

Congratulations on purchasing one or more of the upgrade kits for your awesome Hasbro Ghostbusters Plasma Series HasLab Two in the Box! Ghost Trap and Pedal.

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



For the Ghost Trap (left side of image):

Plug-n-Play Accurate Switch and Indicator
CAL-R Real Resistor and Mounting Plate
30 Segment Bar Graph Look Deluxe Display

For the Ghost Trap Pedal:

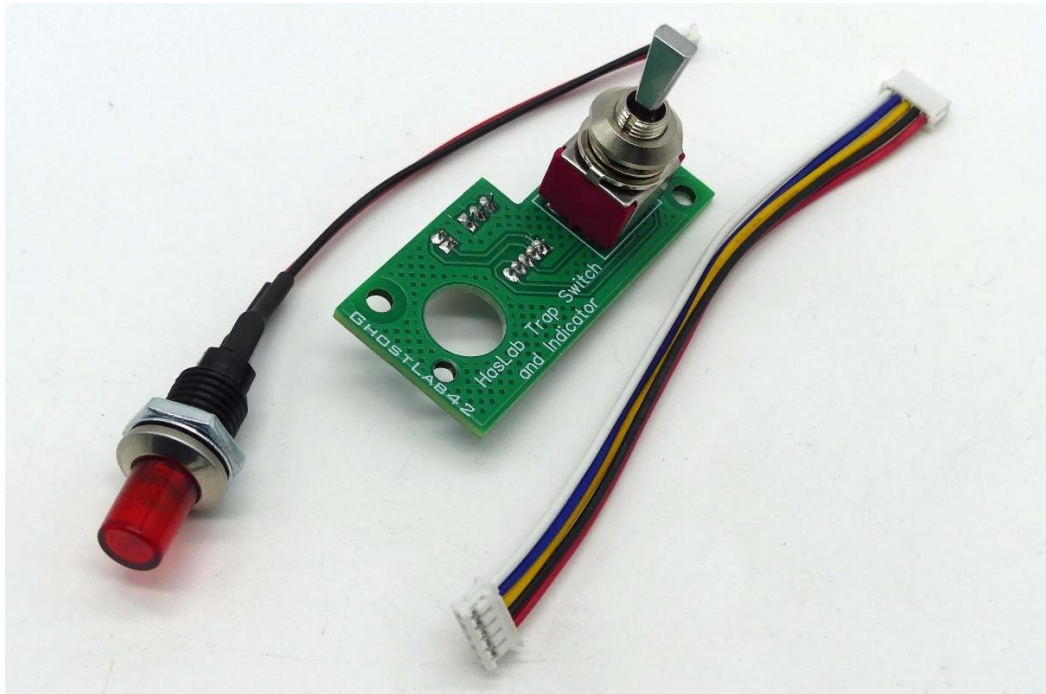
Custom Brass Fittings + Tubing
Replica ITT RM833212 Relay w/ Socket
Arcoelectric Replacement Indicator

Only some of the kits require that you open up the Hasbro Trap or Pedal as some can be installed on the outside only. If the kits do require that the trap or pedal be opened up, see the last part of this document on how to disassemble and reassemble (Johnny 5 has no need to worry) the Trap and the Pedal.

Installing the Trap Plug-n-Play Accurate Switch and Indicator



Here are the parts in this kit:



This installation is a one-way build. The Trap will not be able to be easily returned to the original configuration since the case needs to be modified to fit the new Linrose indicator. At least there is no required soldering!

First step is to remove the retaining nut and washer from the existing toggle switch:

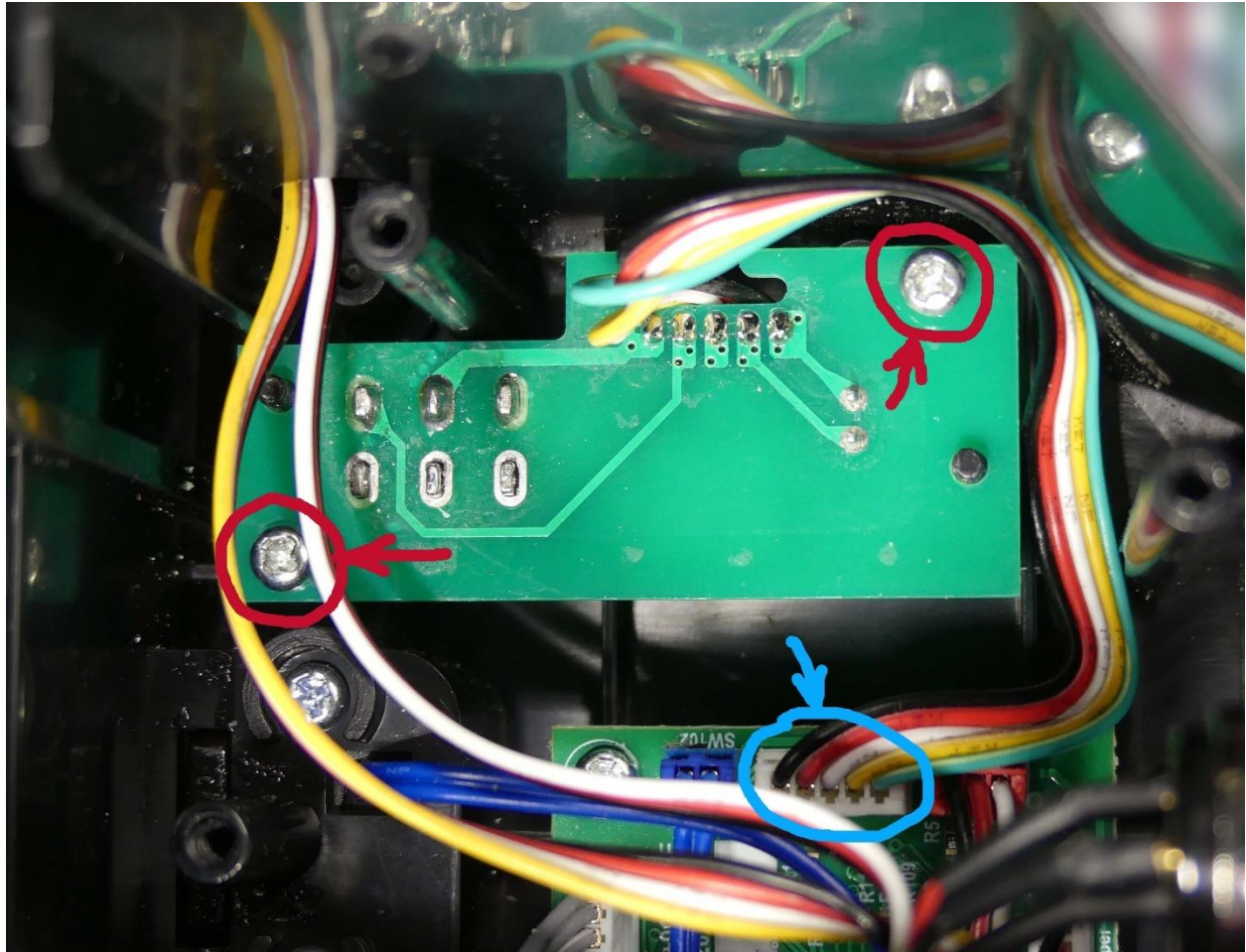


Set the toggle switch to the center (off) position. Then you can use an open-end wrench, or needle nose pliers to remove the nut. Take care not to scratch the black plastic surface, since the replacement switch does not cover much more of the surface than the existing switch.

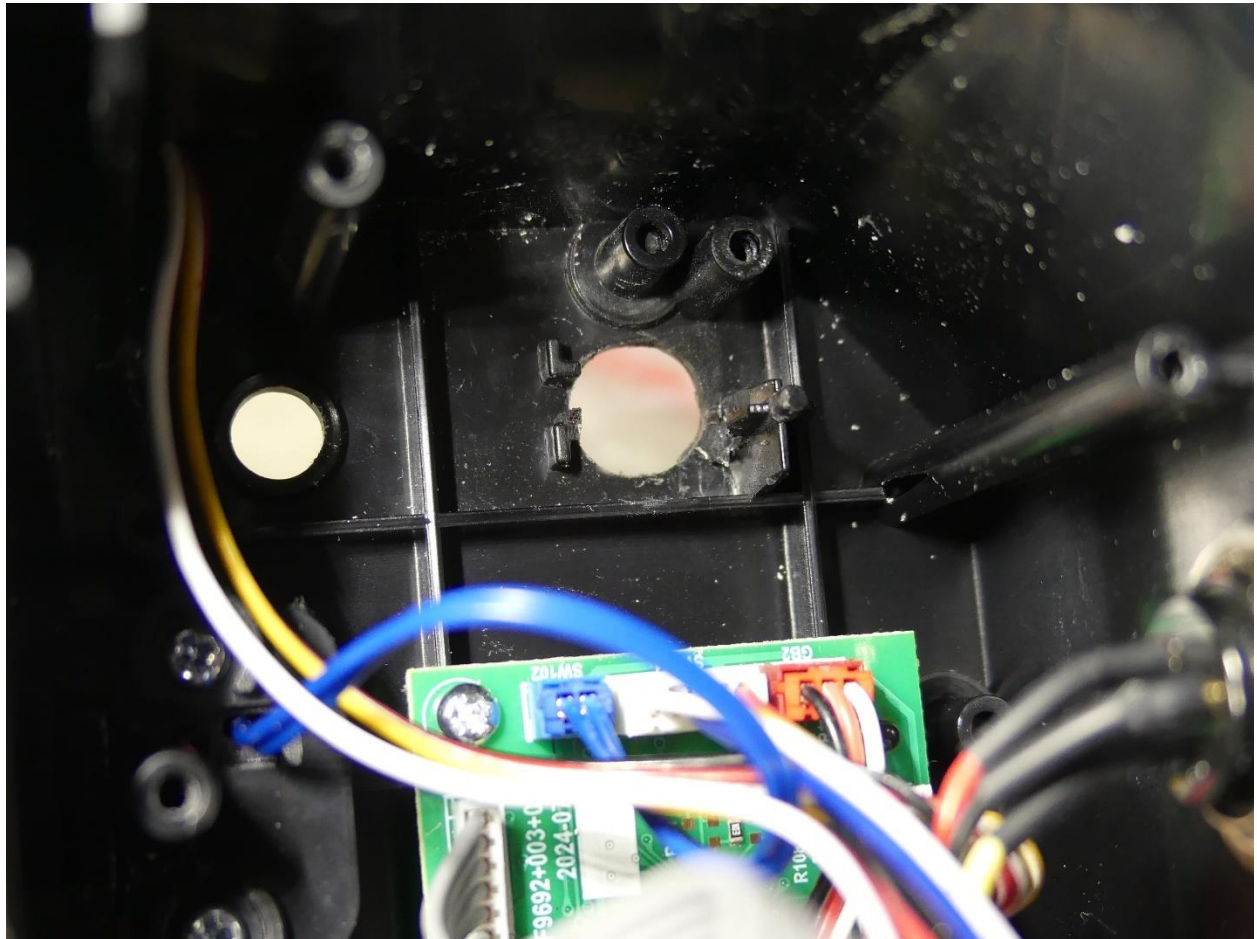
The next step is to open up the trap shell. See the “Disassembling the Ghost Trap Shell” instructions near the end of this document.

Now that the shell has been separated into two halves, you have access to the existing circuit board that houses the toggle switch and an LED.

Remove the 5-wire connector from the main circuit board (shown circled in blue) and the two screws (circled in red) with a Philips screw driver and then remove the toggle switch and LED circuit board from the trap shell top.



Also remove the red plastic indicator portion that will be replaced with a real Linrose indicator to expose the area we will be working on next:

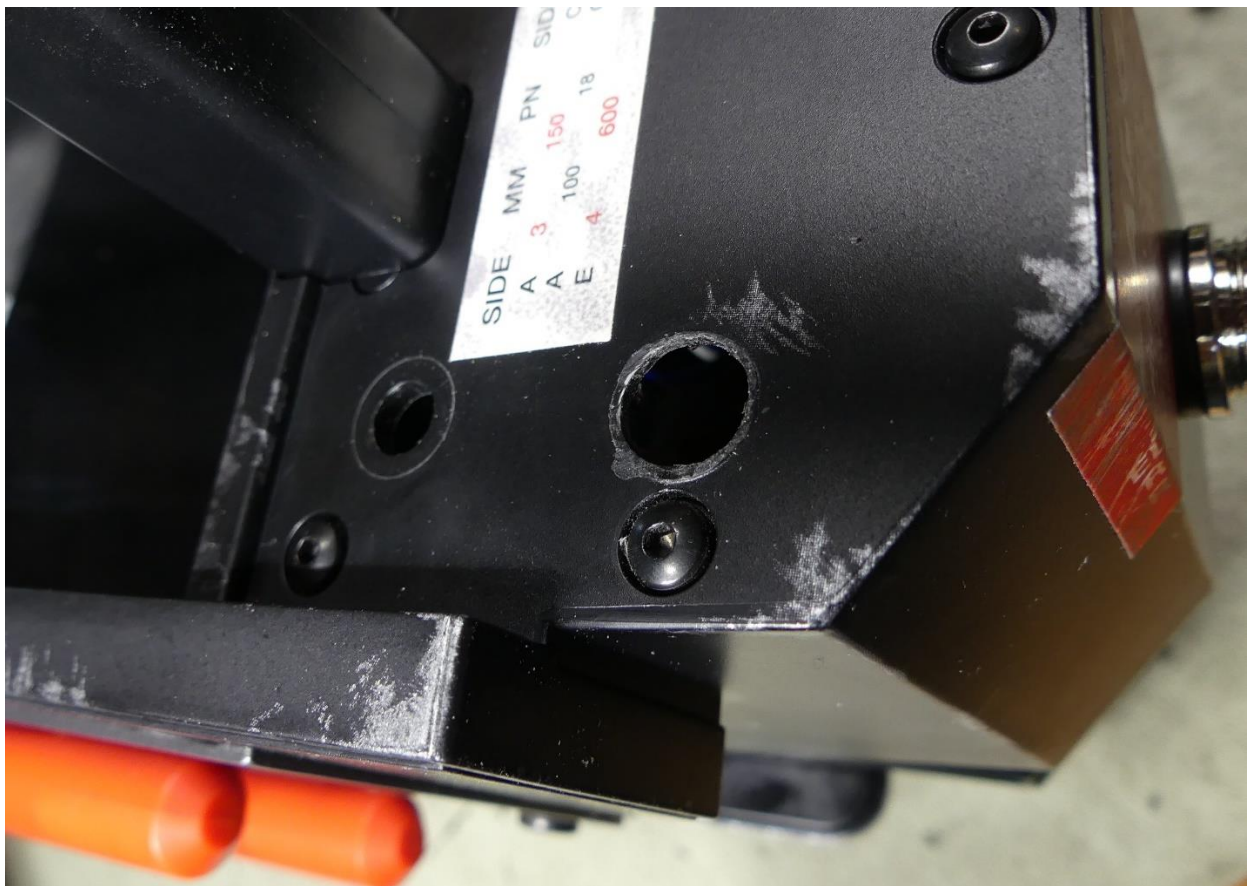


The replacement toggle switch will fit the same hole, but the Linrose indicator needs a larger hole and also a flat inside surface so that the nuts can securely attach the indicator in place.

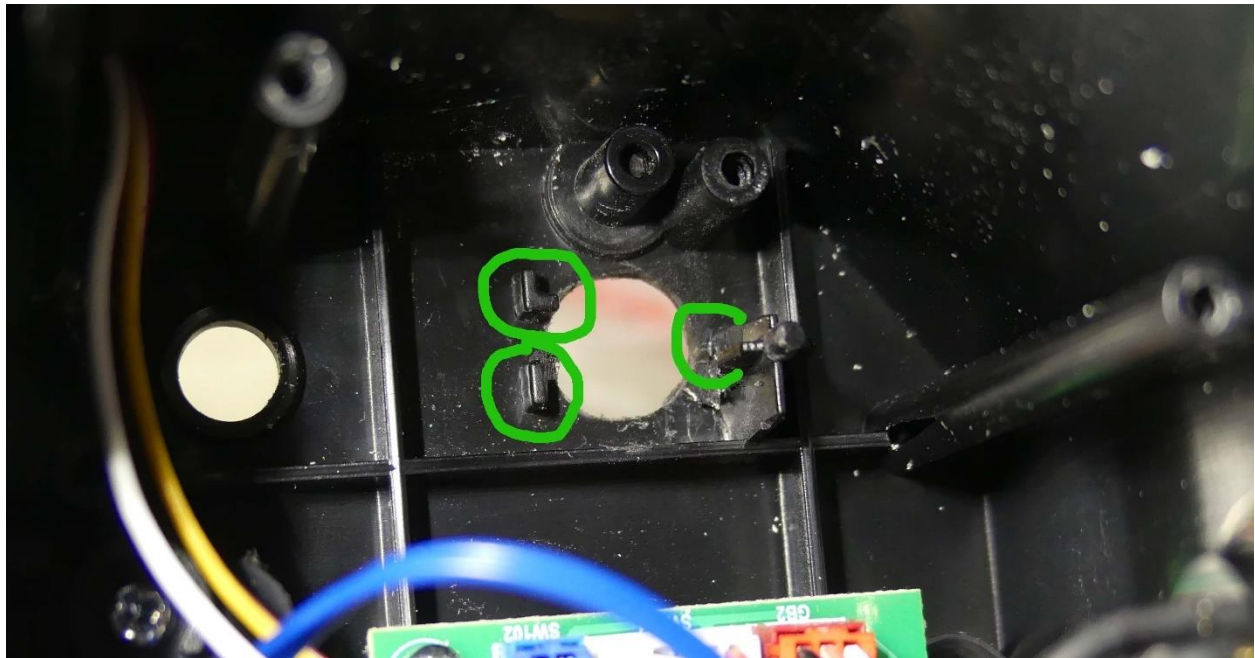
First we need a larger hole. You can try using a Dremel to get close, but recommend at least using a 3/8" drill bit for the final hole size. Drill from the top outside and take care when drilling since there are internal wires you do NOT want to get tangled in the drill bit or it will be a pain to repair!

You can use some tape to secure wires out of the way when drilling.

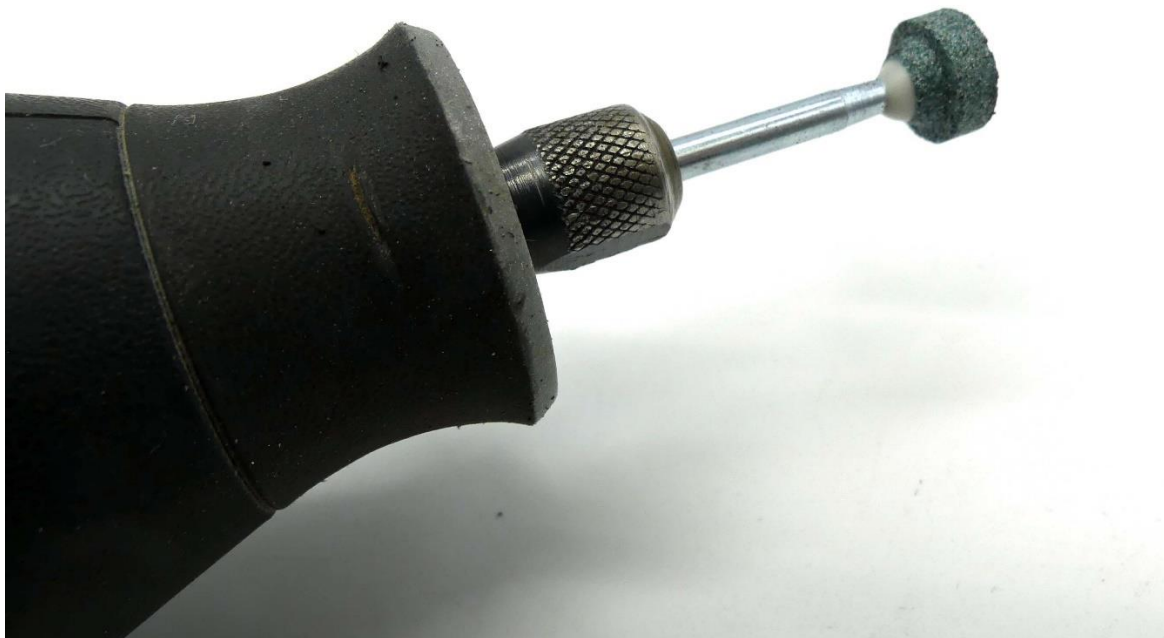
Note: the drill may also tend to "pull" through before just removing material and leaving a clean hole. Be aware of this and expect the drill bit to go further into the trap that you anticipate, so make sure it has a clear path deep into the trap!



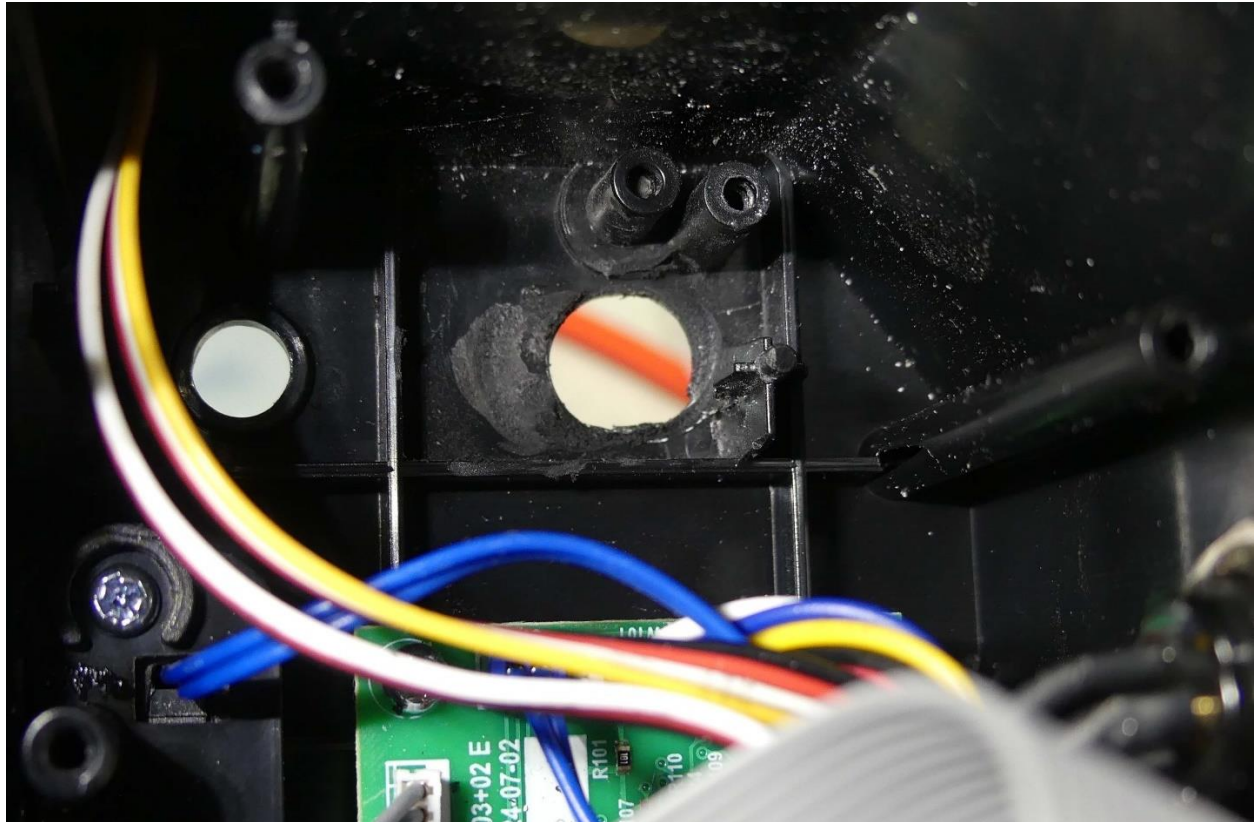
Next, we need to remove the internal obstacles for the mounting of the Linrose indicator part:



I used this bit on my Dremel rotary tool:

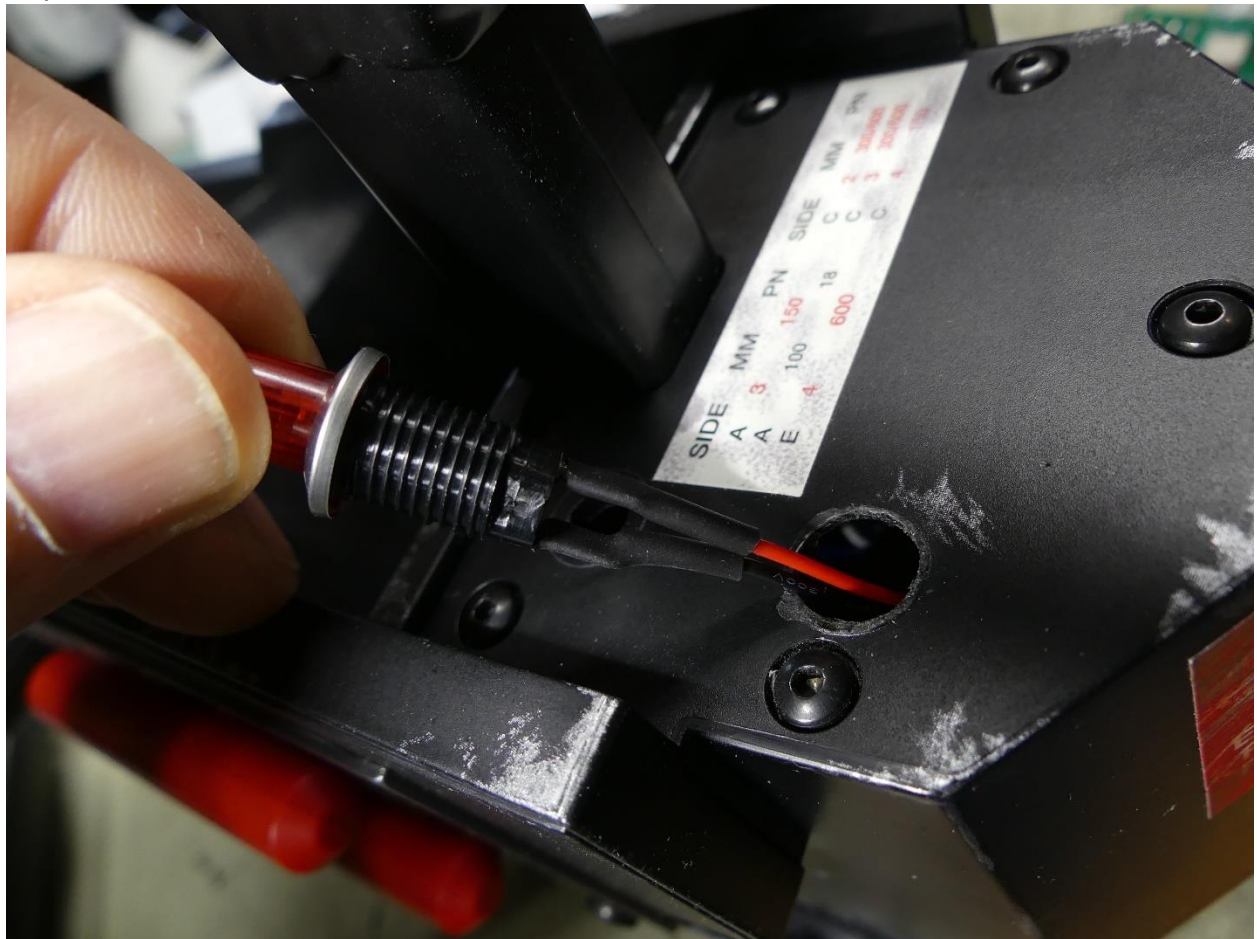


The finished internal view looks like this:

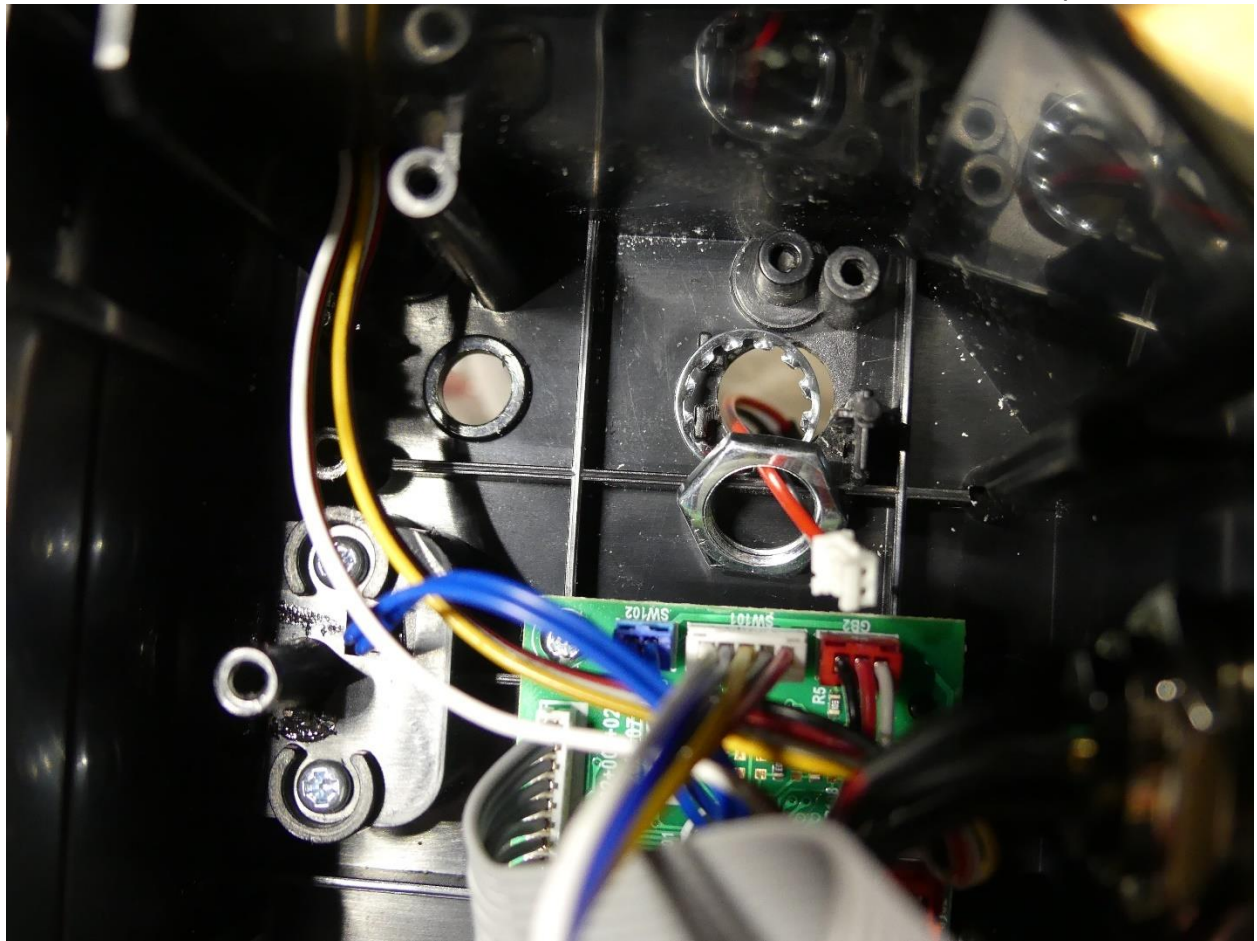


The post on the right side of the hole (from the above viewpoint) needs to be undercut a bit to allow the nut in there. The post is not _really_ needed, but it's nice to have for the circuit board alignment. So do not remove the entire post, just the base of it where it attaches to the housing.

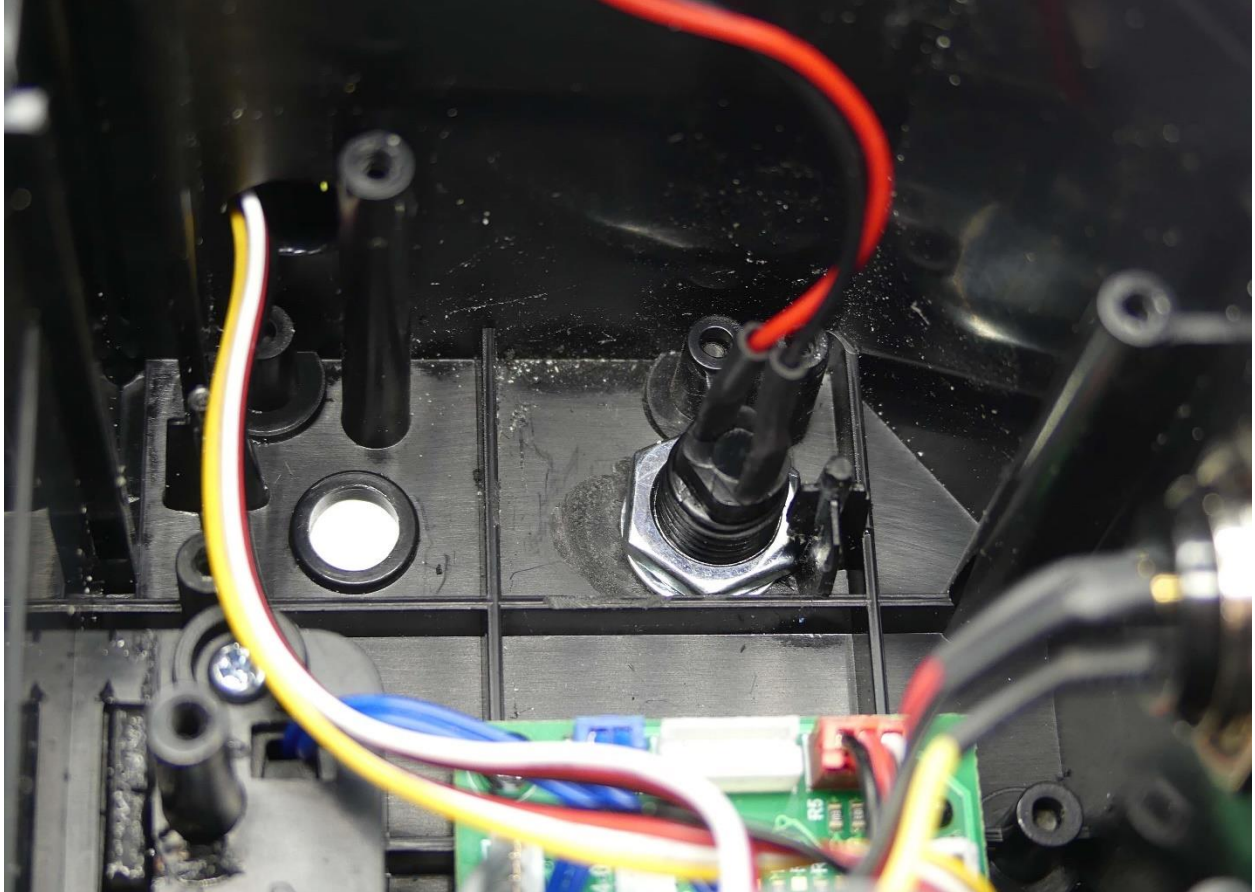
Now start by removing the lock washer and nut from the Linrose indicator and inserting the leads from the indicator into the enlarged and cleaned up whole from the outside top of the trap shell:



Slide the lock washer and then the nut over the wire ends and somewhat into place:



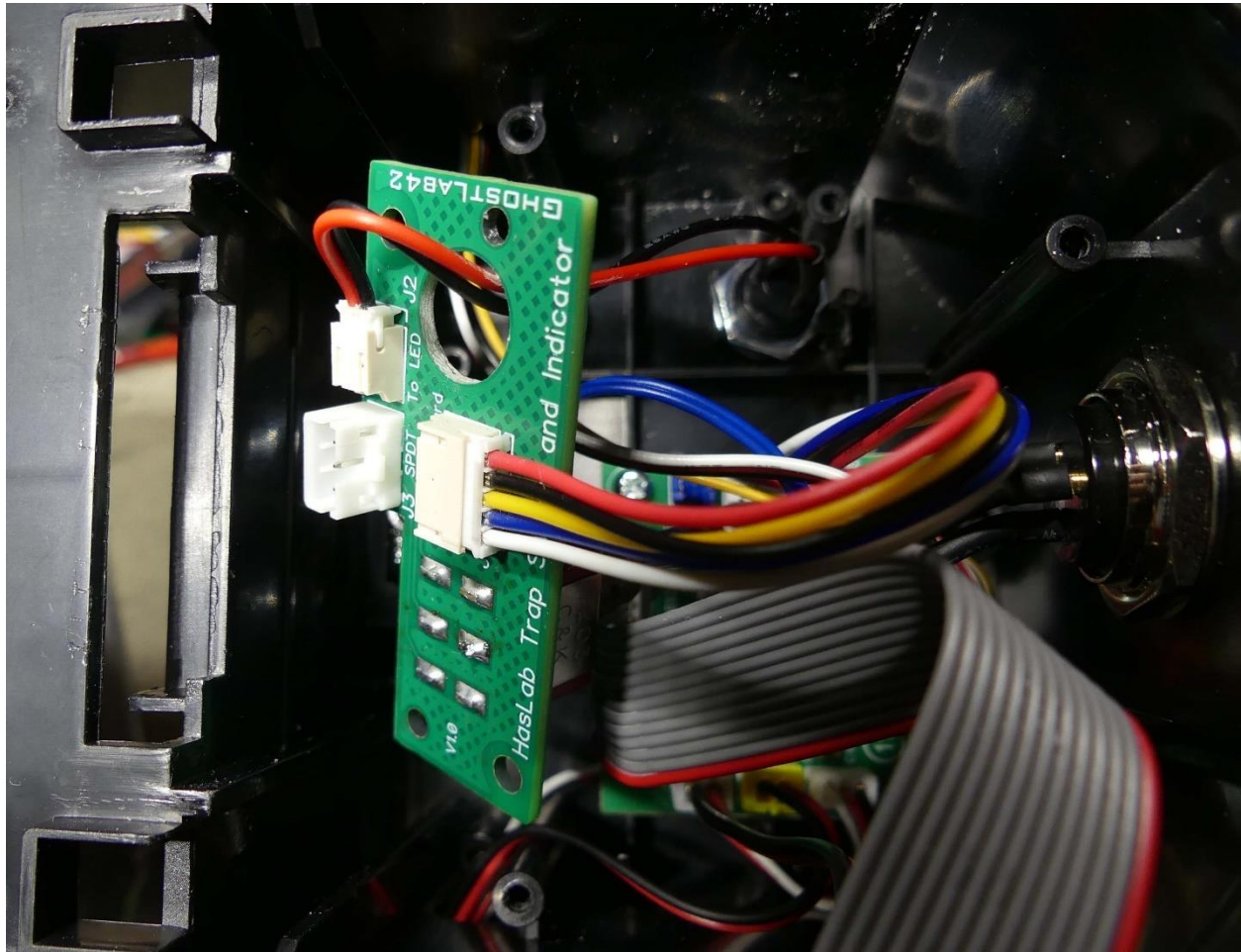
Now start inserting the indicator into the lock washer and nut. You can see that the nut goes under the alignment post on the right, so this is the space you had to clear out with the Dremel. If needed, the entire alignment post could be removed, but it is certainly not required.



To tighten the nut onto the display, you rotate the indicator on the outside top while holding the nut in place. Just hand tighten the Linrose indicator – the nut should not be able to spin much depending on how far you cleared out the supports for the previous display.

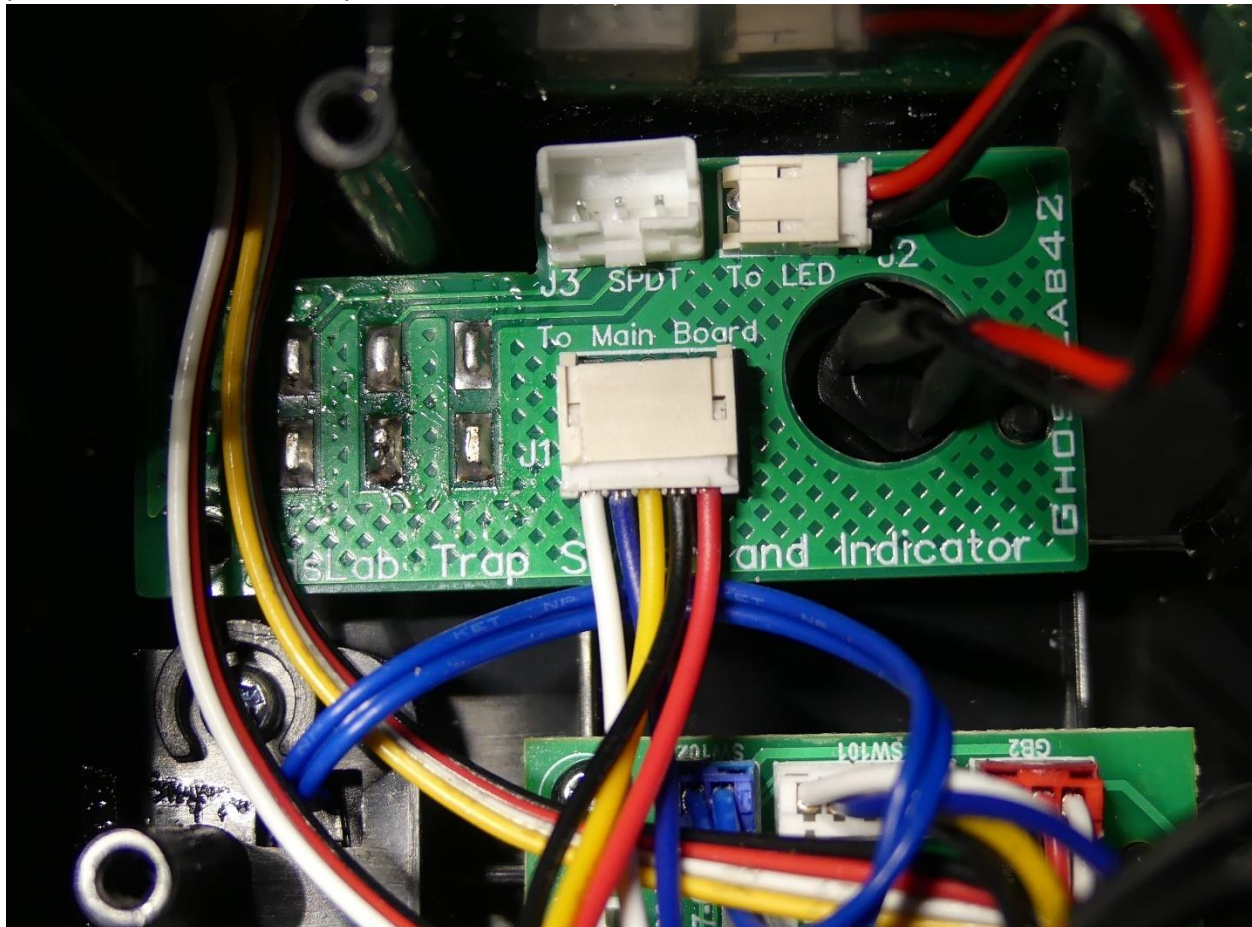
Now plug the new 5-wire cable into the main circuit board that you removed the previous cable from.

Next, remove the nuts and washers from the new toggle switch board and set that toggle switch to the center (off) position. Thread the Linrose indicator's 2-wire lead through the large hole from the toggle switch side of the board and plug the 2-wire plug into the connector into the and place the board in the same position as the board that was removed. Then attach the free end of the 5-wire cable into the new circuit board.



No move the circuit board into position, making sure the existing wires do not get trapped between the circuit board and the mounting posts. Main issue I had were the multiple wires on the left hand side next to the toggle switch.

When the board is in place, you can use the same 2 screws that were used to hold the previous circuit board in place to secure this circuit board.



Yes – I took this picture before I put in the screws, but it is set in place and uses the existing molded in alignment pins.

Now you can add the desired lock washers and nuts for the look you want.

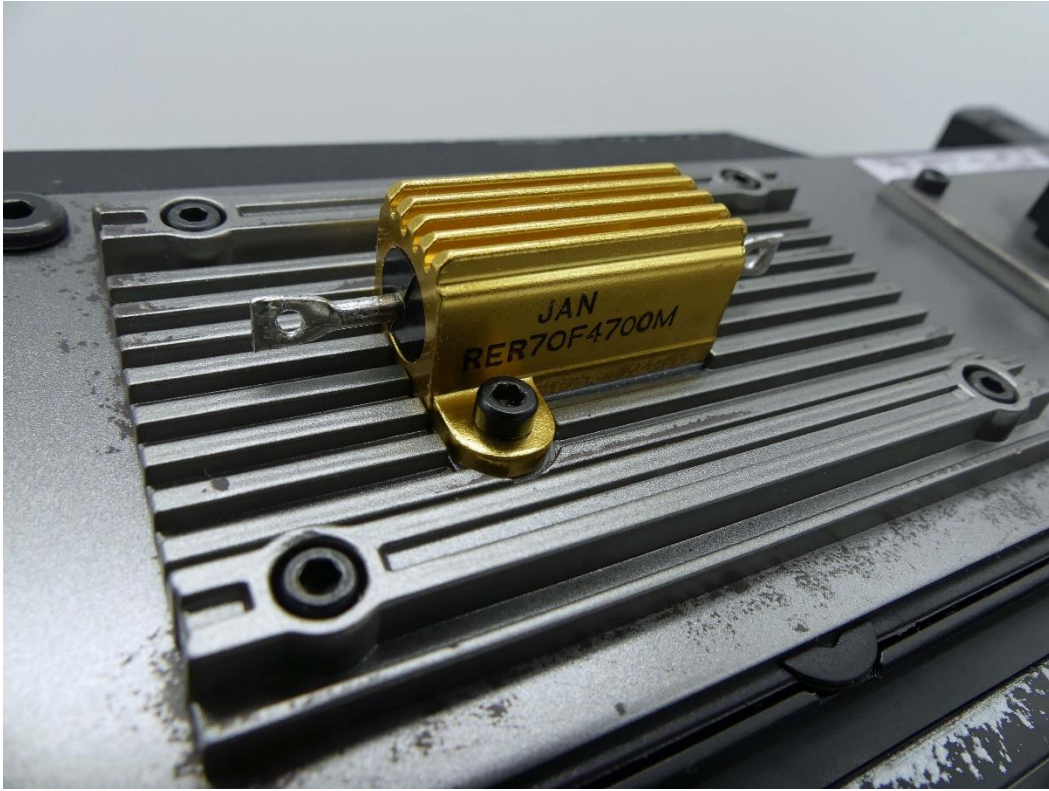


Backing up a step, if you do not want as much of the threaded portion of the toggle switch mounting to show, you can add a nut on the toggle switch first, before mounting the circuit board. You may have some repeated trials to get the desired height showing. Then secure the toggle in place with the desired washers and nut on the top of the trap. Depending on how far off the new switch is mounted, the alignment pins may no longer reach the circuit board. At the extreme, the circuit board mounting screws may also not quite reach the mounting posts. If needed you may want to get longer mounting screws. Do NOT tighten the screws too much since they would only be used to align the circuit board and the circuit board should not be bent trying to press it down to the mounting post!

Lastly, reassemble the trap shell. See the “Reassembling the Ghost Trap Shell” section towards the end of this document.

All done!

Installing the Trap CAL-R Real Resistor and Mounting Plate



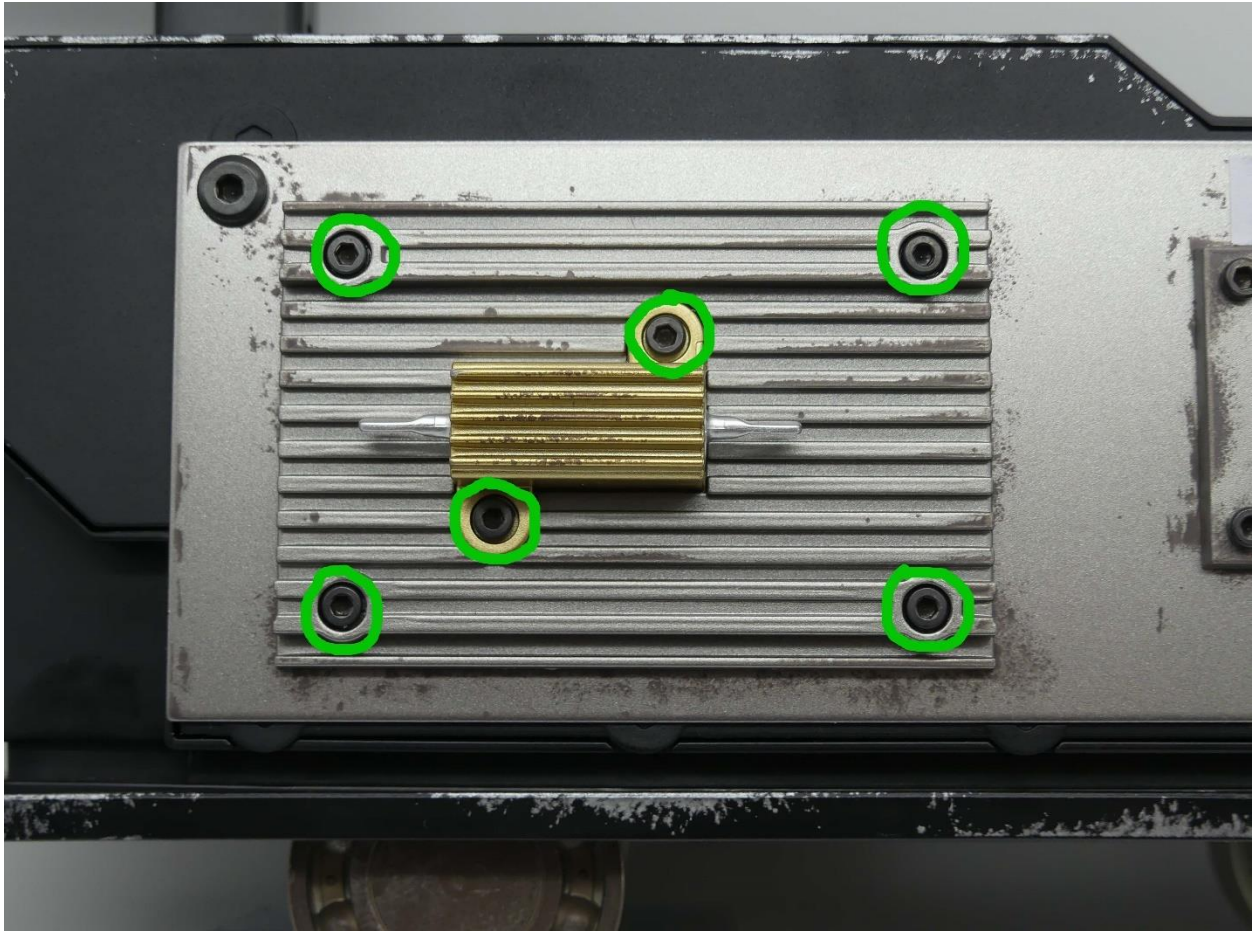
These are the parts in this kit:



This installation does require a bit of modification to the trap so makes it a bit more complicated if you want to revert back to the original configuration.

The first step is to remove the existing plastic resistor piece from the side of the trap shell.

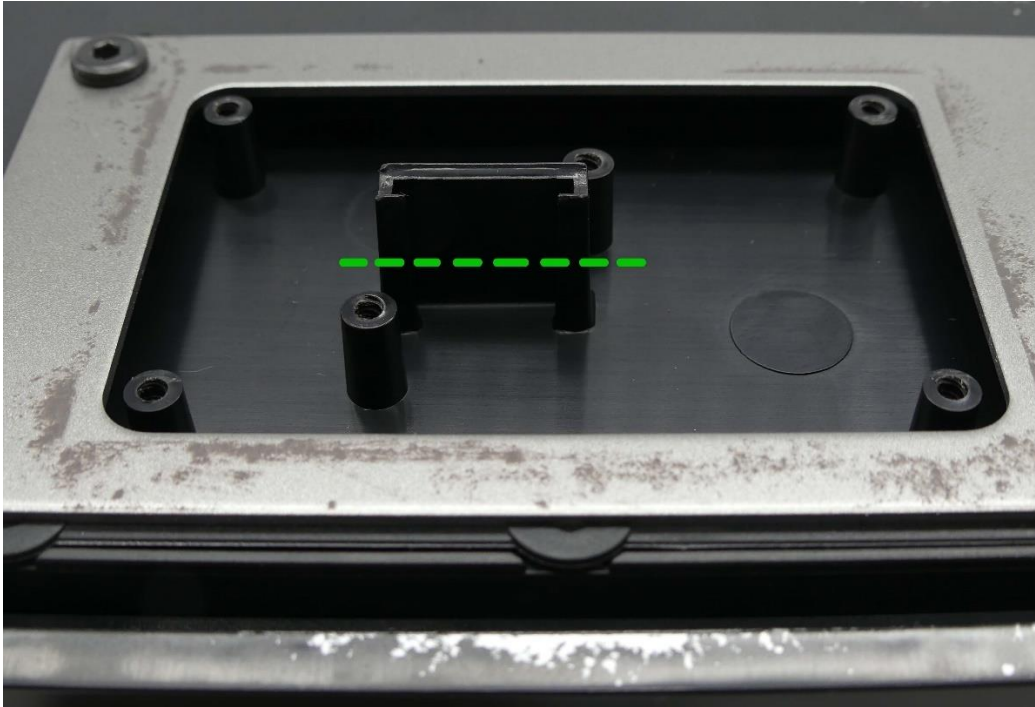
Six screws need to be removed. Use a 5/64" Allen wrench.



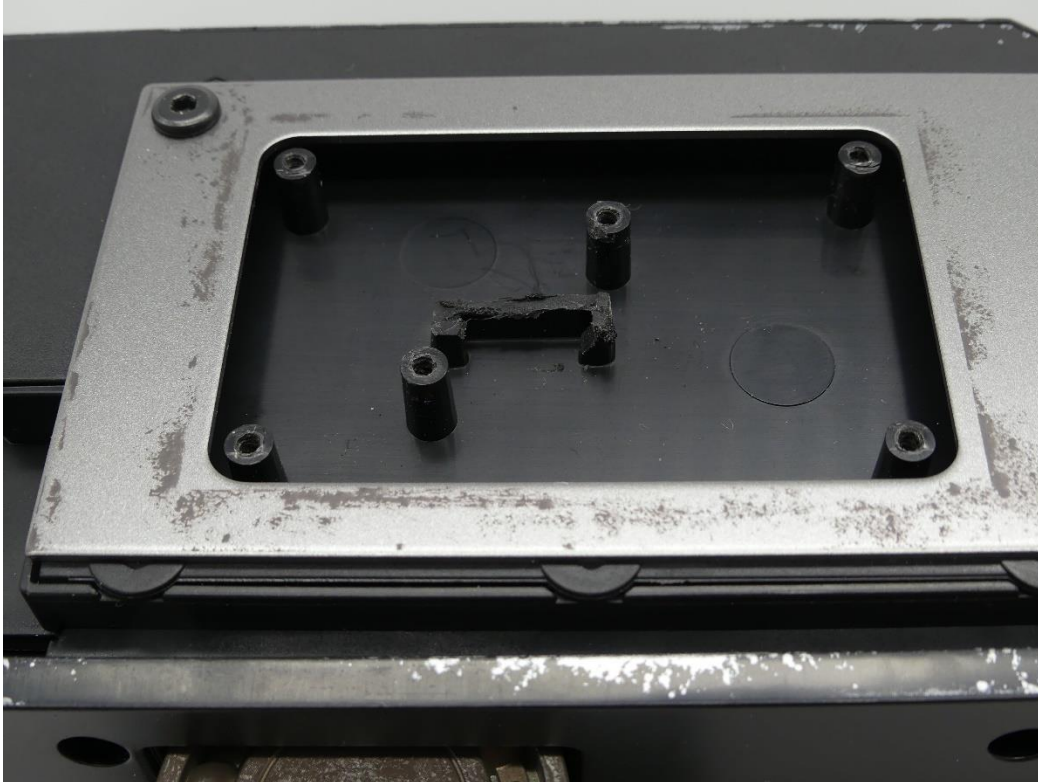
The plate and plastic resistor can now be removed from the side of the trap. The two screws that were used to secure the plastic resistor will be re-used to secure the real CAL-R resistor and mounting plate.

Pull the silver plastic tabbed part out of the center of the plastic resistor to remove the resistor from the “vector” style side plate.

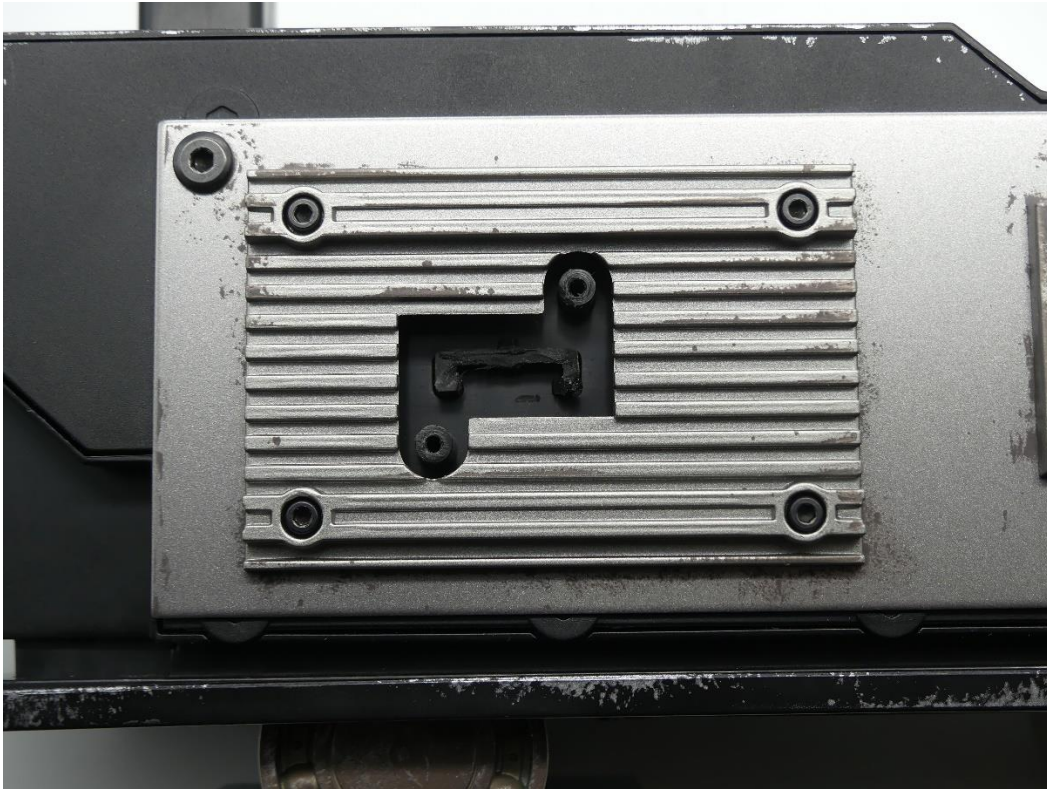
Next the alignment feature needs to be removed (at least lowered) to make room for the real CAL-R resistor. Lower the center structure to below the adjacent mounting posts:



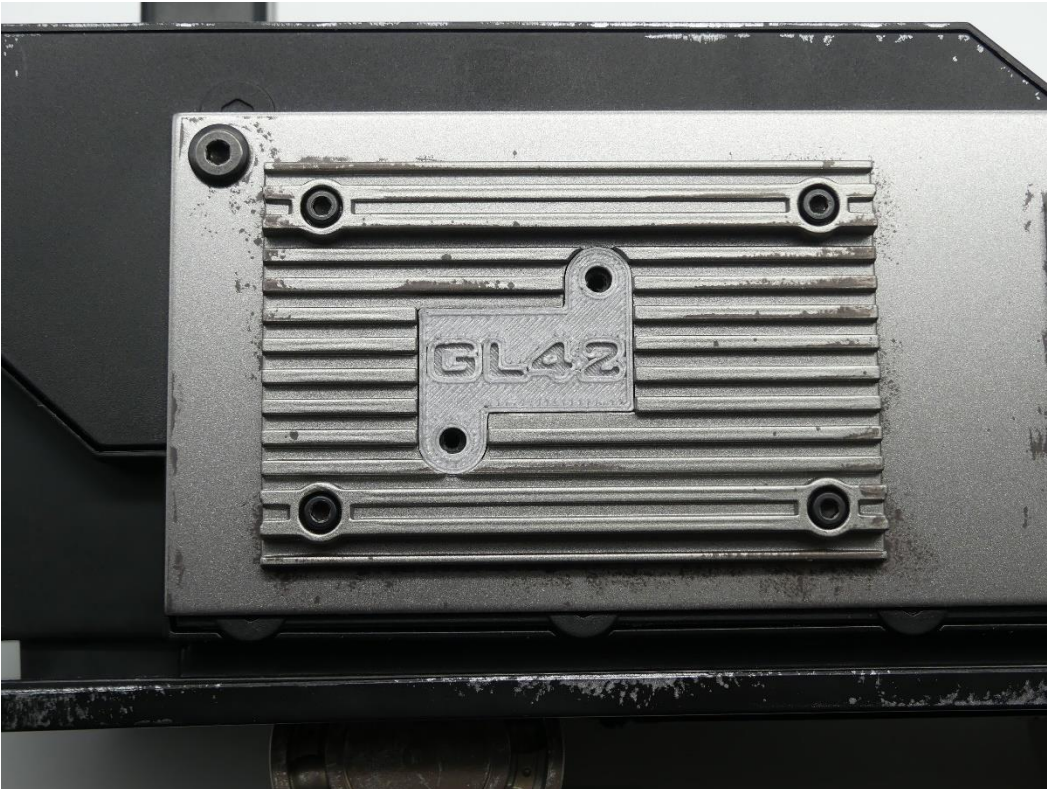
After grinding the center structure down with the Dremel:



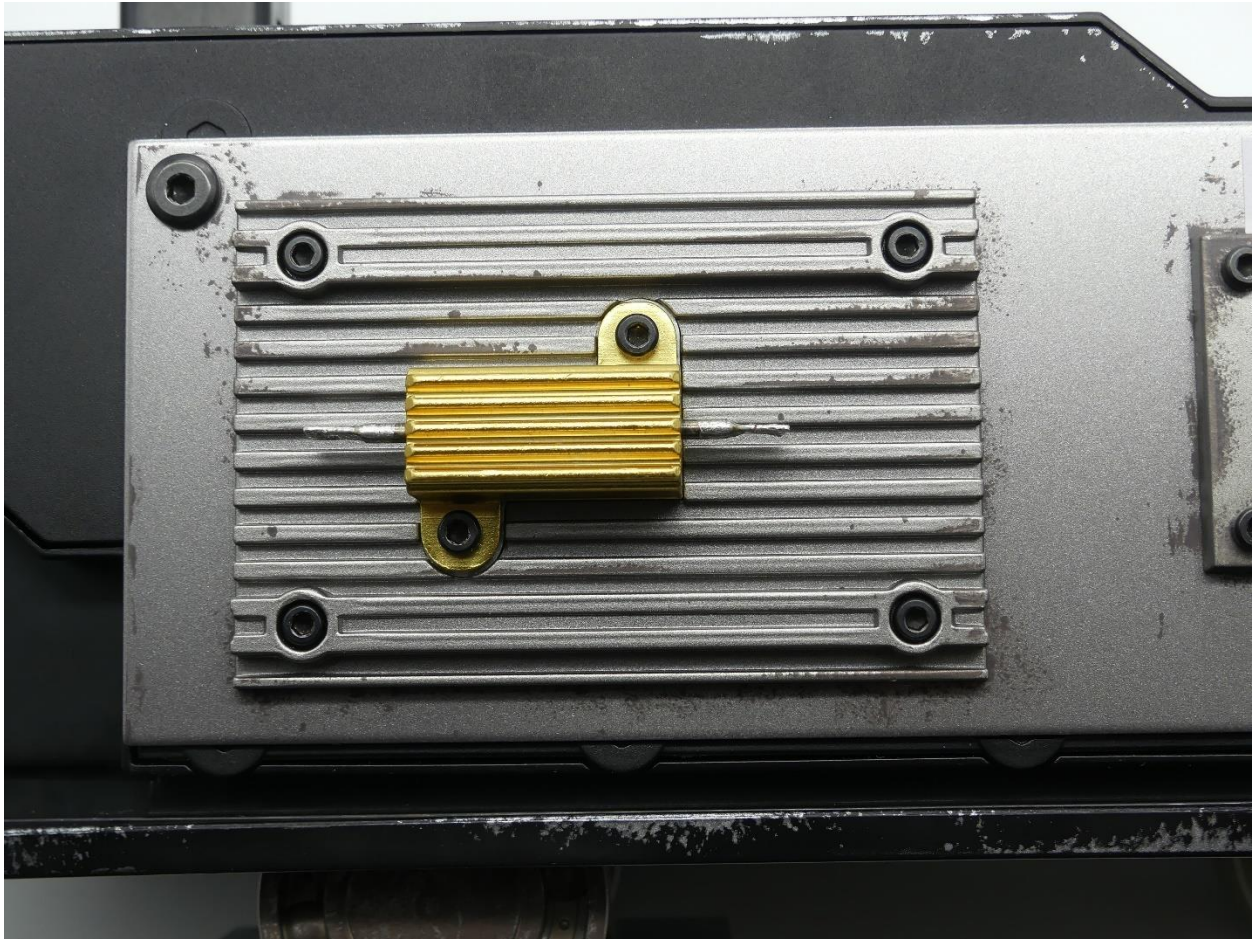
Next, remount the “vector” style side plate with the original 4 screws:



Then place the spacer into the hole with the GL42 facing out:

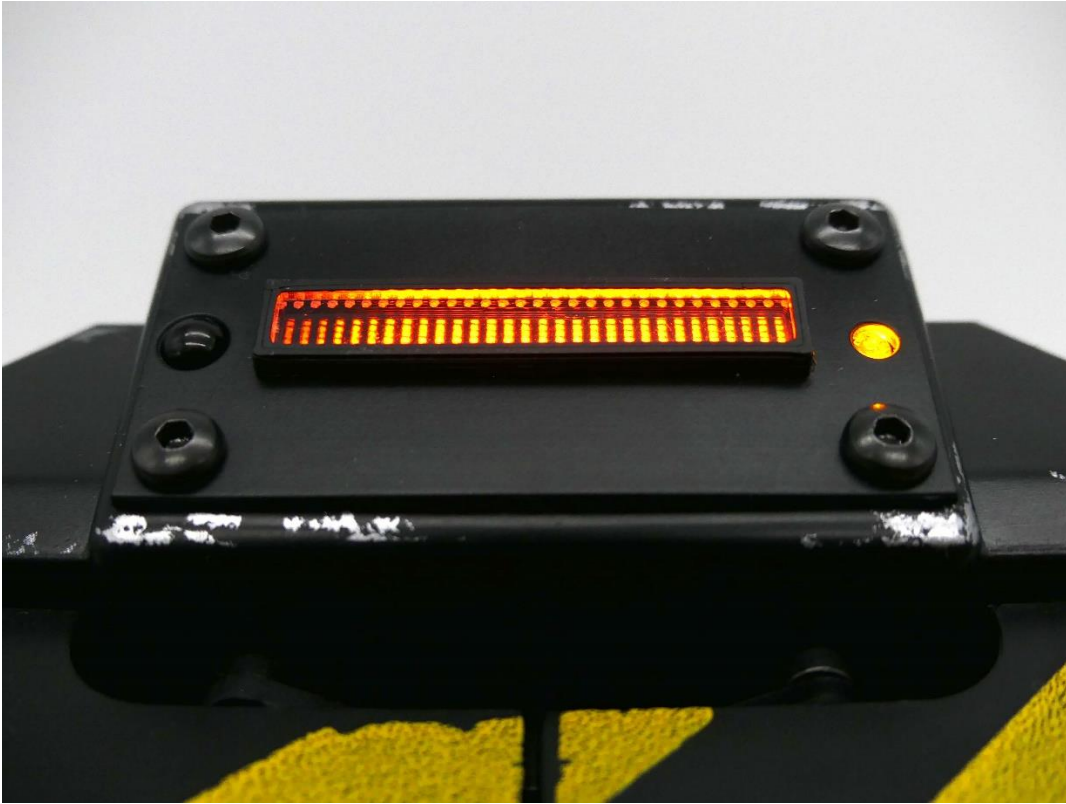


Lastly, place the CAL-R real resistor on top of the spacer and using the last two screws that were holding the plastic resistor, screw the CAL-R into place:

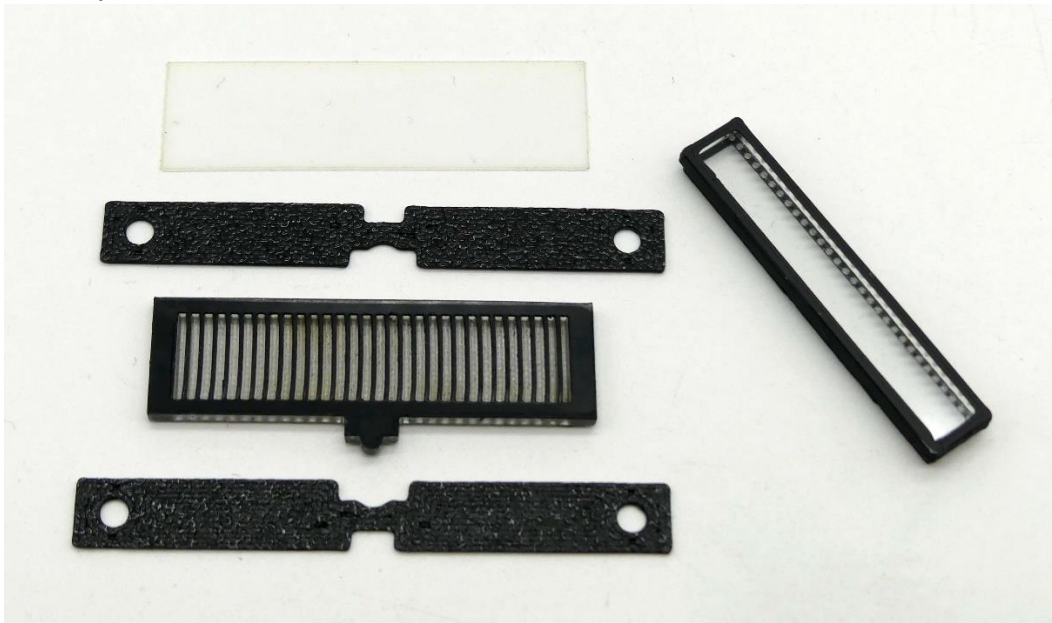


All done!

Installing the Trap 30 Segment Bar Graph Look Deluxe Display



These are the parts in this kit:



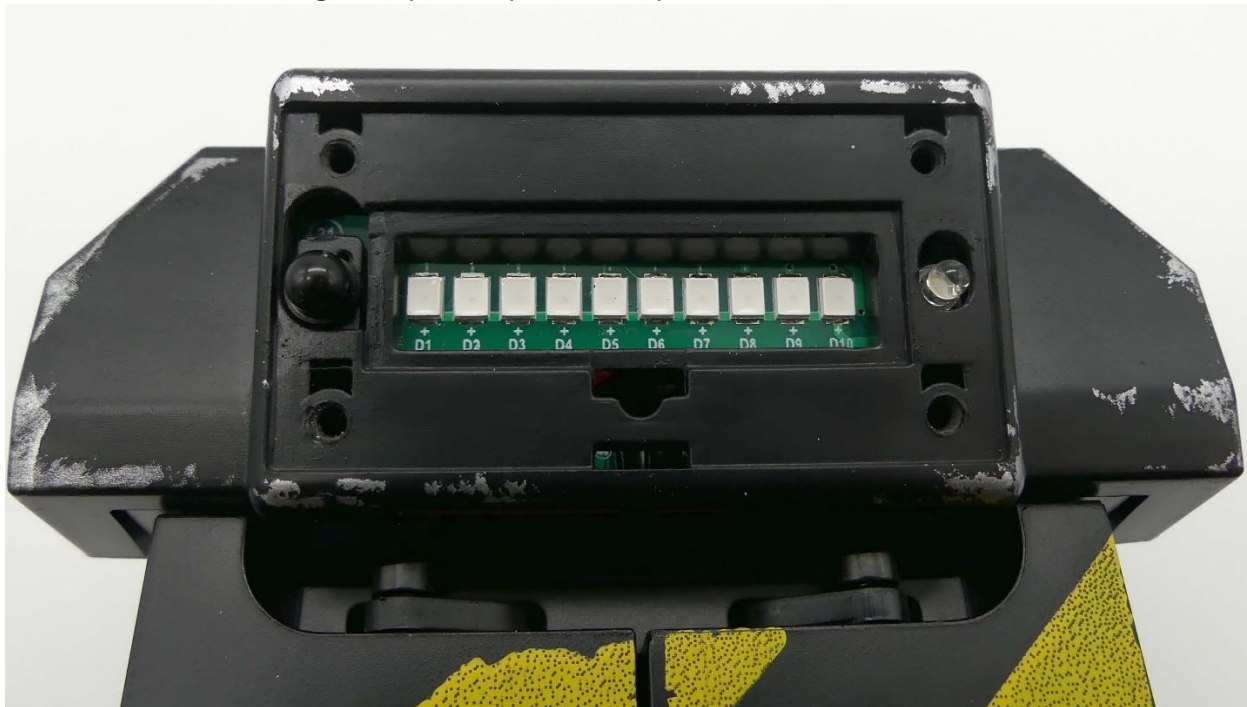
This kit can be installed without the riser portion and can be completely reversible back to the original trap configuration.

If you add the riser, this part needs to be glued in place so cannot be easily restored back to the original configuration.

First, the original top display plate must be removed. Remove the 4 screws with a 5/64" Allen wrench:



Then remove the 10-segment plastic piece to expose the LEDs and circuit board:



Place the white diffusion material in the inset to cover those LEDs up:



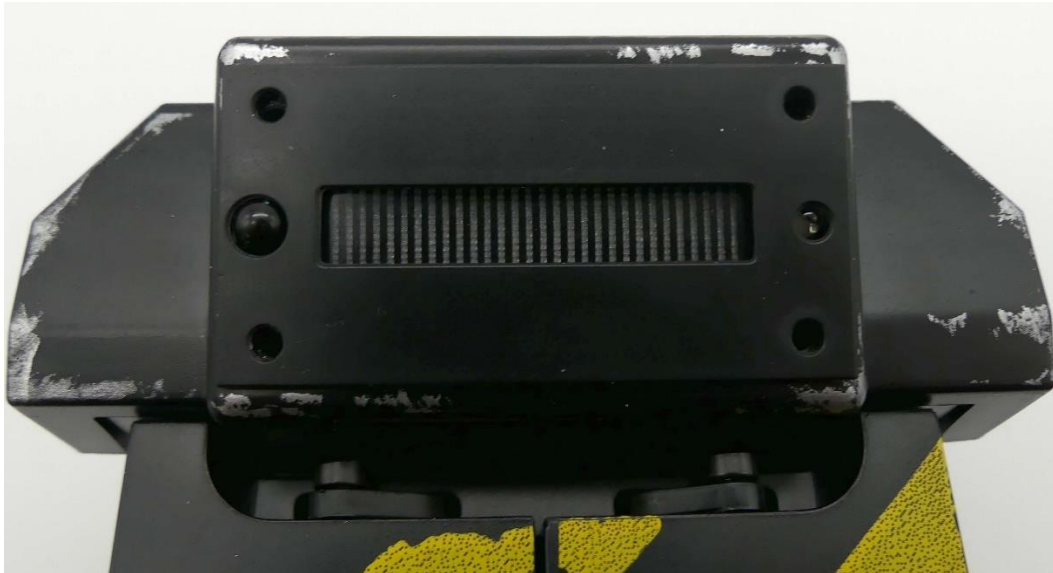
Place the new display lens on top of the white diffusion piece. The matte flat surface should be facing up and the etched glossy surface should be facing down. The alignment notch should be down facing to cover the hole that was used by the previous 10-square display piece.

The two 3D printed spacers should be placed above and below the new display piece:



The spacers make up for the slightly thicker new display piece so the top plate can sit flat and does not bow out because of the thickness difference.

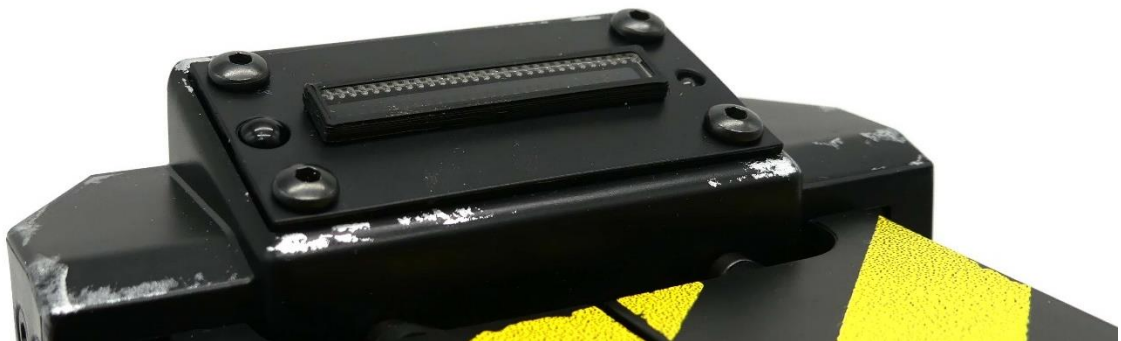
If you do not intend to add the “riser” to the trap, just remount the original plate on top of the spacers and new display with the 4 original mounting screws:



If you want to add the riser, first test fit the riser in the top mounting plate to make sure it sits well in the opening. The top is an acrylic piece very close to the top surface. The bottom is a slightly narrower portion of the 3D printed black bezel that is designed to extend into the top plate.



Check to make sure the slightly larger top half of the riser sits flat on the top plate by looking at it from the side. No gaps should be seen:

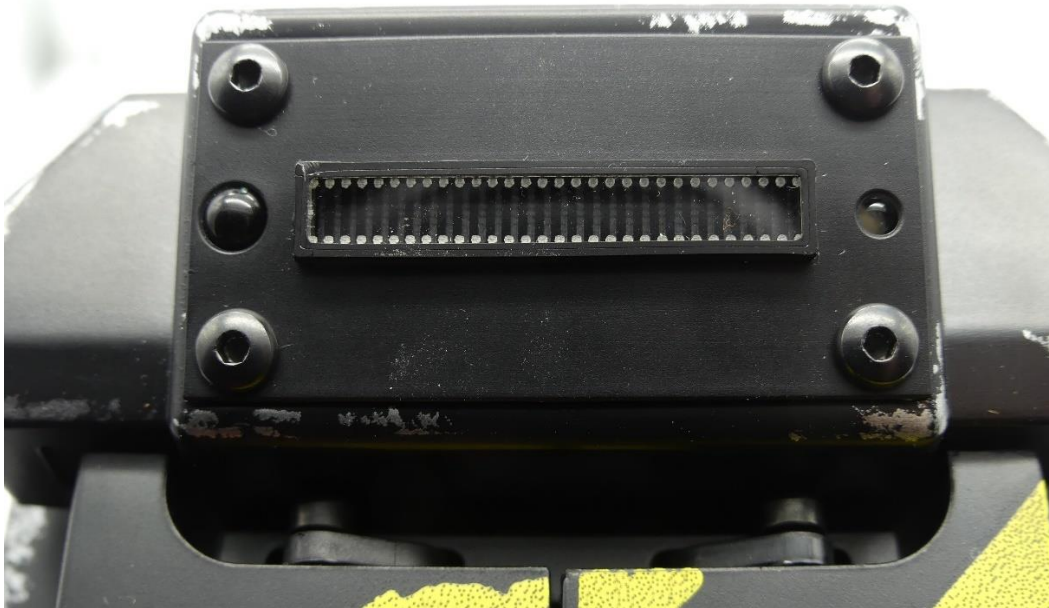


The riser is only a friction fit so may be dislodged with use. It is best to glue it in place. After the test fit, remove the riser and I use the Gel type super glue and apply a small amount to the inside edges of the original top plate. Try to avoid the top and bottom surfaces: just a small amount of glue only on the inside edge highlighted in green in the following image:



Then press the riser back into place. We don't want the glue to drip onto or adhere to the display lens, so set it aside and allow the assembly to completely dry.

When dry, you can remount the new display top with riser onto the spacer and display lens and secure it in place with the original 4 screws:

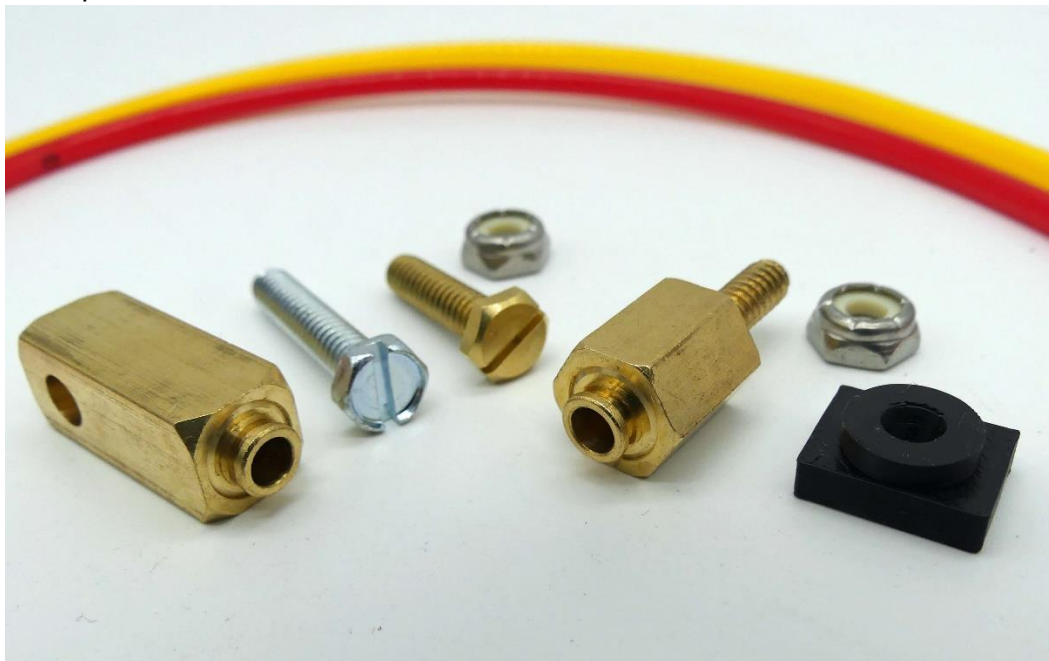


All done!

Installing the Pedal Custom Brass Fittings + Tubing

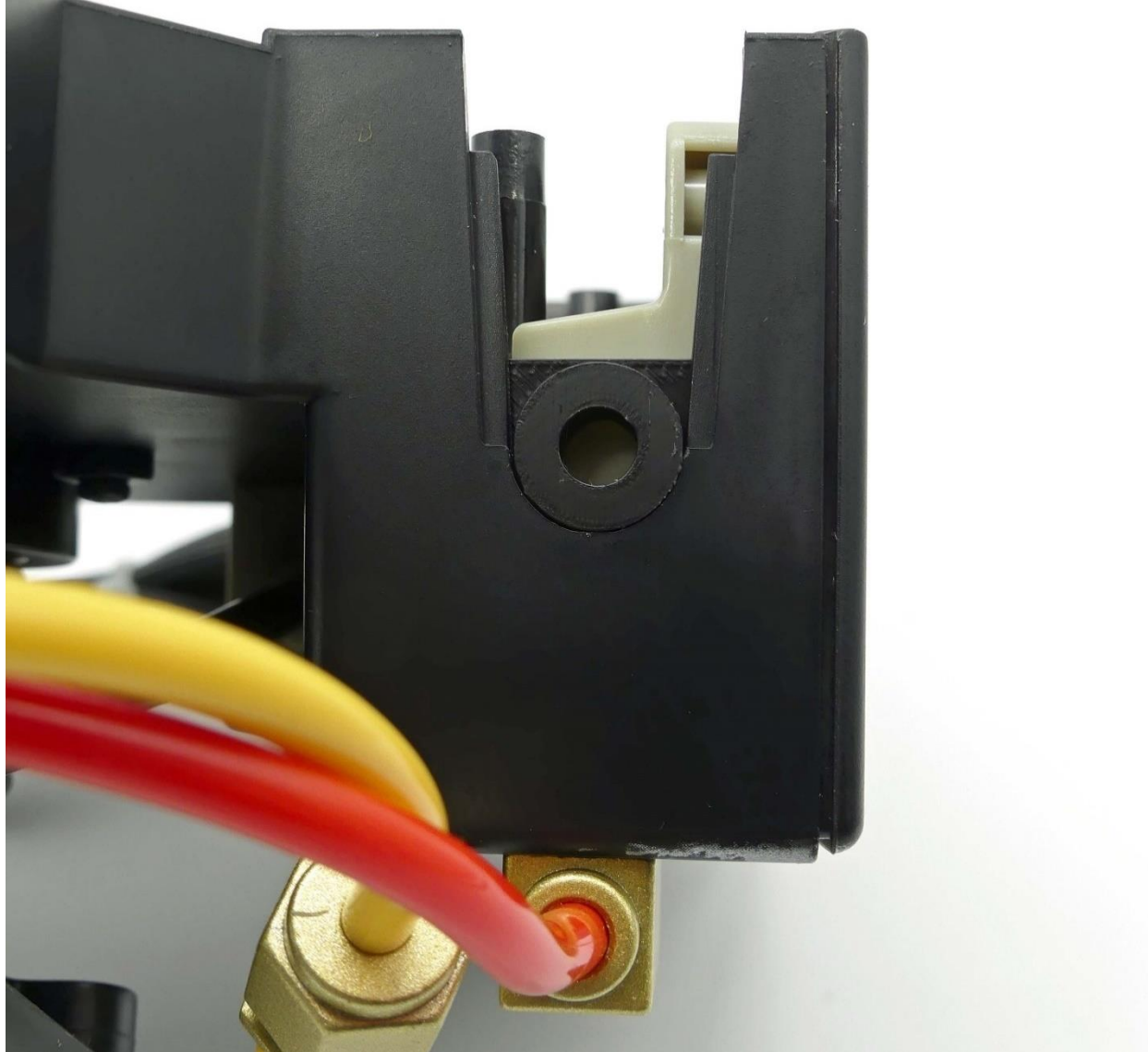


Here are the parts in this kit:



The first step is to open up the trap shell. See the “Disassembling the Ghost Trap Pedal” instructions near the end of this document.

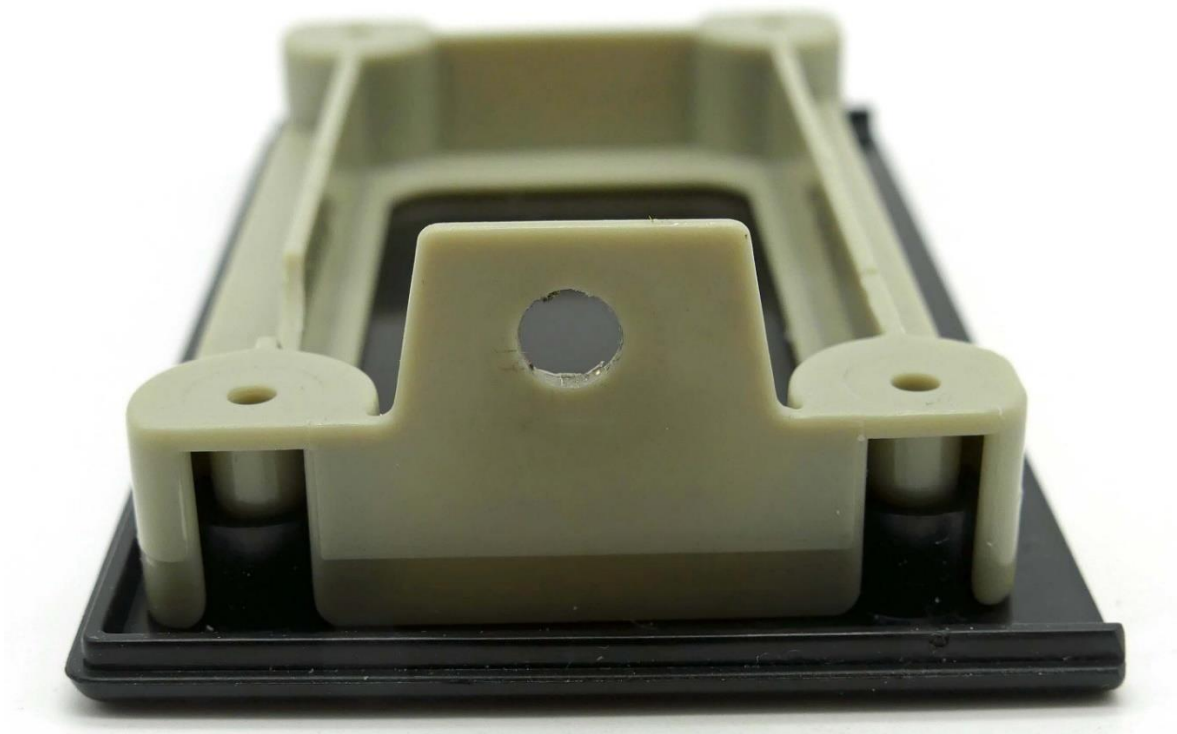
Next, remove the yellow tubing’s connector from the side, remove the 3D printed space part from the brass fitting and place it in the location that the previous yellow tubing’s plastic connector was placed.



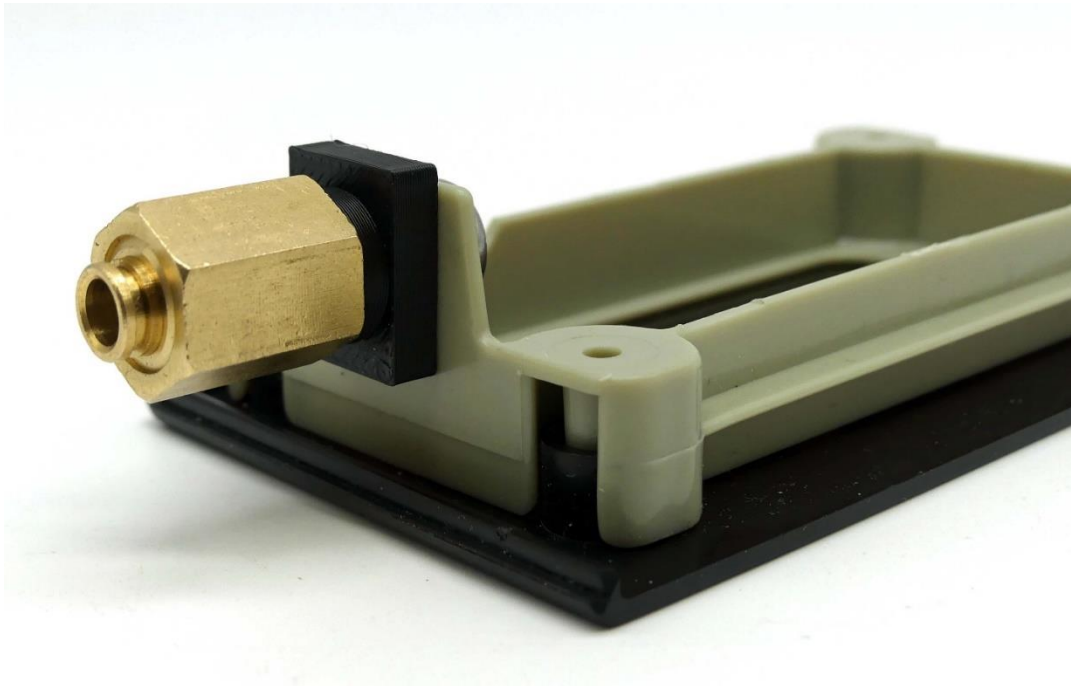
Mark through the center hole of the 3D connector to indicate where a 3/16” hole must be drilled. Then removed the parts and drilled through the side panels lighter colored piece directly.

I also tried just holding the pieces in place on the pedal and directly drilling a smaller (5/32”) hole through the 3D piece’s hole into the side panel’s light colored piece. Then removed the parts and directly drilled with the required 3/16” bit and either method worked fine.

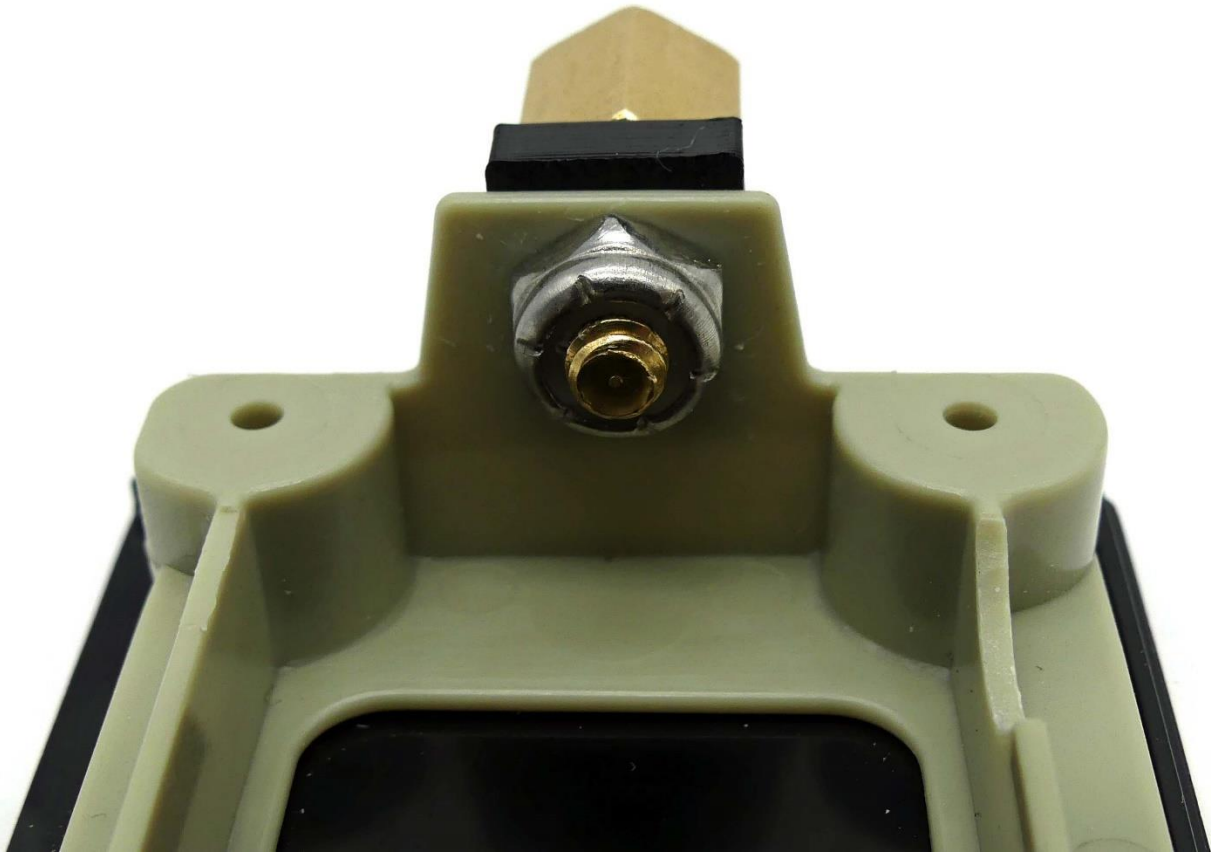
When the hole has been drilled:



Then mount the Brass fitting with the 3D piece and the lock nut:

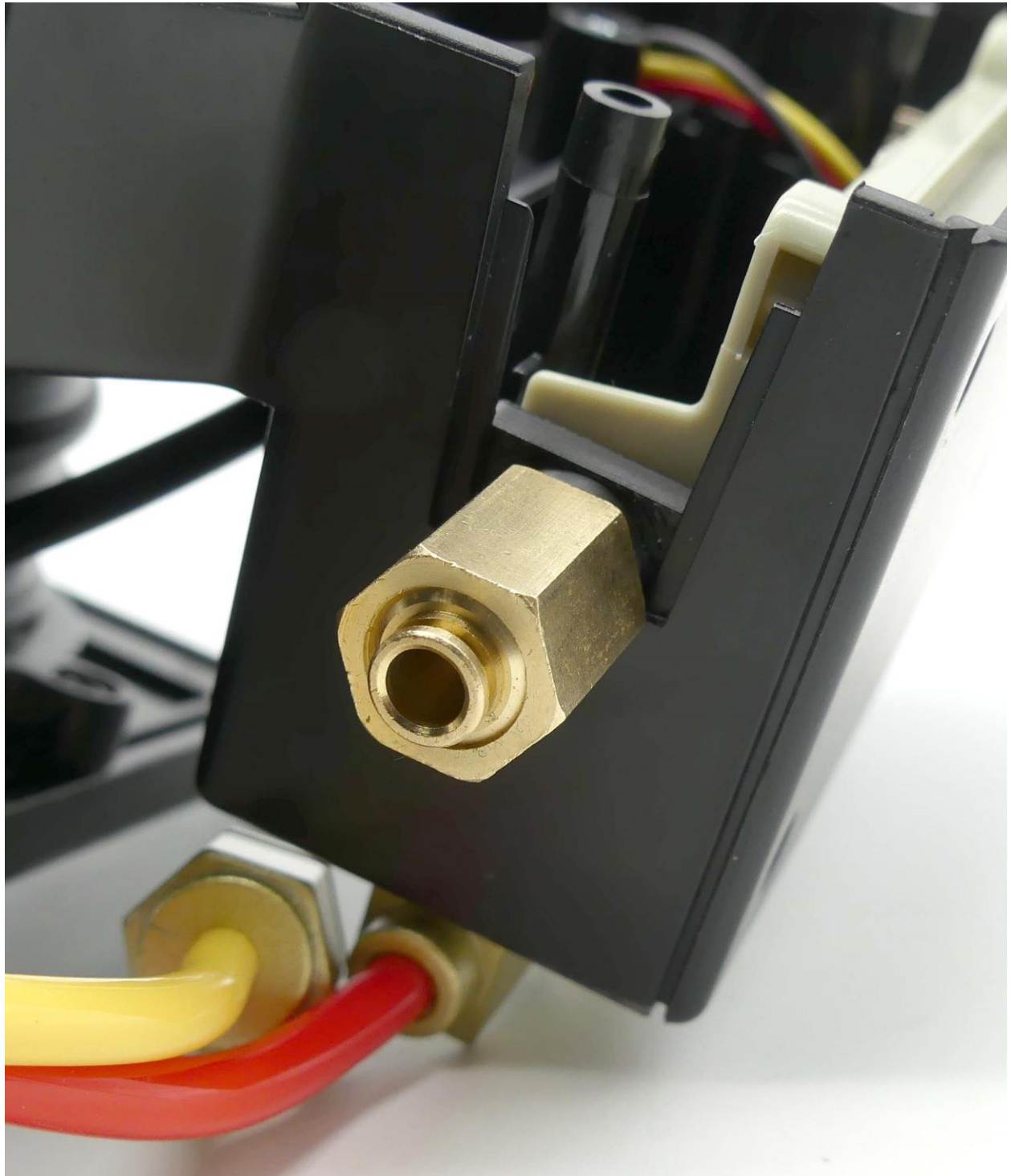


And from another view:



Take note of the orientation of the black piece. One dimensions is longer than the other and it should stick up above the light colored part of the side panel like as shown when in the proper orientation.

And then a test fit. The side panel with securely mounted brass fitting should slide right into place:

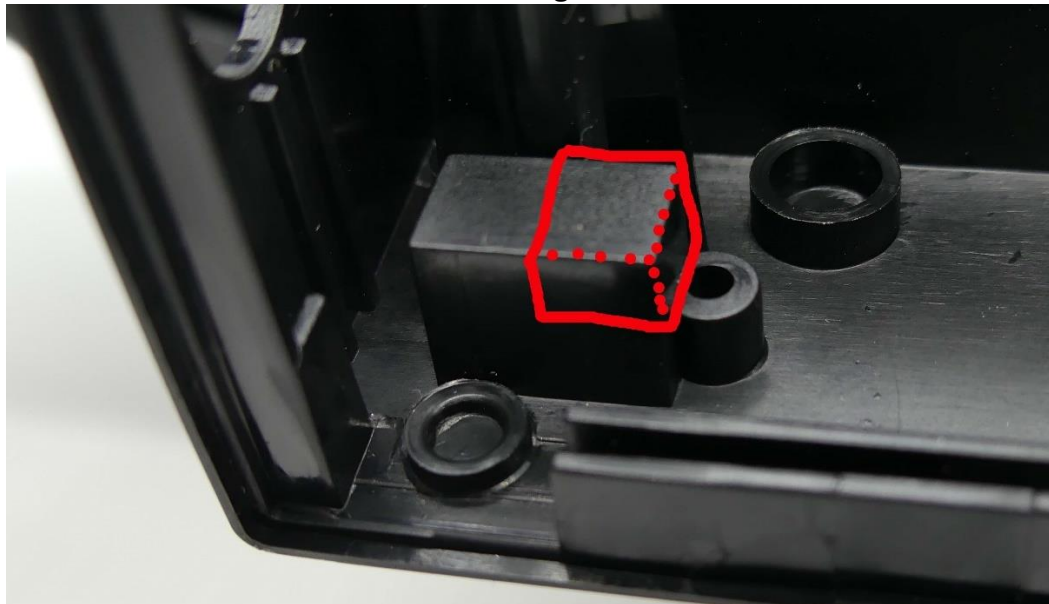


Next, remove the red tubing's plastic connector by removing the Philips head screw. The screw will not be needed for mounting the brass part.

The top protrusion need to be flattened to allow the brass part to sit flat on the box:



The inside parts of the red tubing's connector also need to be modified by removing the red box of material to make room for the brass fitting's lock nut:

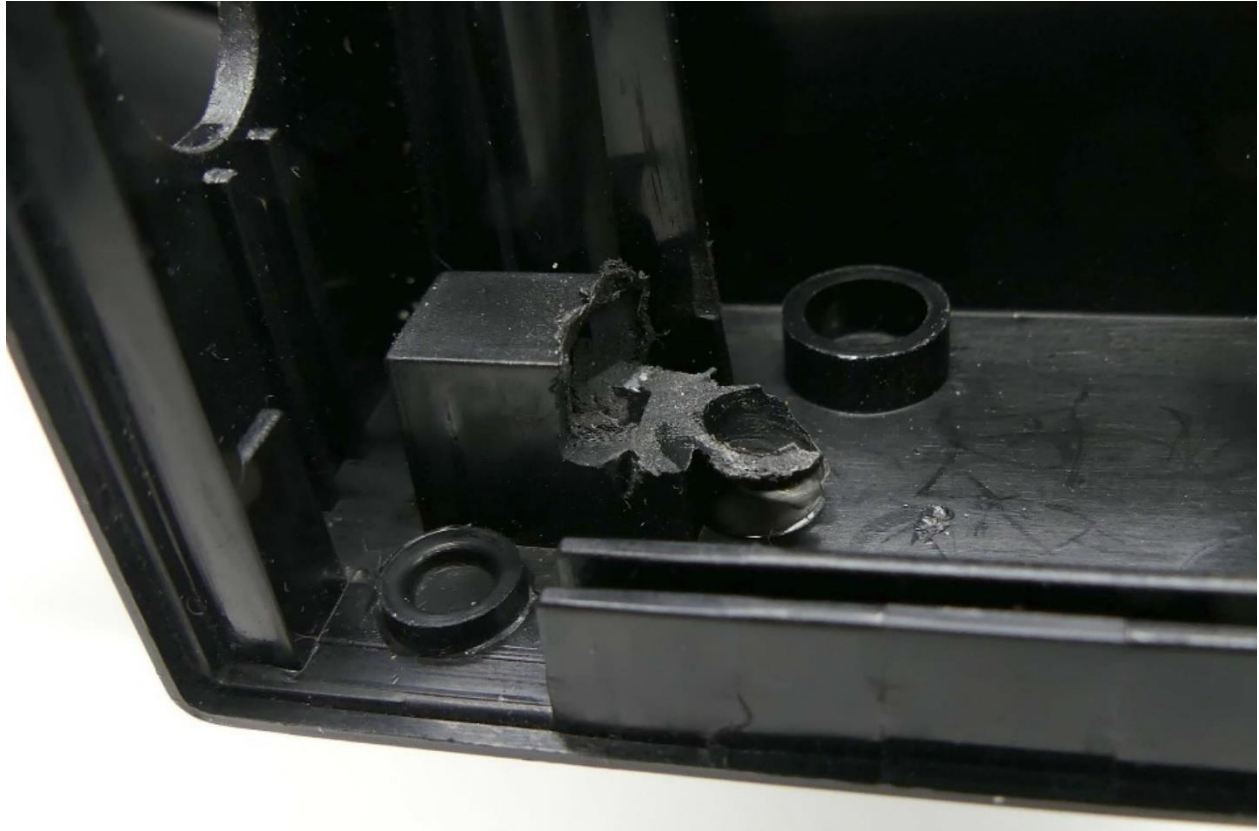


Start by removing the top features that stick out above the surface. I used a Dremel with a grinding wheel. Then in the center of the previous screw mount hole, drill a larger hole with a 3/16" drill bit. This will allow the larger Brass screw to fit in that hole.

When done, the top surface should look like this (or better!):



Then I used the Dremel and a grinding wheel to remove a chunk of the material so a lock nut could be placed on the shorter brass screw. You could also remove a larger section so that it was nearly flat on the surface, but take care to leave enough material for the nut to hold on to.



Next place the brass fitting and the desired screw (brass in this case) through the hole you drilled:

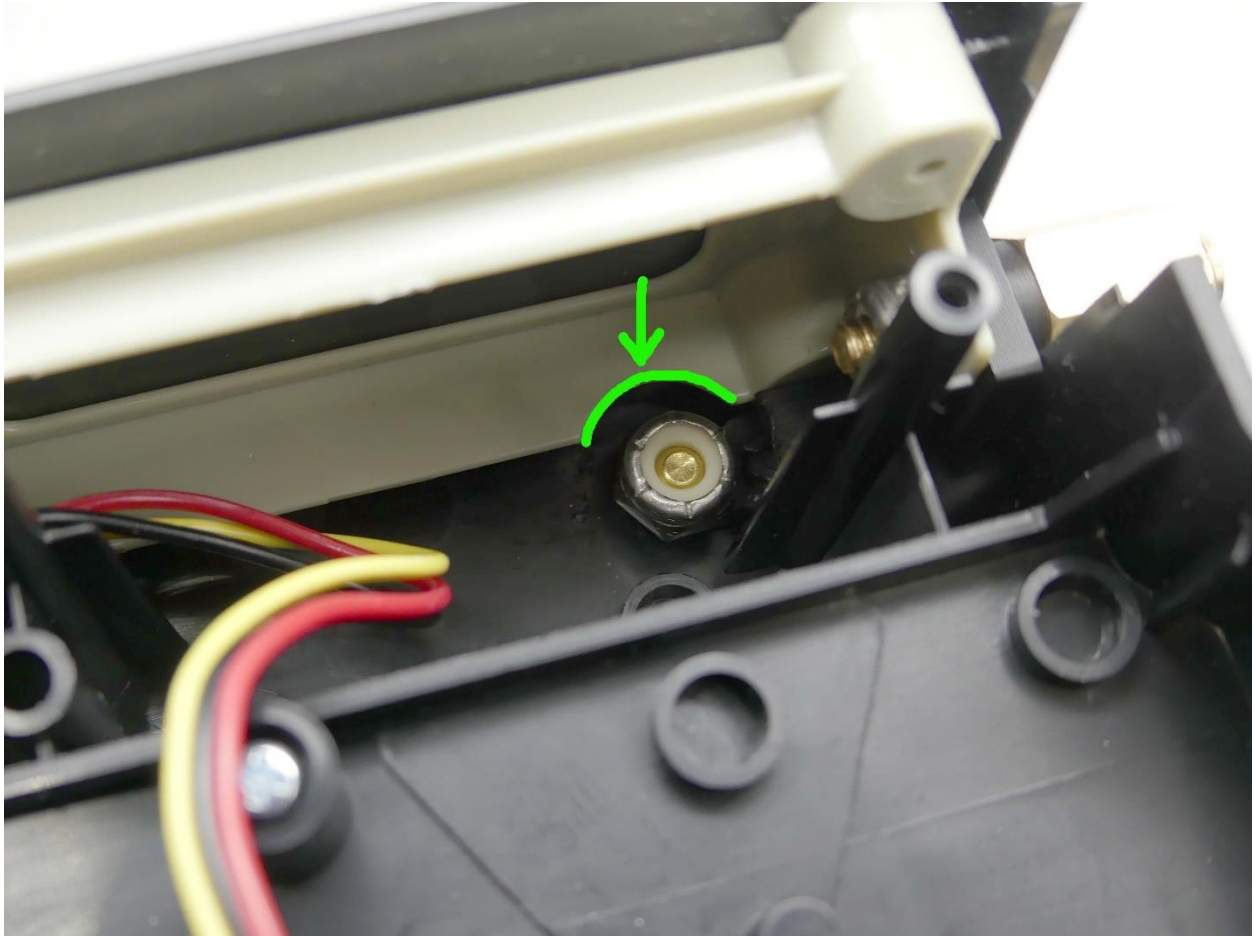


And place the lock nut on the end of the screw inside the pedal and tighten:

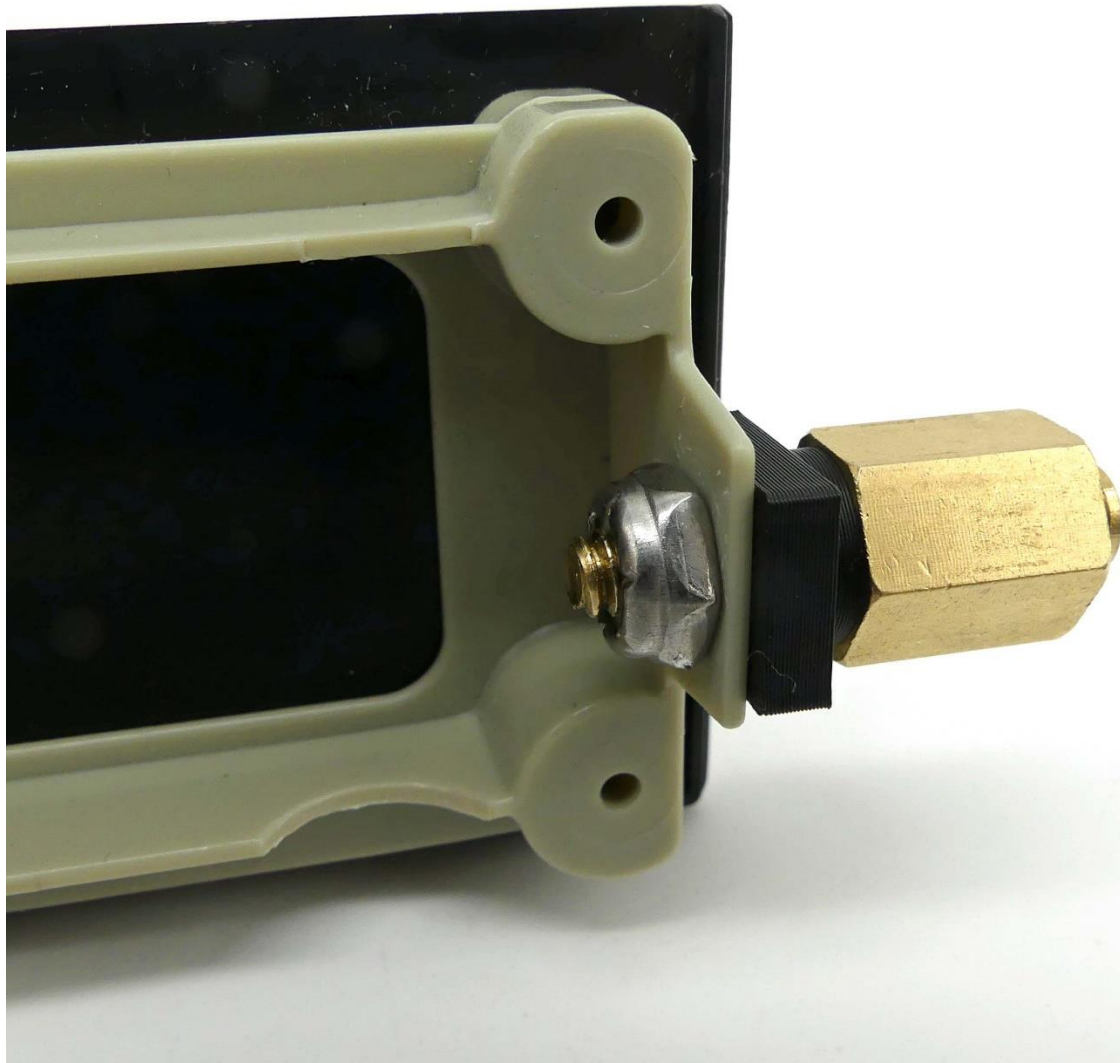


When you place the panel back on the side of the trap, the bottom of the lighter part of the panel will interfere with the Lock nut you just placed on the brass fitting for the red hose. This will not allow the side panel to go all the way into the pedal top.

You need to add a cutout to the light part of the panel to allow the panel to fully seat in the trap side (see the area highlighted in green):



Here is a look at the side panel with the cutout section at the bottom. This panel should now be able to be easily installed and removed.



With the panel installed the brass fittings look like this:



Next remove the yellow and red tubings with the associated plastic fittings.

Drill out the yellow and red tubing holes to allow the new red and yellow tubing to fit through under the pedal. Take care when drilling as you do not want to drill through into the pedal!

Then press the tubing as far as possible into the ends of the brass fittings: Red for the top brass fitting and Yellow for the side brass fitting.

Feed the other end of the tubing into the new holes you drilled. Pull the tubing through so you have a nice look to the tubing (not too tight and not too long and droopy)

Leave a few inches of extra inside the pedal. You may wish to secure the tubing with glue if you find that the tubing comes out based on how you handle the pedal.



The final step is to close up the trap shell. See the “Reassembling the Ghost Trap Pedal” instructions near the end of this document.

Installing the Pedal Replica ITT RM833212 Relay w/ Socket



Here are the parts in this kit:



Now additional screws are included: Slotted machine and Slotted sheet metal screws for more accurate movie prop replication.

The ITT relay has the white legend on a specific side. If you want to closely replicate the ITT relay look, this is the side to affix the dry-rub transfer:



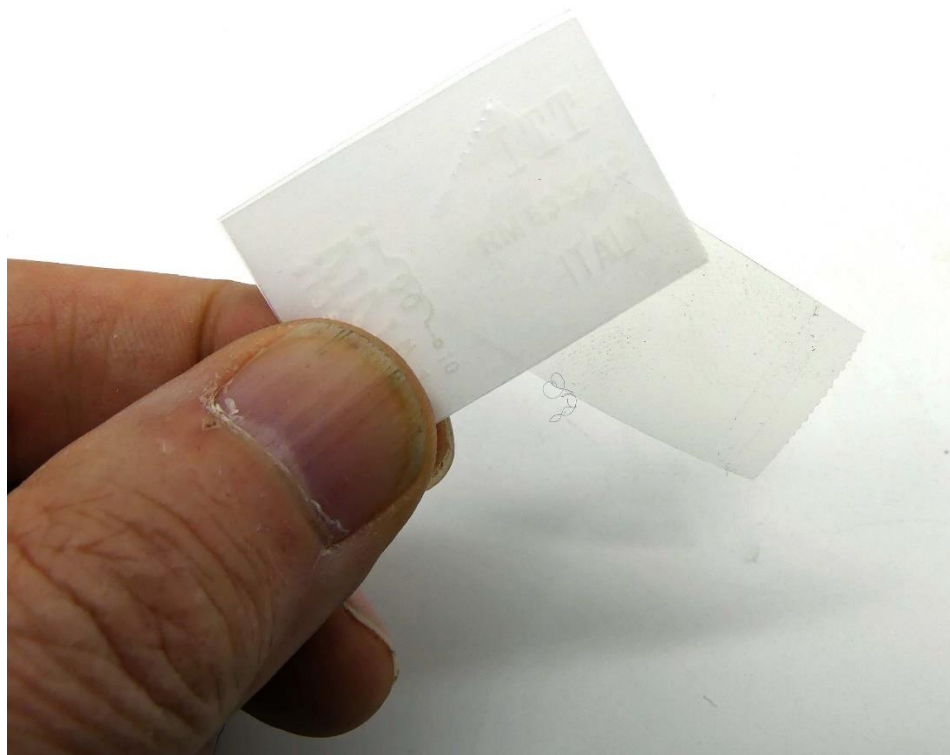
The correct side for the legend is as shown above. The relay has the 3 vertical contacts on the right hand side and the large metal plate on the left hand side.

The socket is “keyed” so the socket orientation will also affect which side of the trap the legend would face. Determine which way you would like the legend to face before you permanently attach the socket!

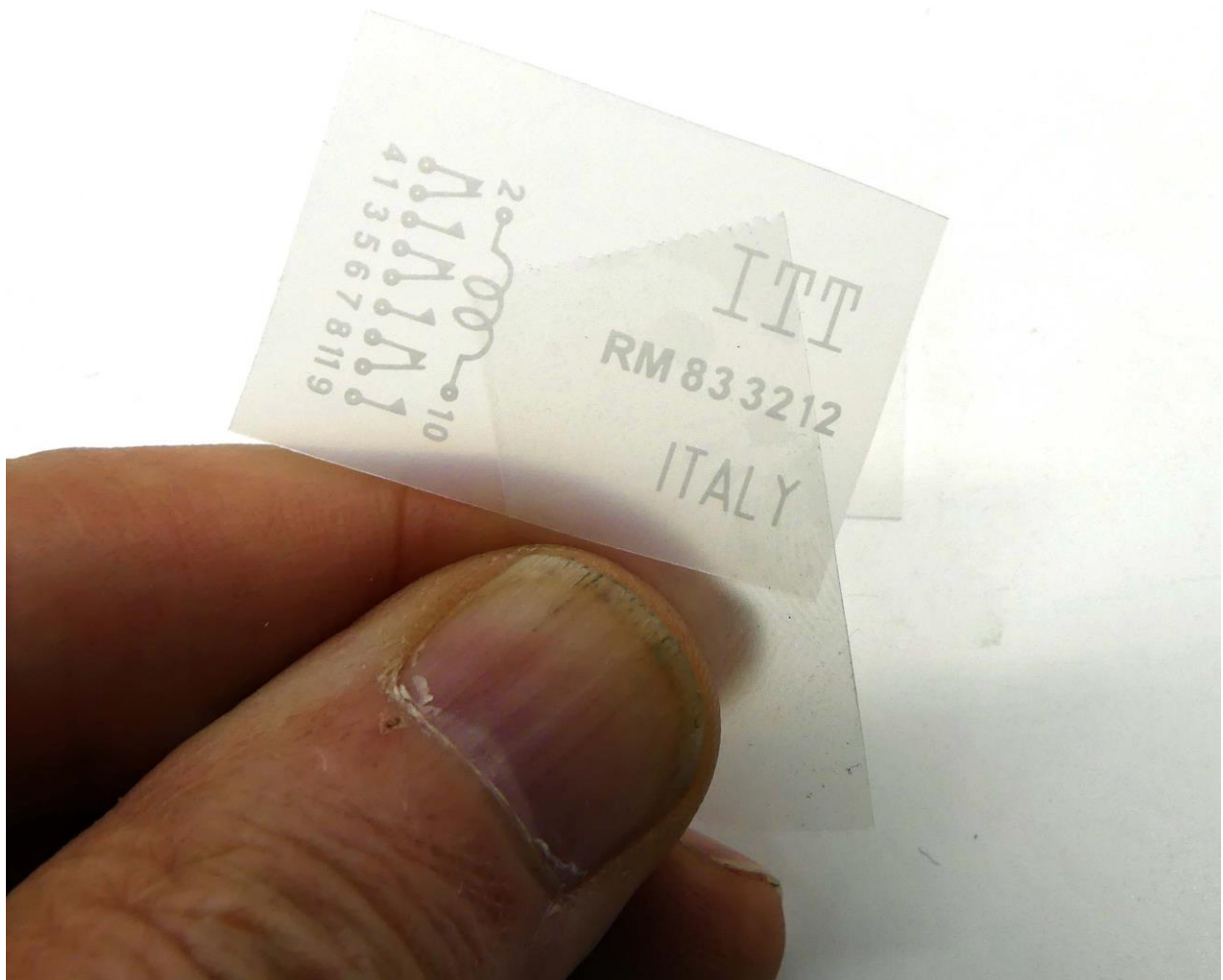
The dry rub has adhesive applied to the back side of the carrier that also has the white ink on the back side and is setting on a protective piece of material. Carefully lift the dry-rub off of the index card (it is taped on two corners) in the folded index card along with the protective material.



Be careful to NOT touch the underside of the dry-rub material that has the white ink and adhesive on the bottom side. When you remove it from the card you can grab both sides since there is a separate protective material on the back side. Place some cellophane tape on the top of the dry rub material same place as tape was used to hold the material on the index card.



Then lift and hold the dry-rub only by the added cellophane tape so the protective backing drops off the back side. Do NOT touch the back side now that the protective material is gone.



Place the dry rub on the relay on the proper side, but leave an air gap between the dry rub and the relay surface. You do not want to start the transfer just yet. Orient the dry rub as best as possible and use the cellophane tape to attach to one side:

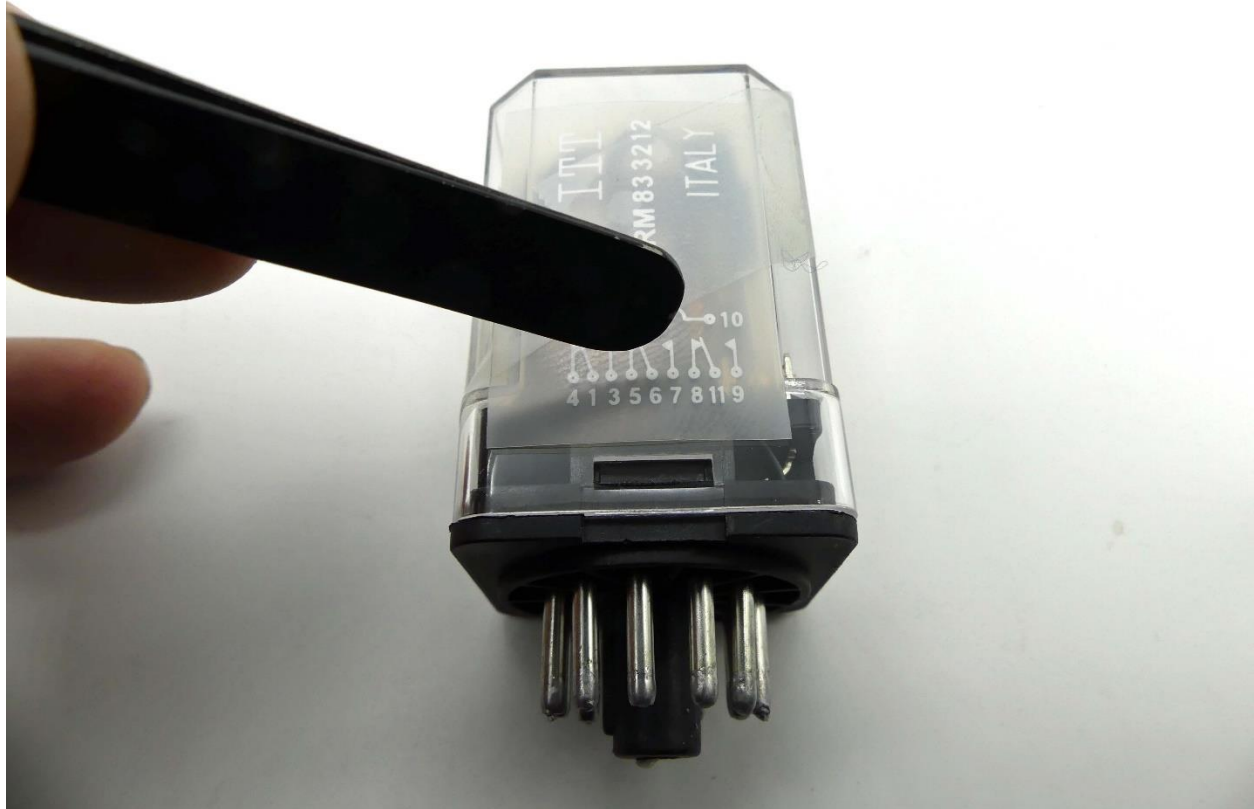


Now the important step just before transfer: lower the dry rub on to the surface and tape the other side so the dry rub is firmly attached to the relay and the legend is located where you want to transfer it to:



Now the transfer! Use something that is rounded, at least on one edge. Nothing too sharp since we do not want to scratch through the transfer backing material.

Rub across all of the white lettering and images you can see. I go side to side and then top to bottom – at least two different directions encouraging all the white ink to transfer to the relay's surface.

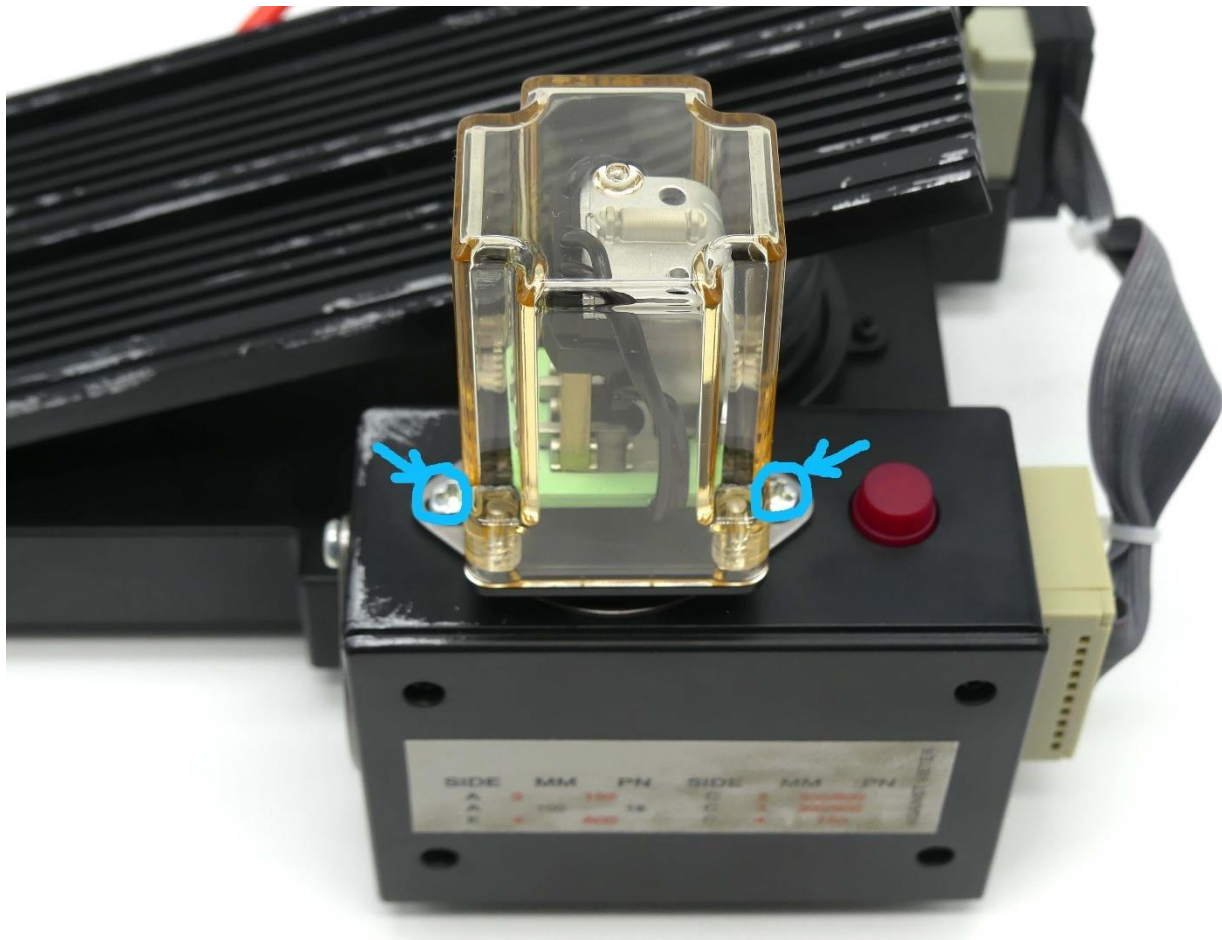


Then remove the tape from one side and lift the transfer backing material a bit to see all of the white ink has transferred. If some has not, align and tape it back down and rub some more!

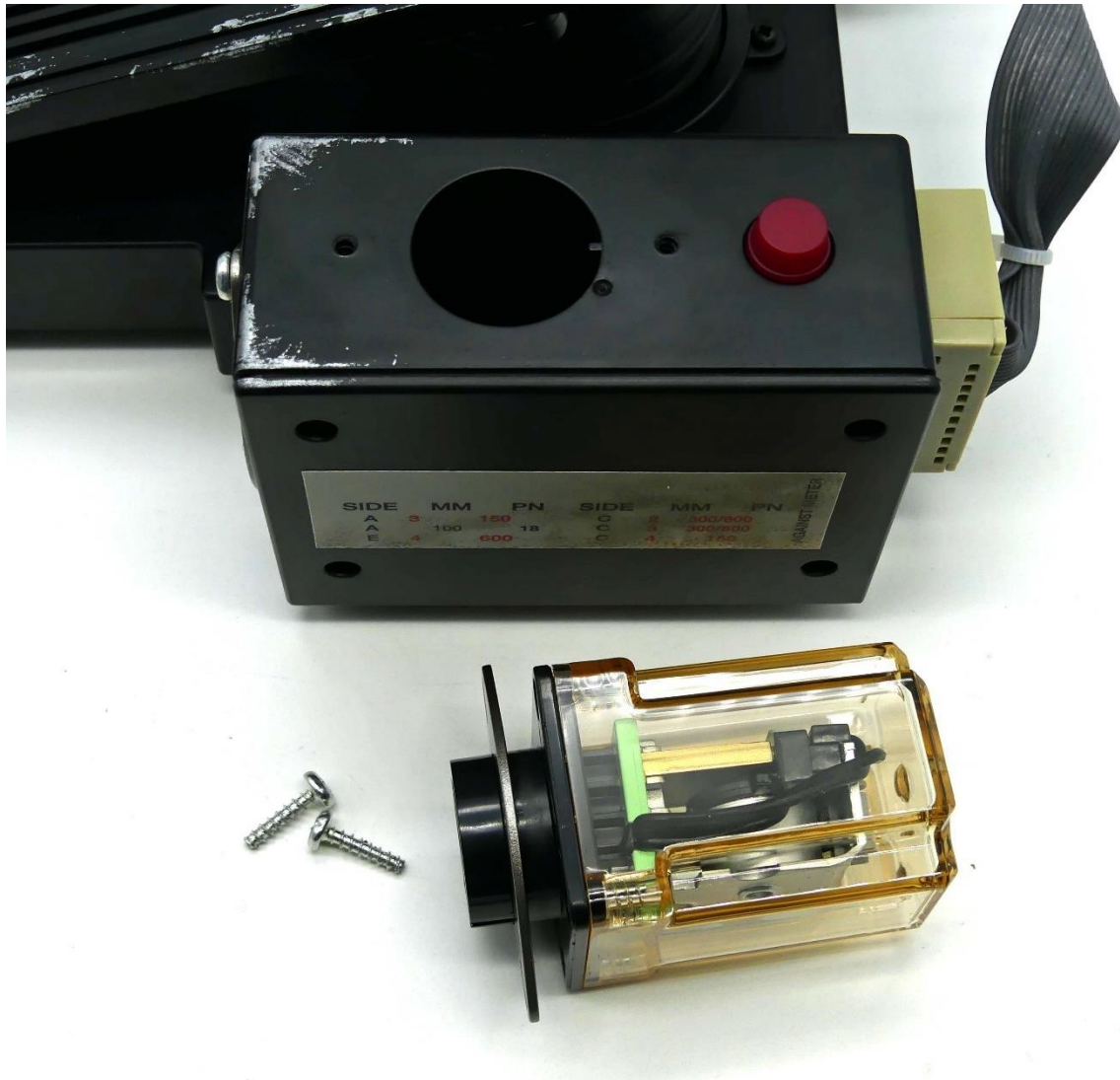
Once this has transferred you can remove the tape from both sides and the relay legend is now applied.

The next step may be to open up the trap shell. See the “Disassembling the Ghost Trap Pedal” instructions near the end of this document. You may not need to do this if you are happy with how the socket sits in the existing hole (I am not!) If you intend to use the spacers, you will need to somewhat enlarge the hole so the socket can sit a bit lower into the side box to match the spacer height.

To remove the existing plastic relay, just remove the two screws highlighted in blue that are holding it in place. These same screws will be used to mount the new real socket, so keep close track of them.



With the relay removed you see the fairly large hole where the plastic relay/socket combo resided:



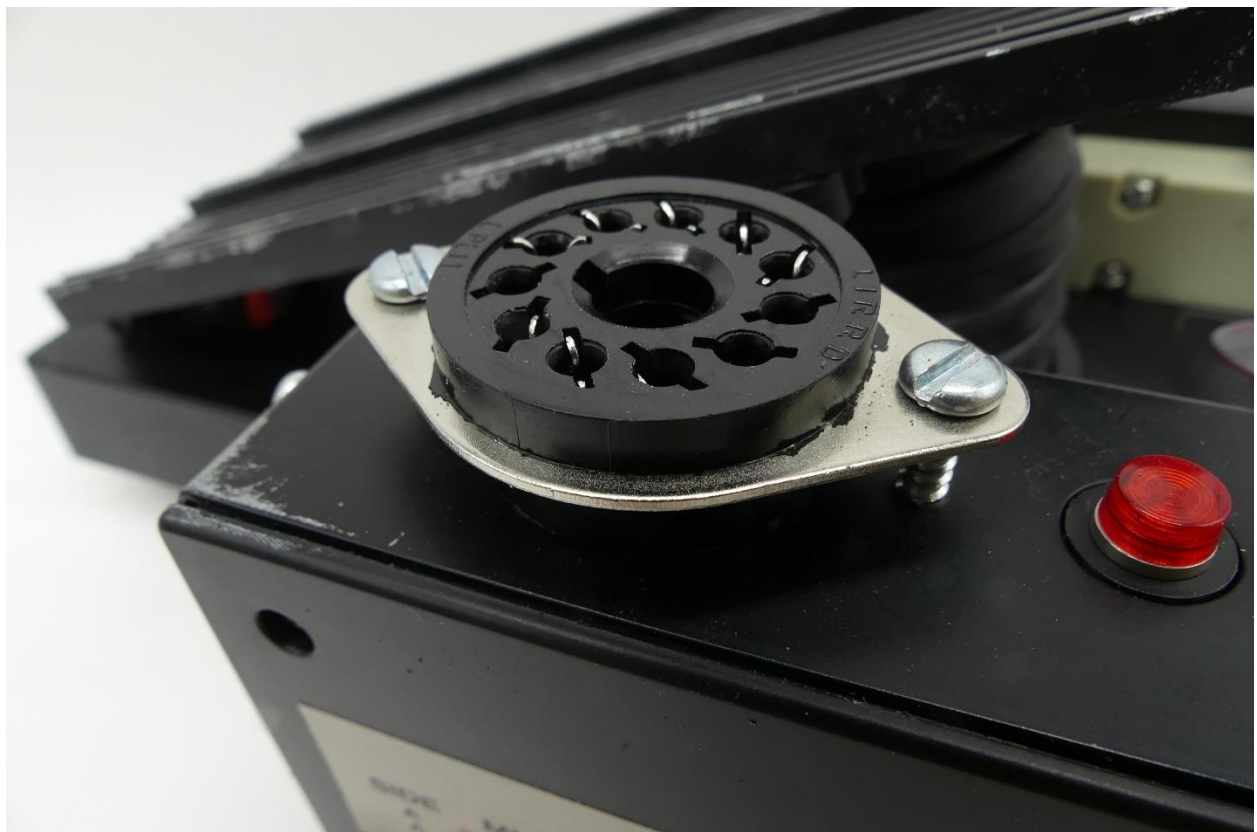
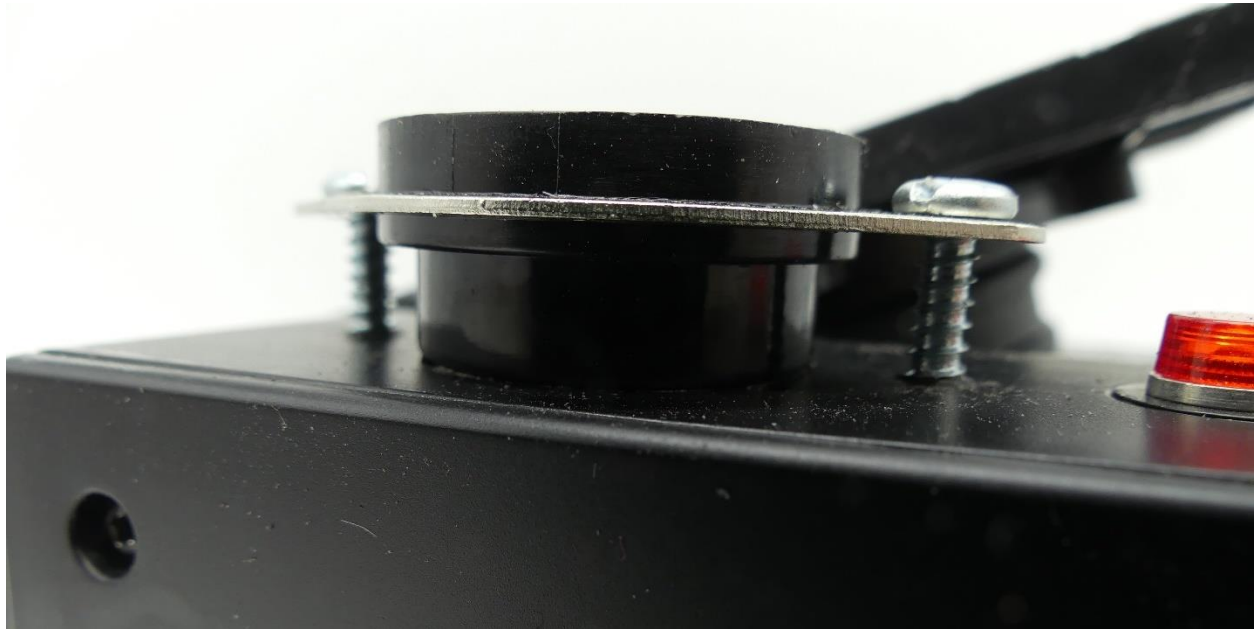
To use the real socket, you need to bend the leads in so that it can at least test fit with the current socket hole in the trap side box. The un-altered socket is on the left and the one on the right has the leads bent inward:



Just setting the socket in the hole for a test fit:



The new Slotted Sheet Metal screws are longer than the original screws so use these new screws to hold the socket in place..



If you use a curved file to slightly enlarge the hole, the socket sits a bit better. The socket does NOT slide into the hole, this is just to get some ridges on the bottom of the socket to sit in the hole instead of not quite fitting in the hole.

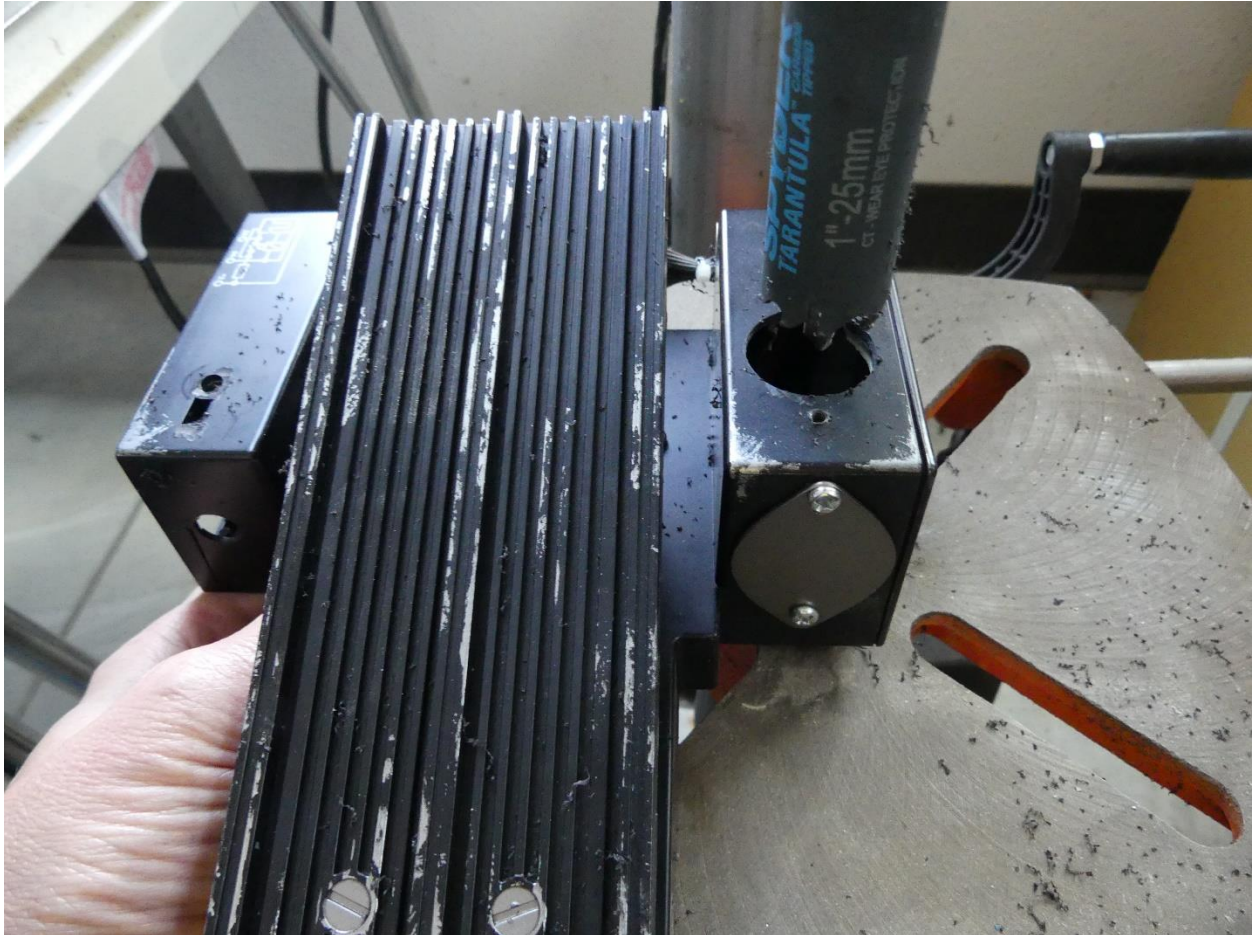
Here is what the hole looks like after a bit of filing:



The sheet metal screws (pointed ends) can be screwed into the existing holes.

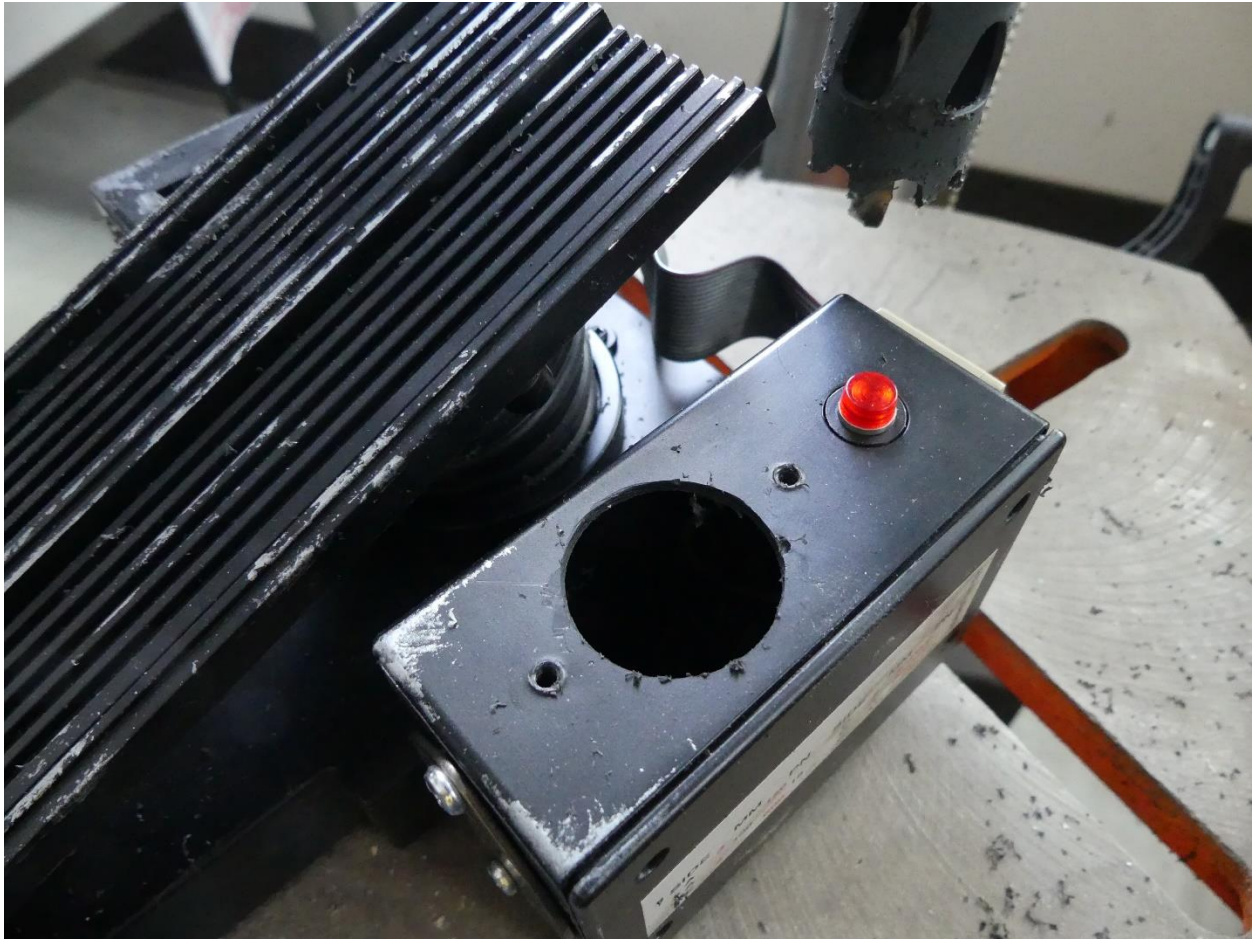
If you wish to use the Machine screws, either the Slotted head or the Button head with a hex drive, I predrilled the hole with a 3/32" bit. The screws are fairly tight into the hole, so the lock nuts are needed and you do not have to remove a bunch of structures on the inside to make room for a lock nut.

To use the spacers, a larger hole is needed to allow the socket to sit down into the box. You may be able to do this with a Dremel, but it was easier for me to use a drill press and a 1" hole saw. I tried to do this with a hand drill but could not figure out a way to steady the bit.



I just held the pedal in place with my left hand by clamping the middle of the pedal base to the table of the drill press.

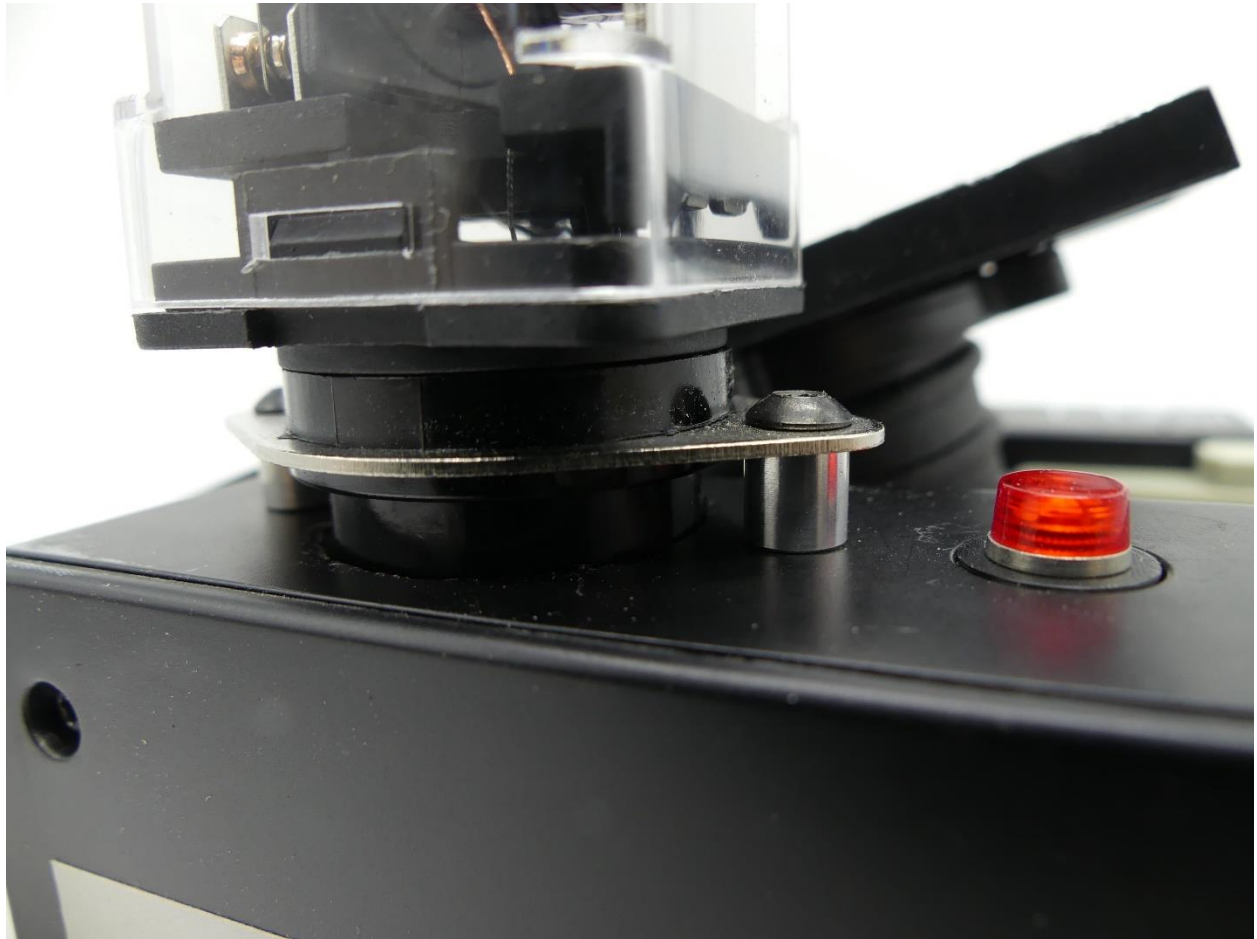
Here is what the hole looks like after the 1" hole say is drilled:



Make sure the side is on so it will not interfere with the socket either. Now the socket should easily fit all of the way into the hole:



Using the Black button head machine screws and the spacer this is how the socket sits:

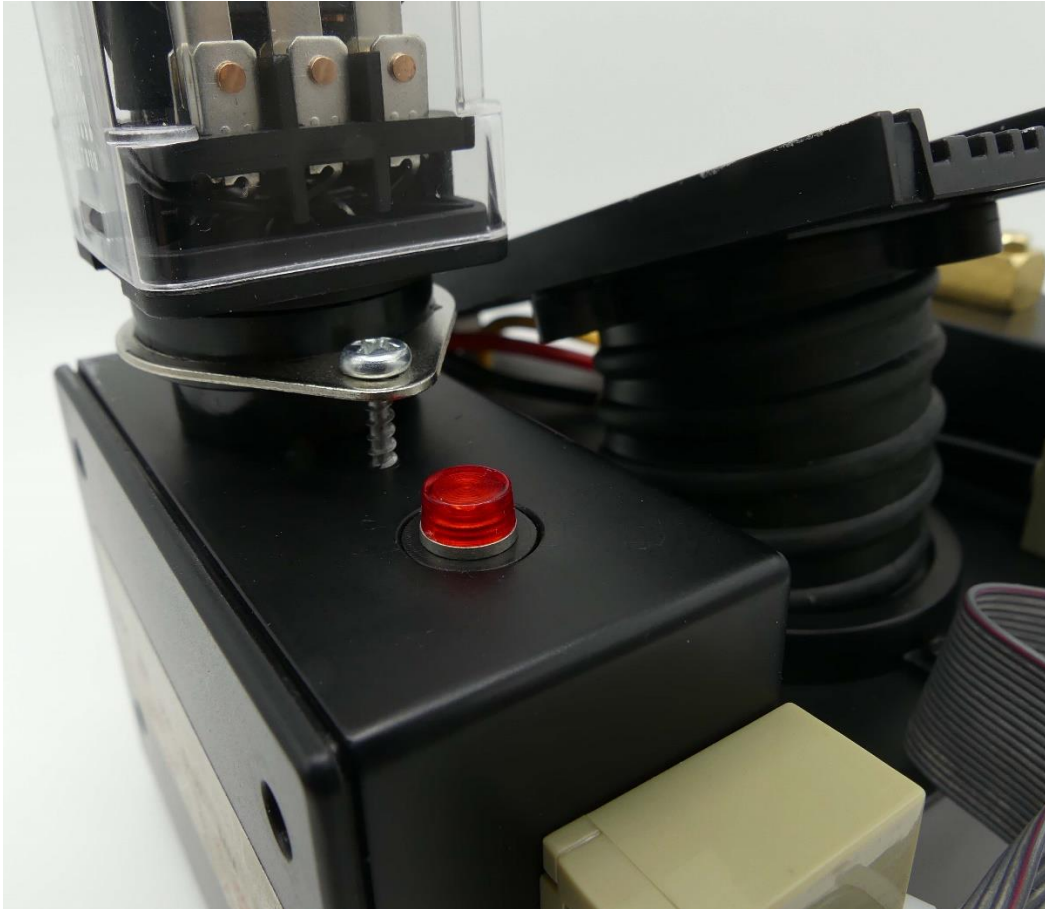


I used a 3/32" drill to drill out the existing holes for the screws, and used a 5/64" hex (allen wrench) to tighten the machine screws.

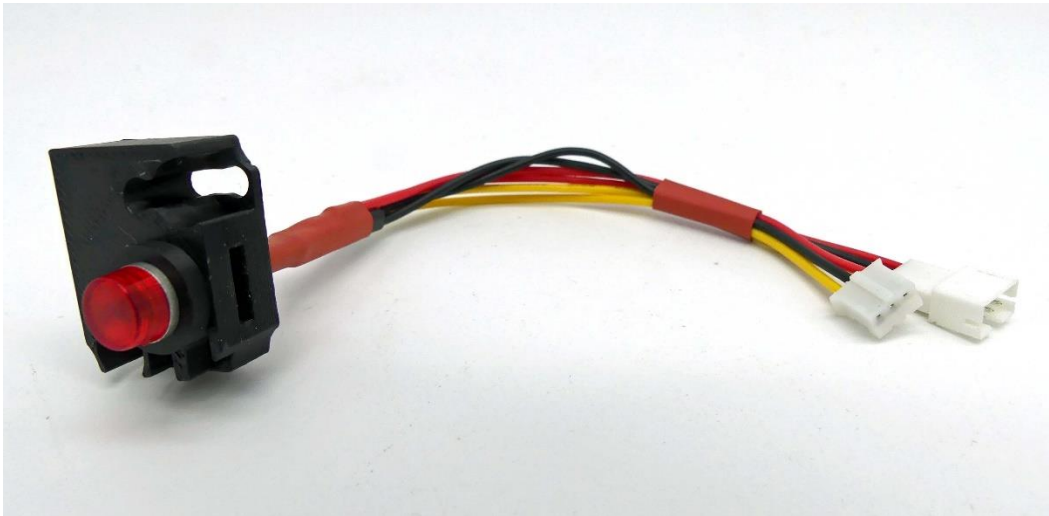
When you mount the socket, decide which way you are going to orient the socket so the relay faces the way you want. Different reference photos show the movie props with the relay facing different ways.

If you did not open up the pedal you are done! Otherwise the final step is to close up the trap shell. See the "Reassembling the Ghost Trap Pedal" instructions near the end of this document.

Installing the Pedal Arcoelectric Replacement Indicator

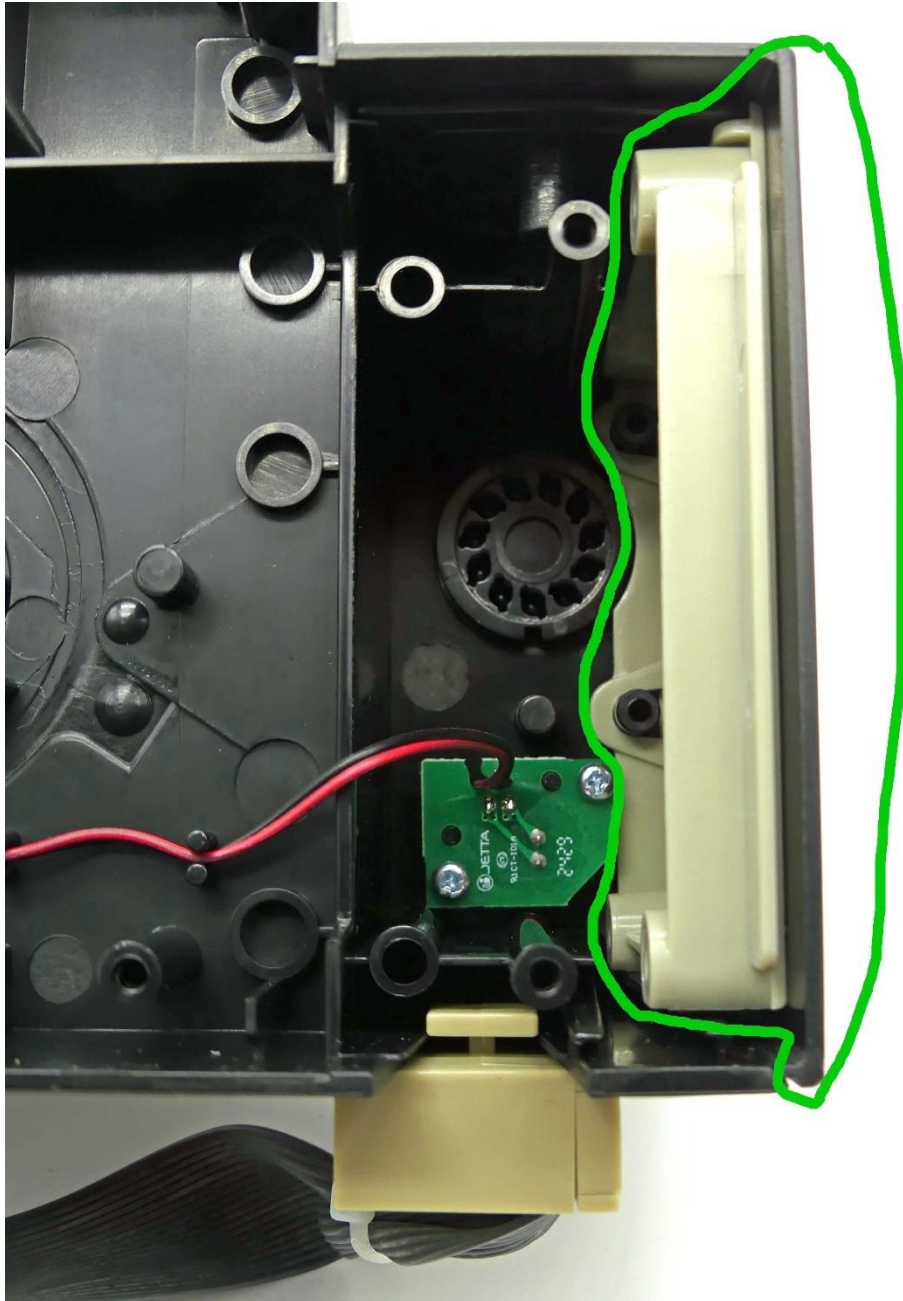


Here is the one fully assembled part in this kit:

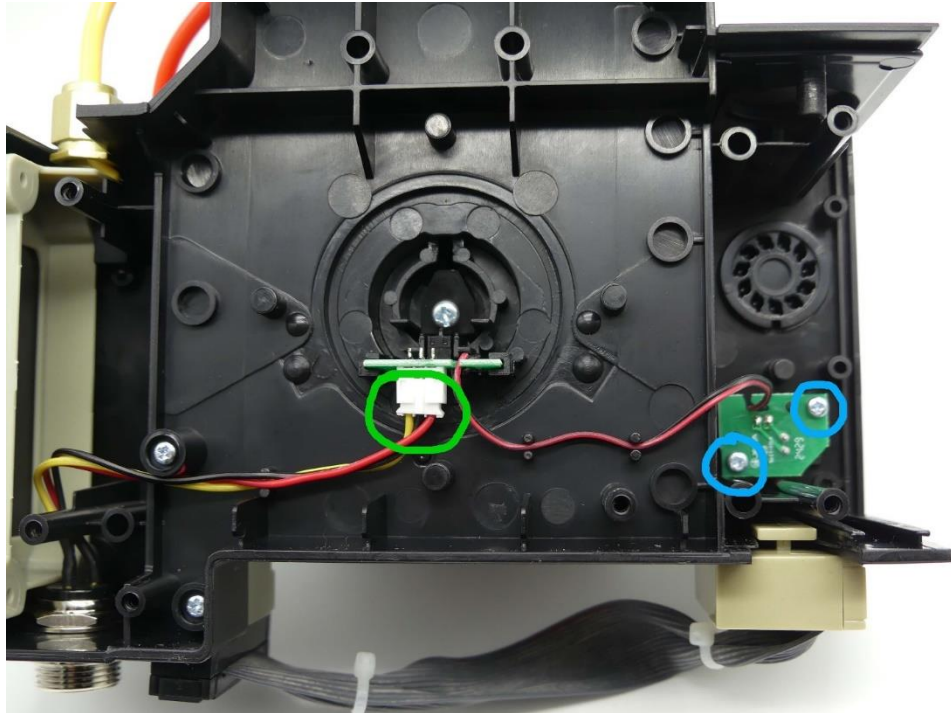


The first step is to open up the trap shell. See the “Disassembling the Ghost Trap Pedal” instructions near the end of this document.

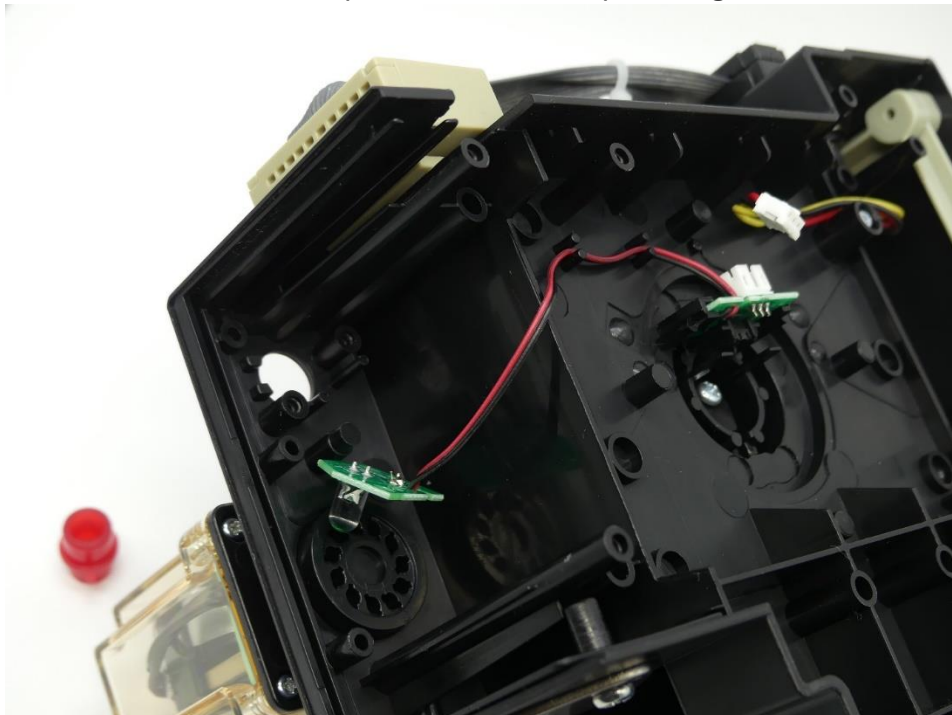
Next remove the side panel that is next to the socket. Not necessary, but does allow more room for the installation. Just lift that side panel up and off of the pedal:



Next, remove the two screws that hold the existing display in place (circled in Blue/Cyan) so the circuit board can be lifted out. Also unplug the 3-wire cable from the center circuit board (circled in green):



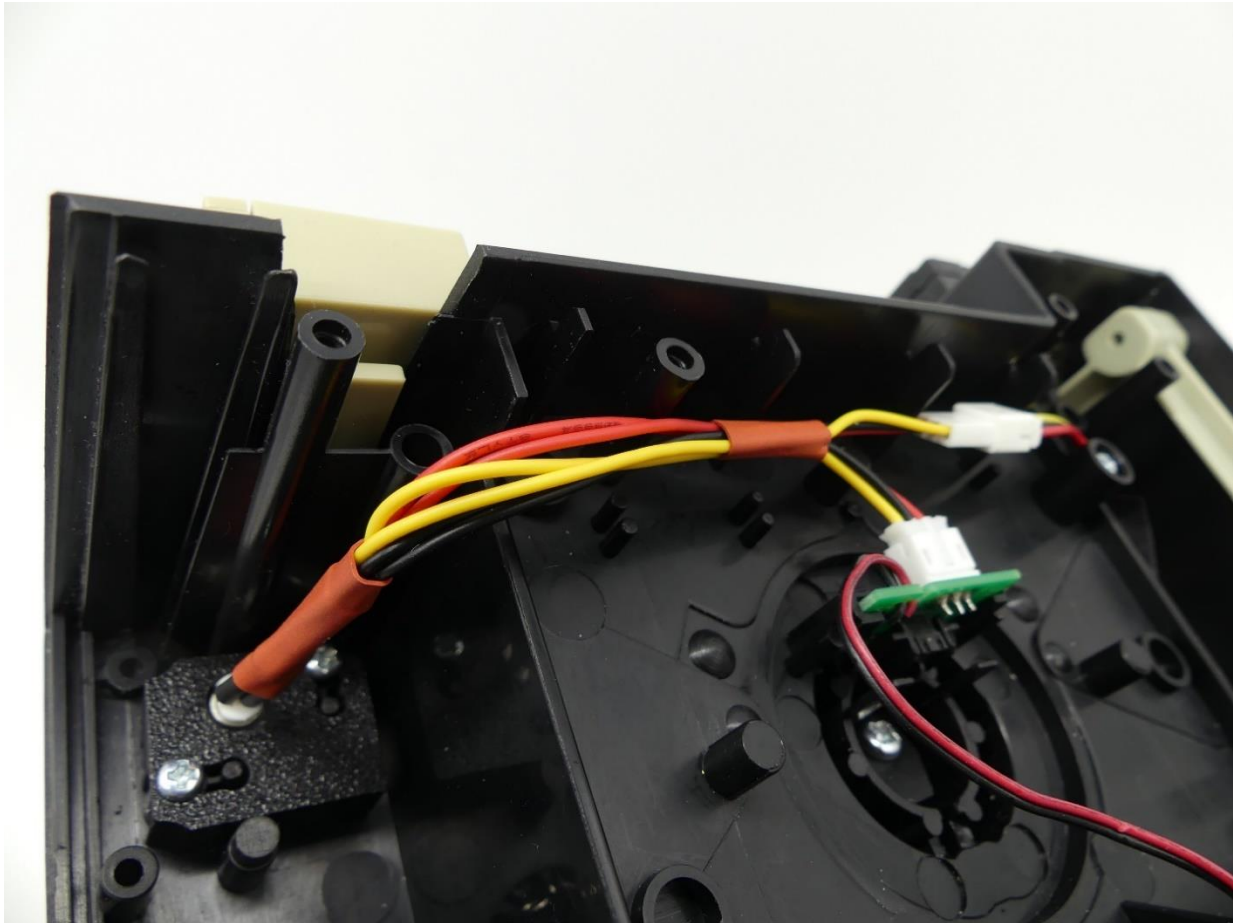
Removing the circuit board and red plastic lens ends up looking like this:



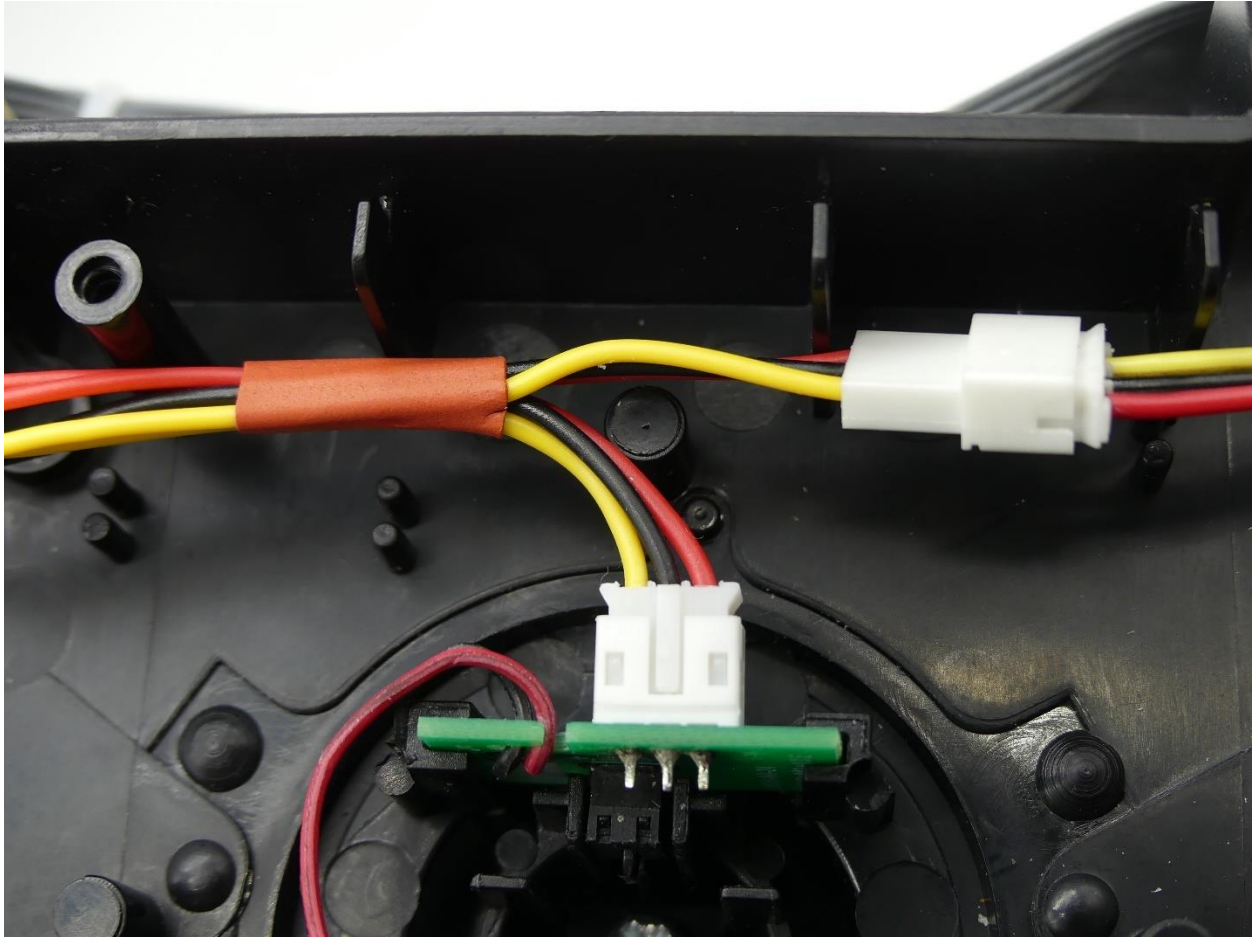
Now install the replacement part cable assembly. The Arcolectric indicator's 3D printed housing mounts in the same place as the previous circuit board and red plastic part.

The 3 pin plug inserts into the socket on the center circuit board

The 3-pin plug from the pedals cable connector plugs into the 3-pin socket on the cable assembly:



Try and keep the cables from blocking/covering the black molded post that is just above the circuit board. If needed, you can use tape to hold the new cables in place.



This post is below the mounting screw in the bottom of the pedal. When you place the pedal back together you want to look through the mounting hole and make sure no wires are going to be clamped in this area between the mounting screw hole and post.

Slide the side back on (if it was removed).

What to do with the dangling original circuit board that has the LED on it?

- 1) Not preferred, but possible: You can let it dangle in the side chamber. It is probably best to tape it down or pack something in there, so it does not rattle. For the pedals I have modded, the Arcoelectric still lights up, but not quite full brightness. There is some chance that your particular pedal's parts end up making the original LED brighter and the Arcoelectric dimmer. So this is not the recommended best solution, but should work.
- 2) The preferred solution: cut the 2 wires so that the original LED circuit board is removed. The cut wire ends should then be covered (electrical tape or heat shrink) so they do not accidentally contact anything inside the pedal.
If the wires are left fairly long, then tape them down so they do not make any sounds when the pedal is moved around.

The final step is to close the trap shell. See the "Reassembling the Ghost Trap Pedal" instructions near the end of this document.

All done!

Disassembling the Ghost Trap Shell

First remove the main Ghost Trap containment portion of the trap from the “Shell” holder with handle. We only need to open up the shell with handle portion of the Ghost Trap assembly. This is done by pulling back on the sliding switch on top of the handle and holding the switch in the back position then pulling the main containment portion out from the shell.



There are 10 (!) screws that need to be removed but first the plastic “covers” for each need to be removed:

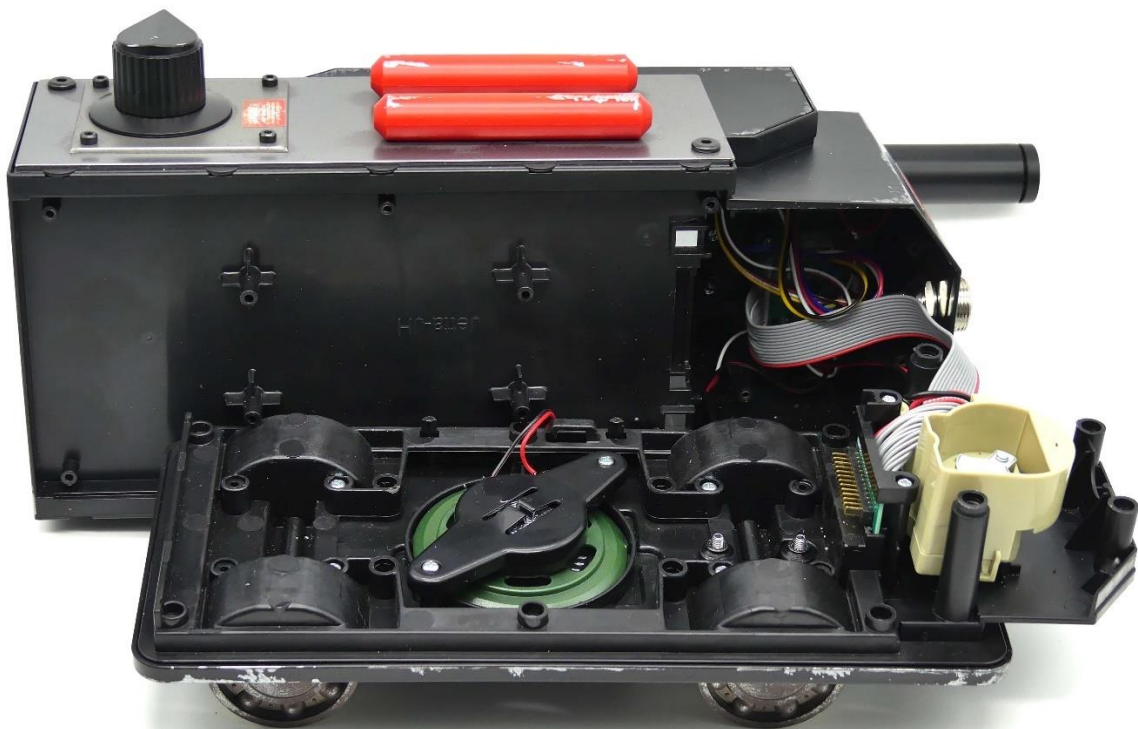


There are several ways to try and remove them.

- 1) Use a dental pic with holed end. I was successful in removing a few with this, but some just would not budge.
- 2) Use a screwdriver with tip that is just a bit larger than the hole. I jammed this in, then tilted the screwdriver as much as possible and pulled hard. This also removed a few, but not all of them.
- 3) Use a drill on low speed. This worked for the rest, though it does a bit more damage to the plug / cap that covers the screw. Be sure to use a low speed because you want the drill bit to catch, but not actually drill a clean hole into the plug / cap. Also do not drill too deep or you can damage the head of the screw making the removal a pain!
- 4) For the really stubborn plugs/caps use a bit that is almost the same size as the plug/cap. This will destroy the plugs/caps but it will most certainly remove it. Same cautions as step #3 above: do not go too deep or too fast so you do not contact the screw head with the drill bit.

Once all 10 plug/caps have been removed, use a Philips head screwdriver to remove the 10 screws.

Now carefully pull the bottom section from the top. There is one pair of wires that go between the base speaker and the top. The speaker connection is not strain relieved so take care not to stress this or you may break the wires at the speaker connection and would need to strip the wire end and resolder it to the speaker.

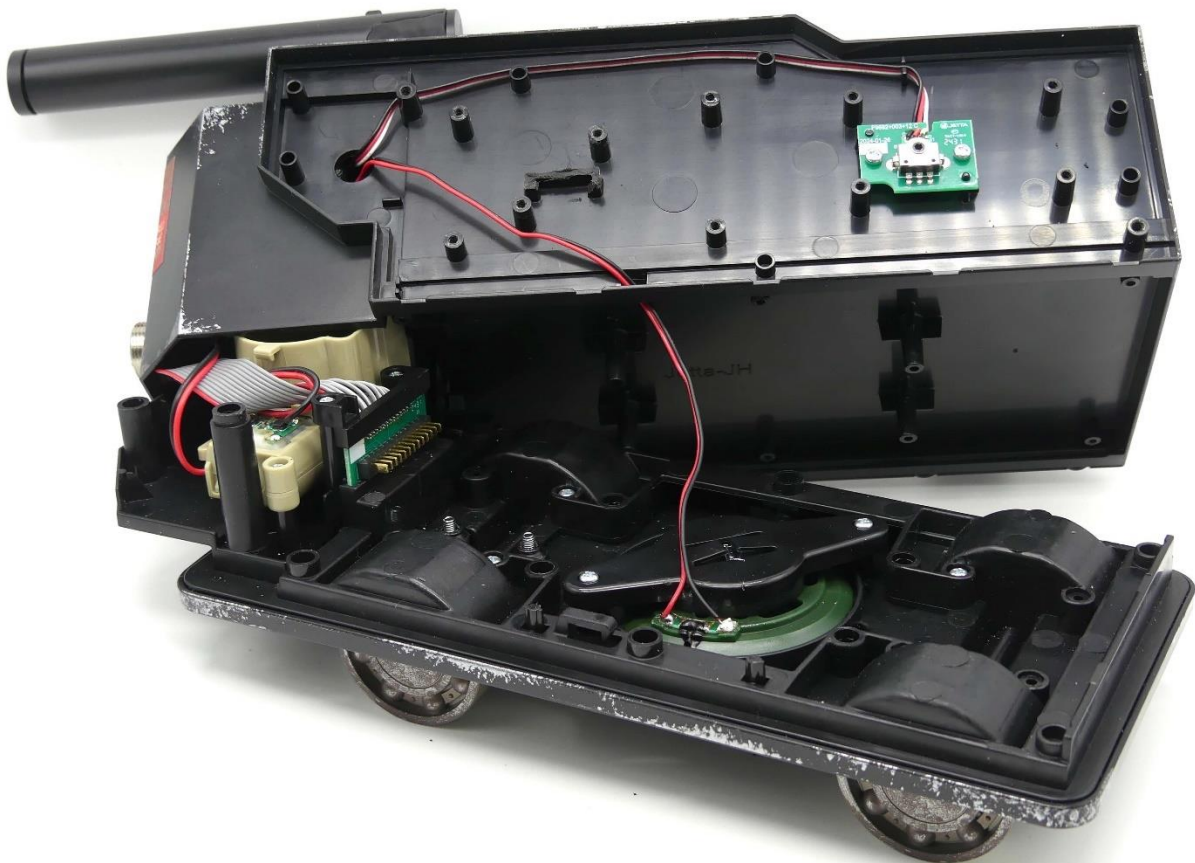


If you want more slack for the speaker wire, it does require that you remove most of the side pieces from the trap shell. The side that houses the CAL-R resistor.

There are 12 screw that need to be removed.

- 1) 2 that hold the CAL-R resistor (5/64" Allen wrench)
- 2) 4 that hold the plate around the CAL-R resistor (5/64" Allen wrench)
- 3) 4 that hold the knob plate (5/64" Allen wrench)
- 4) 2 that hold the overall plate (2.5mm Allen wrench worked best for me)

Then the large plate and several supporting pieces need to be removed. Now you expose the speaker wire so can extend the "slack" in that wire.



Reassembling the Ghost Trap Shell

If you removed the side portion to release the base with wheels and speaker, then you would have to reassemble that section first. If removed, thread the speaker wire back through the side panel and then plug the speaker wire back into the main circuit board. Make sure to properly dress the speaker wire back in the wire clip on the outside of the shell then reattach all the pieces that were removed, in reverse of the order that they were removed.

Now we can put the two halves back together.

Make sure the wires are placed so they do not get trapped between posts that get screwed together and are not caught between the outside edges of the two halves that are going to be placed together.

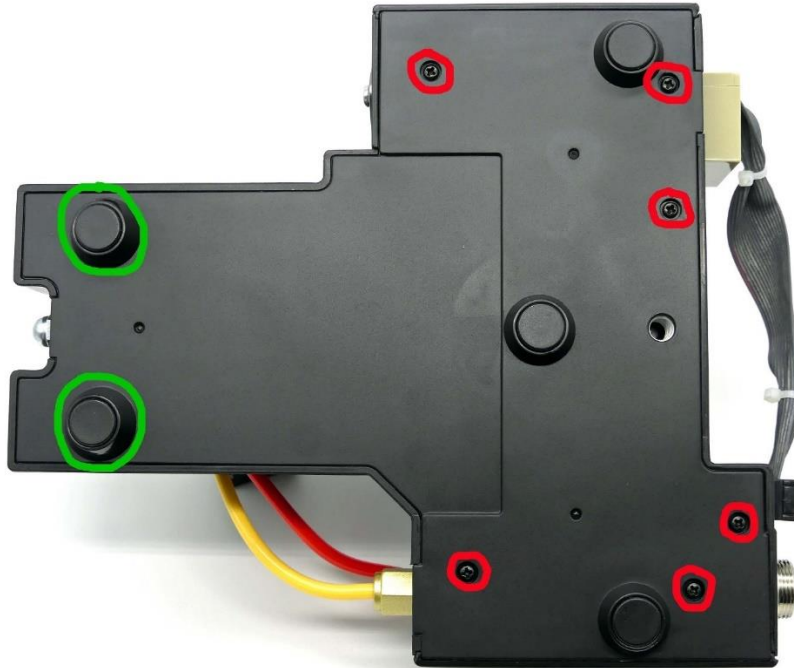
Carefully push the two halves together and re-inspect for any trapped wires before you go to screw the 10 screws back in.

Re-install all 10 identical screws to secure the base in place.

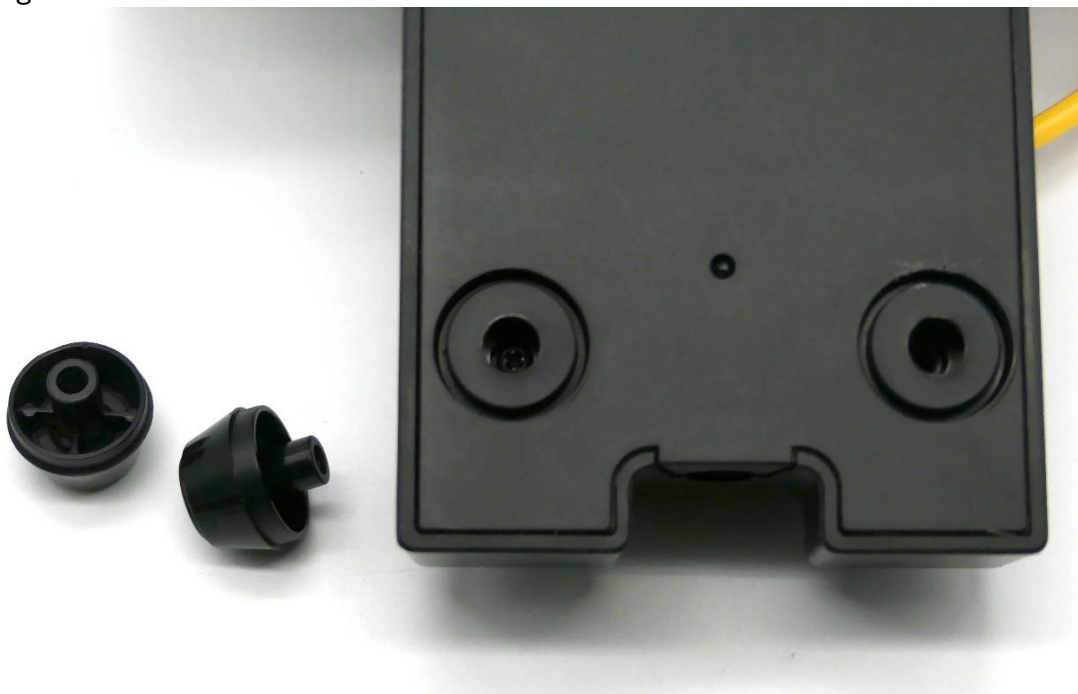


Disassembling the Ghost Trap Pedal

There are 8 Philips head screws holding the bottom of the pedal in place. Six that are easy to access (circled in red), and 2 that are buried under foot pads (circled in Green):



For the two feet marked in Green, with strong fingers you can rotate the feet to break any adhesive. Then rotate back and forth while pulling and the feet can “just” be pulled off revealing the screws underneath.



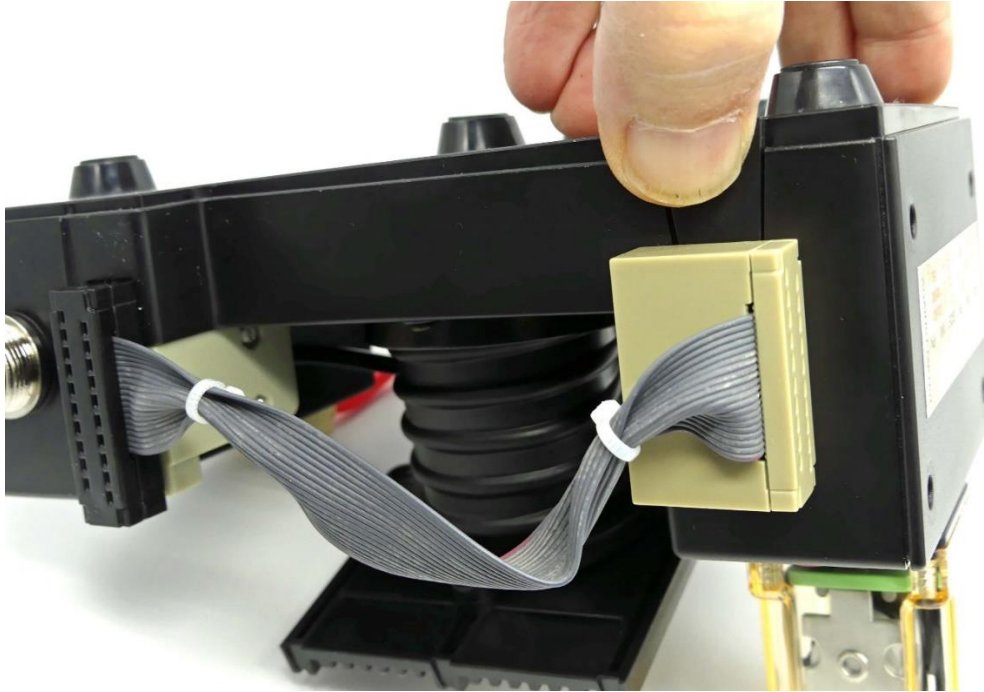
I did have one very stubborn foot, and this is an alternate but more destructive way to get at those two screws in the feet by removing the pads. I used a small flat screwdriver to lift up a section of the pad and a second small flat screwdriver to wedge under the pad. The pads are held on with some adhesive and also have a post that helps to center the pad:



I then used a small Philips screwdriver that fit into the hole. Can't see the screw and it behaves as if it is trapped inside with a larger head on the screw than the hole in the foot...



With all eight of the screws backed out (only two still in the base) it is easiest to remove the base off by starting with the tab that holds up the yellow tubing's connector:



This should completely lift off, but be aware that the small metal acorn-ish part will probably fall out also – don't lose that:

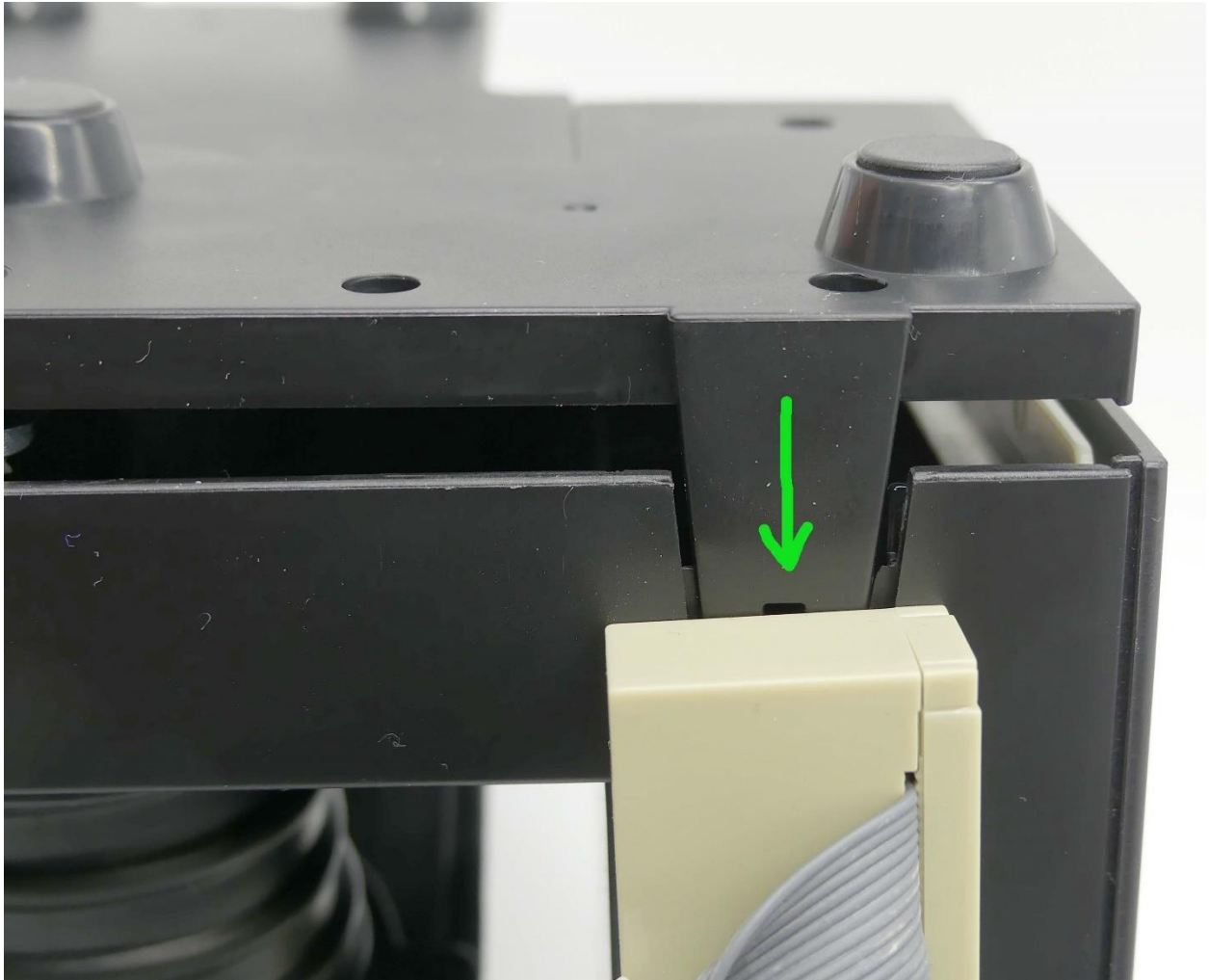


Reassembling the Ghost Trap Pedal

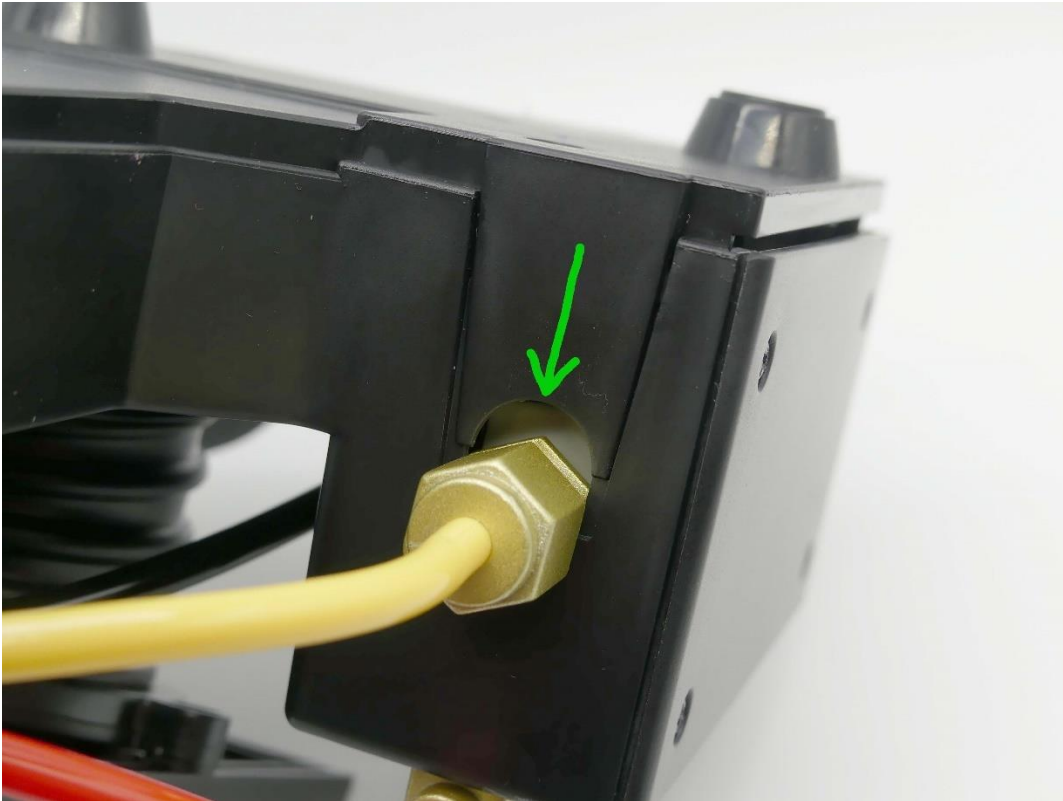
Place the main pedal part face down on the pedal plate.
Make sure the side plates are fully set in position.

Make sure the ribbon cable connector, the yellow tubing's connector, and the silver acorn-ish nut is in place.

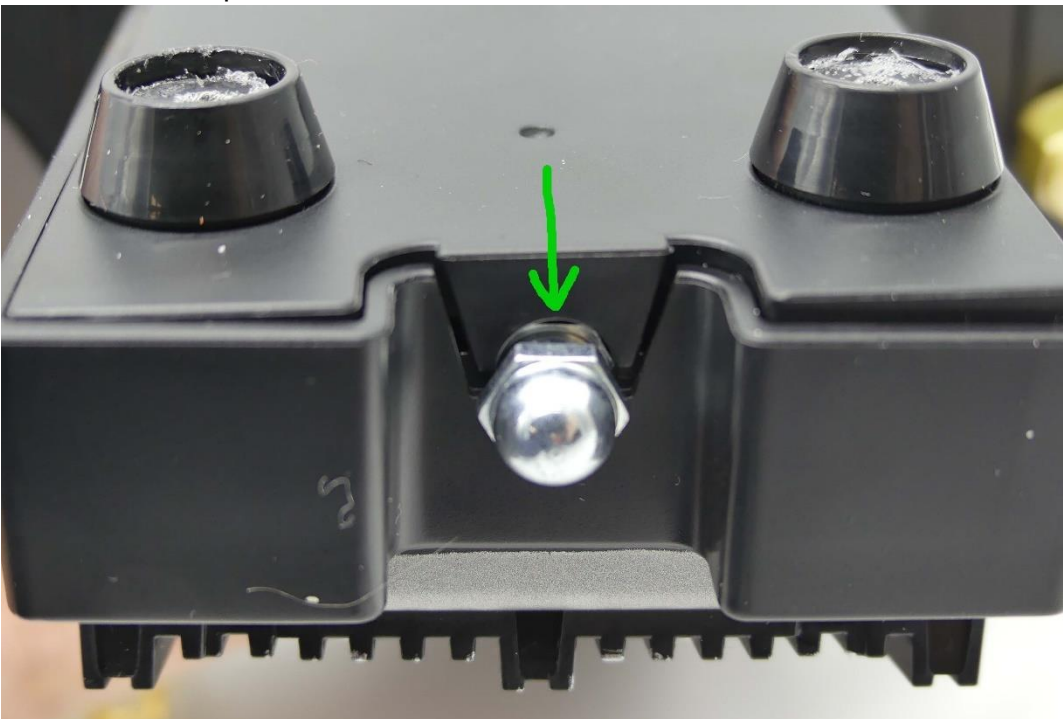
There are several places to make sure the bottom goes together properly.
At the ribbon cable connector capture:



At the yellow tubing's connector capture:



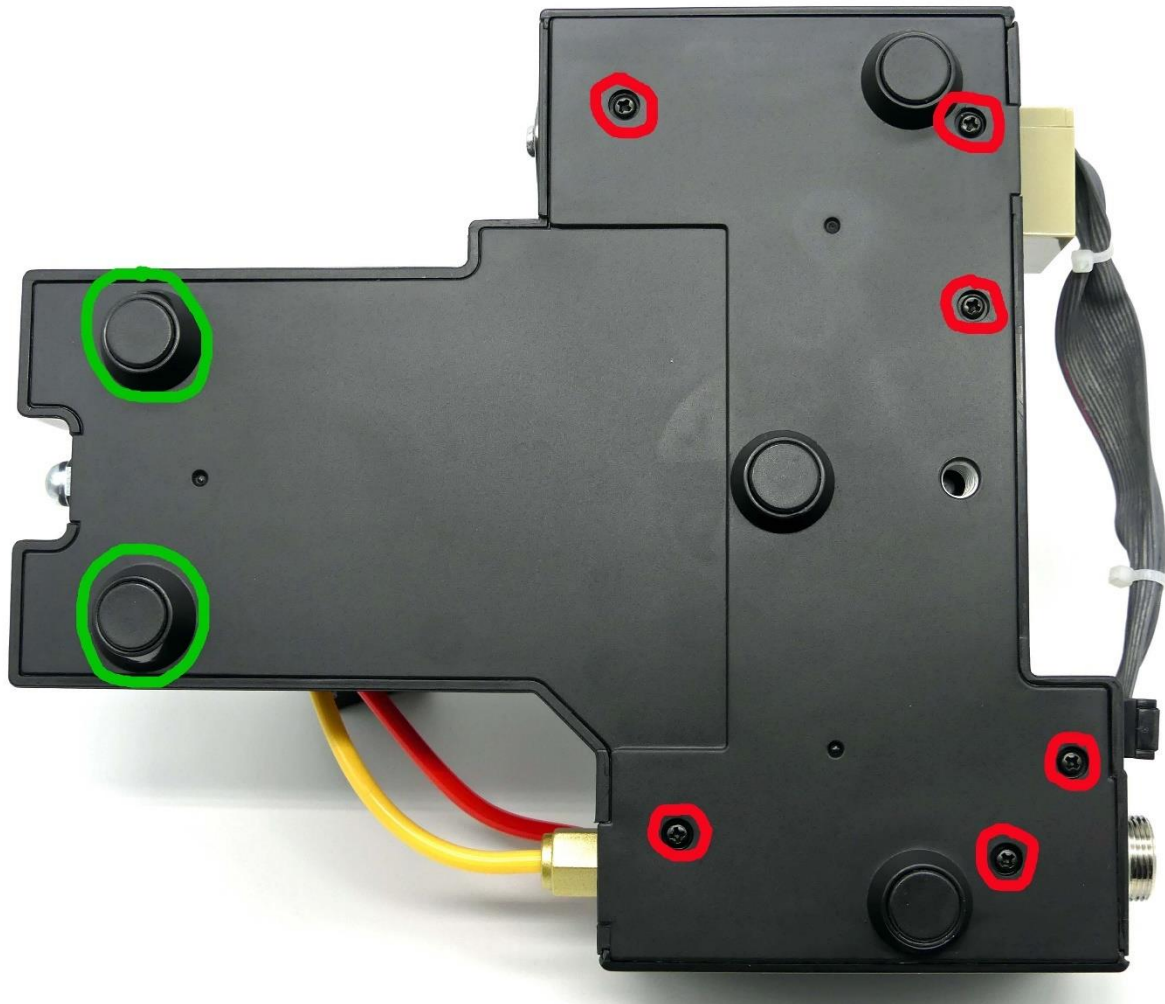
At the acorn-ish nut capture:



Check to make sure no wires are visible in the mounting screw hole. If you can see them they may get damaged and so you will need to remove the bottom and make sure the wires are placed differently and possibly held with tape to keep them out of this area:



Tighten the 2 screws in the feet (marked in Green), and re-install and tighten the 6 screws (marked in red):



Place the two foot-pads (or plugs if you removed them) back into the two front feet location (marked in green above).