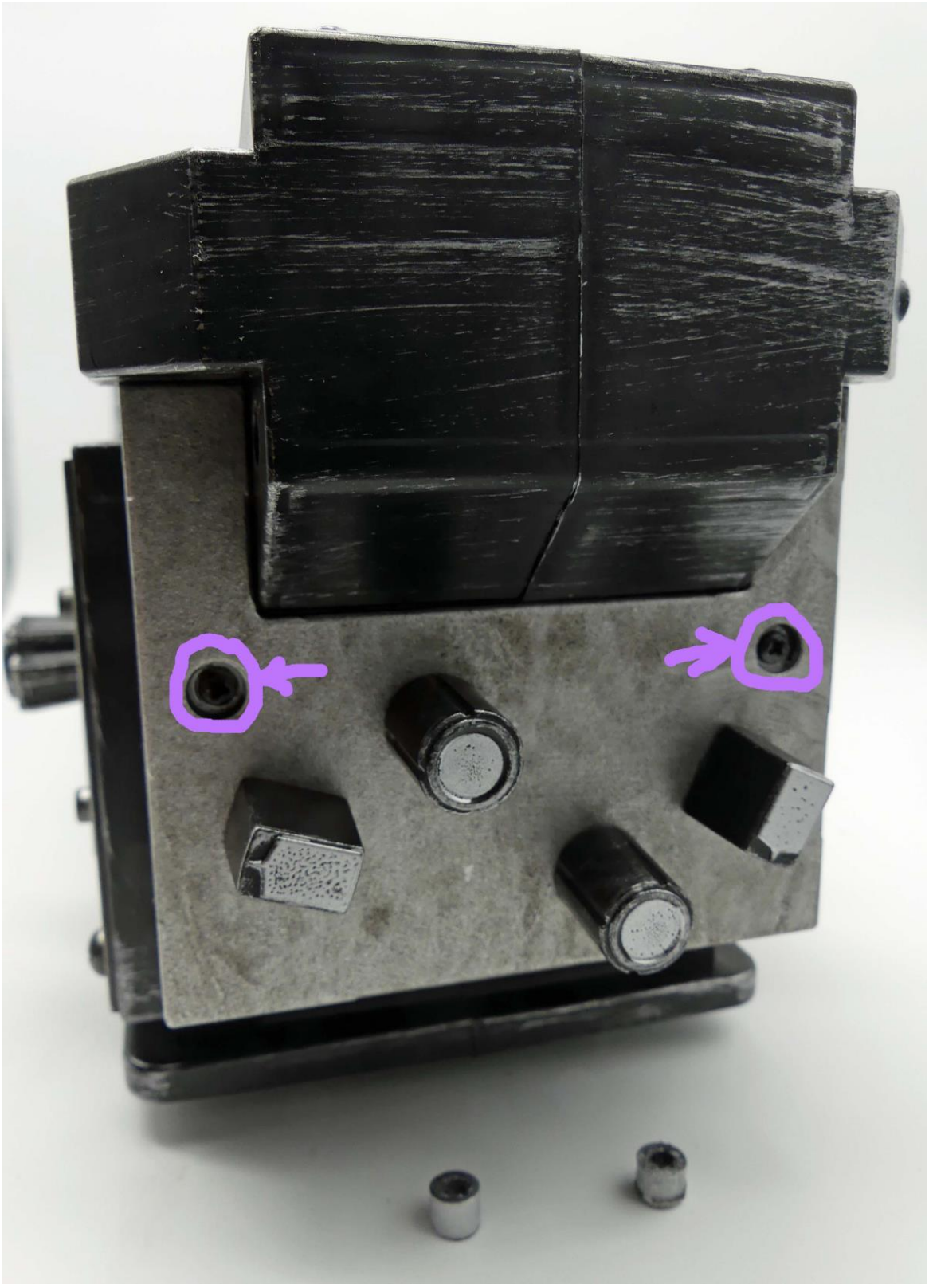
Next remove the wheel assemblies. They are held on with friction clips, so just pull and they will detach from the body:



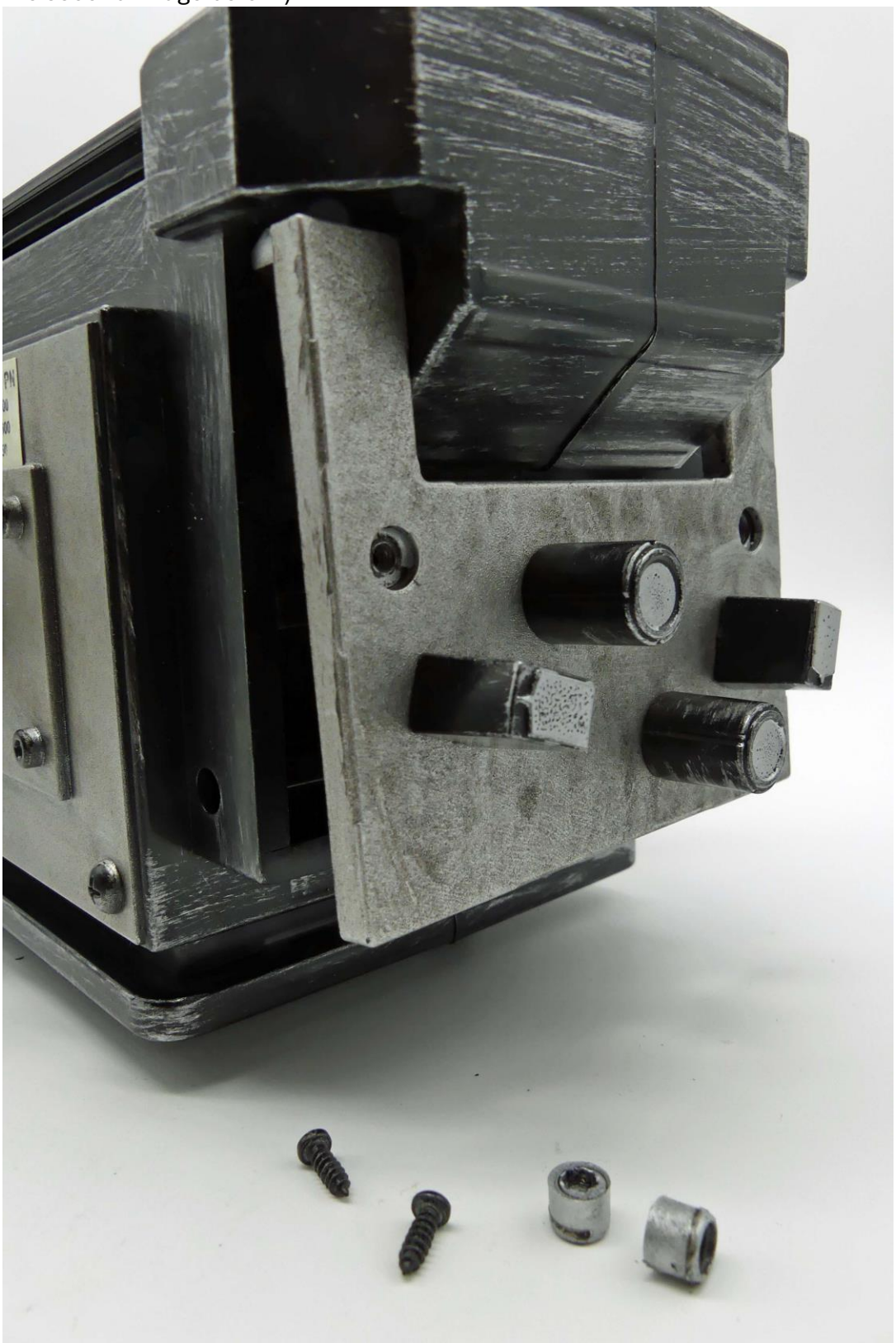
Remove the front panel by first removing the two plastic fake screw heads caps that are glued into place. I used small pliers to grab them and slight rocking was all that was needed to release the glue. Try not to mar them as they could be used again, but there are larger real screws in the kit that are going to replace these, so they are not necessarily needed.

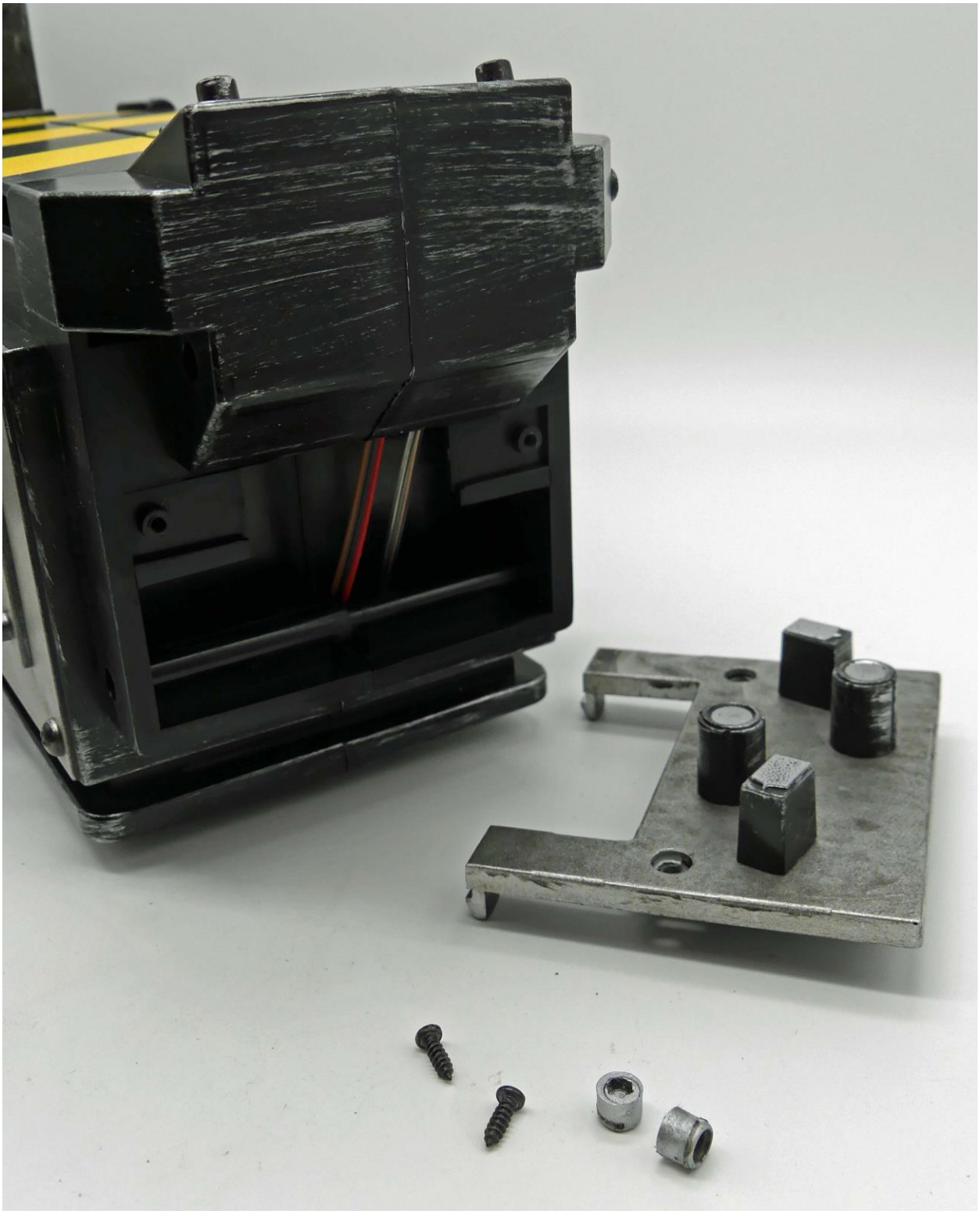


The screws may have glue on them, so may need to be cleaned up a bit to remove with the small Phillips screwdriver. I used a dental pick to clean out one screw, a pin or needle can also work.

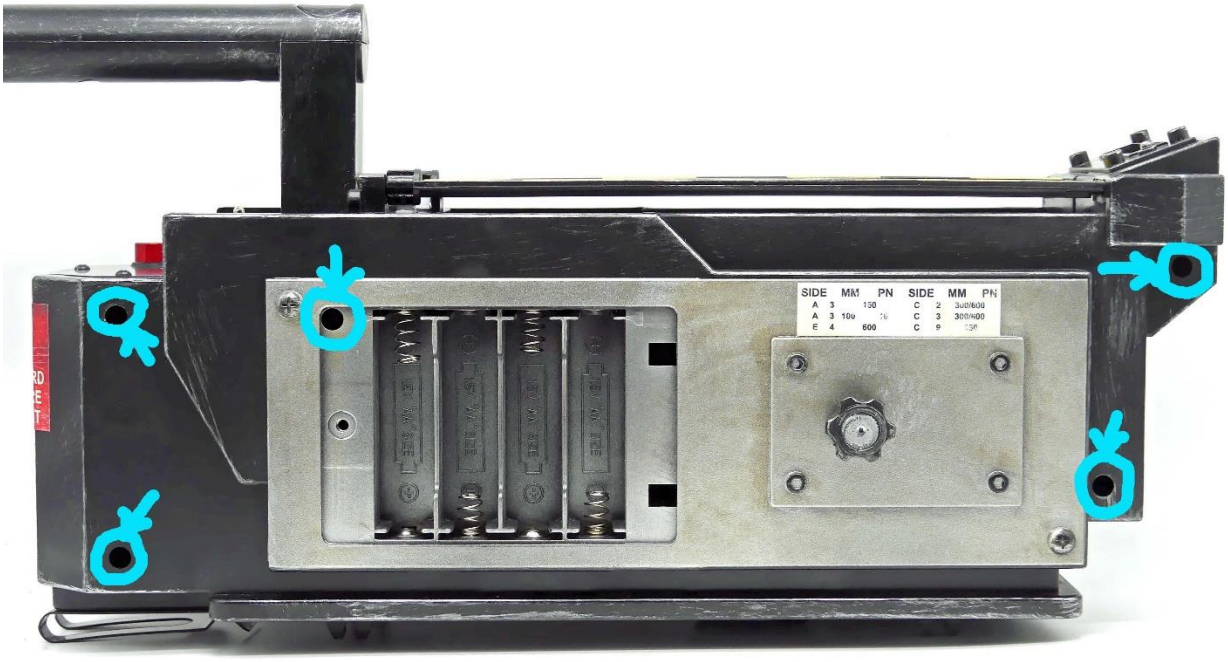


Once the screws are removed, pull down on the front plate and then you should be able to tilt and pull out the plate. The plate is held in by the two tabs on the top of the plate (see the second image below.)





Unscrew the 5 silver Philips head screws that hold the two sides of the trap together:



On my trap, the screw in the battery compartment and just under the display had poined ends and the other three had blunt ends – not sure if that is important or not…

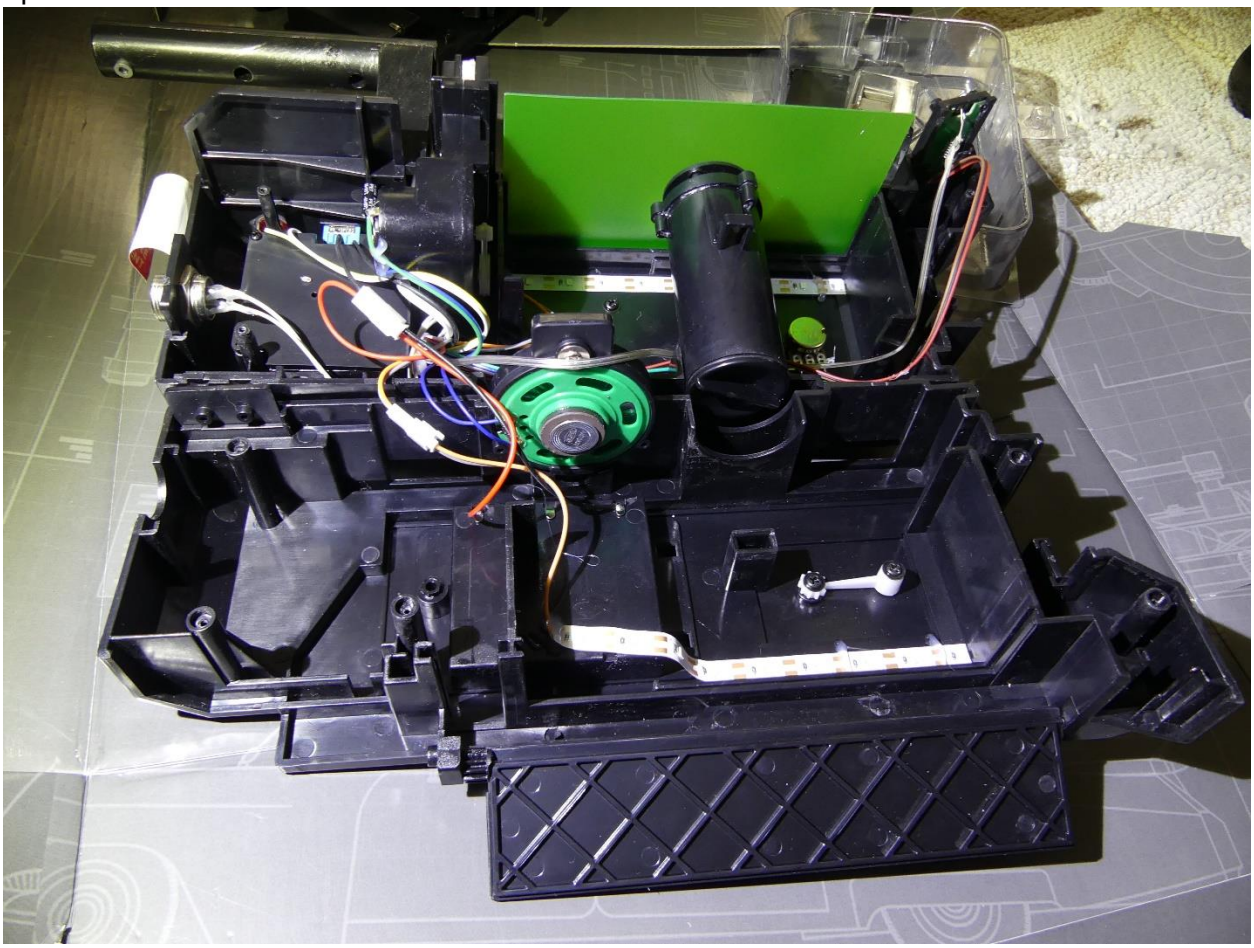
The only thing left holding the two halves together is the “Danger” label on the back of the trap under the handle.

Two ways to deal with this:

1) Cut the label with a razor blade down the middle along the seam where the two halves meet.
   This will always be visible, but most of the label will be left in great condition.

2) Remove at least half of the label (what I have been doing)
   Start by peeling up just the bottom right side of the label with your fingernail or a razor blade. This is to start the peeling process.
   Pull VERY slowly to detatch the label from the rest of one side with a low angle. If you used a high angle (like folding it over on itself), you may add more marks on the label that will be noticeable when putting the label back in place.
   This worked OK for me, but did leave some marks on the label from the bending.
   You could remove the entire label and it may be safer, but I was able to do all the modes with just one half removed.
   To reattach later, some glue/paste will be needed since it may no longer reliably stick.

Once the “Danger” label issue is resolved, the two halves will now be able to be pulled apart:

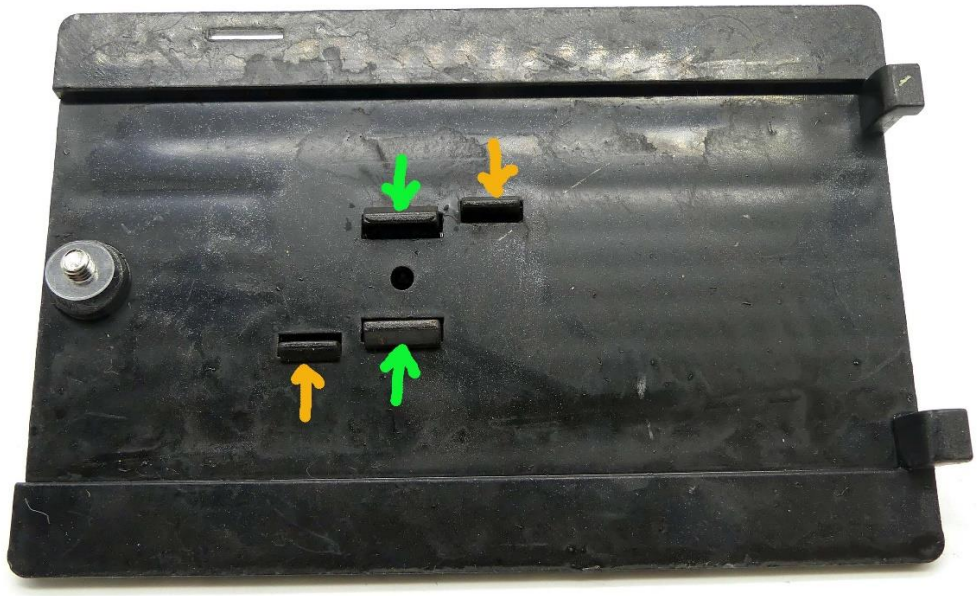


Installing the Trap CAL-R resistor

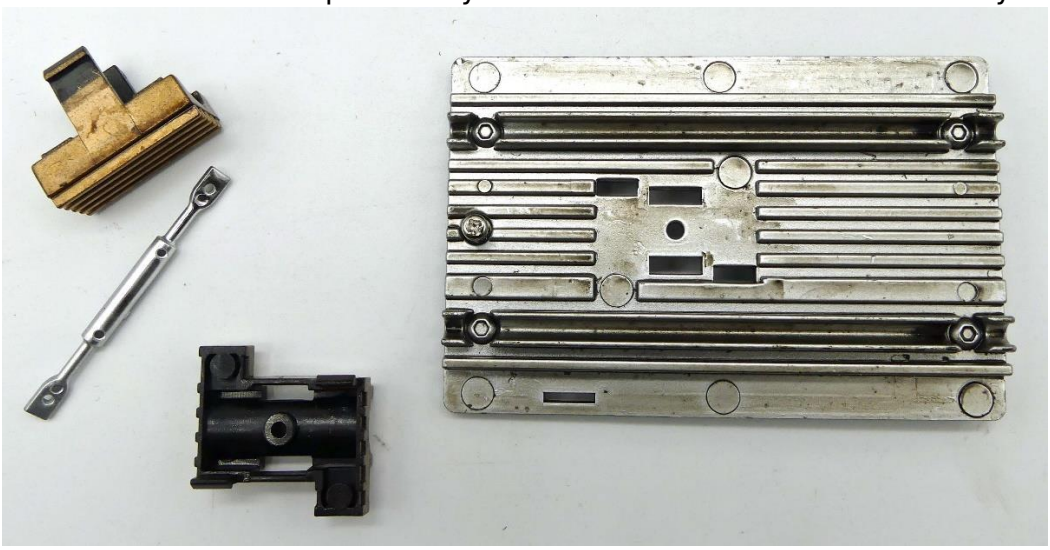
Tools

- Drill with 3/32” drill bit
- 3/32” Hex Key / Allen Wrench / Allen Key

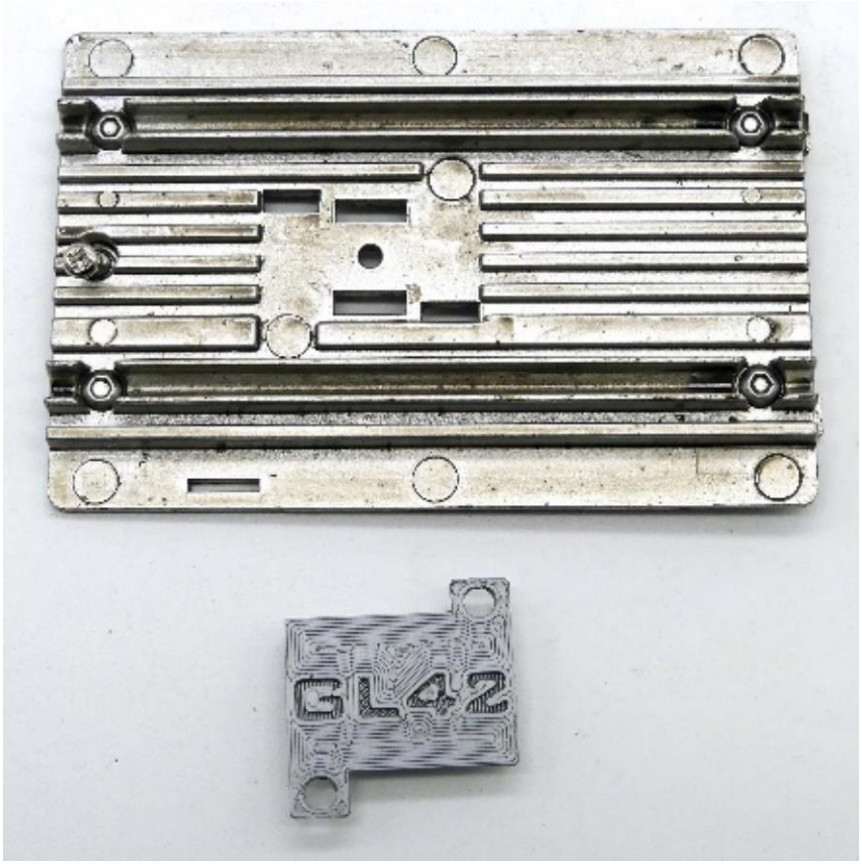
Remove the existing plastic resistor by flipping the battery cover over and squeezing the tabs towards the middle of the back and pushing on the tabs to release the parts on the top side of the battery cover:



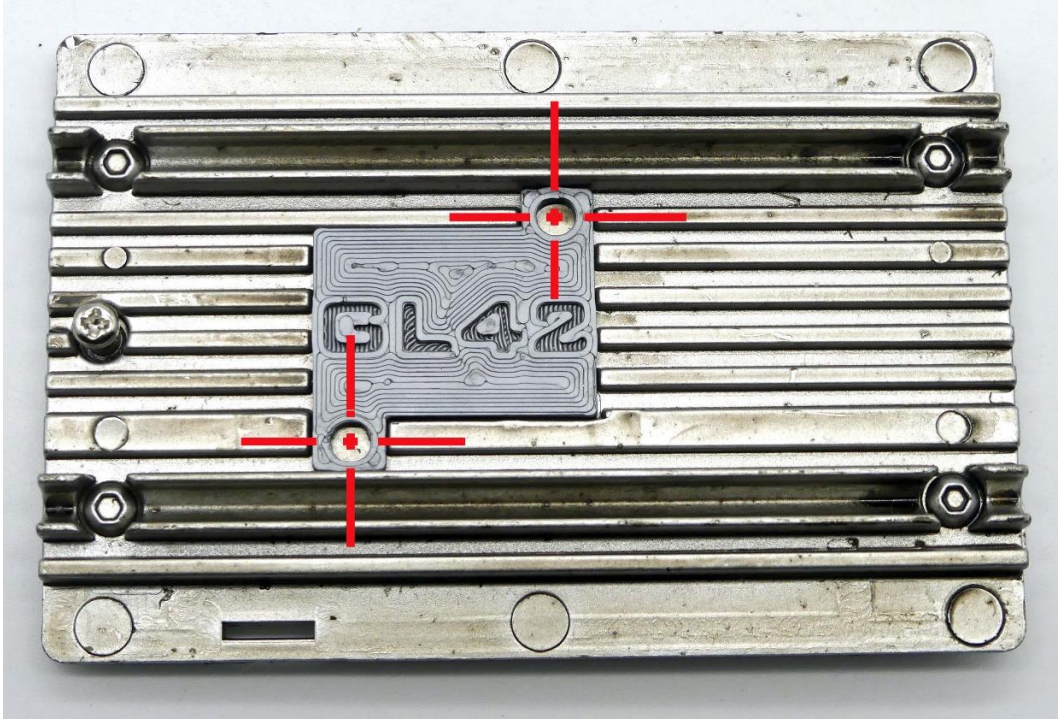
This should release the parts and you now have a somewhat blank battery cover:



Take the silver GL42 spacer part and clip it into the battery holder from the top side. It will snap into place and be held securely:



Drill a 3/32” hole in the center of each of the two openings in the silver GL42 part:

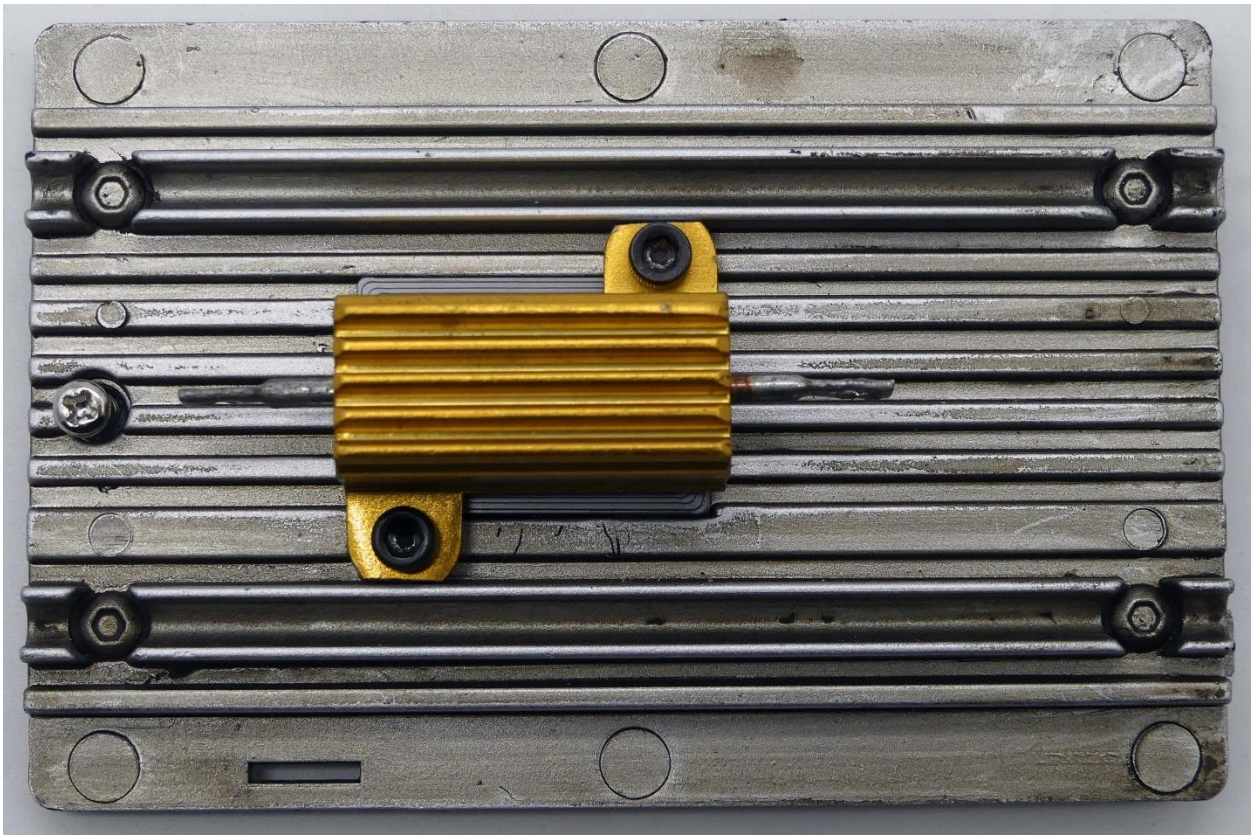


With the holes drilled all the way through the battery cover:





Place the CAL-R resistor over the GL42 spacer and secure it in place with the two black socket head screws. Use the Hex key with pressure to get the screws to thread into the holes that were just drilled. DO NOT OVER TIGHTEN! The screws are only threaded into the plastic, so you do not want to strip them.

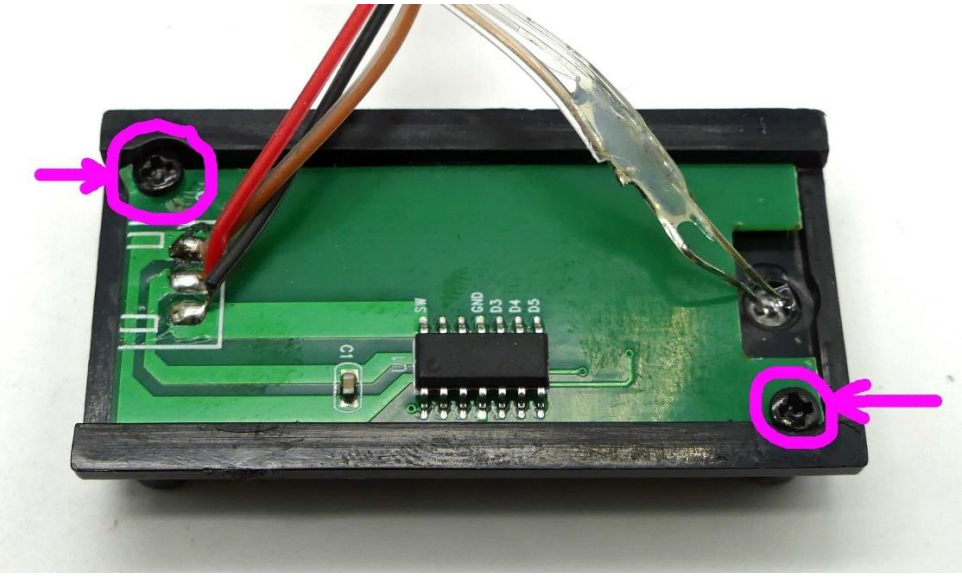


Installing the Trap Bar Graph Display Upgrade

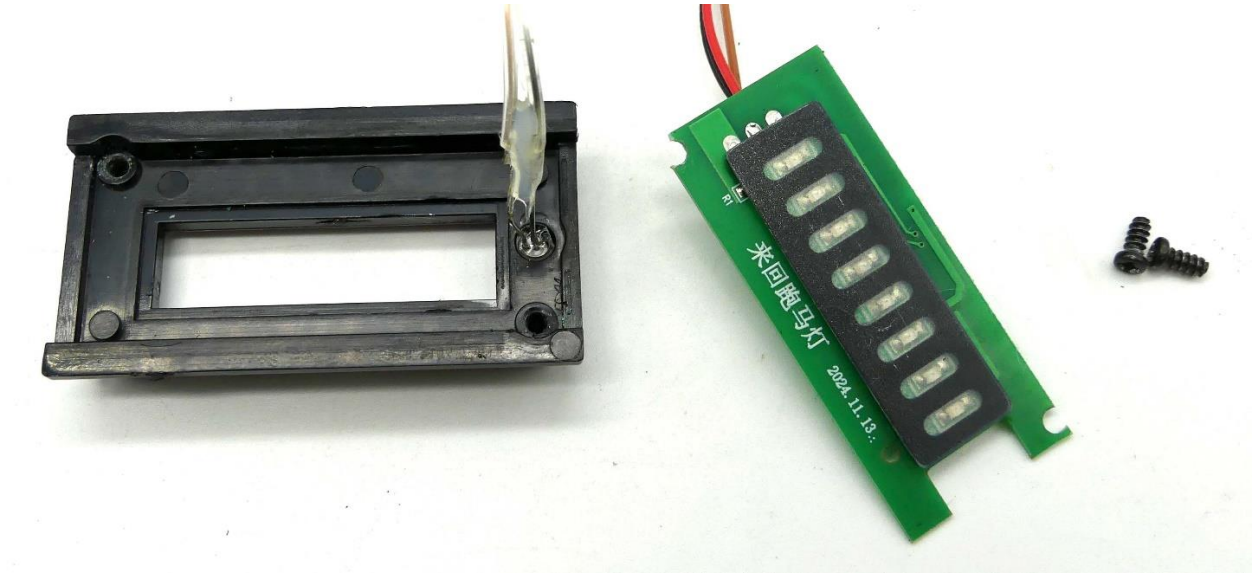
Tools

- Small Phillips screwdriver
- Gel / medium / thick super glue
- Toothpick

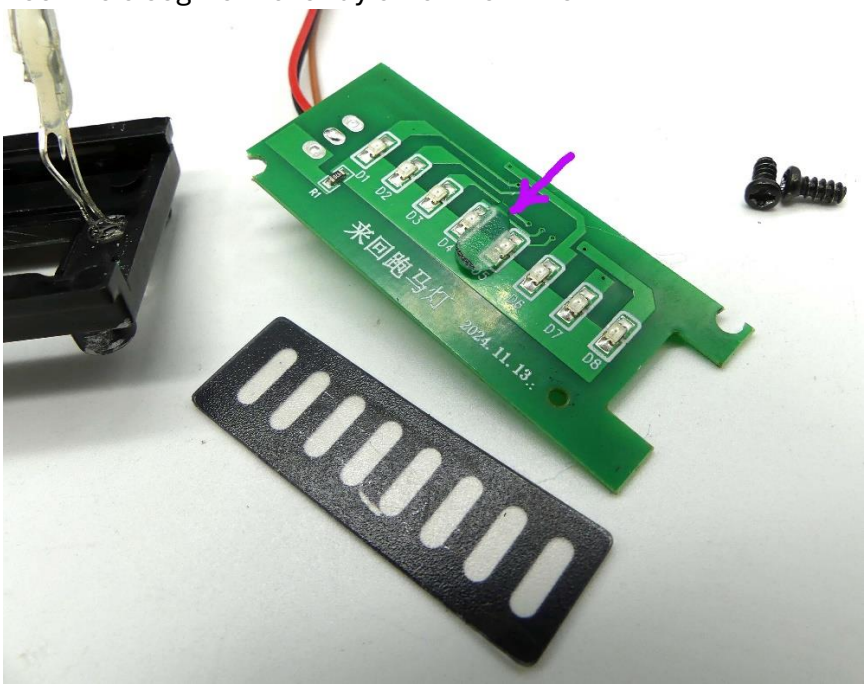
Pull the bar graph assembly out from the trap half it is in and flip it over so you have access to the circuit board on the back side of the bar graph display. Use the Phillips screwdriver to remove the two screws holding the circuit board in place:



With the screws out, the circuit board can be removed:

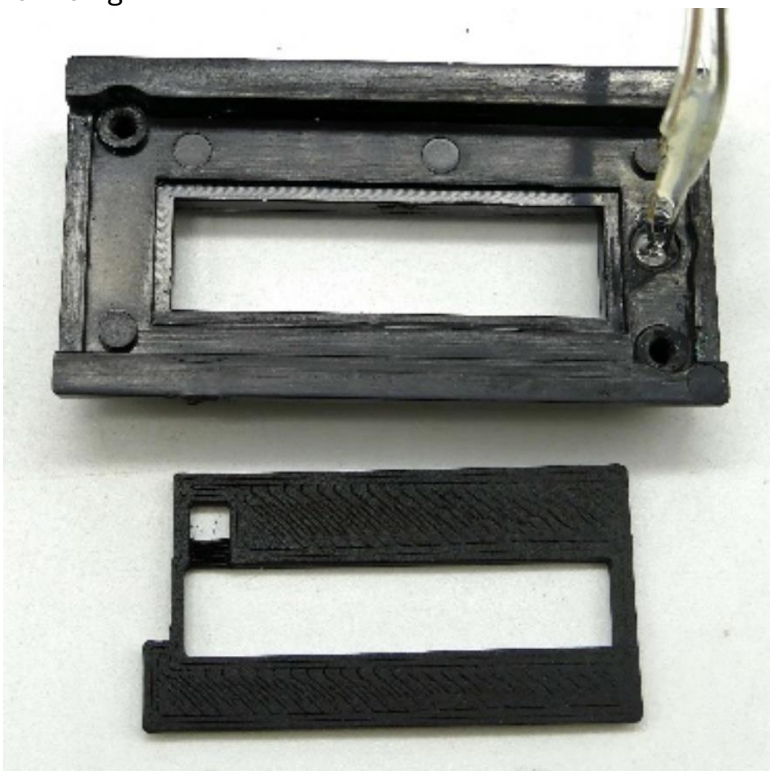


Peel the 8 segment overlay off of the LEDs.



The above purple arrow points to a blob of hot glue that is on top of some of the LEDs. I don't like that, but it may be fine. I use my fingernails to scrape the hot glue off of the board and the LEDs. Using metal tools may harm the board and/or the LEDs.

Next orient the 3D printed spacer such that the ridged surface is facing down and the square notch cutout is in the upper left with the bar graph housing is oriented with the LED to the right:



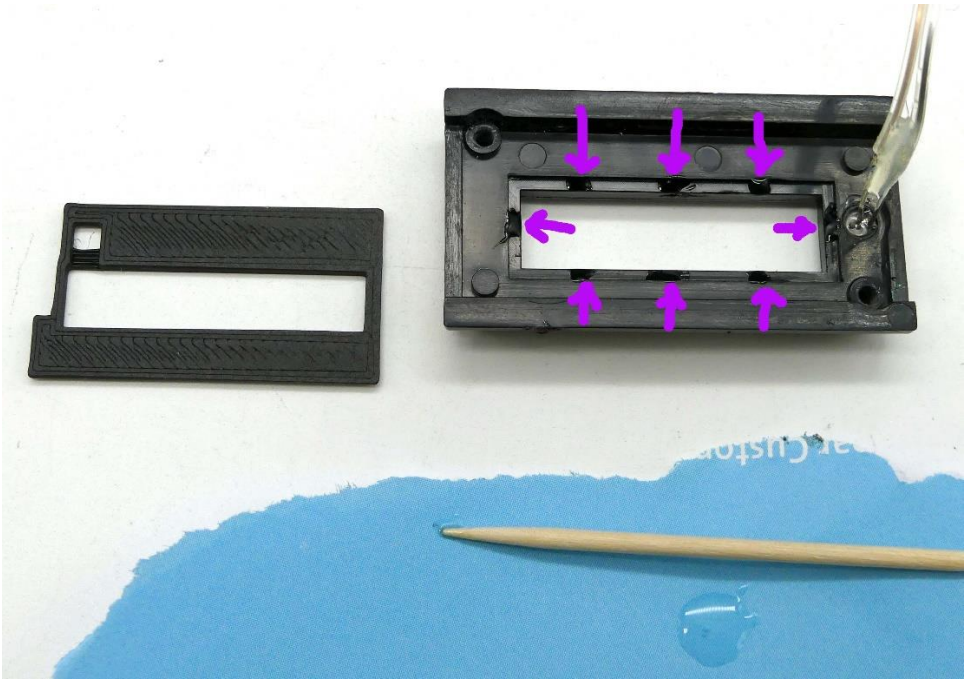
It would be good to test fit the 3D part in the opening before gluing it in place:



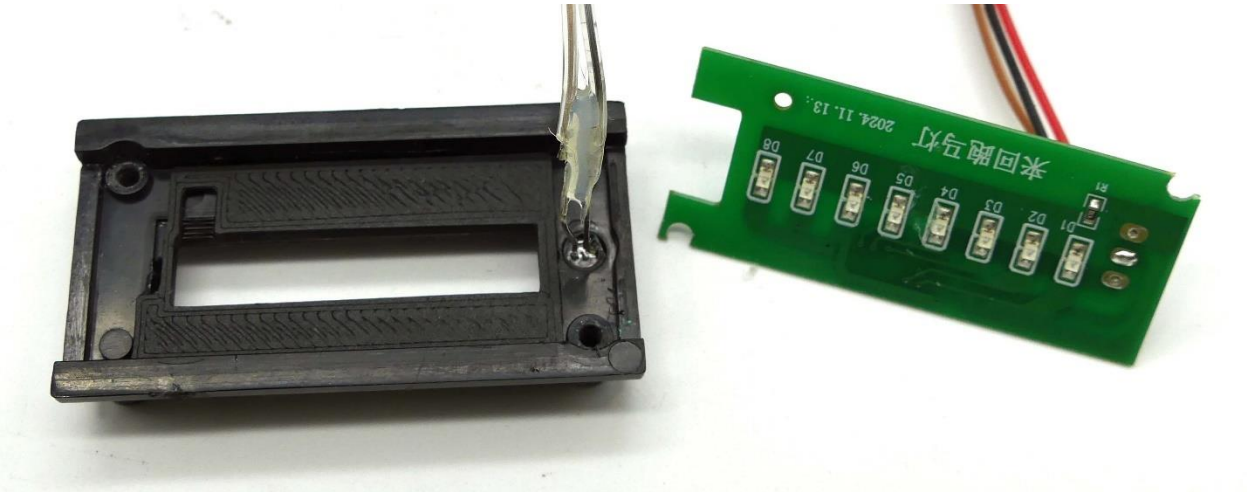
The 3D printed spacer should sit flush with the two screw supports and the two posts that are near the 4 corners of the circuit board. If the spacer is taller than these posts, it is not snapped into place.

After a successful test fit, remove the 3D space but preserve the orientation because it will soon be put back into place.

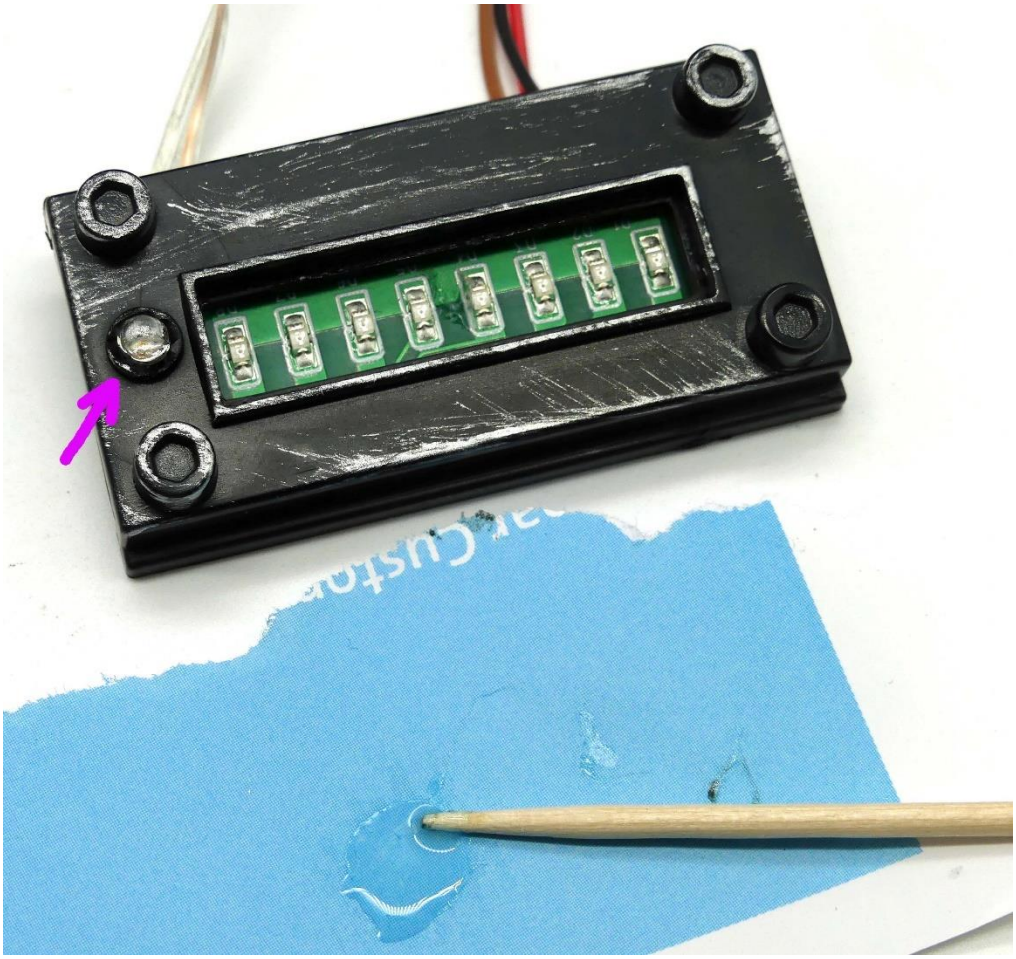
Use the Gel / medium / thick superglue to secure the spacer in place. I like to use a toothpick to apply the glue. I added dabs of glue to the spots pointed to in Purple:



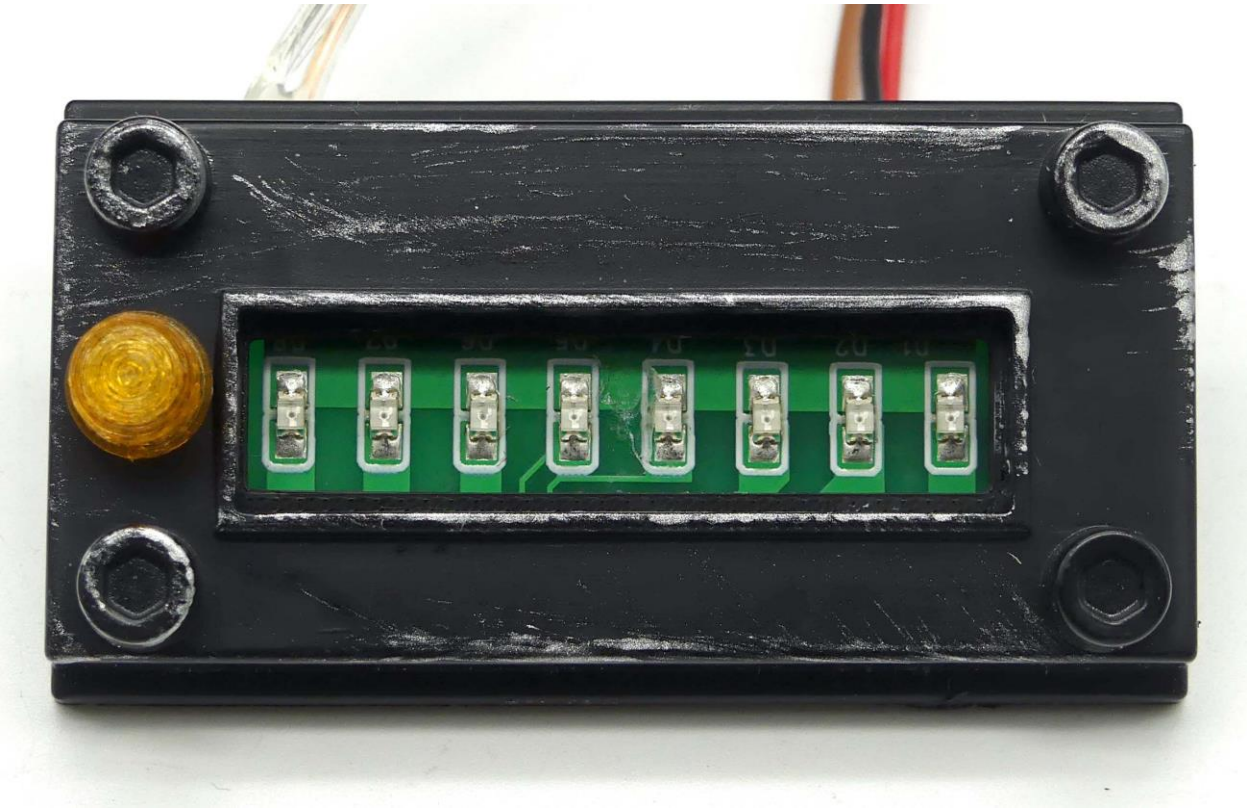
Now snap the 3D printed space back in place and hold for a few minutes to make sure the superglue has set. Next to the glued assembly is the circuit board without the hot glue blob in the center:



Next, re-attach the circuit board with the two screws. Make sure the circuit board is fully seated. Flip it back over and you are ready to glue on the Amber LED cover. Add a dab of superglue around the LED on the raised black surround:



Then set the amber lens over the LED and center it over the LED before the superglue take hold:

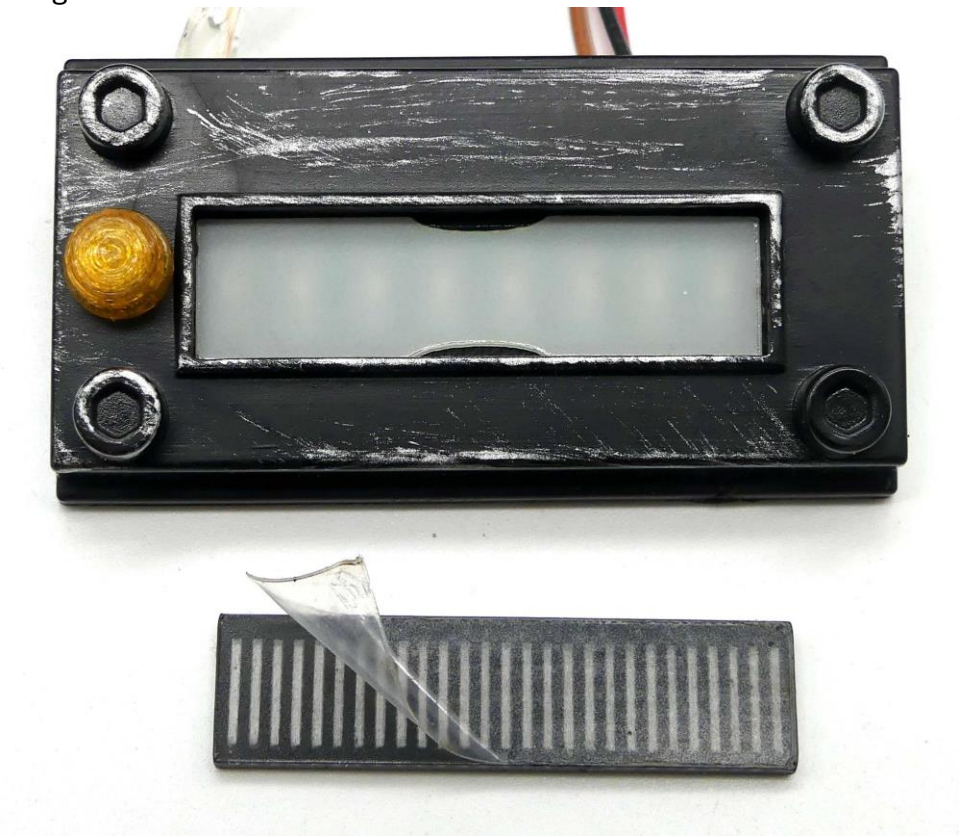


Next drop in the diffuser material:

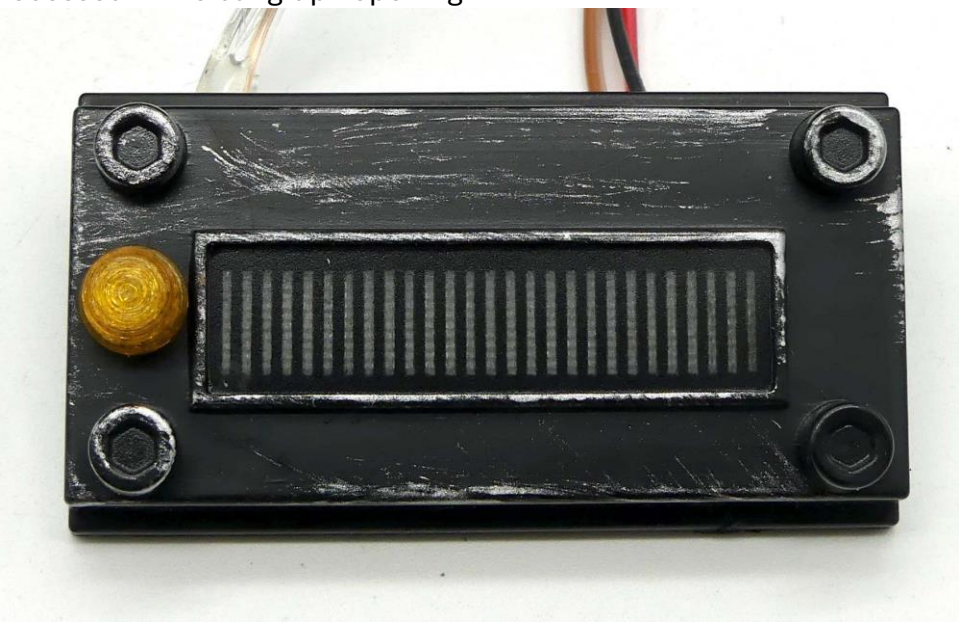


The two cutout areas on the top and bottom of the middle of the diffuser are there to allow you to add a dab of glue if the laser cut display part is not secure. So far that has not been an issue in the traps I have modded, so may not be needed.

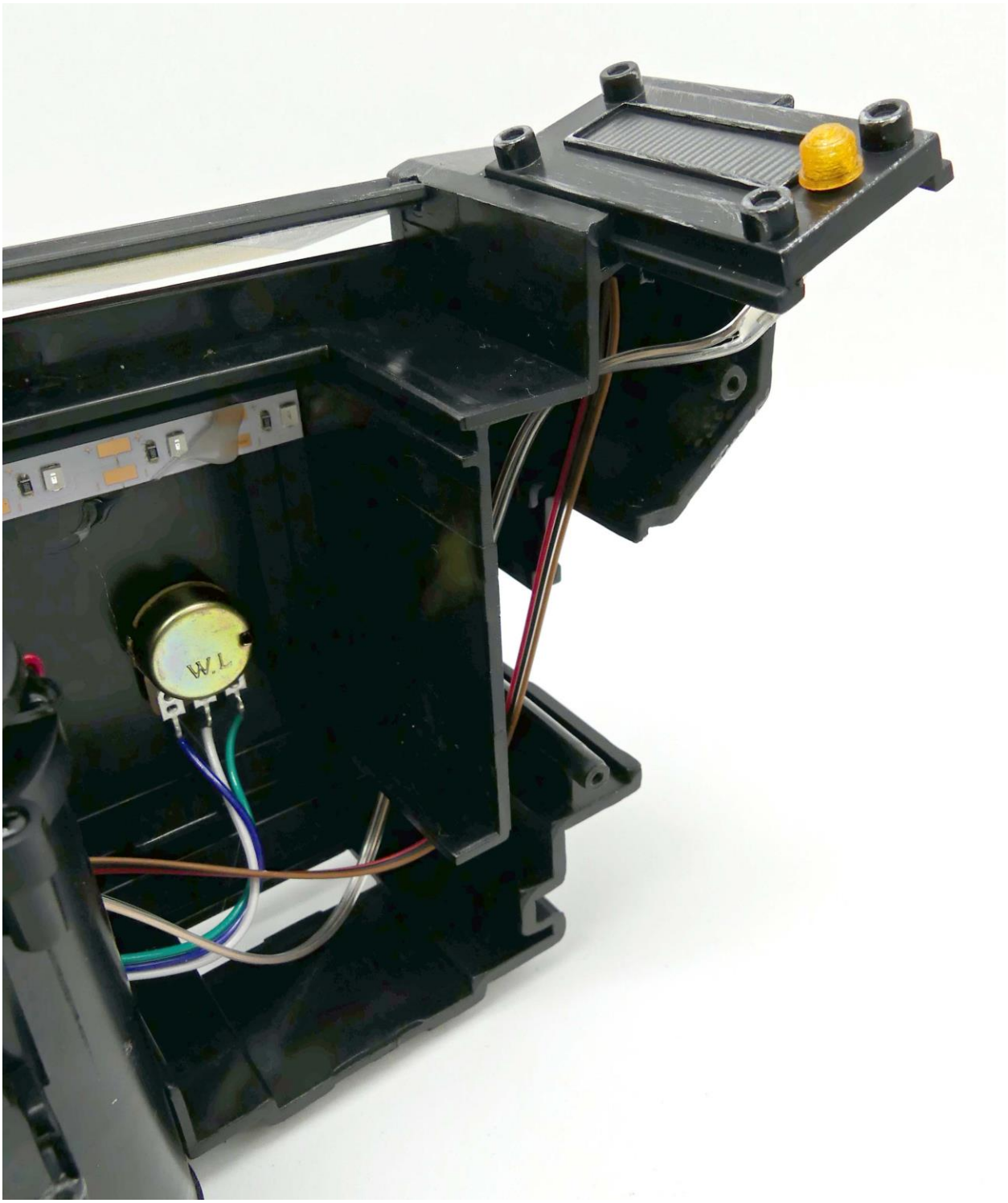
Next peel off the protective cover on the laser cut part, shown partially removed in the image below:



The laser cut piece should be able to be pressed into place and can sit flush, or somewhat recessed in the bar graph opening:



Now that the bar graph upgrade is complete, you can slide the bar graph assembly back into place and dress the wires where they need to go:



Installing the Trap Top Plate Screws

Tools

- Rotary grinder (Dremel) with small grinding wheel
- Drill with 3/32“ drill bit
- 5/64“ Hex key / Allen Wrench / Allen Key

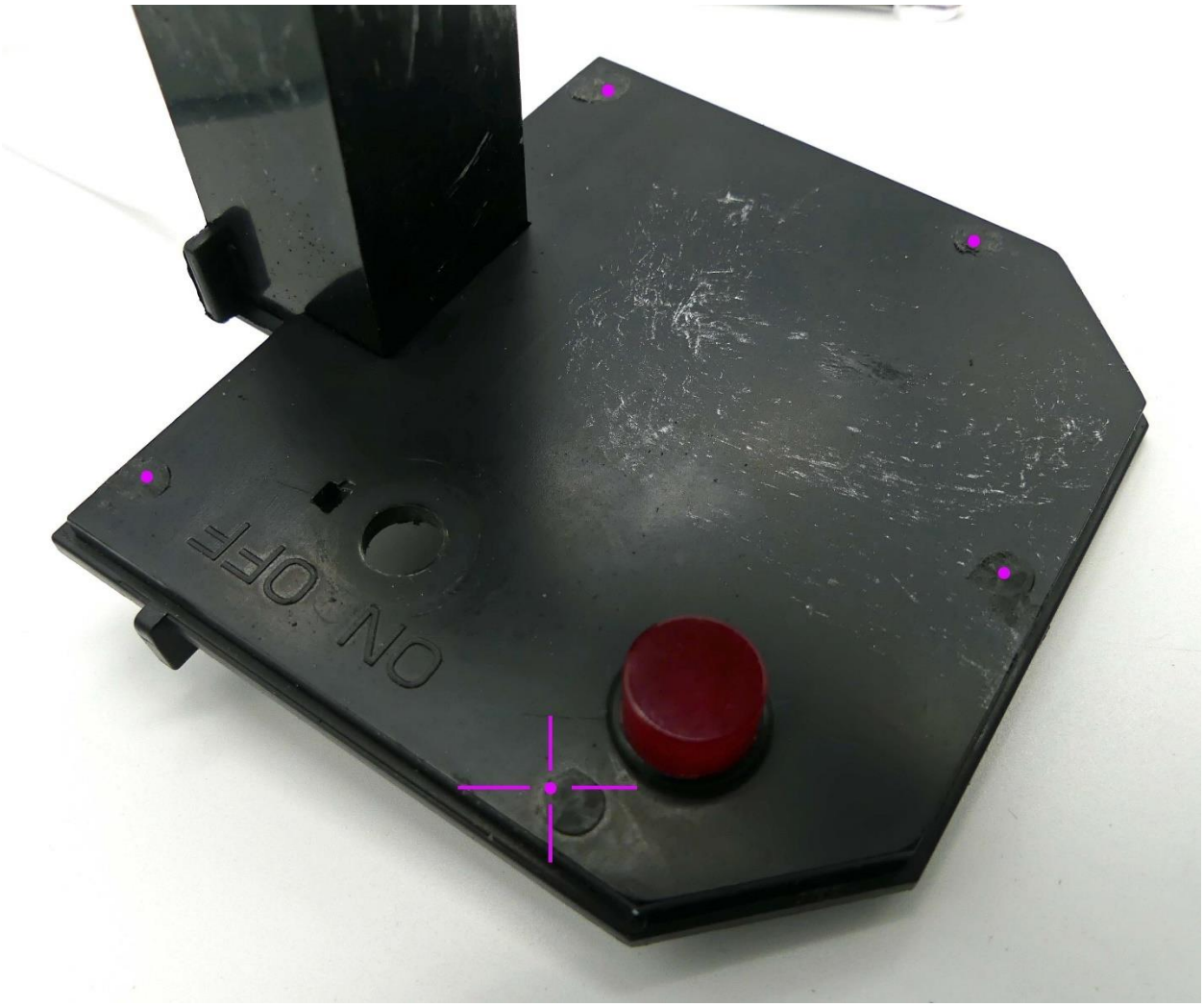
Remove the front plate with the toggle switch and power indicator by sliding it out of the half it is sitting in.

It may be easier to work on if the toggle switch and indicator are not connected to the main board. This may also help in the installation of a new toggles switch (and or indicator), so do not struggle with wires if it causes any issues for you to move the panel to a convenient area to work on. See the install details for the toggle switch for images of the cover removal and cutting of the wire tie to free the connections from the trap’s main controller circuit board.

Grind off the existing screw heads with the rotary tool (Dremel) so you have a flat area to work with:

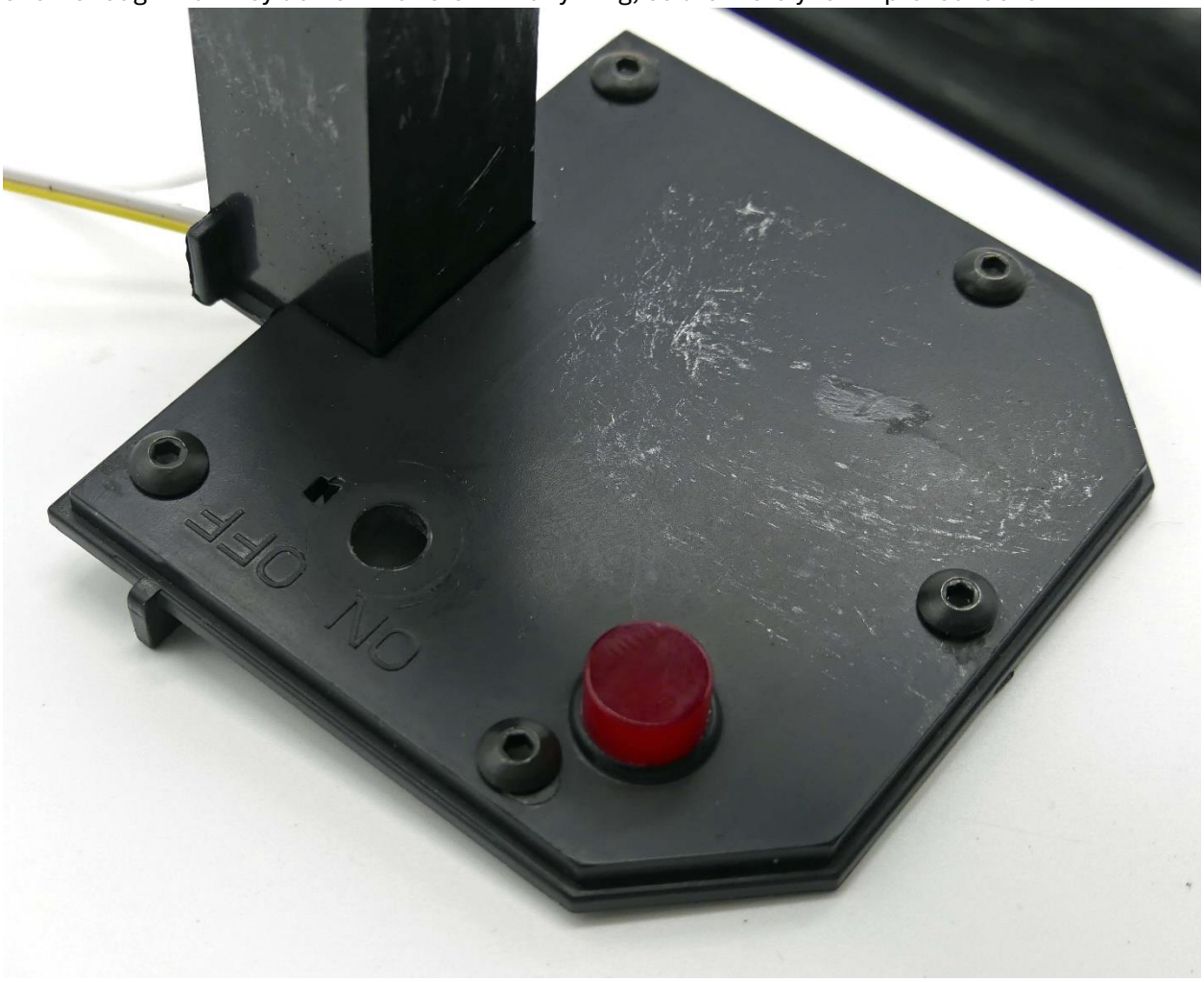


Next, drill 5 holes for the screws to be screwed into. Four of the holes should be placed to cover the grinding off of the fake screw heads, but the screw head next to the Indicator light should be moved away from the light to give room for the Linrose Indicator Light if you ever want to install that. The Correct indicator light has a metal ring that is larger than the original Spirit Halloween indicator, so needs more room around the indicator light.



The hole centers are located approximately 4.5 mm from the top surface edge.

After the holes are drilled, the screws can be installed. They do not connect to anything and are short enough that they do not interfere with anything, so are merely for improved looks:

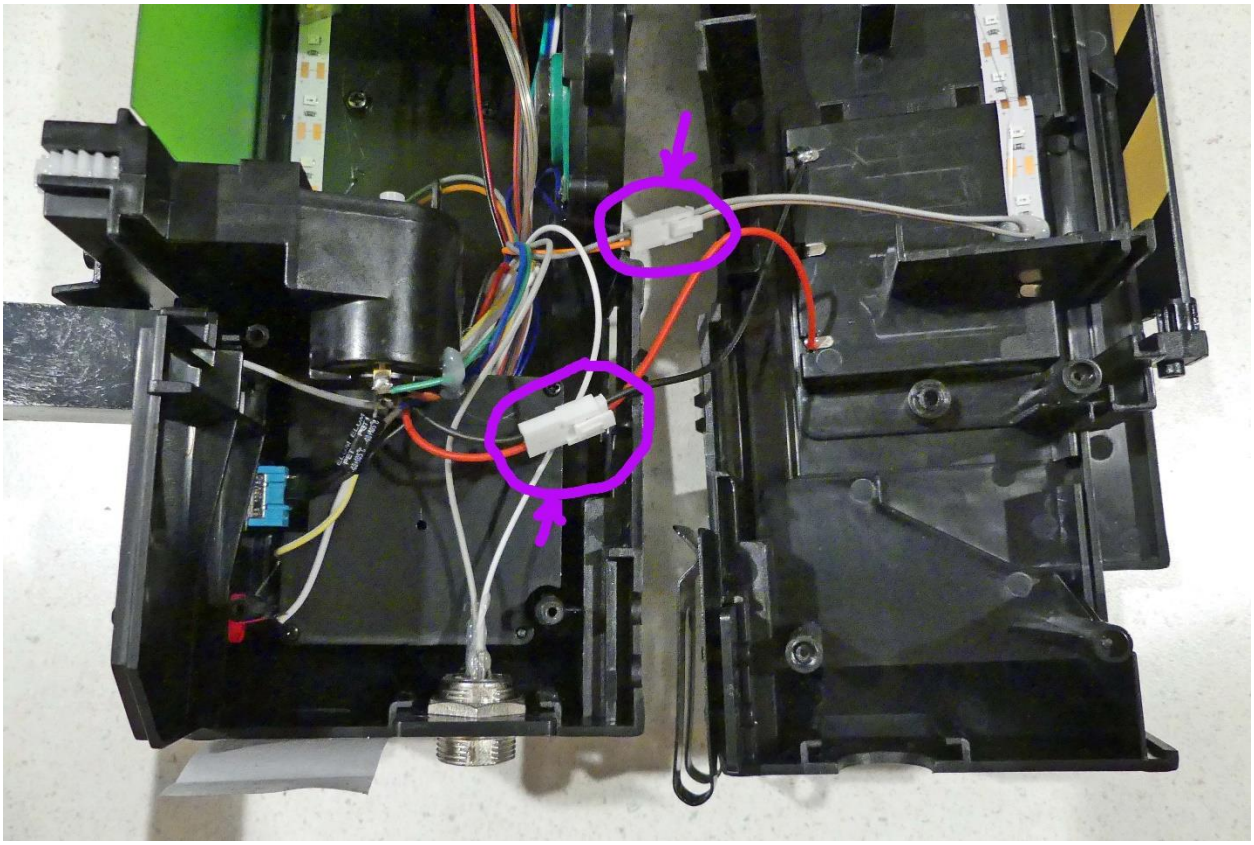


Common Prep for Installing either Trap Toggle Switch

Tools

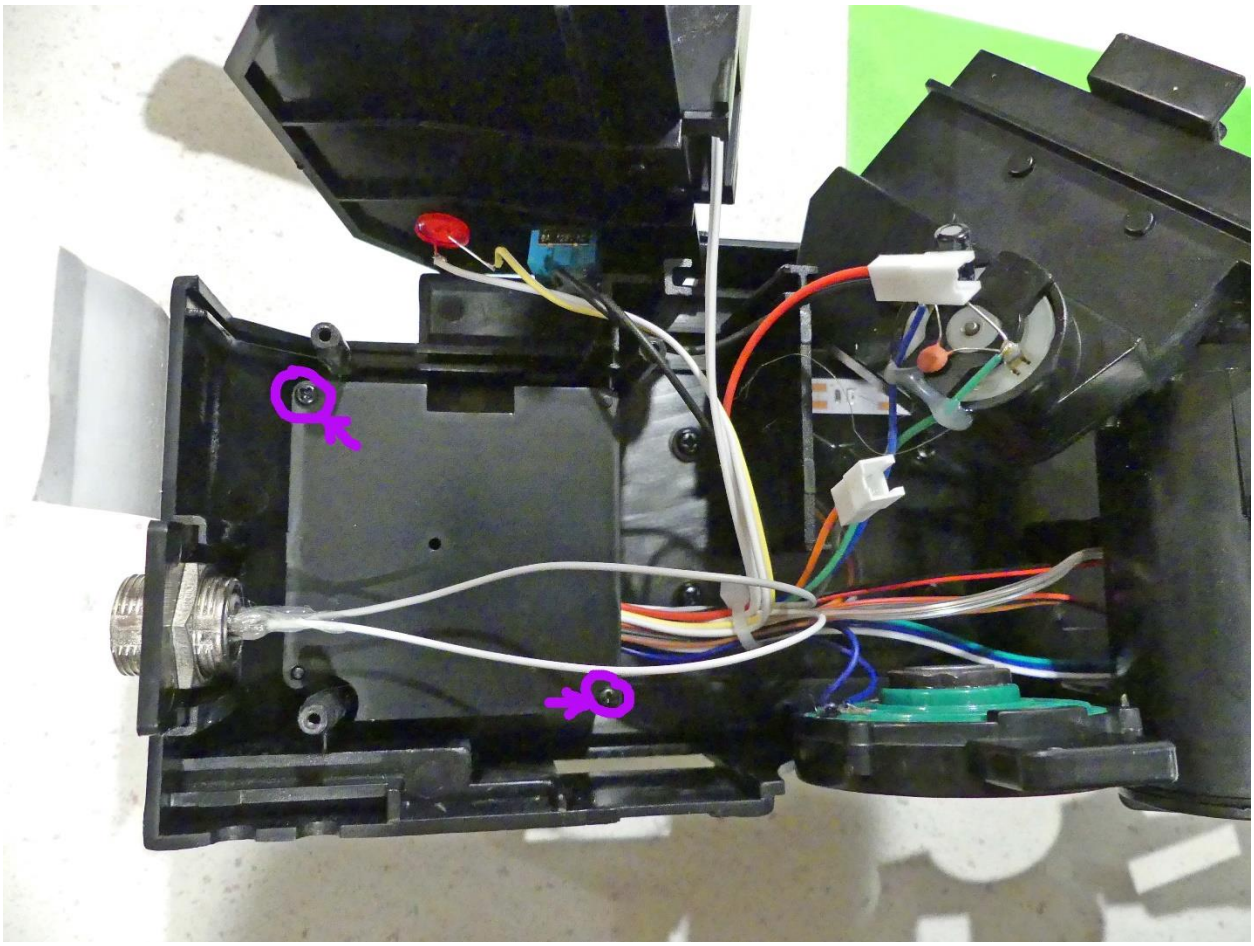
- Philips screwdriver
- Diagonal cutters (just to cut a wire tie)
- Needle nose pliers or small crescent wrench
- Rotary tool with small sanding stone disks
- Drill and ¼” drill bit

Separate the two halves of the trap by unplugging the LED strip connection (gray and orange wires) and the battery connection (red and black wires). This works best if the speaker is in the same side as the mist and electronics, so you do not have to deal with those wires.



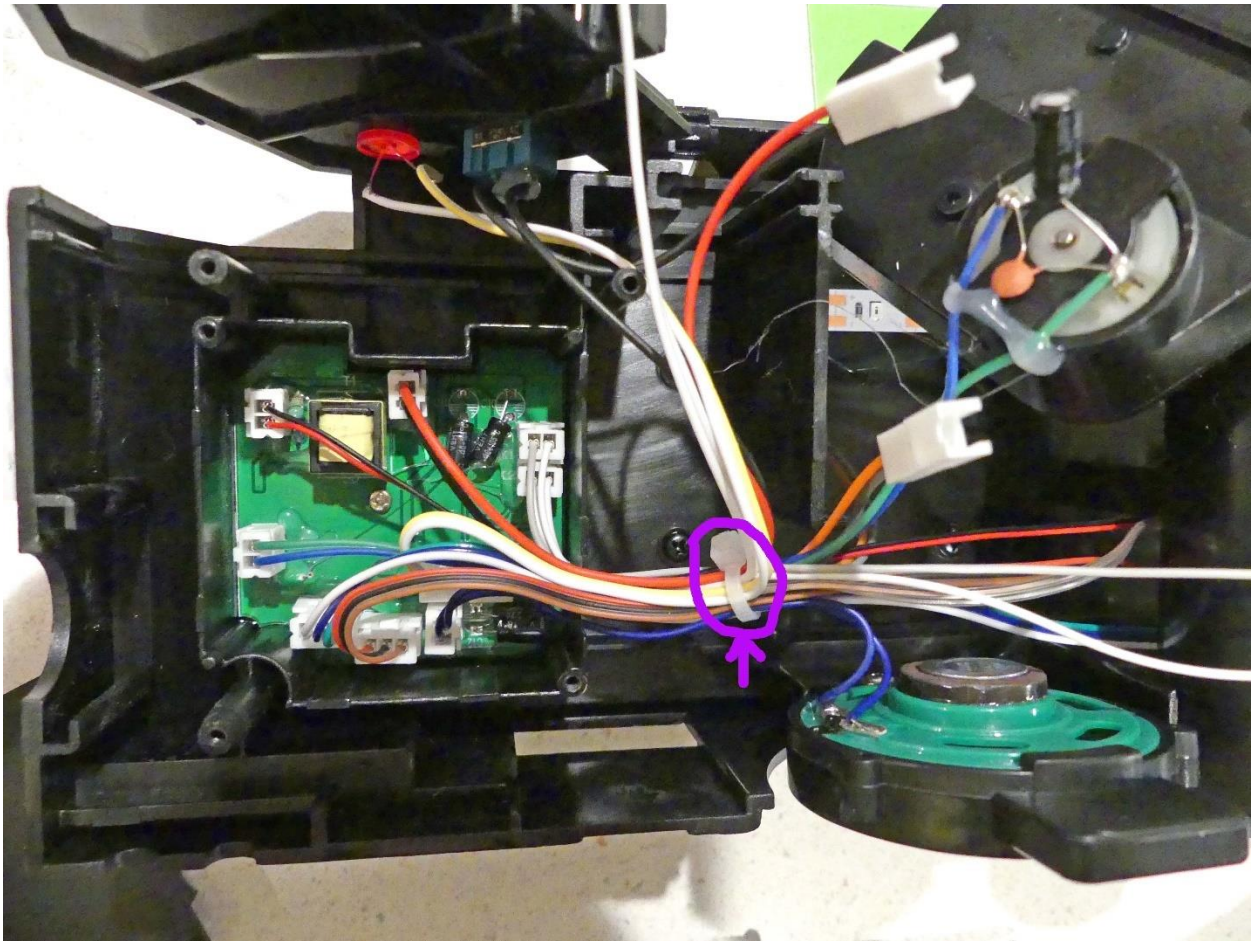
Next, slide out the motor assembly that opens and closes the top flaps and also the trap handle with attached power switch and power indicator light. The wire lengths do not allow these to be moved very far, just enough to make room for easy access to the electronics.

To expose the main electronics circuit board, remove the two Phillips head screws and lift the lid off:



The large circular metal connector with two white wires that is used to connect a cable between the trap and the pedal can also be lifted out of the way just to make the next steps a bit easier.

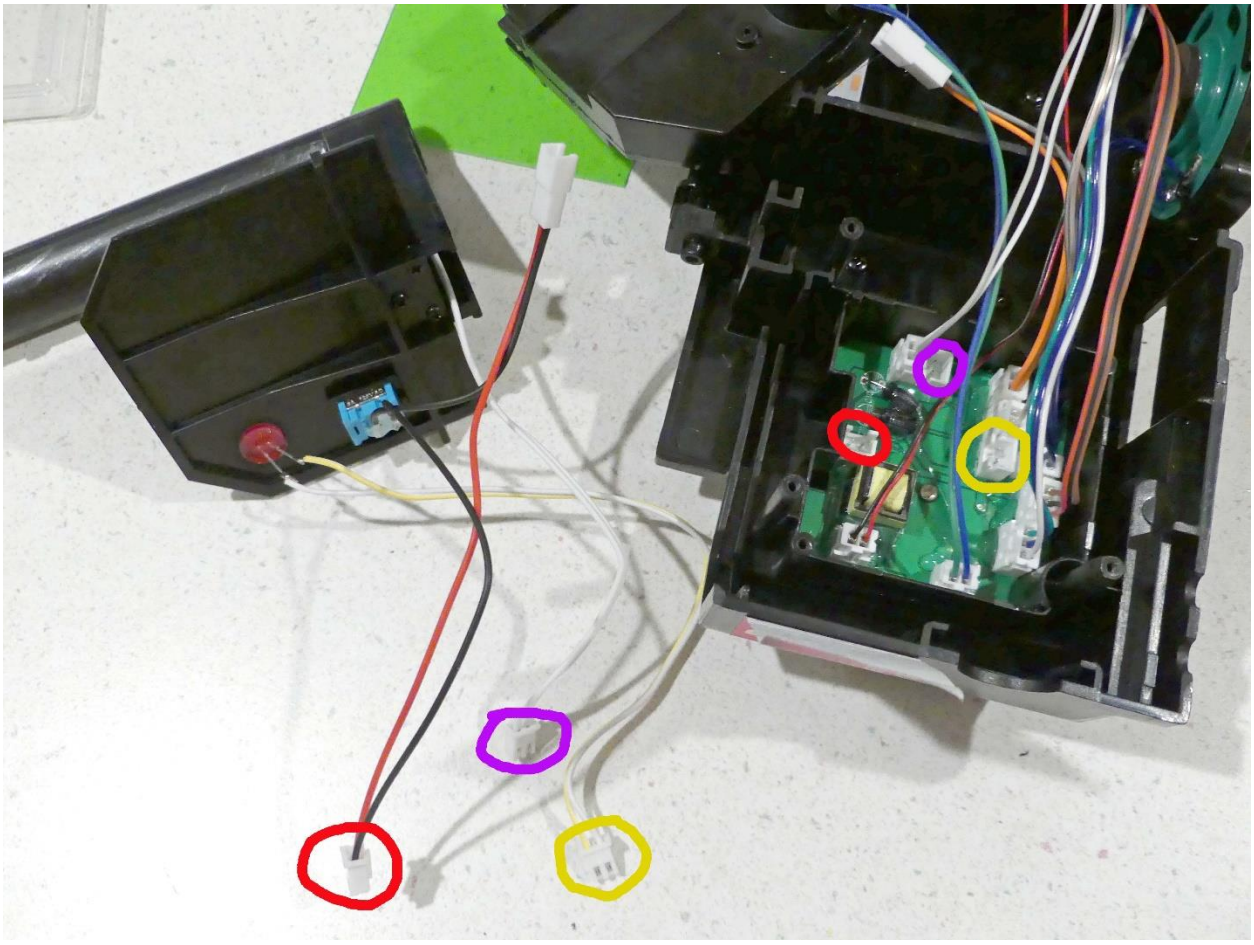
Next use the diagonal cutters to remove the zip tie. DO THIS CAREFULLY!
You do not want to cut any of the wires the wire tie is holding. If you do, you will need to repair the connection by stripping the wire ends and preferably adding heat shrink over a solder-fix connecting the two cut and stripped wire ends.



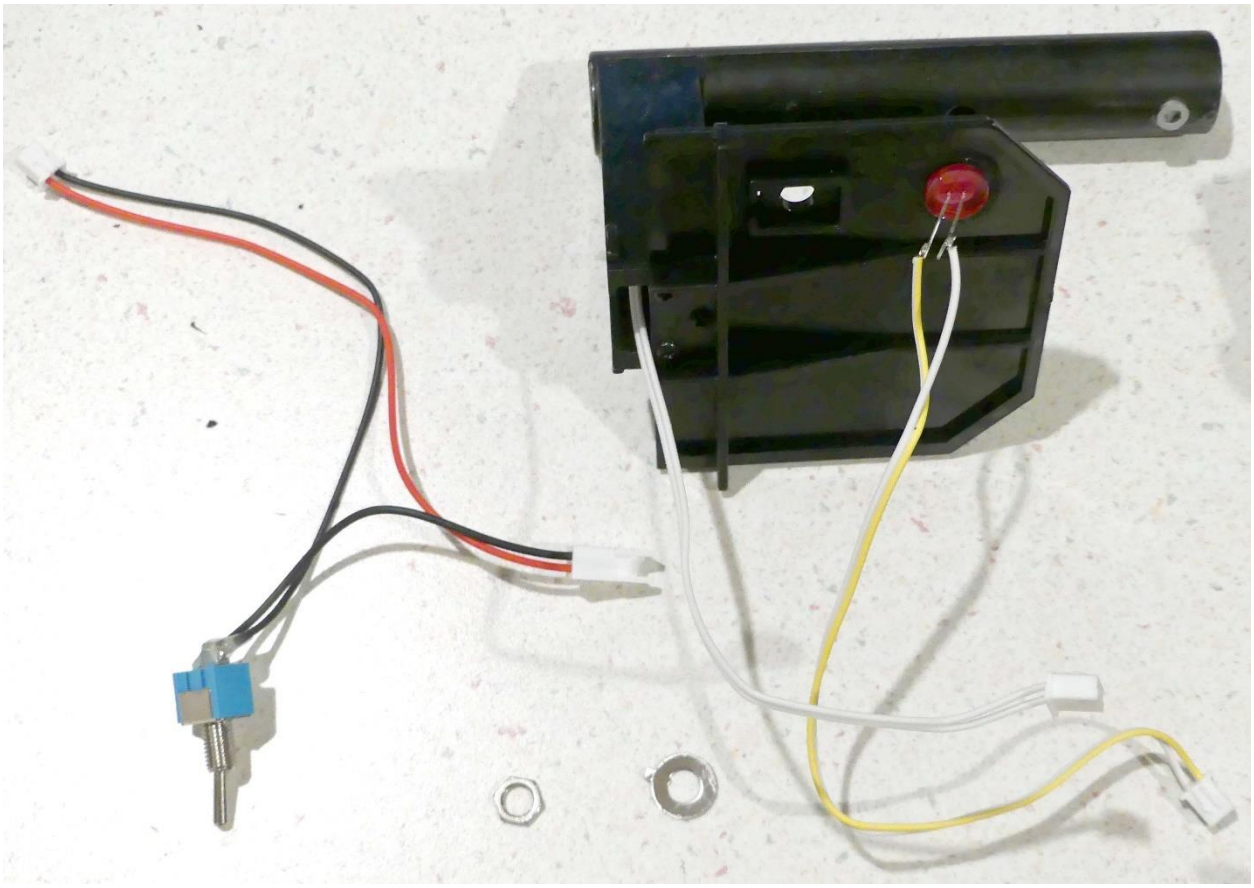
Now that the wires are free, unplug the 3 connecting cables between the trap handle assembly and the circuit board.

The three connection cables are:

1) (Red) Red and Black wire connection from the power switch
2) (Yellow) White and Yellow wire connection from the red indicator
3) (Purple) White and White wire connection from the trap handle's button

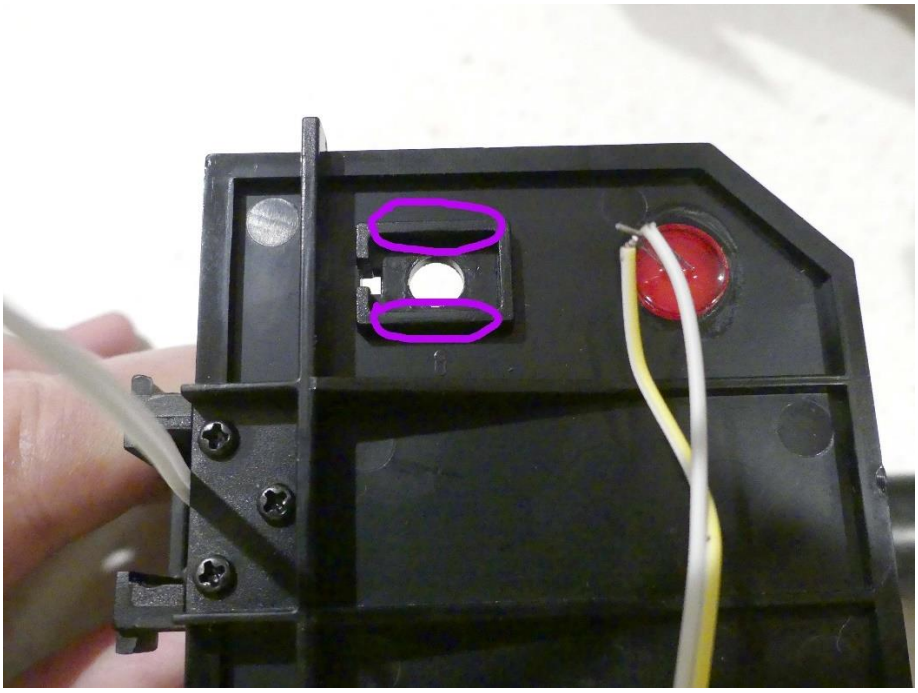


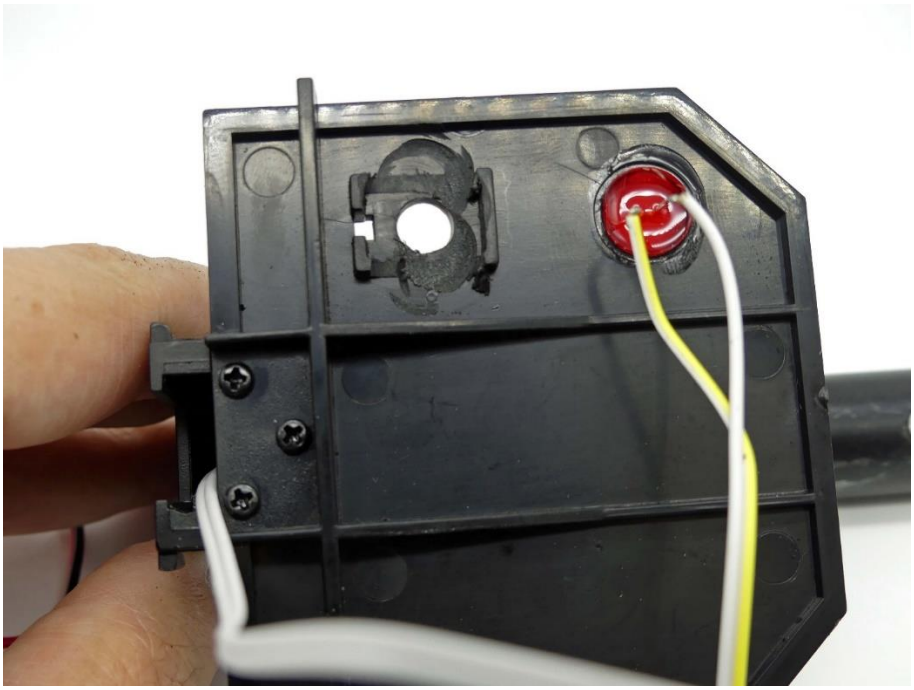
Now that the handle assembly is free, first remove the existing toggle switch that will be replaced. Either needle nose pliers or a small crescent wrench can be used to loosen the nut on the top side of the toggle switch. Remove the nut and the toggle switch is free to be removed.



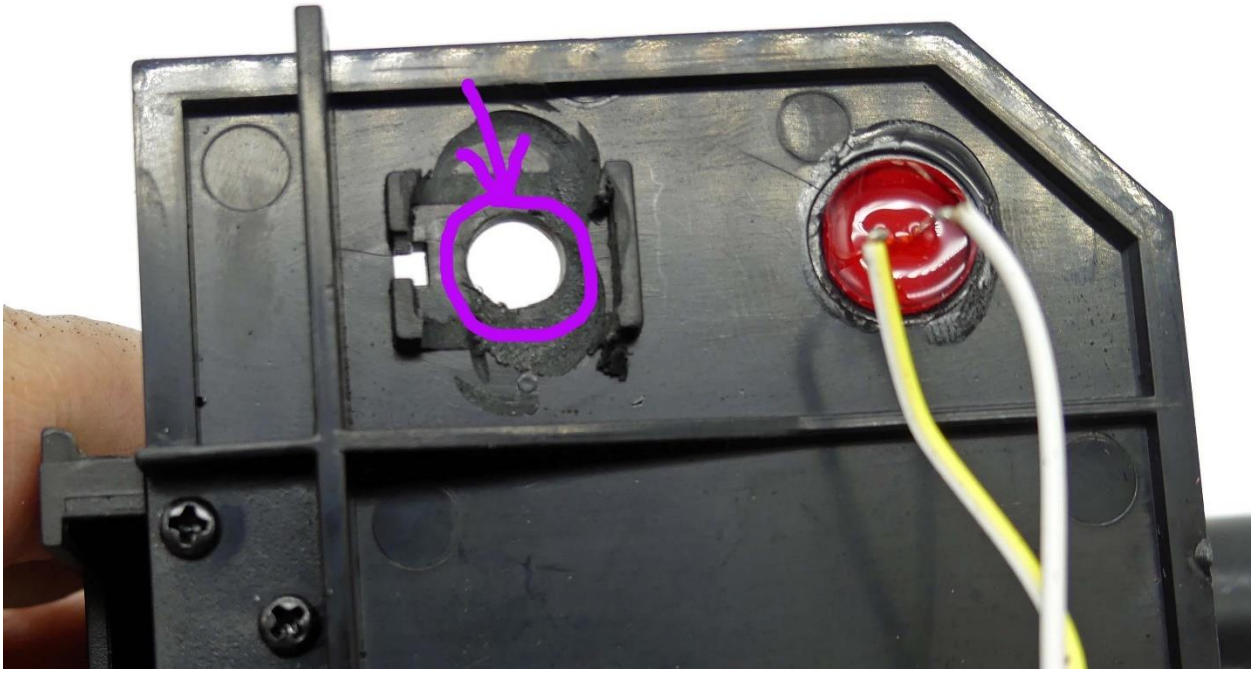
Next, use the rotary tool (Dremel) to grind down the two sides so a larger flat washer can be installed on the back side. The area to remove is shown in Purple on the diagram below.

The large alignment washer _*can*_ be installed on the top side if desired. I just like the look of only having the fancy nut on top…
If you are only installing the “Standard” toggle switch AND want to install the washer on the top side, you do not have to remove the sides with the rotary tool.





The hole for the toggle switch needs to be just a bit larger. Use the drill with the ¼” drill bit to make the hole the correct size. Drilling from the bottom made it easy to not have the drill accidentally contact the handle.



Installing the Trap *Standard* kit Toggle Switch

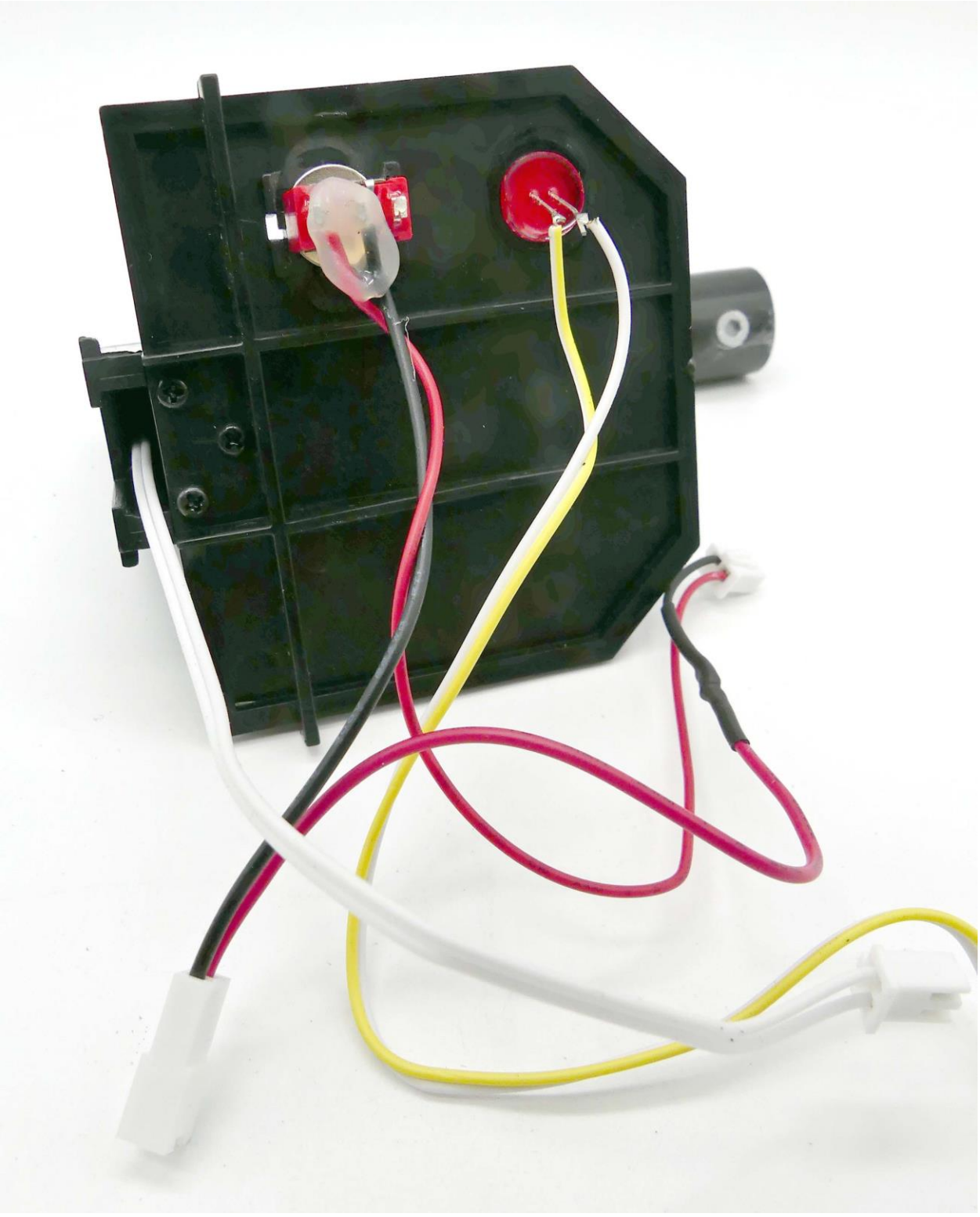
Tools

- Philips screwdriver
- Small crescent wrench
- Diagonal cutters

The toggle switch needs to be installed in the correct direction. The wires need to go away from the edge that the toggle switch is closest to, and the notch down the threading needs to face away from the indicator light.

Normally place the larger orientation locking washer on the toggle switch first, then the lock washer, then slide the toggle switch into the hole from the bottom side of the handle assembly. The fancy nut would then go onto the toggle to secure it in place. Finger tighten and then use a small crescent wrench to tighten but take care not to mar the top plastic surface with the wrench while tightening.

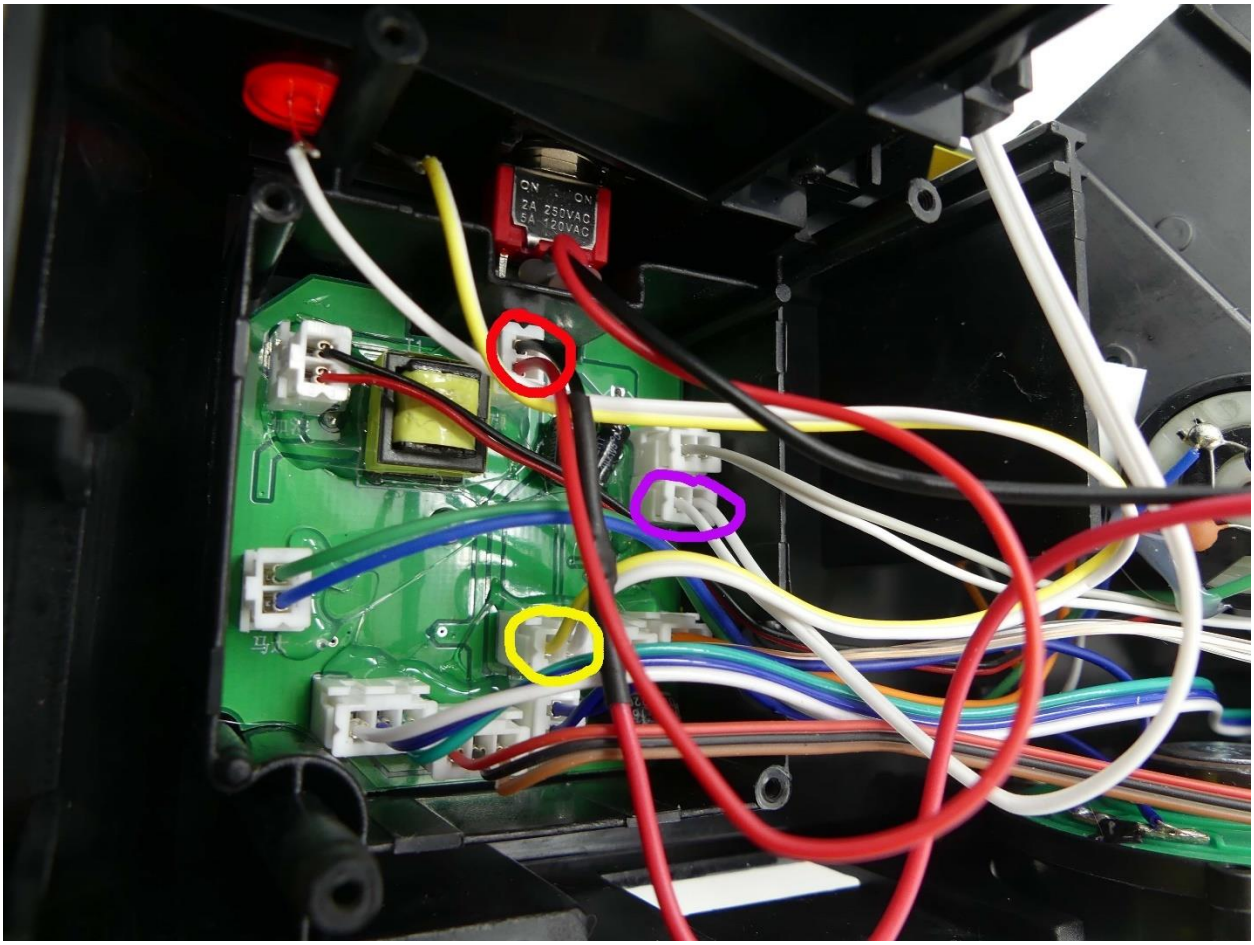




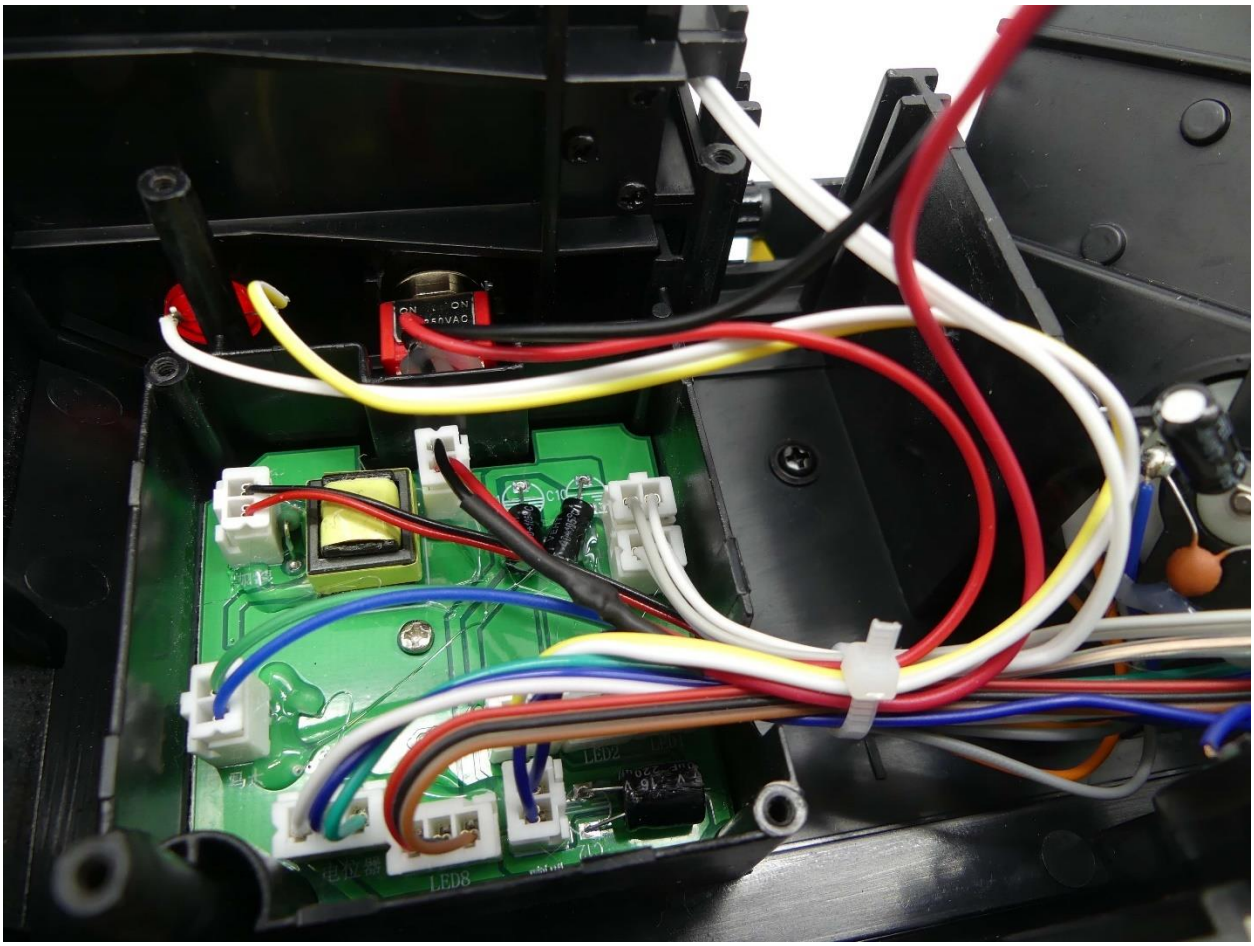
The larger locking washer does not really prevent the switch from rotating since it is mounted too low on the threading. This would work if mounted on the top surface, but I do not like how that looks as much. If the twisting is a concern, use a hot glue gun on the bottom side of the assembly to keep the switch from rotating.

The switch installation is done, so now you need to reassemble the parts into the trap.

Slide the Trap handle assembly back into place, and plug in the 3 cables into the correct connectors on the circuit board:

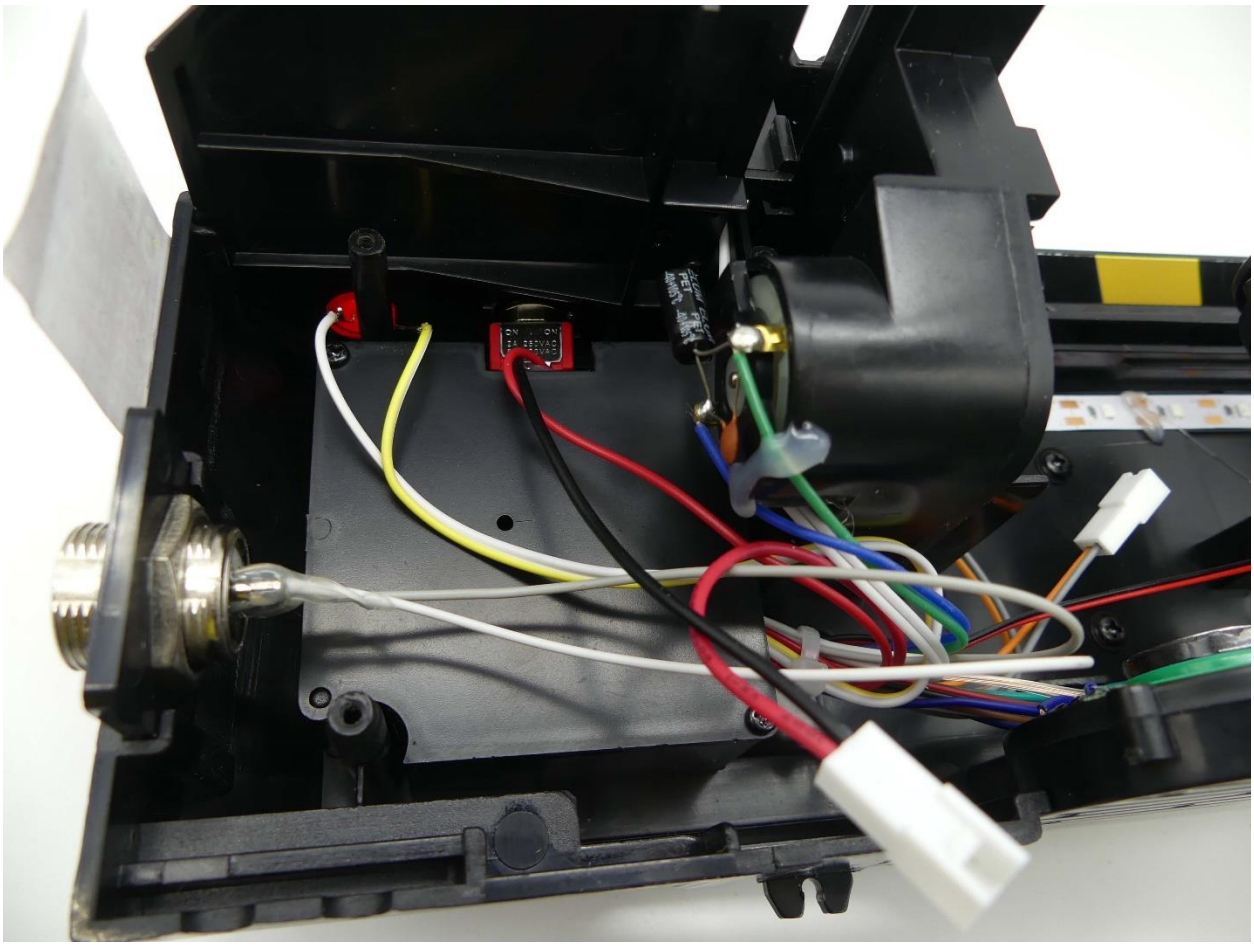


Next, dress the wires neatly and they all need to fit in the cutout so the lid can be put back over the circuit board. Use the included wire tie to make a nice bundle like the factory provided when we started:



Use the diagonal cutters to trim the end off of the wire tie.

Place the cover over the circuit board and ensure the toggle switch and LED wires go on top of the cover. Secure the cover in place with the original 2 Phillips head screws. The motor assembly and the trap cable metal connector can also be put back in place.



The switch installation is now complete:



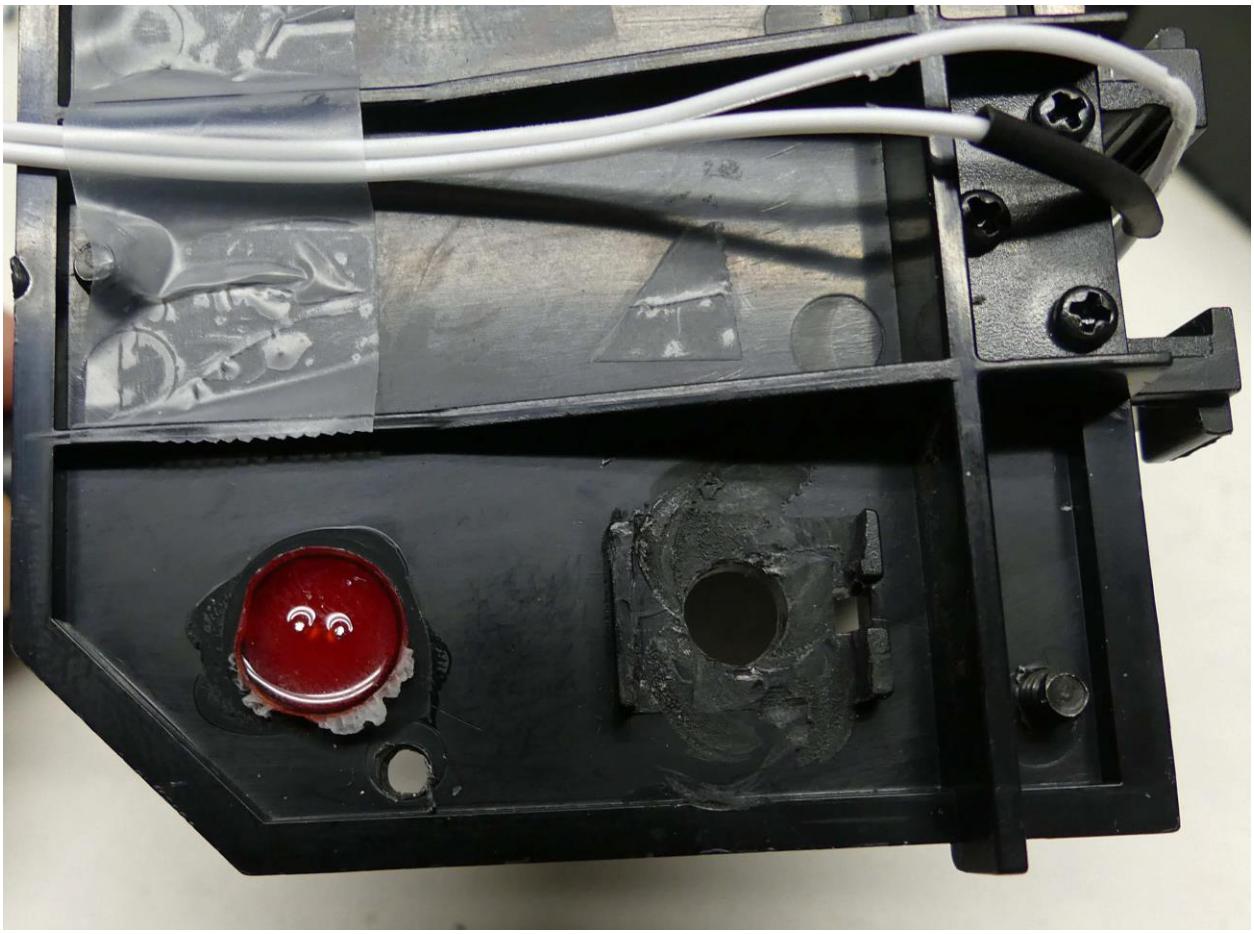
Installing the Trap *Deluxe* kit Toggle Switch and Indicator

Tools

- Philips screwdriver
- Diagonal cutters
- Drill and 3/8” drill bit
- 1/16” drill bit
- Rotary tool with small sanding stone disks

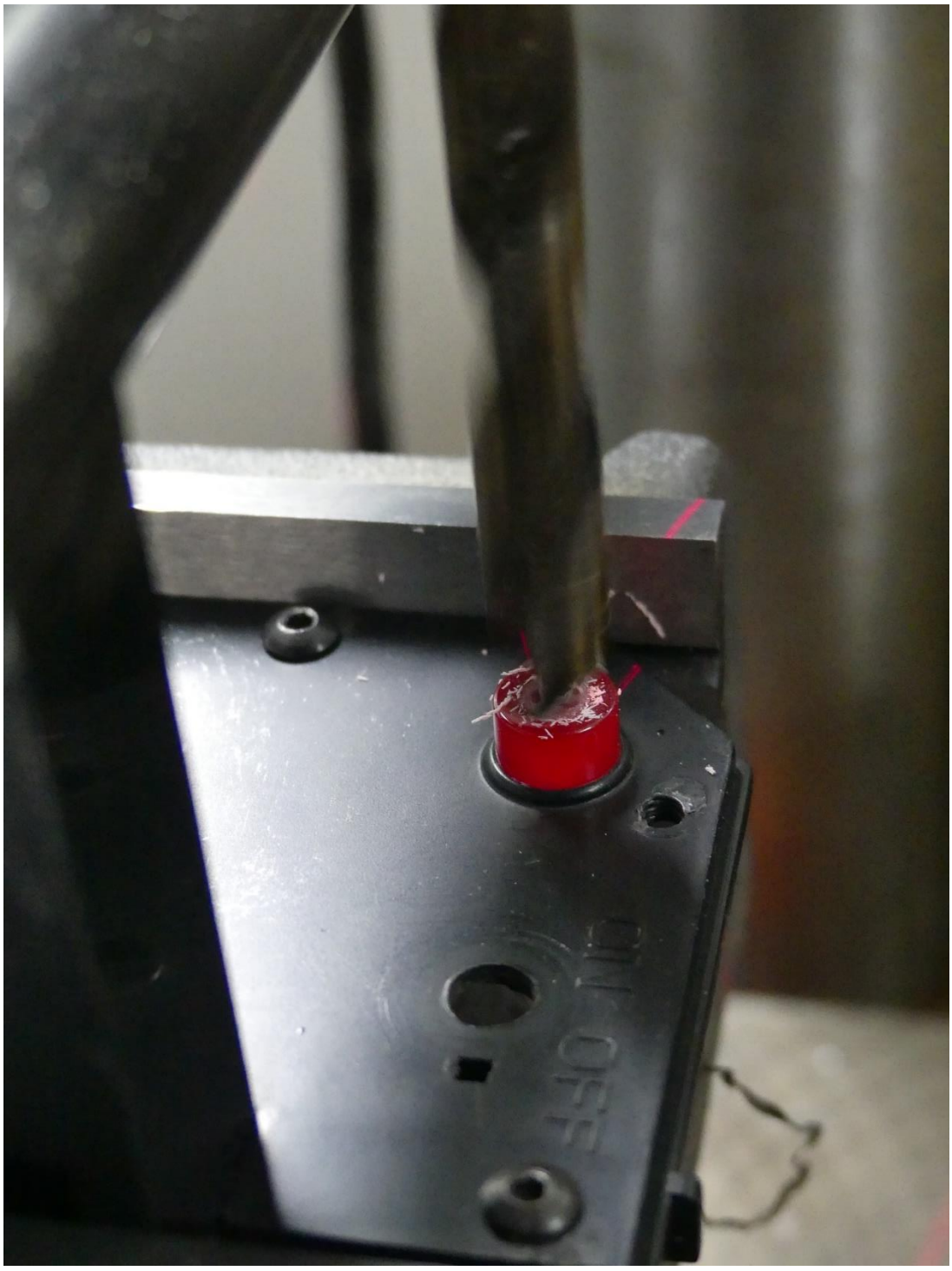
The existing power indicator light needs to be removed.

Cut off the LED leads and tape the white wires from the trap handle button out of the way. I had to repair the white wire since I kept trapping them on the post the connects the two halves and getting those pinched. Hopefully something you can avoid!



Drill from the top of the LED. I decided to try and just drill through it since I was using the drill press. Maybe it is easier to use a rotary tool (Dremel) to remove a lot of the LED first if drilling by hand.

The real screw next to the LED can be removed to make it easier for the next couple of steps.



The drilling still left a small ridge on both sides of the surface:



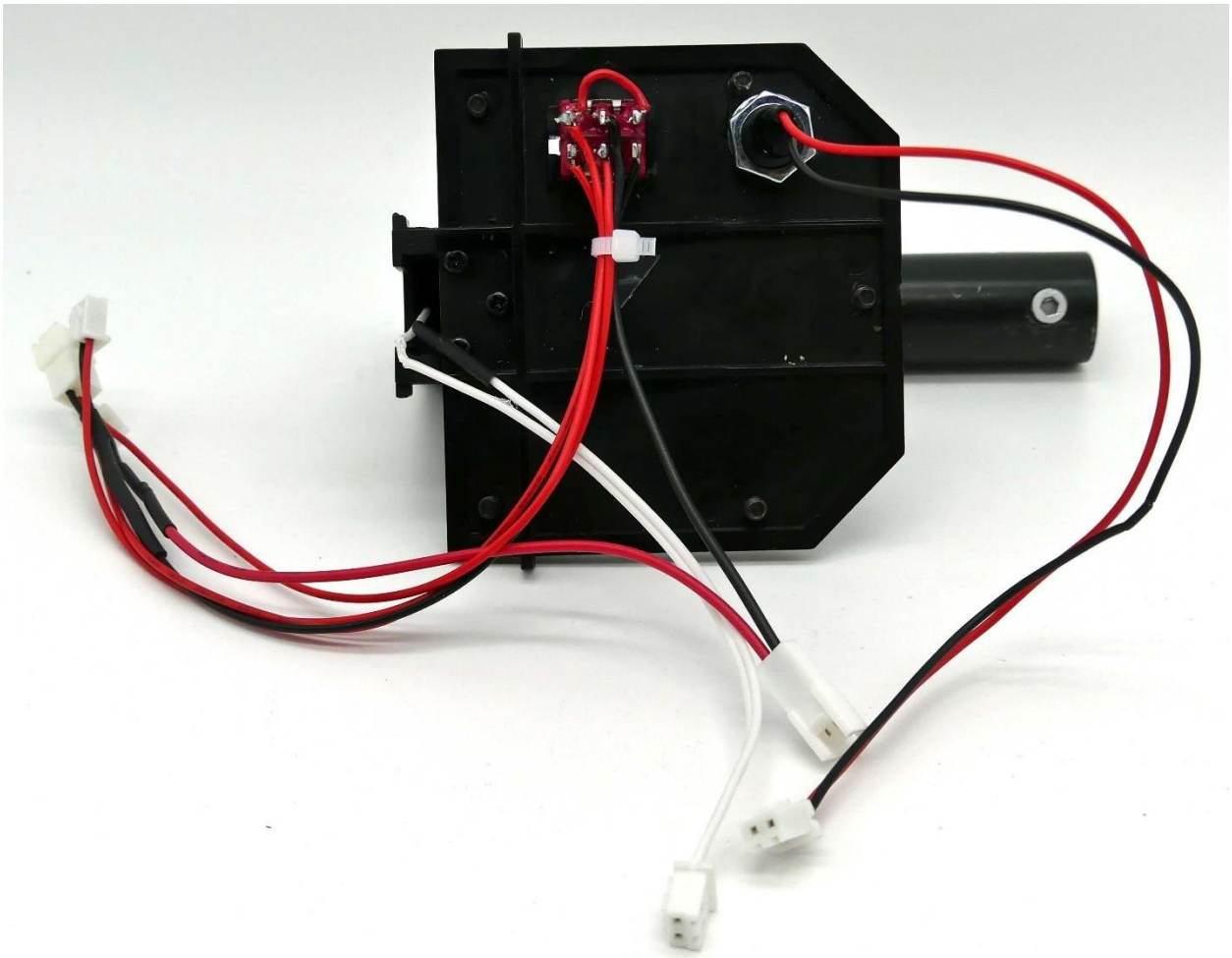
Those edges should be ground off with the rotary tool (Dremel):



The new light assembly and larger toggle switch can now be mounted in the handle assembly. First add the real screw that was removed that goes next to the power indicator light.

The toggle switch needs to be installed in the correct direction. The wires need to go away from the edge that the toggle switch is closest to, and the notch down the threading needs to face away from the indicator light.

Normally place the larger orientation locking washer on the toggle switch first, then the lock washer, then slide the toggle switch into the hole from the bottom side of the handle assembly. The fancy nut would then go onto the toggle to secure it in place. Finger tighten and then use a small crescent wrench to tighten but take care not to mar the top plastic surface with the wrench while tightening.



The toggle switch can use the small nut first, the large locking orientation washer next, then slide into the hole and hand tighten the fancy nut on the top side to secure the nut in place. You can use a small crescent wrench to tighten the top nut, but take care not to scratch/mar the top surface with the wrench.

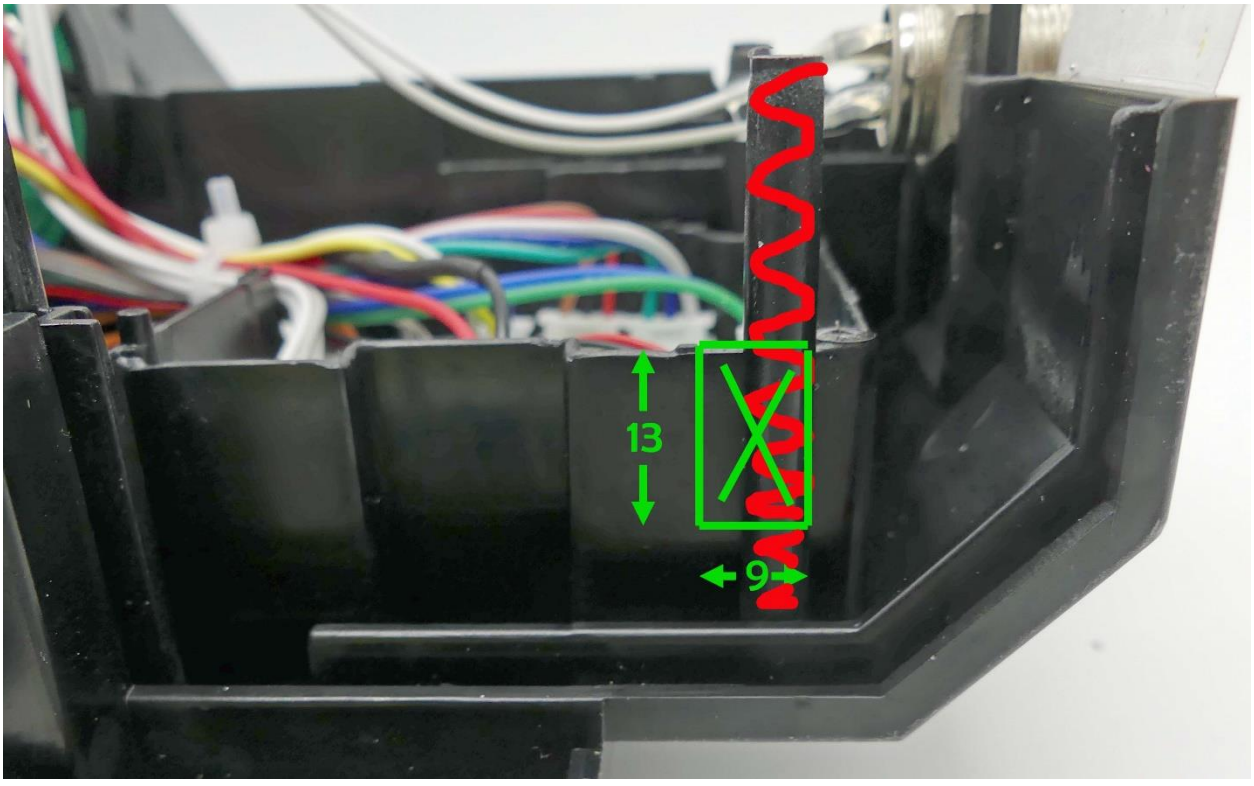


The new indicator on the trap handle assembly is too large to fit back into the trap. The base of the indicator assembly will interfere with the circuit board housing that is molded into the trap side.

I tried to save the post but went a little too far drilling and grinding so the post broke off anyway. Because of that, I suggest just removing the post and making a clean removal of part of the trap internals so the indicator can easily slide into place with the electronics lid removed.

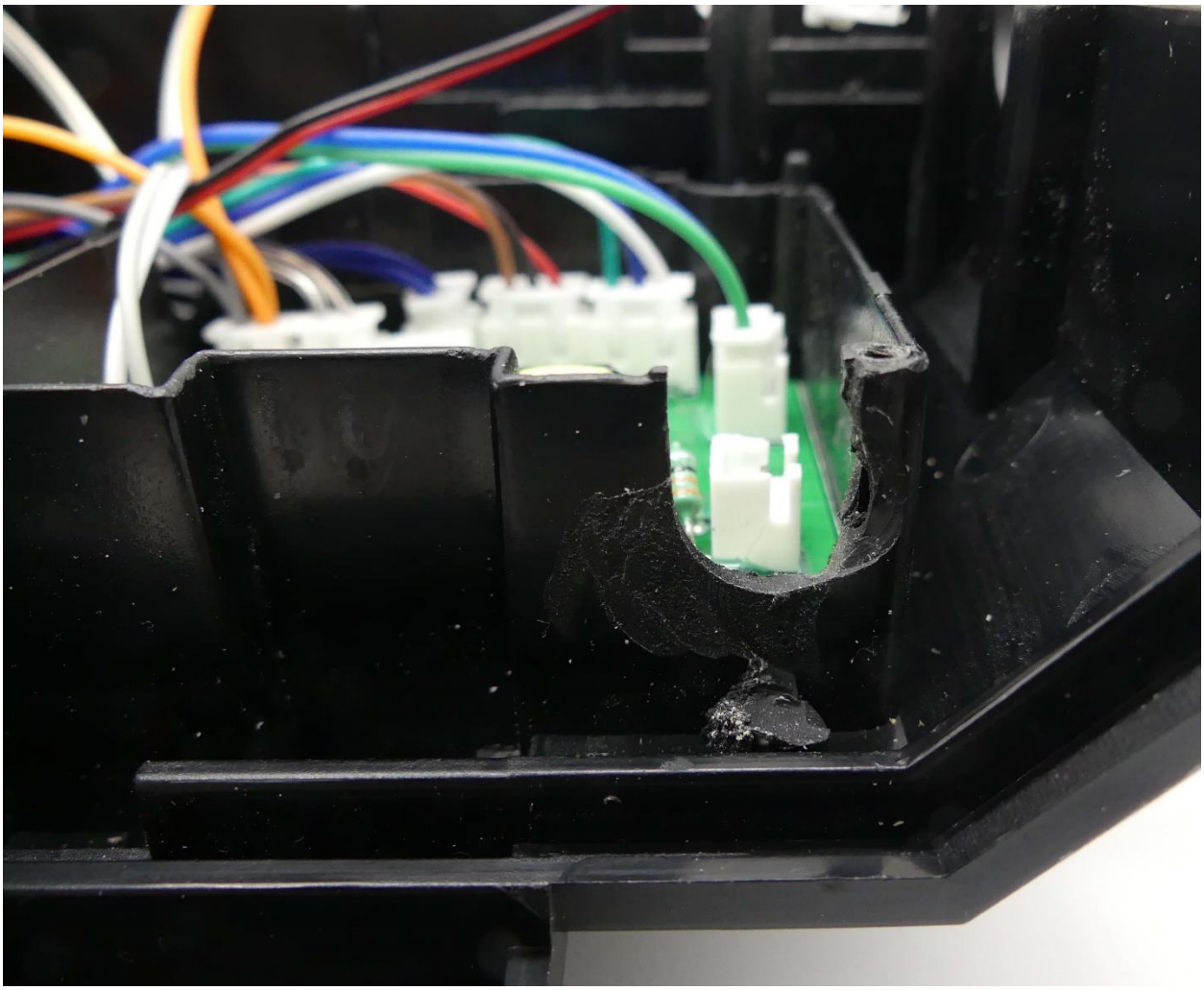
The included replacement post snaps and is screwed into place on the lid, so you still get a post to hold the two trap halves together and the trap handle assembly can still be easily removed and re-installed.

Remove the existing post and make an opening that is about 9 mm wide and 13 mm deep (shown in Green), and remove the post all the way down to the lip of the handle plate's support (shown in Red):



I do recommend removing the cable connection directly behind this cutout so in case you slip, that wire will not be damaged. The thin red and black wires in that cable go out to the mister device.

Here is my over aggressive attempt, but it worked fine. I tried drilling (made the round bottom of the opening) and that drilling tore out the post, so recommend only using a rotary tool (Dremel) to remove most of that material.



It is still a tight fit for the leads on the new indicator to fit in this slot. Try and remove a small portion of the post on the opening (left hand) side of that post. The post is on the far right inside the box that is used to hold the lid in place with a screw. You can see that I removed too much down a bit from the top and you can see the inside of the post. That portion would no longer be useful for holding a screw. Luckily the top portion is still intact so the screw can hold the lid on!

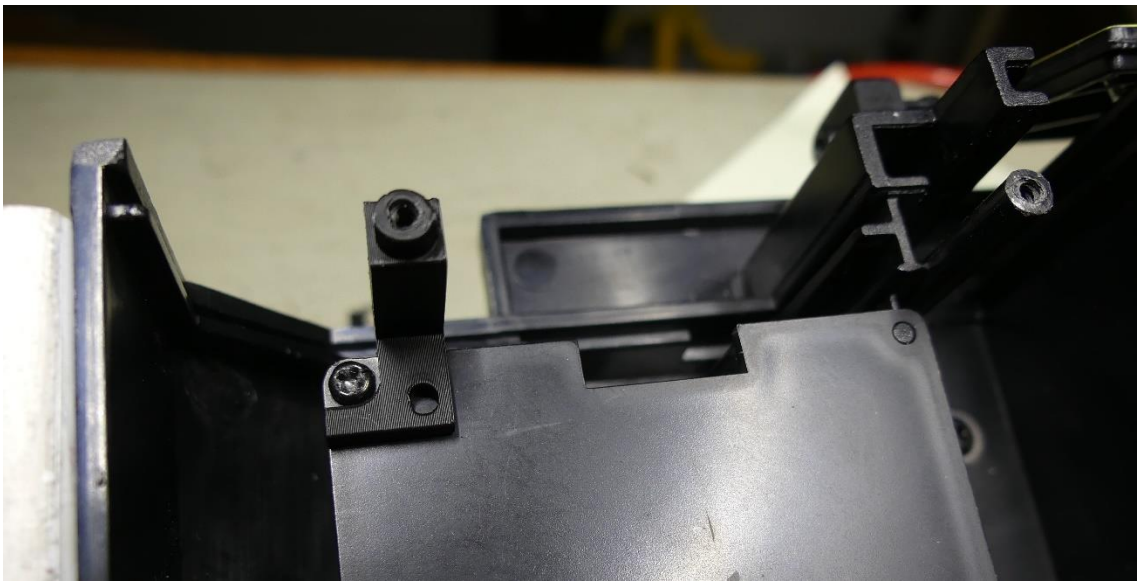
When done you can re-plug the mister cable back into the open connector that can be seen just behind the opening.

Installing the new (replacement) post

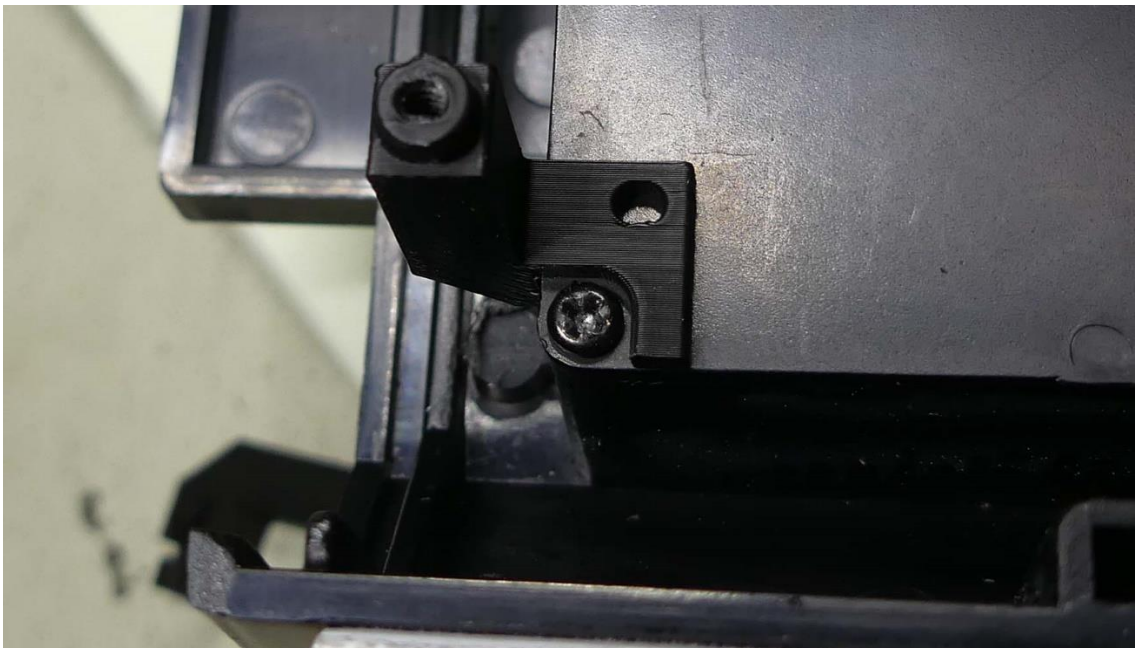
Remove the small silver screw and clip the new post into place on the electronics lid and make sure it is fully clipped in and the left side of the 3D printed part is flush with the left edge of the lid.

Here is a picture of the test fit before drilling the hole for the screw. Do not drill while the lid is in this position – you do not want to damage any cables or printed circuit board parts in case you drill too deep.

Mark the hole, or just start to drill – ONLY ENOUGH to leave a mark!

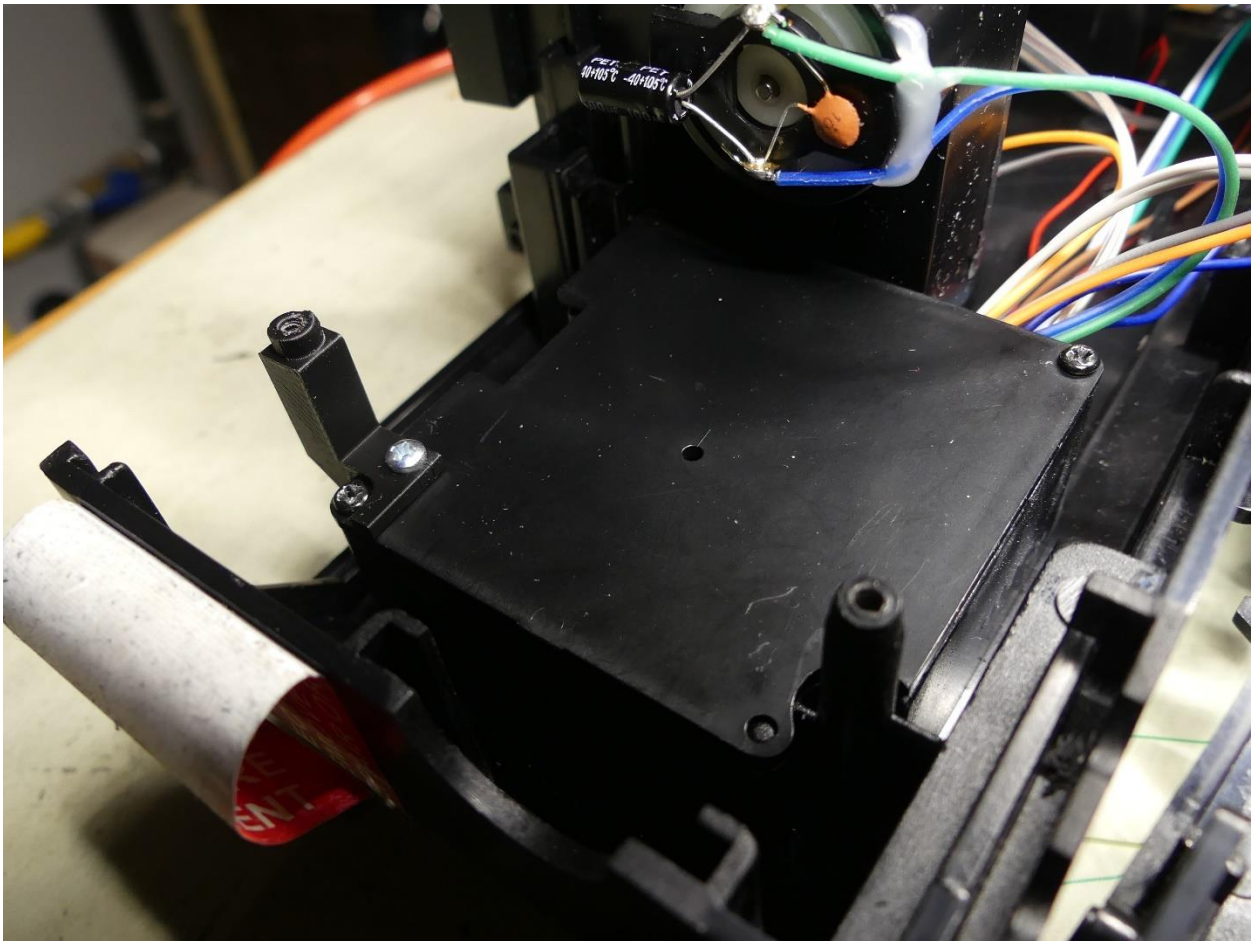


Just another view:



Take the lid off and drill the 1/16“ inch hole and screw back in the small silver screw that came with the 3D printed part.

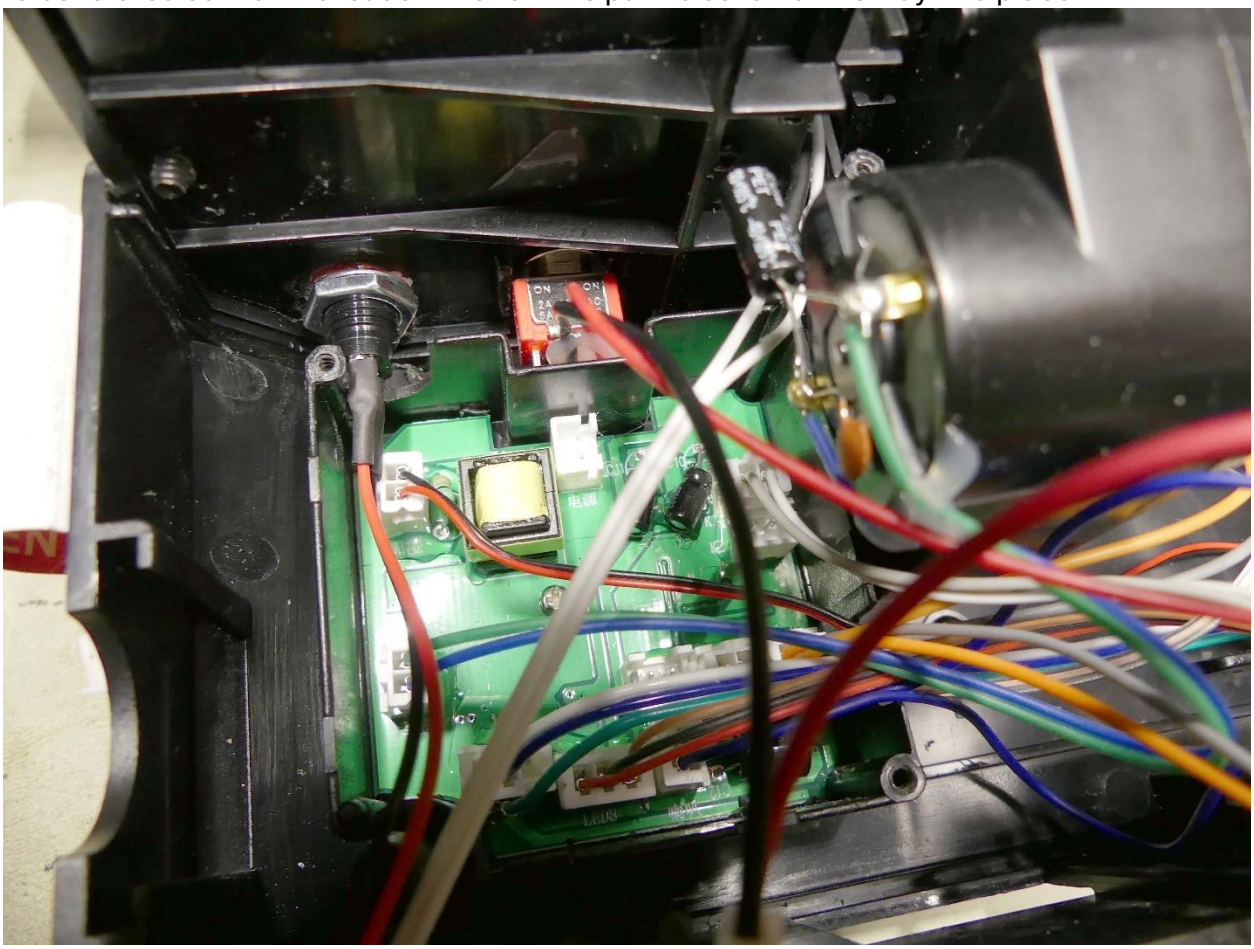
Here is another test fit to make sure the post still allows the electronics’ cover plate can still be securely fastened in place:



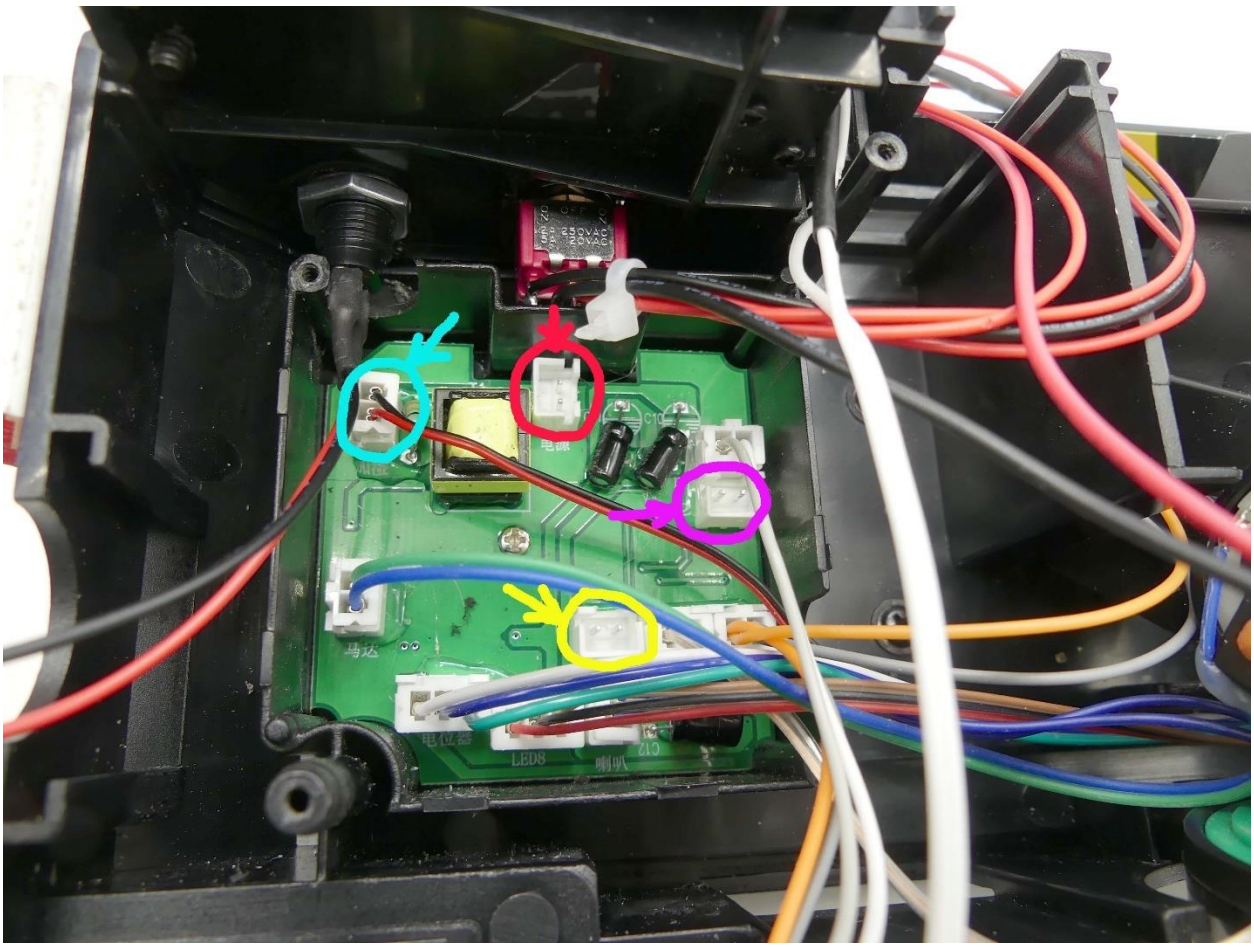
I also did a test fit of the two halves together, but no trap handle assembly installed so you can see how the new post will mate with the other side. There should not be a need for you to do this test, but you can if you want to!



Now remove the cover and slide the trap assembly into place. The new indicator may need to be rotated so that the leads will allow the part to set all of the way into place:



The cables now need to be plugged into the circuit board.

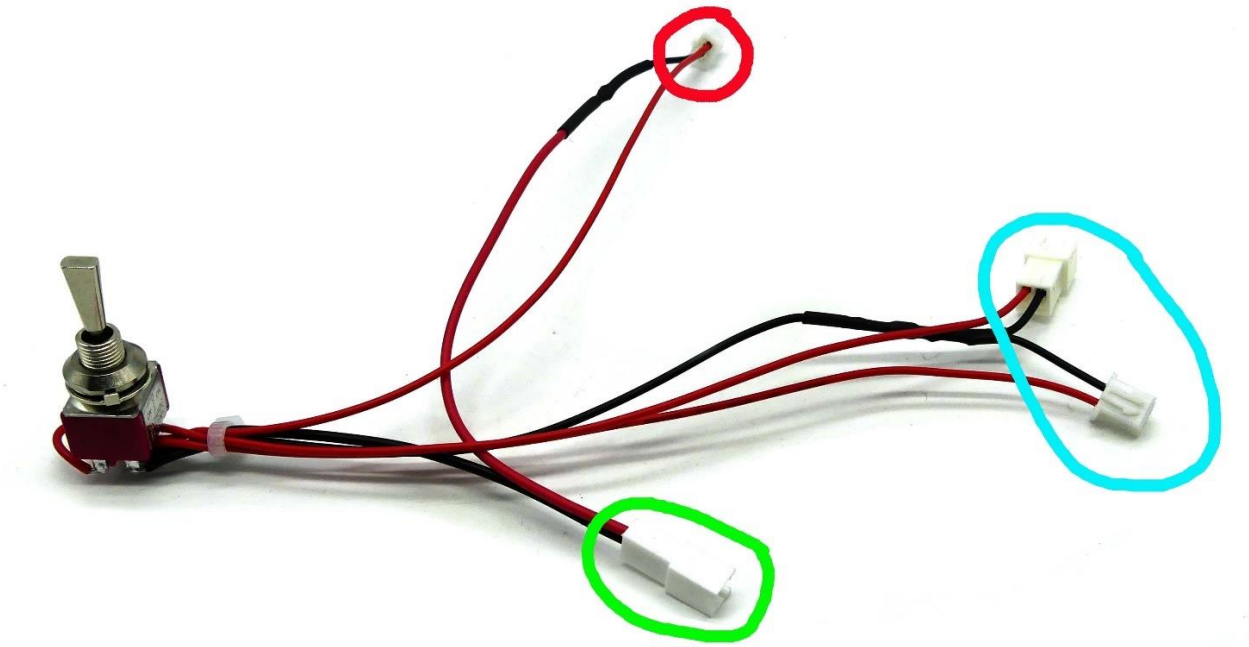


There are 4 connections that need to be done:

1) Circled in RED, the power toggle switch main connection
2) Circled in PURPLE, the Trap handle switch connection
3) Circled in YELLOW, the new Indicator connection
   This connection used to come from outside the electronics box, but with the new Indicator and associated opening that you made in the box, this cable needs to stay inside the box.
4) Circled in CYAN, the existing connection with tiny (smaller diameter) red and black wires that goes over to the mist generator (mister?) needs to be unplugged and added to the additional cable connections from the toggle switch.

The toggle switch connections are shown in the same color indicators as were used for the circuit board.

The connector circled in GREEN will not go inside the electronics box and will be used to connect to the battery compartment, which is located in the other half of the trap.

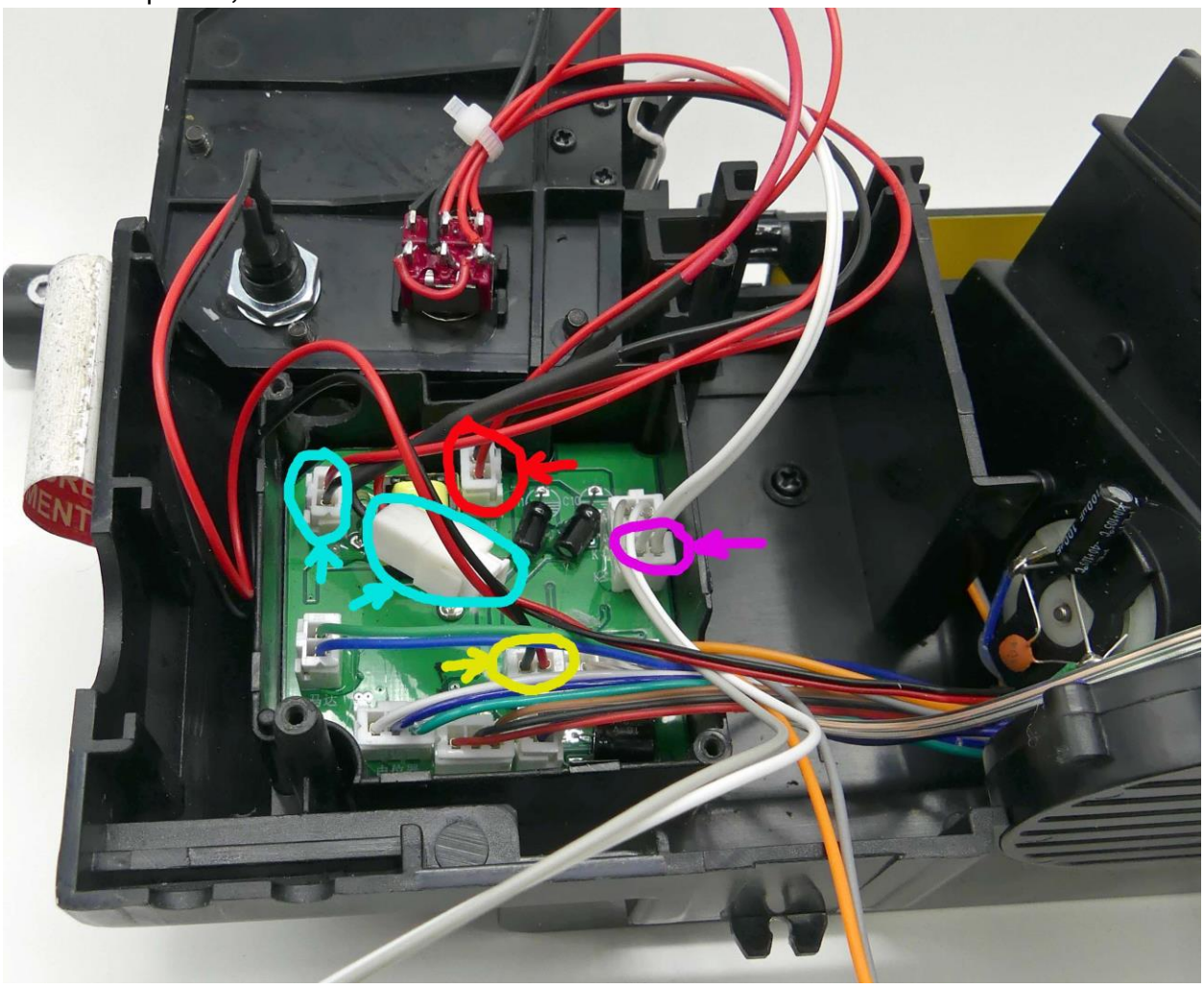


Make the cable connections for the RED, PURPLE and YELLO W circled connectors and cables first.

The connections circled in CYAN required a few steps to complete:

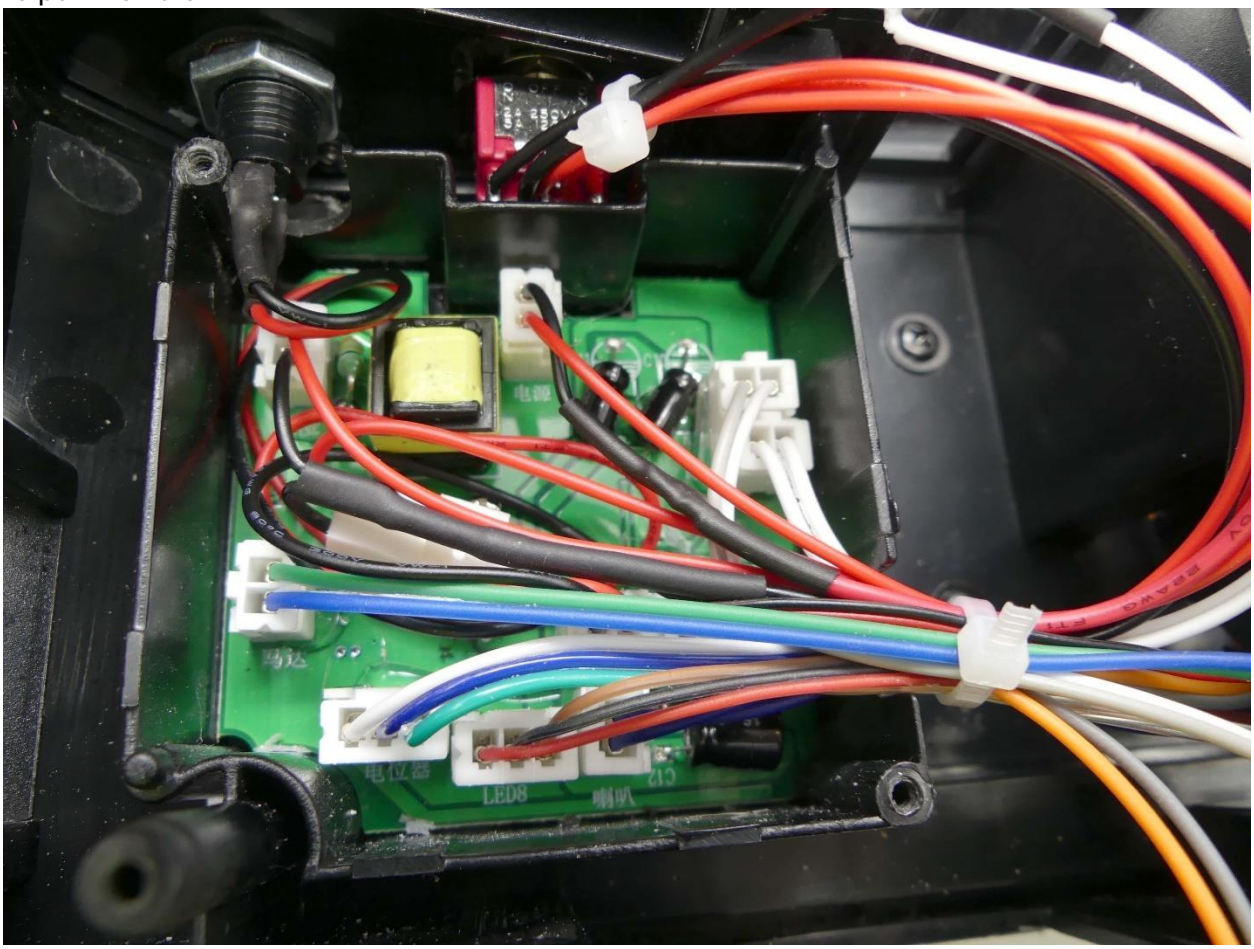
1) Unplug the Mist generator connection from the circuit board and plug it into the mating connector on the toggle switch cables (also circled in CYAN)
2) Plug the remaining connector on the toggle switch cable (circled in CYAN) into the circuit board connector (circled in CYAN)

When completed, the cables should look like this:



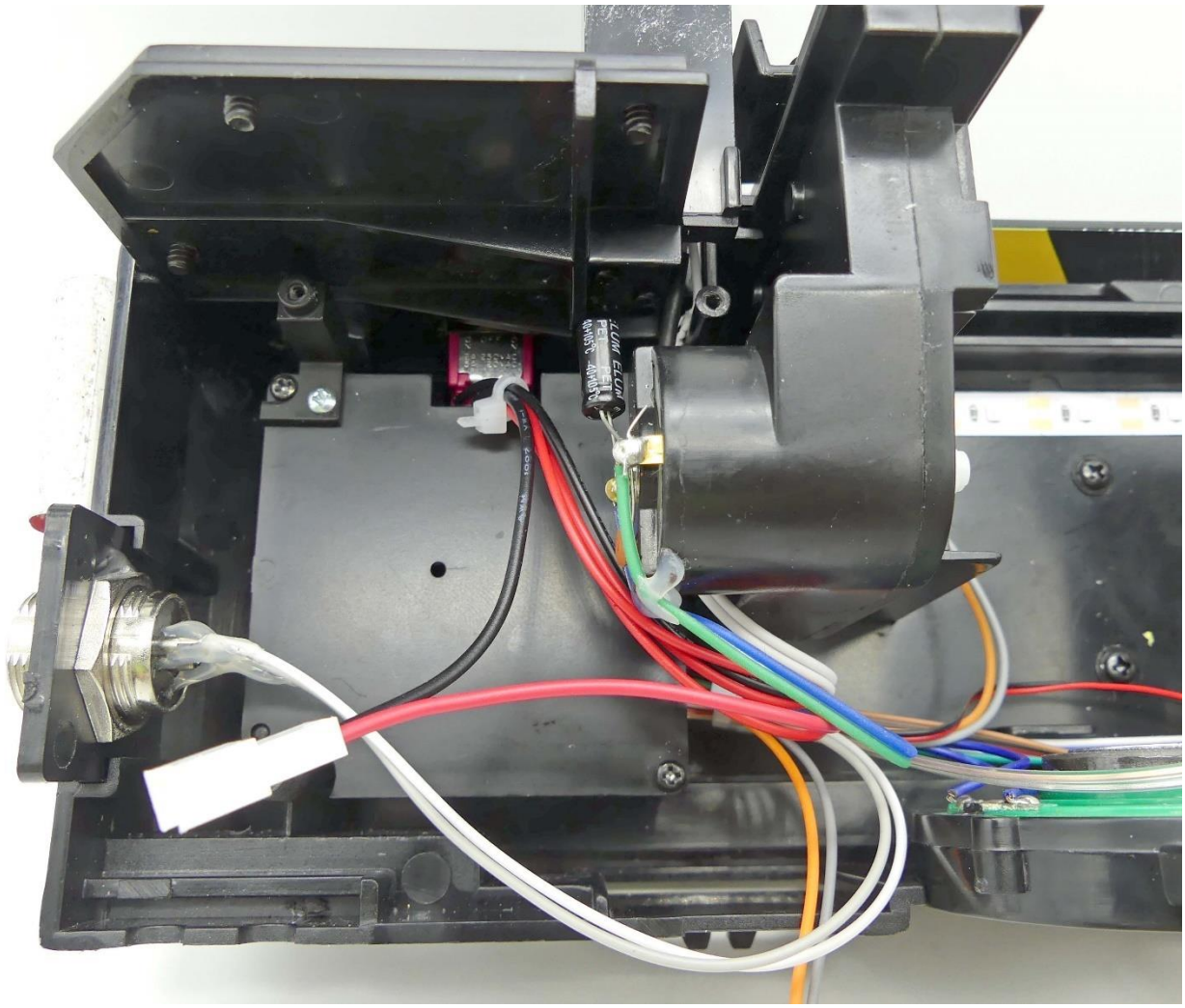
Next, arrange the wires so that the electronics' lid can be placed over all of the wires and that all come out of the opening on the lower right hand side.

Use the included wire tie (zip tie) to keep all of the wires in a nice bundle and make it easier to put the lid on:



Now place the electronics' lid (with newly added post) on the box and secure it in place with the original two Phillips head screws.

The motor assembly used to control the top flaps and the metal connector used to attach a cable between the trap and the pedal can both be put back in place:



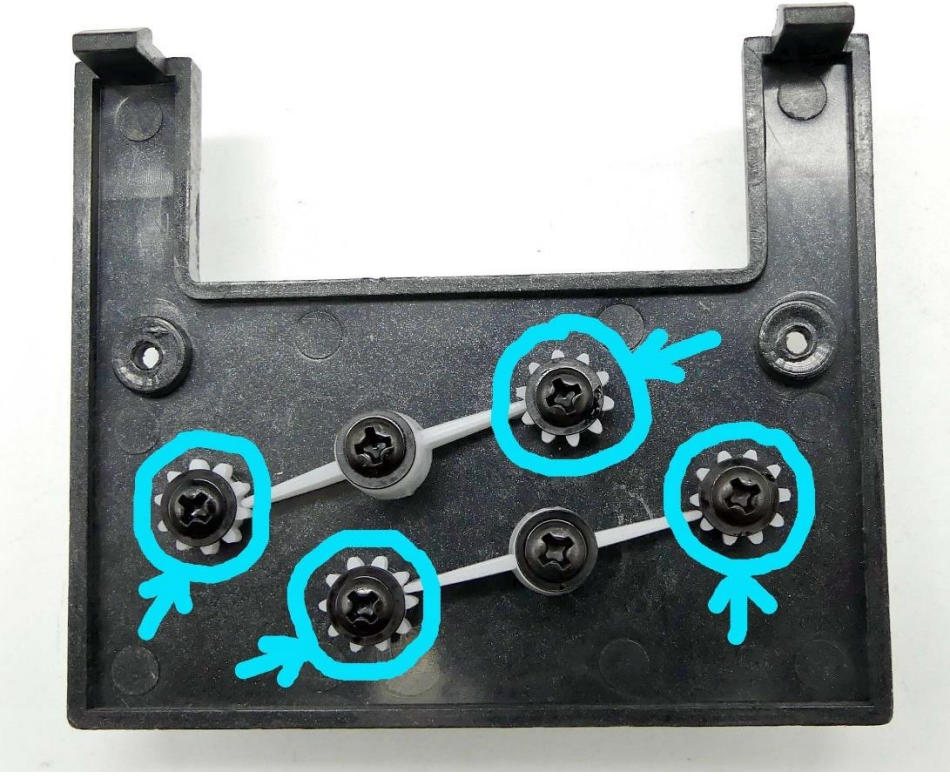
This completes the installation of the Deluxe switch and indicator!

Installing the Trap Red Labels on the Front Panel

Tools

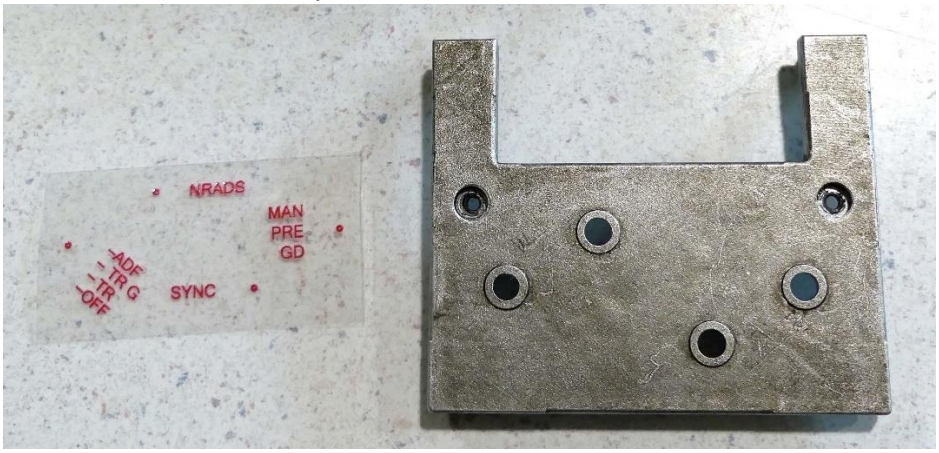
- Philips screwdriver
- Squeegee / credit card / popsicle stick?

First remove the knobs by removing the four screws holding the knobs (and their associated gears):



It may be easier to work on the transfers if the two center parts are also removed. Not required but it did feel a bit more stable when those were removed.

Now we have the front plate and the Red transfers:



The Red Transfer installation instructions:

1. Prep the surface and the Red Transfer

   Prepping the Area - Clean the trap surface before applying the Red Transfer. Rubbing alcohol works well, but make sure the surface is completely dry before applying the transfer.

   Pre-Squeegee - Place the transfer face down with the white side facing up. Rub over the whole design with hard pressure, back and forth 2-4 times. This helps to make sure the backing can be peeled off successfully.

2. Preparing the Red Transfer for transfer

   Gently peel the two sheets apart, watching to ensure the whole design lifts off onto the top carrier sheet. Peel slowly for the best results.

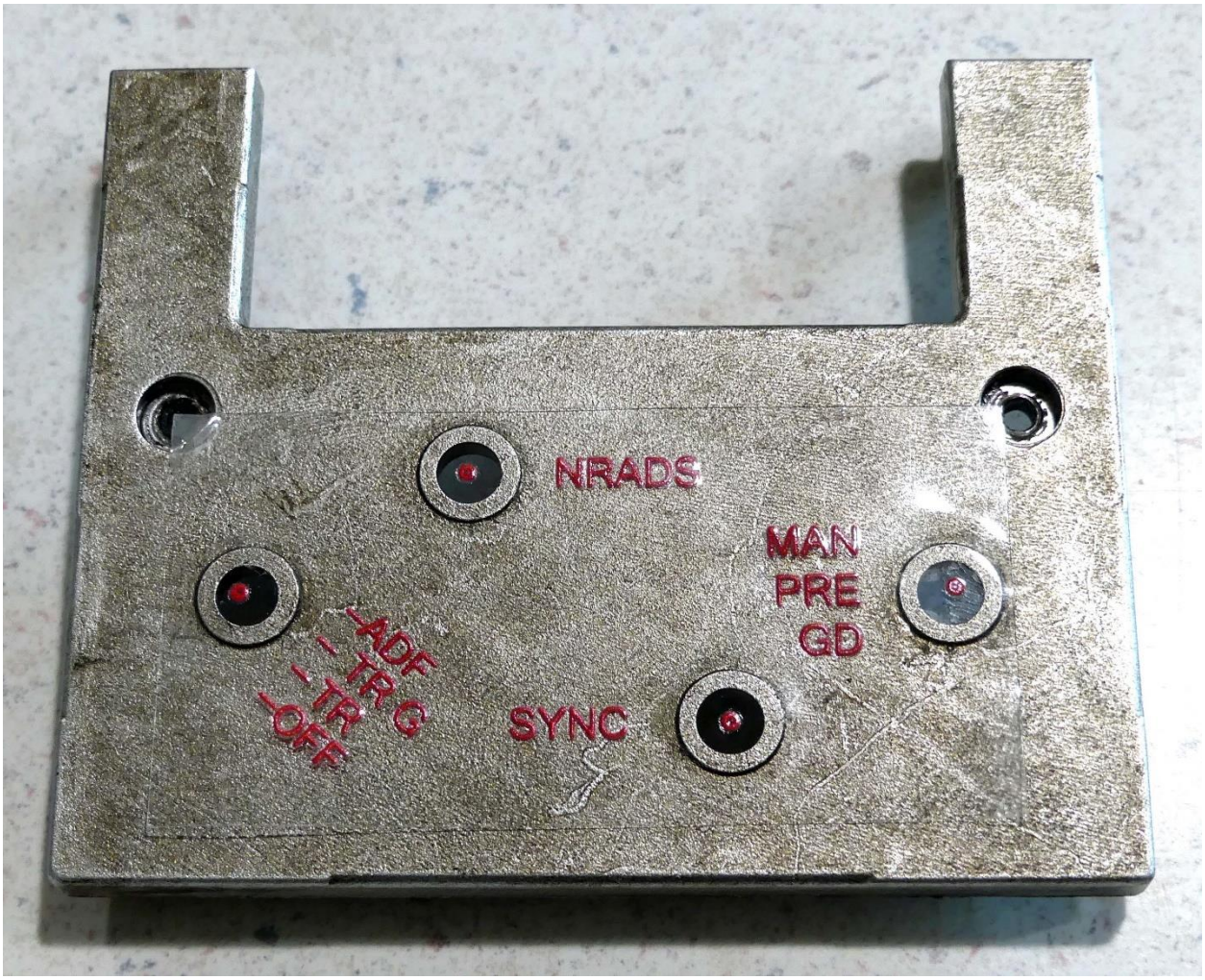
   If parts do not lift, re-squeegee from behind, and attempt to peel again from a different angle.



3. Placing the Red Transfer onto your trap

Carefully place the design onto the front plate with two hands controlling the placement. The Red Transfer will stick, so repositioning after touching the surface is not going to happen.

You can hold the transfer in place with tape to make sure nothing shifts while doing the final transfer.



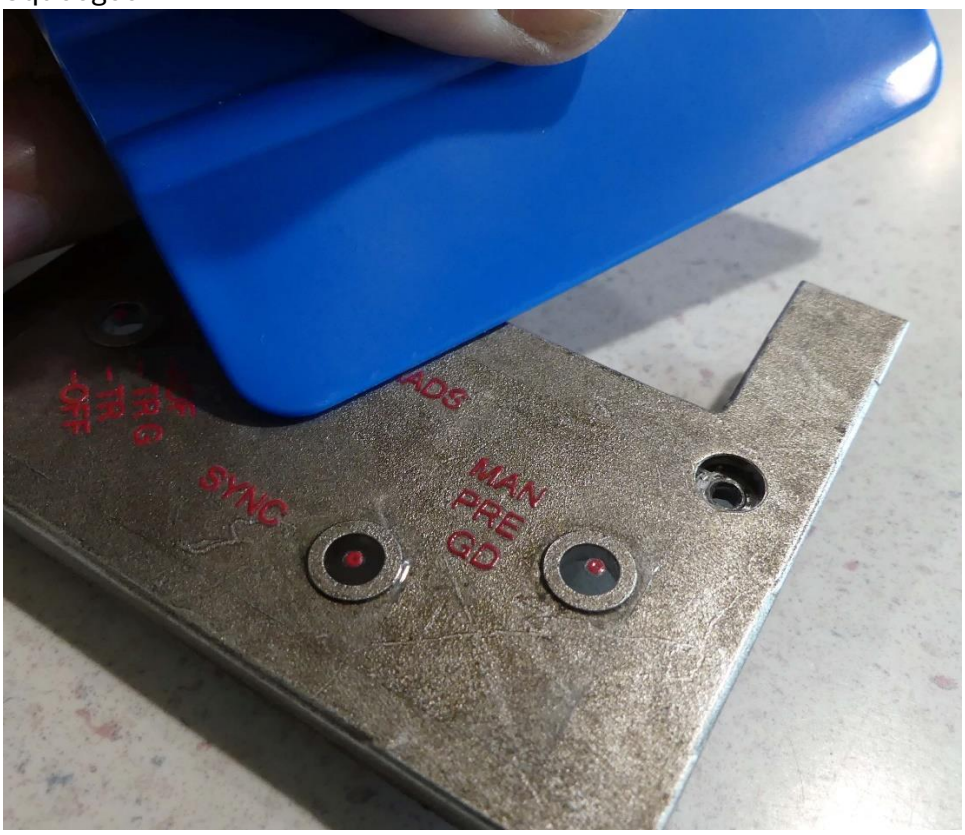
The raised portion of the front plate where the knobs were located are a great place to have the transfer stick to and align the rest of the transfer. The 4 red dots should be located in the holes for each of the 4 knobs.

4. Completing the transfer process

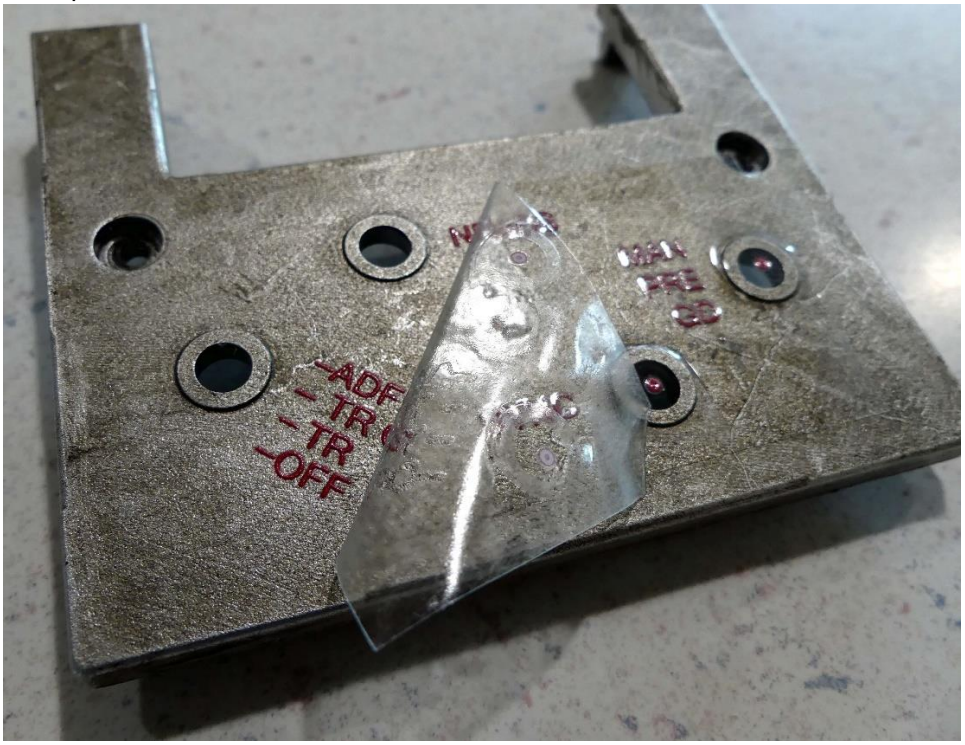
After placing the transfer, firmly squeegee it 2-4 times. Peel slowly, watching to ensure all elements stick to the trap.

If any part of the design is not adhering, lay the carrier sheet back down, re-squeegee and try peeling from a different angle. This is where keeping at least one side taped to the panel can help make sure the design does not shift if you have to re-squeegee.

Squeegee:



Slow peel:

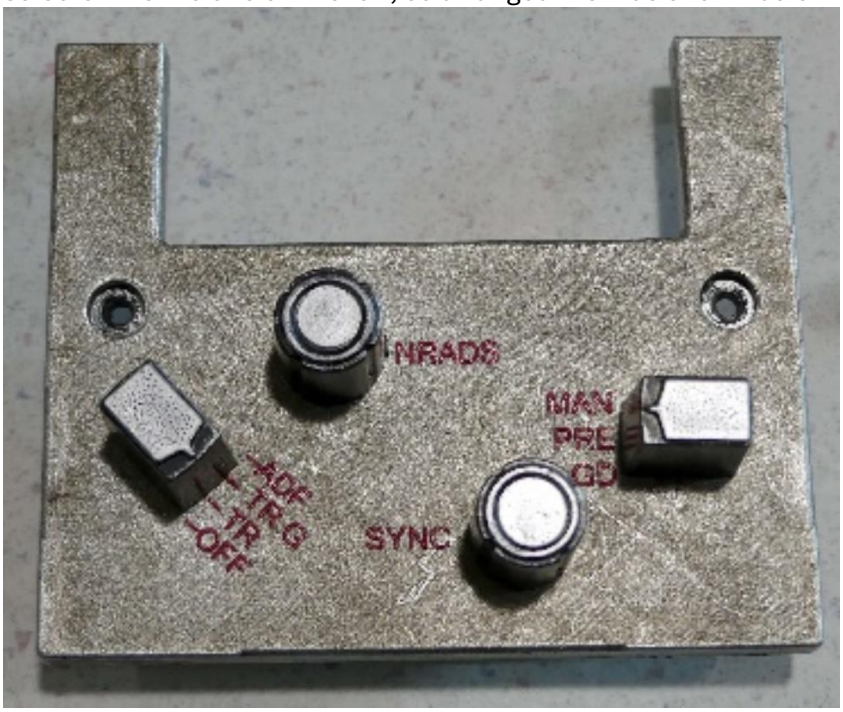


Fully peeled and ready for the knobs to be screwed back in place:



The knobs can be arranged in whatever position you want… Use the Phillips screwdriver to reattach the parts on the backside of the plate.

Some of the reference photos show the rectangular knobs as being located on the far left and also the bottom right (“SYNC”). I like the right hand side rectangular knob being a selector like the one on the left, so arranged them as shown below:



The two round knobs then get the single named items (“NRADS” and “SYNC”) which appear to be adjustments, rather than selections.

Installing the Trap Mist Illuminator

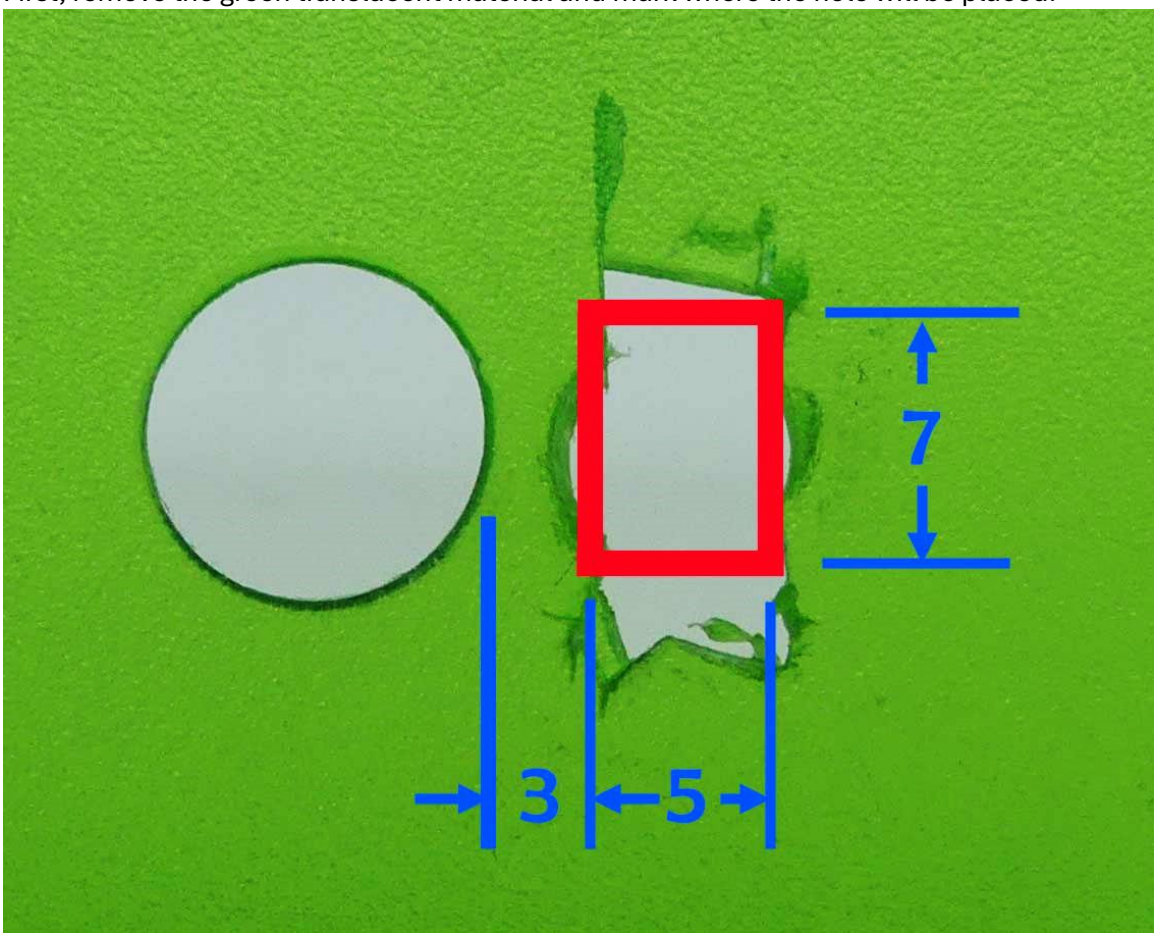
Tools

- Diagonal flush cutters
- Drill with 3/16” drill bit

There needs to be a hole added to the translucent green trap sheet that has a hole in the center to let the mist out.

I rushed the first install in my excitement to see if this would work so please ignore the terrible hole that is shown the following images…

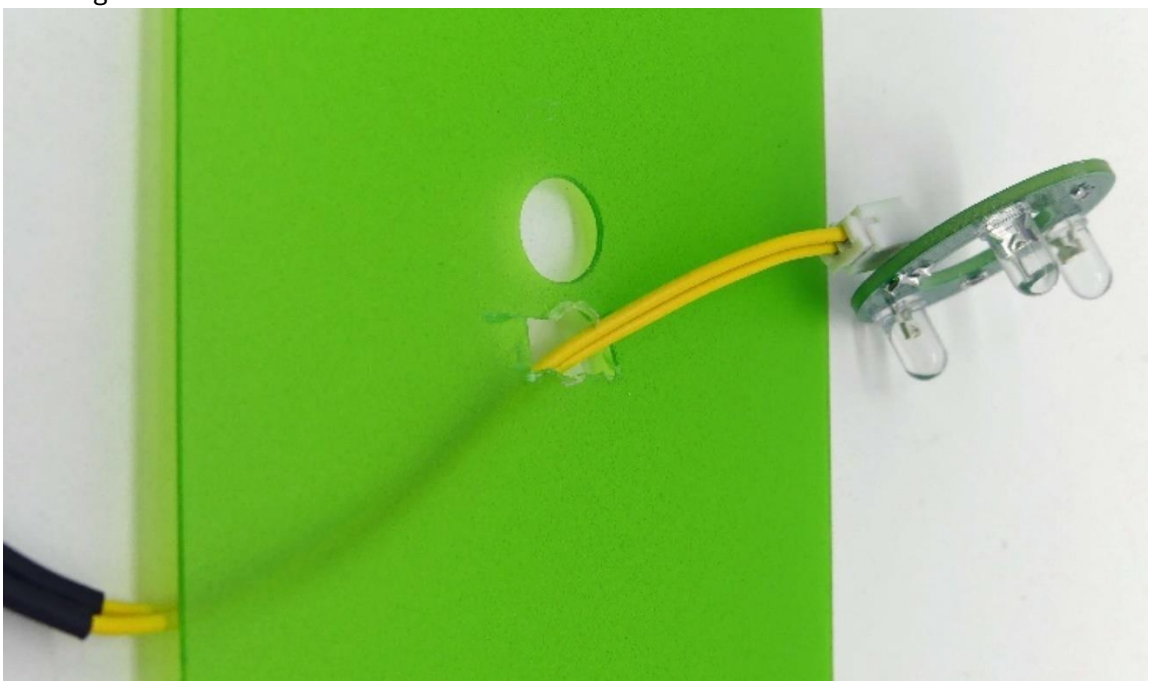
First, remove the green translucent material and mark where the hole will be placed:



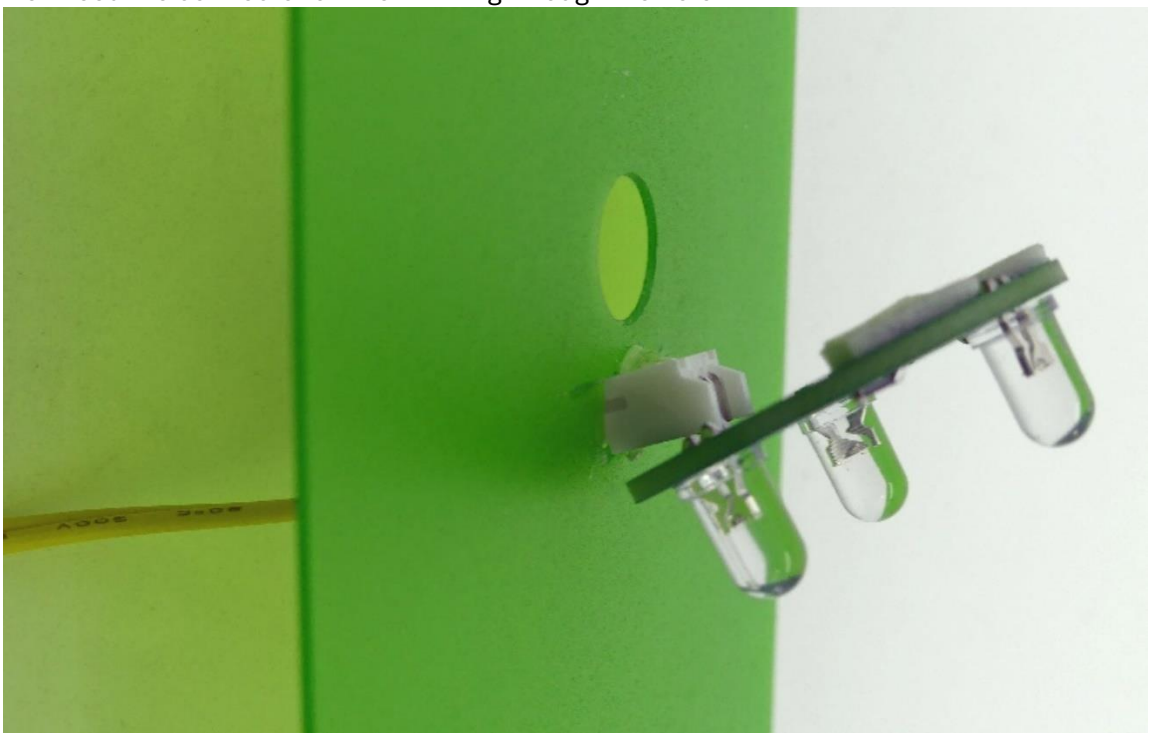
Rather than the crazy mess I made, mark out a 5 mm wide x 7 mm tall rectangle that is 3 mm away from the edge of the center hole. The green translucent piece shown oriented with the rectangle offset in the direction of the longest dimension.

Also mark the center of the rectangle so you can drill a 3/16” hole (4.7 mm diameter) that does not go outside the rectangle. This should allow you to use the flush diagonal cutters to cut out a nice rectangle. A larger hole makes installation easier, but then you may be able to see the hole after installation and that is not desirable!

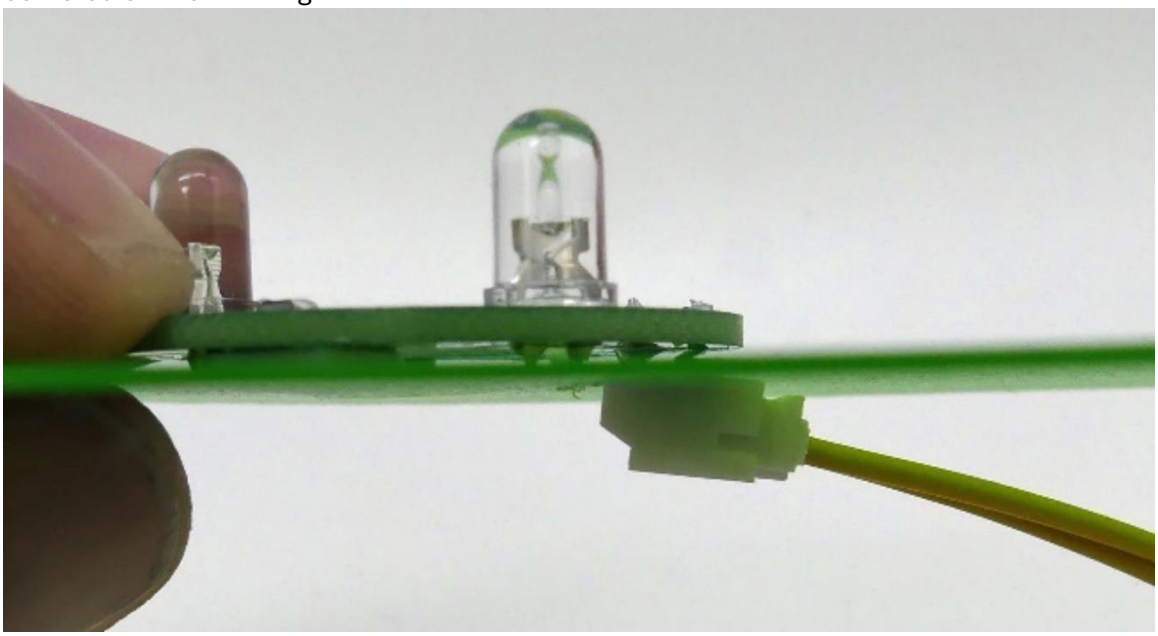
Next, unplug the yellow cable from the LED ring, thread it through the hole and plug it back into the LED ring:

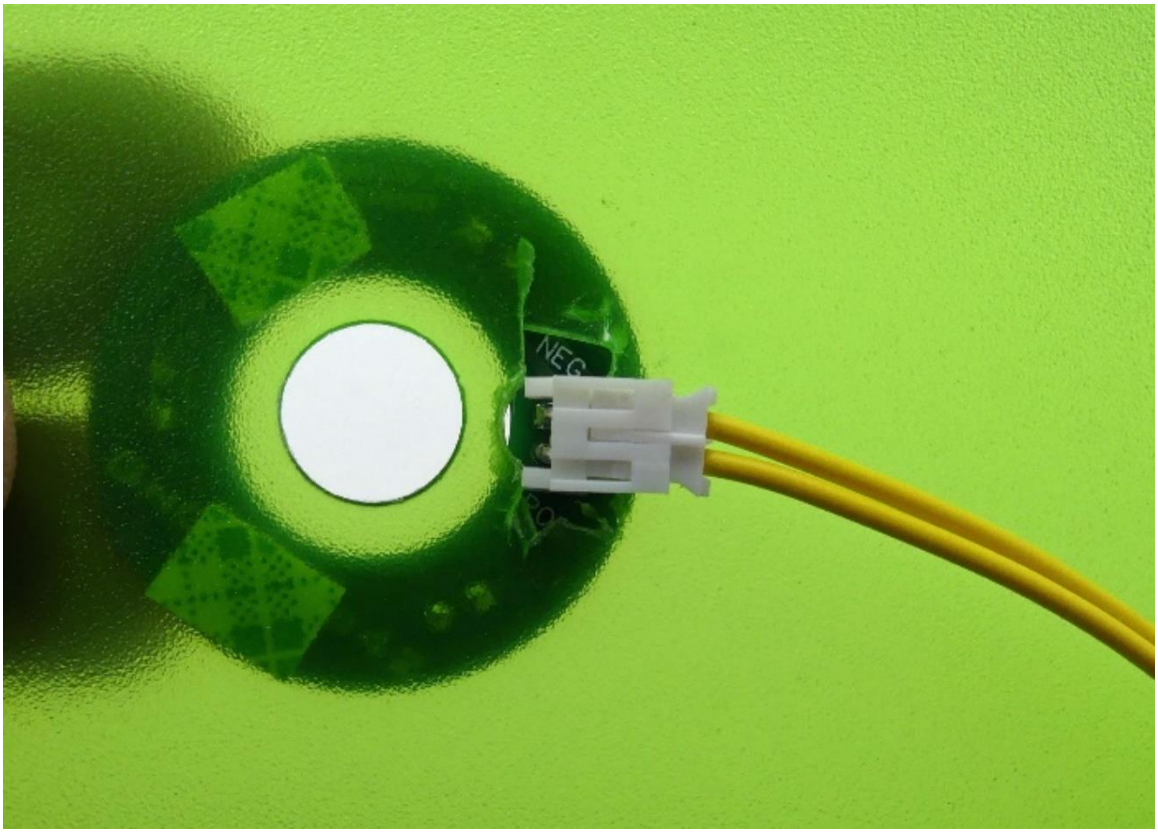


Next feed the connector on the LED ring through the hole:



Then flatten and center the LED ring so the original hole in the green translucent material is centered on the LED ring:





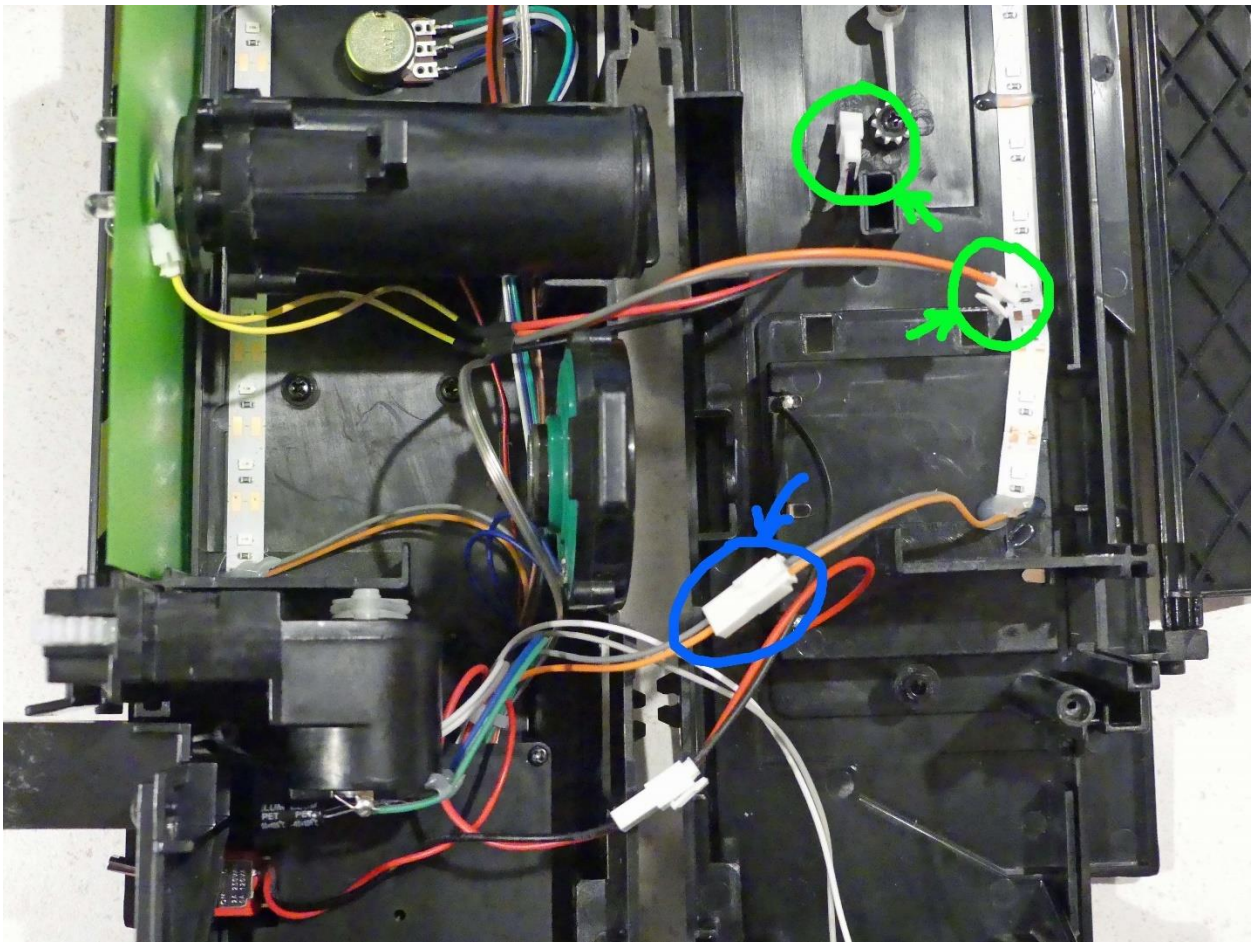
Now lift the LED ring slightly and remove the paper on the double-sided tape so it can stick to the green translucent material. Make sure it is centered and then apply pressure by squeezing the board and the green translucent material together.

Next the LED ring connection cable needs to be installed in the trap.

Reinstalled the green translucent material to the original location.

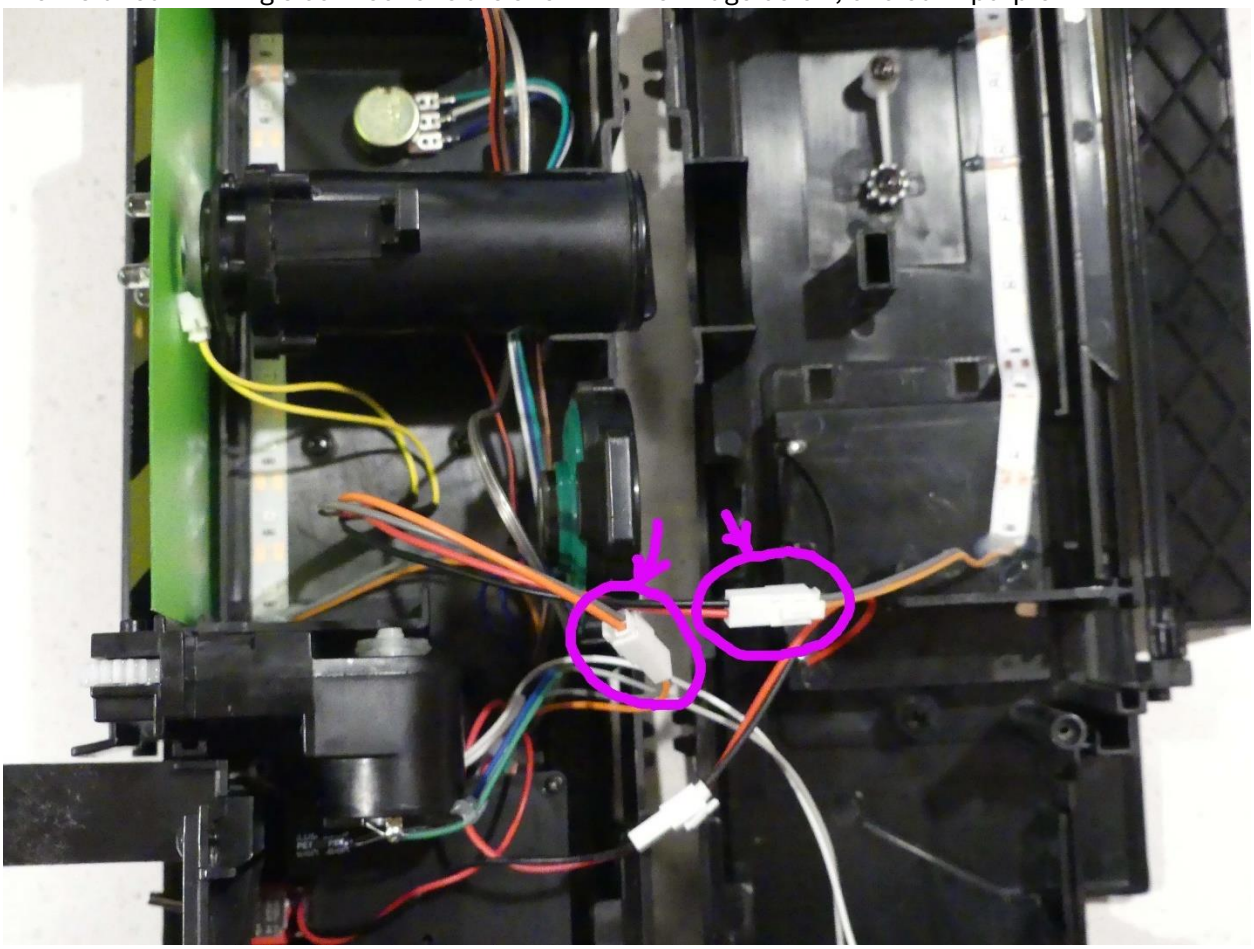
Then identify and disconnect the electrical connection between the main controller and the LED strip that is on the side of the trap with the battery compartment. Press the locking mechanism's tab at the end of the connector by where the wires exit the connector and this will allow the connectors to be pulled apart.

Green circles the LED ring cable connectors and the Blue circles the existing connection that needs to be disconnected:



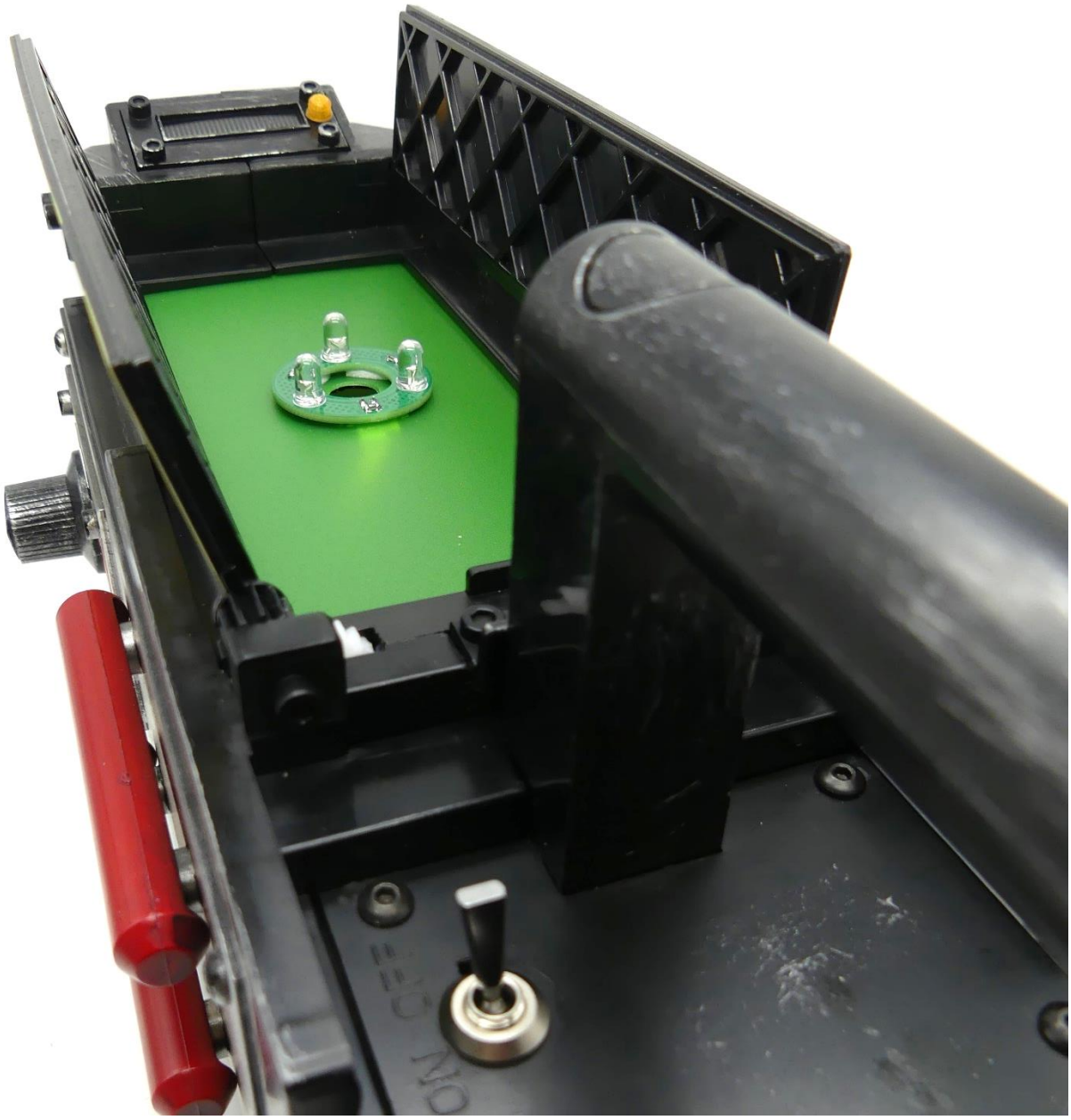
The LED ring connectors are chosen to mate with the existing connectors. Plug the trap's LED strip connector into the LED ring cable's mating connector and then connect the other LED ring cable's connector into the other Brown and Orange wired connector that comes from the traps main controller.

The installed LED ring's connections are shown in the image below, circled in purple:



If you have batteries installed and the mister filled with water, you can test the operation by turning on the trap and pressing the button on the trap's handle. The only thing changes is the LED operation, so both of the trap's original LED strips should flash, and the LED ring should flash when the mist generator is operating.

This is how it should look when the trap is put back together:



Closing the Trap

Make sure that wires do not get trapped between mating parts!

I had a lot of issues with the wires from the trap handle button getting crunched by the screw posts and had to repair that cable. Best to tape that in place so it will not slip over into a problem area!

First make sure that the last two connections between the two trap halves (battery and side LED strip) are connected.

Getting the flaps closed:
Next you need to get the two halves almost completely slid together but leave them about ¼" apart. This allows enough room to disengage the motor assembly from the flap on one side or the other.
Push the motor assemble one direction so you can set the flap down on the opposite side.
Then push the motor assembly in the opposite direction so you can set the flap down on the opposite side.
Now you should be able to completely get the two halves together.

Watch for pinched wires – make sure no wires are sticking out between the two halves and that the two halves come completely together without too much pressure.

With the front plate off (the one with the red labels) you can see the display's wires and make sure they are located properly and not trapped between the two halves.

Testing before completely put back together:
Once you are satisfied that the halves are together, I put the one screw in the battery holder and under the display in so that the halves will stay together.

Make sure you have four fresh AA batteries loaded in the battery compartment in the correct orientation. Also make sure there is water in the mist generator.

Try turning on the trap and make sure all the parts work: turn it on and press the handle button to see the trap operate and all of the lights sound and mist are working.

Nearly final assembly:
1) Put in the remaining three screws into the side holes to secure the two halves together.
2) Snap the wheels back in place
3) Put the battery cover on and screw it in place

Last step is putting on the front panel:

If you want to replace the front plate small screws and plastic fake socket head caps with the large black button head screws, a few steps will be needed to allow for the use of the new screws.

If not, snap the front panel in place, screw in the two screws and re-glue(?) the plastic socket head caps back in place. The caps will probably fall out if not re-glued.

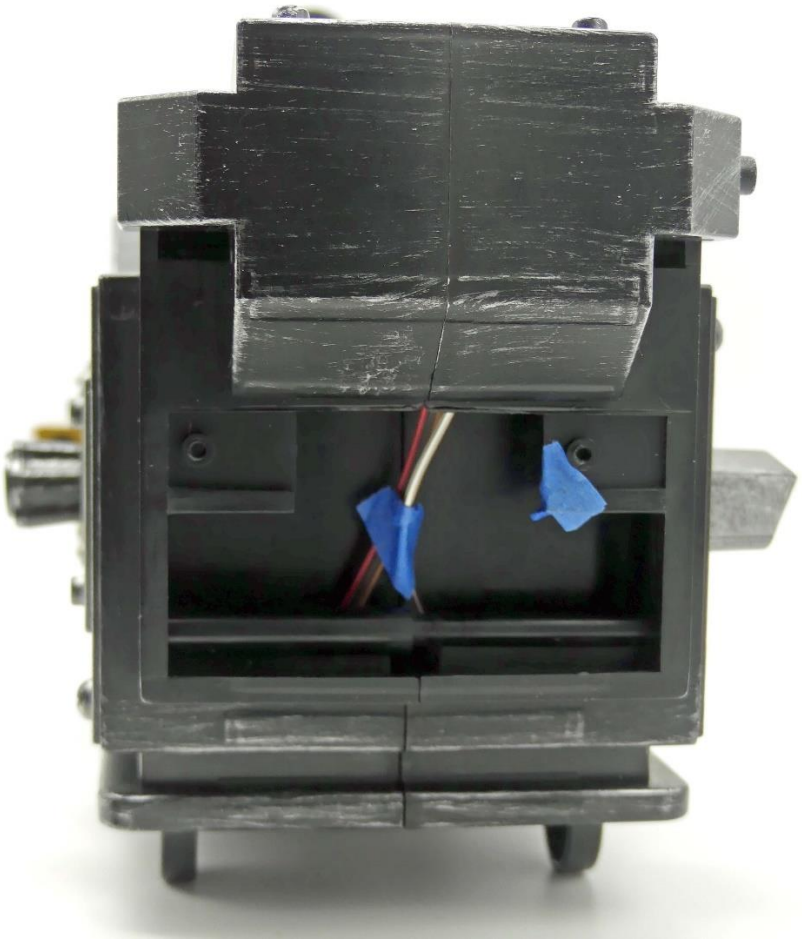
If you are replacing the screws in the front panel:

Tools

- Drill and 1/8“ inch drill bit
- Hex Key / Allen Wrench / Allen Key

We need to flip over the two screw brackets, so we have a flat place to drill. I tape them in place because they tend to move a bit. You could also glue them in place if you want this more permanent. Also taped the wires from the display so they would be out of the way.

Here is a picture of the original position of the screw bracket on the left and the rotated 180 degree screw bracket on the right (taped in place):



Next, put the front plate on and secure with the regular screw on the left to secure the panel in the proper place. Then drill with the 1/8” bit through the existing front panel hole on the right. This will allow the new screw to be screwed into place with the hex key. Install the new screw on the right.

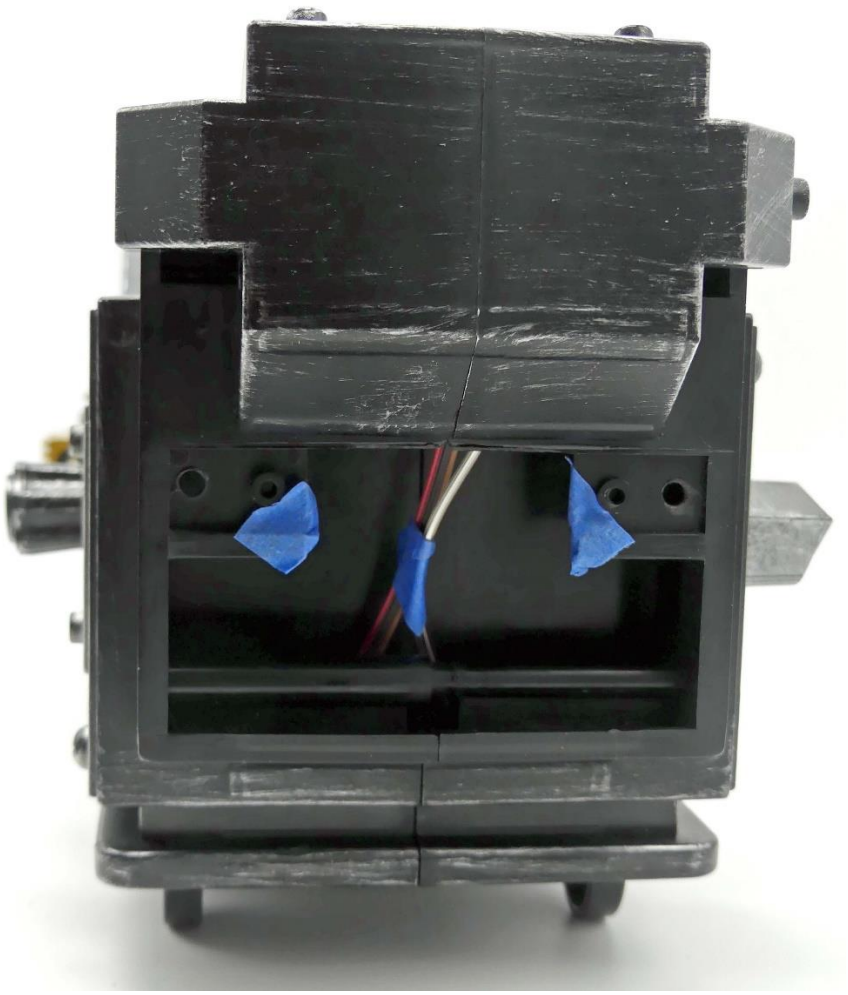
Next remove both screws and the front panel.

Rotate the left screw bracket 180 degrees, push back in place and tape the left side so we can drill another hole.

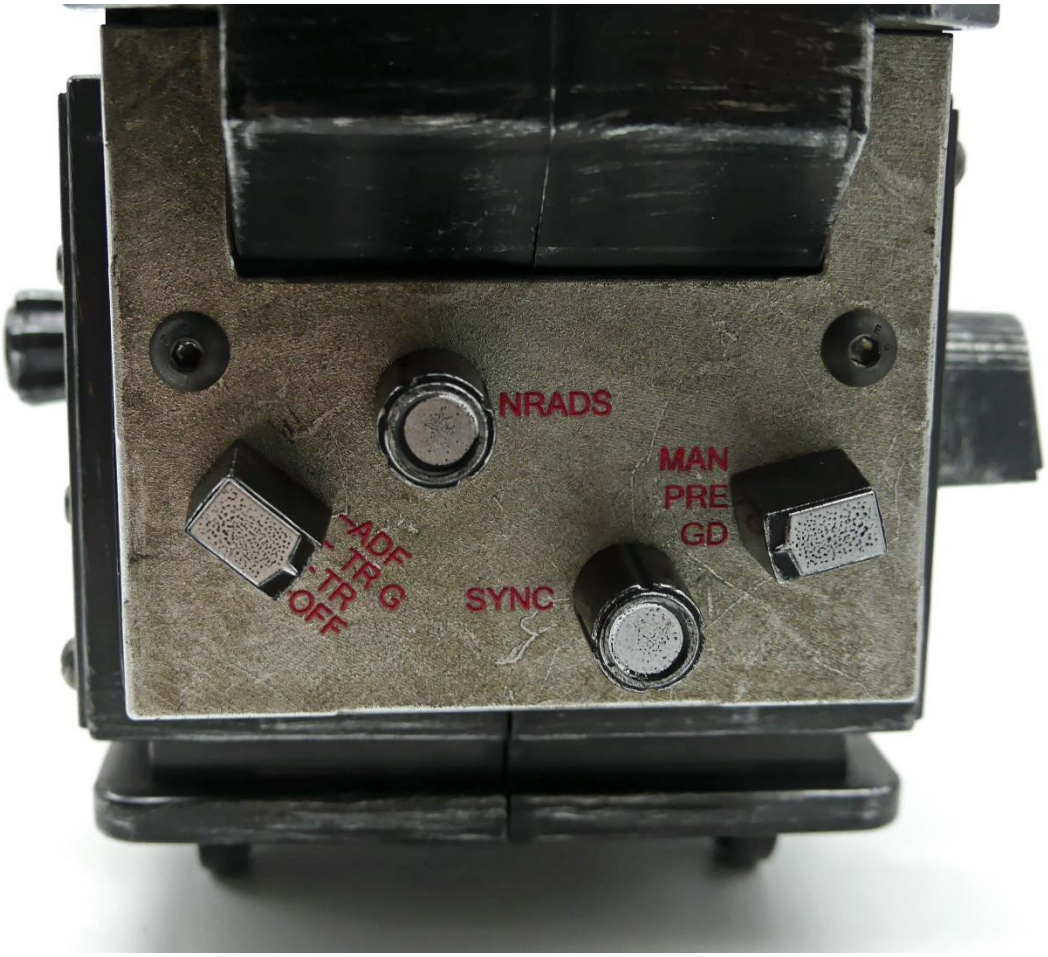
Place the front panel back on and screw in the right-hand side with the new screw to hold the panel in the proper place. Drill the left side with the 1/8” drill bit. Install the new screw on the left-hand side.

You are nearly done, but there could be extra debris inside the trap from the drilling…
If you want to clean that up, just remove the two screws and the front panel and vacuum out the area below where you drilled. Make sure the screw mounts are taped in place so you do not vacuum them out!

Here is a picture of the new screw holders with the holes in them:



Finally (!) snap the front plate in place and screw in the new front screws with the hex key.

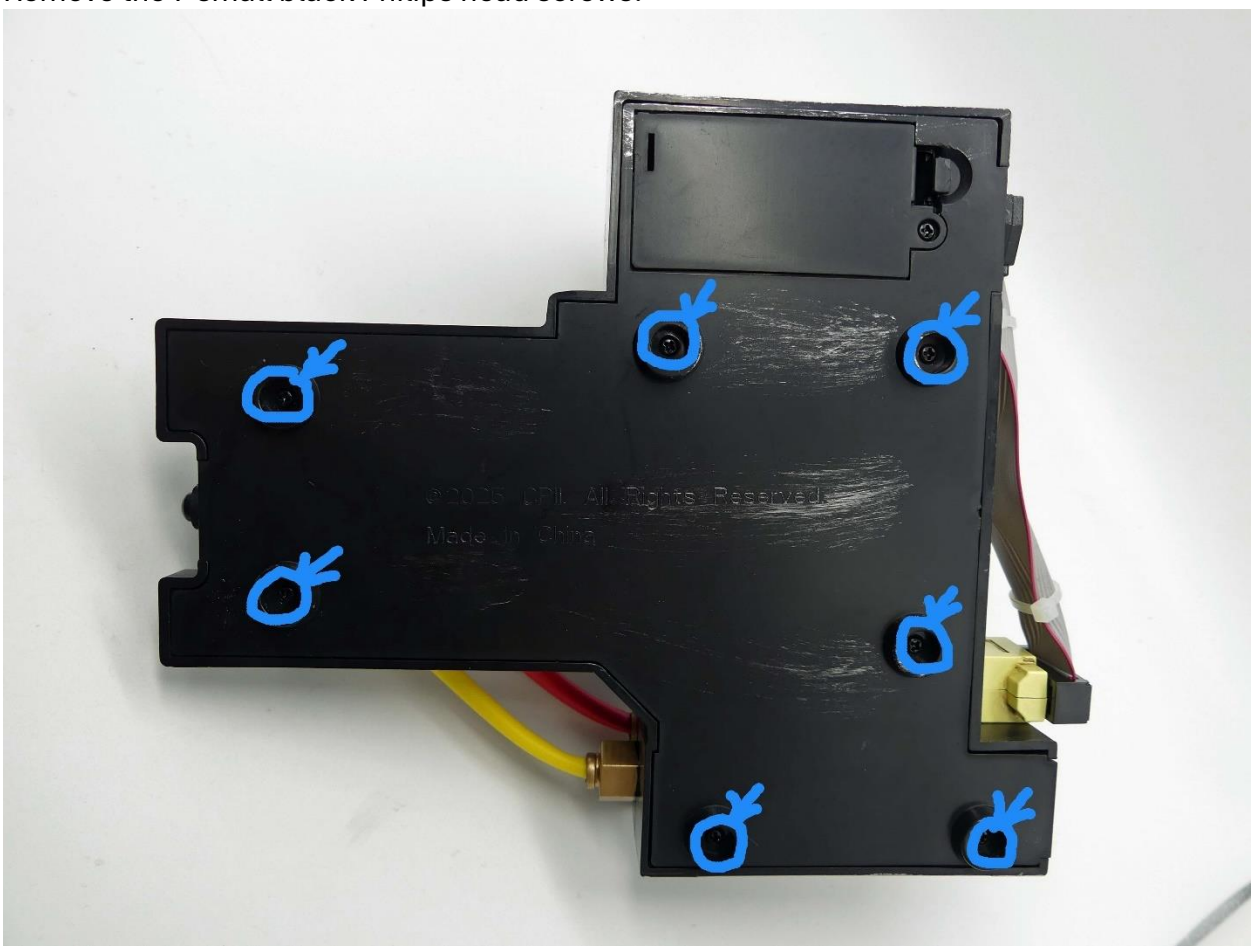

NRADS
MAN
PRE
GD
SYNC
ADF
TR G
TR
OFF

Opening the Pedal

Tools:

- Small Philips Drive screwdriver
- Tape to hold down parts (clear or painters tape, etc.)

Remove the 7 small black Philips head screws:

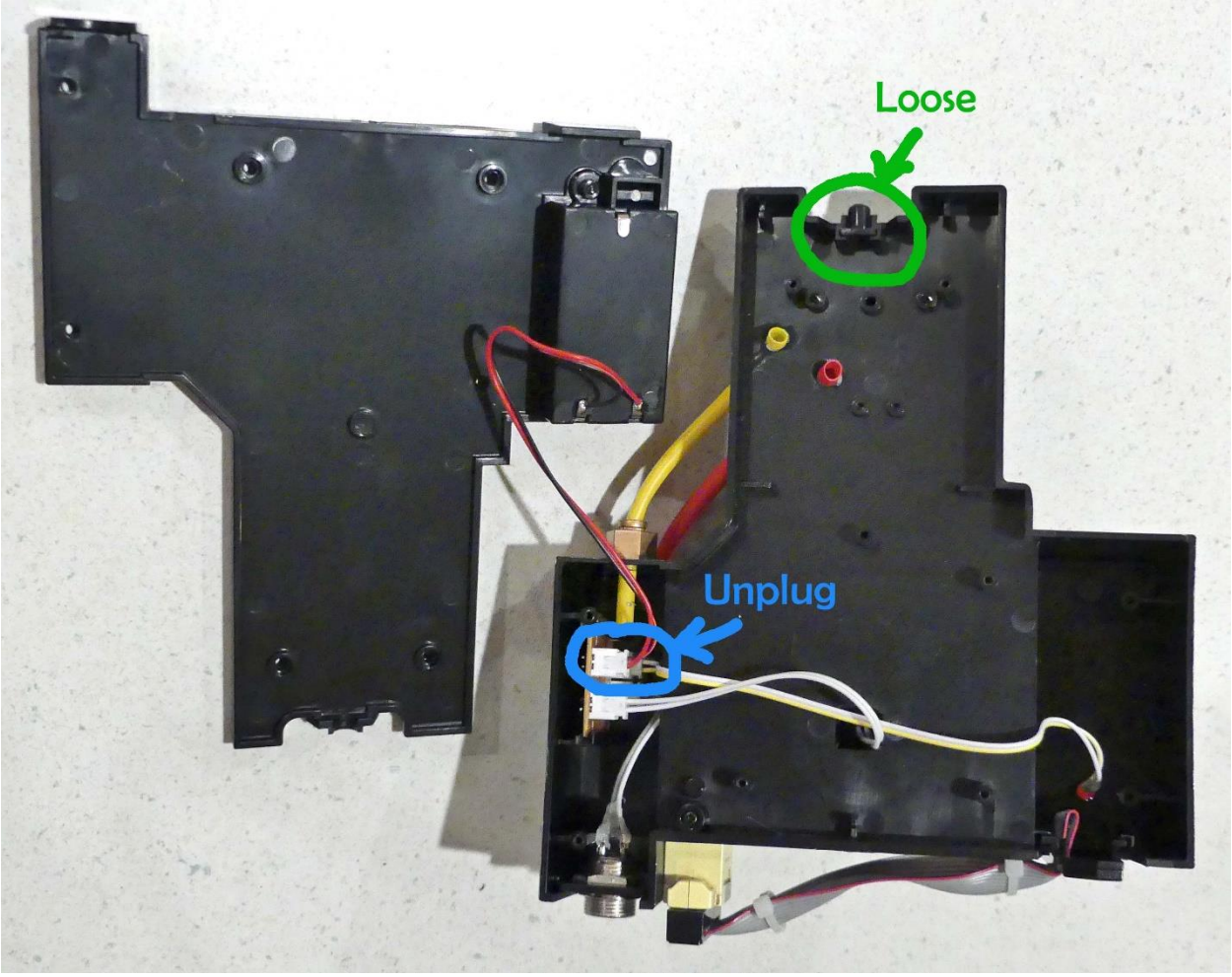


Grab the feet or the tab next to the battery compartment and lift the base off of the pedal.

No need to open the battery compartment, except to put in batteries if you hadn't already done that...

It works out best to unplug the battery cable (red and black wires) from the circuit board so you can work on the top portion without damaging the battery wires. Shown in BLUE in the image below.

The small nut that is centered below the pedal hinge can easily fall out, so tape it in place or keep it with the screws so you do not lose it! Shown in GREEN in the image below.



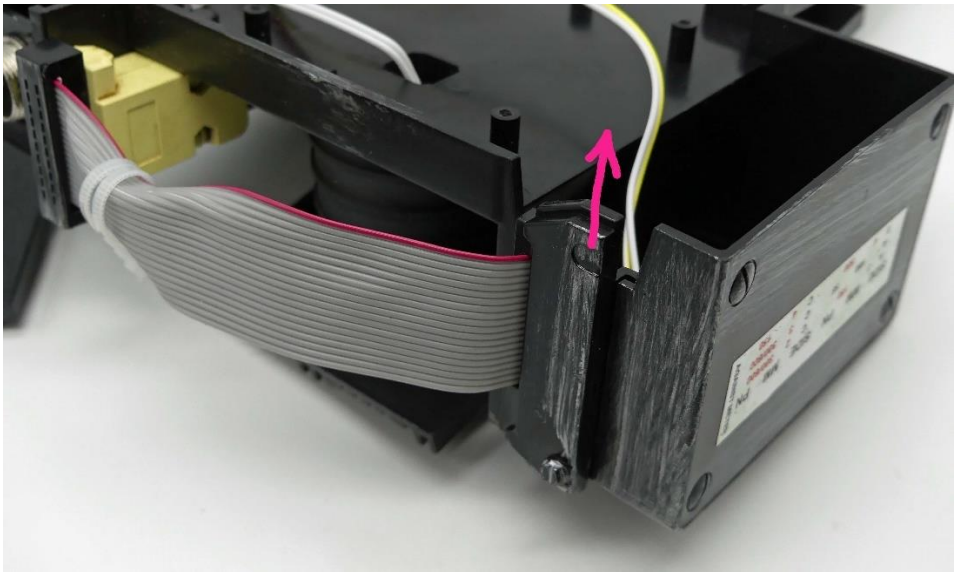
The small circuit board is easy to lift out of the two side rails, and this makes it easier to remove the LED connection from the bottom of the board, just below the battery cable connector. Unplugging the LED cable will be needed when updating the lighting on the pedal.

Installing the Pedal Cable Upgrade

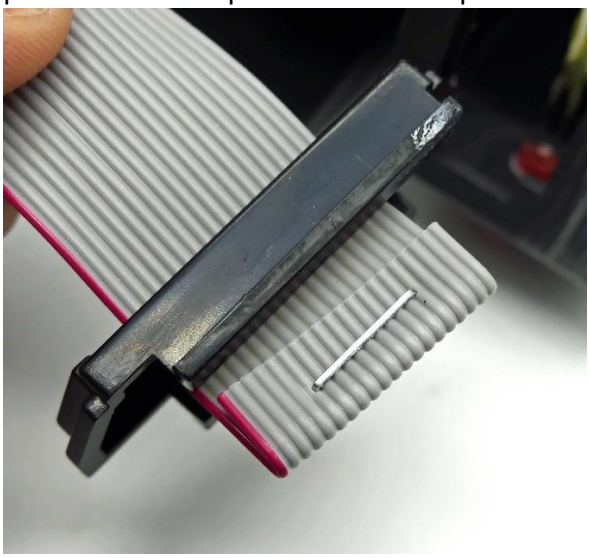
Tools:

- Small Straight/Flat Drive screwdriver
- Small Philips Drive screwdriver
- Small Vise to squeeze the connector onto the cable

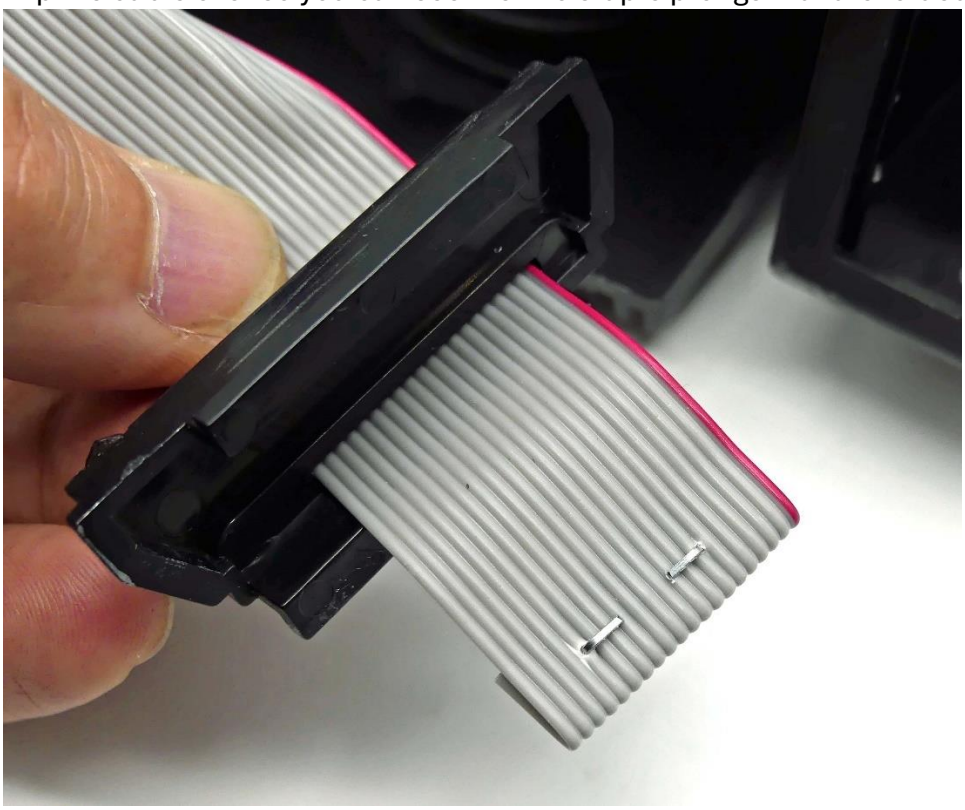
The cable end that is going to be replaced just easily slide up and out of the pedal top:



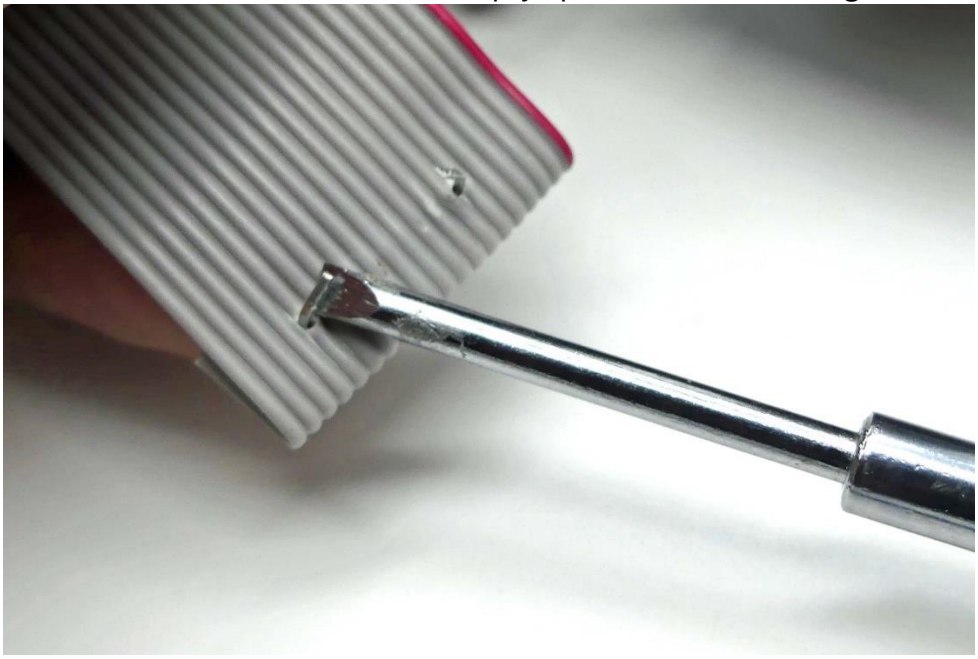
The cable is threaded through the connector piece and then folded over and stapled in place. Here is a picture of the staple:



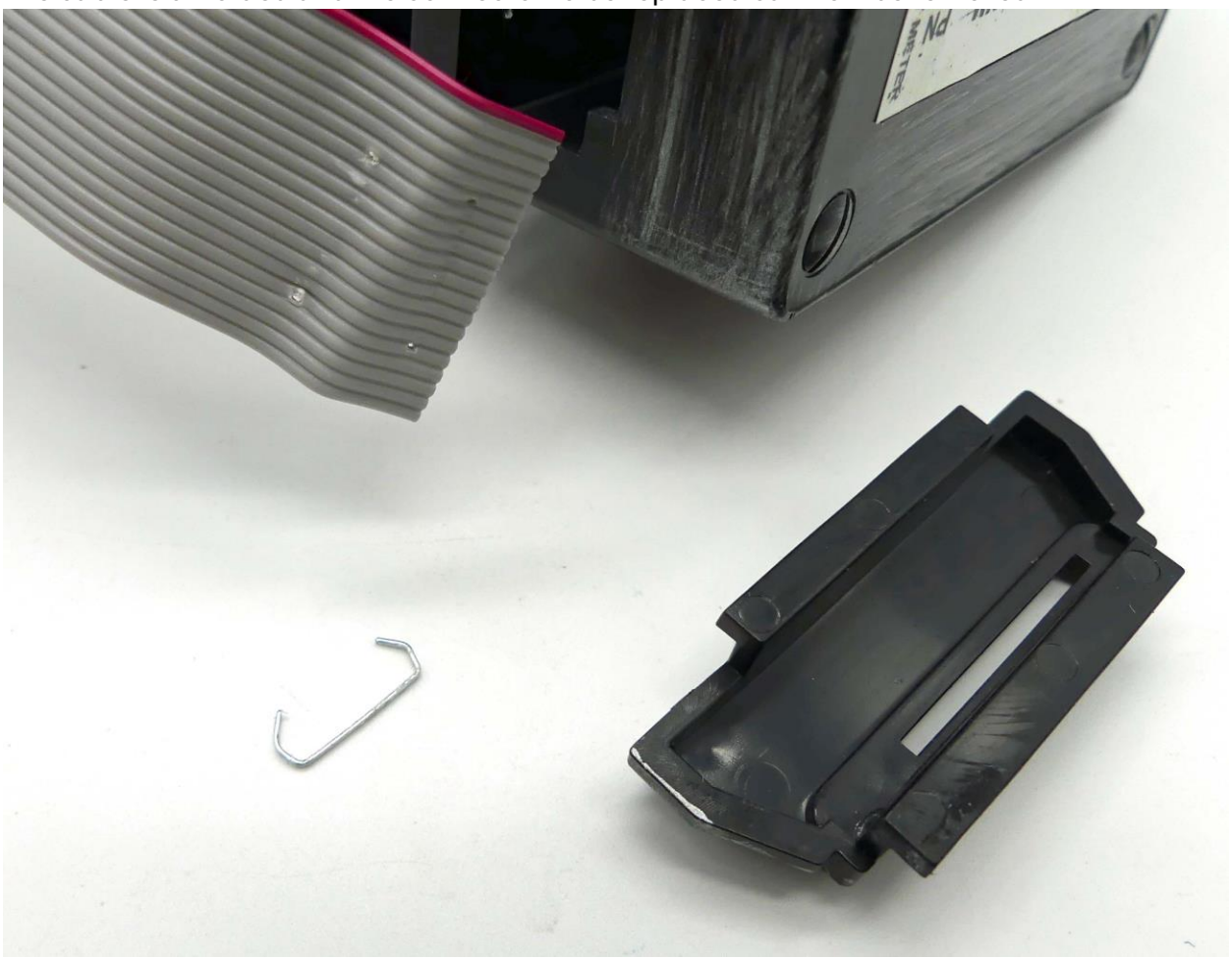
Flip the cable over so you can see the two staple prongs that are folded over:



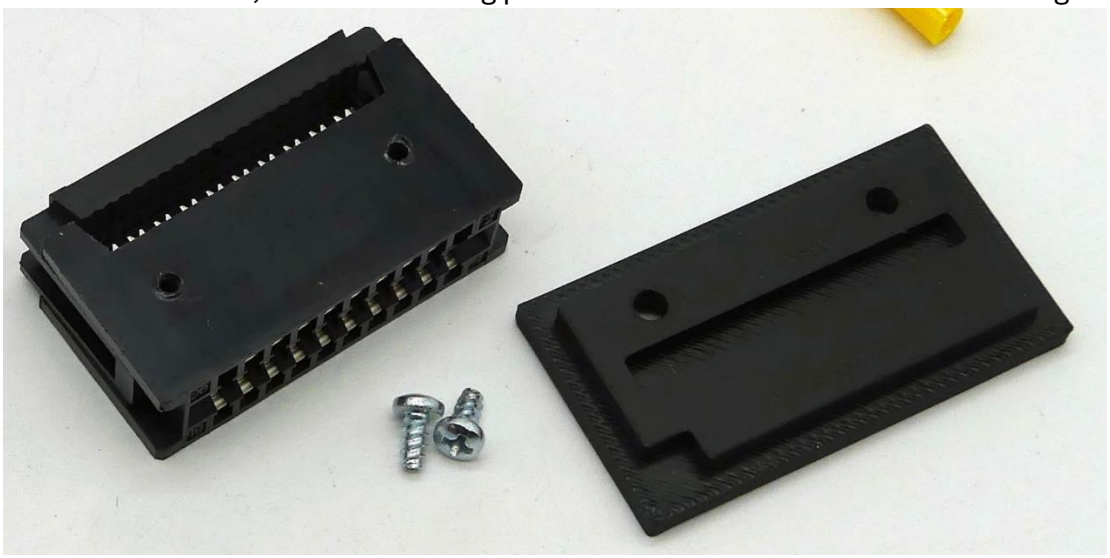
Then use a small flat screwdriver to pry up each folded over leg and remove the staple.



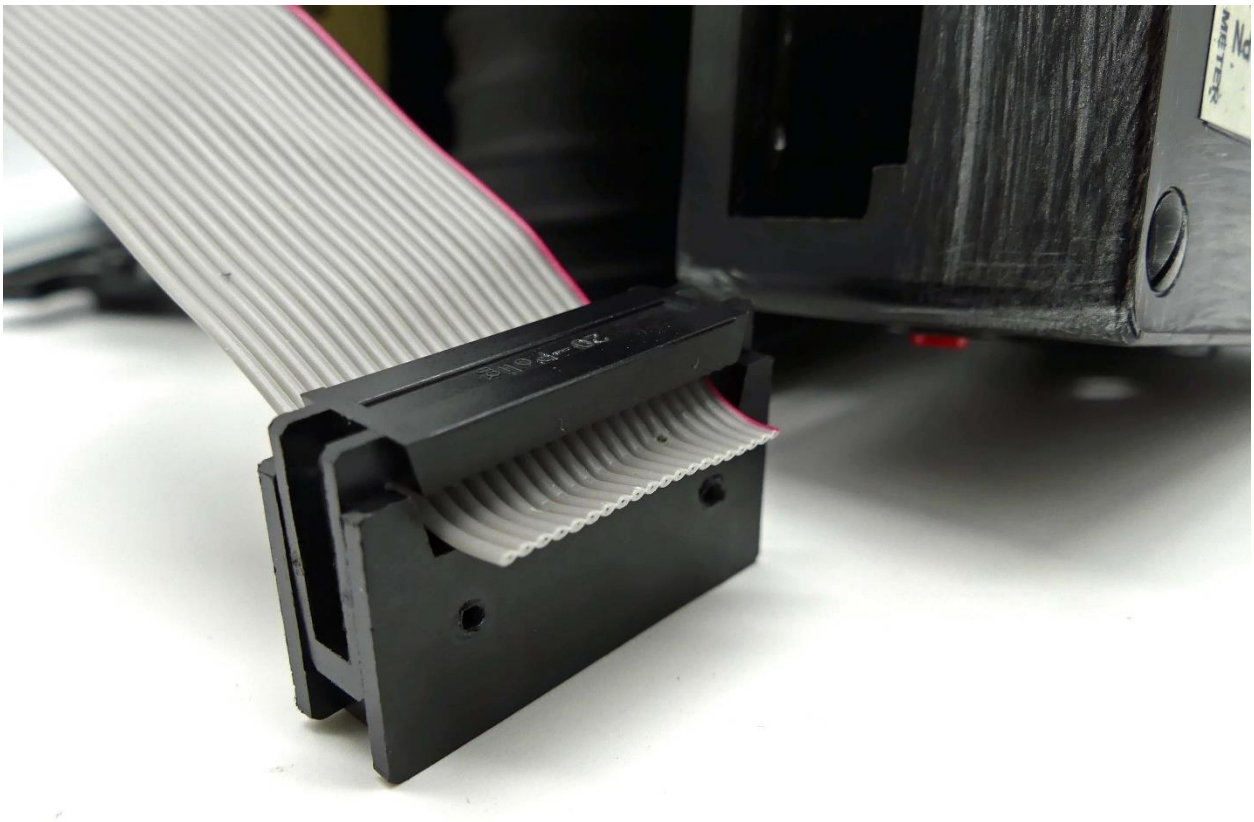
The cable is unfolded and the connector to be replaced can now be removed:



Using the small Philips head screwdriver separate the replacement component into parts: the real connector, the 3D mounting plate and the 2 screws that hold them together.

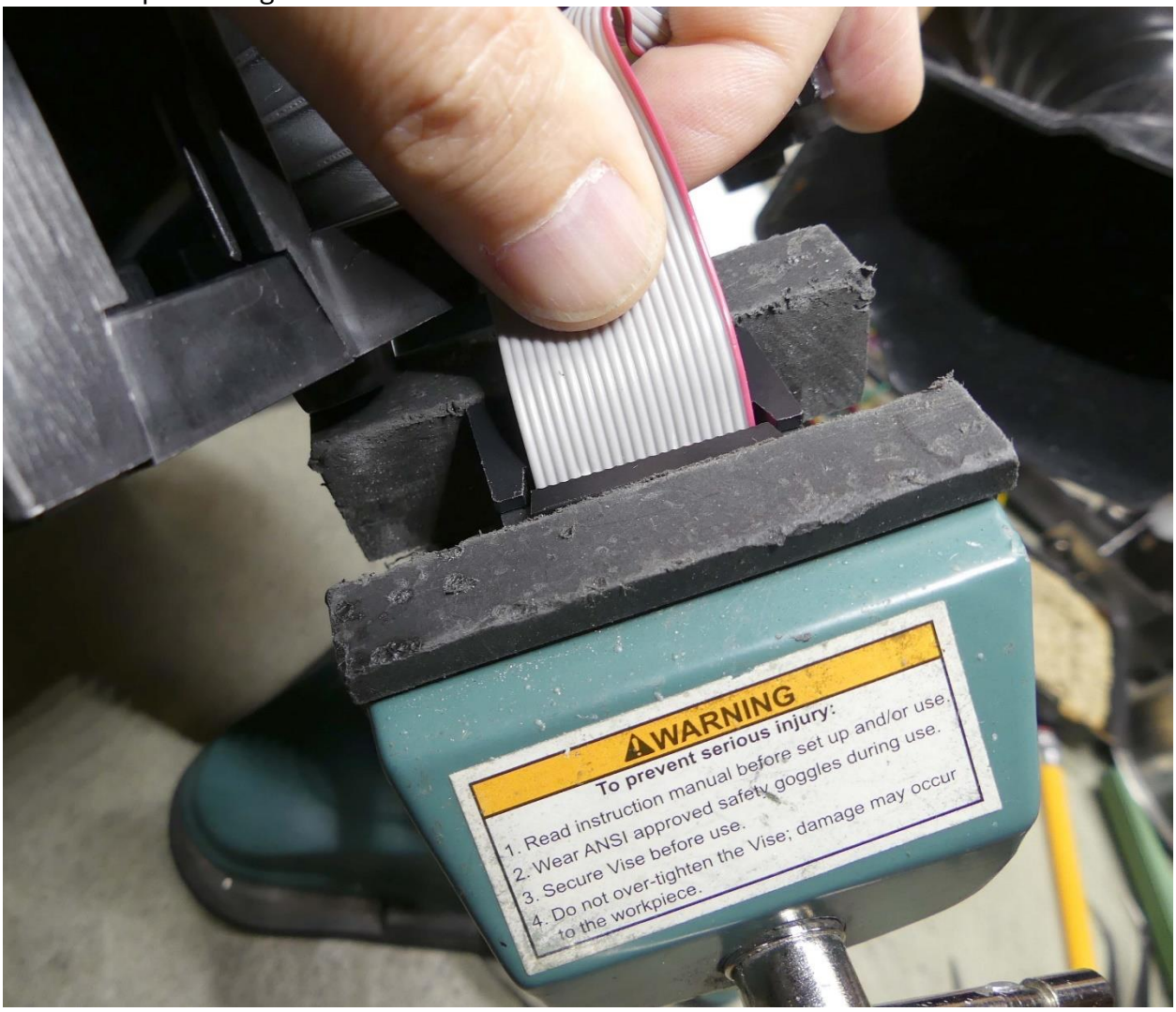


The gray ribbon cable needs to be attached to the real connector and the orientation is important! Se the later images to make sure the connector is properly oriented to the cable, so the cable does not have to be twisted 180 degrees to mount the part.



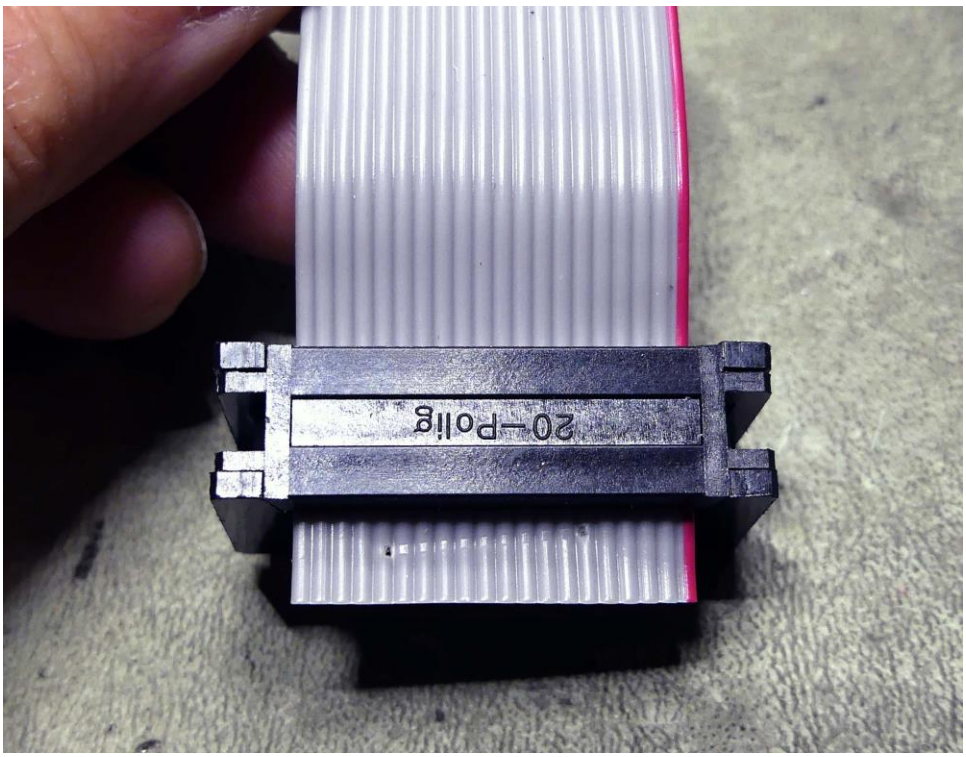
The cable should be as long as possible WITHOUT showing the staple holes! So only feed in enough so that when the connector is clamped shut the holes are covered by the top retention clip.

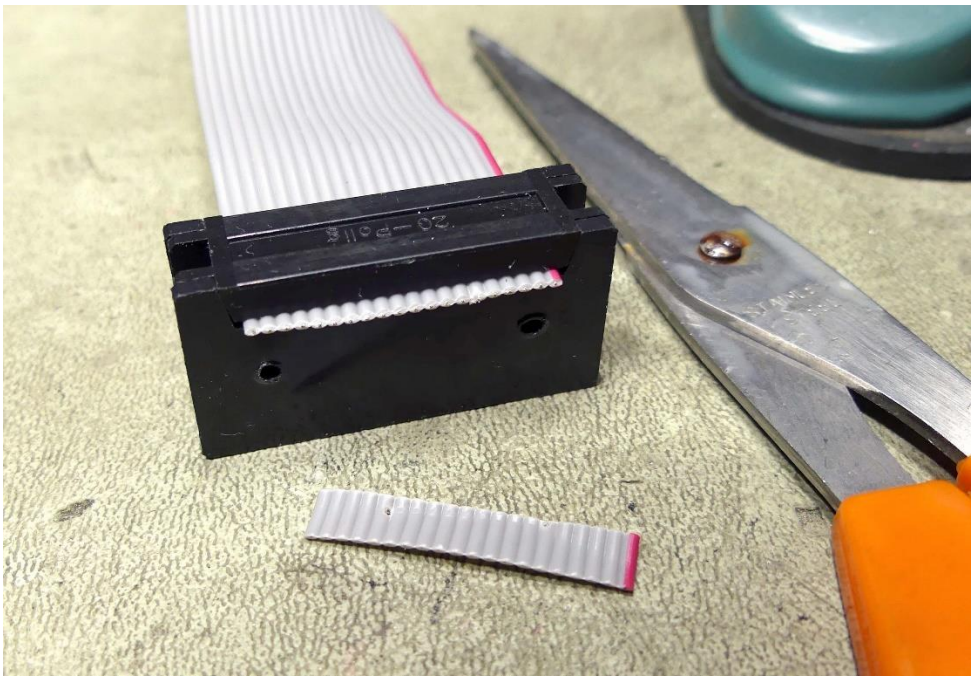
I am holding the cable in just enough to cover the holes as I tighten the vise to press the two connector pieces together:



I left the rubber protectors on the clamp just to see if it would still be able to squeeze the connector together and it worked fine. I would normally remove those and just squeeze the connector together with the flat metal faces of the vise. If your vise has textured surfaces, you would want to use something flat and hard between the connector and the faces, so you do not mark up the connector's surfaces.

Here is the connector with the cable fully clamped in place. The excess ribbon cable does need to be cut off.



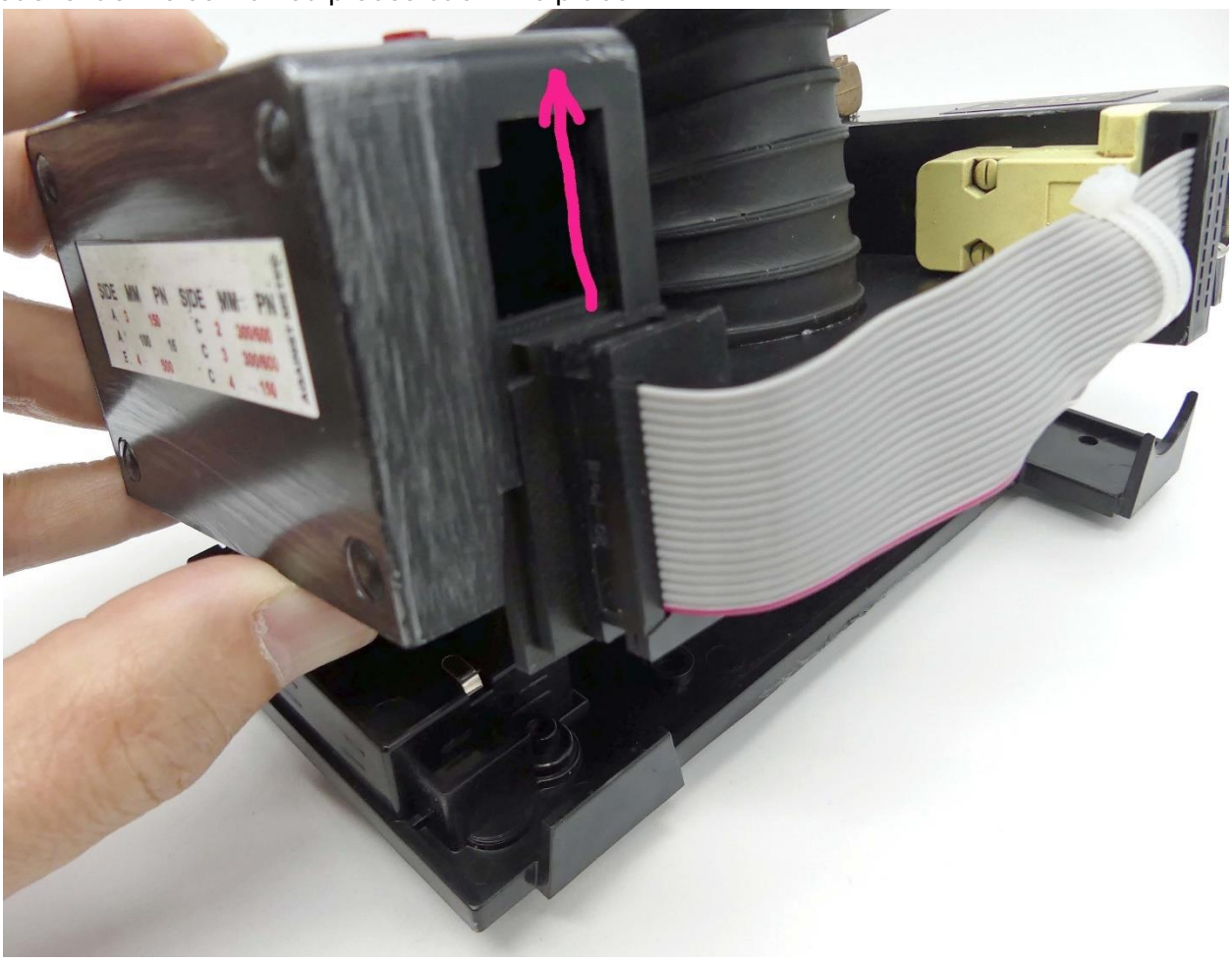


Leaving a bit of the cable is fine as there is a recessed area on the 3D printed piece to allow for that.

Next, the 3D piece needs to be reattached to the ribbon cable/connector assembly using the two screws that were holding the pieces together when shipped. The orientation of the 3D printed part is critical and should look like this when attached:



Just slide the combined pieces back into place:



Lastly, adjust the two wire ties how you would like them to appear. The reference photos I used show the two ties separated, not together like can be seen above and how they were configured from the Spirit Halloween factory.

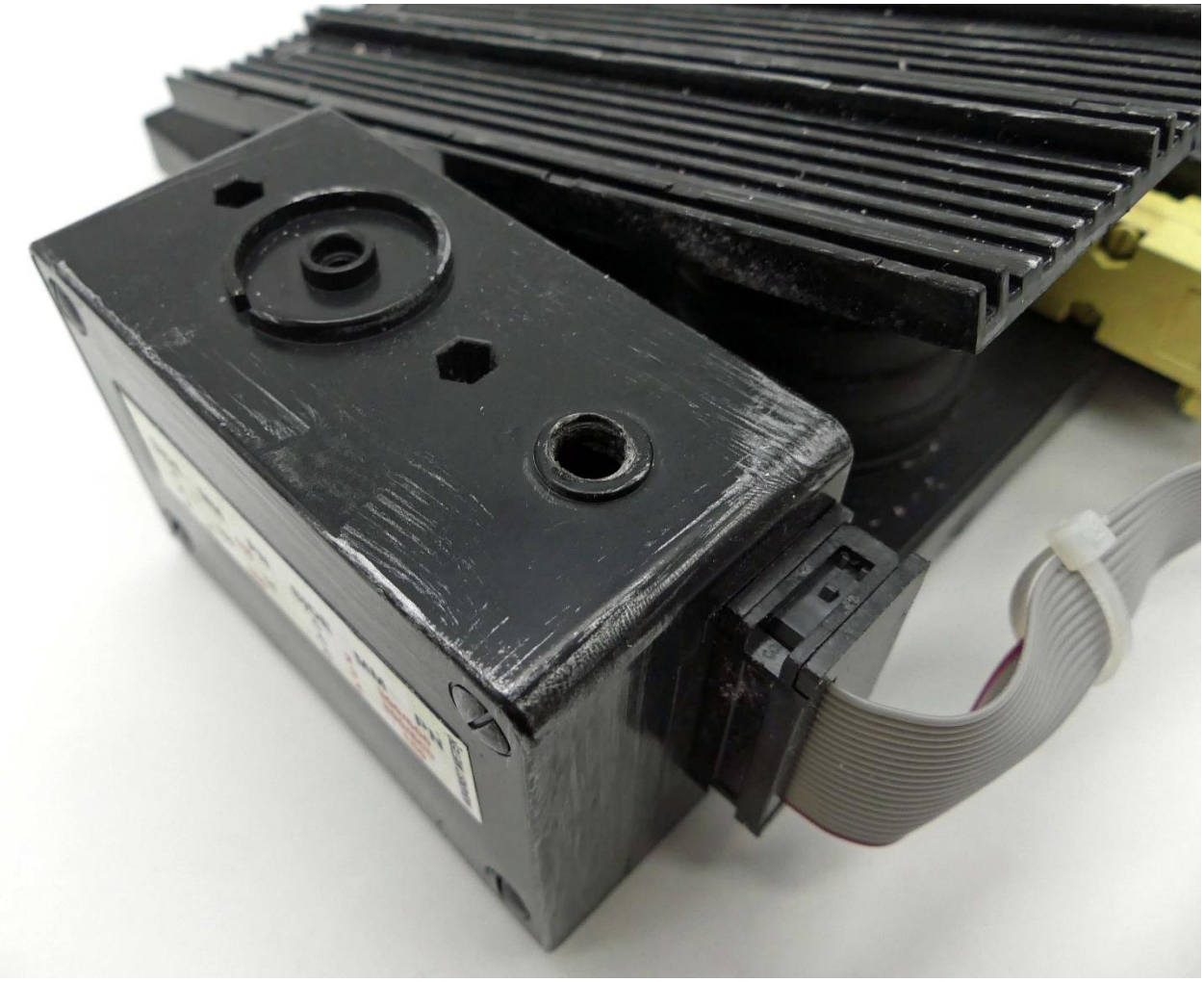
Installing the Pedal *Standard/Deluxe* Indicator Upgrade

Tools:

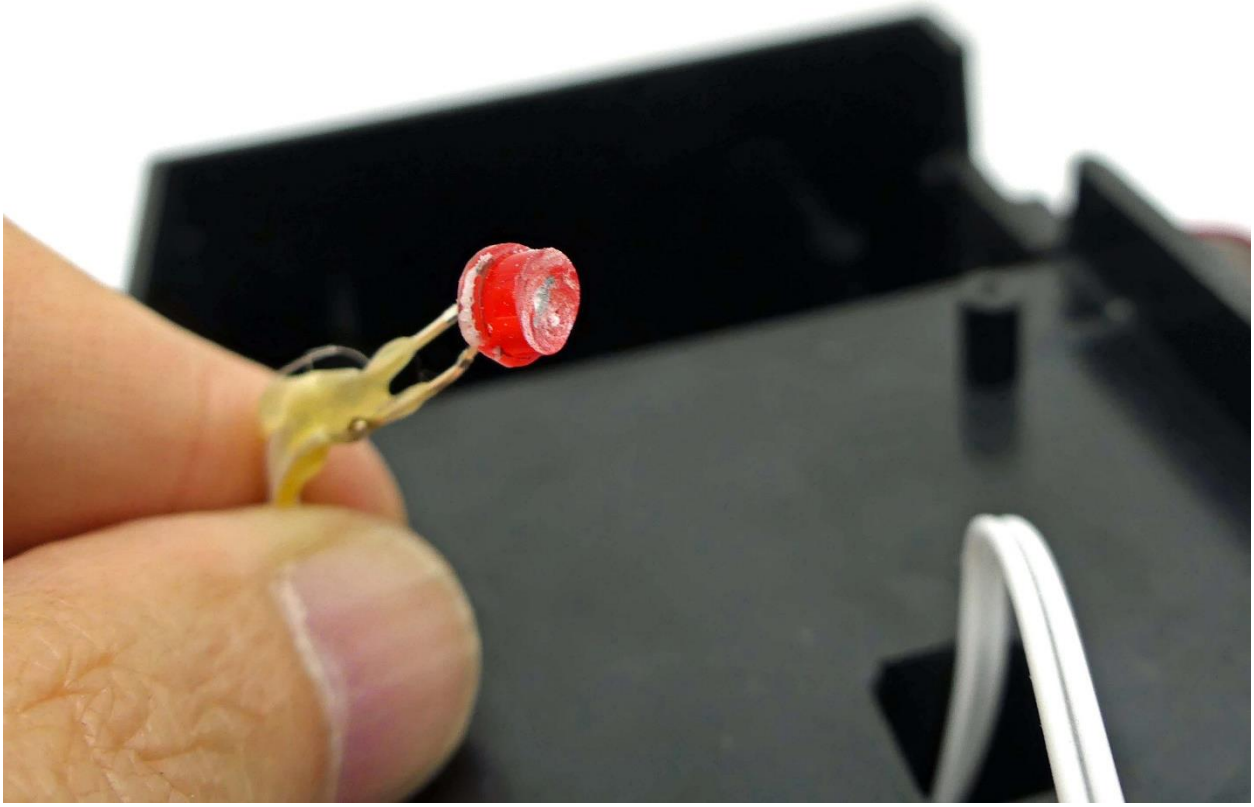
- Drill and ¼” drill bit, maybe also a 1/8” bit to start and center the larger hole
- Maybe a hot glue gun to secure the Standard Indicator in place
- Needle nose pliers for the deluxe Indicator

The LED that is currently installed is very securely glued in place, so it is easiest to just drill the LED out of the pedal assembly.

I used the ¼” bit directly and apparently did not center the hole ideally, so recommend using a smaller drill bit first to make sure the hole is centered on the LED and with a good dimple/hole started then switch to the ¼” drill since that is the hole size that is needed.

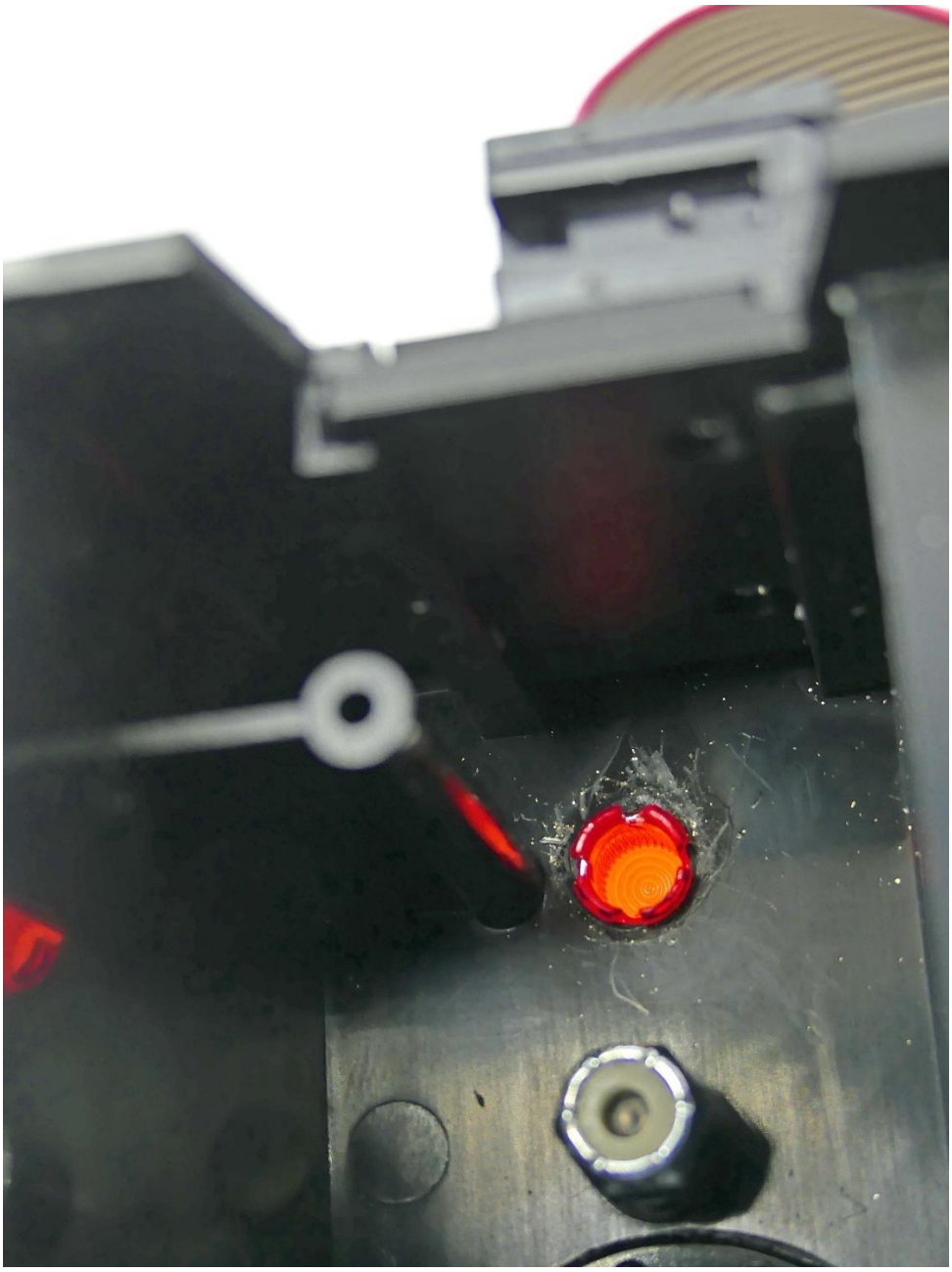


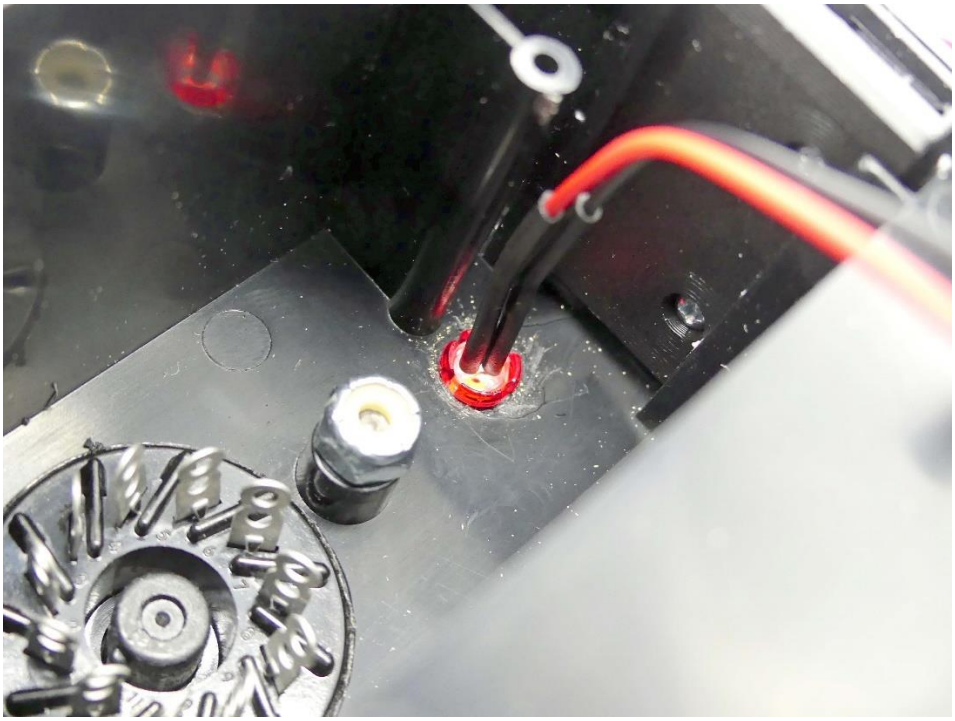
The LED looks like this when done and was easy to remove from the pedal. This LED is no longer useful!



“Standard” Indicator Upgrade:

Just press in the LED Lens. The part should be a somewhat tight fit, with the tabs clearly reading the inside of the pedal and able to expand. If needed, some flattening of the inside surface may be needed for proper fit.





You can tell if it is fine if you can press the LED into this lens from the inside of the Pedal. It should snap into place. You may need to hold the lens in place from the outside of the pedal when pressing the LED into the lens from inside the pedal.

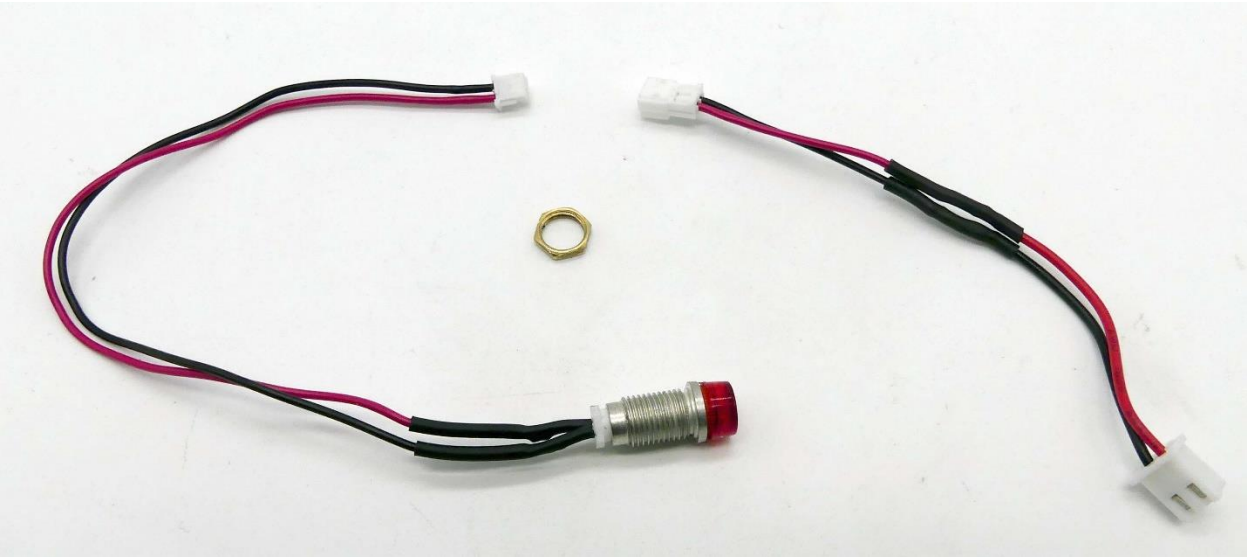


If you drilled the hole a bit larger than the ¼" bit (due to angled or repeated drilling), the lens/LED assembly may be loose, and the LED may easily fall out of the lens. To fix this, just use a hot glue gun and dab a bit on the inside to hold the LED and lens in place.

"Deluxe" Indicator Upgrade:

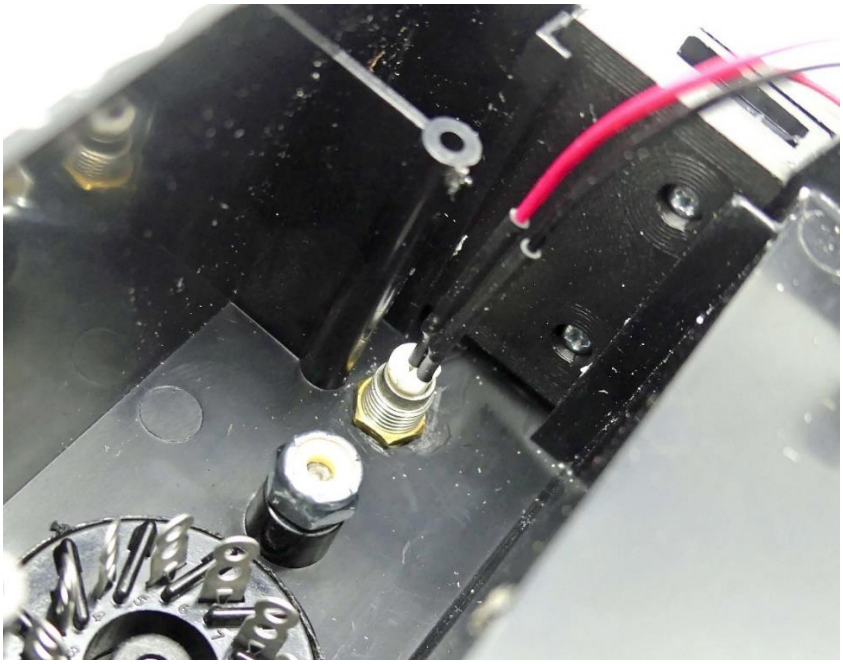
The Arcolectric indicator has attached leads and must be installed from the top side of the pedal. To get the leads through the ¼" hole, a tiny set of connectors were used to separate the cable into two cables: one attached to the Arcolectric indicator and one with the needed connector that plugs into the circuit board but is too large to fit through the ¼" hole.

Separate the cable into the two cables, then remove the brass nut from the Arcolectric indicator and slide it off the cable:



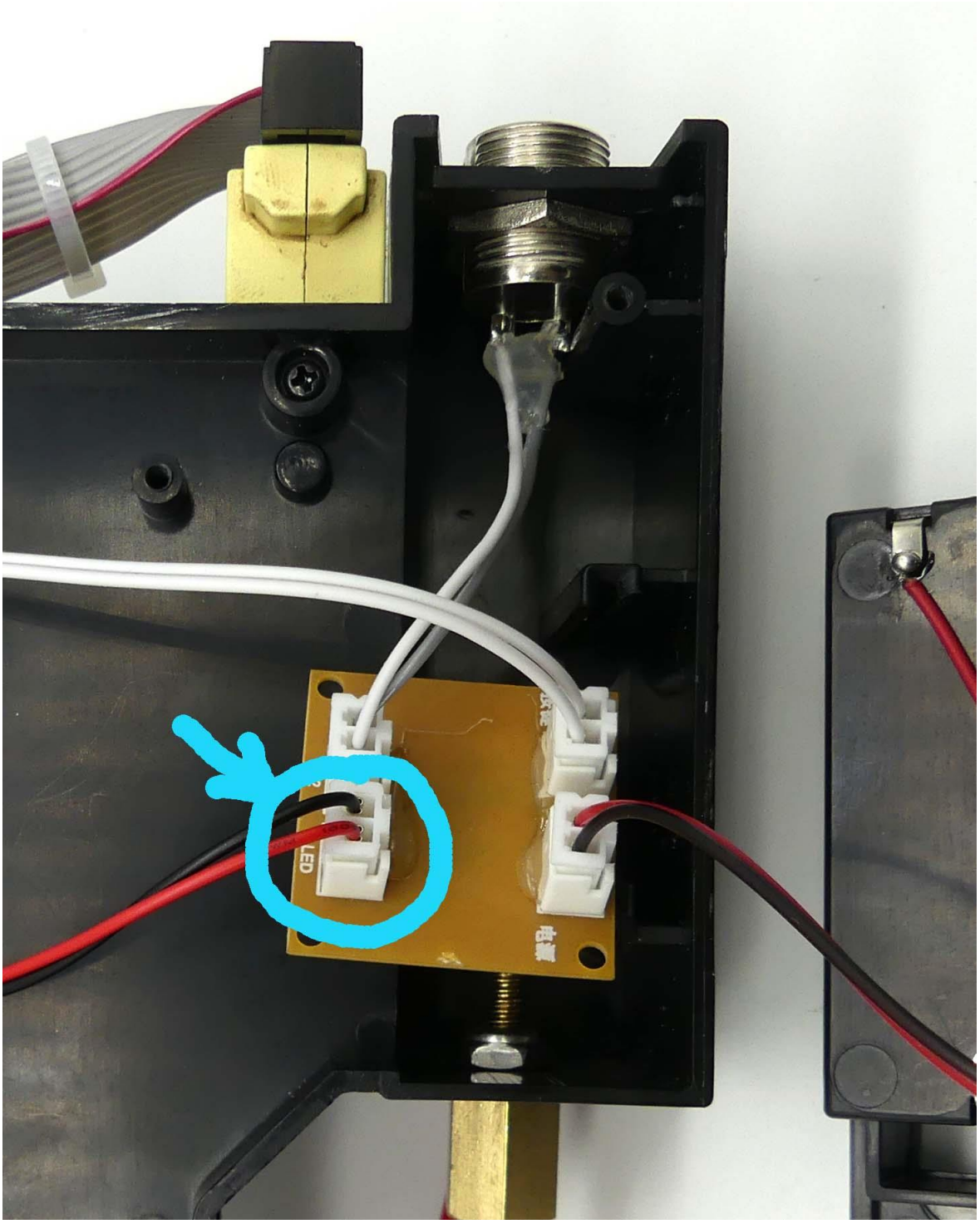
Next feed the Arcolectric connector's tiny cable end through the ¼" hole from the top side. You can now secure the Arcolectric indicator in place by sliding the brass nut over the tiny connector and threading it onto the Arcolectric indicator on the inside of the Pedal. I used long needle nose pliers to be able to tighten the nut.

The Red lens cap on the Arcolectric indicator is not that strongly attached to the housing so just hold the indicator in place when tightening the cap and do not use the cap to tighten the indicator in place.





Then plug the Arcolectric cables back together.
Lastly, plug the end of the Indicator cable assembly (LED or Arcolectric) into the circuit board. The plug will go into the bottom socket closest to the tubing connectors, labelled “LED”.


LED

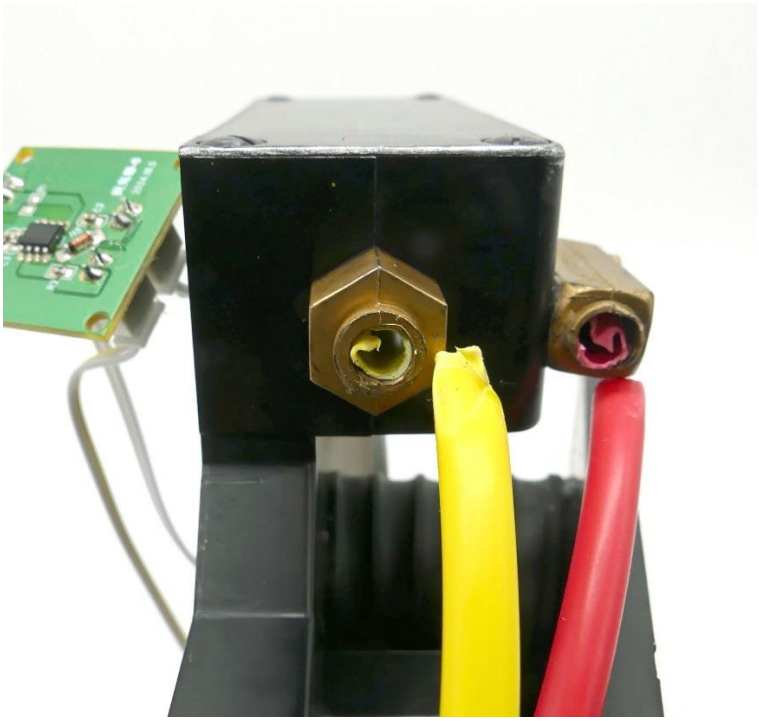
Installing the Pedal *Standard* Tubing Upgrade

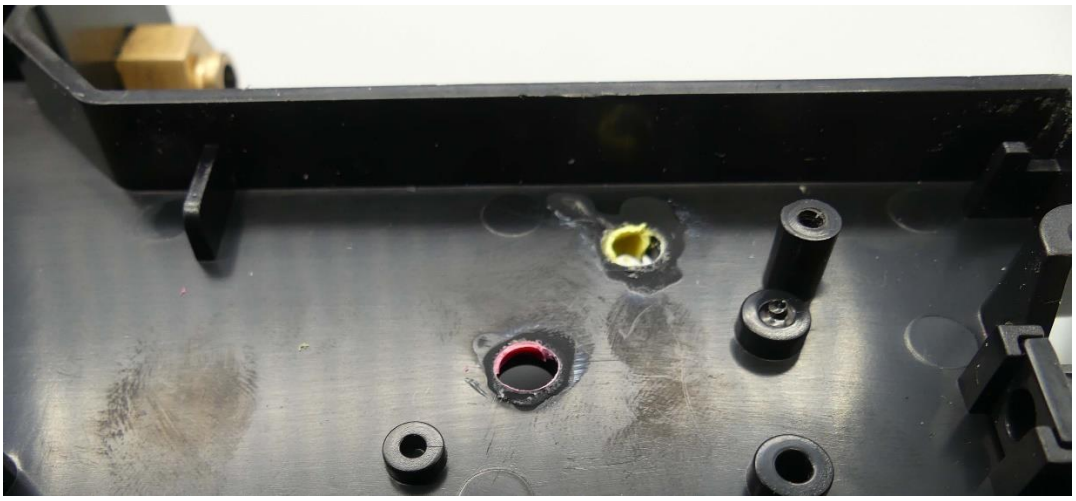
Tools:

- Drill and “ drill bit
- Small Pliers

The first step is to remove the original thin tubing without damaging the plastic connectors or the bas under the pedal.

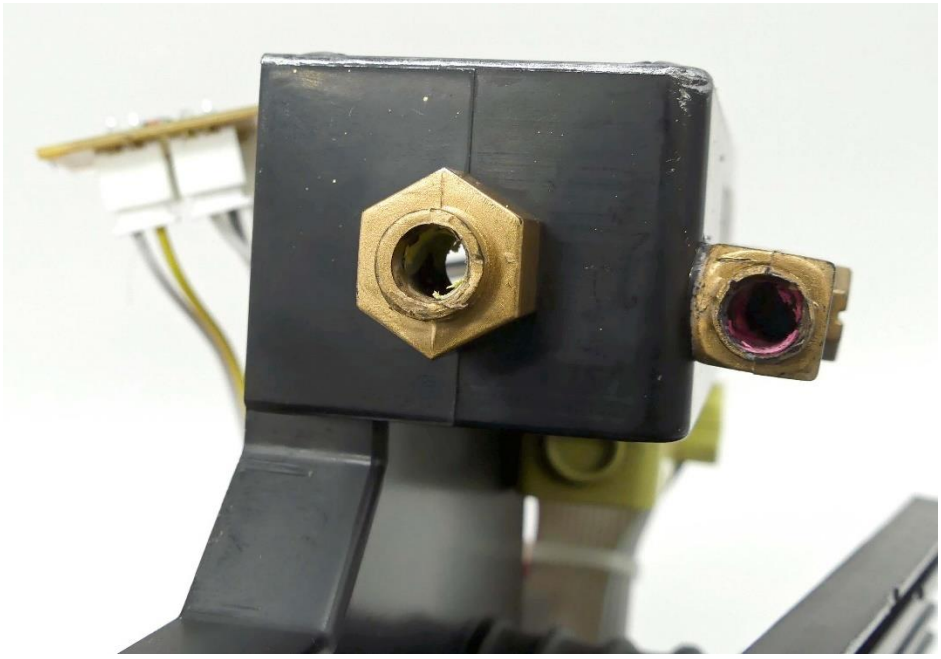
I used pliers and grabbed onto the thin tubing near the connections and then squeezed and twisted until something gave way:





Then using the drill with the 3/16” drill bit, remove as much of the hose material from the 4 holes as possible, without damaging something else and leaving alone the protruding

portion of the “brass” parts as possible since we will be needing those edges for attachments:

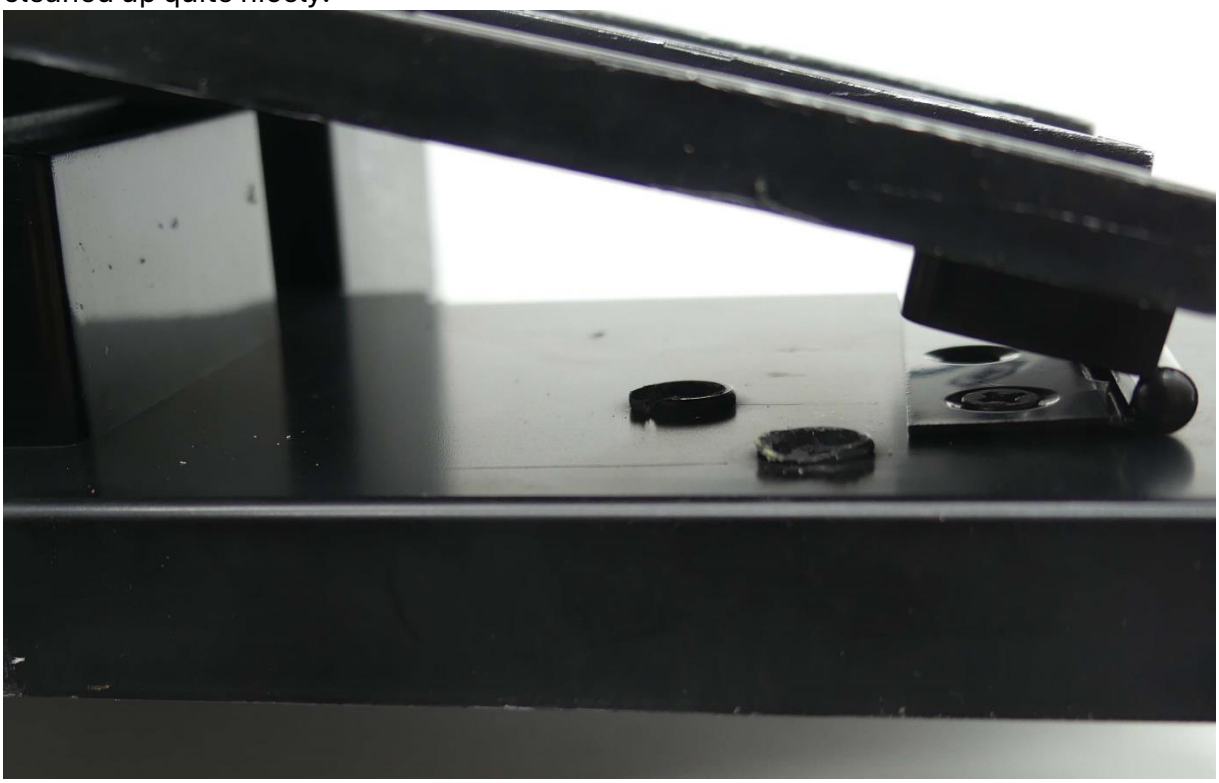


The leftover yellow tubing on the hex “brass” connector is not as important since only the new yellow tubing will go inside that part, but the leftover red tubing can be a problem if it does not allow the Red 3D printed cap to fit inside the “brass” banjo that is on the right-hand side in the above photo.

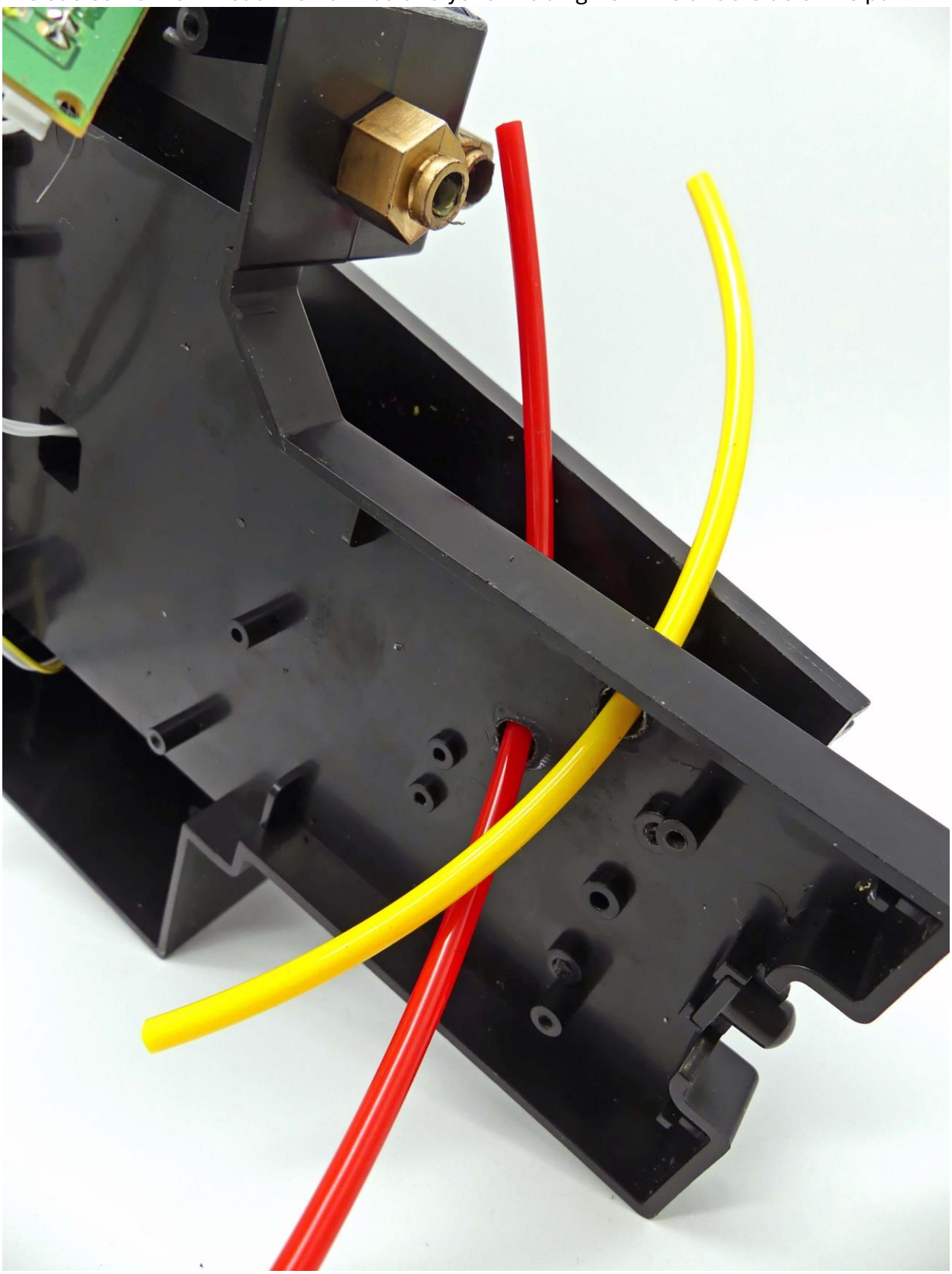
The 3/16” drill bit is also used under the pedal – drill from the underside of the plate!



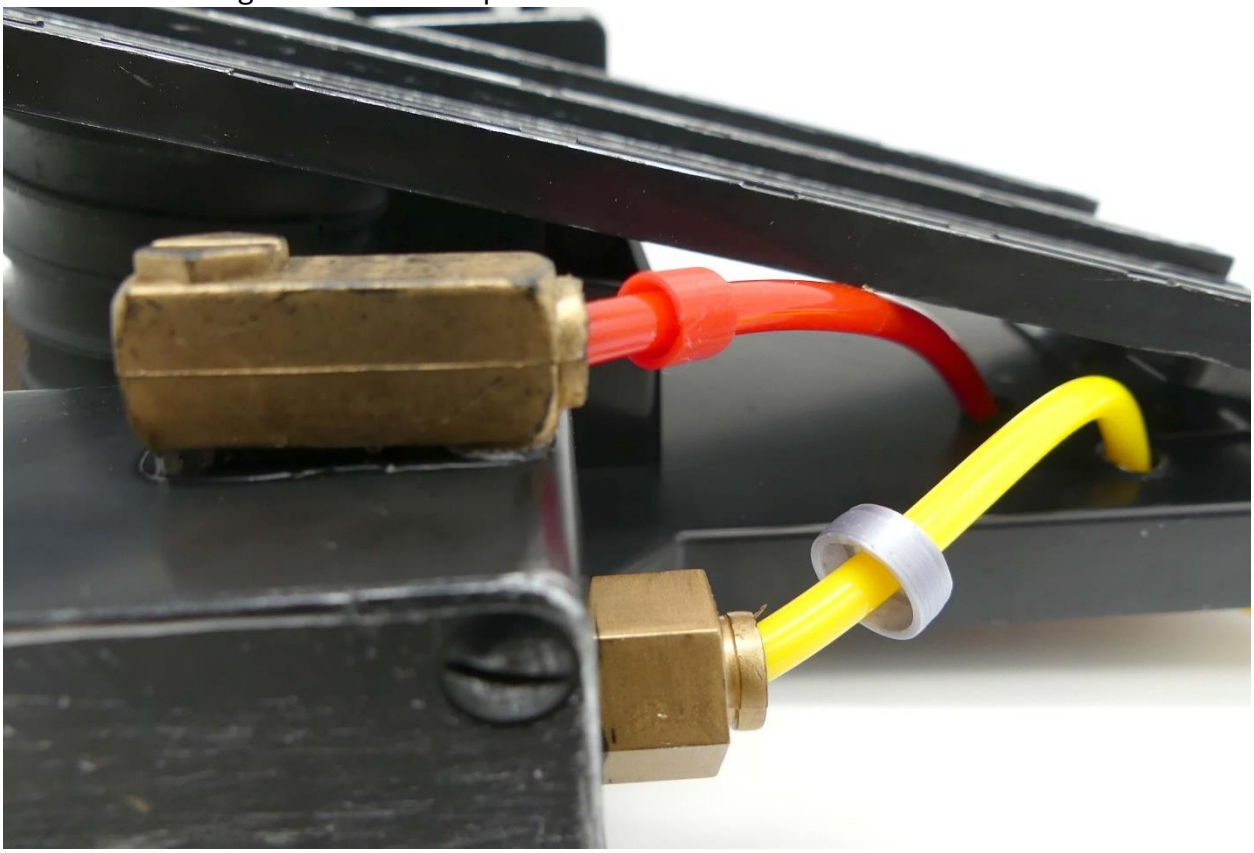
Since it is covered by the pedal, the top side may not be as important, but it still can be cleaned up quite nicely:



It is easiest to first thread the new red and yellow tubing from the underside of the part:

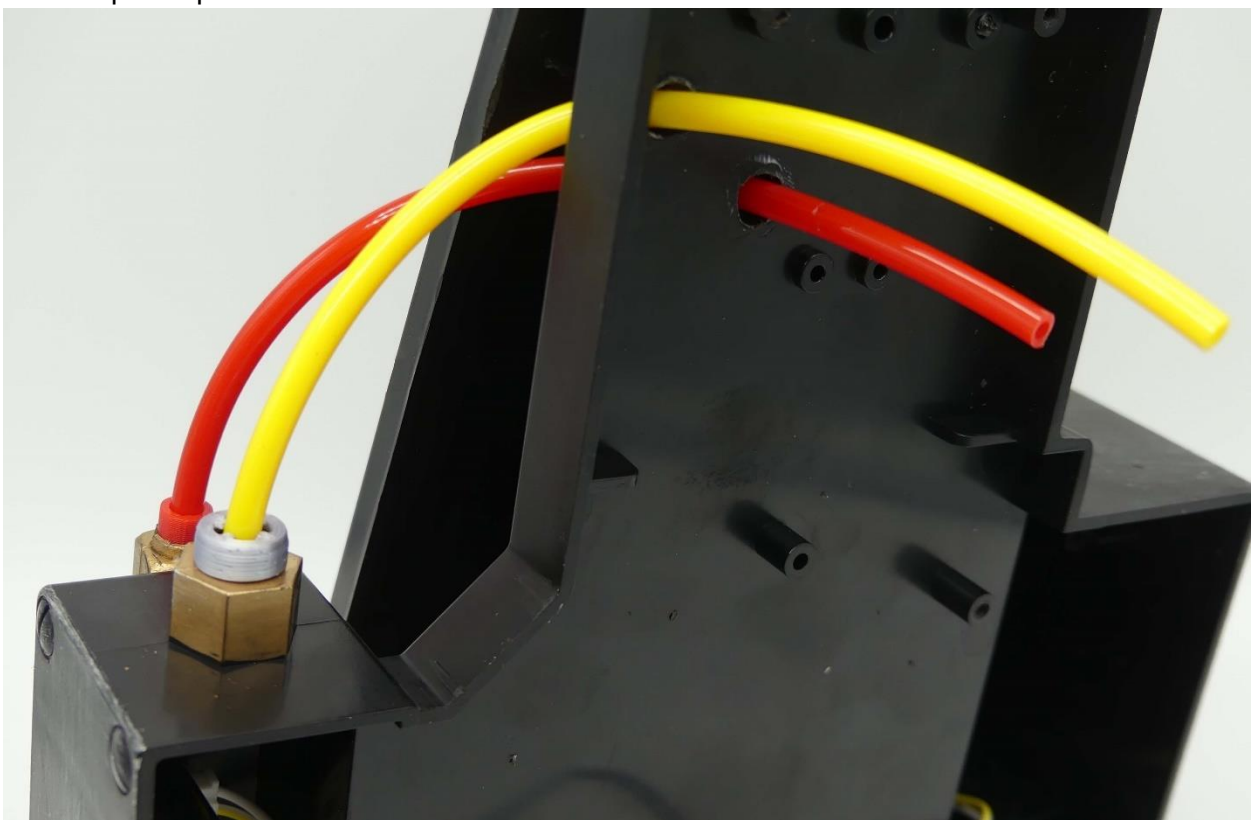


Next, attach the 3D printed parts to the ends of the new tubes that will be connecting to the “brass” parts. As can be seen in the image below, the red and Gray parts have “hollow portion where the parts do not touch the hosing. This side of each of the 3D printed parts needs to be facing the fake “brass” parts:

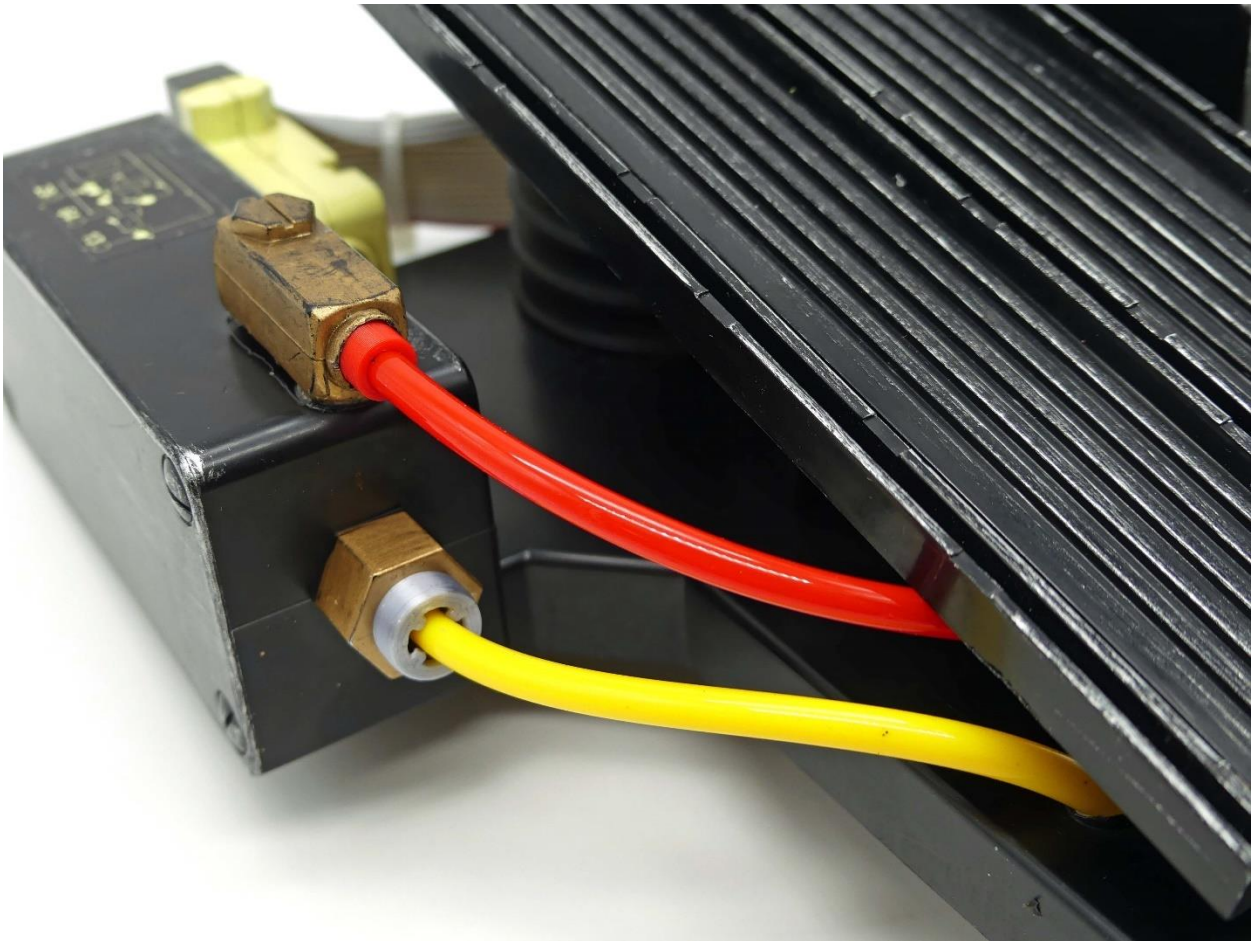


For the red hose, the red 3D printed part should go partially inside the fake brass part so it can securely hold the new red hose and itself in place. You can push the red hosing as far in as possible, since it does not have an exit path in this part. If needed, glue can be added before pushing the hose in to secure the hose.

For the Yellow Hose, The gray 3D printed part is designed to hold the hose and snap onto the protruding part of the fake “brass” hex shaped connector. The Yellow hose can extend a lot inside the pedal housing, but there is no need for it to do that on the side that extends through the fake “brass” hex-shaped part. Leave most of the extra hosing exiting out the bottom pf the pedal as seen below:



“Dress” the hoses so that they have a look you want by adjusting the hose from the bottom side of the pedal. No need to secure the hoses as they will be tightly held in place when the bottom piece of the pedal is secured in place. You could glue the hoses on the underside (inside) of the pedal if desired.



Installing the Pedal *Deluxe* Tubing & Brass Upgrade

Tools:

- Rotary (Dremel) tool and grinding disks
- Diagonal cutters are useful
- Drill and 3/16“ drill bit
- Small Pliers

The first step is to remove the original thin tubing. Just cut it off close to the original connector. Using the small pliers grab and twist to remove most of the tubing going under the pedal.

I used the pliers to pry/pull off the top “banjo” and used diagonal cutters to remove most of the hex shaped connector. This could be all done with the Dremel, but I wanted less grinding so removed a lot of the parts before the grinding had to be done.



After grinding down the surface to be flat on the top and side:





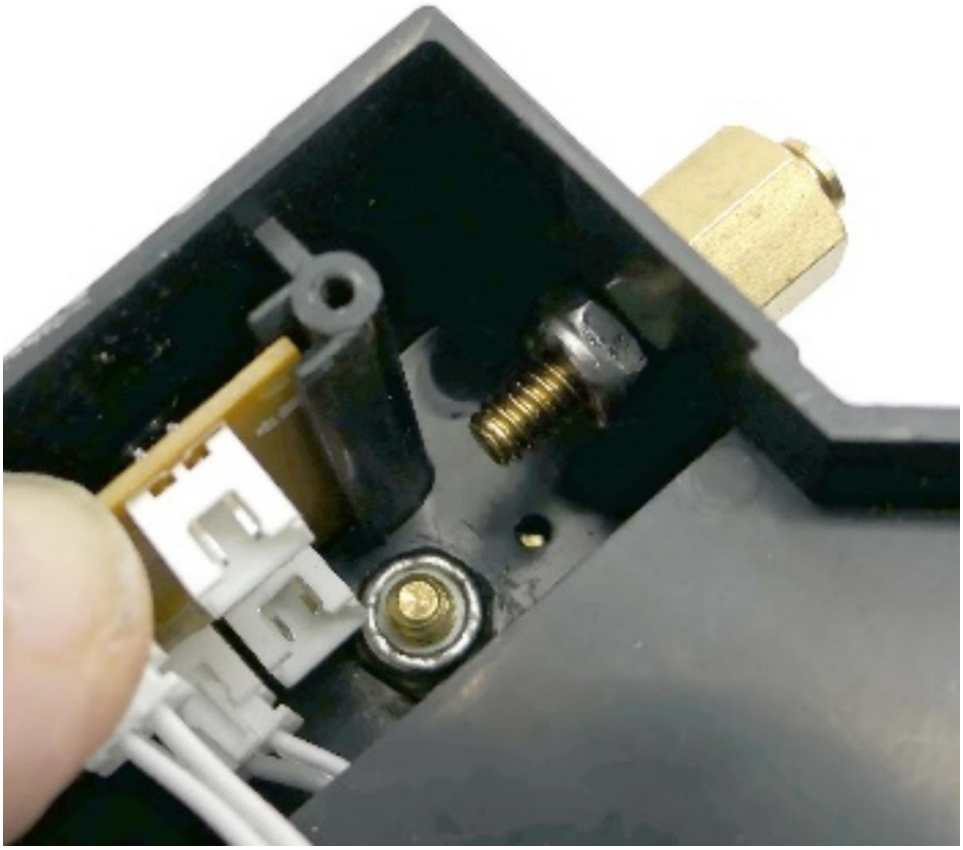
Drill the two holes with a 3/16” drill bit.

The surfaces _could_ be painted if you want to make the surfaces look great. The rest of the build was done without any surface finish changes other than the grinding.

Next install the real brass parts with the included lock nuts.

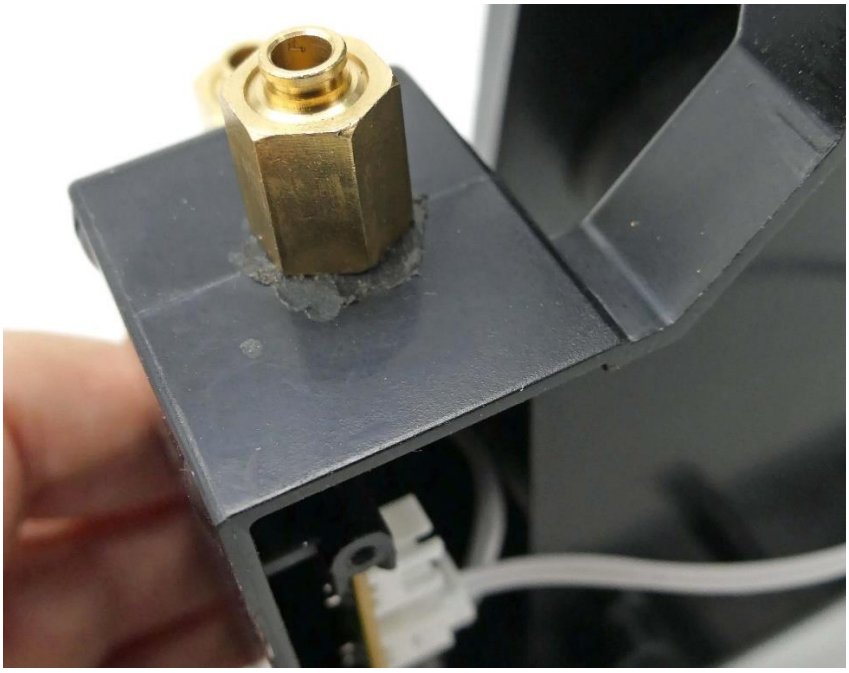


The hex nut is a tight fit, but the circuit board does not have to sit all the way onto the bottom surface since there is extra room inside the pedal.

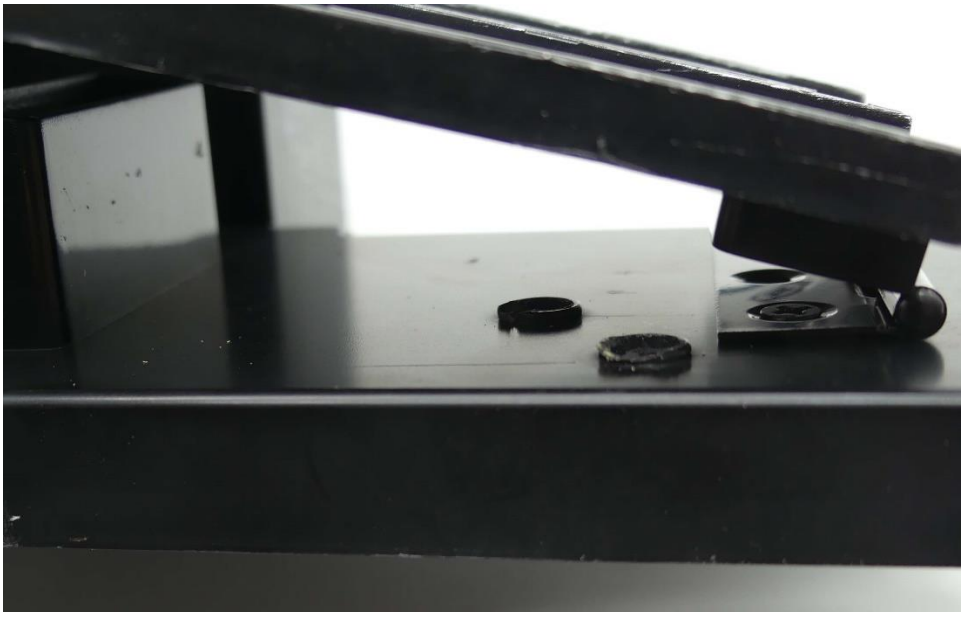


Here is the view from the outside and the rough surfaces are not very visible (no painting was done!)



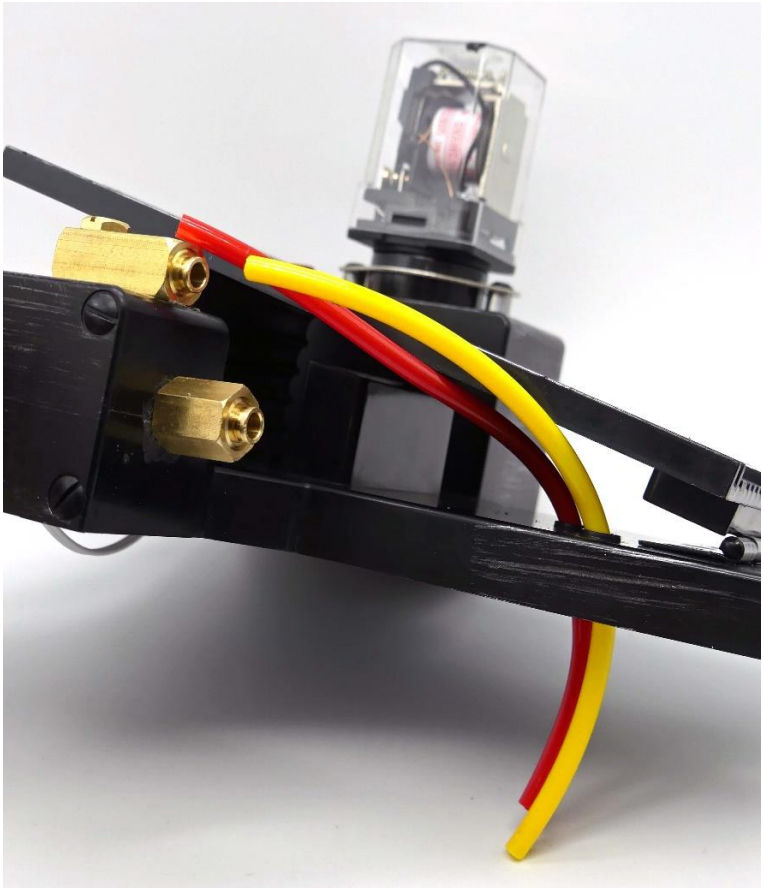


Remove the original floppy tubing and drill out the two holes that are located under the pedal using the drill with a 3/16” drill bit:

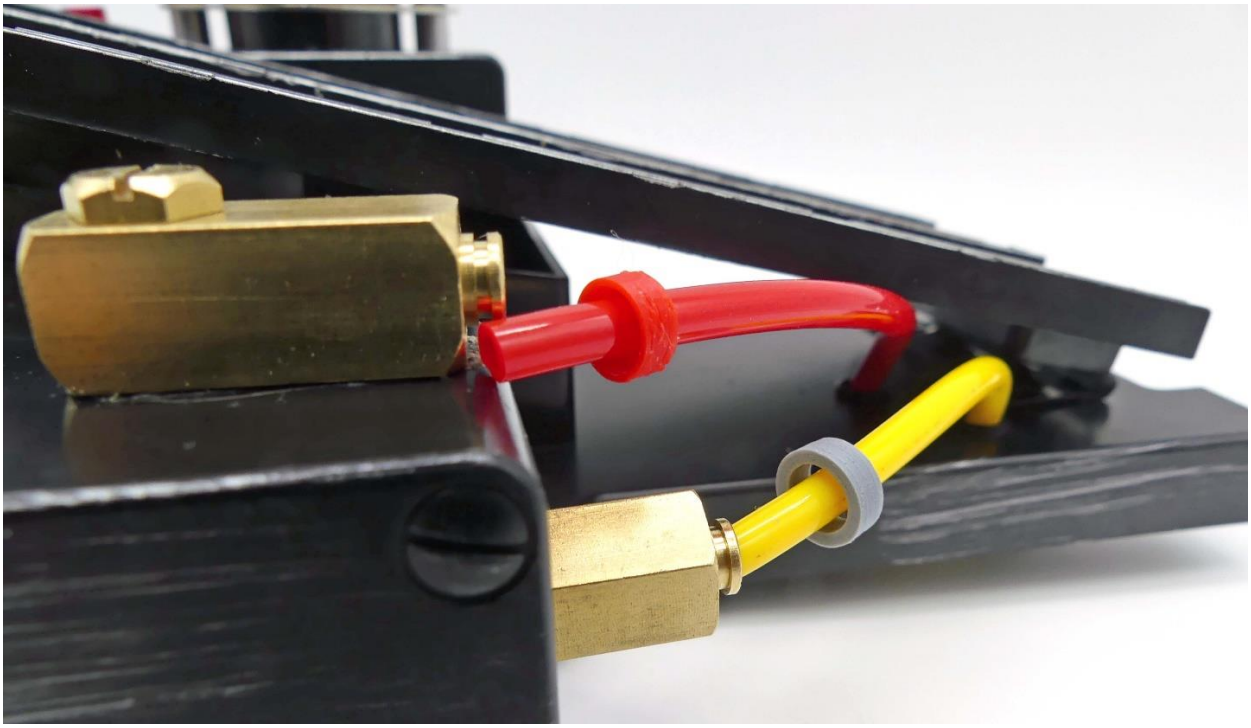




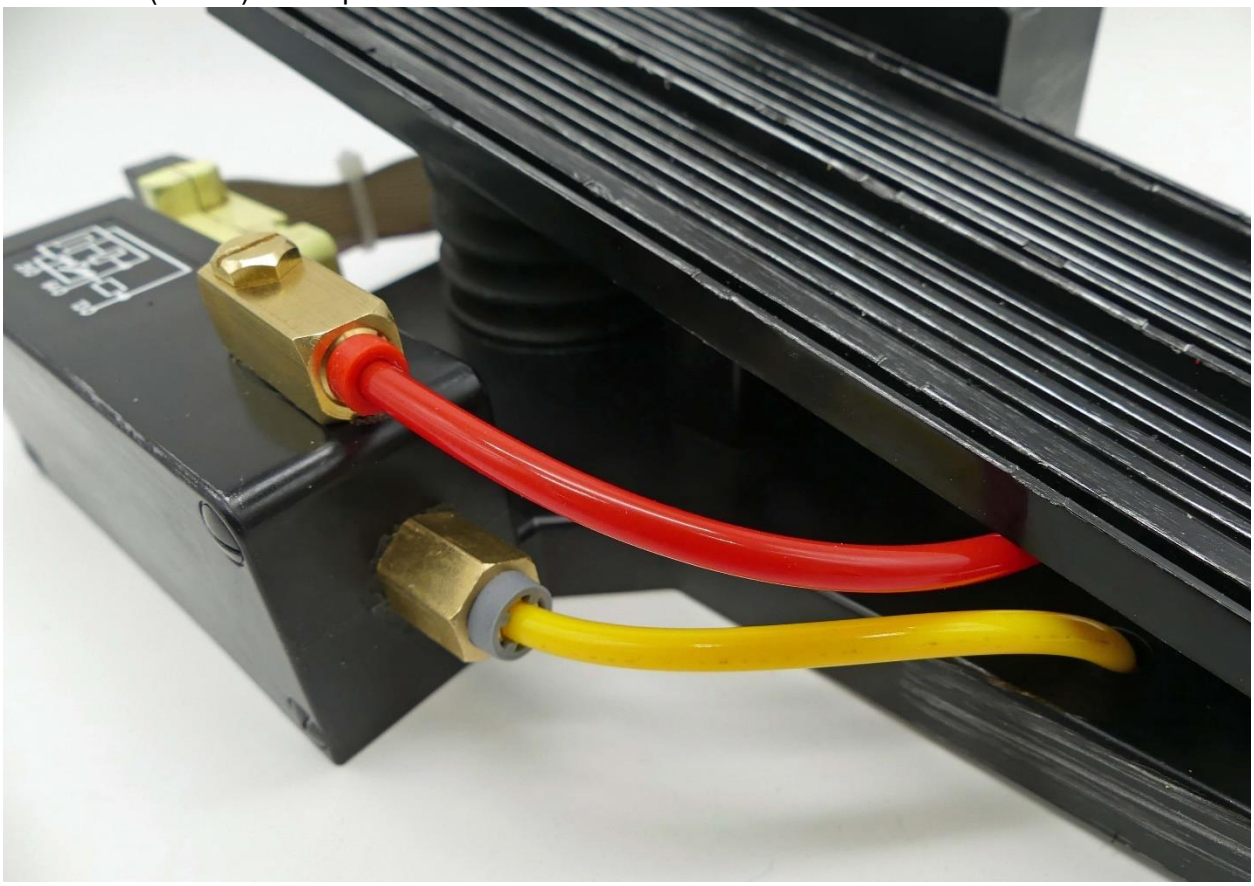
Next, feed the new red and yellow tubing up from the bottom of the pedal:



Next, attach the 3D printed parts to the ends of the new tubes that will be connecting to the “brass” parts. Both 3D printed parts need to be facing the correct way so they can snap onto the brass fixtures.



Now “dress” the hoses so that they have a look you want by adjusting the hose from the bottom side of the pedal. No need to secure the hoses as they will be tightly held in place when the bottom piece of the pedal is secured in place. You could glue the hoses on the underside (inside) of the pedal if desired.

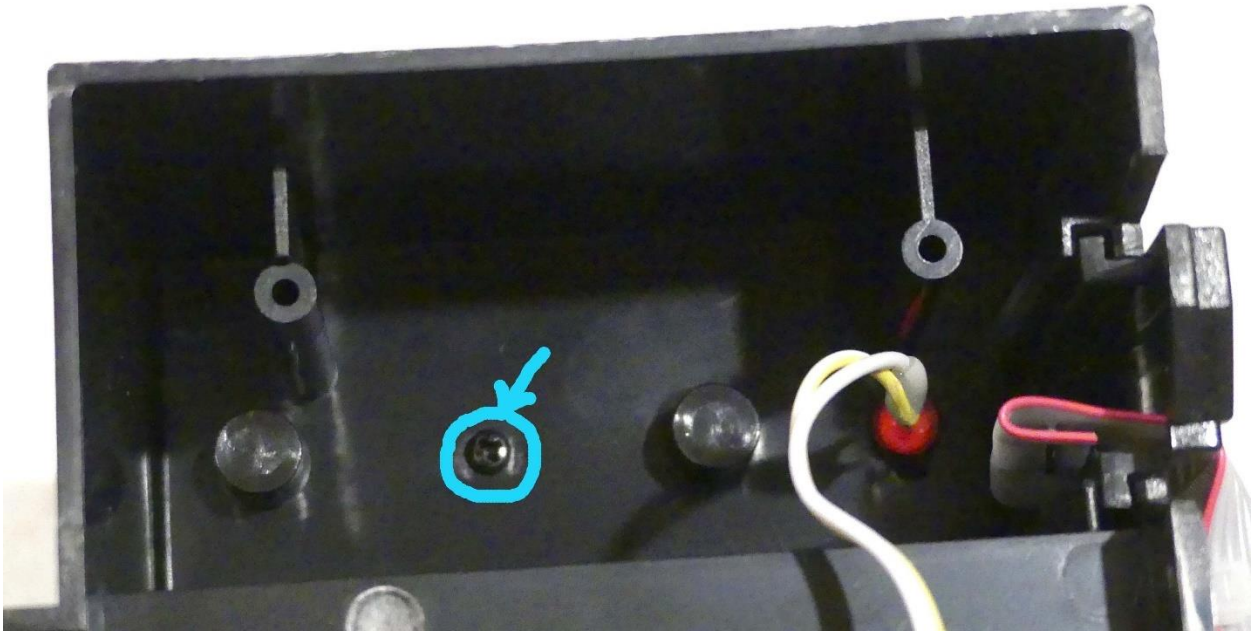


Installing the Pedal *(Deluxe)* Relay Upgrade

Tools:

- Rotary (Dremel) tool and grinding disks
- Drill and 1 1/8” hole saw drill bit
- Drill and 1/8“ drill bit

Remove the existing socket and Relay assembly pieces by removing the screw that is in the center of the fake relay, accessed from the back side:



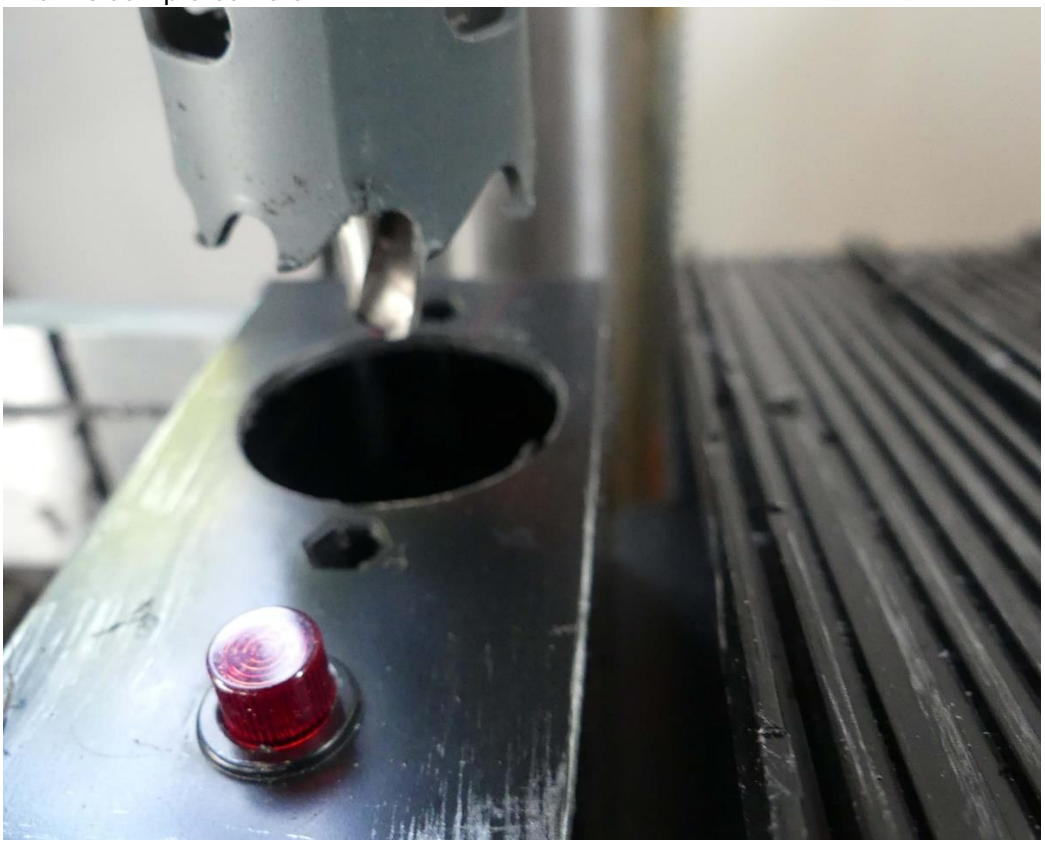
I used my drill press, but it should not be too hard to do this by hand since the center of the relay has a small hole centered perfectly as a way to get the drill bit centered where it needs to be. Use a 1 1/8” round hole saw bit. This could be done with a Dremel, but it would probably not leave as nice a hole.



Part way through the drilling of the relay socket's hole:



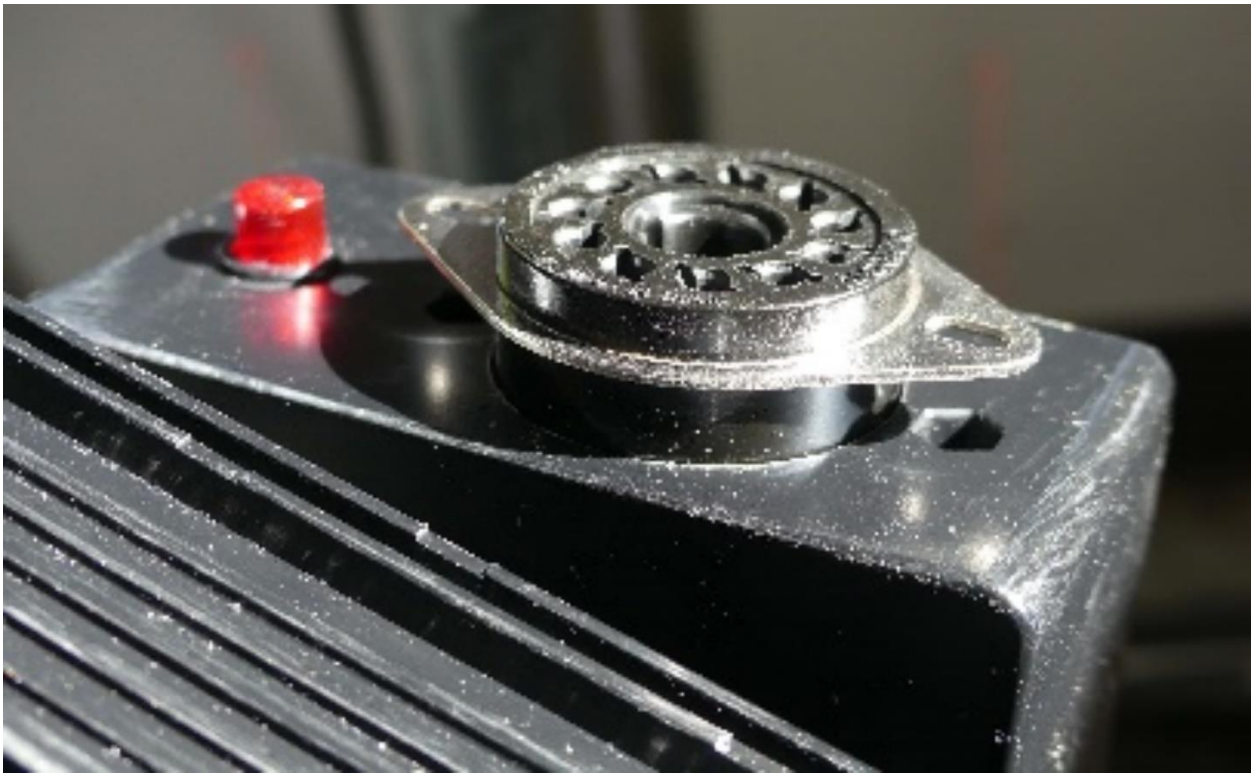
And the completed hole:



Next, bend all the socket solder tabs inward so they will fit in the hole. The original position of the leads on the left and the bent in leads on the right:



Then test fit of the socket in the hole:



Next, drill the two holes for the screws to mount the socket with the drill and the 1/8” drill bit in the center of each indented areas:



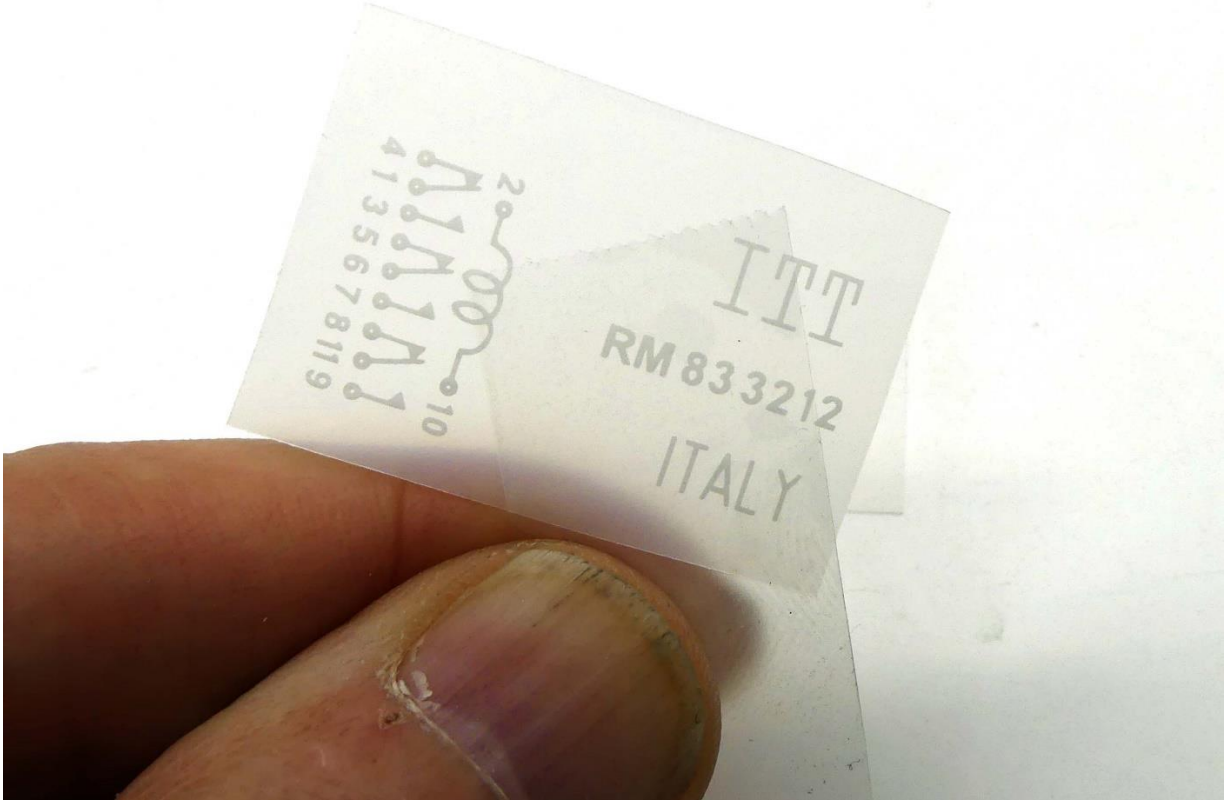
Now choose the bolts you want to use and orient the socket so that the side of the relay you want to face. The relay socket will dictate which way the relay will face, and it has two orientations possible. Here is the mounted relay with the black hex drive screws and the aluminum spacers:



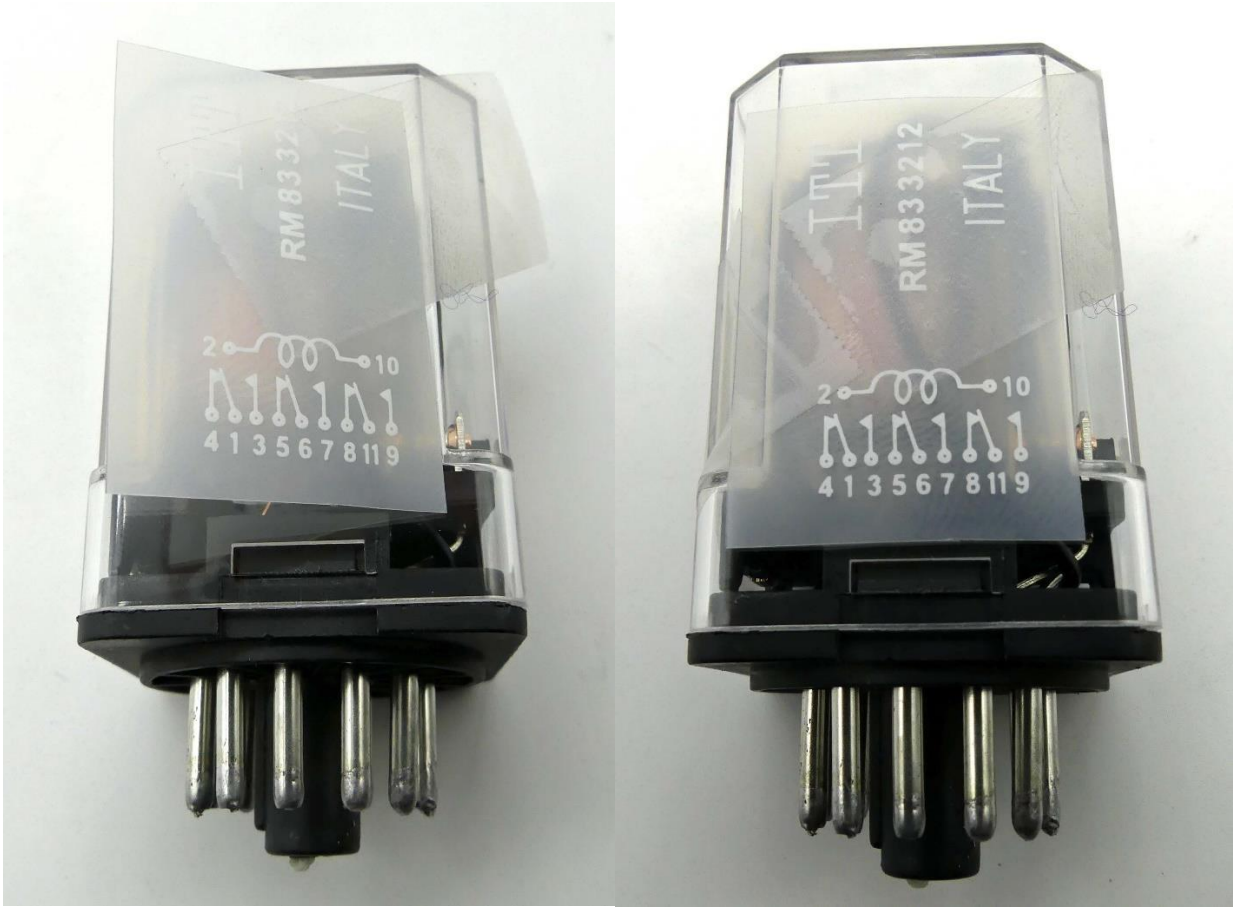
The screws are long enough to reach through the holes and the lock nuts can secure the screws in place:



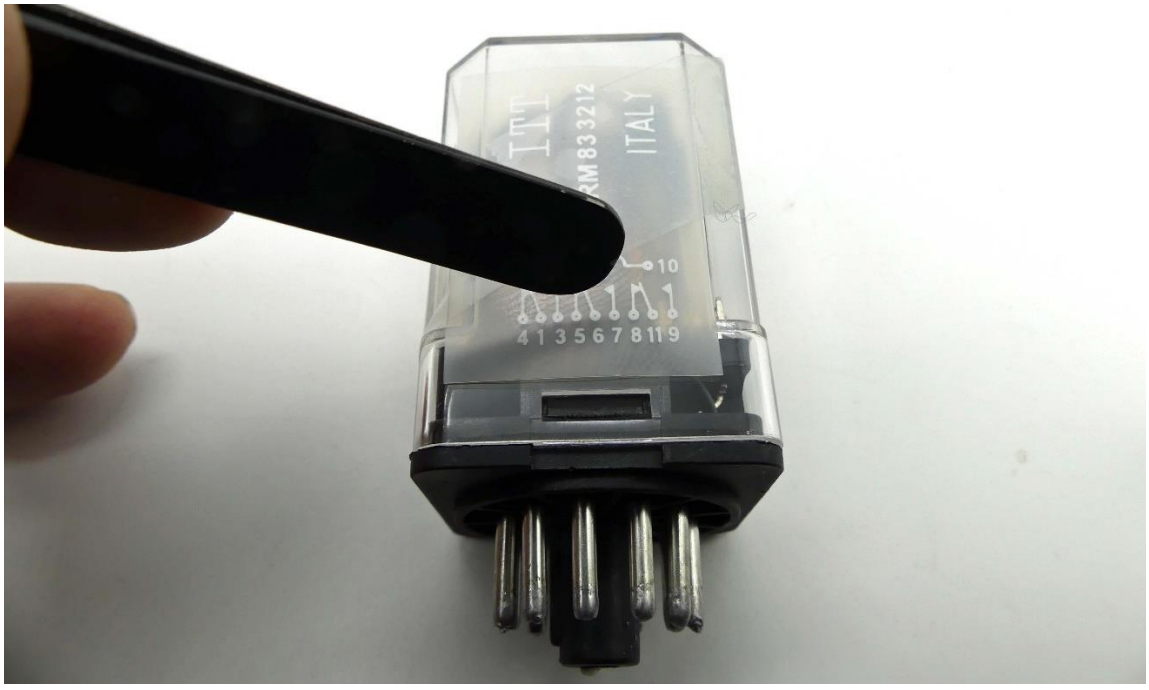
Next, make sure the relay is oriented in the desired way and choose which side of the relay you want to apply the white rub on transfer to. Discard the protective backing that is not held in place,



And use a piece of tape to hold the transfer in the correct location:



Then rub on the transfer. Use a blunt object and rub mostly on the white artwork and avoid rubbing on the wide open spaces where there is no artwork. Rub in multiple passes and in different directions:



Then lift one side and verify that all the white artwork has been transferred. Put the side back down, make sure it is well aligned, tape it down and rub on the parts that were not transferred.

Once you verify all the artwork has been transferred, pull the transfer paper and tape off. Then push the relay into the socket. It should look like this:



Installing the Pedal Dry Rub Transfer

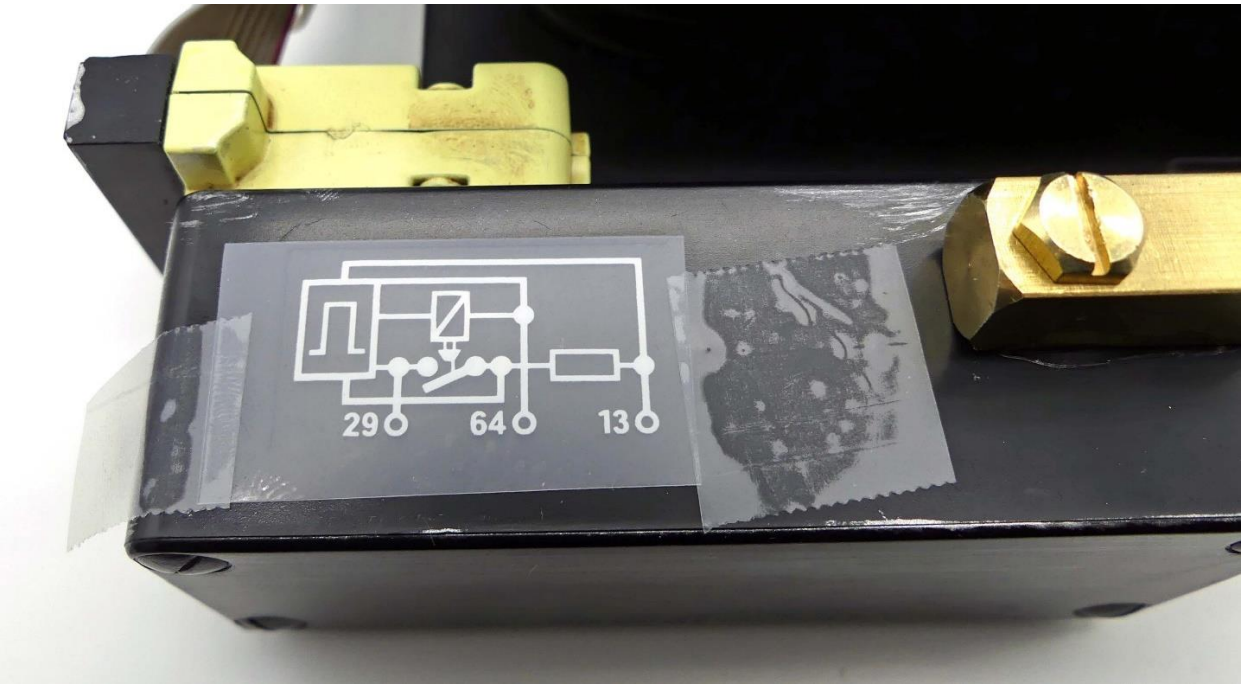
Tools:

- Isopropyl Alcohol for cleaning
- Plastic squeegee (or a credit card?)
- Tape may be useful to hold the transfer

I used my fingernail to lift one corner of the decal that is going to be replaced. Then slowly peel the sticker off the surface by the “brass” connectors connecting to the hose.

Some residue was still on the surface after the removal, so I used Isopropyl alcohol to clean the surface. And then made sure it was thoroughly dry before the next step.

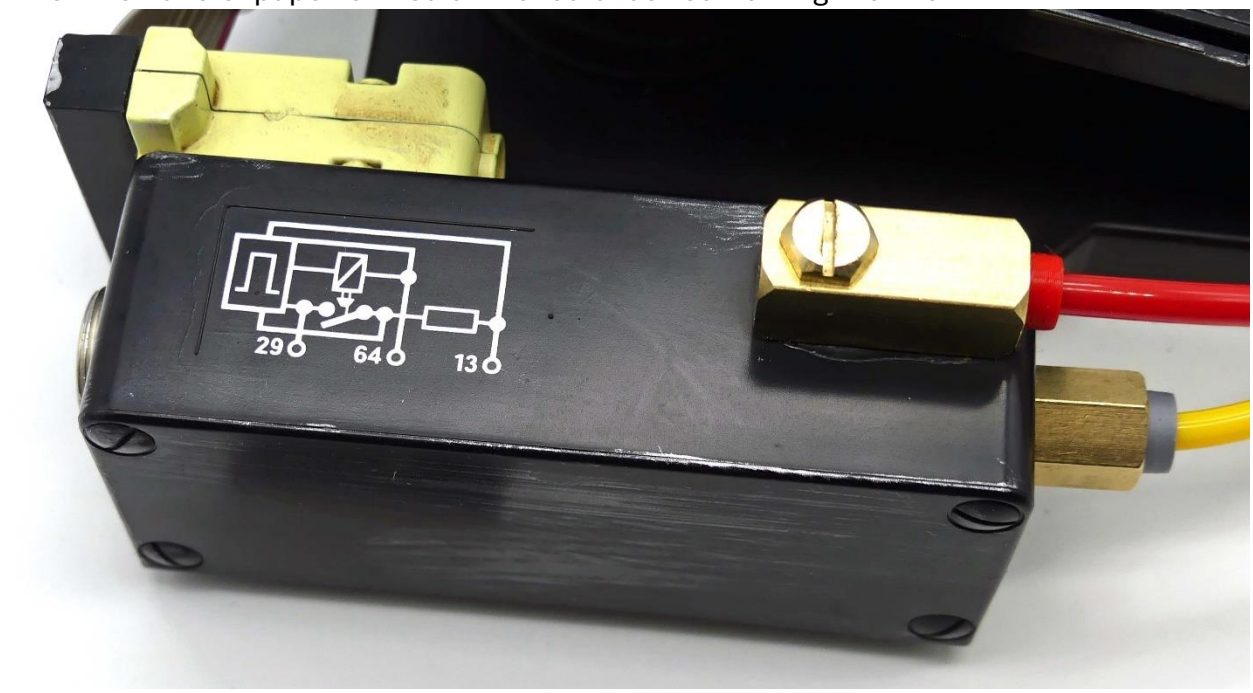
Place the dry rub transfer on the surface where you would like the transfer to be placed. I use take to hold it in place in case it does not completely transfer.



Rub the white lines and text with the plastic squeegee or credit card corner. Rub left to right, then up and down and diagonally. Try to apply pressure mostly on the white artwork, not the blank spaces.

Then lift one side of the transfer to see if all the white artwork has transferred to the Pedal. If not set that side back down and align and tape the free side in place and rub over the part(s) that did not transfer. Use multiple passes of rubbing while using different directions.

When the transfer paper is lifted off it should look something like this:

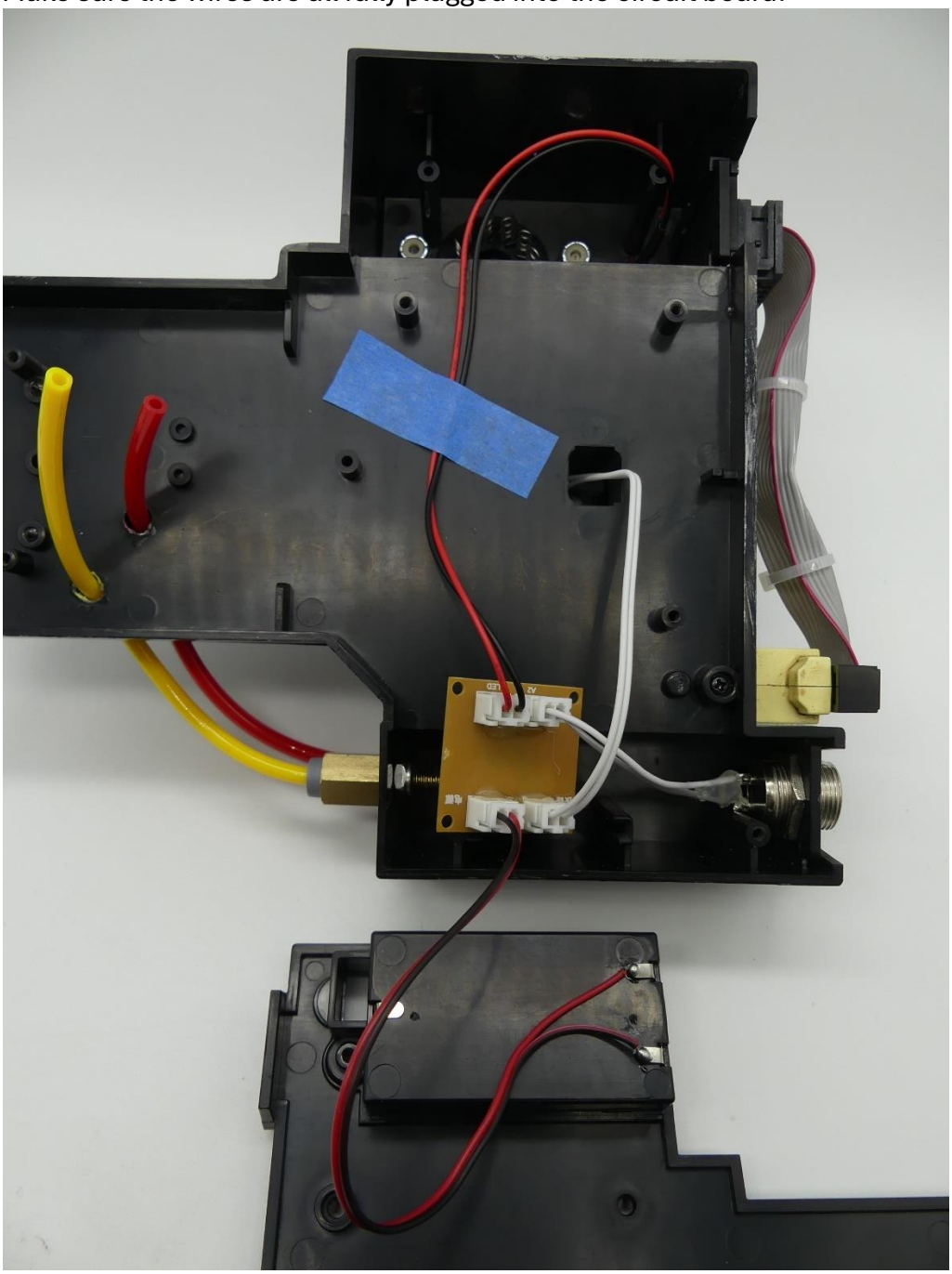


Closing the Pedal

Tools:

- Small Philips screwdriver
- Tape may be useful to hold wires in place

Make sure the wires are all fully plugged into the circuit board:



Align the bottom to the top and make sure:

1) The circuit board is properly seated in the vertical railings
2) No wires will be pinched when fully closed (you can use tape to keep the wires in place)
3) The black “acorn nut” is in place next to the hinge of the pedal
4) The ribbon cable termination part is fully seated and the bottom plate tab that is at the base of that connector is in the proper location
5) The pedal bases portion that holds the 2-pin circular trap cord connector in place is in the proper location

Then screw in the 7 screws that were initially removed with the small Phillips screwdriver.

