

**Take your time, follow the instructions, relax, and enjoy yourself!**

**WARNINGS: Perform installation with your pinball machine turned off and unplugged from AC power.**

# PixlWav - LED Speaker Light Installation – Stern Spike-2
## Expression Lights

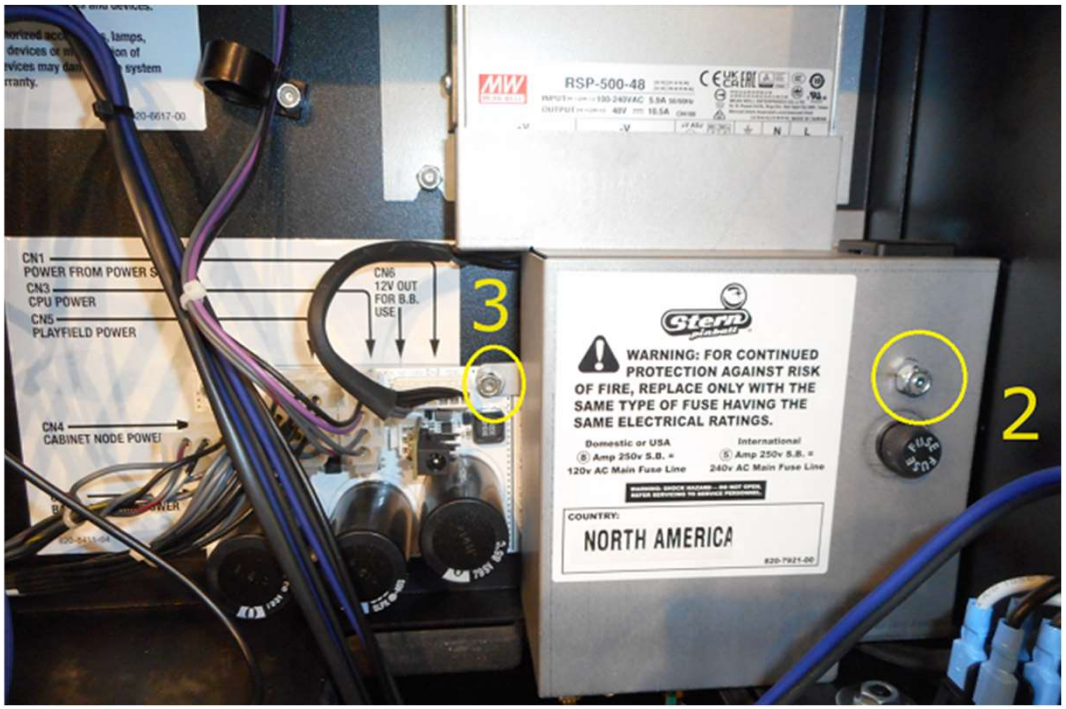
**If you have non-PW or non-PinWoofer speakers (such as the Kenwood KFC-1366), please review the addendum at the end of this document before starting.**

# Power Box 1

- **Make certain that your machine is unplugged from AC Power.**
- Locate the power box cover found in the lower-right hand side of the backbox.
- Nut 1 does not need to be removed.
- Remove Nut 2.

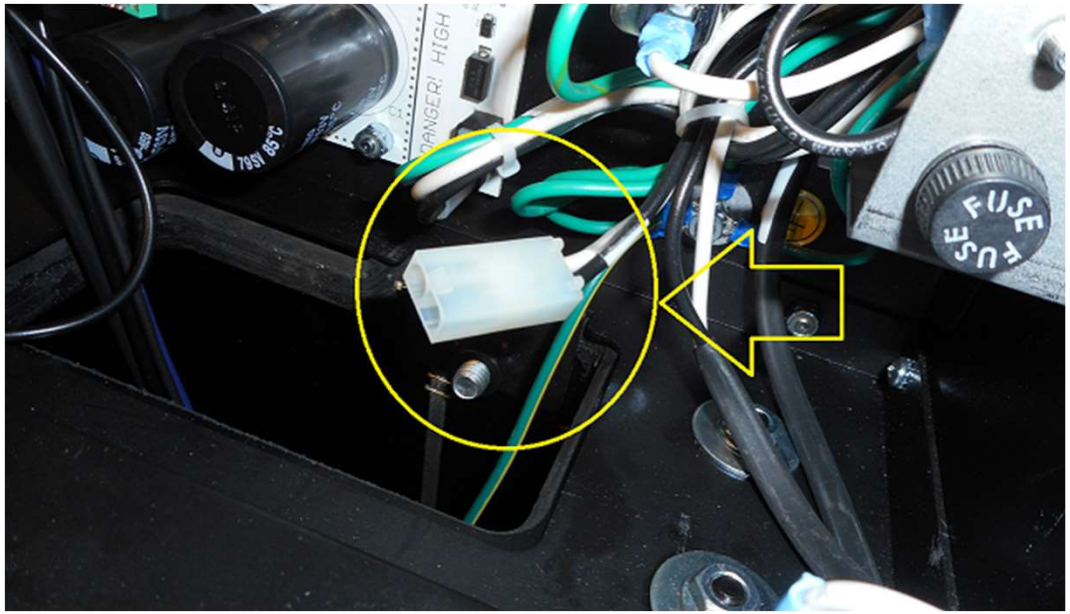
# Power Box 2

- Remove Nut 3.



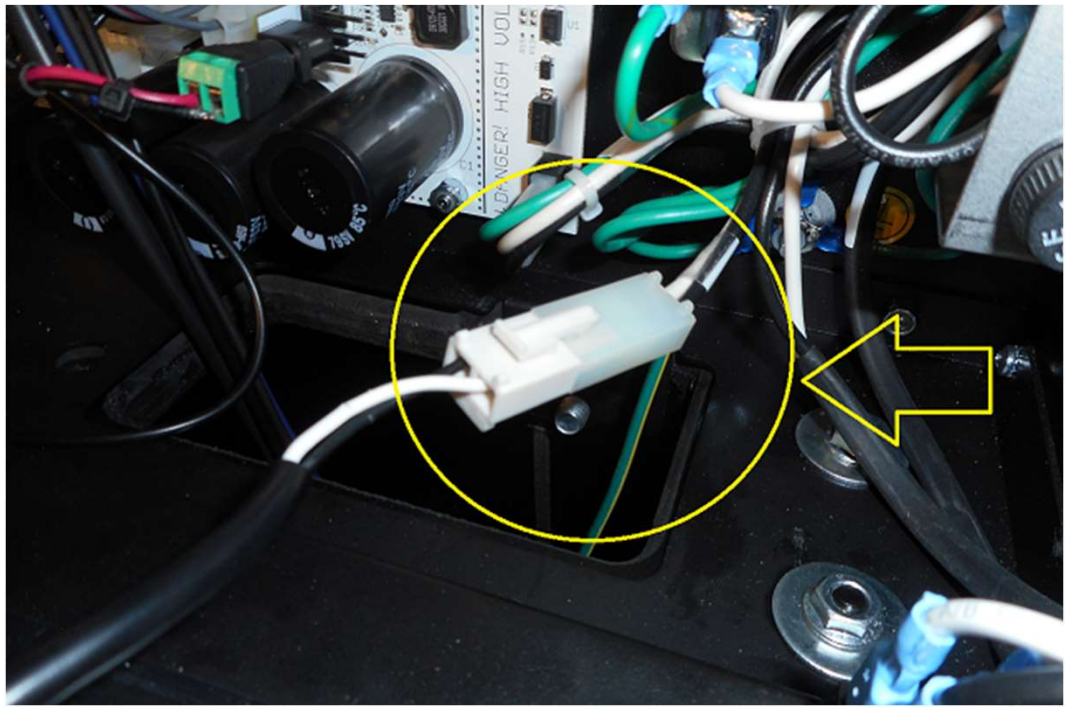
# 110 AC Connector (Bill Validator Power) - 1

- Remove the power box cover.
- Locate the 110 AC Bill Validator Power Connector shown in the yellow circle (United States Only).



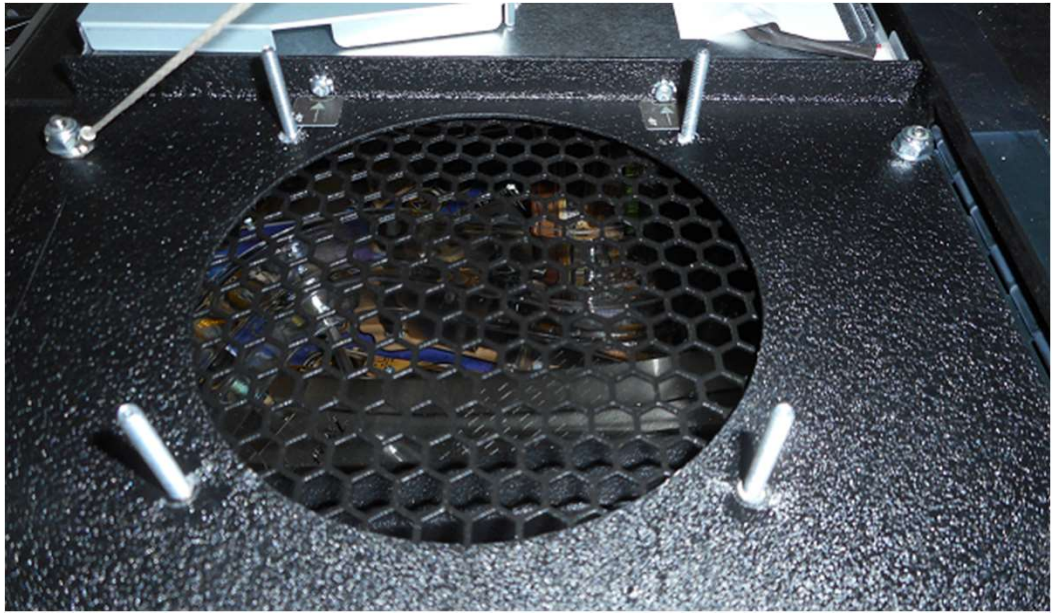
# 110 AC Connector (Bill Validator Power) - 2

- Plug the supplied 110V AC to 5V DC power adapter as shown.
- Re-install the power box cover at this time.



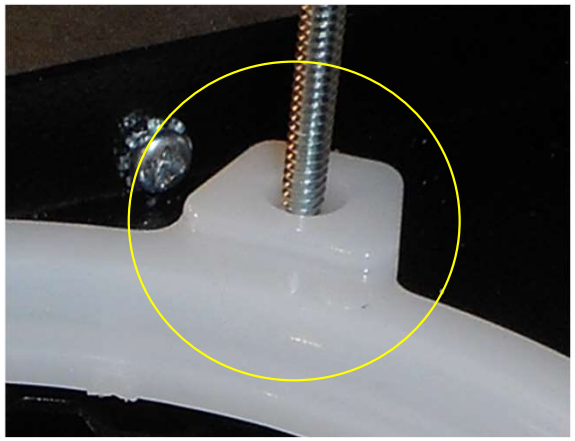
# Mount Right Side - 1

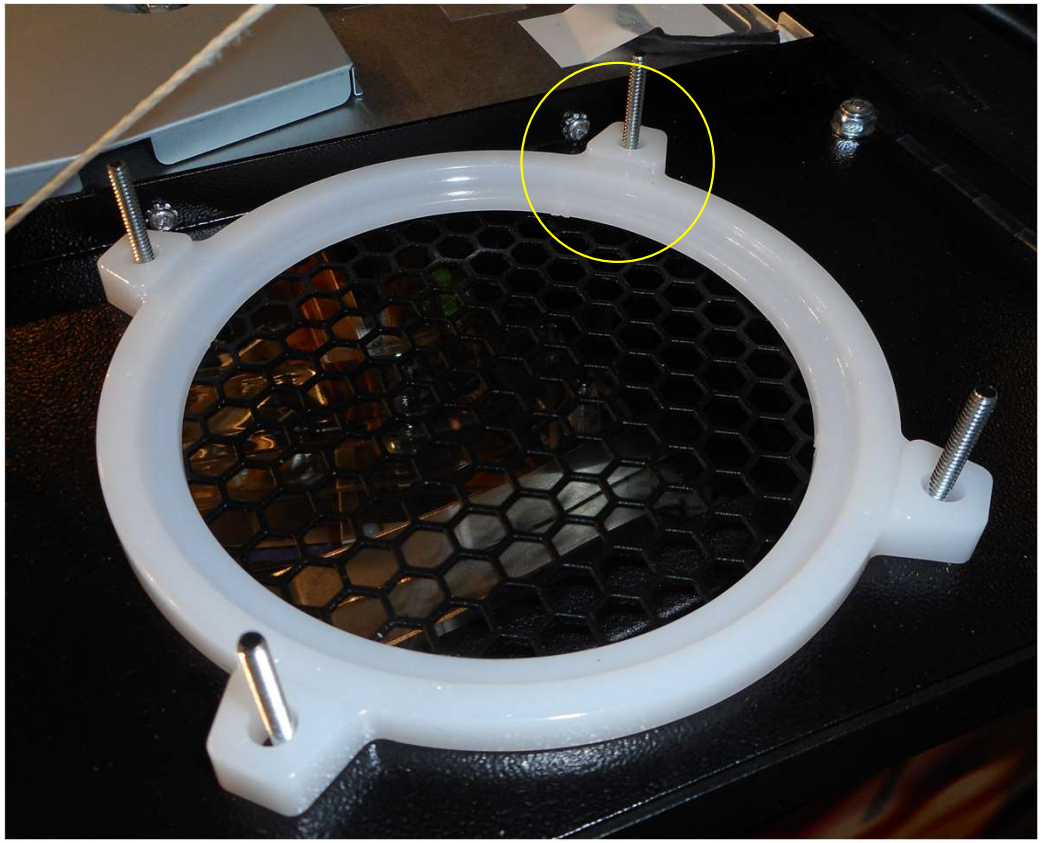
- Remove everything that's currently attached to the right-hand side speaker plate as shown.
- You will have 4 exposed studs as pictured.



# Mount Right Side - 2

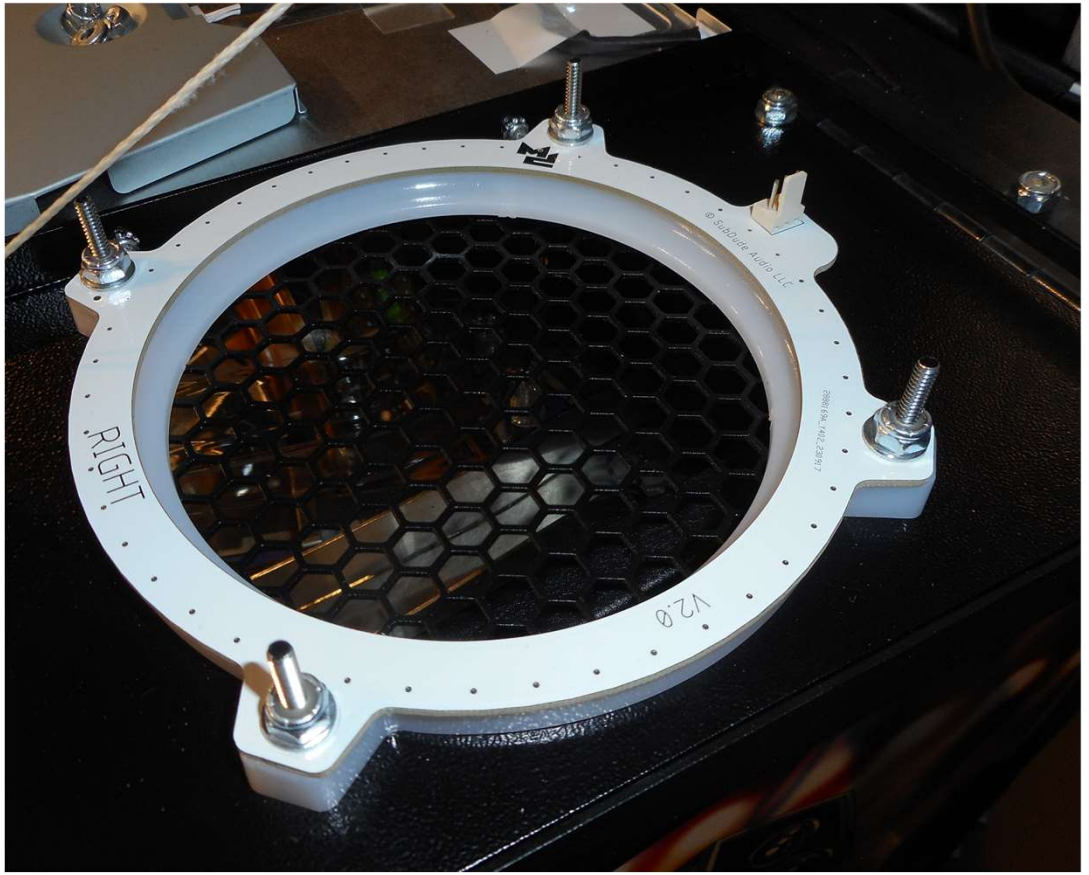
- Place one of the two supplied mounting rings onto the studs as shown.
- Note that the four mounting points on the supplied mounting ring are higher than the interior of the ring as shown in the yellow circle, to the right and below.





# Mount Right Side - 3

- Place the LED PCB Ring labeled “RIGHT” as shown.
- The tab with the 3-pin electrical connector should rest at the bottom of the speaker plate when the speaker panel has been closed.
- Add the newly supplied flat washers and nuts to secure the PCB and mounting ring as shown.

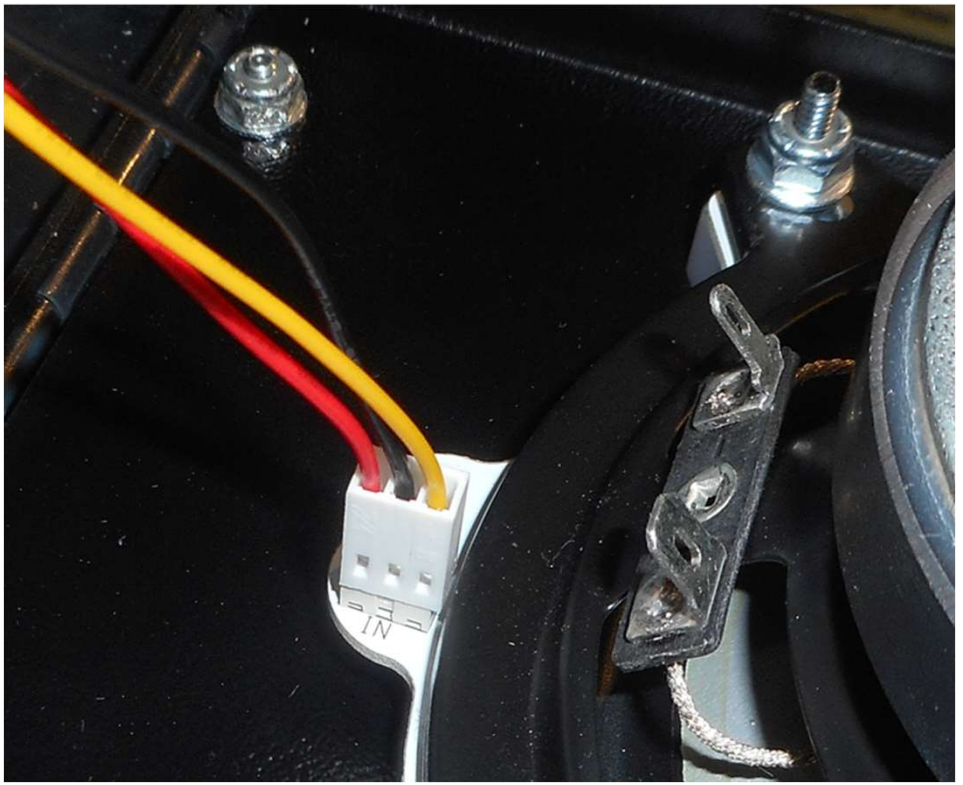


# Mount Right Side - 4

- Secure the speaker with washers and nuts as shown.

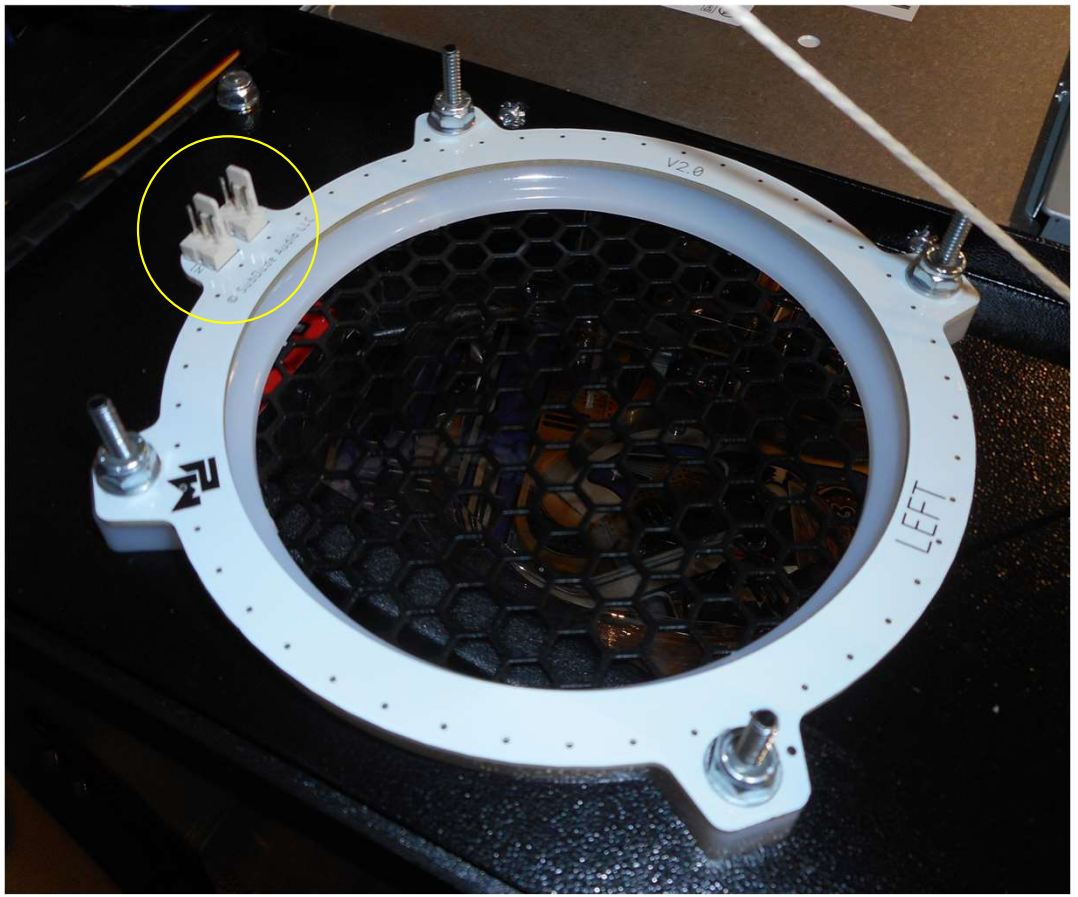
# Mount Right Side - 5

- Attach the longer of the two supplied 3-wire connector to the right-side PCB header as shown.
- Position the other end of this wire connector near the left-hand backbox speaker location.
- All connections should have a “natural” fit. Each connector has raised fins that mate to the target header. DO NOT force these connections or you may damage the plastic retainer clips.



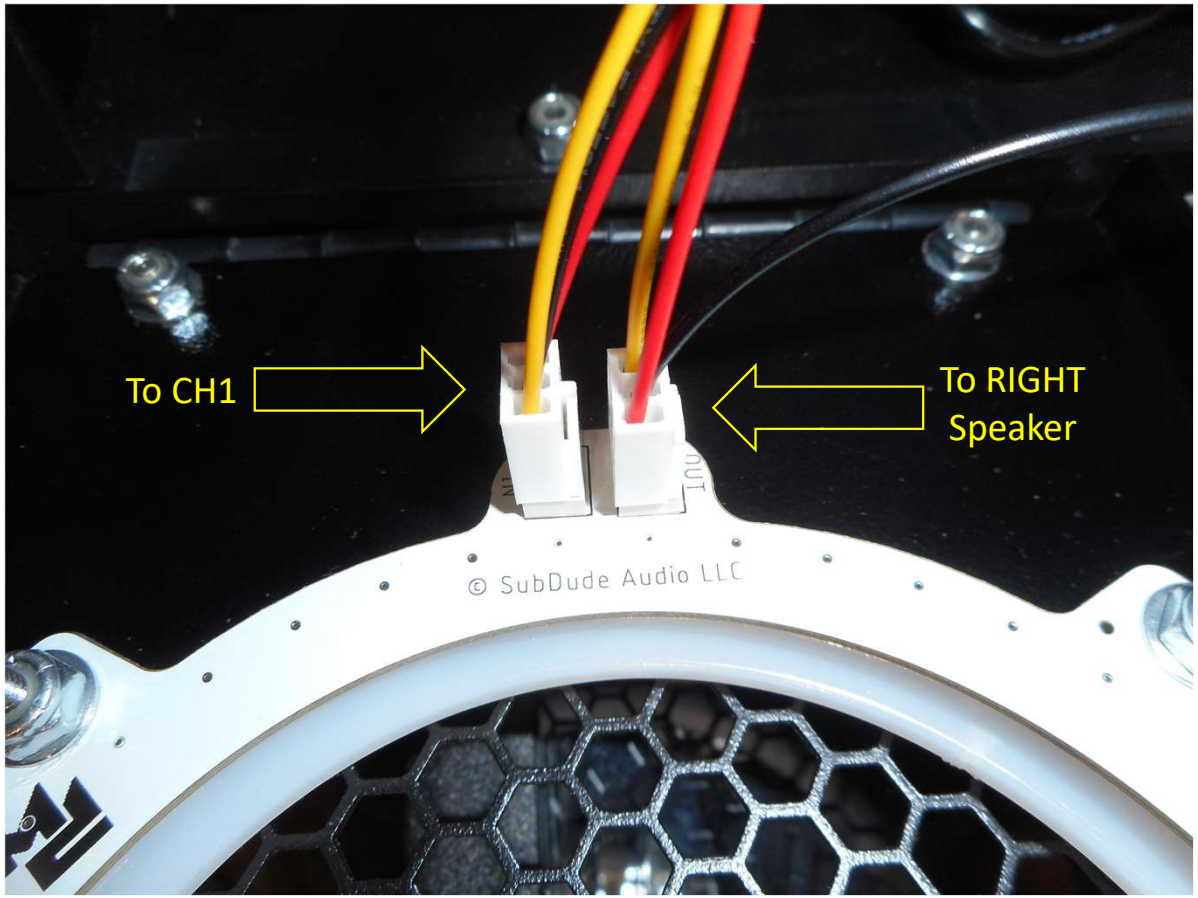
# Mount Left Side - 1

- The LEFT PCB has two, 3-pin headers as shown.
- The headers are oriented to the bottom of the speaker plate when the speaker panel is closed.
- Secure everything in the same way as was done for the right side.
- The left side speaker can be mounted now, or later.



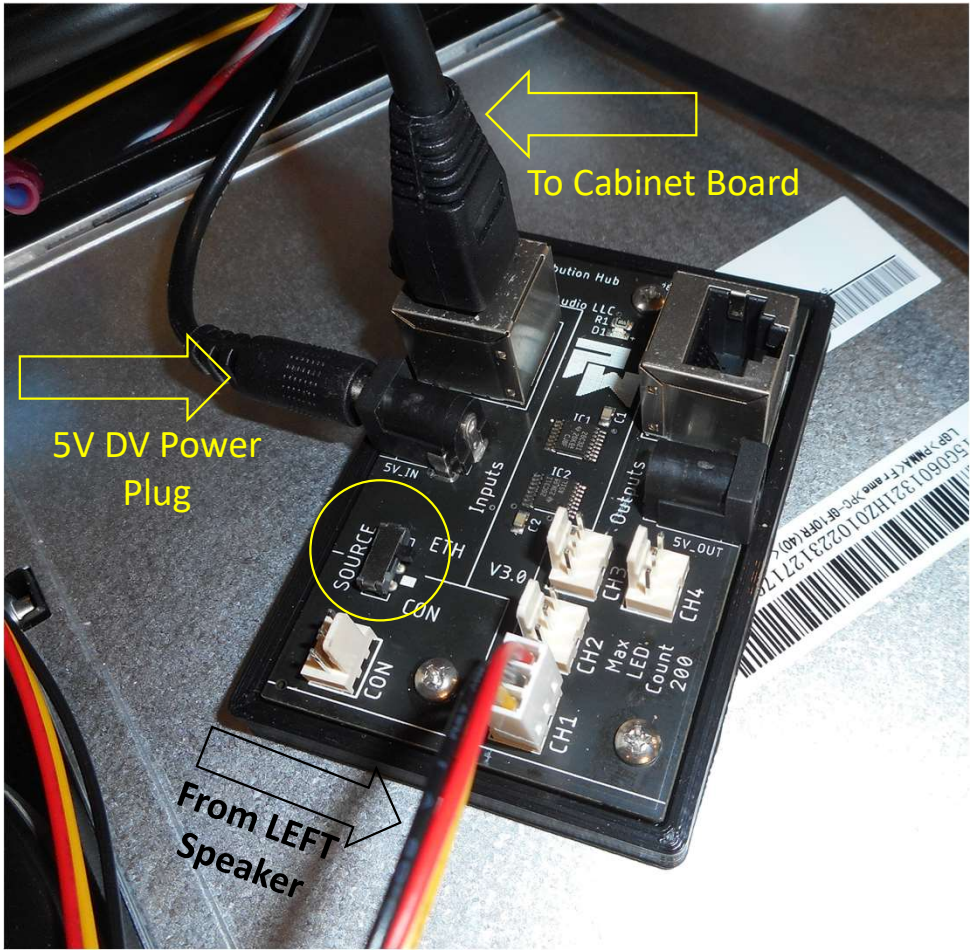
# Mount Left Side - 2

- Connect the other end of the right-side wire harness to the inside, 3-pin header labeled “OUT” as shown.
- Connect the shorter of the two, 3-pin wire harnesses to the outside 3-pin header labeled “IN” as shown. (The other end of this 3-wire harness will route to the CH1 header on the hub in the next step.)
- All connections should have a “natural” fit. Each connector has raised fins that mate to the target header. DO NOT force these connections or you may damage the plastic retainer clips.



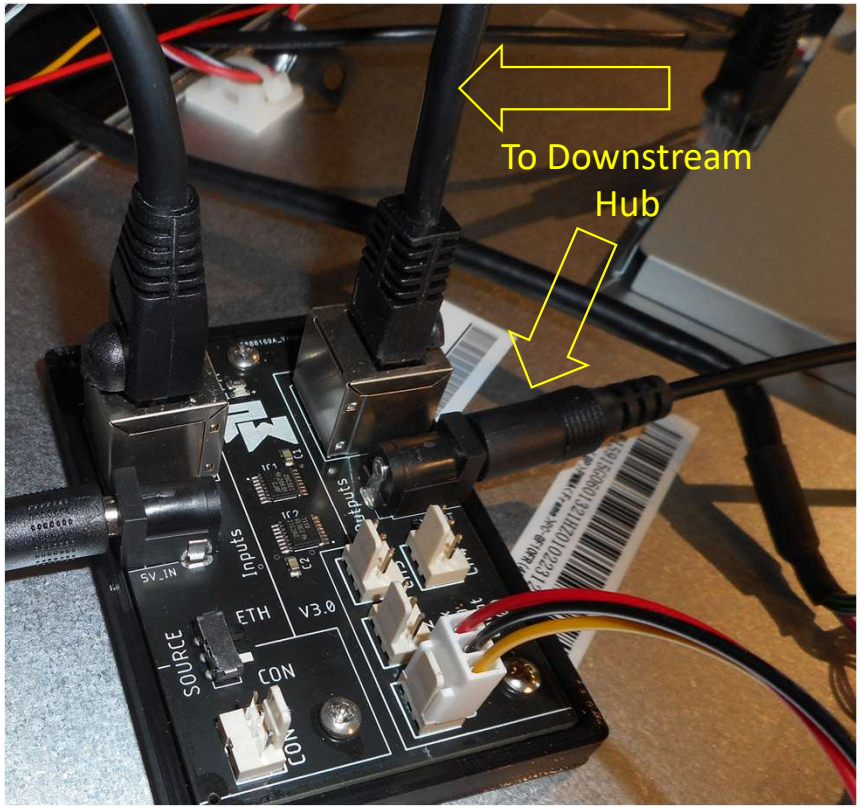
# Connect Hub

- Connect to CH1 using the cable from the LEFT speaker, as shown.
- Move the “SOURCE” switch lever to the “ETH” side as shown in the yellow circle.
- Plug the 5V DC Power Plug to the input power jack as shown.
- Plug one end of the supplied ethernet cable into the ethernet Jack as shown. (This cable will route down to the cabinet board in a later step.)



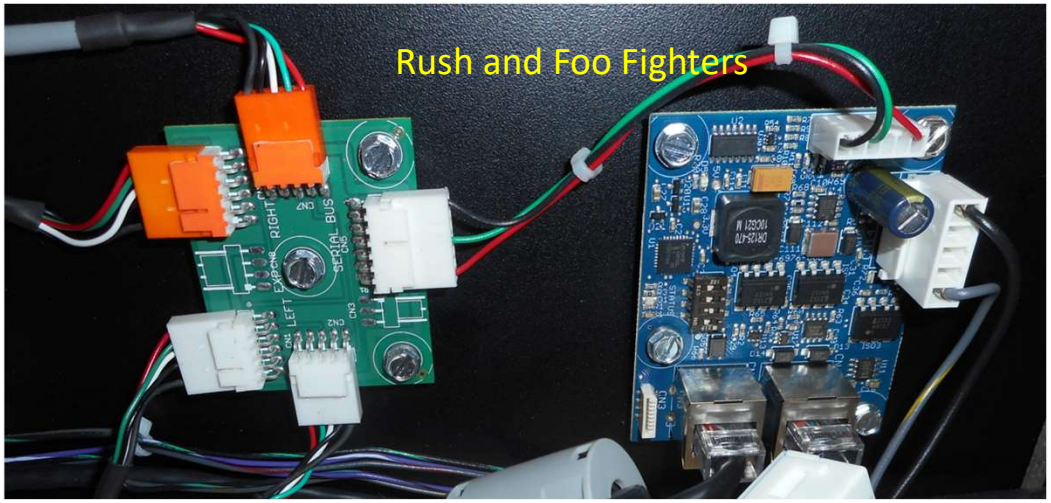
# Additional Hub Connection

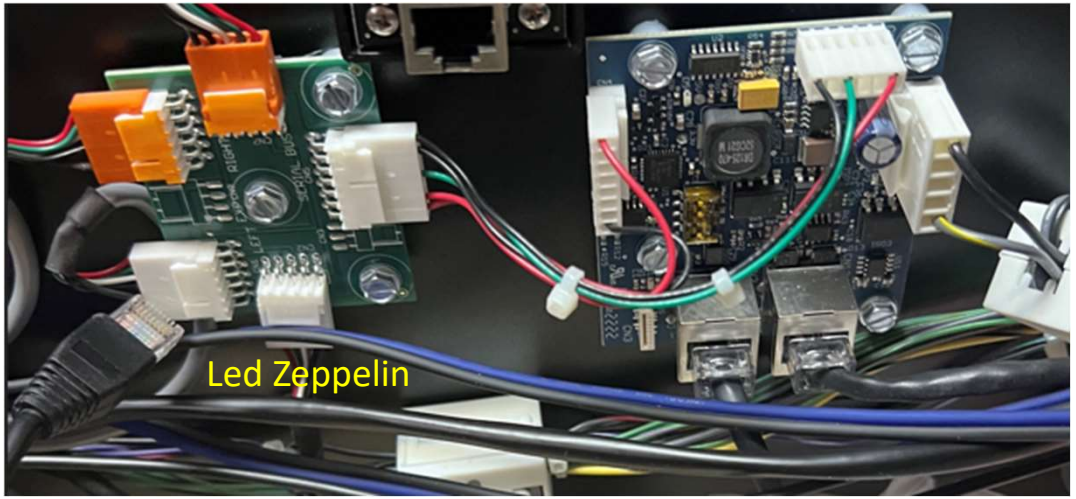
- Expansion for one additional Hub is supported.
- Additional LEDs can be connected using the output of the first hub, and routing to a second, additional hub.



# Connect the PW Cabinet Board - 1

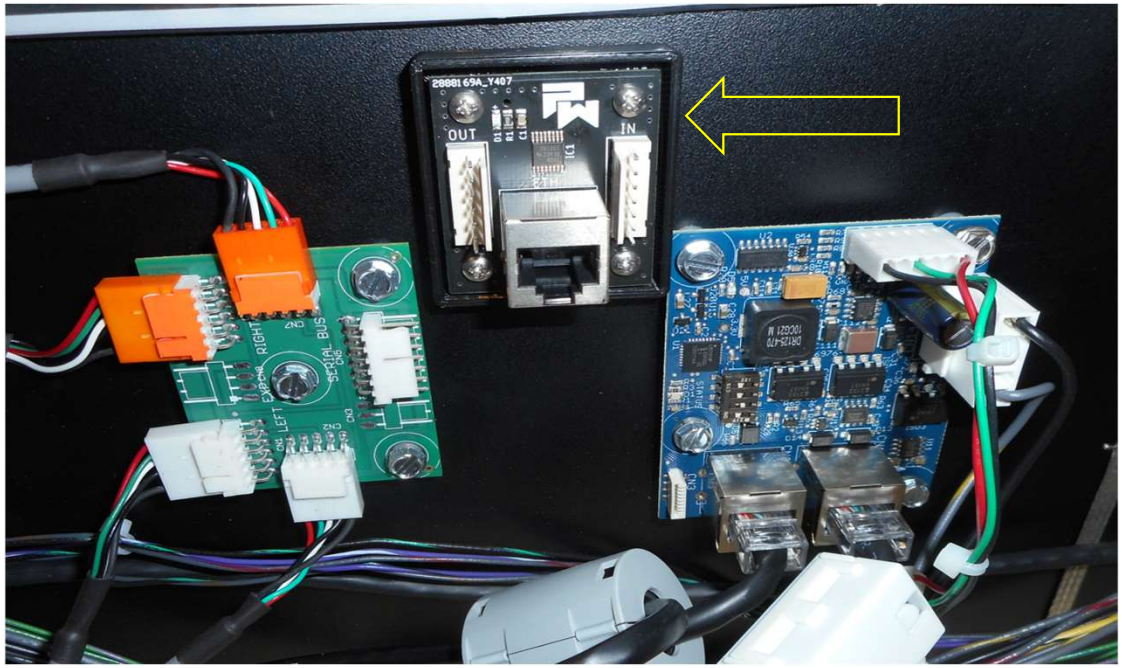
- Find the expression light boards. They are located on the left-hand side of the interior of the cabinet, left of the cabinet speaker.
- The expression light boards for all compatible titles are shown in the images to the right. One is green and one is blue.
- Rush and Foo Fighters are shown in the top image.
- Led Zeppelin is shown in the lower image.



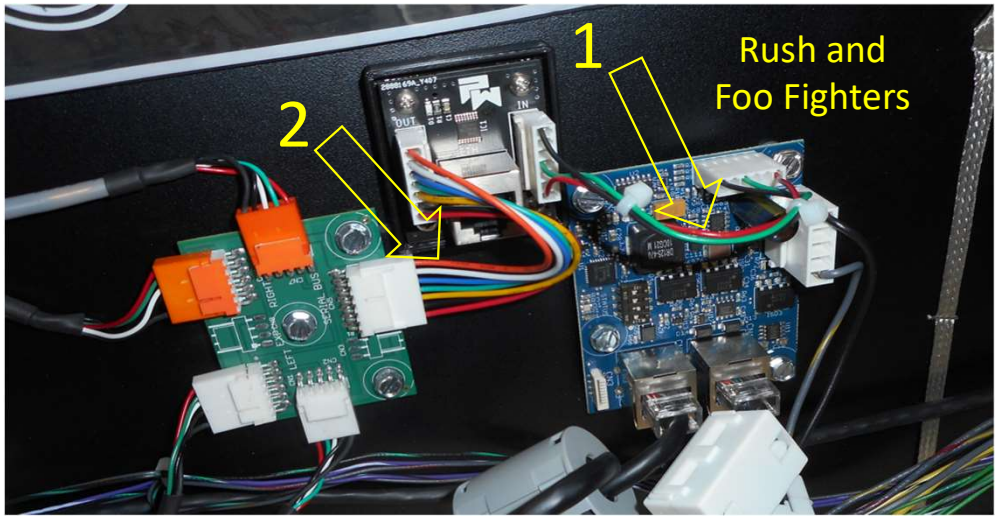
# Mount the PW Cabinet Board - 2

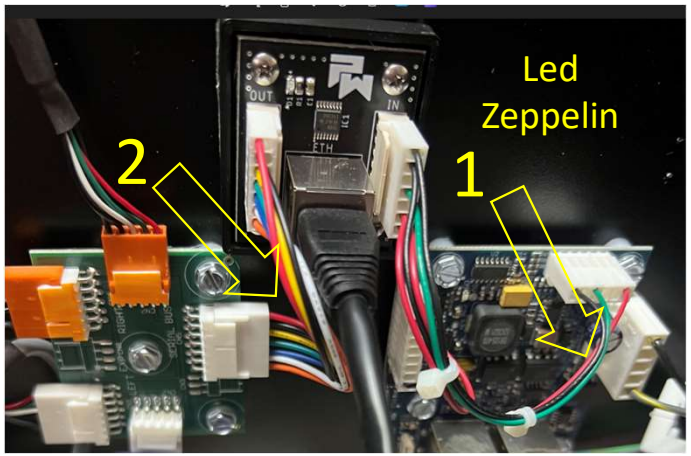
- Mount the supplied PixlWav Cabinet Board as shown next to the yellow arrow, using double sticky tape.



# Connect the PW Cabinet Board - 3

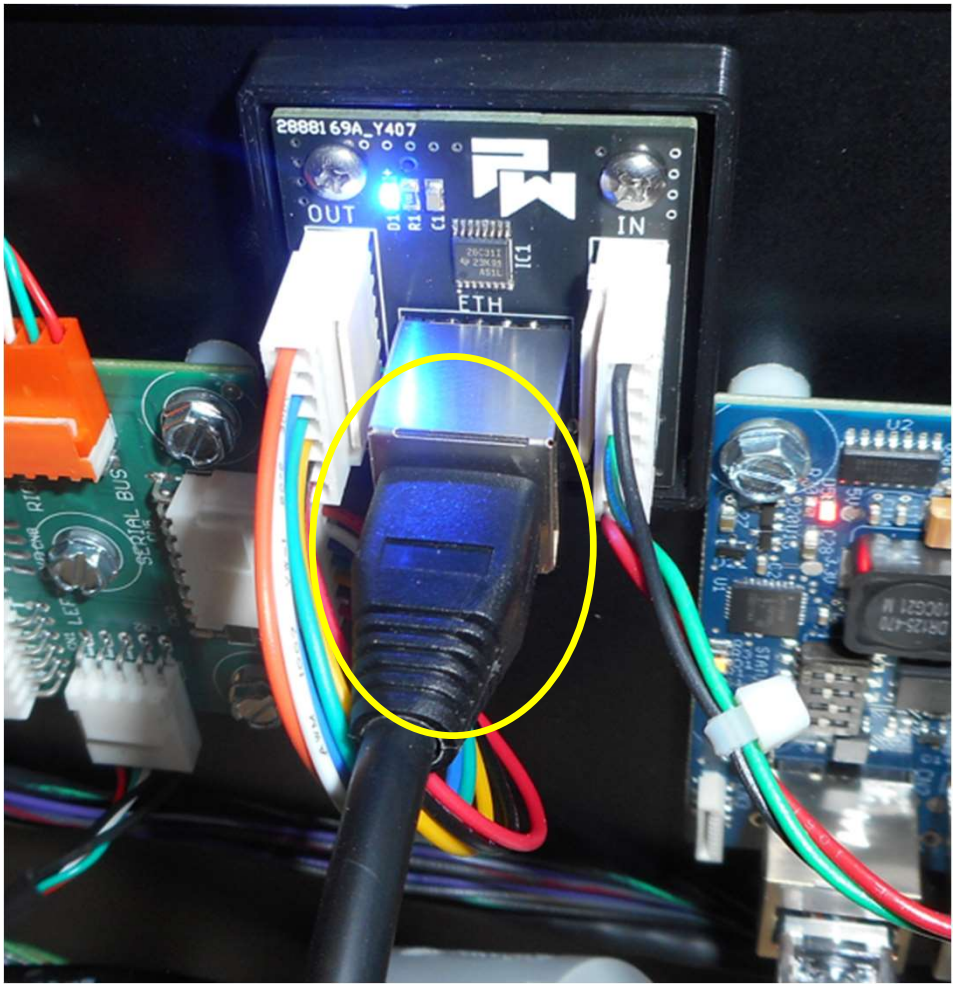
- 1 – Re-route the existing 3-wire (5-wire for Led Zeppelin) harness from the blue board, to the “IN” side of the PixlWav Cabinet Board as shown.
- 2 – Interconnect the supplied 7-wire harness from the “OUT” side of the PixlWav Cabinet Board, to the input header of the green board, as shown. (Wire colors for this harness may vary.)
- All connections should have a “natural” fit. Each connector has raised fins that mate to the target header. DO NOT force these connections or you may damage the plastic retainer clips.
- Move slowly and take your time.



# Connect Cabinet Board - 4

- Plug the cabinet end of the cat 5 cable into the PixlWav Cabinet Board as shown.
- **The Cat 5 / Ethernet cable is much longer than necessary. It is vital to leave a 2 to 3 foot loop of slack at the back interior of the cabinet so that the head can be closed for transport without putting strain on this cable.**



# You Have Installed your LED Speaker Lights

# Addendum - 1

- Shown to the right is a non-PW / non-PinWoofer speaker.
- For this example, the Kenwood KFC-1366S is used.
- Please read this addendum in its entirety and then return the start of this instructional document.

# Addendum - 2

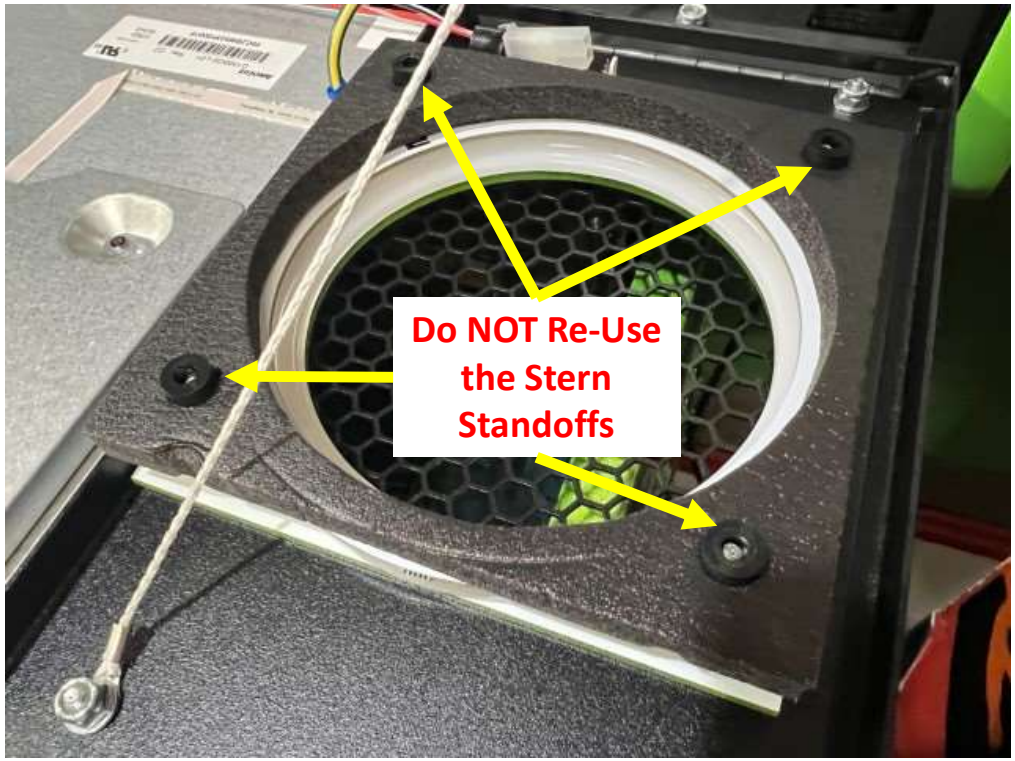
- This speaker has no integrated gasket for sealing the speaker to a speaker mount.
- A GAP results from mounting this speaker to the PixlWav Mounting Diffuser hardware.
- A gasket's purpose is to allow a pressure wave to develop between the front and back of the speaker which increase mid-bass levels.
- A missing gasket not only sounds "thin", but the speaker and stack-up can vibrate audibly.
- This condition cannot persist and must be addressed.

# Addendum - 3

- Pictured to the right is a speaker plate with a stern 5.25in Foam Speaker Gasket.
- This is Stern part #626-5113-00.
- Stern Limited-Edition titles generally have this included as part of the factory supplied speaker panel assembly.
- If you have the Kenwood KFC-1366S (or other speaker without an integrated gasket), utilize your existing gaskets if you have them.
- Otherwise, you will need to purchase two of these before installing this speaker light kit.
- An online search of “Stern 626-5113-00” will yield several outlets.

# Addendum - 4

- Included with the Limited-Edition trim are four cylindrical standoffs.
- **DO NOT** re-use these standoffs; discard them.
- Shown to the right is an error in installation; if you attempt to re-use the standoffs there will not be adequate thread remaining to re-install the factory speaker and washers/nuts.



# Addendum - 5

- Secure the speaker over the PixlWav Mounting Diffuser, the supplied LED ring and the newly installed gasket.