

Expressive Speaker Lights

Installation Guide

First, thank you for buying our mod. It is cool to know that we can help people keep their machines in great condition and looking their best! *Please read these instructions fully before installing the kit.* Reach out to us *before you start* if you have any questions.

Information:

This kit is designed to take the signal that drives the expression lights in your Stern game and replicate it up to the speakers so they light up in the same colors and patterns as the expression lights, in perfect sync! We did our best to make this kit easy to install, and easy to remove, should you ever need to. As of this writing, this kit will work with both Led Zeppelin and Rush games with expression lighting installed, though it should also work with any future games that use expression lighting. Finally, all kits are fully bench tested right before they go into the box.

Tools you'll need include: P2 Philips screwdriver, 1/4" nut driver and either a 5/16" simple wrench or bent nose pliers.

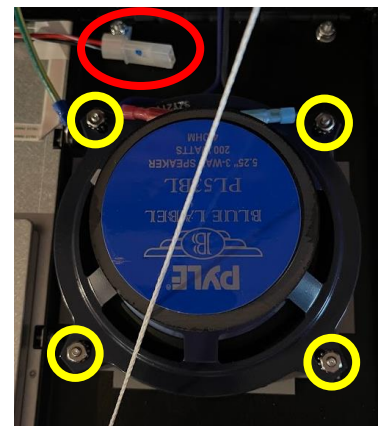
Note that in these photos, we show the PinWoofers kit installed to begin with, but we'll address what you need to know for factory speakers as well.

Installation:

Step 1:

TURN OFF THE POWER to the game and unplug it. This is crucial to avoid damaging the game. The node boards, expression lights, and our expressive speaker lights are all VERY sensitive to power surges.

Open the speaker panel and flip it down. First you need to remove the existing speakers. Starting with either speaker, disconnect the speaker at the plug circled in red. Now remove all four nuts circled in yellow. Gently lift the speaker up off the posts and set it safely aside. For factory speakers, remove the four plastic spacers on the posts and the big foam surround, you will not use these at all when installing the new kit. For non-factory speakers, remove any rings or spacers that were provided. You should now see all posts with nothing on them all the way to the metal speaker grille plate (or colored speaker surround plate if your game had them). Repeat for the other speaker.



Step 2:

Place your expressive speaker light rings onto the speaker posts as follows. When looking at the game from player position, the ring marked "L" will go on the speaker to your left, and the ring marked "R" will go on the speaker to your right. Another way to look at it is that the power supply is behind what we're calling the right speaker. This is very important because, if they are backwards, they'll mirror the wrong side of the expression lights. The side of the expressive light ring that is black and shows the letter will face up and away from the metal speaker grille plate. We recommend installing the ring with the wires at the top, as shown. This will make

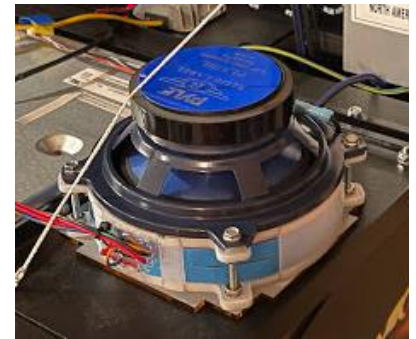
the bottom of the ring act as the “center” of the lights so they wrap up and around each side of the ring (like the letter C but turned on its side so the opening is at the top). Alternatively, you may choose to install it with the wires to the inside edge, causing the “center” of the lights to begin at the edge of the speaker panel and wrap around inwards toward the screen. Wires at the bottom works too. This is purely a matter of preference. The only position that will not work is with the wires to the outside, they will collide with the metal strips on the sides of the backbox that backstop the speaker panel. Once you have selected your orientation, it’s time to install the speakers on to the ring lights.

Step 3:

To attach the speaker to the ring, first, place it on to the ring in the proper orientation and line up the tabs with the ring’s tabs. Use four of the #8 x 3/8” Philips pan head screws to secure the speaker to the ring tabs. Make sure you support the tabs from underneath as you tighten so you don’t accidentally push too hard and snap them off. Slowly snug each corner down in turns until the speaker is firmly held in place. Repeat for the other speaker. You can remove the light rings from the posts for this step if it helps.

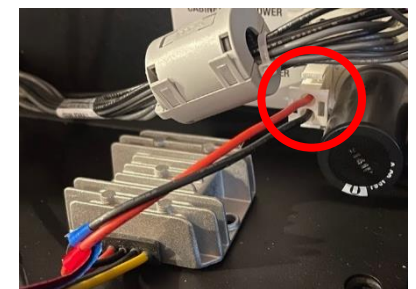
Step 4:

Secure each ring light to the post using the supplied 5/16” lock nuts. To do this, slightly lift each corner of the ring until you can maneuver the nut into place, then only screw it about halfway down the post. Once all four nuts are in place, you can hand tighten them down the rest of the way. Use the 5/16” wrench or angle nose pliers to tighten all four nuts. Repeat for the other side. Be very careful in this step not to damage the lights with the tools. When you’re done, it should look something like this (except you will have pan head Philips screws mounting the speaker, not hex screws as shown in our prototype here). The left speaker will look the same except it will have the extra orange wire coil hanging off it.



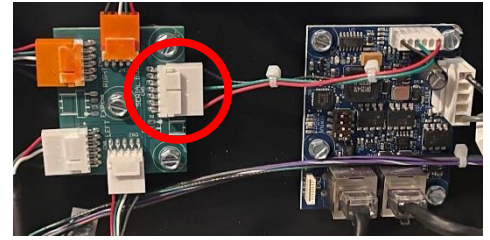
Step 5:

Remove the twist ties from the long orange wire and the power cords. Drop the orange wire down into the cabinet through the left hole in the neck. Once again, ensure that the power is turned off before proceeding. Plug the power supply connector into CN7 (48V) on the power supply board, as shown circled in red. If you already have an accessory on CN7, you’ll need a splitter, also available in our Pinside shop. Find a place where the power supply sits comfortably and secure it to the bottom of the backbox by removing the cover on the sticky pad and pressing it down firmly against the backbox.



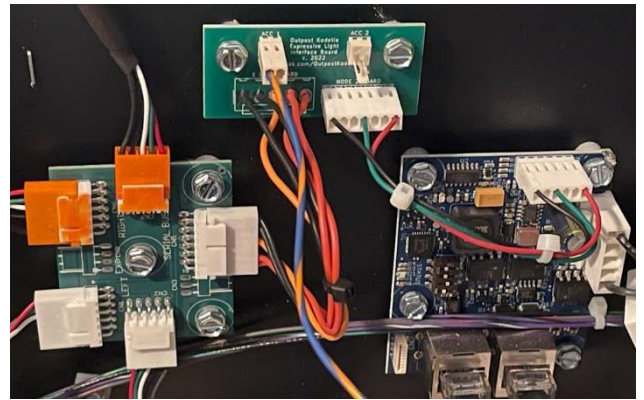
Step 6:

You're done with the backbox, so close it up. Now, remove the pinballs from the machine and fully lift the playfield. Now you need to disconnect the Node 2 board from the expression light distribution board by removing the plug, as indicated by the red circle. These boards can be found on the left inside wall of the cabinet, approximately 1/3 of the way back. Be careful not to directly touch any boards through this process, as all are sensitive to static shocks.



Step 7:

Now, take that same plug you just removed and plug it into the "NODE 2 BOARD" plug on the little green interface board included with our kit. Take the "E LIGHT BOARD" wire coming out of our interface board and plug it into the expression light distribution board where the Node 2 board was originally connected. Using the two hex head 3/4" screws included with the kit, find a place where the interface board sits, such that none of the wires are strained, and secure it to the cabinet with the 1/4" nut driver. Take the long orange wire you dropped down from the backbox and plug it into "ACC 1" (or 2, both work the same) and secure the wire in the wire rings down the side of the cabinet. It should now look like this. (This photo is of the prototype, so just pretend that the blue/orange wire shown on ACC 1 is only orange.)



Congratulations! You're all done! Double check your connections, lower the playfield, reinstall the pinballs, and you're ready to turn the game on. The lights will power on with the game and you should see the test cycle run through both the expression lights and your new expressive speaker lights, then sit back and watch the show when the attract mode starts! ENJOY!!

NOTE 1: We fully recommend you also look into the acrylic speaker light surrounds available from speakerlightkits.com. Gold is perfect for Rush, and light blue looks good with Led Zeppelin. They let a lot more light out and really let the expressive speaker light kits shine. You'll see them installed in our photos, because we love them. Just bear in mind that they add a little depth. If you're using the factory Kenwood speakers, you shouldn't have any issue. But if you're using the PinWoofers or similar, depth may be a problem, and you may have to remove the acrylic spacer bars that sit between the speaker grilles and the speaker panel. If you require assistance with this, reach out and we'll give you pointers.

NOTE 2: If you wish, you can remove the metal speaker surround plate entirely. This will let the speaker lights shine bright, and can give you a little extra mounting depth for deeper speakers. You could also remove the acrylic spacer bars, as mentioned above, to recover even more mounting depth.

Contact:

If anything goes wrong feel free to reach out to support@ninjacamp.com or @OutpostKodelia on Pinside. I will respond as quickly as possible.