



## INSTALLATION GUIDE

### KENWORTH W900 BREATHER 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 12vdc battery to do this (e.g. car battery, motorcycle battery, lawn tractor battery or 12vdc power supply). If you're not sure how to bench test, download this pdf: <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 first?**

**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 document 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 led strip mounting locations, 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.

**MOUNTING SURFACE.** How and where you mount your LED strips will for the most part determine the longevity of your lighting system. If you mount the LED strips to smooth, clean, continuous, straight, flat surfaces as we recommend, you can expect your lighting system to last for many years

**SECURE THE POWER LEADS.** Make sure the power lead wire that connects to one end of the LED strip is firmly secured to the boat. Do not allow that power lead to move or flex at the point where it attaches to the LED strip. If you do, it will fail prematurely and is not covered under warranty.

**INSTALLATION TIME.** We suggest allocating 2 to 3 hours to properly install this light kit.

**POWER LEADS.** All of the power leads coming from the LED strips will need to be routed back to your power source/switch/controller which is usually mounted near the battery bank. We typically will mount the led controller in the driver's side storage box (aka 'jockey box' ). If you're installing this kit along with another one of our light kits, you can usually merge the wiring together. It's important these power lead be secured (especially at the point where the power lead attaches to the LED strip) and wrapped in split loom to prevent chafing.

## Mounting Locations

This instruction guide covers both the UPPER and LOWER breather lights. If you only purchased one of these, disregard the other mounting instructions.

Upper: We always prefer to hide the LED strips whenever possible so you can't see the strips themselves; only the glow from them. For breather lights however not all breather can styles will allow this. If your breather can has a removable rubber boot that covers air cleaner, the ideal location is the mount the LED strip to that removable rubber boot. That way the LED strips are completely hidden and only the glow shines out of the breather. If your breather cans don't have a rubber boot, then the next best option is to mount the LED strip at the very top of the breather facing inward (see photos). In both cases, the power lead will need to exit the breather can such that it can then make its way into the engine compartment where it connects with the rest of the lighting system (or power + switching mechanism you're going to use). Our preference is to keep the power lead wires inside the breather can and then fish the power lead cable into the engine compartment via the air intake. Doing so will require drilling one 5/16" hole in the breather can and another hole in the air intake hose inside the engine compartment so the power lead can exit that air intake hose and connect to power/switching. How you do it is up to you. Just make sure you seal any holes and are routing the power lead wire in such a way that the power lead wire isn't pinched or chaffing against any metal. Important too all power lead wires be wrapped in split loom (included) for extra protection. We have some photos of a couple of different breather installs at the end of this guide to show you how we've done it on several different trucks.

Lower: The lower breather light strip can only be mounted one way; inside the lip on the bottom of the breather can. The W900 has a 1.25" aluminum lip on the bottom of the breather can which makes this possible. Routing the power lead wire for this light strip can only be done on the outside to get it inside the engine compartment. Because the LED strip and power lead is attached to the bottom of the breather can, it's relatively easy to hide the power lead going into the engine compartment.

Note that we include a set of male/female quick disconnect connectors for each breather light strip purchased. Adding these to your installation is important for future maintenance of the breathers without damaging the LED light strips. These allow the breathers to be easily removed for service without damaging the electrical connections.

If you're installing an LED controller (or wireless on/off switch) with this kit, you'll need to remove the driver's side steps to access the batteries. You can mount it anywhere you have a dry area. We prefer to mount our led controllers in either the driver's or passenger's side storage box but it's not required. You can just as easily mount the controller in the engine compartment or also inside the battery box. The key is making sure you're mounting it where it is protected from water or extreme heat. There should be air flow too around the controller. If mounting inside either of the storage boxes, you will need to drill a hole in the floor of that box to connect power to the battery box, led wires and antenna. We provide some butyl tape to seal this hole.

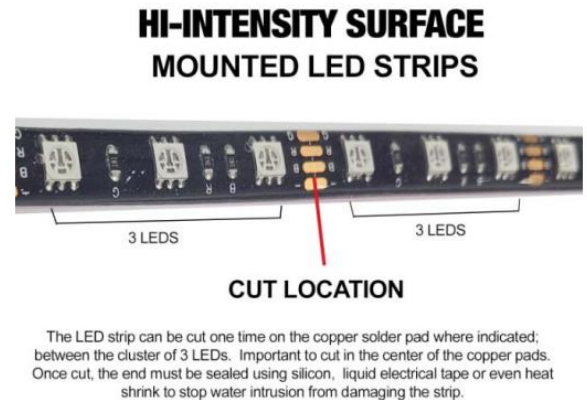
**CUTTING YOUR LEDS-** While you shouldn't have to do so, if you need to cut your LED strip you can do so as long as you cut in the proper location – which is every three LEDs as shown in the below photo. Cutting incorrectly could damage your lights and is not covered by the warranty. If you cut the strip, be sure to use the included heat shrink tubing 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.

## MOUNTING THE LED STRIPS

*Follow these steps for mounting your LED strips:*

- 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 rubbing 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).
- Next, use the 3M Adhesion Promoter supplied with your kit to "paint" on the promoter where you are going to mount the LED strip. ***This is an important step. Do not bypass.*** Allow the promoter to dry for 60-90 seconds.
- 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.



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



Do NOT bend the LED strip on a horizontal plane.



## INSTALLATION

1. Remove the top of the breather. There are usually 4 bolts. Take the top of the breather to a workbench or flat surface where it's easier to work on it. NOTE: If your breather has a rubber or plastic boot (see photos at the end of this guide), the installation is easier since you can mount the LED strips to that boot vs mounting them directly to the breather can itself. If your breather has the one piece boot/air cleaner, you'll need to mount the LED strips on the inside of the top of the breather. See photo for LED placement.
2. Determine how you're going to run the power lead that attaches to the LED strip from inside the breather top and into the engine compartment. There are two ways you can run the power lead from inside the breather top into the engine compartment where you'll make your electrical connections (or, connect to an existing Boogey Lights light kit already installed). We provide a diagram on the next page showing both options. Pick the option that works best for you.
3. The first way is to route the power lead down into the air intake manifold hose that connects the breather to the engine and then exit that intake manifold hose once inside the engine compartment. We find this to be the easiest and cleanest since it doesn't require removing the entire breather can from the truck. It might not however always be that way depending upon your truck.
4. The second option is to route the power lead out of the back of the top of the breather. This is done by drilling a hole through the screen mesh at the back of the breather top at the seam and then routing the power lead through an existing hole in the truck behind the breather and either into the cab area or the engine compartment. This option may require removing the entire breather can from the truck to gain access to a suitable access hole.
5. Once you've determined which method of routing the power lead cable you're going to use, you'll need to either drill a 5/16" hole into the base of the breather top (see photo) for wiring option one OR into the screen seam for wiring option two (see photo).
6. Clean the LED mounting surface with rubbing alcohol and then apply the 3M Adhesion Primer. At this point you can mount the LED strips. Make sure you plan the layout such that the power lead points toward the rear of the breather. Use the supplied Butyl tape to secure the power lead firmly against the breather top (see photo).
7. Route the power lead wire through the hole you drilled in the breather top. Once you have the power lead through the hole, you can wire in the supplied male end of the quick disconnect plug. Important that the breather top be able to be removed easily for service with the LEDs installed inside. Installing the quick-disconnect plug does that. We suggest allowing 12" to 18" of slack in the power lead cable so you have some room to work; but not too much that you have to coil up excess cable inside the air intake hose. The female end of the quick-disconnect plug needs to be wired to the included feeder cable with the opposite end going through the hole you'll drill in the intake hose inside the engine compartment (see photo). The male and female quick-disconnect plugs will connect together inside the air intake hose just inside the engine compartment.

8. Once you have the power lead cable in the engine compartment, you can continue with wiring the LEDs to power and/or a switch.

Here's a photo of the breather referenced above. Ideally you want to mount the LED strips to the inside of the rubber boot. If that's not possible, mount them to the inside of the top of breather. We prefer the rubber boot option because it completely hides the LEDs. You only see the glow. If your breather however has a one piece boot/filter, that's not possible since you'd have to replace the LEDs every time you changed out the filter. In that scenario mount them to the inside of the top of the breather. The LEDs are designed to make a full circle of light. In some cases you may want but those LED strips such that you only have a semi-circle of light with the LEDs mounted in such a way that they face inward toward the truck (vs outward toward other drivers).

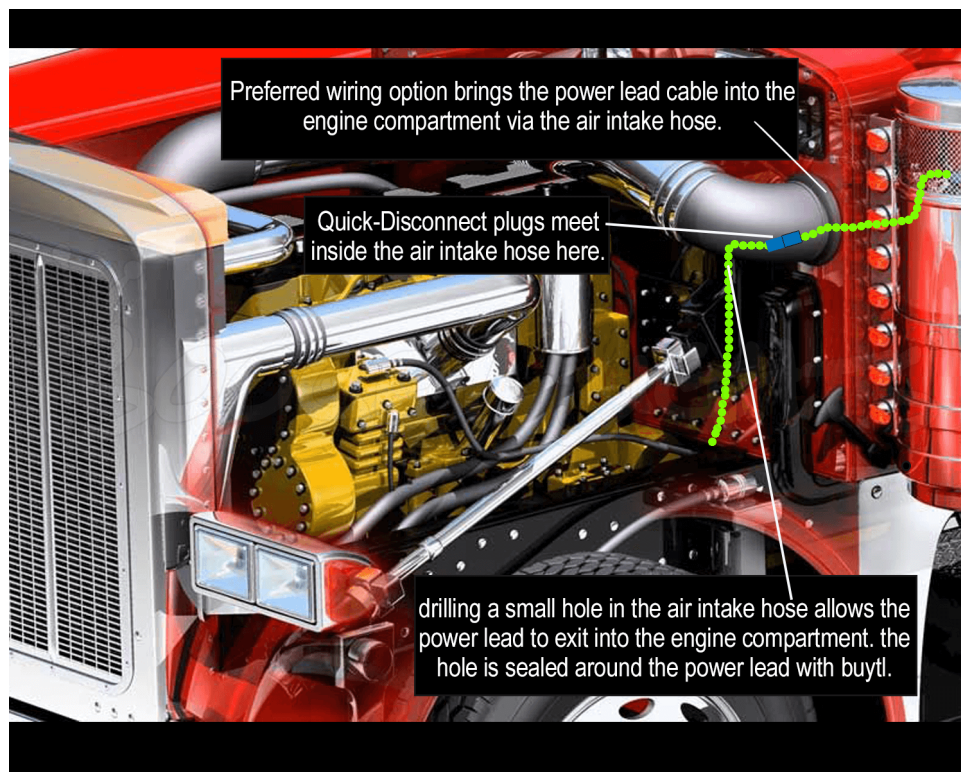


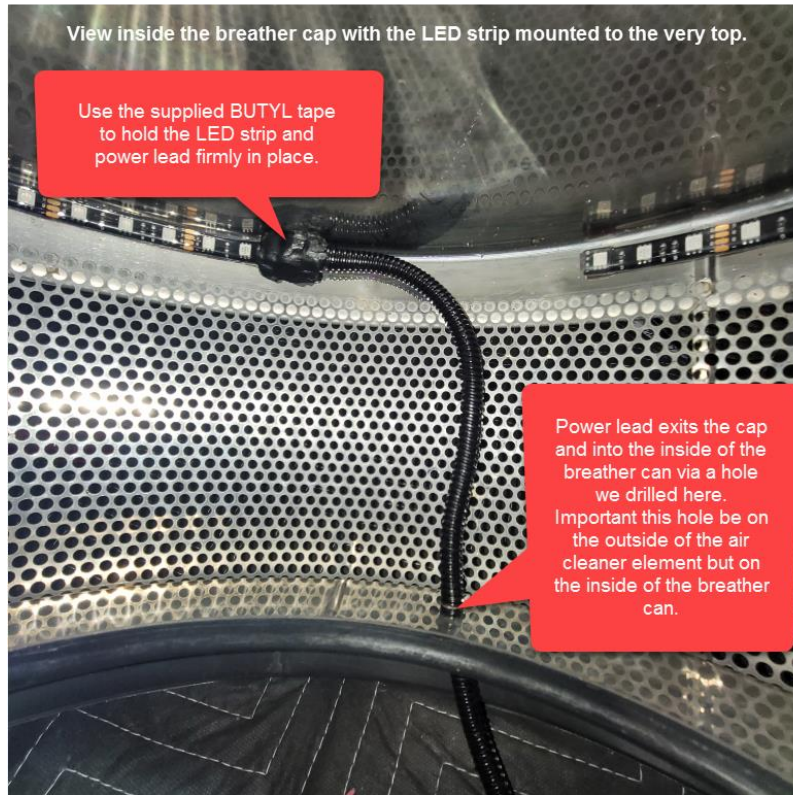


Here's a diagram of the two power lead routing options. We prefer OPTION 1 however either will work.



Diagram of the larger picture with the power lead routed into the engine compartment. Note the location of the quick-disconnect connectors.







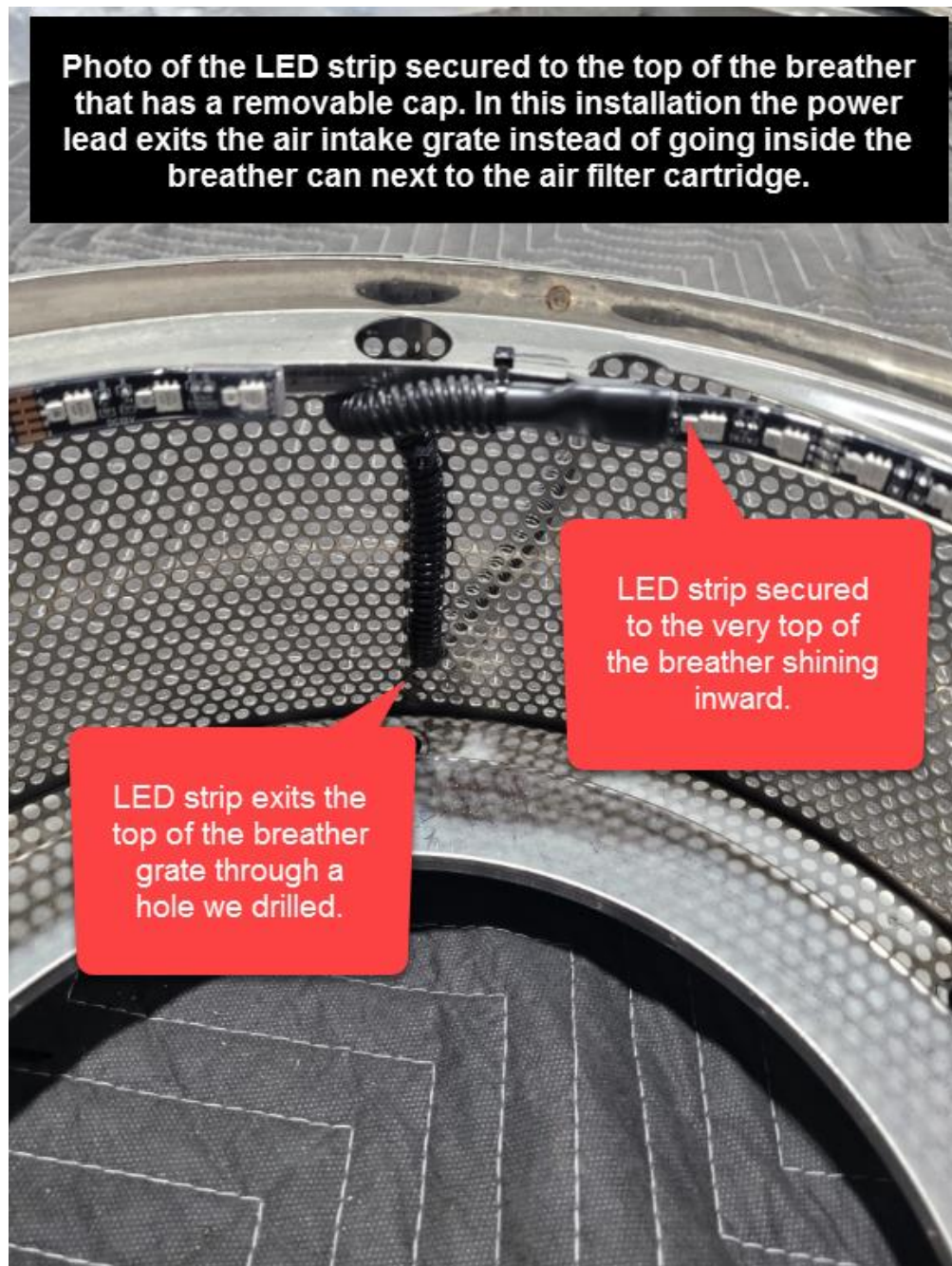
View from the bottom looking up into the breather top.

Hole we drilled  
for the power  
lead to enter the  
breather can on  
the outside of  
the air filter.

LED Strip  
Mounted  
Here

Quick Disconnect

This is a different installation where we had to route the power lead out of the breather can instead of going into the bottom of the can. There wasn't enough room between the outside breather can and the air filter cartridge to route the power lead wire inside the can completely.





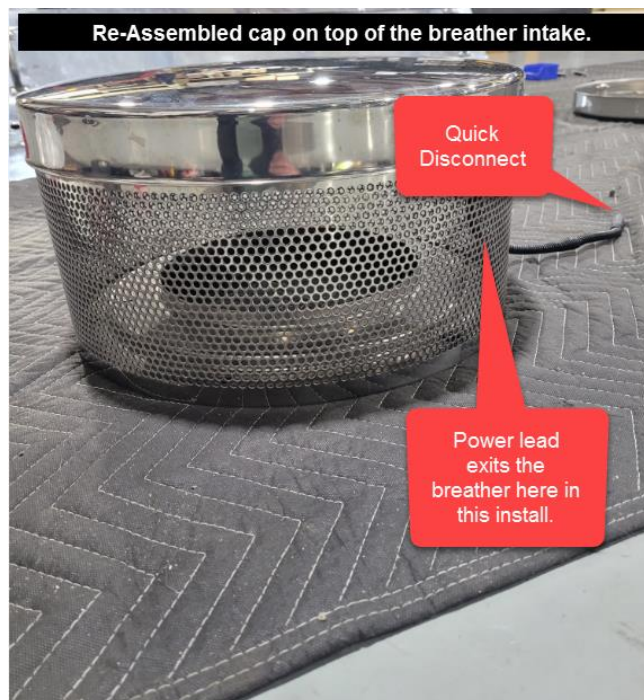
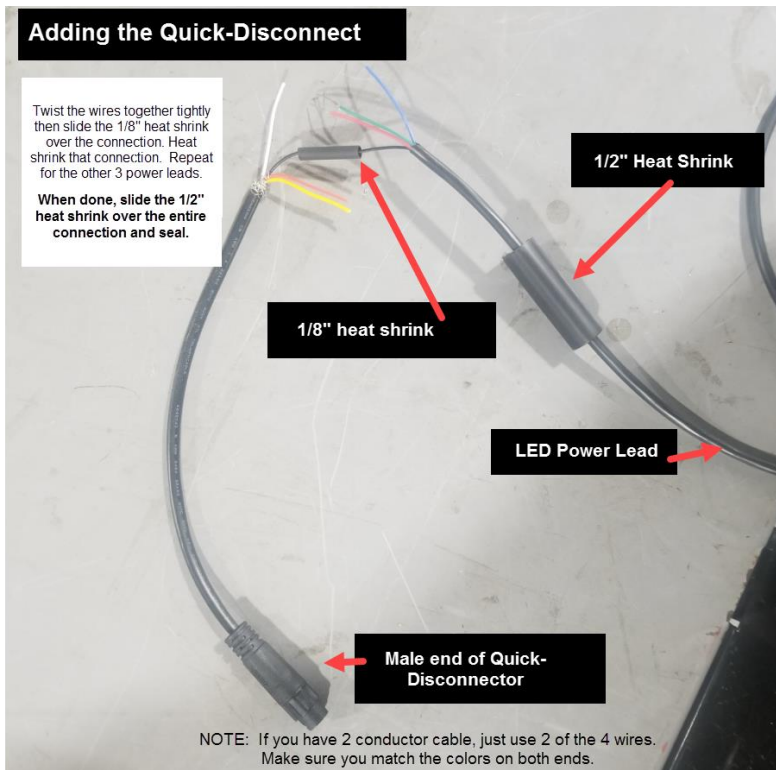


Photo of the LOWER breather led strip.

The LED strip is mounted to the inside of this lip facing inward.

Not seen here but the power lead is routed up on the back of the breather can and into the engine compartment.





## Additional Resources

- How to Videos: <https://www.boogeylights.com/how-to-videos/>
- Product Page: <https://www.boogeylights.com/kenworth-w900-led-accent-light-kit/>
- Troubleshooting: <https://www.boogeylights.com/trouble-shooting-guide/>
- Installation Resources: <https://www.boogeylights.com/installation-resources/>
- How to Bench Test: <https://docs.boogeylights.net/?wpdmdl=1305>
- Amperage Data: <https://docs.boogeylights.net/?wpdmdl=1137>
- 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>

## 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/>.