PinPAC TH2
Installation Manual
for

Stern Spike 2 Pinball
Machines
330.202.00

Version 1.1 March 06, 2022

Contents

Warnings and Agreements

Welcome! The PinPAC Pinball Personal Audio Controller has been designed for simplicity of installation! As with any pinball machine modification and add on kit there is a required level of expertise for the installation. If you are not proficient in basic pinball parts installation we recommend having our kit installed by someone who is proficient with the basics of pinball repair. Pinnovators requires our kit be installed by an experienced pinball service technician with basic electrical skills. As with any electrical piece of equipment a danger does exist and you must agree to not hold Pinnovators responsible for any injury, damages, etc. before continuing.

Sound Levels: Pinnovators recommends running your headphone sound level at a safe level to prevent long term hearing loss. For a good example of recommend sound levels, we recommend following suggestions given by major audio equipment manufacturers such as Apple and their ipod.
phys.org/news80304823.html

www.macworld.com/article/1060274/hearingprotection.html

ESD: We recommend always discharging the headphone cable by touching it to an exposed metal part of the pinball machine before plugging it into the machine.

Power Cord: ALWAYS UNPLUG THE POWER CORD for safety when working on your pinball machine!

Playfield Propping: Pinnovators highly advises following playfield propping instruction for your pinball machine. These instructions are typically found inside the Operators Manual for each machine. Failure to follow these instructions can cause fatal injuries or even death. Pinnovators also recommends having an assistant hold a propped playfield in the up position when servicing under the playfield.

1. What's included in the Kit

Item	Part Number	Picture
PinPAC TH2 Front Panel Assembly	310.202.000	
Back Plate	100.054.000	
Cable	600.057.000	
PinPAC TH2 Hardware Kit:	600.053.001	
¼ 4-40 Inch Nuts	441.005.000	

2. Requirements

A.   The Pinnovators PinPAC TH2 for Stern Spike 2 systems requires a Tournament hole on the front of the Pinball cabinet.

B.   Tools: A ¼ Inch hollow tube nut driver.

You can purchase the tool here if you do not have one.
Pinnovators Link: https://pinnovators.myshopify.com/collections/tools/products/1-4-gearwrench-insulated-nut-driver

3. Preparation

Unplug the pinball machine!

4. Back Box Installation

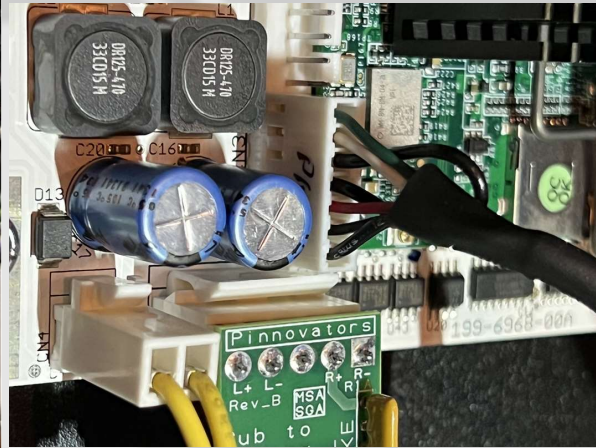Lower the front speaker grill and remove the back glass. Store the glass in a safe location.


Uncoil the included interface cable.

This cable has two connectors on it.

Cable End	Plugs into	Picture
5 Pin	Front Headphone Interface Panel	
7 Pin	CN3 on the CPU board.	

Plug the 7-pin connector into the CN3 Male pin header on the Spike 2 CPU board.
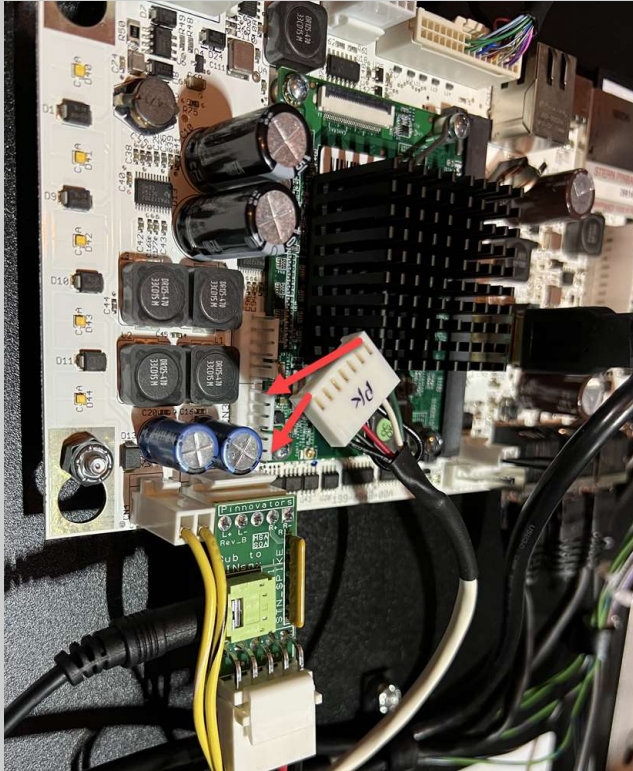
Run the cable under the cable clamp. No need to remove the cable clamp, just tug on the top of it to open it. Run cable under the second cable clamp and then drop the remaining cable into the main cabinet.
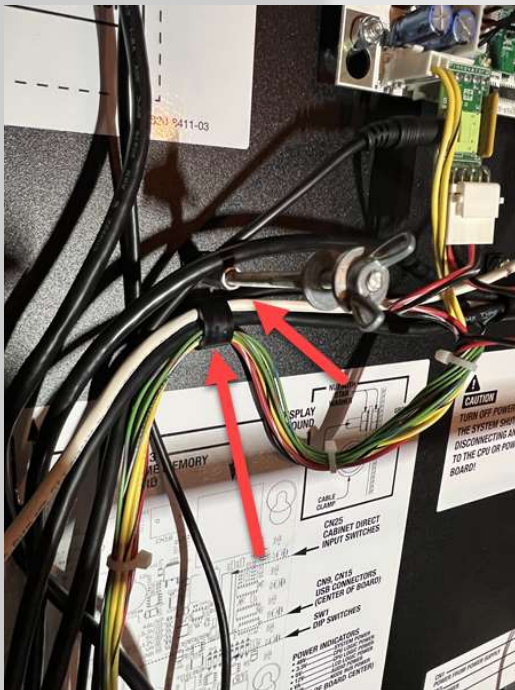
5. Running the cable through the main cabinet

Remove the playfield glass and lift up the playfield as shown. REMOVE THE PINBALLS! 😎 Run the cable through the cable clamps as shown below. Leave any leftover cable slack neatly here so the cable will not get stretched when the back box is folded down. Use the included Velcro tie to neatly secure the cable to the main cable coming down from the back box.
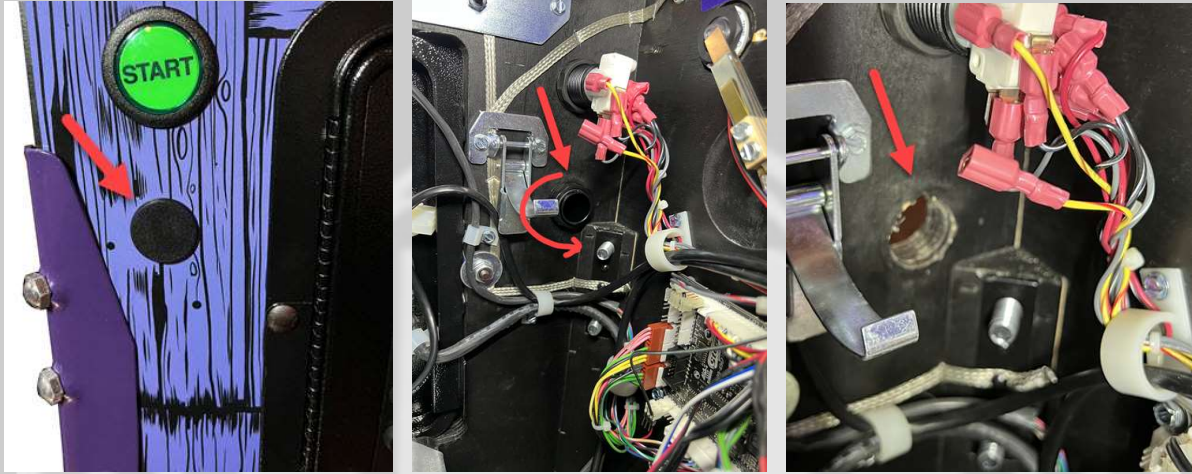

Lift up the playfield and lean it against the back box. Run the cable through the three cable clamps as shown.
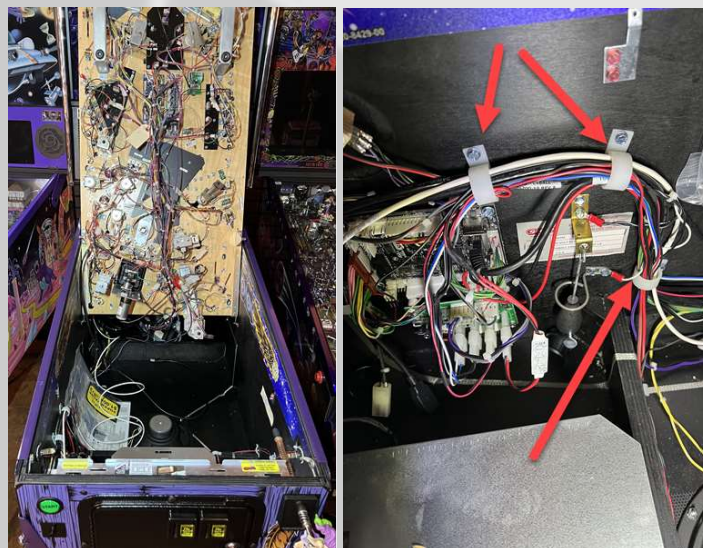
6. Removing the Tournament Hole Plug.

Remove the Tournament hole plug by turning the nut on the back as shown. Some nuts can be removed my hand and some will need a pair of pliers or a wrench to remove it.


7. Installing the PinPAC TH2 Plate.

Insert the PinPAC TH2 Front panel into the open Tournament hole. The volume control faces up. Future product revisions will be slightly different than what is shown here.
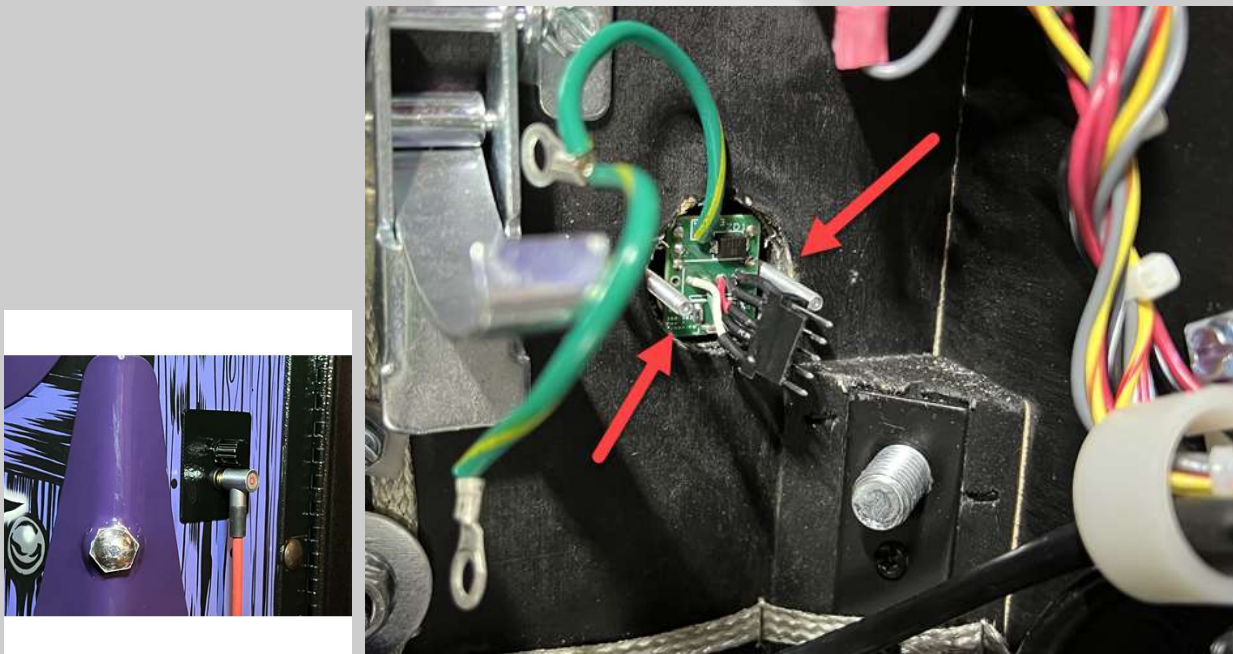
Thread the green ground wire and the pin header cable through the slotted opening of the PinPAC TH2 rear mounting plate as shown. Hand tightten the two 4-40 lock nuts onto the Pem studs of the PinPAC TH2 front plate.
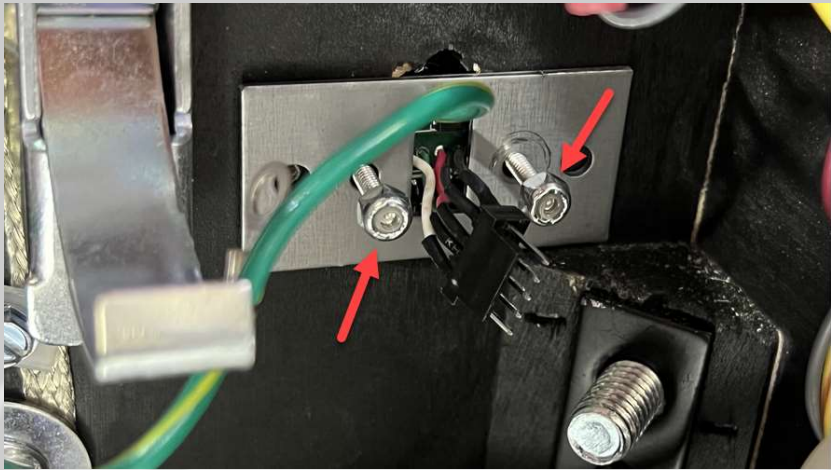
Using your hollow nut driver, tighten the lock nuts until they just start to make contact with the rear mounting plate. Carfully align the PinPAC TH2 panel so it sits straigtht. Snug the lock nuts enough to keep the assebly from rotating but do not over tighten! I twill require a lot of force to break the PEM studs so don't overkill it.

Remove the ¼ inch screw on the lock down latch and then fasten the mid lug of the green safety wires are shown.

Caution!! You must attaches these ground wires as show!!

Make sure the screw is snug when you screw it back in. If for some reason, the hole is stripped (like mine was on my Aerosmith) completely remove the bracket and repair the hole! Please contact us if you need help.

Next using your nut driver, start to thread the included ¼ bolt into the rear bracket. Hold off on putting the green wire under the bolt until you have the hole fully started. Drive the bolt in half way and then remove the bolt and put the bolt through the remain lug of the green wire.

Fully fasten the bolt.
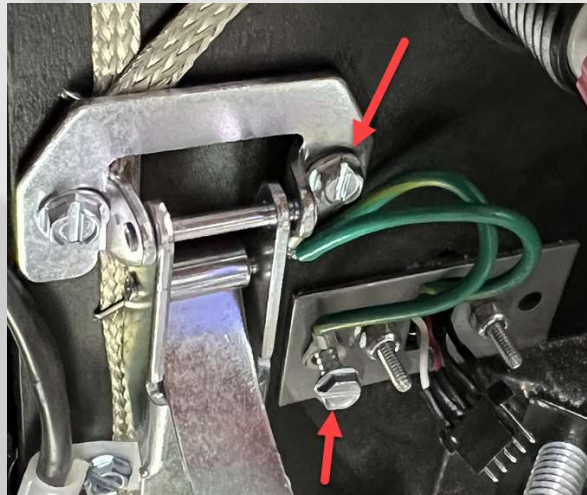
Instert the femal end of the interface cable into the male pin header as shown. Secure the wire in the cable clamp.
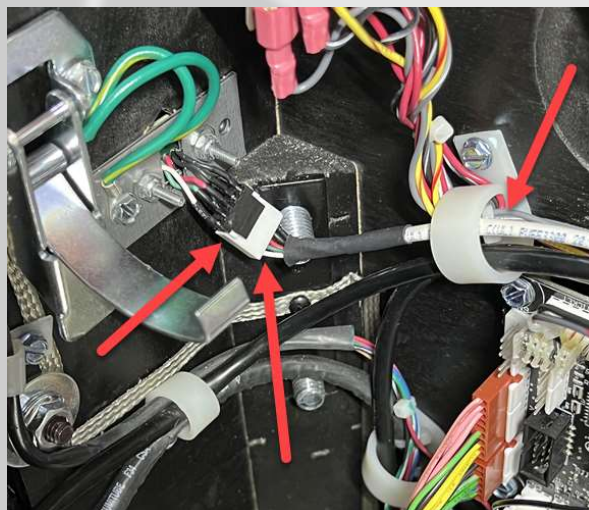
8. Reassembly

Lower the playfield and reinstall the pinballs. Reinstall the playfield glass.

9. Setup Menu Adjustments

Power up your game!

There are two menu sections we will need to adjust now that the headphone kit is installed. Beware! You may need to power cycle the machine to get a menu setting to work properly! You can make the setting, but it may not fully work until the power is cycled or the game menu is entered and existed a few times.

The following screen shots were taken on an Aerosmith LE using V1.10.0 SYS 3.01.0 OS 2.06.0. Your menus will be different if you have not updated to the latest firmware.

Setup menu Part 1: Go into the Service Menu and then navigate to the ADJ menu and then Standard Adjustments.

Go to "Front Volume Knob" (menu #79 on Aerosmith)

> For home use games, keep this setting on default so you can use the headphone knob to control the games volume when the headphones are not plugged in.

> For games on location, set to "HEADPHONES VOL. ONLY". This setting prevents the customer from adjusting the games volumen.
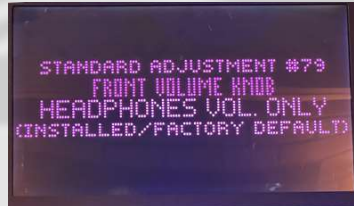
Next advance to "MUTE IF HEADPHONES DETECTED". This setting causes the max volume of the headphones to behave differently!
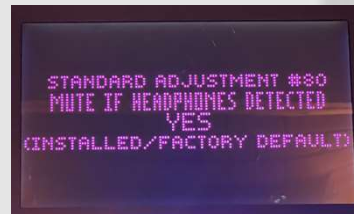

If set to "YES":

> Headphone volume can go extremely high! Be careful! The headphone max volume will be discussed in the next setting section. Set to "YES" for home use.
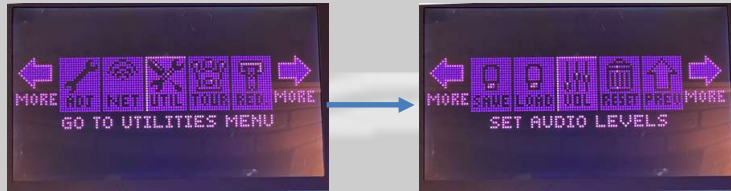
If set to "NO":

> The headphone volume will max out at about 43/44 and will also depend on what the game volume is set to! Set to "NO" if the machine is on location.

Menu items #18 and #82 can be changed if desired. The defaults are shown below.
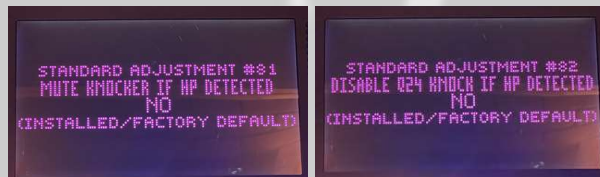
Setup menu Part 2:

Navigate to the "UTIL" menu then the "VOL" menu.

Not all Spike 2 machines will have the same menu! The VOL menu is not numbered so it makes it difficult to navigate. Scroll through the VOL menu to become familiar with the menu items.
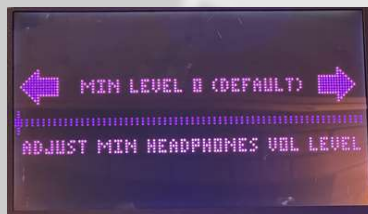
Menu item "ADJUST HEADPHONE VOLUME" is basically the same menu that the PinPAC TH2 volume control adjusts. No need to touch this menu.

Navigate to the "ADJUST MAX VOLUME LEVEL". See the table below for setting.
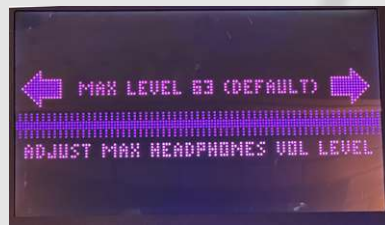
Menu #80 Mute if HP Detected set to:	The set Max level to:
YES	45 or less
NO	63

"ADJUST MIN HEADPHONE VOL LEVEL" can be left a 0 (Default)

Exit the setup menu and you are now ready to play your game!

10.   Closing Statements

We appreciate your business!

Thank you for purchasing our products. We try our best to make pinball products that we find useful and sell them for a fair price. We keep our eyes open for useful pinball product ideas we are pinball people too!

Warranty and repairs:

Pinnovators will stand behind everything we sell. If our product ever fails, contact us and we will make it right! (Even if you didn't make the original purchase or you break our product)

Contact Us:

Please contact us with any idea or suggestions for making our products better!

We can be reached at: Sales@Pinnovators.com

Thanks,

The Pinnovators team.