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BOOGEY LIGHTS
Family Owned Motorsports Lighting Since 1989!

INSTALLATION GUIDE

RV ENGINE BAY LED LIGHT KIT

IMPORTANT! No two installation scenarios are the same. Accent lighting is highly subjective. Not everyone shares the same lighting or installation quality goals. Some folks are OK with twisting wires together, others want to solder and heat shrink them. Some folks are OK with running wires where they may be seen or unprotected to save money/time, others want a tidy, clean install so they wrap plastic split-loom around all exposed cables. Some folks are OK with mounting their LED strips to whatever surface they can find, others want to take the time necessary to build out appropriate mounting surfaces to provide the best lighting effect on their vehicle and maximize the longevity of their lighting system. The point is it's not possible to provide all the materials necessary for all installation scenarios on all types of vehicles to meet everyone's quality goals. Our light kits provide the essential components needed for a high-quality, functioning lighting system. Installation of our light kit to your specific vehicle will however likely require additional items to make it look, fit and work the way you want. This is particularly the case with electrical wiring, switching functionality and mounting surfaces for the LED strips. We have created a list of additional items you may need. Here's the link: **https://www.boogeylights.com/other-items-you-might-need/** . While we offer them for sale you can also find these items locally. We urge you to review this information before starting your install.

BENCH TEST YOUR LIGHTING COMPONENTS FIRST!

We know this takes a few extra minutes, but we STRONGLY suggest you bench test your lights AND your controller / switches on a table before doing anything further. Test all of them. While we test every light strip and controller before shipping, bench testing your lights will eliminate the possibility of any problems with the lights or controller before mounting. It also lets you know everything is working properly. Also, the process of bench testing gives you an opportunity to understand the wiring system without interference from other wires, connectors and cables. You can use any good 12vdc battery to do this (e.g. car battery, motorcycle battery, lawn tractor battery or 12vdc power supply capable of supporting a 5 amp load). If you're not sure how to do this, we have prepared a document explaining the process here: https://docs.boogeylights.net/?wpdmdl=1305 . Bench testing takes an extra 10 or 15 minutes. It's simple to do and can potentially save you hours of time and frustration down the road.

Did we mention the importance of bench testing every LED strip and controller before installing?

BEFORE YOU START

THIS IS A GUIDE. NOT A HOW-TO. It's simply not possible to provide detailed instructions for all installation scenarios. Far too many variables. The information in this manual is intended to be used as a guide. It is not a detailed step-by-step how-to installation manual. We do not spell out every single step along the way. We cover the essential steps related to installing this kit. Beyond that we assume the installer has the skills, knowledge and tools necessary to do the work using the information we provide as a guide. You may need to vary your installation and/or make adjustments based on your vehicle. This is particularly the case with electrical wire routing, electrical connections, electrical load sizing and switching. If you're unsure about how to do the installation – particularly the electrical components – we urge you to seek assistance from someone who has those skills.

YOU MUST HAVE AN UNDERSTANDING OF 12V POWER. An essential skill with installation of any Boogey Lights LED products is knowing how to correctly wire the product to a 12vdc circuit. This includes understanding the importance of having a properly sized fuse at the power source, polarity, how to properly seal an electrical connection, using properly sized wire gauge for the load, measuring voltage and measuring the additional amperage draw you're adding. If you are uncertain or unfamiliar with any of these concepts, we urge you to ask someone who has the knowledge to assist you. Electricity is unforgiving.

WORK AREA. Make sure you have ample area in which to work and that the area is protected from rain or cold temperatures. The 3M adhesive tape and 3M adhesion promoter works best if applied when the air temperature is above 40 degrees (and of course is DRY).

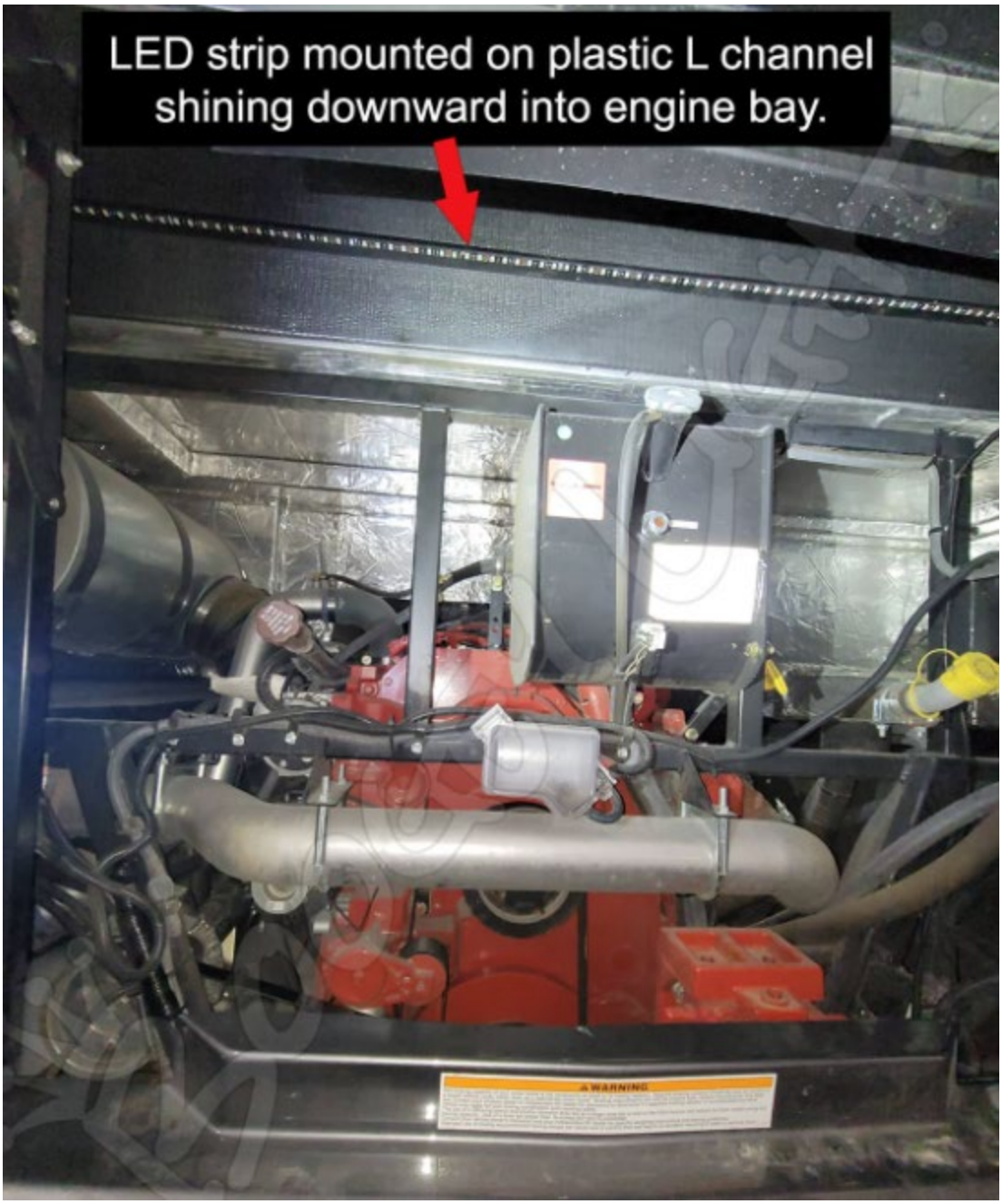
KNOW YOUR AMPERAGE DRAW. Pay attention to the number of LEDs you are lighting and the total amps you will be drawing. We manufacture a number of LED Controllers of varying capacities. If you over-load the LED controller, it will either not work at all or the lights will dim in a short period of time. Amperage data for all our LED products are on each product page. You can also download it directly here: https://docs.boogeylights.net/?wpdmdl=1137

CHOOSING THE MOUNTING LOCATION IN YOUR ENGINE BAY

When it comes to diesel pusher engine bay lighting, there is no one size fits all solution. Too many variables. The goal of engine bay lighting is to mount the LED strip(s) in a place where the glow from those light strips shine through the bay door structure without being able to see the actual LED light strips from outside the engine bay. This means the structure of the engine bay door largely determines where the LED strip(s) will need to be mounted and how many LED strips are needed to provide the glow you want. Some engine bay doors have large slots making it easier. Others have smaller slots and/or screens which require more carefully placed LED strips. For example, we've had to install the LED strip directly to the bay door in some cases in order to get the best glow effect. The LED strip needs a smooth flat mounting surface of about 1/2" wide so as long as you have a smooth flat surface that's at least ½" wide, you should be able to mount an LED strip to that surface.

Most engine bay lighting systems will have the primary (and longest) LED strip mounted at the top of the engine bay with the LED strip shining downward illuminating the engine bay. We do this using the supplied plastic L channel included with this kit and riveting that plastic channel to the back wall of the engine bay a few inches above the hinge point of the engine bay door. See photos below. On some engine bays it's possible to mount two vertical LED strips on each side of the bay both of them shining inward toward the center. An example of that type of installation is shown in the photo below. In other installations you may have to mount at least one led strip on the bay door itself to achieve the lighting glow you're looking for. Each bay is a little different. This light kit can be configured with up to four LED strips (only one is required -- the other three are optional). We've never seen an engine bay that required more than four LEDs strips.

Here's a photo of the L channel mounted at the top of the engine bay. The LED strip is mounted to that L channel facing downward.



Here's a close up view of the primary LED strip used to illuminate the engine bay area. Note that the L channel is riveted to the engine bay wall. If you can't rivet the L channel, you may be able to use screws or even heavy duty 3M reclosable fastener. The challenge is that this part of the engine bay tends to get hot so anything that uses adhesive will eventually work loose over time – at least that's been our experience. Whatever you use to hold that L channel in place, make sure it's firmly attached.

You can see the LED strip mounted to that channel with the power lead routed down to where it ultimately connects to the existing Under-Glow light system.

Here's a photo showing the primary LED strip mounted at the top of the engine bay compartment with another optional LED strip mounted on one of the vertical uprights shining inward. The structure of your engine bay coupled with the engine bay door structure will determine whether or not this kind of configuration will work for your application.

CONNECTING TO THE LED CONTROLLER

The vast majority of Engine Bay LED light kits are used with existing RV under-glow light kits. We typically will connect all LED strips mounted in the engine bay area to one feeder cable which then connects to the existing under-glow light kit. In this way the engine bay lights will work whenever the under-glow lights are on. The one exception is if we're adding a separate cut off switch which will allow the user to turn off the Engine Bay light kit when the under-glow lights are on (not everyone wants the engine bay lights to always be on when the under-glow lights are on). In this scenario we'll install a simple on/off toggle switch in the engine bay area that breaks the ground wire running to the engine bay LED strips.

If you're installing this kit stand alone, the only difference is that you'll need to wire in the LED controller or on/off switch to power the LED strip(s) mounted in the engine bay area. We'll typically connect power to the engine starting batteries which are usually in or very close to the engine bay itself. While we generally discourage connecting any of our lighting systems to the starter batteries, most engine bay light kits contain relatively few LEDs so the voltage draw isn't all that significant. If however you're worried about reserving your starter battery power just for starting the motorhome, you'll need to find 12vdc power elsewhere. In these situations we recommend connecting to the house batteries but realize for a lot of motorhome configurations the house batteries are often 30+ feet away. We include a wiring diagram for the LED controller (if purchased). Be sure to refer to that wiring diagram.

Regardless of how you're wiring the lights, make sure all power leads are wrapping in split loom and zip tied firmly to an appropriate surface. We include split loom with every kit. You don't want any of the wires hanging loose inside that engine bay area. You also want to make sure that none of the power leads are near moving engine parts or too close to hot surfaces.

CUTTING YOUR LEDS- If you need to cut your LED strip you can do so as long as you cut in the proper location – which is every three LEDs as shown in the below photo. Cutting incorrectly could damage your lights and is not covered by the warranty. If you cut the strip, be sure to seal the cut end. You can also use silicone found at your local hardware or RV store. If you do need to cut your LED strip, we strongly suggest doing so BEFORE you mount the strip to your RV/Camper/Trailer. **NOTE: Heavy Duty LED strips CANNOT be cut. LOW PROFILE only.**

The LED strip can be cut one time on the copper solder pad where indicated; between the cluster of 3 LEDs. Important to cut in the center of the copper pads. Once cut, the end must be sealed using silicon, liquid electrical tape or even heat shrink to stop water intrusion from damaging the strip.

MOUNTING THE LED STRIPS

Once you have your LED strips cut (if necessary) and you know where you are going to attach them, follow these steps:

- The area where you are mounting the LEDs has to be clean: free of all dirt, oil or anything that might affect the LED from sticking. You only get one opportunity to mount the LEDs so it's critical the area be prepared properly.

- Use alcohol to clean the area where you are going to mount the LED strip. Be sure to let the alcohol dry completely before proceeding to the next step. (Note: Do not use acetone or similar cleaner without reading the section "A Word About 3M Tape & 3M Promoter" further on in this document).

- Next, use the 3M Adhesion Promoter supplied with your kit to "paint" on the promoter where you are going to mount the LED strip. See the note below (on page 6) about the proper way to use promoter. ***This is an important step. Do not bypass.*** Allow the promoter to dry for 30-60 seconds.

Do NOT bend the LED strip in a radius of less than 2 inches.

Do NOT bend the LED strip on a horizontal plane.

- Peel off the red backing tape that protects the 3M adhesive tape on your LED strip. Be careful not to let the tape touch anything. The 3M backing tape on these LED strips are one-use only. They cannot be reused.

- Carefully push the LED strip to the area you have prepared. You will want to apply only enough pressure to the strip to make sure it is firmly mounted. *You only get one opportunity to do this.* Once the LED strip touches a properly prepared surface that has been promoted, that LED strip will be very difficult to remove. Moreover, if you do remove the LED strip, the strip cannot be used again without adding another layer of 3M adhesive tape to the back. DO NOT press too hard as too much pressure can damage the LEDs and connecting wires in the strip. Also, do not pull, stretch or twist the LED strip. Too much tension on the strip will also damage the LEDs such that some of the LEDs in the strip will not illuminate. The strip must be mounted flat against a single continuous mounting surface, in a straight line. Really important that the ENTIRE STRIP be stuck to the mounting surface and that you NOT attempt to span across multiple mounting surfaces. **NOTE: With these large LED rolls we suggest you unroll the LEDs as you apply them to the mounting surface.**

- Secure all power leads. Do not leave the power lead cable hanging. Doing so will place too much stress on the LED strip itself causing it to fall off or fail where the power lead connects to the LED strip.

Additional Resources

- Product Page: https://www.boogeylights.com/rv-engine-bay-led-light-kit/
- How to Videos: https://www.boogeylights.com/how-to-videos/
- Building a mounting surface: https://www.boogeylights.com/video-creating-a-smooth-mounting-surface/
- Using Aluminum Channels - https://docs.boogeylights.net/?wpdmdl=1351
- General installation: https://www.boogeylights.com/video-how-to-install-a-boogey-lights-multi-color-under-glow-led-light-kit/
- Troubleshooting: https://www.boogeylights.com/trouble-shooting-guide/
- Installation Resources: https://www.boogeylights.com/installation-resources/
- GEN2 LED Controller Wiring Diagrams + Operating Info: https://docs.boogeylights.net/?wpdmdl=1163
- GEN2 RF Wireless Remote Operating Info: https://docs.boogeylights.net/?wpdmdl=1164
- GEN2 Bluetooth APP Operating Info: https://docs.boogeylights.net/?wpdmdl=1169
- GEN2 Bluetooth APP Quick-Start: https://docs.boogeylights.net/?wpdmdl=1167
- Amperage Data: https://docs.boogeylights.net/?wpdmdl=1137

Support

- Phone: 800.847.1359 (M-F, 9-6 Eastern)
- Text: 859.955.8155
- Open a Support Ticket: https://www.boogeylights.com/email-us/
- Online: 24/7 resources at https://www.boogeylights.com/installation-resources/
- How to Make a Warranty Claim: https://www.boogeylights.com/make-a-warranty-claim/

Warranty

The Boogey Lights® warranty requires an original sales receipt from Boogey Lights or an authorized dealer. It covers product replacement only, not labor or other costs. Register your purchase at: https://www.boogeylights.com/warranty-registration/. Full details: https://www.boogeylights.com/warranty/.