

# Expressive Topper 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 to our custom topper lights, 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. All kits are fully bench tested right before they go into the box.

Tools you'll need include: 1/4" nut driver or slotted screwdriver, #2 Philips screwdriver.

### 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 topper lights are all VERY sensitive to power surges. Wipe away any dust on the back of the backbox with a tack cloth or lightly dampened rag.

#### Step 2:

Remove the backglass and set it aside. On the top panel of the backbox, to the rear of the backbox, you will find a circular plug sealing a 1" hole. Remove that plug by squeezing the two retaining tabs and pushing it upward. Replace it with the included rubber grommet, positioning it so that the side with the tabs/flaps is facing up.

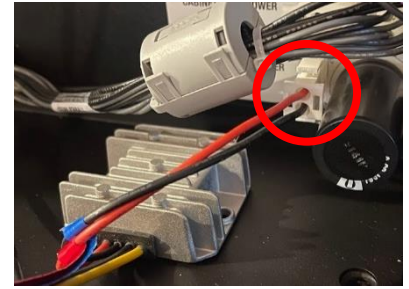
#### Step 3:

Throughout this step, *be very careful not to pinch wires* with screws or anything else. Combine the two halves of the topper lights by simply pressing the dovetail joint together. Remove the two screws circled in yellow from the top of the backbox. Align the topper lights with the same screw holes and attach with the same screws you just removed. The lights will face upward and rearward when done properly as shown. Route the wire around the left side of the topper (when facing the pin from player position) and push the plug through the grommet, into the backbox (you may have to loosen or remove the rear topper screws temporarily to get the plug through the grommet).



#### Step 4a: (for standalone kits)

If you are installing this into a game that already has one of our Expressive All-In-One kits, skip to step 4b. Now we'll install the power supply. Open the speaker panel. 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. Skip to step 5.



\* The CN7 connector won't have any problems powering this kit and the topper together, but if you also have a other accessories plugged into CN7, you may want to install a dedicated 48v power supply to run all of your accessories.

#### Step 4b: (for use with all-in-one kits)

Since you already have one of our Expressive All-In-One kits, you'll connect power to that. Once again, ensure that the power is turned off before proceeding. Simply connect the red wire terminal of the power cable to one of the V+ terminals on our dedicated power supply and connect the black wire terminal to one of the V- terminals (you can use the one with the big gray wire on it if the other is full).

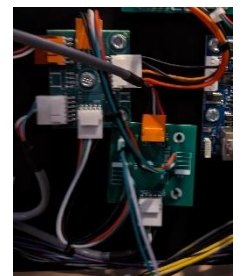
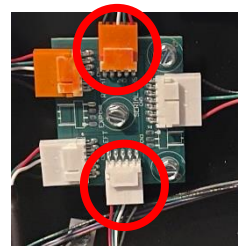
#### Step 5:

From the power supply block, route the wires towards the top of the backbox, using the clips in the backbox to secure them. You'll first route the bundle of red and black power wires up the right side of the mainboard (when looking at it from the front of the game), then to the top center clip. Connect the 6-pin plugs together at the top. Next, route the white and green wires (with the ferrite cores on them) down the left side of the mainboard, and drop it down the bottom left opening of the backbox and into the cabinet. You're done with the backbox, so close it up. Now, remove the pinballs from the machine and fully lift the playfield. Continue to route the white and green wires down the left side of the cabinet.

#### Step 6:

Note: This kit uses a different interface board from our past kits. You need to disconnect the left and right expression lights from the distribution board. 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.

First, remove the top and bottom plugs (one orange and one white) as shown in the red circles. Plug the two cables from the interface board in where you just unplugged those, making sure to match the orange and white plugs. Now take the wires you just unplugged and plug them into the interface board. Using 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 or slotted screwdriver. It should look like the second pic to the right.



#### Step 7:

Plug the white and green wires into the remaining two pin header on the interface board. Pull any remaining slack in the white and green wires towards the back of the cabinet; this will put the slack where it needs to be should you ever need to lower the backbox for transportation.

**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 topper lights. Now sit back and watch the show when the attract mode starts! ENJOY!!

*Note on the white always-on lights in our topper kit.* We pre-installed a set of 150 ohm 1/2W resistors on each of the white strips in order to dim them down a bit, because we felt they were just too bright on their own. You should be good as is, but if you feel they are too dim, you can remove the resistors and replace them with a jumper wire for full brightness, or replace it with a resistor of a lesser ohm value to split the difference. Alternatively, if you feel that it's not dim enough, you can replace it with a resistor of a very slightly higher value.

#### Contact:

If anything goes wrong or if you have any questions, feel free to reach out first to [@OutpostKodelia](#) on Pinside (or [support@ninjacamp.com](mailto:support@ninjacamp.com) if that doesn't work). I will respond as quickly as possible.