

**Stern - 2016  
Ghostbusters (GB)**

***Fire House Mod v4***

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



**Proudly Designed and Manufactured by**



**[www.swinks.com.au](http://www.swinks.com.au)**

## Index

<b>Page 3</b>	1 - Mod Parts
<b>Page 4</b>	2 - Tools and Safety Notes
<b>Page 5</b>	3 - Mod Pre-assembly
<b>Page 6</b>	4 - Game Preparation
<b>Page 7</b>	5 - Mod Preparation for Installation
<b>Page 8</b>	6 - Fitting the Ecto Spinner Topper to the Fire House Building
<b>Page 9 - 16</b>	7 - Remove the Stern Fire House & Linked Components From a Pro Game
<b>Page 17</b>	8 - Remove the Stern Fire House & Linked Components From a Pre / LE Game
<b>Page 18 - 19</b>	9 - Install Socket for Topper Lighting
<b>Page 20 - 23</b>	10 - Fit the Fire House Mod to Your Game
<b>Page 24 - 27</b>	11 - Connect the Fire House Lighting
<b>Page 28 - 30</b>	12 - Swap out the Topper Feature
<b>Page 31 - 32</b>	13 - Testing the Fire House Mod
<b>Page 33</b>	14 - Set Up you Game
<b>Page 34</b>	15 - Enjoy
<b>Page 35</b>	16 - Spare Lighting Parts
<b>Page 36 - 37</b>	17 - Proto-type & Production Version Differences
<b>Page 38</b>	Return Policy and Disclaimers

## 1 - Mod Parts

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

### Mod

- 1 x **Fire House Building** (with 1 of either 2 spinner topper - GB Logo or Ecto)
- 1 x **Fire House Base Plate and Base Support Bracket** (assembled)
- 1 x **Building Support Bracket** (spare)
- 1 x **Filter Bracket** (with pink filters installed)
- 1 x **M3 x 16mm Countersunk Bolt, Washer and Nut** (fitting the top flasher)
- 1 x **M3 x 16mm Button Bolt, Washer and Nut** (loose on the Ecto version)
- 3 x **Doorway Bollards** (3 x yellow pins)
- 1 x **M3 x 10 Magnet** (spare)

### Tools

- 1 x **Custom Home Printer Skinny Finger Nut Tool** (Purple / Red / other)
- 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**

*Note: sticker designs will change over time*

*LHS - Fire House with GB Spinner Topper*

*RHS - Fire House with Ecto Spinner Topper*

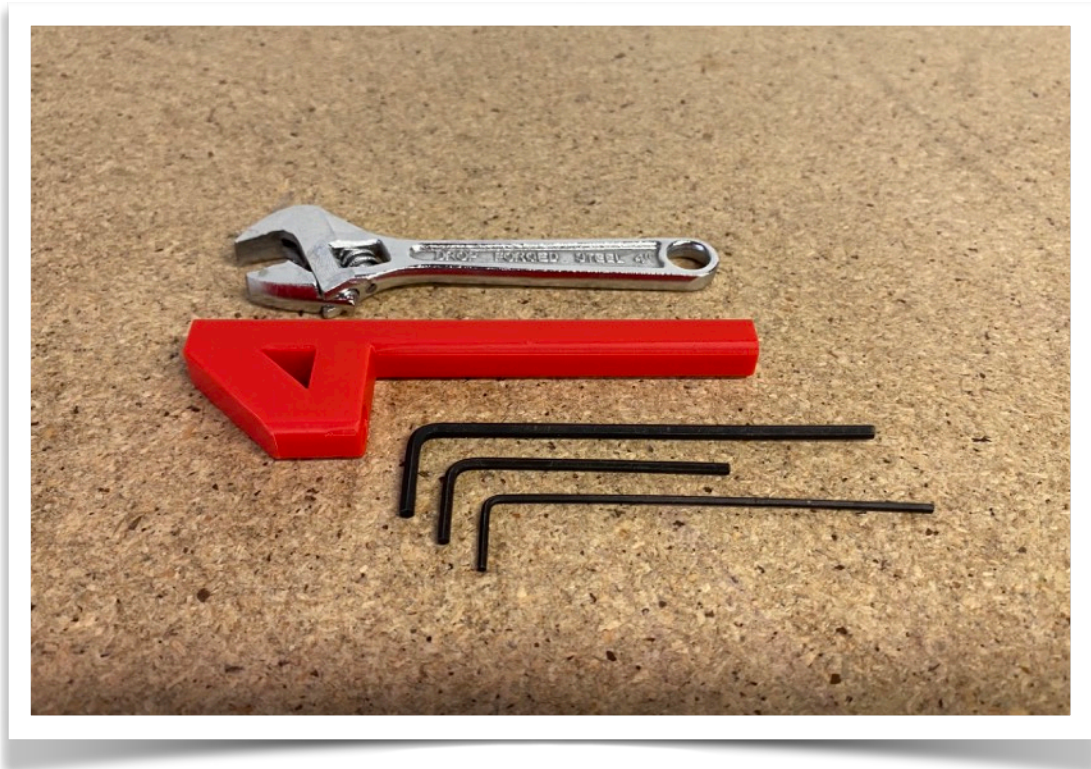


## **2 - Tools and Safety Notes**

### **Tools necessary to install the mod as supplied**

- 1 x Small Adjustable Spanner / Wrench (not supplied)
- 1 x Custom Home Printer 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

*Note: Allen keys will vary between short and long handles - depends on supply - either work fine for this mod.*



### **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**

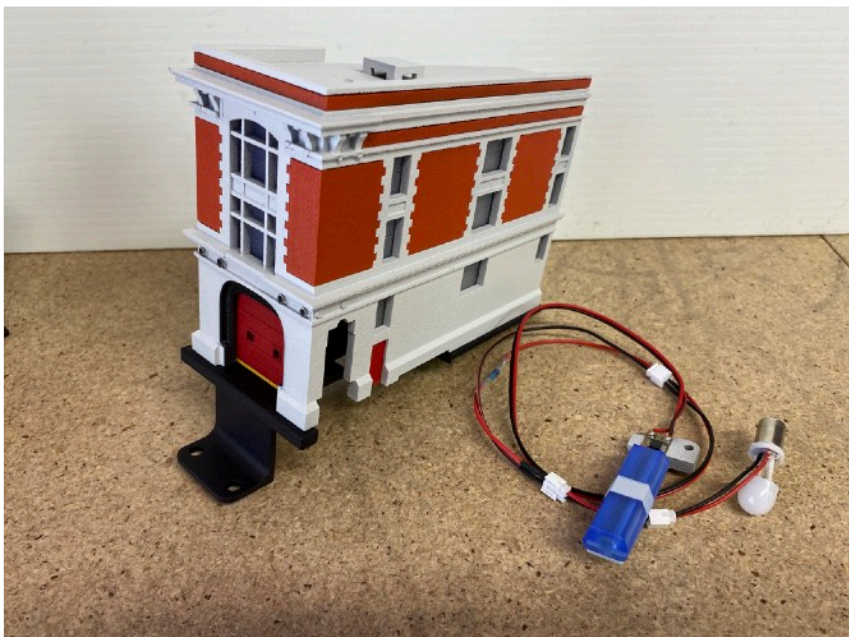
The Mod will fit all levels of the game - Pro, Premium and LE. The Fire House Mod compliments the other scaled Swinks building mods - Library and Flat Iron Buildings in the game.

Your mod is supplied pre-assembled to test fit components before being sent to you making the install very simple and to keep the mod safe during transport to you. The Ecto Spinner Topper will not be fitted to the Fire House building during the freighting process.

**IMPORTANT NOTE:** one customer unfortunately received their package (Firehouse with the Ecto Spinner Light Bar) in which his package was badly mistreated during the postage journey. Therefore all Fire Houses from the 2nd batch of 10 Firehouses and onwards with the Ecto Spinner Topper will be test fitted to the Fire House and then removed and both items wrapped individually to avoid postal damage.



Fire House with the GB Logo Spinner Topper



Fire House with the Ecto Spinner Topper

## 4 - Game Preparation

So start by 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: Installing the Fire House Mod is the same regardless of it being a Pro / Premium / LE Version.**

**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 - mainly 2 screws under the playfield holding the ramp down.**

## **5 - Mod Preparation for Installation**

The Fire House Mod is supplied already fastened to it's base plate. This is the Ecto Spinner Topper version with the Ecto Spinner Topper not installed.



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



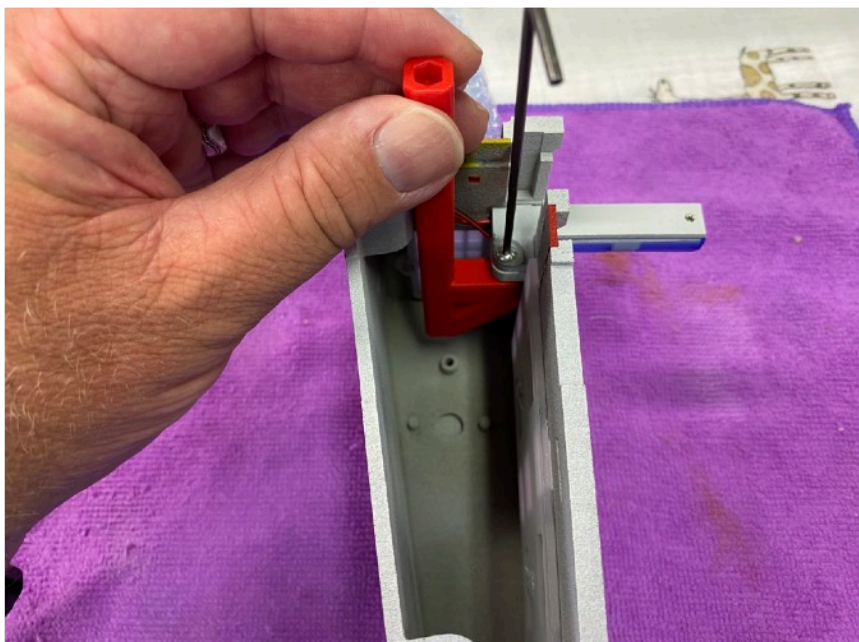
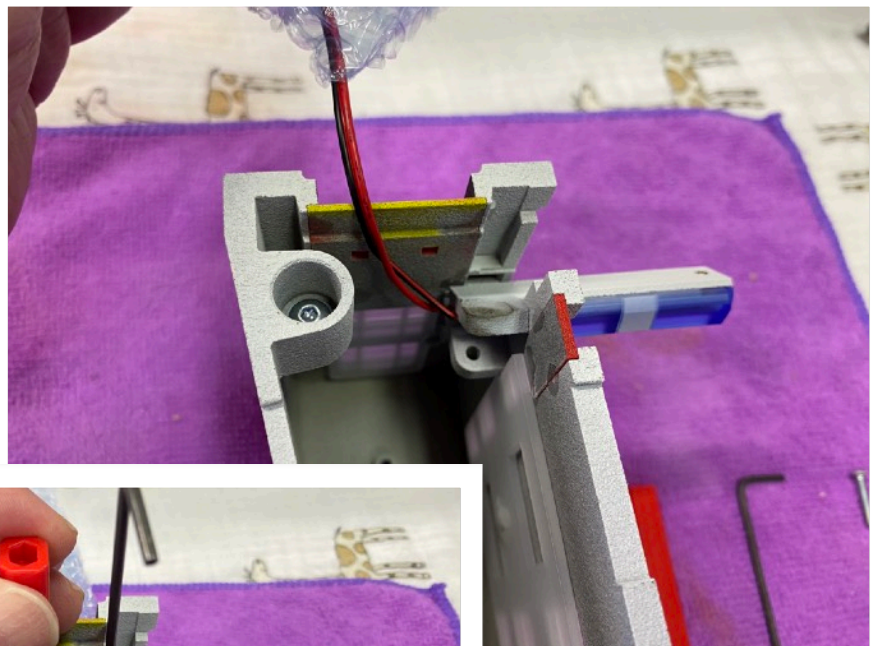
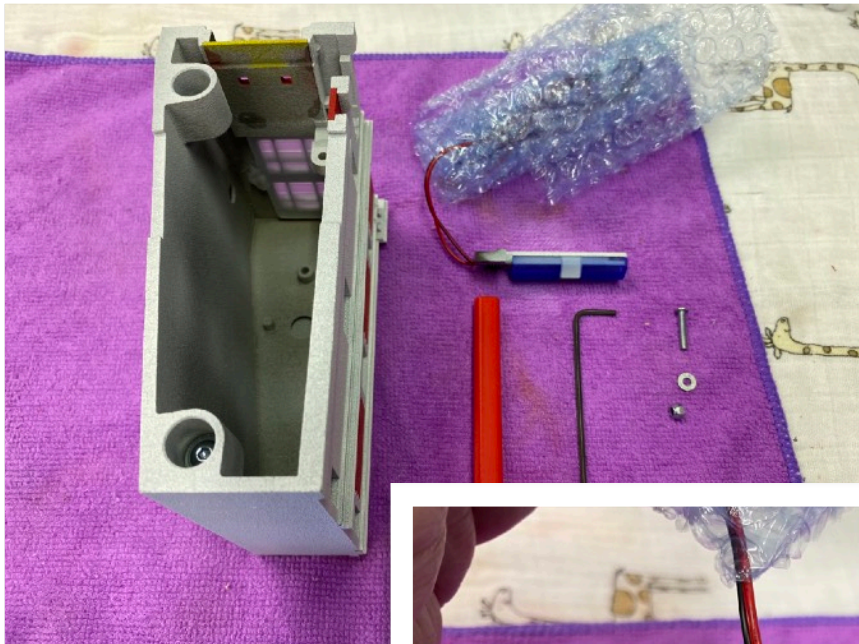
The buildings are set to each base plate before packing so when they are connected like the first picture above and you hold the base plate upside down the building does not fall - see page 32.

## **6 - Fitting the Ecto Spinner Topper to the Fire House Building**

Photo 1 - Locate your Ecto Spinner Topper, the Allen Key and Skinny Finger Tool as well as the button head bolt and place the parts on a clean microfibre cloth to avoid any damage to the building.

Photo 2 - Insert the beak of the mod bracket into a notch in the building and push down.

Photo 3 - Then feed the bolt through the topper bracket and building hole and then put the nut into the skinny finger tool recess and align underneath and tighten up the bolt into the nut held by the skinny finger tool and then you are ready to proceed to the next step.





## 7 - Remove the Stern Fire House & Linked Components From a Pro Game

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

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.

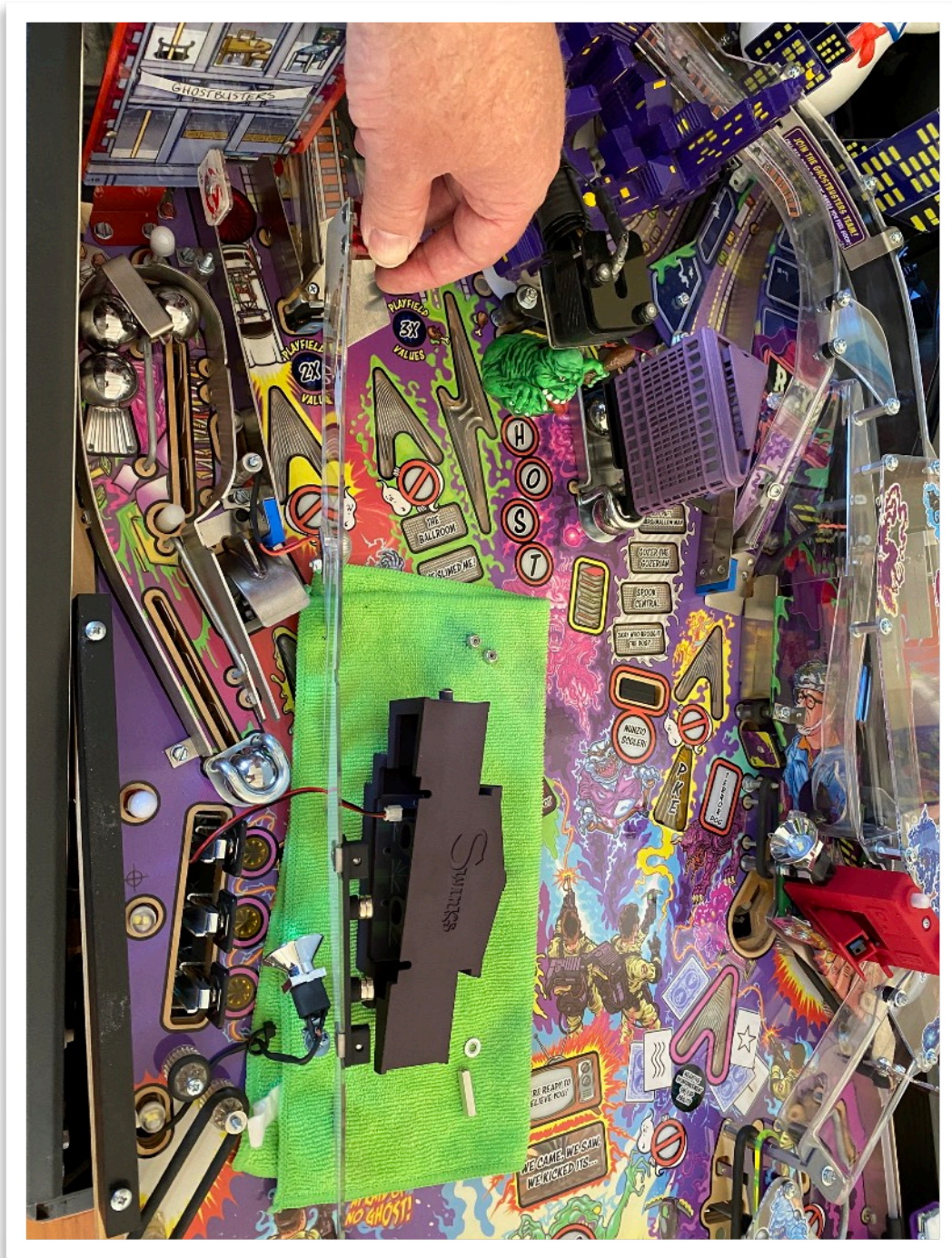
If you have a Swinks library - simply lift off it's base plate and place on the microfibre cloth.

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:



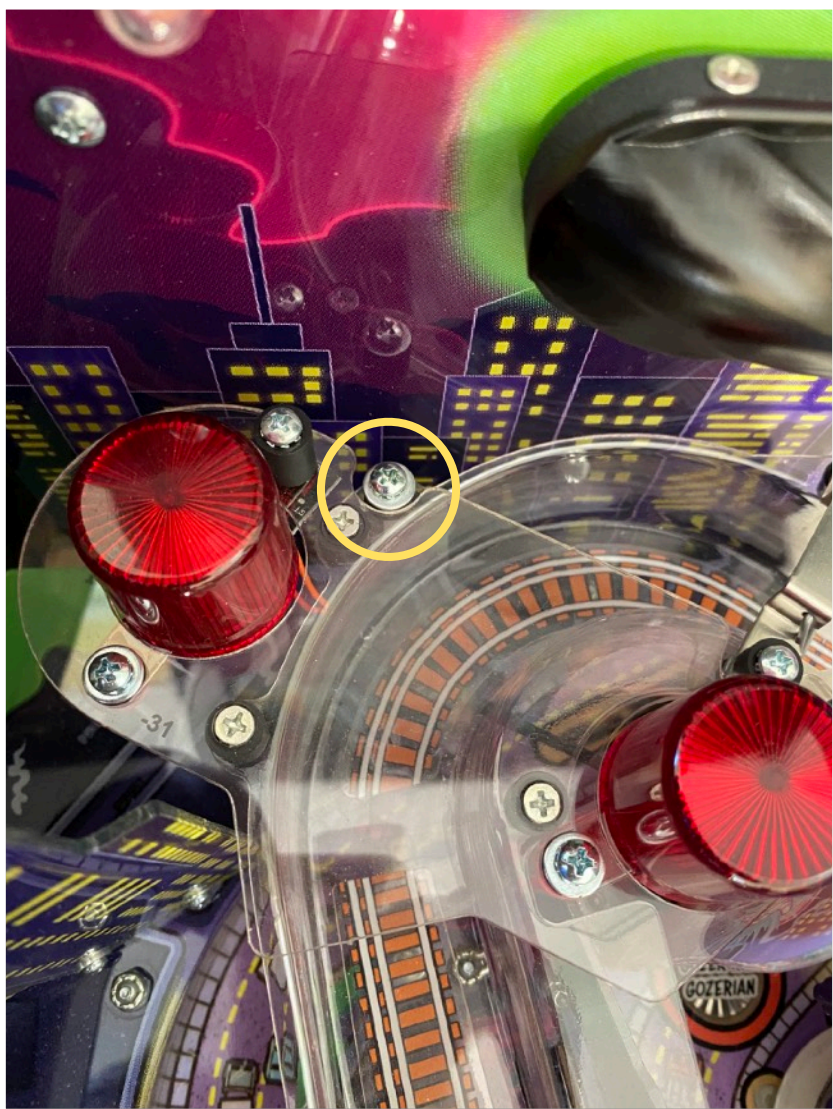
Next you have to work on removing the Stern Fire House shown in the yellow circle on the next page. I will document the process with removing part of the ramp mounting.

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 ramp on a Pro). This is probably the most awkward to get to and will require some ramp 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.



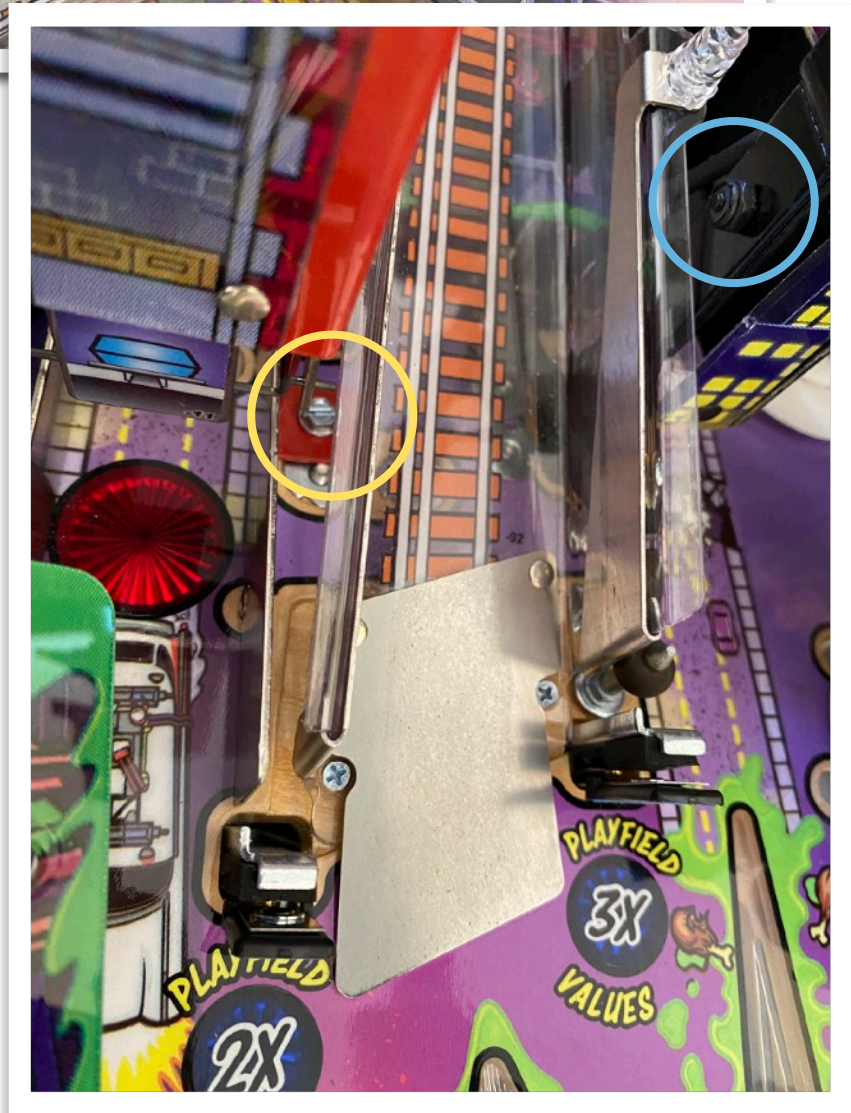
Remove this bolt, washer and spacer from the long hex post and set aside on the cloth.

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 as this will not be used and it is best installed here so not to get lost.



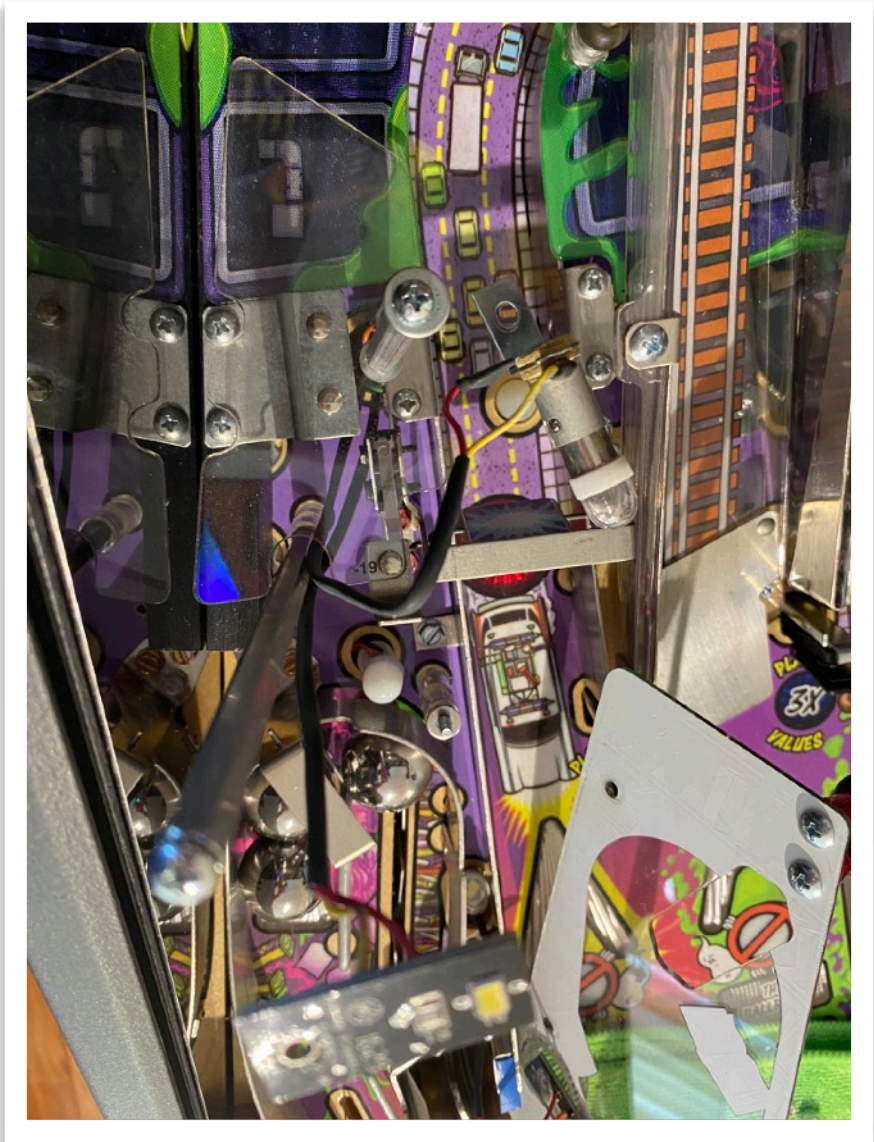
The Fire House area now looks like this once the fire house house has been carefully removed from the playfield.

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.

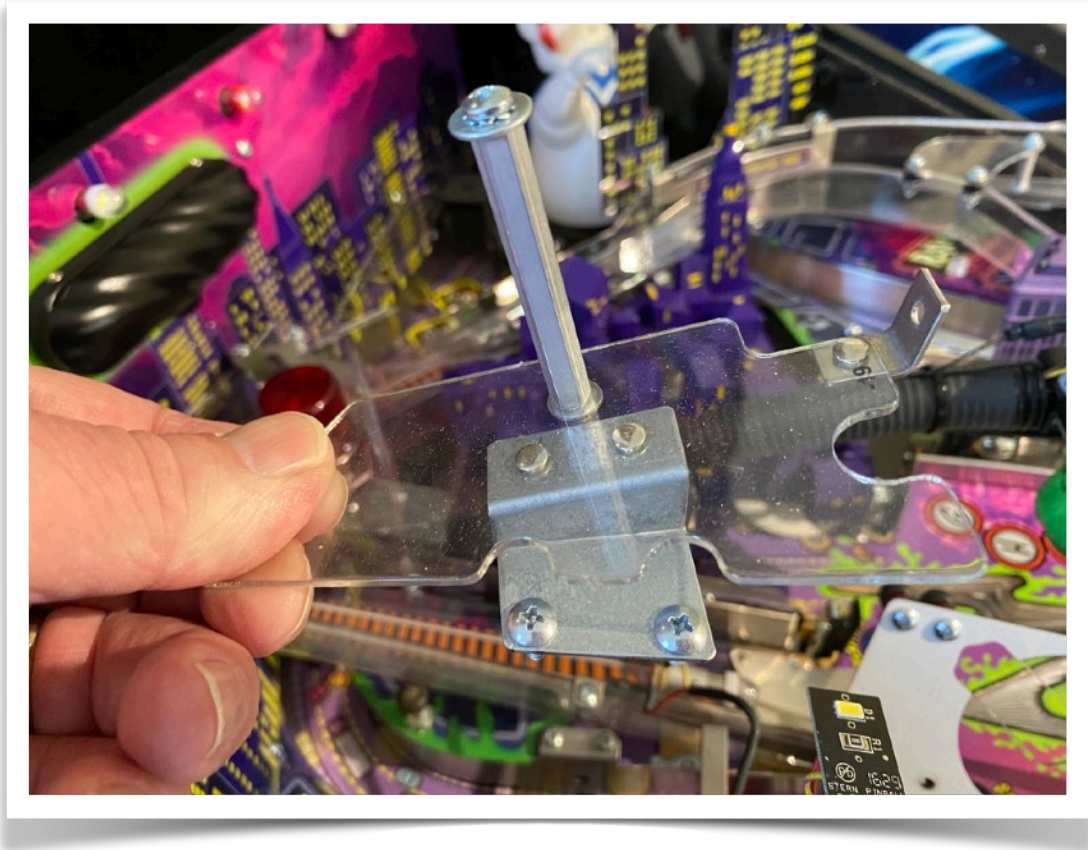


Now twist out the very tall hex post, and the plastic post and also the threaded stud holding down the plastic post.



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.

Your game is now ready to install your new Fire House.

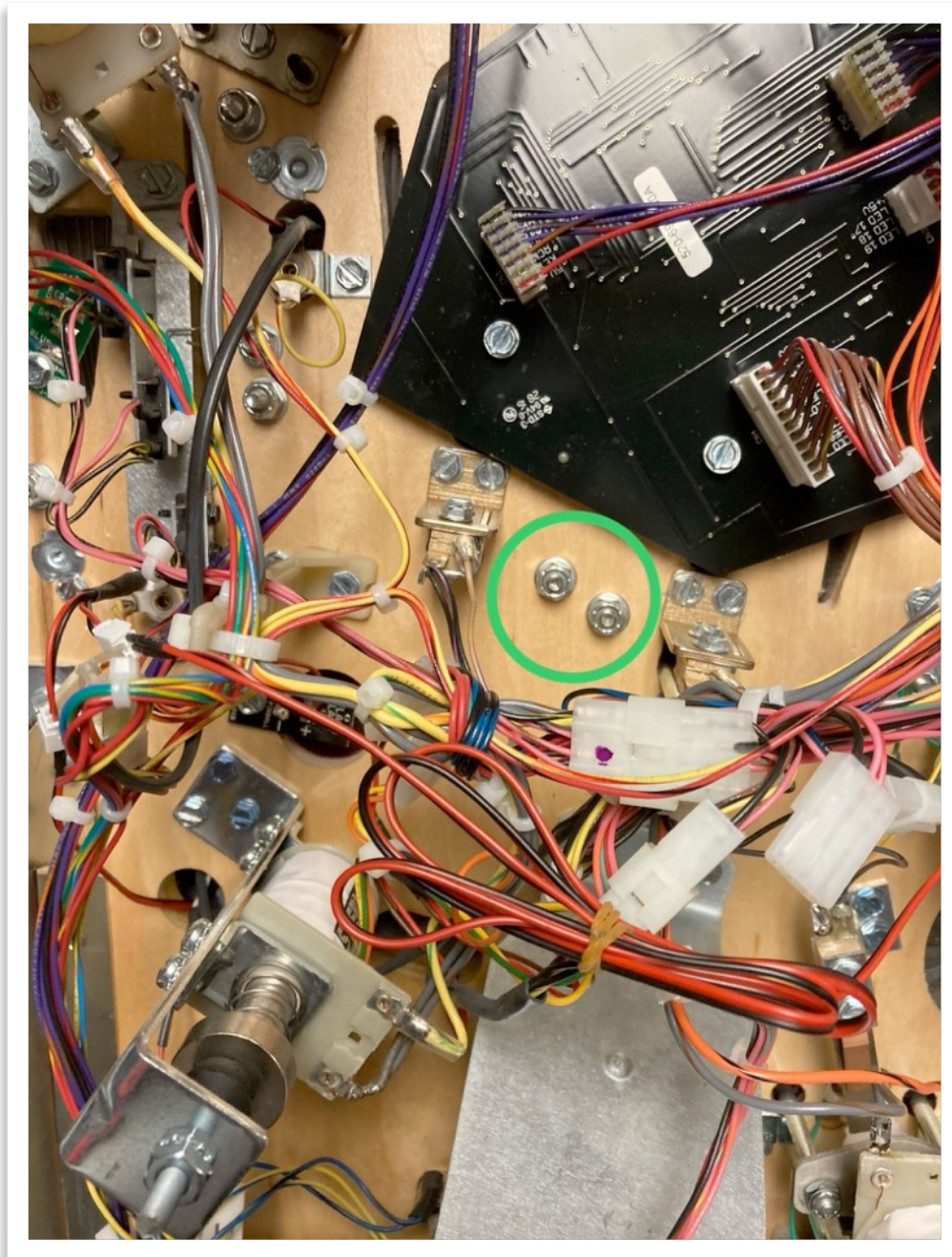




## **8 - Remove the Stern Fire House & Linked Components From a Pre / LE Game**

For the Premium / LE you will need to look into what screws need if any to gain access for partial ramp access / removal to get to one bolt head that holds the RHS of the Stern Fire House.

A Pinsider kindly shared with me a photo of the Premium / LE in which they had to remove these 2 nuts which are bolts under the ramp flap to then be able to move the ramp a little to make it easier to then remove the Stern Fire House. They also had to remove a bolt at the top of the ramp as well - sorry I do not have a photo of this at the moment - if anyone is willing to help.



## **8 - Install Socket for Topper Lighting**

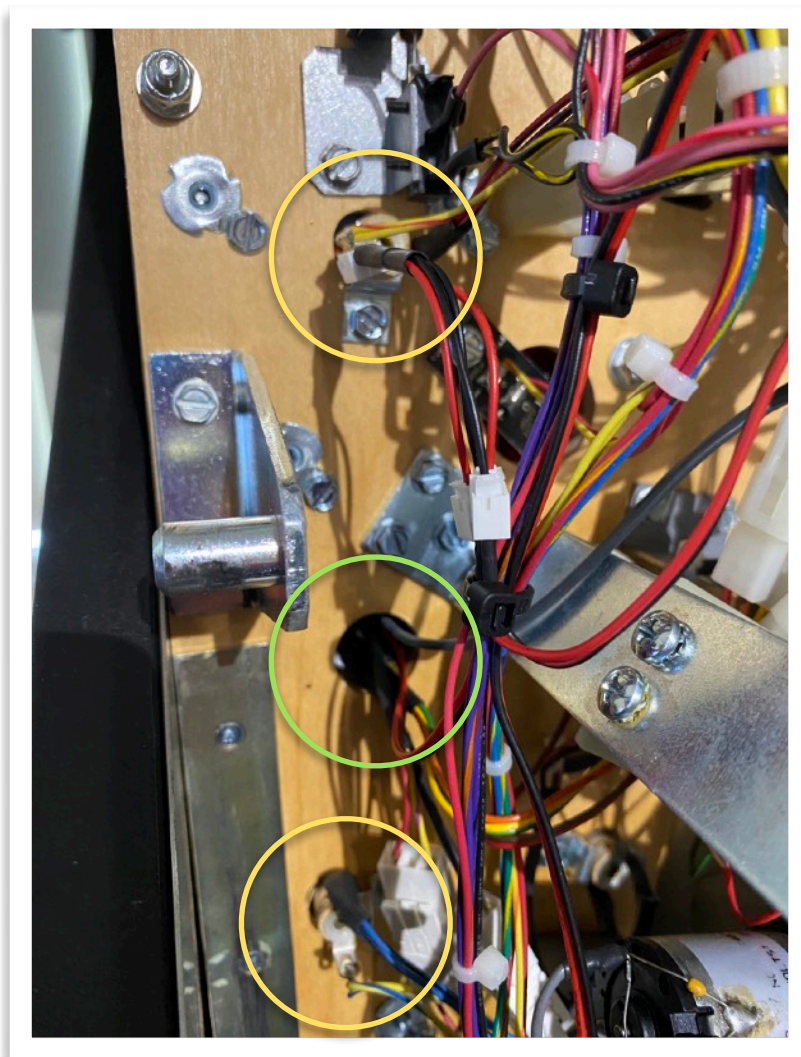
Now before installing the mod it is easiest to install the wiring adaptor now - only if you are installing a Fire House with a Spinner Topper - GB Logo or Ecto Light Bar. If you just have a plain Fire House with no addition lighting then proceed to the next Step

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.

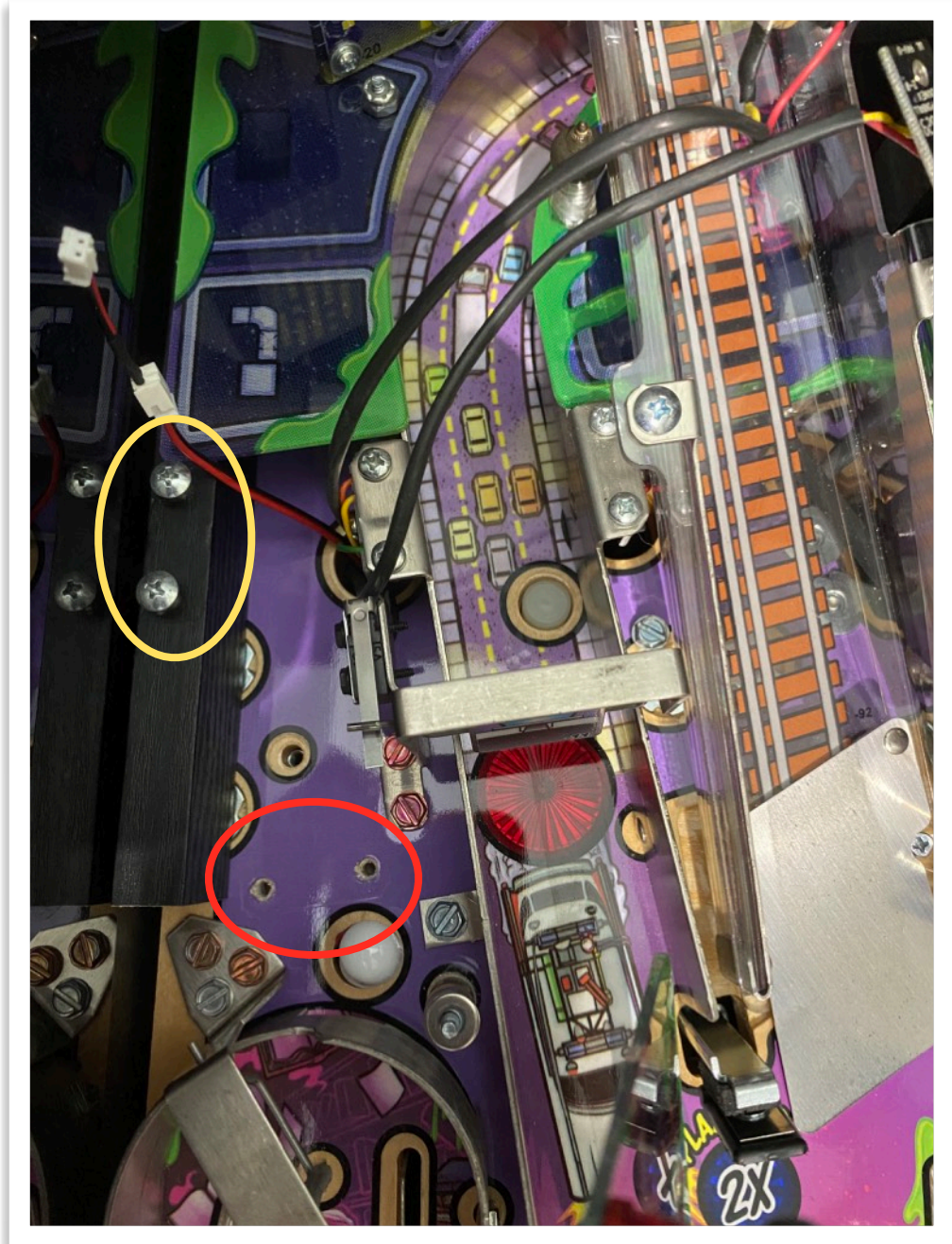
**Note:** for the testers I realised I left out a 6" adaptor extension lead (from Comet Pinball) that connects to the adaptor lead and feeds up through the playfield.



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

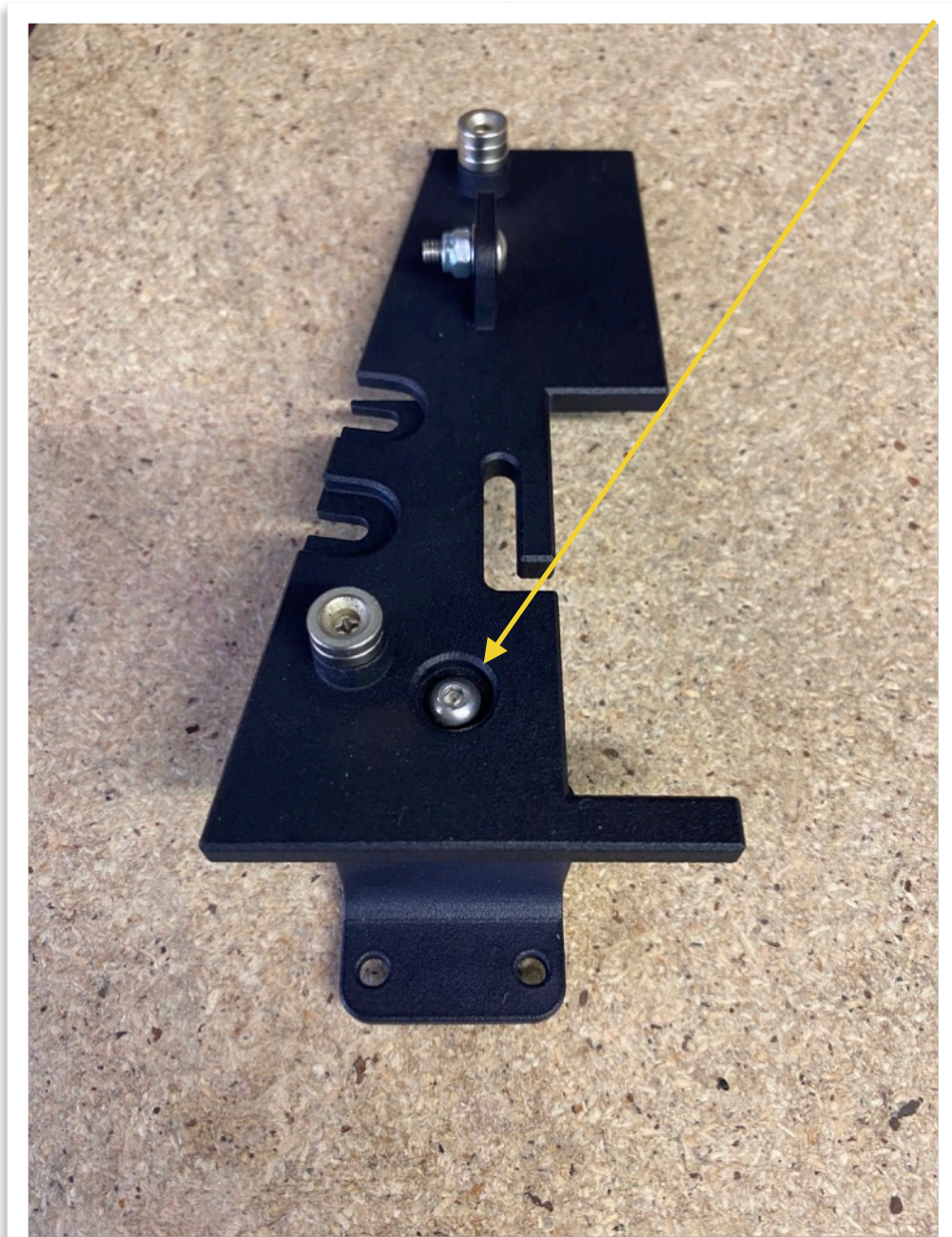
Proceed to the next step to install your new mod.



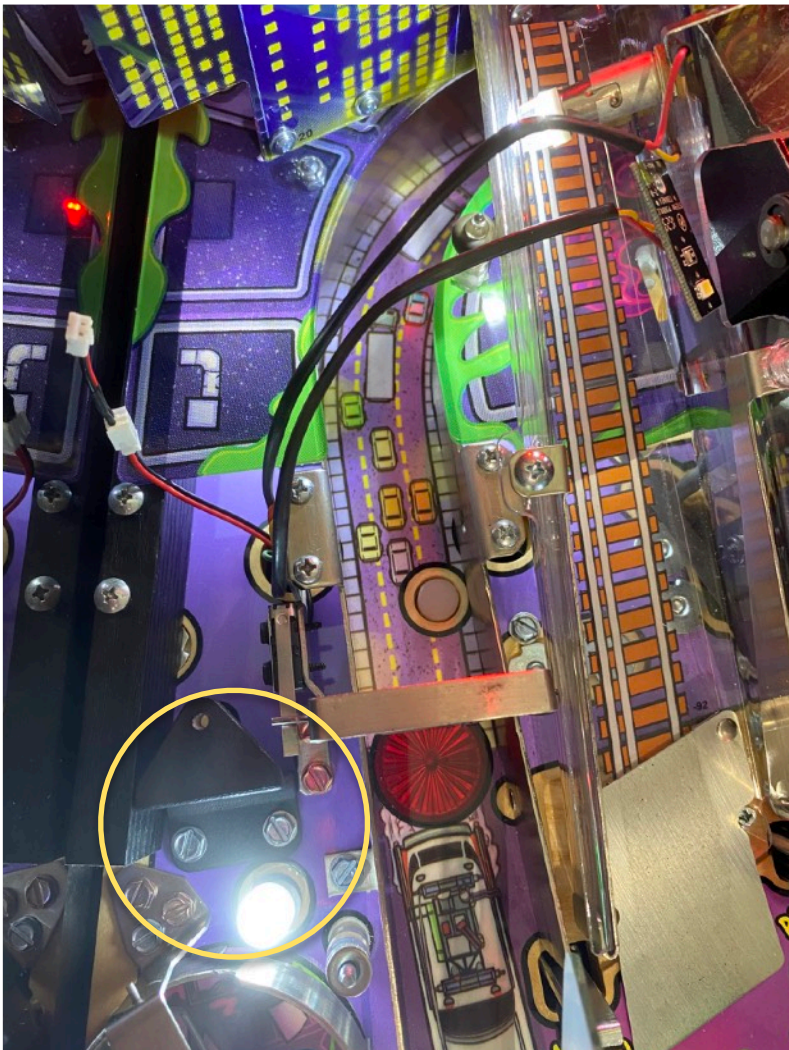
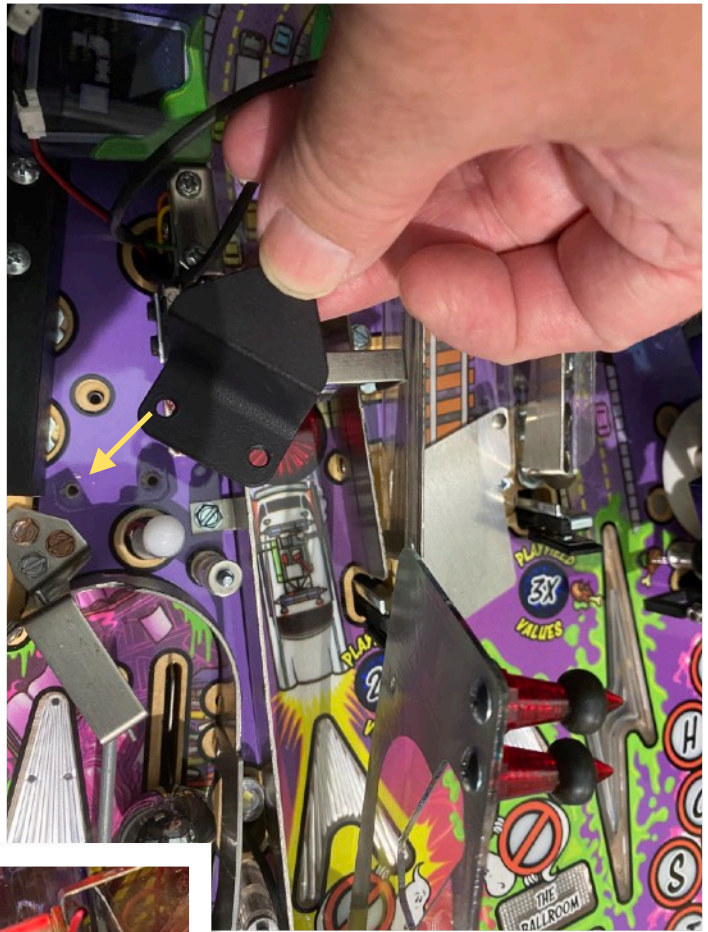
## **9 - Fit the Fire House Mod to Your Game**

**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.

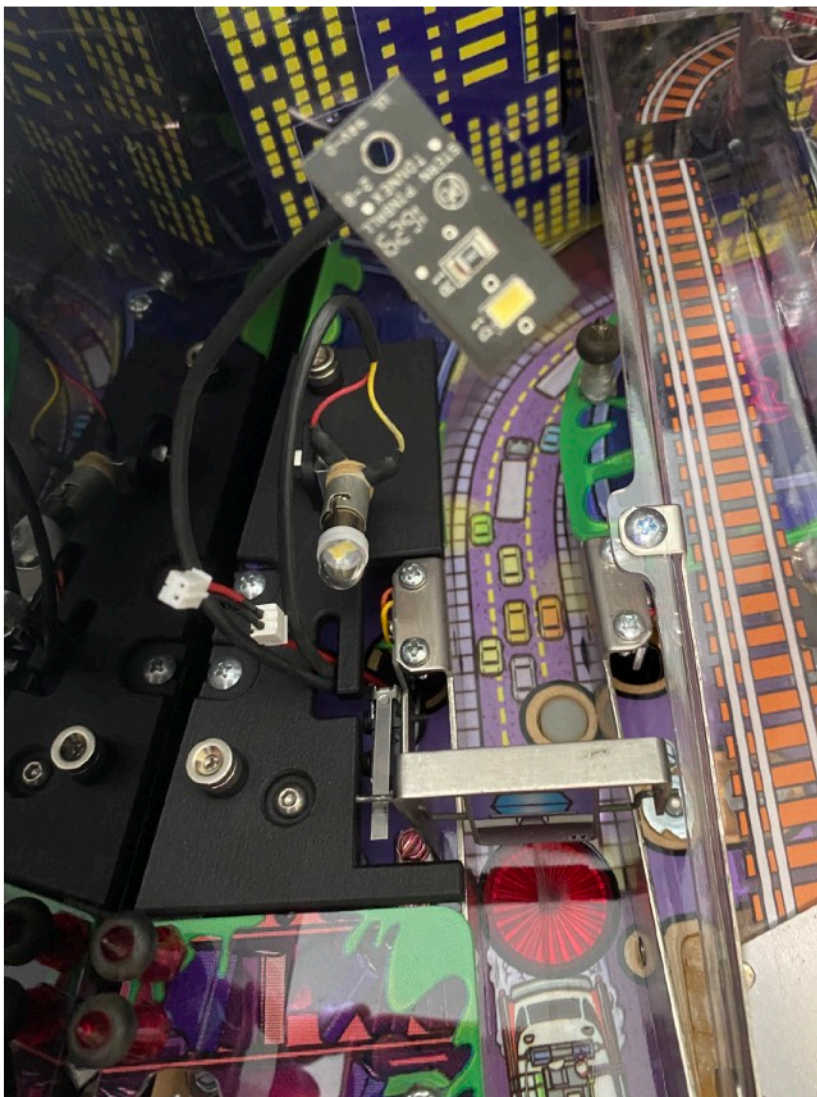
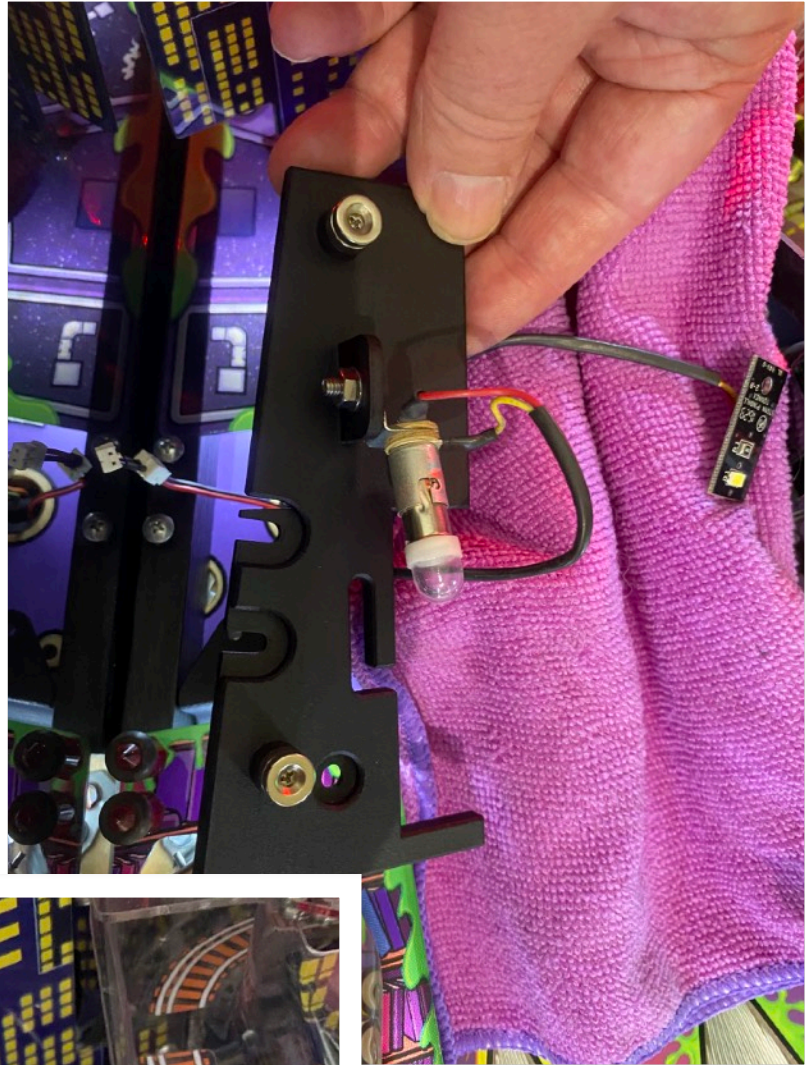
You will see a Red and Black wire coming from the same hole that the 2 existing cables come through. This is the cable from the supplied Comet Adaptor Bulb that I recommend that you replace the bulb in the yellow circle where you just installed the mount bracket. Or you could access a bulb under the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

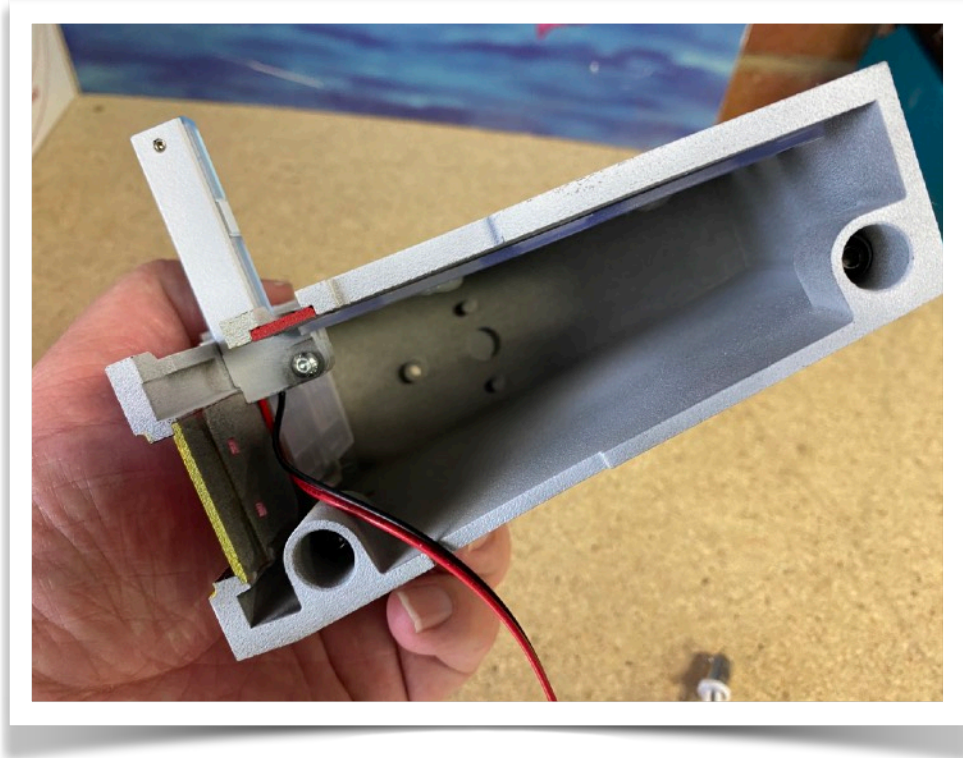


Now lower the base plate so under the screw heads on the side rail. While lowering into place ensure the 3 cables feed into the provided slot - this keeps the cables away from switches and getting pinched when locking the plate down.

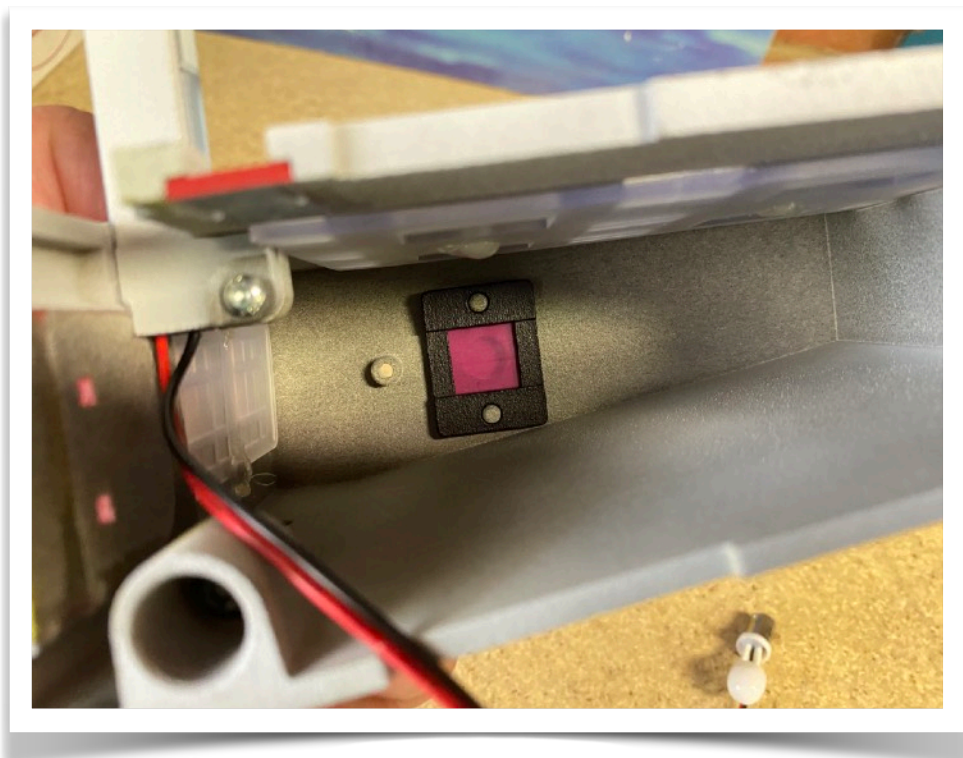
Now fasten the bolt at the front of the base plate to the base support mount. Align the mod's base plate with the side of the playfield and then tighten up everything and it will look like this.

## **10 - 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.





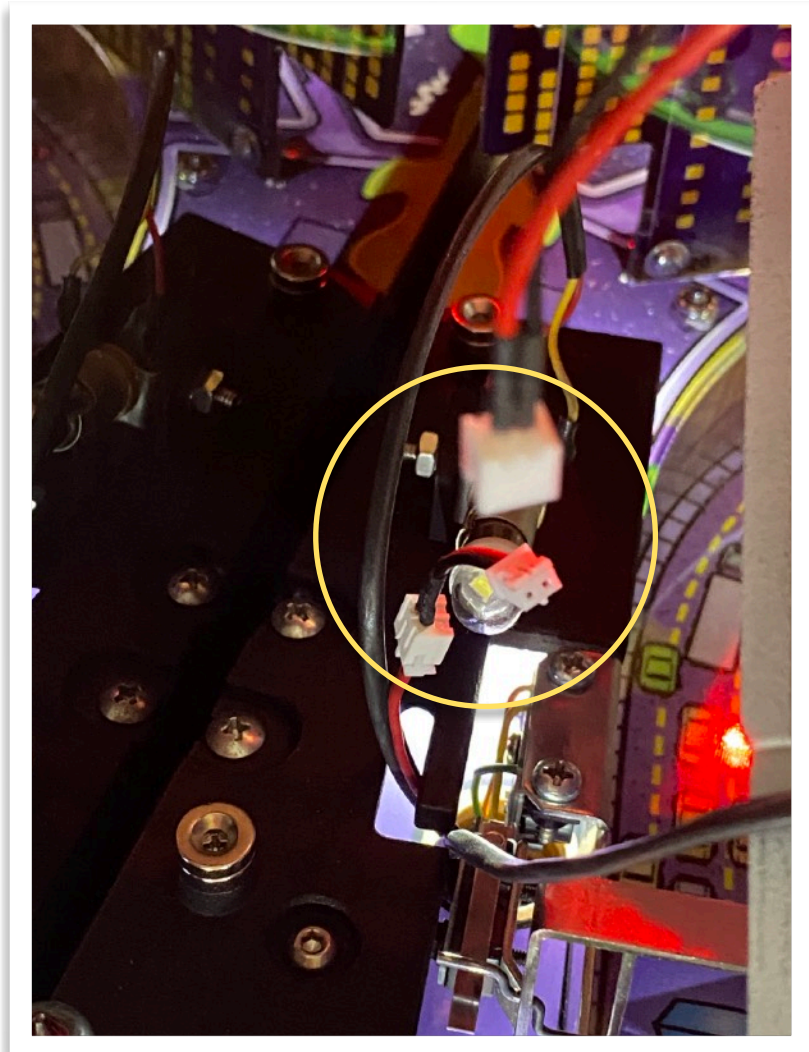
Next place a microfibre cloth on the ramp as you will need to install the stock Stern Flasher board. Insert the supplied bolt through the top of the roof and wiggle any available slack from the flasher board cable and insert into the building and over the bolt. Next place the nut into the Skinny Finger 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.

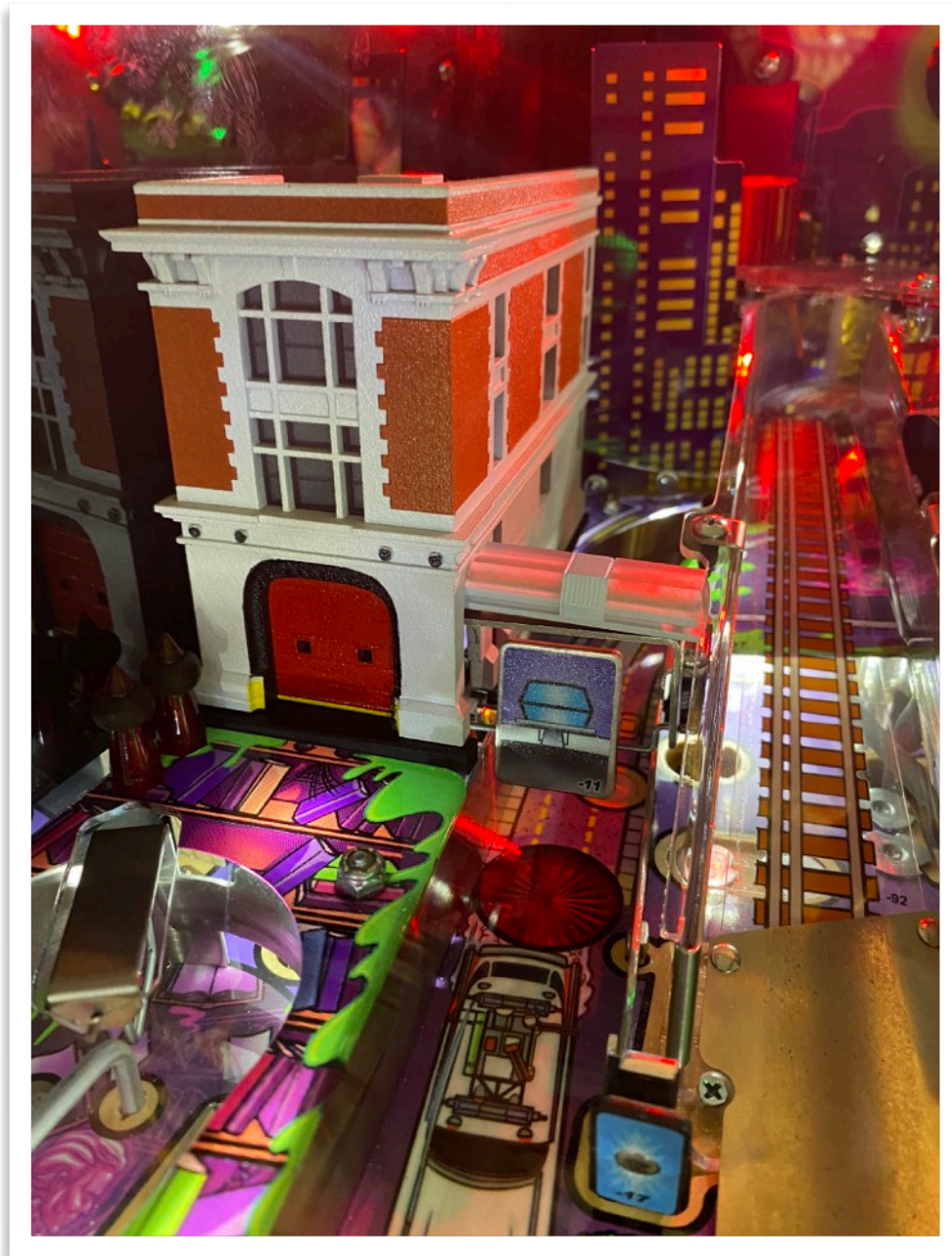


You will notice a very short lead in this power lead - this is the the polarity swap wire. I wire up the accessories with the correct polarity and then stern is correct polarity but the Comet Adaptors are incorrectly wired as their leds are universal all their leds light up but we need this short lead to make the mod light up as it switches the polarity.

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 ends.*

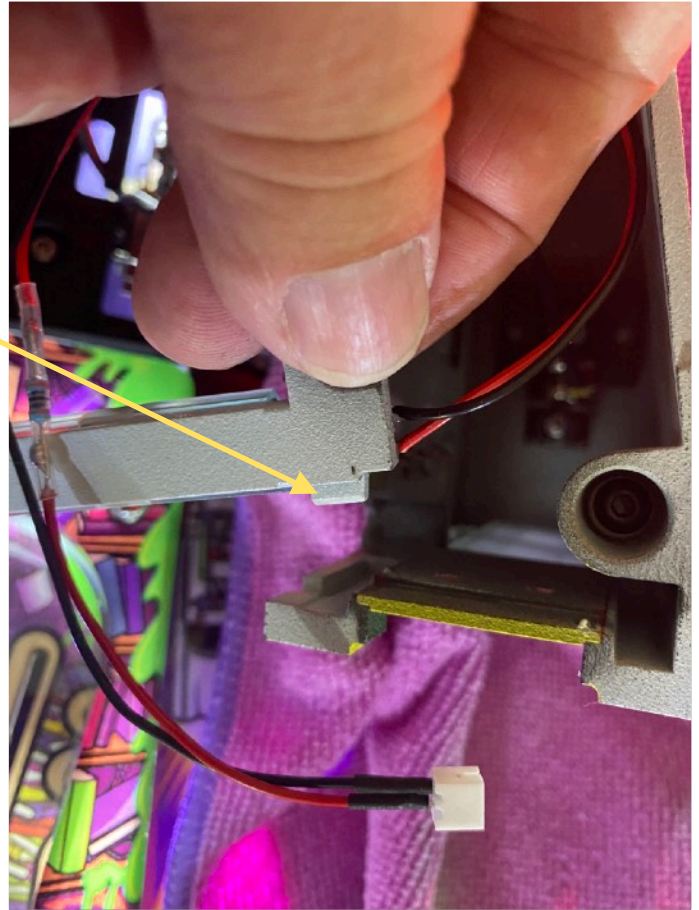


**Refer to the next section if you need / want to swap the spinner topper or perform maintenance.**

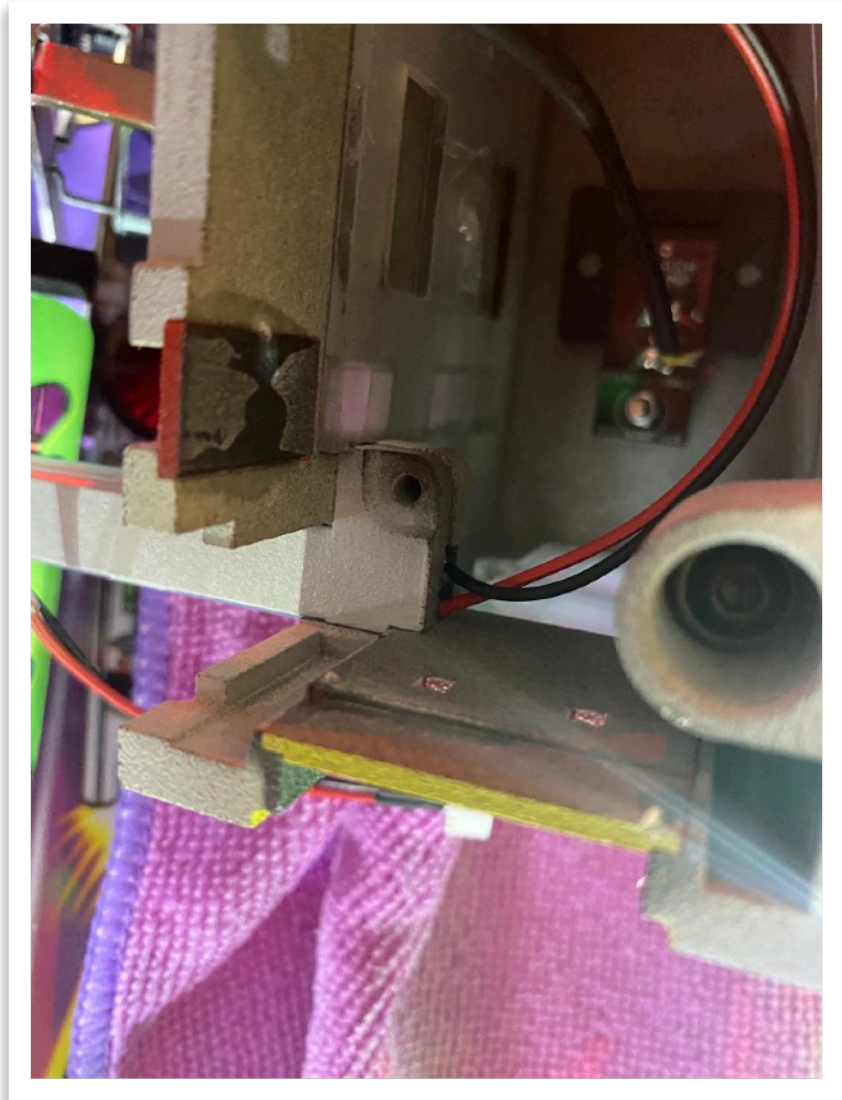
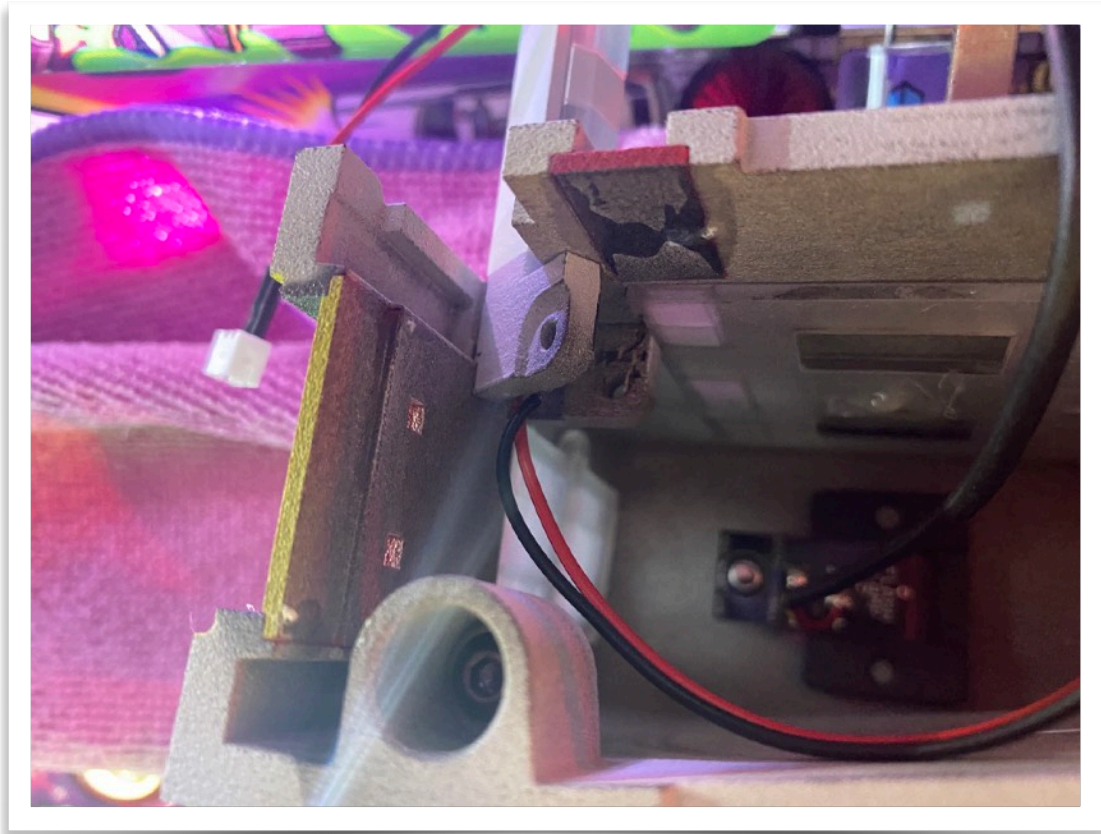
## **11 - Swap out the Topper Feature**

If you purchase both spinner toppers, you probably have plans to swap out the GB Logo Spinner Topper for the Ecto Light Bar Topper for a different look - this is similar to Section 6 / Page 8. 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 the spinner topper installation.



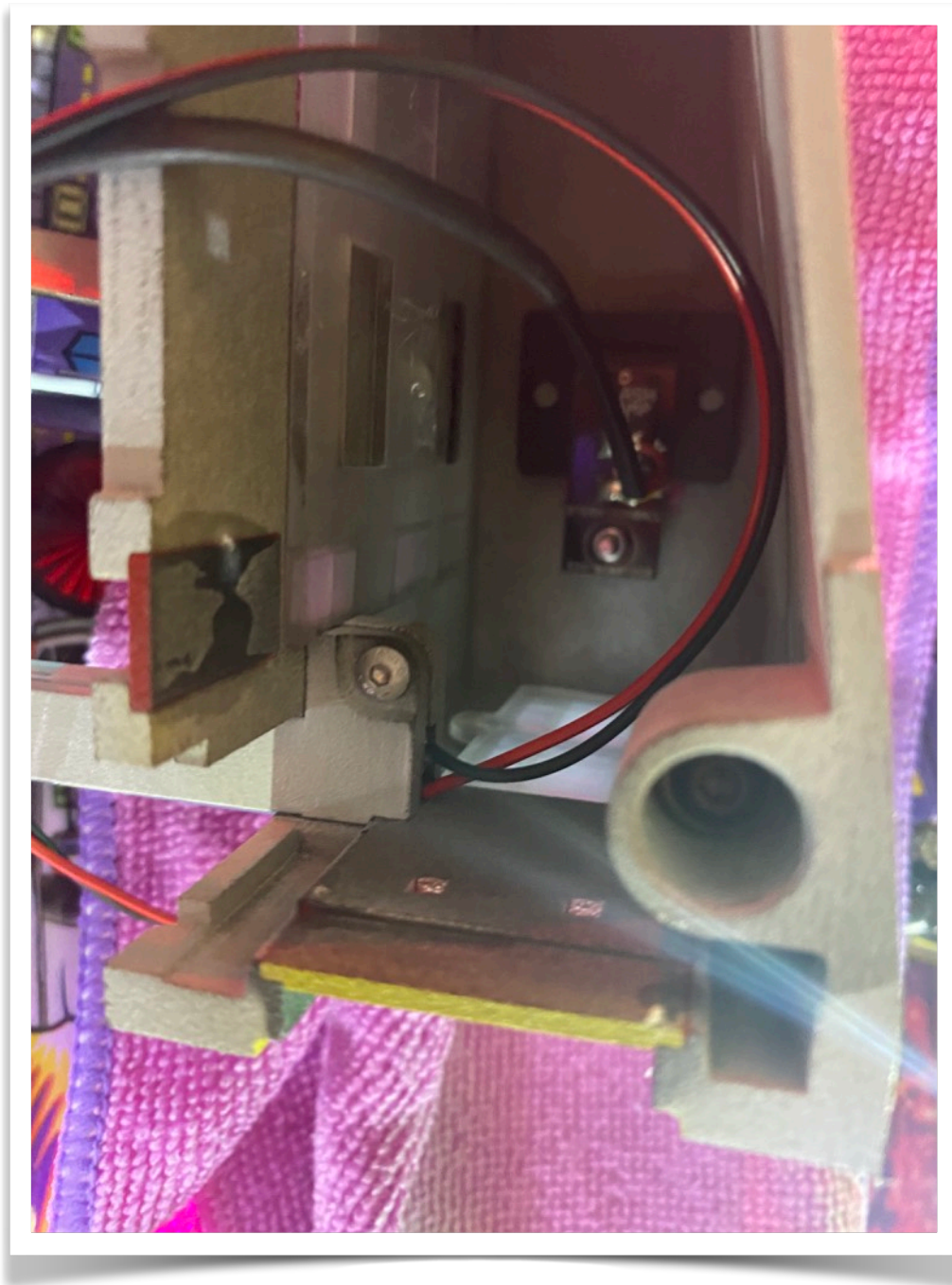
Now insert the beak into a slot next to both doors as shown so the Topper is at a 30 degree angle.



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 of the Fire House building.

Now get 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.



## 12 - Testing the Fire House Mod

### Lighting

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 check the 2 socket ends of the extension lead in case a pin has been pushed out and not making a connection.

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.

### Spinner

Lastly check that the spinner works and that it does not touch the mod base plate or building - if it does you will need to loosen the base plate and slide a little one way or the other.

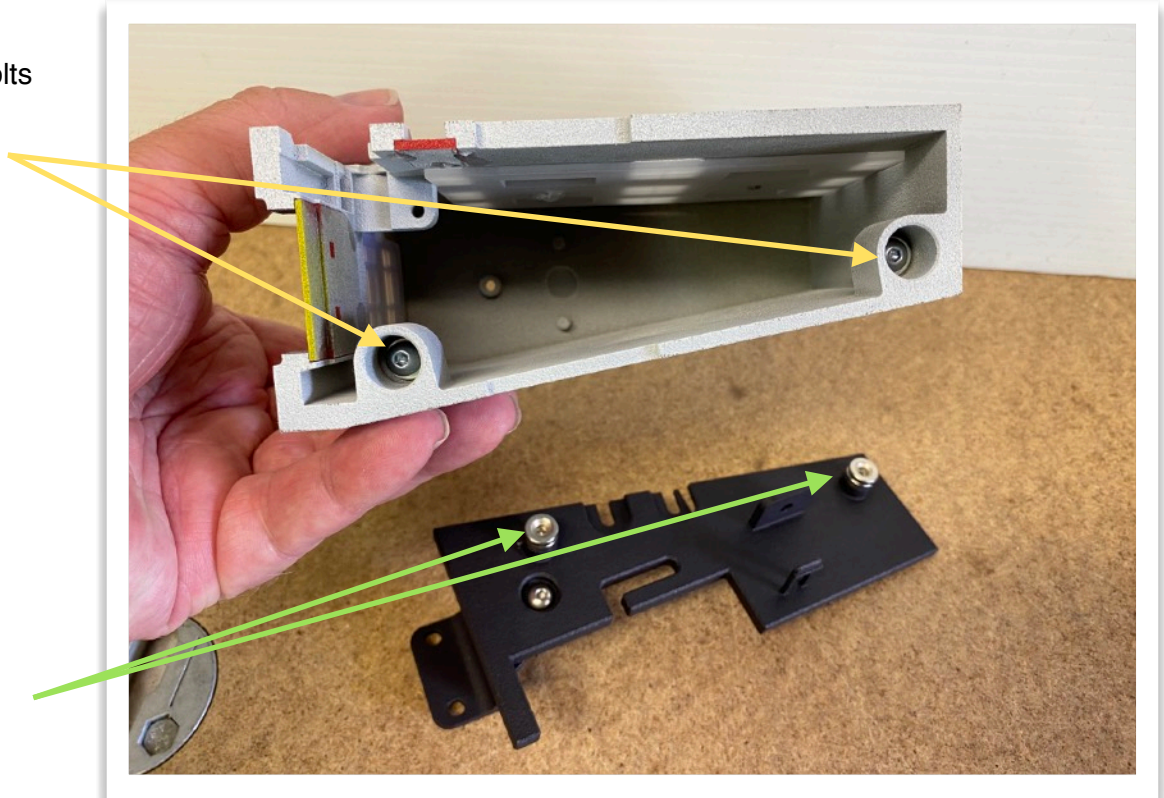
### Yellow Bollards

In the goodie bag were 3 x home printed yellow pins - these are the yellow bollards that can be glued to the front of the door way and one is a spare. These can be glued in but are a high risk of spoiling the paint work. On the 3 porto-types this area was painted but was detailed and risky of spoiling the rest of the buildings paint work so wanted to change this but the alternative is not ideal - I recommend not using them.

### Adjusting the Base Plate

The building has 2 bolts threaded into 2 cylindrical mounts and the bolt heads locate onto the double stack magnets on the base plate. The ideal setting is to wind out or in the bolts so the fire house building snaps to the magnets so when you (carefully) turn the building upside down (be ready to catch it though) the building does not release from the base plate - This has already been set for you.

Adjustable bolts



Magnets

## **13 - 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 a 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.



## 14 - Enjoy

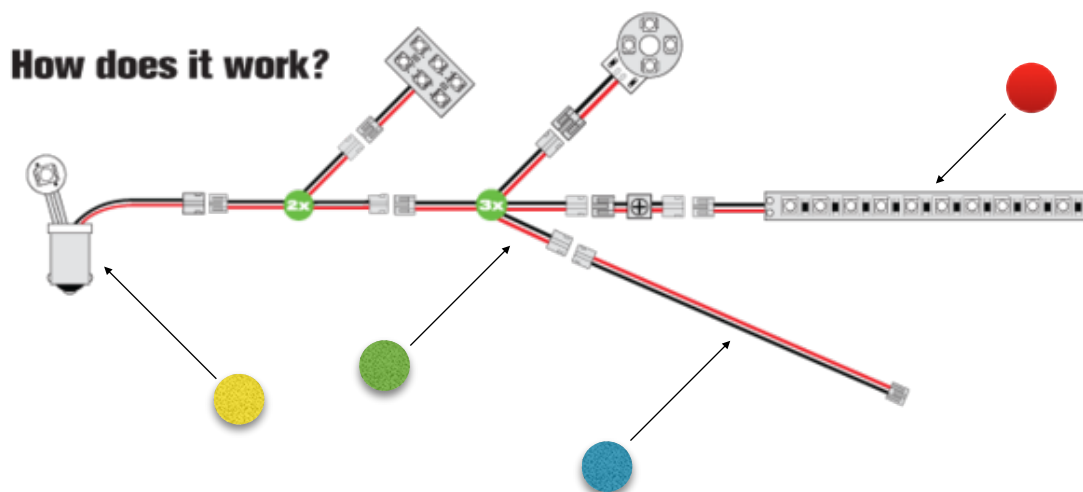
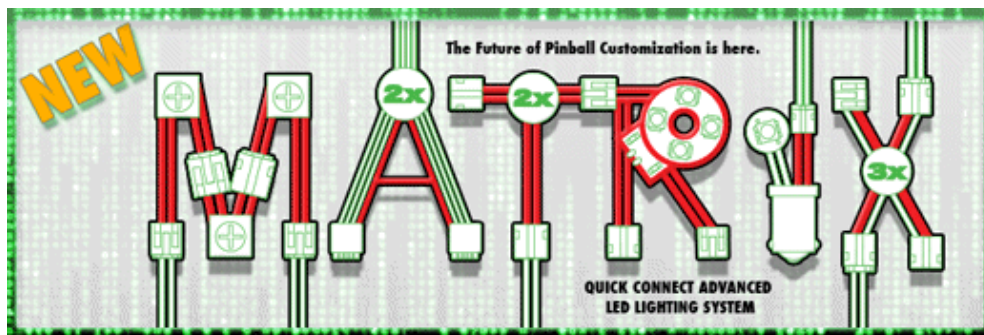
Now your mod is installed and operational, it will operate when ever the games GI is active and complete that city feeling.

Enjoy.



## 15 - 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](https://www.ledsales.com.au/index.php?main_page=product_info&cPath=142_146&products_id=3020)

## 16 - Proto-type & Production Version Differences

- 1 x **v1** and 1 x **v2** - early Proto-types - home prints and thrown away
- 3 x **v3**'s - Proto-types
- 21 x **v4**'s - Production Versions made

### **v4** improvements over the **v3**'s

- Minor brick work tolerances of 0.2mm all around for improved fitment during production assembly
- New building reduced tilt bracket added to the base plate
- 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 parts
- Removed the painted yellow section (bollards) either side of the door as high risk of messing up the paint work so provided some home printed yellow bollards but again are high risk glue installation.

Once the **v3** building was installed it could tilt a little to the left as the magnet anchors are only on the left side - though this does not affect the mod once installed rather a bug bear for me to improve upon. On the production versions - **v4** there is a small vertical bracket that comes up from the base plate which aids in reducing the slight tilt angle of the building. Though on the **v4** production versions of the base plates this was designed and made part of the base plate - these small support brackets are a little too thin so take care as they can break - read next page for the fix.

Left base plate - Production Base Plate - **v4**

Right base plate - Proto-type Base Plate - **v3**



If your small bracket does break off - do not panic there is a fix and it was packed with your mod in the goodie bag - (it is home printed black part which actually works better than the professional printed part). Simply razor blade the 2 remaining base pieces off so the surface is flat and locate your replacement bracket out of the goodie bag.



Then install the replacement bracket to the GI vertical mount like below - a section of the new bracket cups around the vertical GI mount.



Now re-assemble the GI bulb with the supplied bolt to the vertical mount as well as the supplied support bracket. Then you can re fit to your game and install the Fire House building back on to the base plate.

**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**, but Swinks Pinball will not cover the freight back to us.*

*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](mailto: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.*