

**Stern - 2016
Ghostbusters (GB)**

Fire House Mod v5

The “Fire House Mod” is hand crafted in Australia by a GB owner for GB owners around the world who love their game and want to transform their Stern issue Fire House to a more realistic version of the iconic building - New York’s House & Ladder Ghostbusters Fire House Building to add a bit more atmosphere. This mod is a relatively simple one to fit - no soldering and no complex tools required - just follow the detailed instructions to install



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1 - Mod Parts

When you unpack your mod, you will find the following components with the mod already pre-assembled (see photo below):

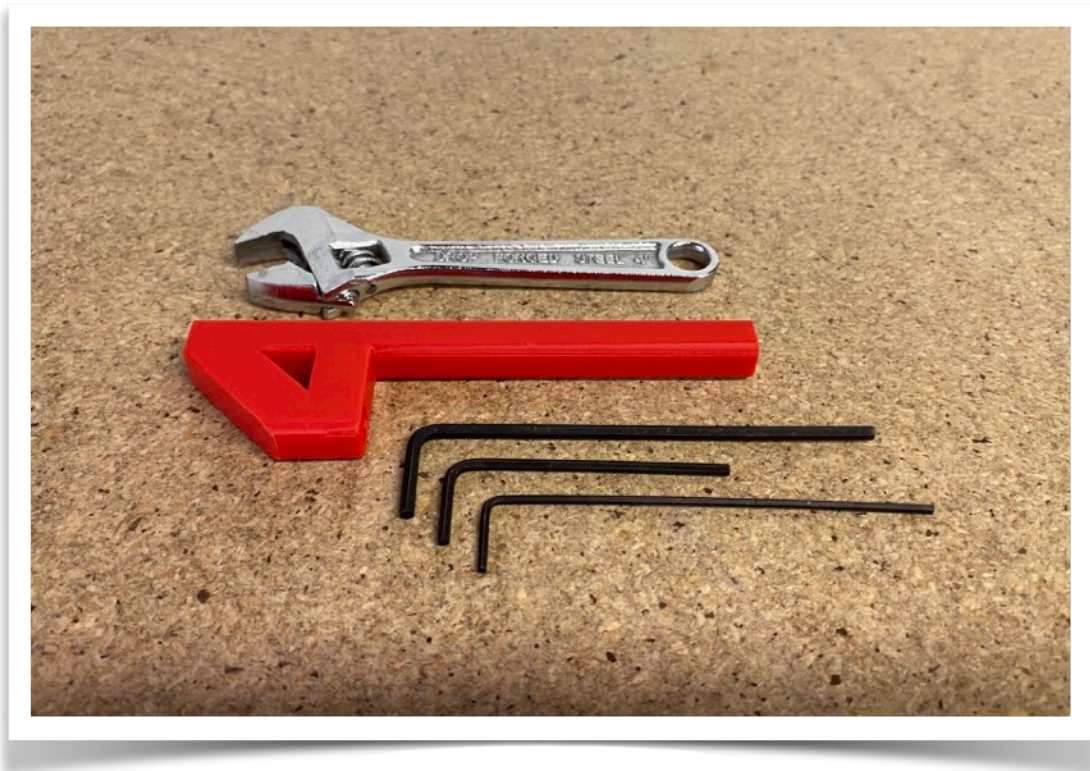
- 1 x **Fire House Building** (with either no spinner topper OR GB Logo Spinner Topper OR Ecto Lighter Spinner Topper with lighting cable etc)
- 1 x **Fire House Base Plate** and **Base Support Bracket** (assembled) - (photo below is a v4 as missing the bollards - need to update photos next time I build some more v5's)
- 1 x **Building Lock Bracket** - now fitted to the base plate
- 3 x **Doorway Bollards** - not supplied anymore with the new Fire House v5 - need to update photo
- 1 x **Filter Bracket** (with pink filters installed)
- 1 x **Custom Home Printed Skinny Finger Nut Tool** (3 x proto Firehouses had Blue and 20 x Production Batch was Red, 10 x 2nd Production Batch was Yellow)
- 1 x **M3 x 16mm Bolt / Washer and Nut**
- 1 x **M3 x 10 Magnet** (Spare)
- 1 x **1.5mm Allen / Hex Key** (only for the Ecto Lighter Spinner Topper)
- 1 x **2mm Allen / Hex Key**
- 1 x **2.5mm Allen / Hex Key**



2 - Tools and Safety Notes

Tools necessary to install the mod as supplied

- 1 x Small Adjustable Spanner / Wrench (not supplied)
- 1 x Custom Home Printed Skinny Finger Nut Tool
- 1 x 1.5mm Allen / Hex Key (only for the Ecto Lighter Spinner Topper)
- 1 x 2mm Allen / Hex Key
- 1 x 2.5mm Allen / Hex Key



SAFETY NOTES:

Make sure that your machine is powered off and the power cord running from your machine to the wall outlet has been turned off / disconnected to remove all risk of electrocution.

Read through all these instructions carefully & completely FIRST before attempting the installation of this enhancement. Although you may know your machine inside and out, there are a few things to consider before proceeding.

3 - Mod Pre-assembly

Your mod is supplied pre-assembled to test fitment before being sent to you making the install very simple and to keep the mod safe during transport to you.

The Mod will fit all levels of the game - Pro, Premium and LE. The Fire House Mod compliments the other scaled Swinks building mods - Library and Flat Iron Buildings in the game.



4 - Game Preparation

So remove the following:

- lockdown bar
- playfield glass
- playfield out on to it's pegs or playfield brackets
- remove all the balls in the game as you will need to lift the playfield up to connect the mod lead to a GI socket later in the assembly.



NOTE: These instructions are the same for all version of the game Pro / Premium / LE Version of the mod.

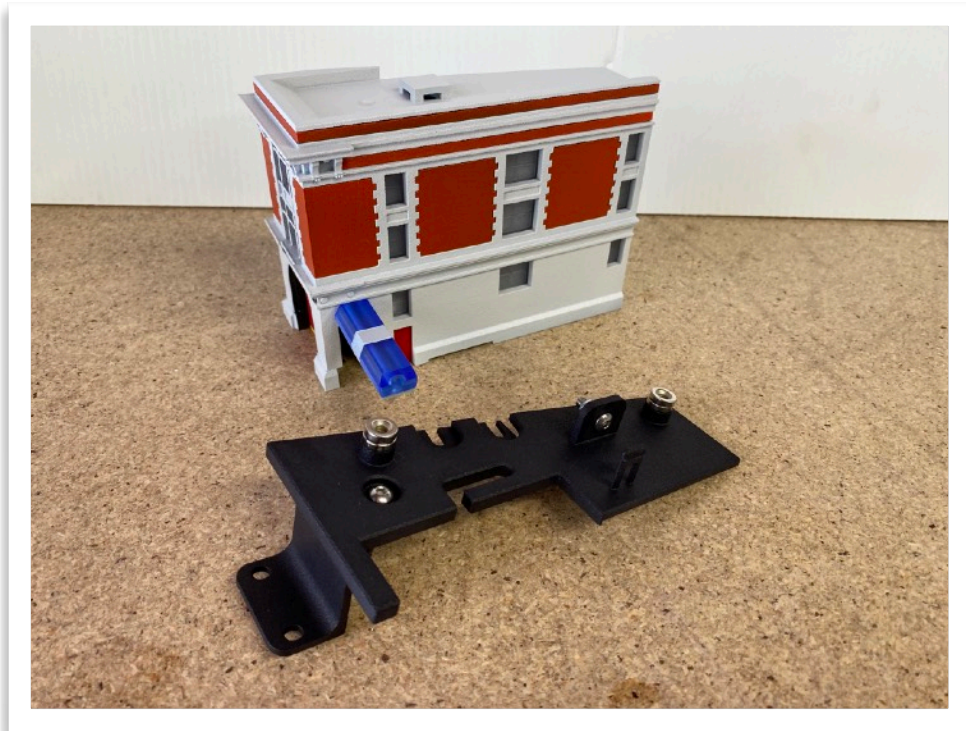
All images in this manual are of the Fire House fitted to a Pro Game, so some ramp screws will be different when you get to the step of removing Stern's Fire House.

5 - Mod Preparation for Installation

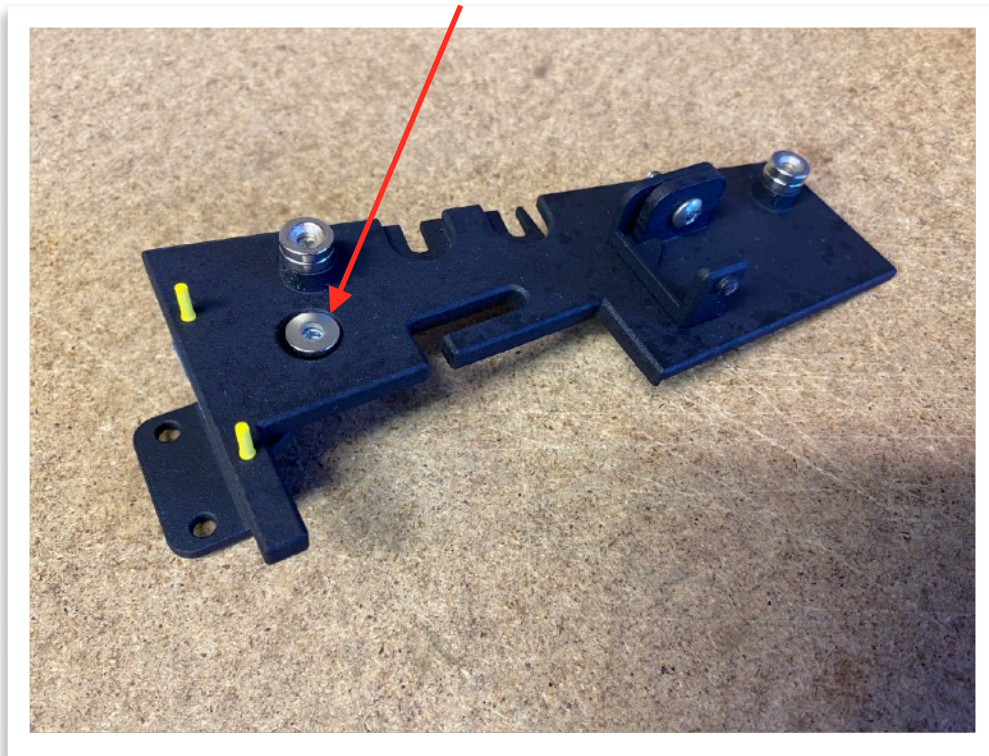
The Fire House Mod is already fastened to it's base plate.



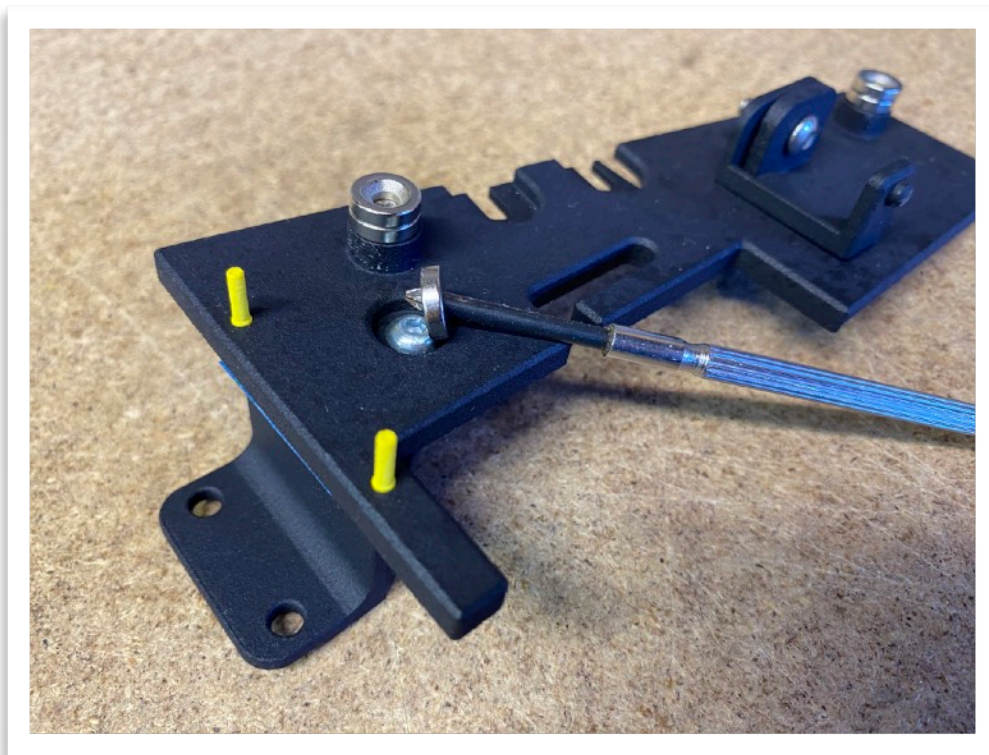
Simply lift off the building from it's main Base Plate as it is just magnetically held together.



In the 3rd Batch of Fire House (the v5's) the magnet was stored in a different location (no longer in the goodie bag) as when purchased the magnetic polarity can vary so when the magnets are assembled to the base plate and when the building is married up to the base plate I relocate the spare magnet on the front mount bolt so not to get mixed in the goodie bags with the incorrect polarity set going with the wrong mod.



To remove to gain access to the bolt simply lift off with a jeweller screw driver, tooth pick or something similar - take care as to not be too forceful as can crack the magnet.



6 - Remove the Stern Fire House & Linked Components

Time - 20 minutes after the playfield is on it's pegs / service brackets.

First place a microfibre cloth on the playfield near the library plastic to protect your playfield for potential damage in front of the library area and to store bolts etc.

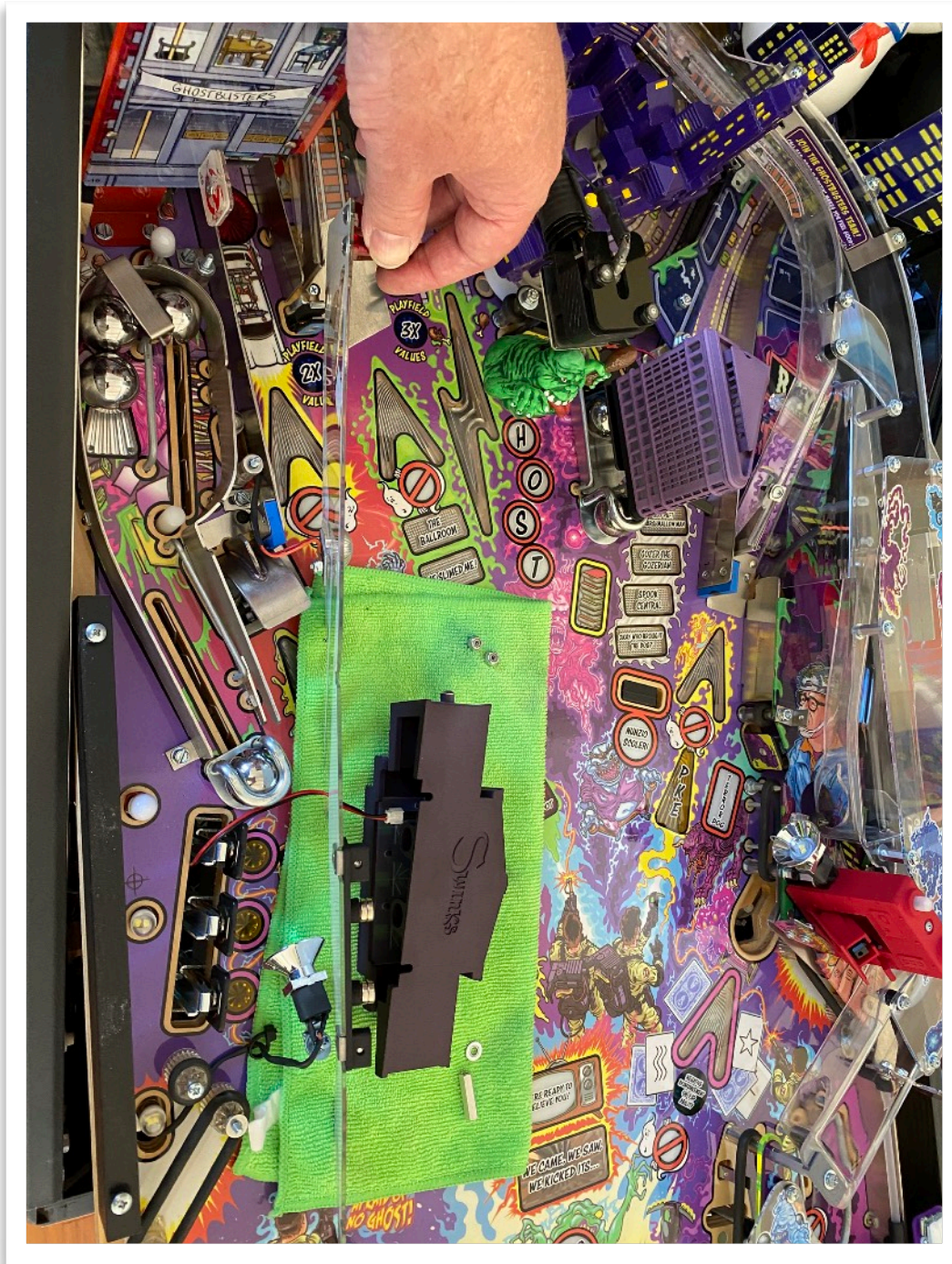
If you have a Swinks library - simply lift off it's base plate and place on the microfibre cloth.

You will need to start by removing the library plastic - 2 x nuts, 2 x screws and 1 x hex post (that supports the spotlight) shown with yellow circles.

Then once everything is removed / loosened slide the plastic under from under the 2 screws. Place the plastic to the side onto the microfibre cloth.



It should look like this:



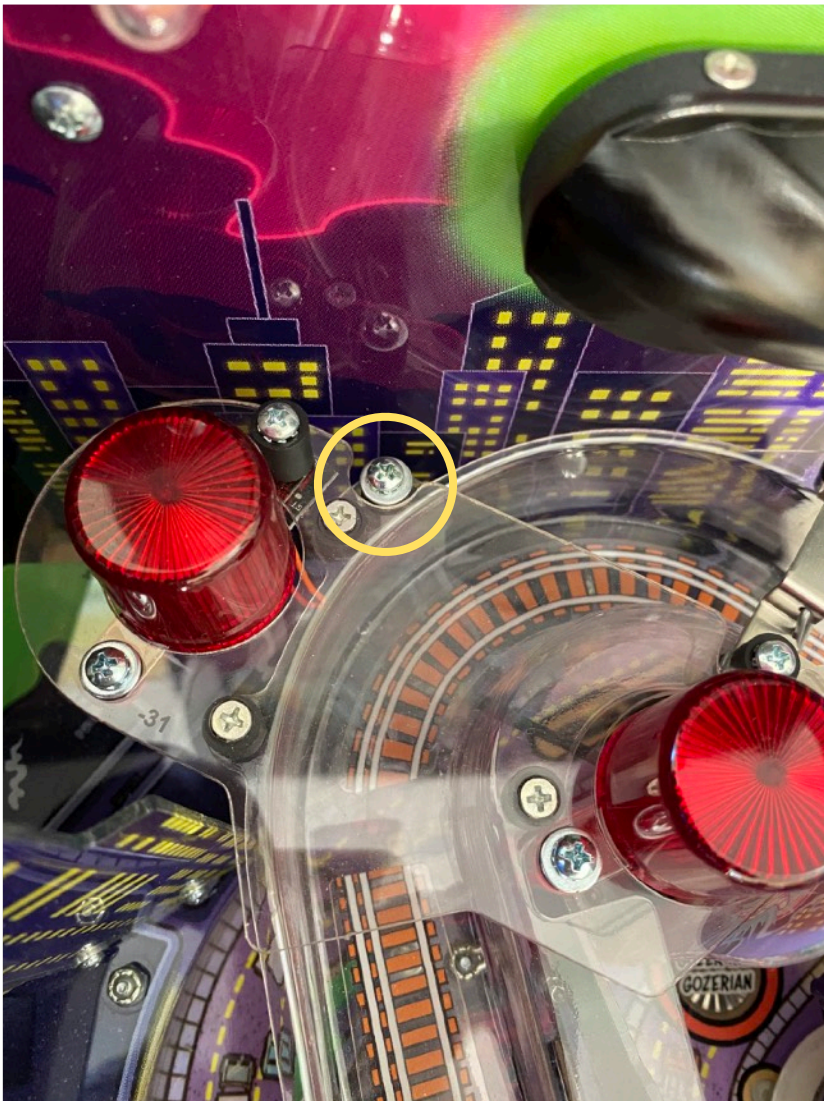
Next you have to work on removing the Stern Fire House shown in the yellow circle above but refer to the next page for what to do. I will document the process with removing part of the ramp mounting. **For the Premium / LE you will need to look into what screws need if any to gain access for partial ramp access / removal.**

Remove the 2 bolts holding down the hex head screws from the base of the red bracketed Stern Fire House.



Next you need to remove this 3rd hex head screw that is a little under the ramp (plastic on a Pro). This is probably the most awkward to get to and will require some screws to be removed that hold the ramp in place - see next page.

Start by removing the 2 screws at the ramp flap. Set the 2 screws aside on the cloth.



Remove this bolt, washer and spacer from the long hex post and set aside on the cloth.

Lastly remove this screw and washer from the ramp and long hex post and set aside on the cloth.



Now you will have enough flex in the ramp to lift and side shift the ramp a little to the right to gain access to the last screw holding the Stern Fire House in place shown with the yellow circle.

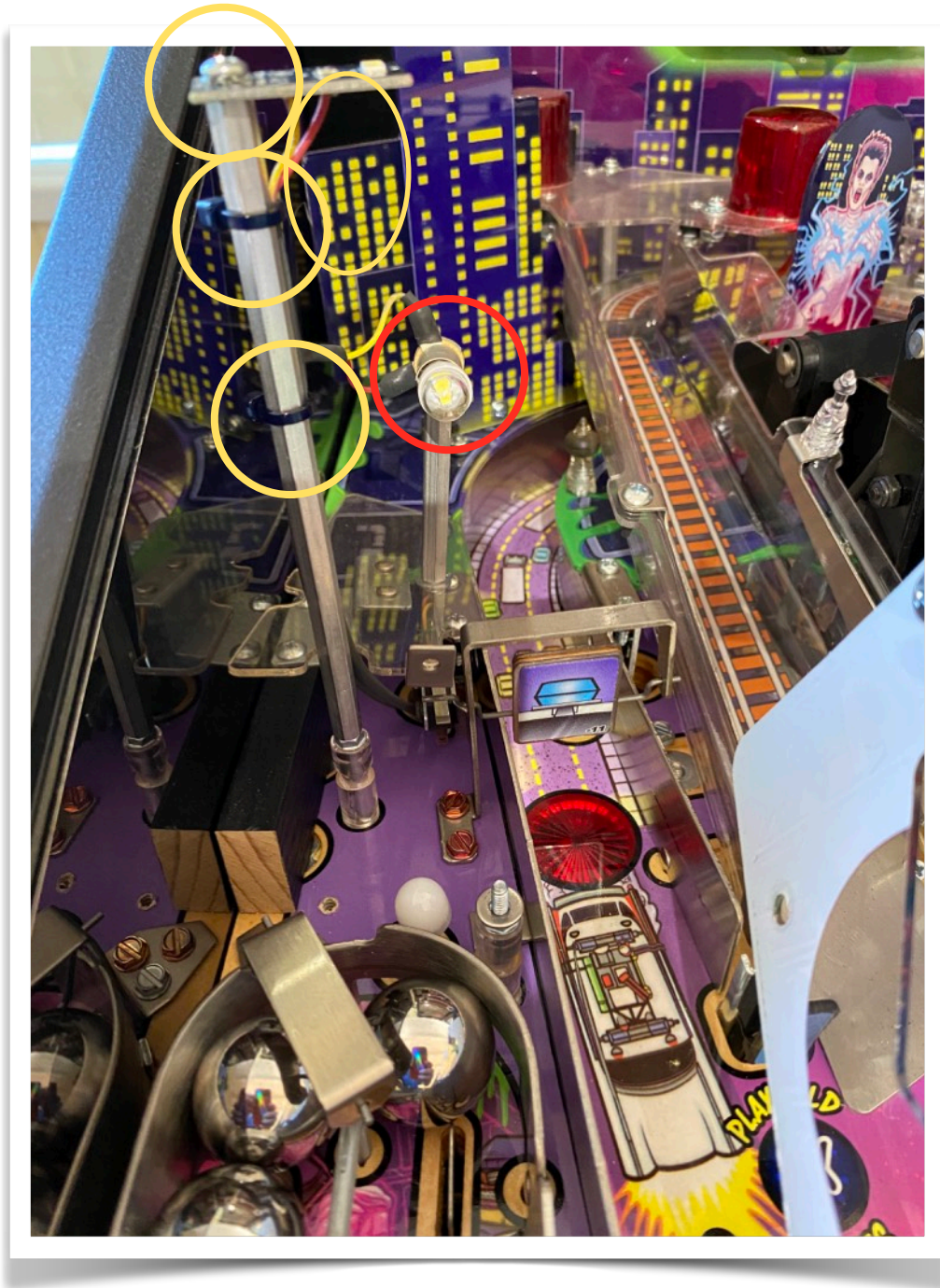
Take care with the ramp as it will be very close to the slimer mech and nut on the side - do not force anything and just be careful and watch this interactive point shown with a blue circle. The Stern Fire House can now be carefully lifted out. I recommend re-installing the bolt that held down the Stern Fire House under the ramp.



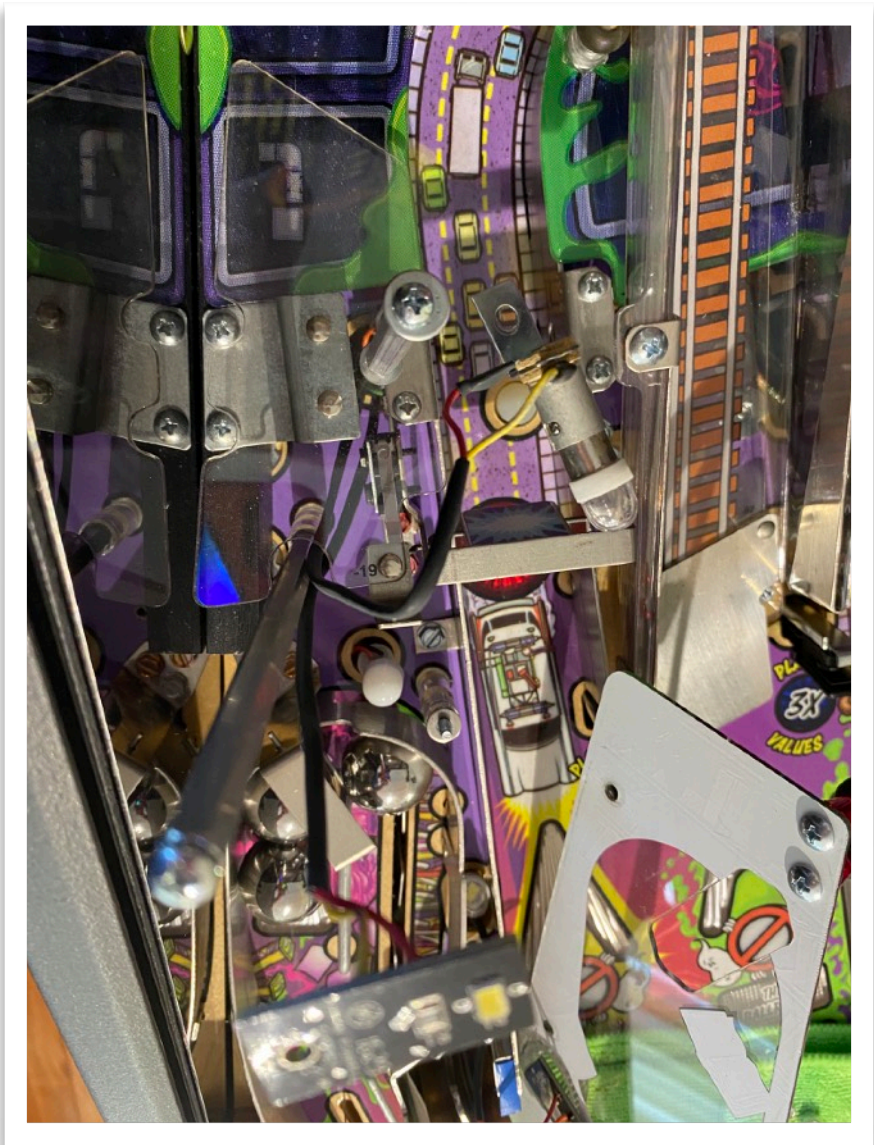
The Fire House area now looks like this once the fire house house has been carefully removed from the playfield.

Before proceeding to removal of more parts - you can now fasten down the ramp basically opposite to instructions on pages 11 & 12.

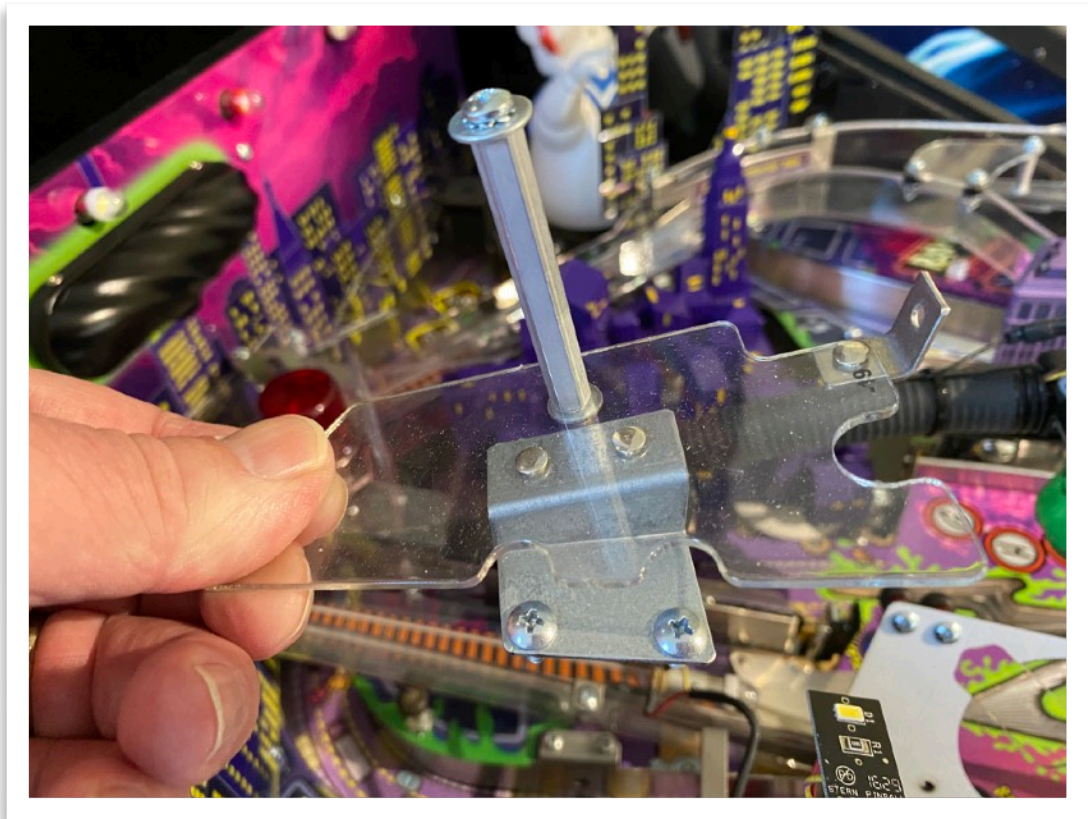
Remove the 2 cable ties on the very tall hex post as the posts will be removed from the game and unscrew the light board from the top as well all shown with the yellow circles. Also remove the light socket from the top of the other shorter post - shown with red circles. Make sure to re-install the 2 x screws back into the top of the 2 posts as these will not be used anymore - keeps the parts together.



Now twist out the very tall hex post, and the plastic post and also the threaded stud holding down the plastic post.



Next remove the 2 screws that hold the bracket to the side rail and then remove the bracket as pictured below and put the screws back into the side rail but do not screw them all the way in - leave out a few millimetres out as the mods base plate fastens to these 2 screws.



7 - Install Socket for Topper Lighting

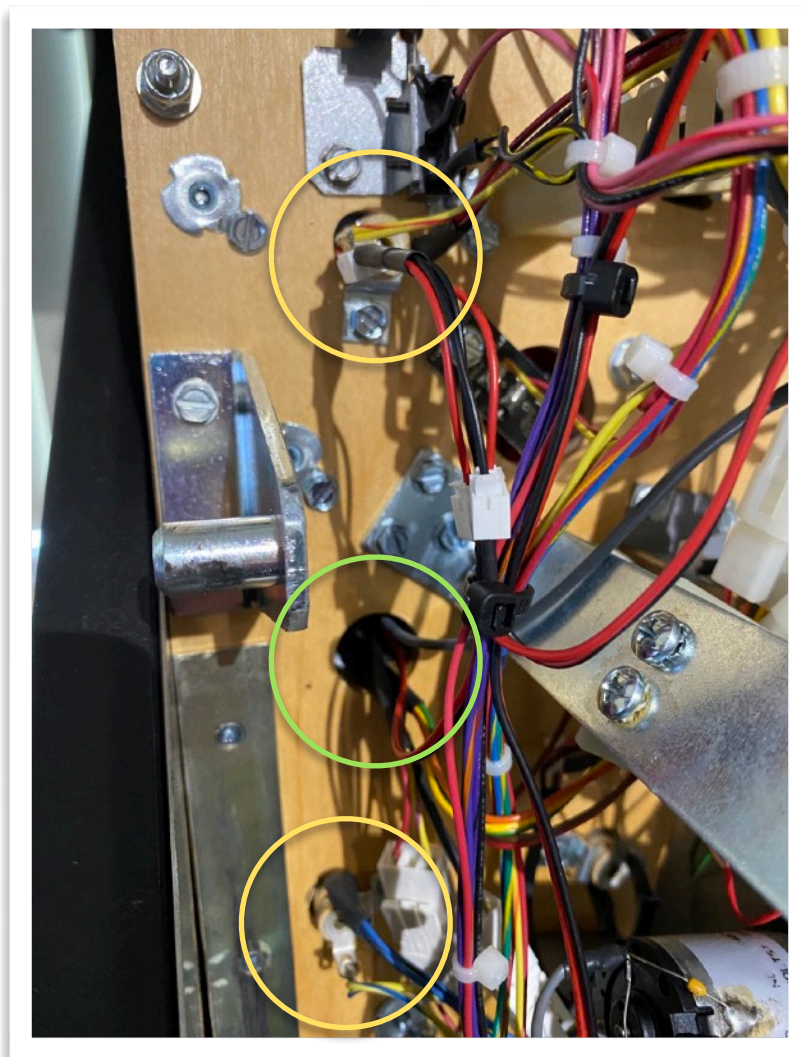
Now before installing the mod it is easiest to install the wiring adaptor now - only if you are installing a Fire House with a Spinner Topper - GB Logo or Ecto Light Bar. If you just have a plain Fire House with no addition lighting then proceed to the next Step

You can connect the mod's lighting lead to a few areas:

- 2 different bulbs under the playfield
- or connect to the bulb that came off the short post which you removed on page 14 (this saves lifting the playfield and you will just tuck excess lead below the playfield). Note this bulb flashes so will have a different effect on the spinner topper.

For connecting to under the playfield, lift your playfield into the vertical position and locate either of these sockets. Disconnect the mods light feature at the polarity swap wire. Now remove the socket and swap out the bulb (yellow circles - 2 options) with the mod's bulb adaptor and re-install the adaptor bulb with the adaptor lead poking out the bottom. Then feed the 6" extension lead through the playfield (green circle). The lower the playfield back on to the service brackets / pegs.

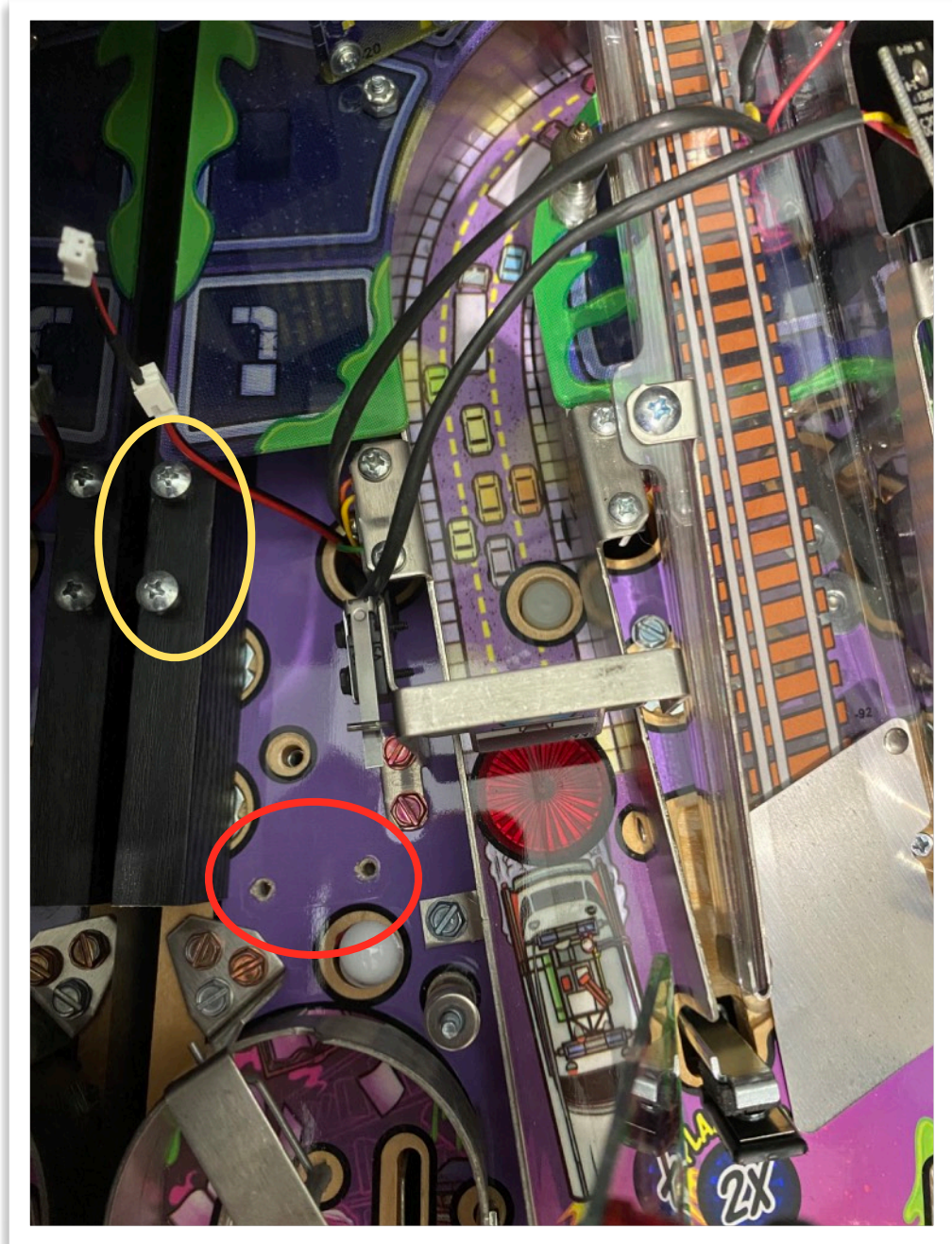
Note: for the testers I realised I left out a 6" adaptor extension lead (from Comet Pinball) that connects to the adaptor lead and feeds up through the playfield.



This is the space where the Fire House mod will be installed:

- 2 x screws partially installed back into the side rails - yellow oval
- 2 x holes from the Stern Fire House front mounting point - red oval
- And note the extension lead with the polarity swap wire poking out of the playfield hole

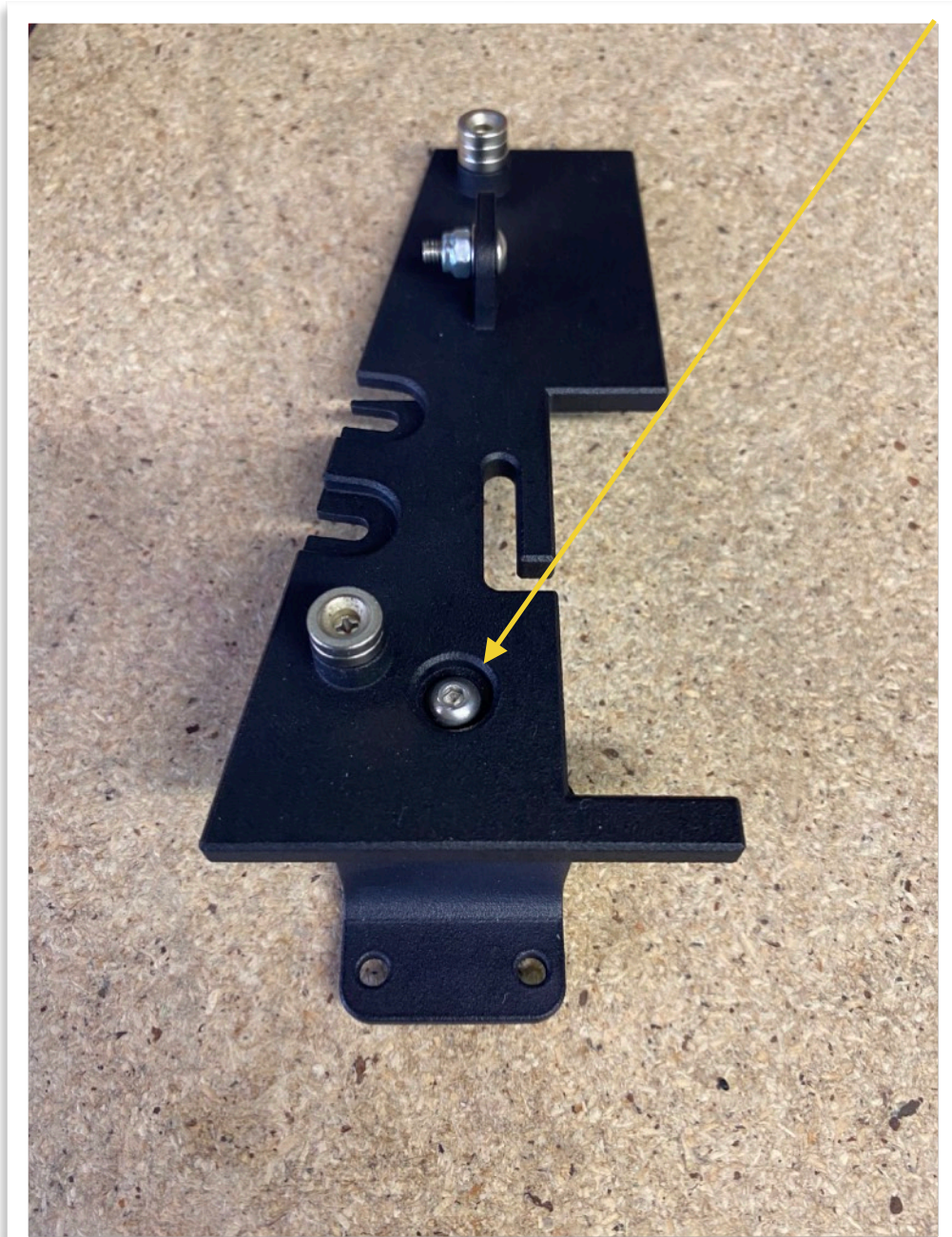
Proceed to the next step to install your new mod.



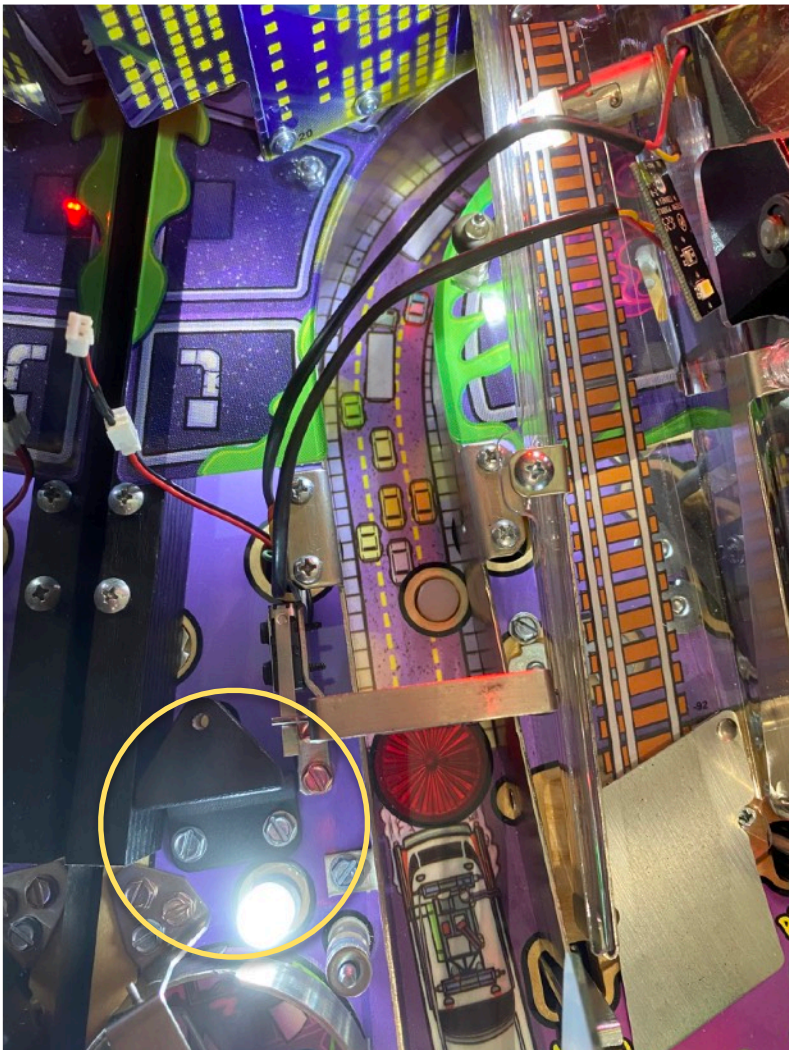
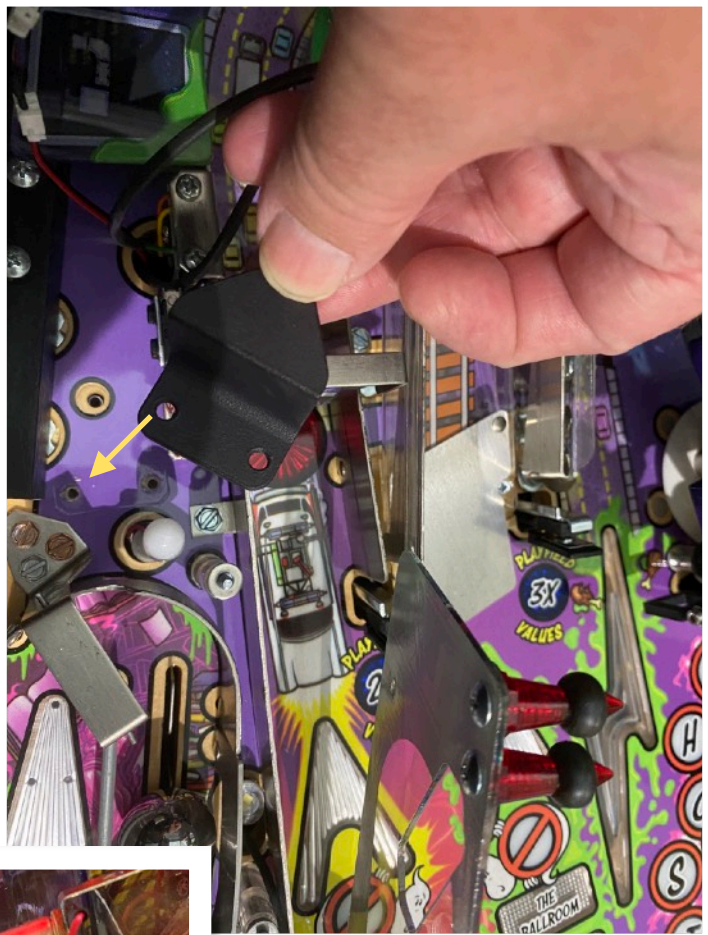
8 - Fit the Fire House Mod to Your Game

Time - 25 minutes to install the mod

Now you will need to take the Fire House Base Bracket and install into your game. The base bracket is already pre-assembled to the mods base plate. Remove this screw and keep aside.



Locate the 2 hex head screws that held the Stern Fire House front mount down as these will be used to install the Fire House Base Bracket to the playfield where the Stern Fire House Front Mount Went and it will look like this once installed.



Once in the bracket is installed it will look like this.

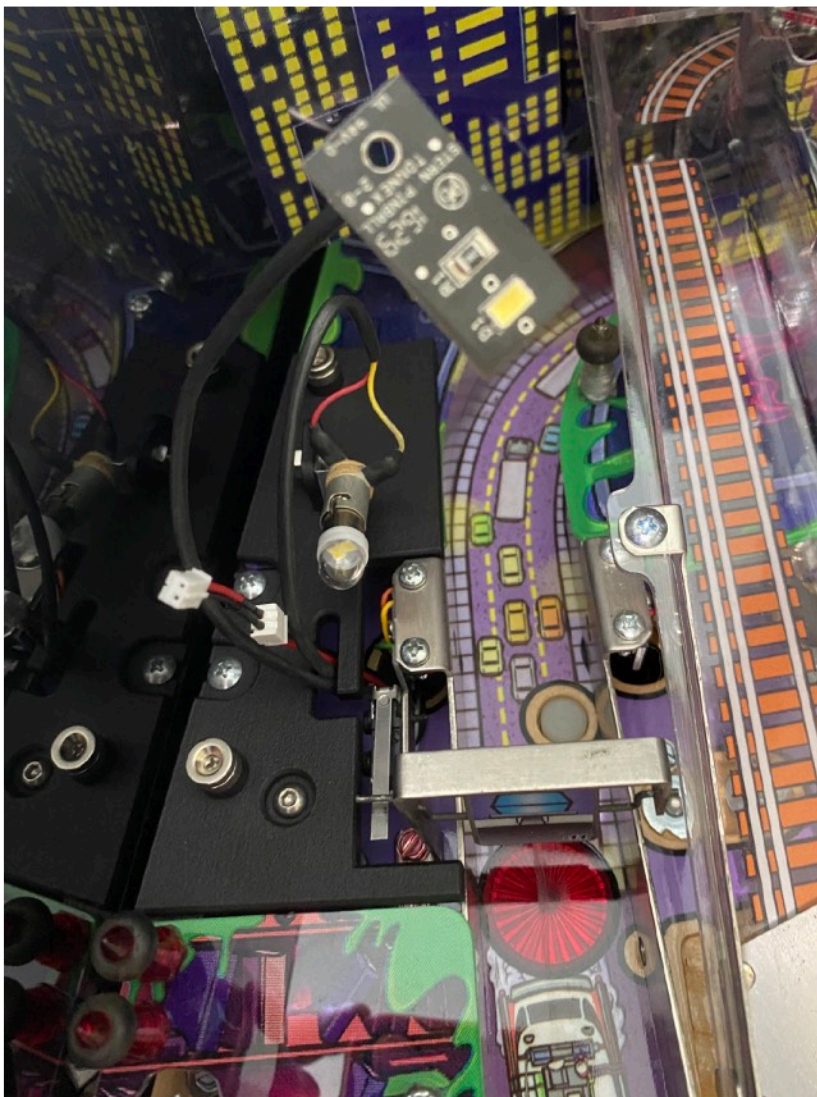
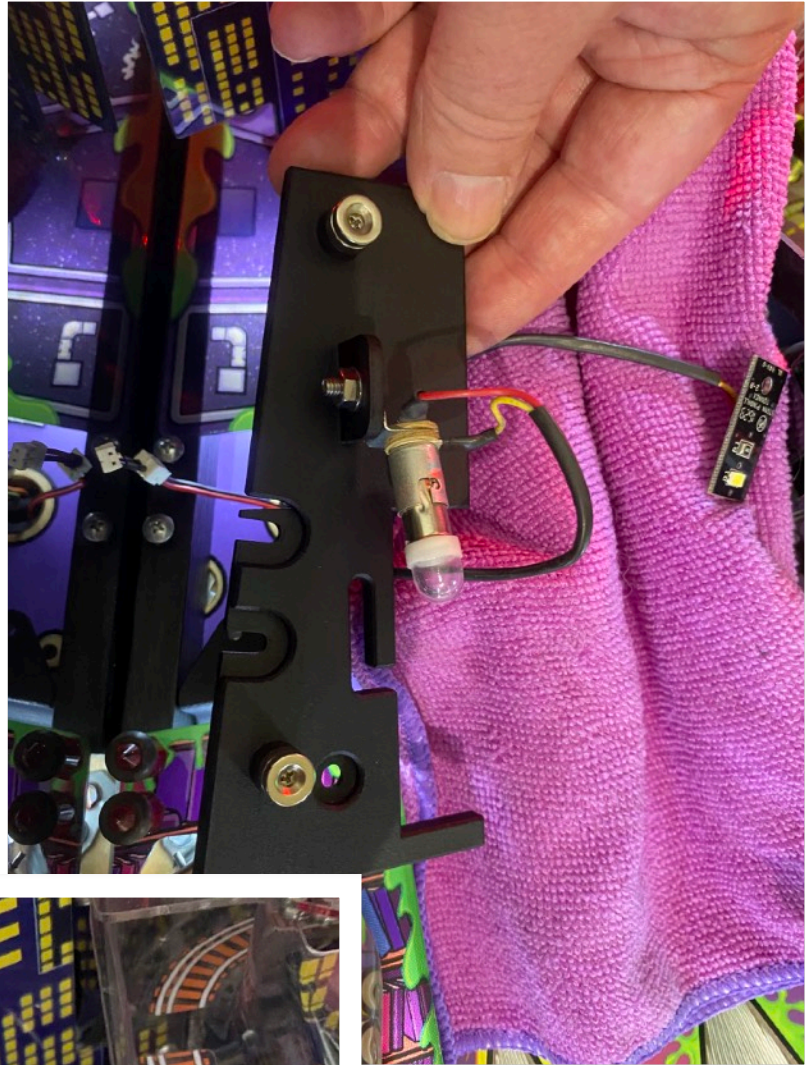
You will see a Red and Black wire coming from the same hole that the 2 existing cables come through. This is the cable from the supplied Comet Adaptor Bulb that I recommend that you replace the bulb in the yellow circle where you just installed the mount bracket. Or you could access a bulb under the back left plastic.

Now install the library plastic back to the playfield as per originally mounted - the reverse of instructions stated on page 8 and once installed the area will look like this:



Now locate the base plate. The hole at the front mounts to the bracket you just installed and the 2 slots locate under the 2 screws that are in the side rail. The Base Plate does come with the supplied bolt already mounted to the vertical lug - remove this before mounting one of the original lights.

Now install the bulb socket that was mounted on the shorter post with the bolt you just removed from the base plate and tighten up. Then tilt the bulb at about 30 degrees so it shoots the light out the front of the buildings windows.

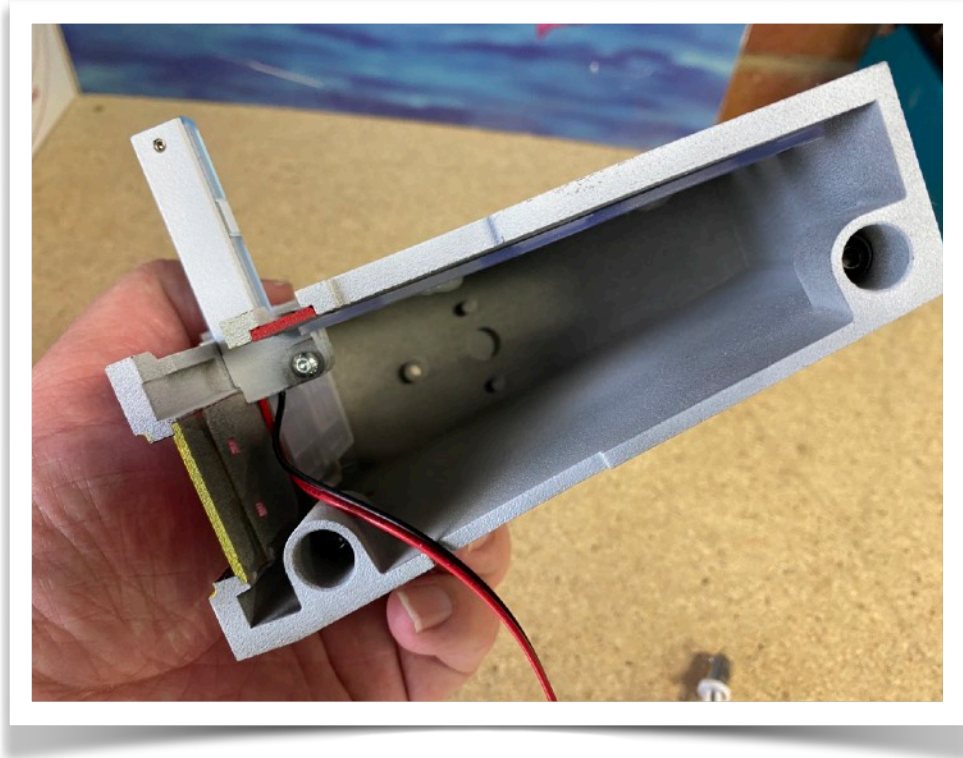


Now lower the base plate so under the screw heads on the side rail. While lowering into place ensure the 3 cables feed into the provided slot - this keeps the cables away from switches and getting pinched when locking the plate down.

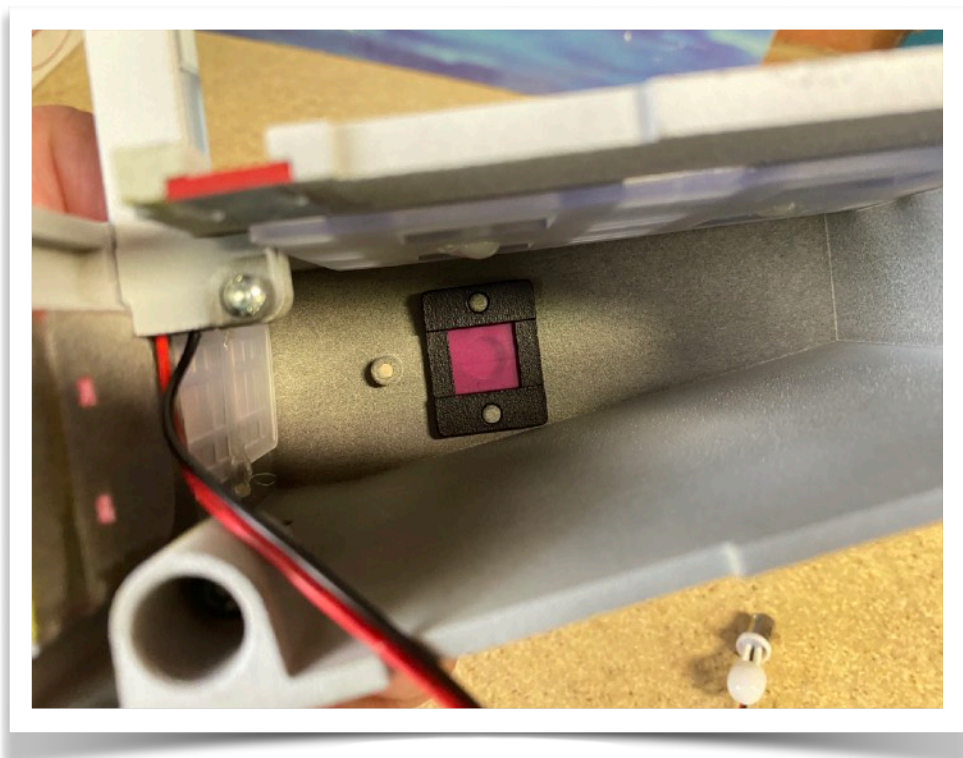
Now fasten the bolt at the front of the base plate to the base support mount. Align the mod's base plate with the side of the playfield and then tighten up everything and it will look like this.

9 - Connect the Fire House Lighting

My apologies to you for this step as it is a little bit of a pain especially if you have chunky fingers but we have a special tool to help you. Firstly locate the filter block and then look inside the building and there is 2 pins.



The filter block has a slot in the side to insert the filters so place this side towards the anchoring post / hole like below.



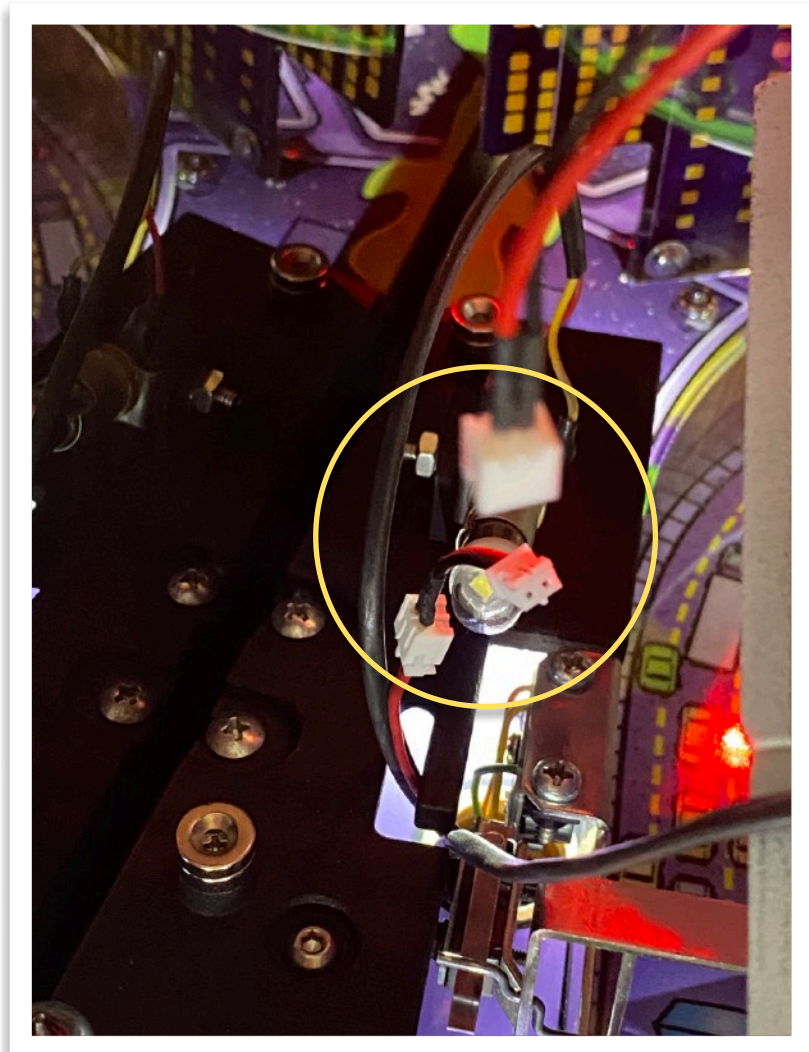
Next place a microfibre cloth on the ramp as you will need to install the stock Stern Flasher board. Insert the supplied bolt through the top of the roof and wiggle any available slack from the flasher board cable and insert into the building and over the bolt. Next place the nut into the Skinny Finger Nut Tool (see below) into the non triangle end and then pass this up into the mod and onto the thread. Then carefully rotate the bolt from the outside and nip up the bolt / nut.



Now the mod is a little more restricted to move around but you are close to finishing the mod installation.

Note: I just noticed the filters sliding out a little, on the production ones I will place a bit of tape over the slot so these stay installed.

Lastly if your mod has a GB Logo or Ecto Light Bar it will have a lead coming from it, this simply has to be plugged into the lead you previously installed from the GI socket.

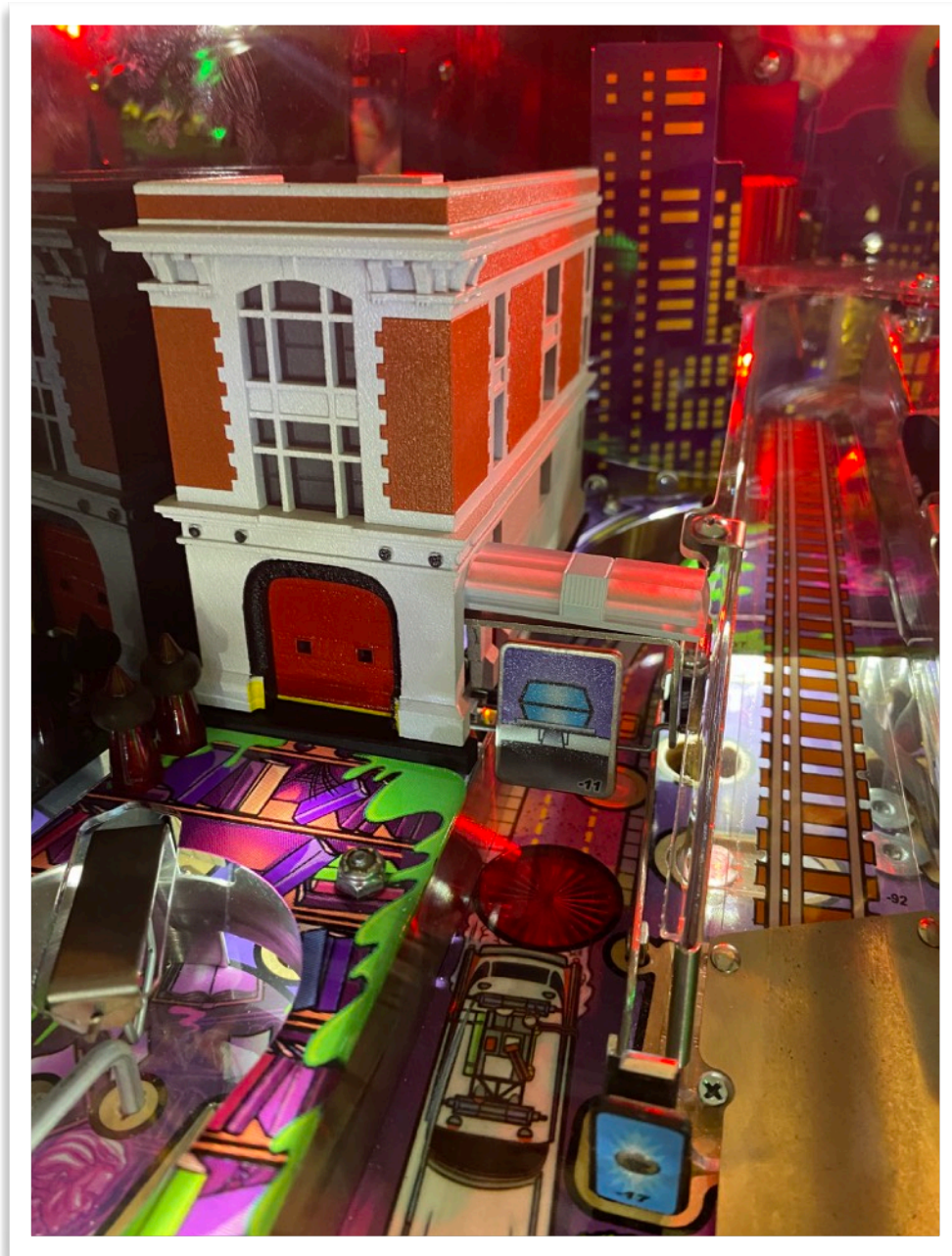


You will notice a very short lead in this power lead - this is the the polarity swap wire. I wire up the accessories with the correct polarity and then stern has correct polarity components but the Comet Adaptors (socket) are incorrectly wired as their leds are universal so not a issue for them as all their leds light up but we need this short lead to make the mod light up as it switches the polarity from the incorrect socket.

Now carefully lower the mod on to it's magnets. While doing so feed the excess cables inside the playfield hole where possible otherwise coil up and place to the back left of the building so cables do not get jammed under the building when joining the parts or create cable shadows in the mods windows.

Check around the building to ensure it is sitting flush and then it will be complete and ready to enjoy.

You will notice the alignment of the Ecto Light Bar to the Spinner bracket - for me this is because my spinner bracket is tilted up towards the ramp. The light bar is correct in relation to the building.
Note: the Production version of the Ecto Lens is now correct colours - Dark Blue lens ends.

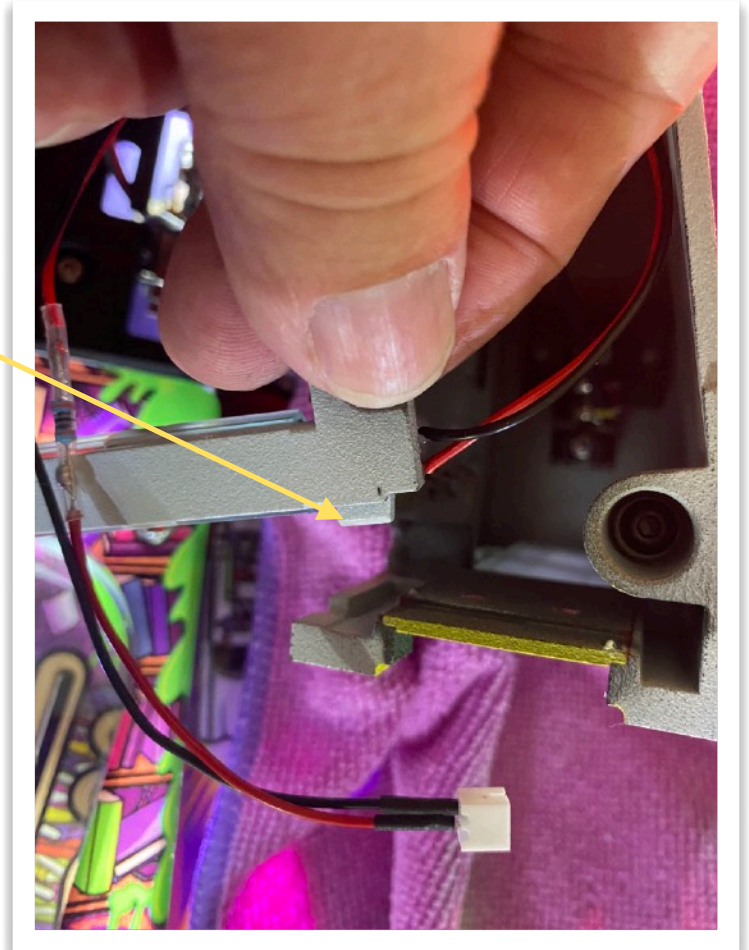


Refer to the next section if you need / want to swap the spinner topper or perform maintenance.

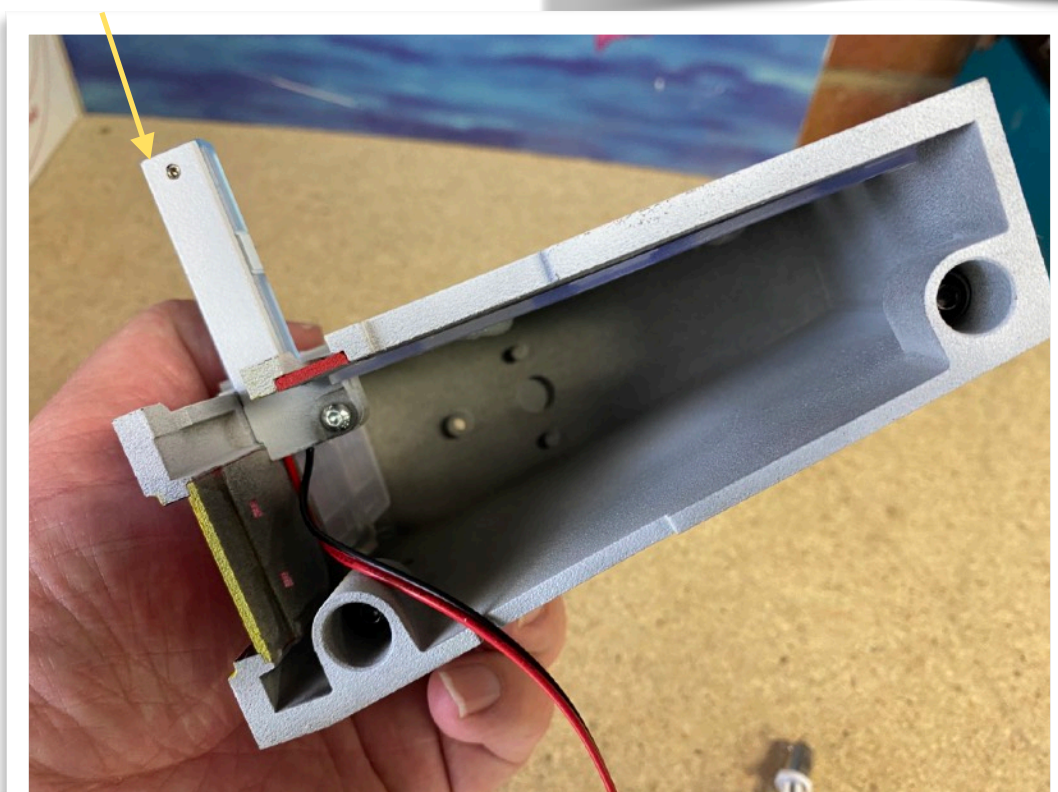
10 - Swap out the Topper Feature

You may want to swap out the GB Logo Spinner Topper for the Ecto Light Bar Topper for a different look or need to perform some maintenance so use the following as a guide as it is a little tricky to install without knowledge. This shows the install process and the remove process is simply the reverse of what is shown.

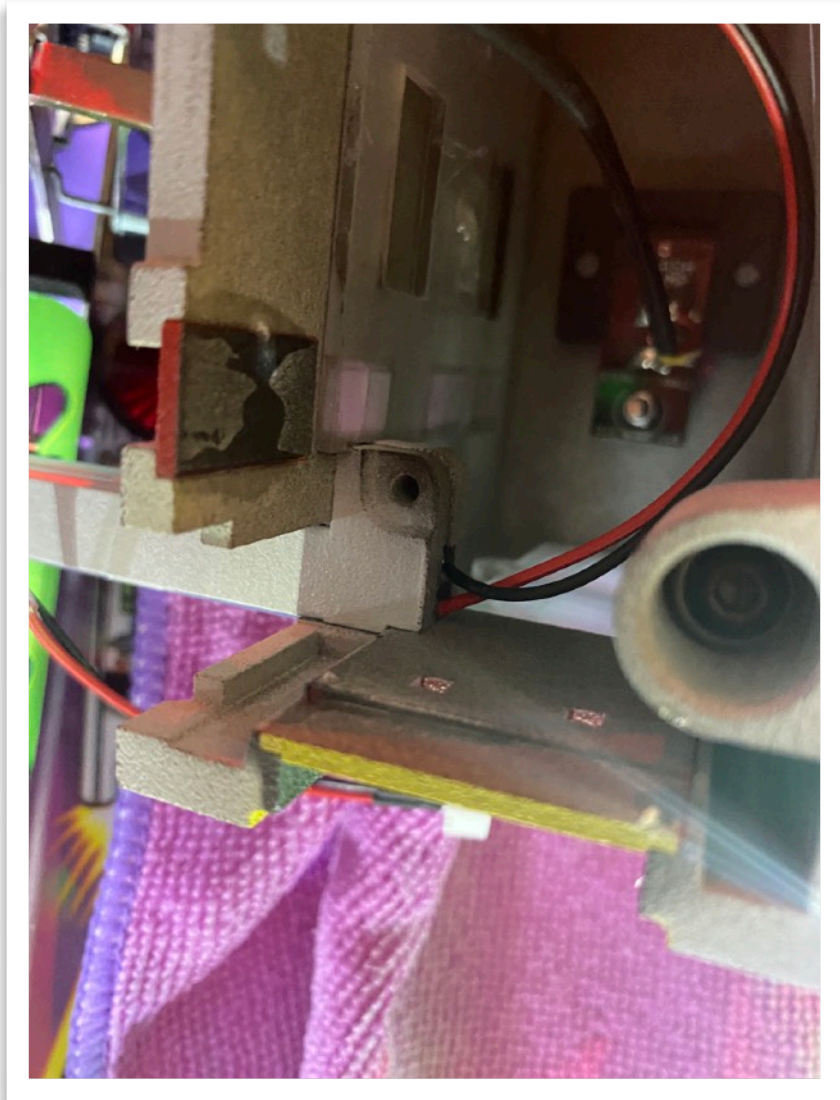
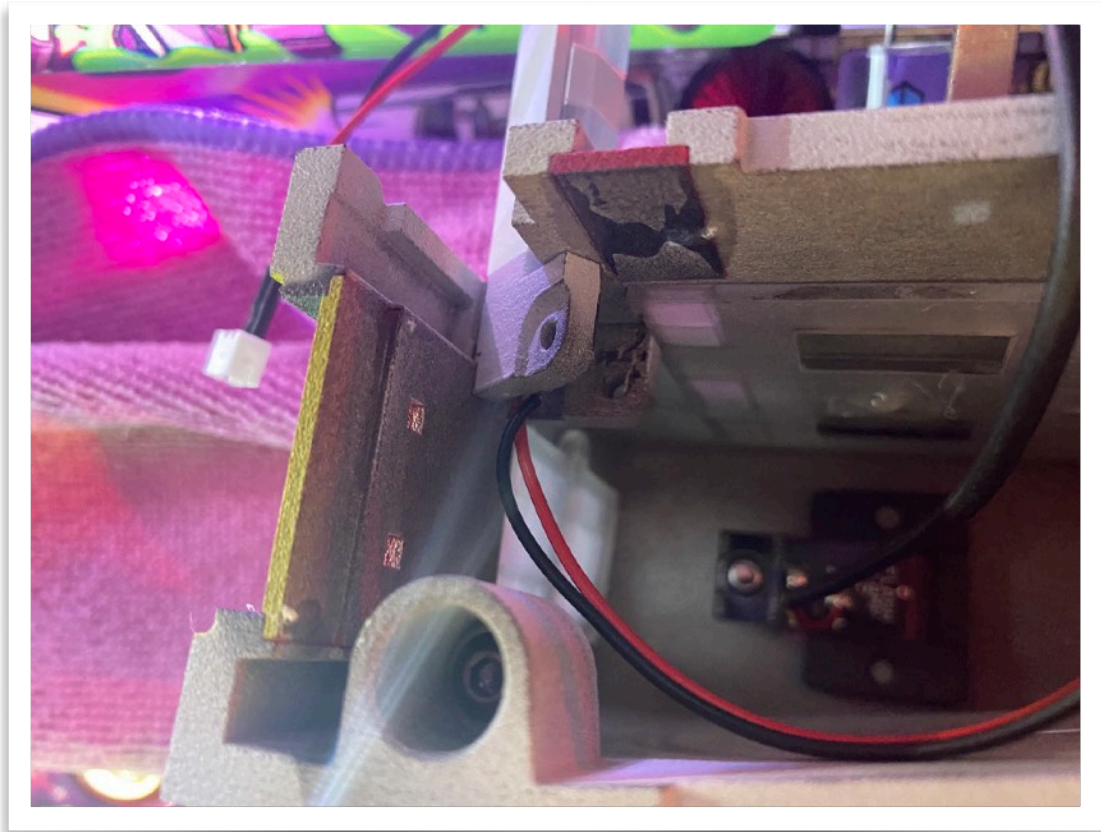
You will notice both toppers have a small beak which allows just one bolt for installation.



Note: below removing or installing the Ecto Light Bar the lens needs to be removed for the proton type versions but not the production Fire Houses. On the underside is a small M3 grub screw - simply loosen off enough for the sense to then slide off



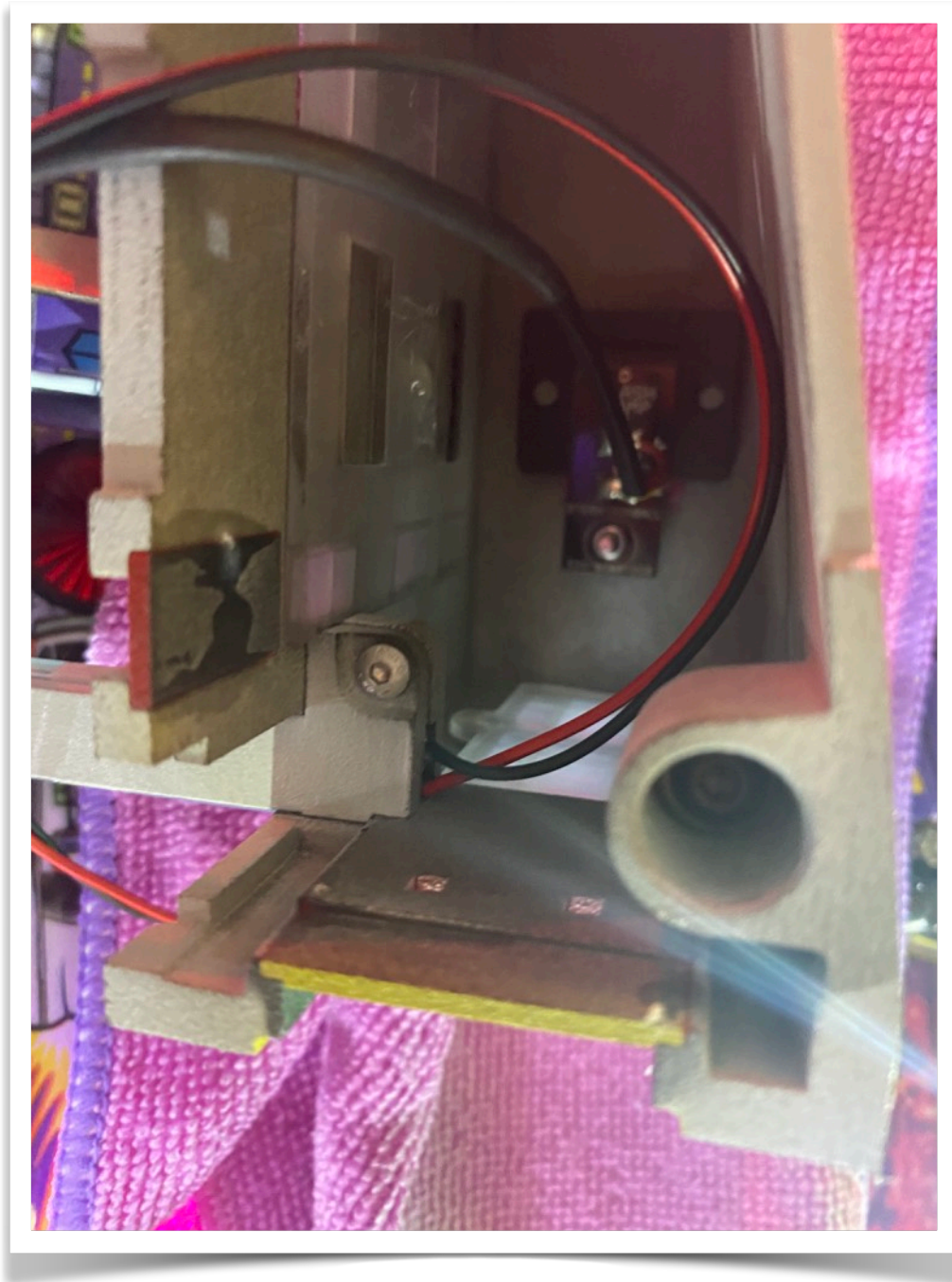
Now insert the beak into a slot next to both doors as shown so the Topper is at a 30 degree angle.



Now push down on the hole side - it is firm - the production ones will be relieved a little more.

Now insert the bolt through the topper mount and then through the hole in the mount block in the building.

Now pull out your Skinny Finger Nut Tool and insert the nut into the outer hole in the triangle piece and insert into the mod and over the bolt and then tighten the bolt with the Allen Key and you are done.



Once the topper is installed re-install the Ecto Light Bar Lens and re-engage the grub screw so it is just flush with the bottom of the bar mount.

11 - Testing the Fire House Mod

Power up your game and the following lighting features will activate:

- **GI will light up and the bulb mounted to the base mount will flash in attract mode.**
- **The Stern Flasher board will flash when the game goes in to Storage Facility Multiball.**
- **The Mini Ecto Light Bar will flash along the light bar or the GI Logo constantly as it is connected to the GI string.**

If it all works, you are all ok to proceed to enjoying your new mod. Two features are using the existing Stern Lighting features and only the Ecto Light Bar / GB Logo connects to GI but is polarity sensitive. **If it doesn't work** check that the adaptor bulb works and if it does but not the mod's light feature you may need to remove the polarity wire and do a brief power on and test. Also check the 2 socket ends of the extension lead in case a pin has been pushed out and not making a connection - it is a weakness of the Comet matrix gear.

If there is any excess cable feed under the playfield where possible, you will need to lift the playfield once again and secure the cable.

Now you can lower the playfield back into playing position - proceed to the **Section 12**.

You will notice with the Ecto Light Bar the bar will not always light - this is due to a intended game voltage drop of certain features where the games leds dim but for this feature it will only light the first 3-4 leds of the approximately 20 and it approximately when ever Slimer is down.

Lastly check that the spinner works and that it does not touch the mod base plate or building - do a finger spin test and make adjustments where needed.

12 - Set Up your Game

You are now ready to lower you playfield if it is out back into the cabinet and re-install the games balls and power up.

The mod should have an even gap along the cabinet side and if not inspect that the plate was installed straight and that the building is not sitting on any of the wires - push these under the building.

13 - Enjoy

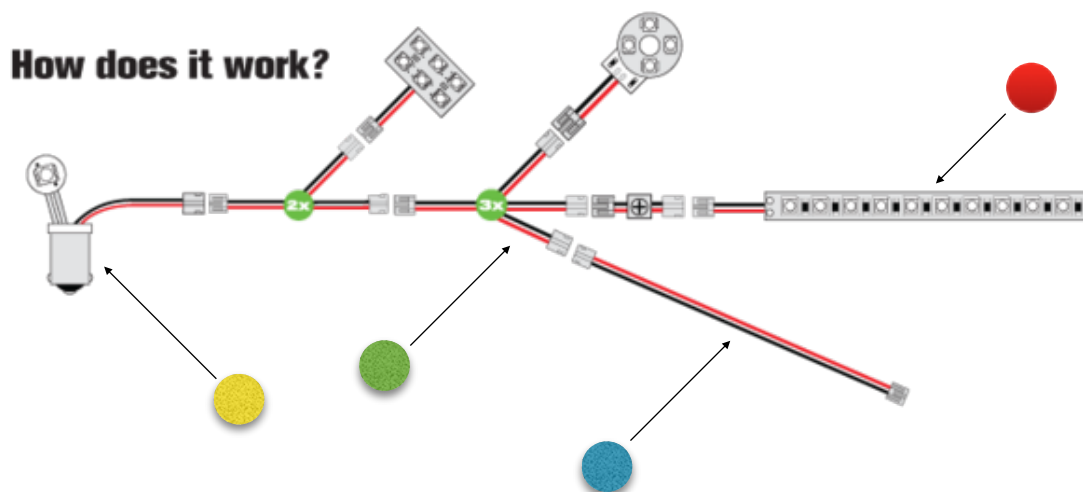
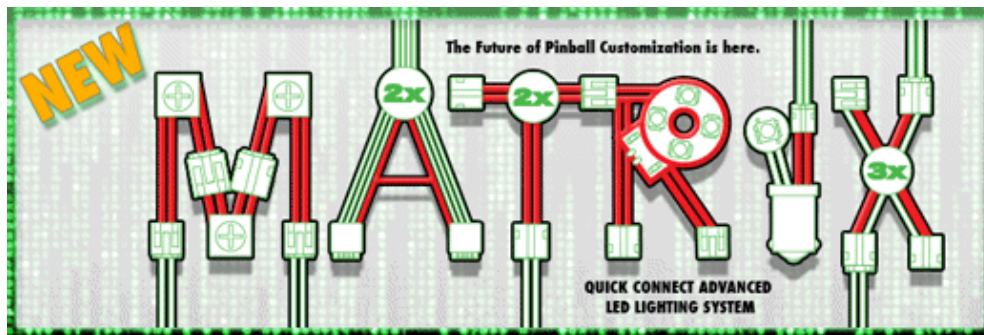
Now your mod is installed and operational, it will operate when ever the games GI is active and complete that city feeling.

Enjoy.







14 - Spare Lighting Parts

- Lighting is mostly supplied by Comet Pinball based in Colorado in the USA using their cool products from their Matrix range. See the coloured arrows referencing the components.



To find these parts:

-  <https://www.cometpinball.com/products/quick-connects?variant=12387006677036>
-  <https://www.cometpinball.com/products/matrix-extension-wires?variant=12493662158892>
-  <https://www.cometpinball.com/products/matrix-splitter-wires?variant=12493662355500>
-  The light bar is not a Comet Part but the part can be found here (my supplier).

https://www.ledsales.com.au/index.php?main_page=product_info&cPath=142_146&products_id=3020

15 - Proto-type & Production Version Differences

- 1 x **v1** and 1 x **v2** - early Proto-types - home prints and now destroyed
- 3 x **v3**'s - Proto-types (2 upgraded with v5 base plates / bollards)
- 21 x **v4**'s - Production Versions made (3 upgraded with v5 base plates / bollards)
- 11 X **v5**'s - Production Versions made

And where are they:

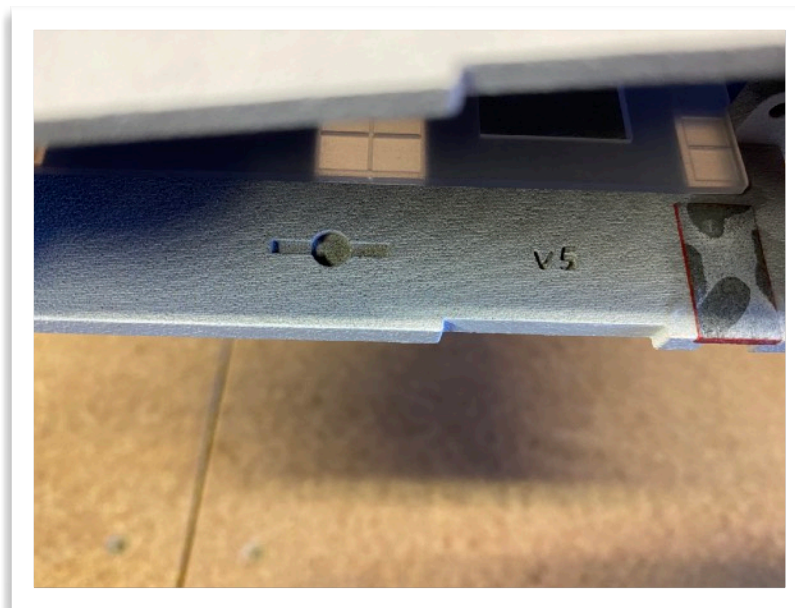
- 5 x Australia
- 3 x Italy
- 2 x UK
- 25 x USA

v4 improvements over the **v3**

- Minor brick work tolerances of 0.2mm all around for improved assembly during production
- New anti-tilt bracket built into the base plate
- The inside of the Fire House v4 has a small slot to line up and catch on the anti-tilt bracket
- Roller door bottom is now flush and does not step out like on the **v3**'s - easier to tape up and paint the yellow and red sections
- The Ecto Spinner Topper Lens is painted a more correct blue and silver
- The Ecto Spinner Topper mount grey plastic and painted light grey

v5 improvements over the **v4**

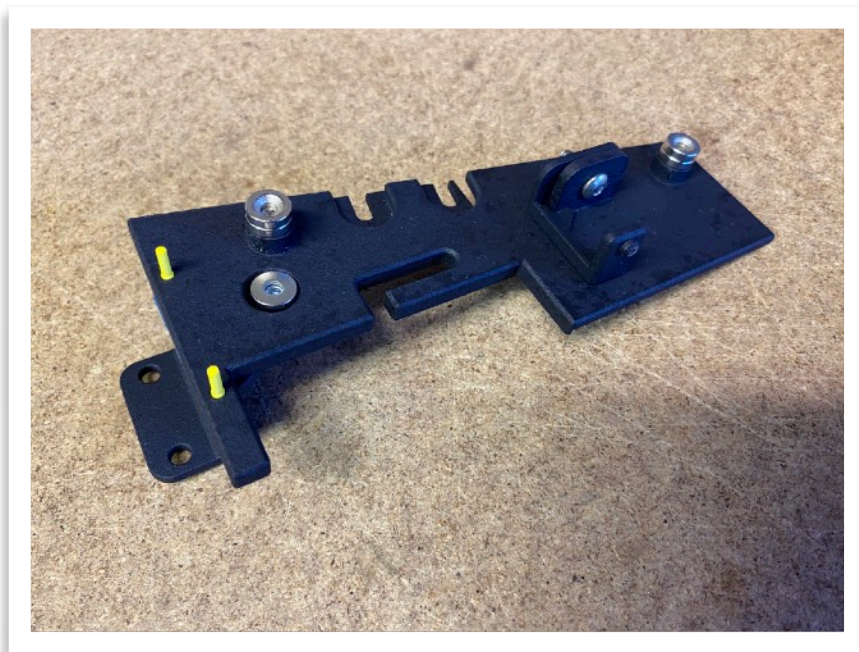
- Anti-tilt bracket separated from the base like the spare provided with the v4's - but has a round stub and not a skinny horizontal extruded section.
- The Fire House v5 building has the same slot like the v4 to line up and catch on the anti-tilt bracket but also a circular cut out so it can accept the v4 and v5 anti tilt brackets
- Reduced a small section of the side window resin part to make it easier to install / swap the spinner toppers (**v4**'s were done by hand)
- Added a v5 to the inside of the building so it can be easily identified as a v5 version of the mod



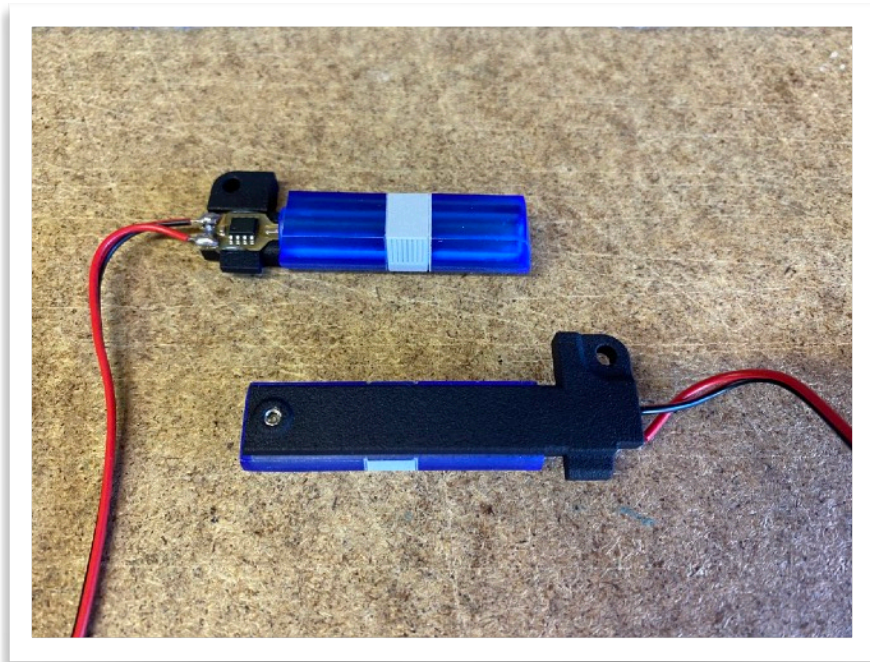
- Swinks Logo was lowered to the ground floor level where as the v3's and v4's the logo was in the centre of the same side of the building



- Added a press in set of yellow bollards to a new revision v5 Base Plate with a recess dedicated to the bollard bar. This v5 base plate with yellow bollards is backwards compatible to the Fire House v3 and v4 Mods so people can upgrade.



- The Ecto Spinner Topper is slightly different in that I opted to have the main mount made in Black Nylon with no painting required.



RETURN POLICY:

*Please contact us as we will be proactive to try and quickly resolve any problems from abroad reducing the need to send your purchased parts back for repair. Approval from Swinks Pinball must be received before any items can be returned for repair or replacement. All parts, cables, etc. must be included when the product is returned. We will repair or replace / exchange components based on our analysis of the problem. Swinks Pinball reserves the right to deny any return or exchange. Refunds are not given. Freight will be covered by Swinks Pinball on the return trip back to you **only**.*

We want everyone to love and enjoy their Fire House Mod - so if you have any issues at all please, please reach out via the well known Pinside forum or another forum or via email and we will promptly help you out.

Email: swinks.pinball@gmail.com

PRODUCT DISCLAIMER:

Please remember that this is a "MOD." We took great effort in designing and testing our product in order to produce a high quality product, but it is not a Stern factory original nor an approved part for your pinball machine. There is the risk of unwanted side effects with any modification to a factory game and there are many factors that can cause undesirable side effects after installation of such a modification. As such, we cannot assume responsibility for game malfunction, damage to the game or surroundings, unwanted electrical emissions, personal injury, or other adverse effects caused by the installation of our MOD as we can not control how it and the electrical were installed.

PRODUCT QUALITY DISCLAIMER:

All parts are made to the highest quality possible. The Mod's base plate, building and resin cover are all professionally 3D printed by Zelta3D. All parts are printed in SLS & MJF nylon & Resin some of which have some minor print lines or clouding (on the resin parts) which is part of the process but treated to the best of our ability to make the parts look the part and professional. You may notice some minor print lines when handling but once the mod is installed they will not be clearly visible from the players perspective and give your machine that cool city look complete with the iconic Ghostbusters Fire House.