



## INSTALLATION GUIDE

### WRECKER UNDER-GLOW

**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.

**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 / Planning Your Install**

All of the LED strips in this wrecker under-glow kit are built on our HEAVY DUTY LED strip series. The quantity and lengths of those strips depends on the type of wrecker you have and the wheel base of that wrecker. If you ordered wheel well lights, we include those as well. Each light kit includes a CUT SHEET listing the number and lengths of Heavy Duty LED strips included in your kit ALONG WITH a rough layout diagram of where on the truck those LED strips are intended to be mounted. Important to note that the layout we provide is not to scale nor is it a precise layout. It's to be used as a guide. You'll need to look at the bottom of your wrecker and make the final determination as to where the LED strips will be installed. When deciding on where to mount your lights, keep in mind that the mounting surface needs to be smooth, flat and rigid. The strip itself cannot span multiple mounting surfaces. If you don't have a straight, smooth flat mounting surface, we suggest installed some aluminum or plastic flat bar first. Then, mount the LED strip to that aluminum or plastic surface. Also, the mounting surface must be free of grease and other solvents. We suggest mapping out your install before proceeding so you know where each LED strip will go.

## **Power & Switching**

For power, you'll need access to 12vdc. Whenever possible, we suggest going directly to the truck's battery bank however many wreckers will have an 12vdc auxiliary shunt which you can connect to as well. Just make sure that auxiliary shunt will handle the additional amperage you're adding to the system. For a general idea of the amperage, refer to our CUT SHEET where we list the estimated amperage for your lighting system. Ultimately we suggest measuring the actual amperage of the system.

## **LED/Flasher Controller or Switches**

If you're installing an LED controller or Flasher we usually mount them in the storage bay closest to the battery power source. In many wreckers, this is the first or second locker on the driver's side of the wrecker. It's important to mount it as close to the power source as possible to minimize the amount of battery cable we need to add. If your light kit includes a controller, we also include a wiring diagram for that controller (you can also download it directly from our website). Be sure to review it before installing. If you're installing a switch, the type of switch you purchased will determine the mounting location. If it's a RF wireless switch, you can mount the receiver component (with relays) wherever the power is connected to the lighting system. If it's a wired on/off (or on/off/on), you'll need to run wires from the dash of the truck to the relays wherever you're making your power connection to the lighting system. In many wreckers there will already be some open auxiliary switches in the wrecker cab which you can use too. Regardless of the switch type, make sure you are using relays.

## **LED Strip Wiring Plan**

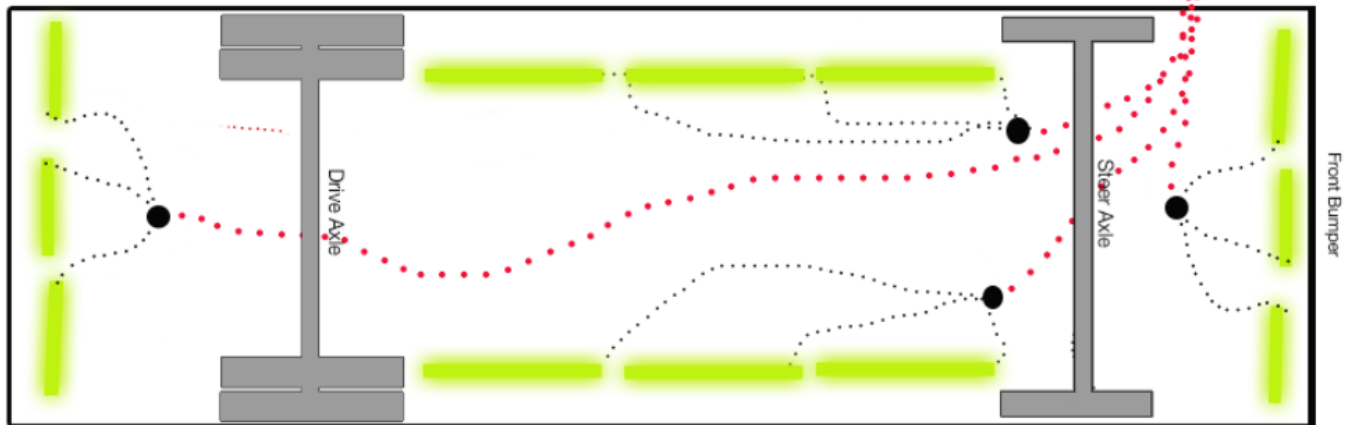
The CUT SHEET previously mentioned will provide a general idea of where the LED strips included in this kit are intended to be mounted. We also include some power lead cable (22awg) and feeder cable (18awg). Each Heavy Duty LED strip has a 36" power lead. For most installation locations, that power lead will need to be extended using the 22awg cable. The 18awg feeder cable is used to connect the LED strips back to the power source. The feeder cable is used to connect the Heavy Duty LED strips to the power source. We include a simple wiring plan diagram on the next page which gives you an idea of what we're referring to.



### SIMPLE WIRING PLAN

The number and length of LED strips will vary based on the truck wheelbase and format.

NOT TO SCALE. FOR ILLUSTRATION ONLY



**BLACK LINES:** 22 awg power lead coming from Heavy Duty LED strips

**RED LINES:** 18 awg feeder cable which connects each Heavy Duty LED strip group to the switch/controller/power source.

### Wheel Well Lighting

If you ordered wheel well lighting with your kit, be sure to read this information carefully.

Installing LED lights in the wheel wells of vehicles can be a little tricky. You want to avoid mounting the strip directly in line with the tire. This will help keep the LED strip out of the 'line of fire' from rocks, road debris, etc that could be kicked up by the tires. Our first choice is to mount the strip as close the fender outer edge as we can with the led strip angled slightly in towards the tire. It usually provides the best lighting. This assumes you can't see the edge of the LED strip by mounting it in this location. If that location isn't available, we will mount the LED strip further in the wheel well on the other side of the tire but not too far that the LED strip can be seen from outside the wheel well.

Note too we generally only install LED strips at the very top of the arc of the wheel well vs covering the full arc. The reason is that a) it provides a nice straight down glow without being able to see the LED strip itself and b), it reduces the likelihood of road debris being thrown from the tire and hitting the LED strip directly.

If you're lucky, the inside of the wheel well will have a smooth, flat surface of plastic or metal. In these cases you can usually mount the LED strip directly to that surface (although you still may need to remove the wheel to gain access to the mounting location.)

If the mounting surface is a felt material (common in cars and pickup trucks – not so in commercial wreckers), it becomes a little more challenging since you cannot mount the LED strip directly to that felt material. Here are the options for these installations (in our order of preference):

1. Cut out the felt material and install the LED light directly to the surface beneath the felt. This works well if that felt material and the underlying surface are connected to each other or very close together. It works too for both our Low Profile and Heavy Duty LED strips. If however there is a gap between the two surfaces, it's not a good idea since that felt material is likely going to a) block some of the light impacting the overall look and b) will move enough that it will eventually damage the LED strip by constantly rubbing against it.
2. Mount the LED strip to some flexible plastic flat stock and then mount that assembly to the felt inside the wheel well using wire and/or zip ties. In some cases, we'll even screw or rivet that plastic flat stock to the underlying service. This will work for both our Low Profile led strips and our Heavy Duty LED strips.
3. Mount the LED strip directly to the felt material using zip ties. This ONLY works for our Heavy Duty LED strips. Using zip ties to hold our Low Profile LED strips to the felt will damage the LED strip and cause it to fail prematurely.

**If you purchased a kit without an LED Controller or switch we do not include any switching devices with the kit. We assume you already have a switch available in your truck or will be installing another switch of some type. Regardless of how you decide to switch your single color LEDs, be mindful of the amperage that adding more lights will draw. If you're considering adding these LEDs to an existing circuit (e.g. with your existing marker or running lights) we strongly suggest using a relay vs simply tapping into the existing circuit. This is especially important on newer trucks where the LCM will likely throw an error when you add more LEDs to the system.**

## **WARRANTY**

Warranty info can be found on our website at <https://www.boogeylights.com/warranty/> . The warranty is a product only warranty. It covers the lights (or remote control) themselves. It does not cover reimbursement for labor or other charges involved in replacing the product.

PLEASE NOTE: If you want warranty coverage on our HEAVY DUTY LED Strips, you must follow these instructions before installing:

1. Bench test each LED strip using a 12vdc power supply. Confirm each LED diode in the strip is lighting as expected.
2. Visually inspect the LED strip to make sure it's not damaged.

Do not install a HEAVY DUTY LED strip if it's not lighting properly and/or appears damaged/defective in any way. Instead, contact Boogey Lights by opening a support ticket at <https://www.boogeylights.com/contact-us/> . We will respond promptly.

Assuming you've performed the above two steps and the strips are working as expected, be sure to follow the mounting instructions included with your order.

Failure to follow these instructions will void the warranty.

**Bending:** While these Heavy Duty LED Strips are designed to take a beating, it's important you do not bend the strips in a radius of less than 2". Also, do not bend the LED strip on a horizontal plane. Doing so will damage the circuit traces on the PCB board causing the LED strip to fail, voiding the warranty.

*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).

If the area is especially greasy, you'll need to clean it with a degreaser or similar solvent. IF you do, be sure to use rubbing alcohol on the surface next to completely remove any left-over residue from the degreaser.

- 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.



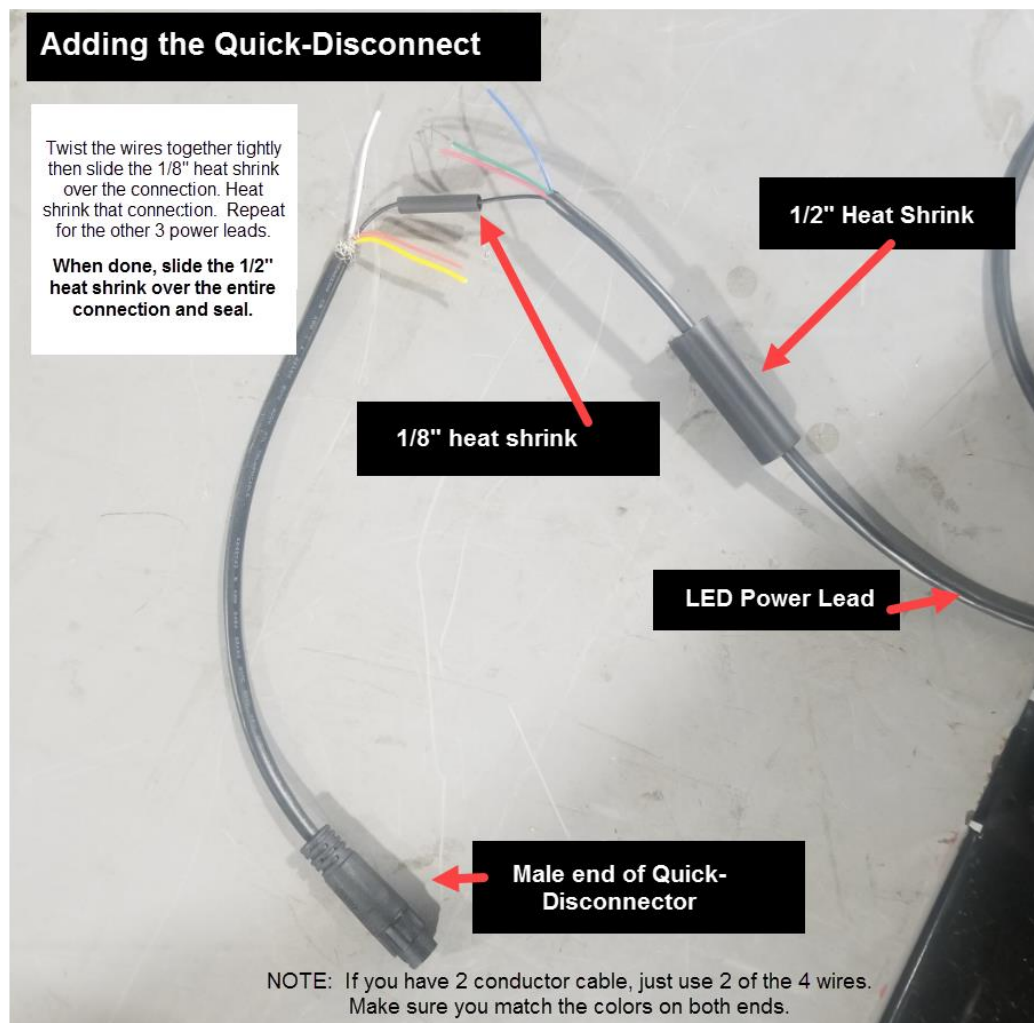
## WIRING DIAGRAMS & POWER CONSIDERATIONS

This kit includes the wiring diagrams for the configuration you purchased. **Please review carefully.** An essential skill with installation of any Boogey Lights LED product 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.

Be mindful of the amount of amperage you're drawing through your lighting circuit and to not exceed the circuit component limitations. The product page of our website includes an amperage chart to give you a general idea of amperage draw but be aware that the amount of power (amps) you're pulling through the circuit will vary based on a combination of three factors: 1) The number of LEDs in the circuit, 2) the amount of copper wire in the circuit and 3) the input voltage to the circuit. The amperage ratings for our switches, controllers and LEDs assume 12.5 vdc input or less. If you're going to be driving with your Boogey Lights on, be aware that the input voltage will absolutely increase when the engine is on as RPMs increase. It's not unusual for an alternator to charge the batteries at a rate of 13.5 to 14.5 vdc depending upon the vehicle. Increasing the input voltage to the LED Controller/LEDs will also increase the amperage draw of those LEDs because they'll burn brighter. For example, we've seen circuits that draw 17 amps when the engine is off and the input voltage is 12.5vdc but jump up to drawing 24 amps when the engine is on and RPMs increased. This is because the input voltage jumps to 14vdc when the engine is running. If your circuit is only sized for 20 amps but the system requires 24 amps while running, you're going to have a problem.

Here's a photo showing how to use the 1/8" and 1/2" heat shrink to connect and seal the feeder cable connections to the power leads of each Heavy Duty LED strip. Tightly twist the copper wires together. Important that none of the copper wire strands poke through the heat shrink. Make sure they're all laying down (and not pointing outward). Then, slide the 1/8" heat shrink over the connection and heat shrink that connection. Repeat for the other 3 (or 1 if single color LEDs). When those connections have been made, slide the 1/2" heat shrink on top of the bundle and heat shrink. For the 1/8" heat shrink you only need about an inch (1") or 1.25" of heat shrink to seal each connection. Use 2 or 2.5 inches of the 1/2" heat shrink to cover the bundle.

**NOTE: There are no quick-disconnect connectors in this kit. The below diagram is provided for illustration purposes of showing how to use the heat shrink.**





## Additional Resources

- Product Page: <https://www.boogeylights.com/wrecker-under-glow-led-light-kit/>
- How to Videos: <https://www.boogeylights.com/how-to-videos/>
- 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>
- Cutting Your LEDs: <https://docs.boogeylights.net/?wpdmdl=964>
- 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/>.