



## INSTALLATION GUIDE

### KENWORTH T680 UNDER-GLOW 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.

**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.

**INSTALLATION TIME.** We suggest allocating 6 to 8 hours to properly install this light kit.

#### RGB/MULTI-COLOR KIT Installations

Installation of this led light kit takes 6 to 8 hours depending on whether or not you're adding this light kit to an existing installation or installing this kit as a stand-alone. See wiring diagram included with this kit.

#### SINGLE COLOR KIT Installations

Installation of our single color kit typically takes 6 to 8 hours. With single color installations we always recommend using a dedicated on/off switch OR if you want to tie them into an existing circuit (e.g. marker lights), we suggest adding a relay to the circuit. If you purchased the on/off wireless switch we offer, you do not need a relay provided the grill lights in this kit are the only lights you're switching on it. The single color on/off wiring diagram is included with this kit.

## NOTE:

These instructions make reference to some ALUMINIMUM FLAT BAR. That is no longer the case. We are now including PLASTIC FLAT BAR instead of the aluminum flat bar. The plastic flat bar should be mounted the same way as the aluminum with one exception when mounting to the bottom of the fuel tanks: make sure the plastic flat bar is securely fastened to the fuel tank (or sub-structure) in multiple places across the entire length of the flat bar. The goal is to minimize the amount of flexing the plastic flat bar does.

### Mounting & Placement Locations | Planning Your Install

All of the LEDs in this kit are built on our Heavy Duty LED strips. Each strip is encased in rubber with a 36" power lead. Each LED strip will have to have it's power lead extended (using the included power lead cable + heat shrink tubing) based on where the LED strip is located on the truck. It's important that each of these connections be sealed. Our kit includes the 1/8" and 1/2" heat shrink tubing to do these connections. In total there are 13 different mounting locations in this kit and all of the power leads need to be carefully run. The mounting areas are focused in the following areas:

#### Front Bumper

- 2 – 45 LED strips

#### Driver's Side

- 1 – 45 LED strip
- 1 – 30 LED strip
- 2 – 60 LED strips
- 1 – 75 LED strip

#### Passenger's Side

- 2 – 75 LED strips
- 1 – 30 LED strip
- 1 – 75 LED strip

#### Under-Truck

- 2 – 45 LED strips

See diagram and photos with layout as indicated.

For power, you'll need access to the driver's side steps to access the batteries. If you're installing an LED controller, the LED controller can be mounted in either the driver's side storage box or the passenger's. We prefer to install in the driver's side if possible because it's closer to the battery box. While either location will work, be aware if you mount the controller in the passenger's side, you'll need to extend the positive battery cable a little further than if you mounted the controller in the drivers side storage. The 12vdc + power going to the LED Controller should connect directly to the 12vdc+ terminal on your truck's battery bank. You can connect the ground wire on the LED controller to any bare metal part of the chassis. Regardless of which side bay you use, you will need to drill a hole in the floor of that

box to connect power to the battery box, led wires and antenna. Be sure to seal that hole as well as protect the sharp edges of the metal from damaging the cables.

All of the our Heavy Duty LED strips include a 3' power lead. Most of the strips will need to have additional power lead cable added which we include in the kit. Where possible, we recommend connecting all of LED strips in similar locations together and then running one feeder cable back to the LED controller. Doing so reduces the total number of power leads coming back to the LED controller. **Regardless, we strongly recommend planning out your install on paper first.** Be sure to wrap all power leads in split-loom which is also included and then secure them to the truck using zip ties.

## LED PLACEMENT

These are the LED placement locations we used for this kit. It's important to follow this placement pattern to ensure the LED strips are protected. Mounting them in any other way voids warranty.

**Under Front Bumper:** We mount two 45 LED heavy duty light strips under the front bumper in a 'V' shape. The power leads come together in the middle.

**Driver's Side Under-Structure:** To build out the mounting structure for the LED strips, we mount three pieces of plastic flat bar (84", 36", 24") to the truck's under-structure. Then, we mount a total of FOUR heavy duty led strips to that plastic flat bar: 2 - 60 LED strips, 1 - 45 LED strip, and 1 - 30 LED strip.

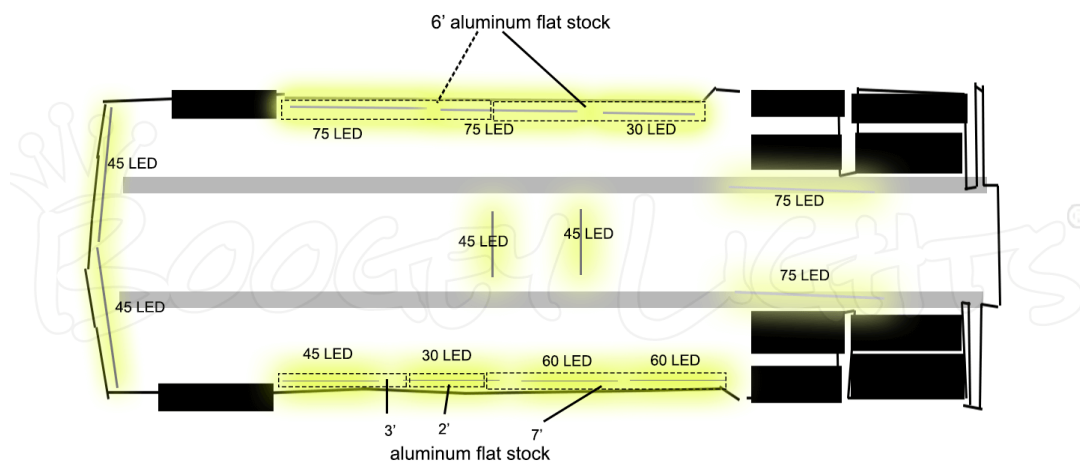
**Passenger's Side Under-Structure:** To build out the mounting structure for the LED strips we mount two pieces of plastic flat bar (each are 72" long) to the truck's under-structure. Then, we mount a total of THREE heavy duty led strips to that plastic flat bar: 2 - 75 LED strips and 1 - 30 LED strip.

**Fuel Tank Center:** We mounted 2 - 45 LED heavy duty strips to the horizontal cross beams, shining downward.

**Rear Frame Rails:** We mount two 75 LED heavy duty strips to the rear frame rails just behind the cab and in front of the drive axel. Both shining downward.

### Kenworth T680 LED Under-Glow Light Kit

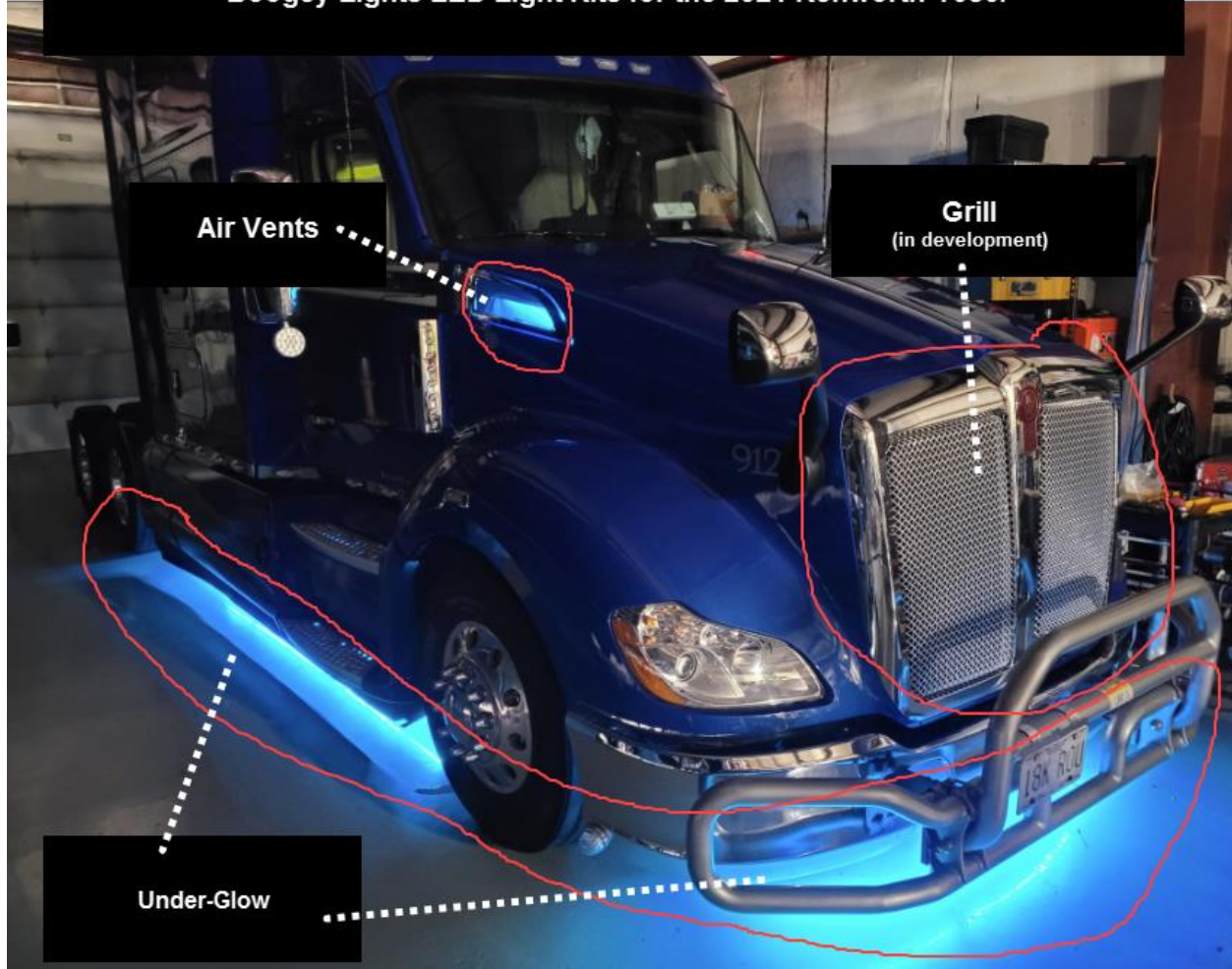
#### LED Placement Layout



For the driver's and passenger's side of the truck (between the steer and the drive) there is not a smooth mounting surface so we have to build that surface using aluminum flat bar. This kit includes five pieces of aluminum flat bar. That flat bar is secured to the bottom of the truck using zip ties and screws. Then, the heavy duty led strips are mounted to the flat bar. See install photos for a closer look at how this is done.

Not to scale. For LED strip placement illustration purposes only.

Boogey Lights LED Light Kits for the 2021 Kenworth T680.



*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.

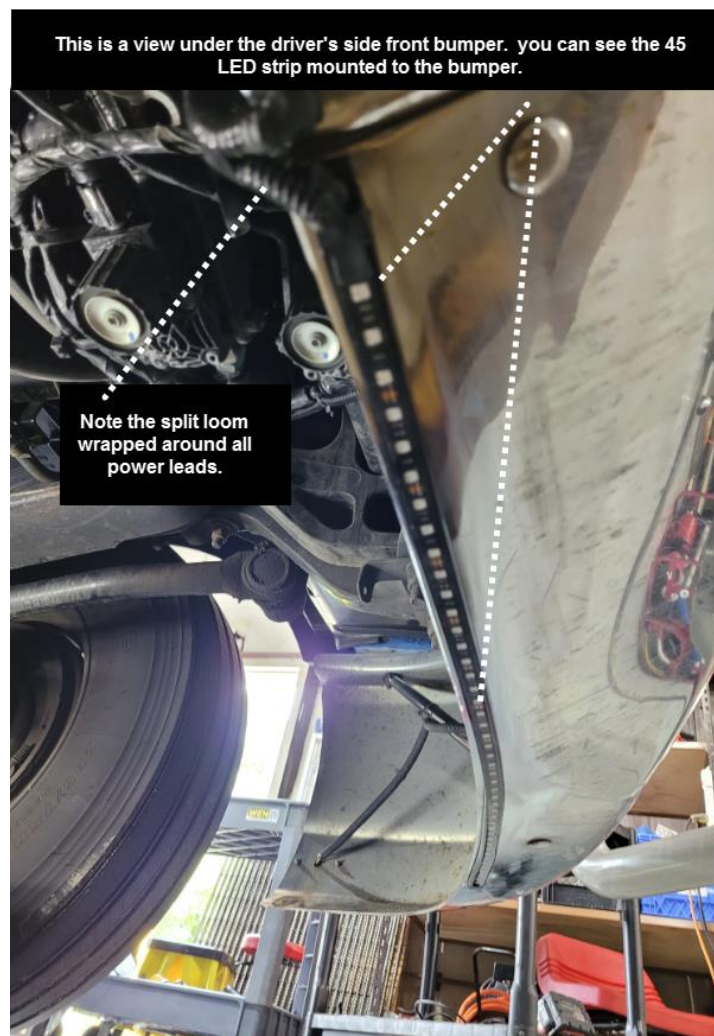
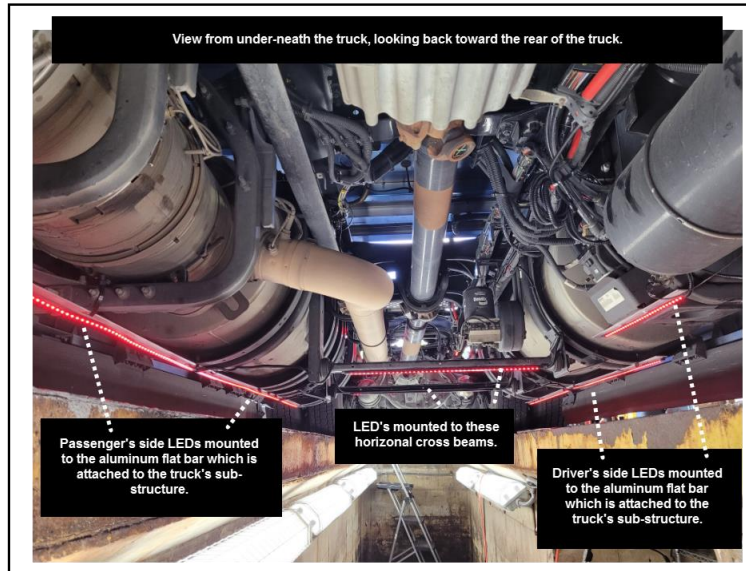
Do NOT bend the LED strip in a radius of less than 2 inches.



Do NOT bend the LED strip on a horizontal plane.

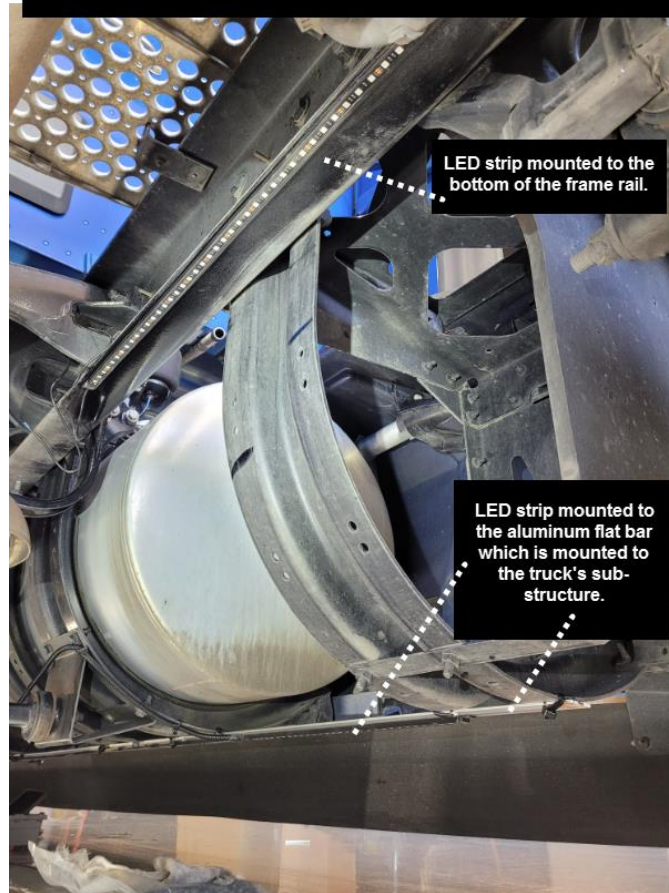








This is a view from the rear looking forward to the passenger's side.

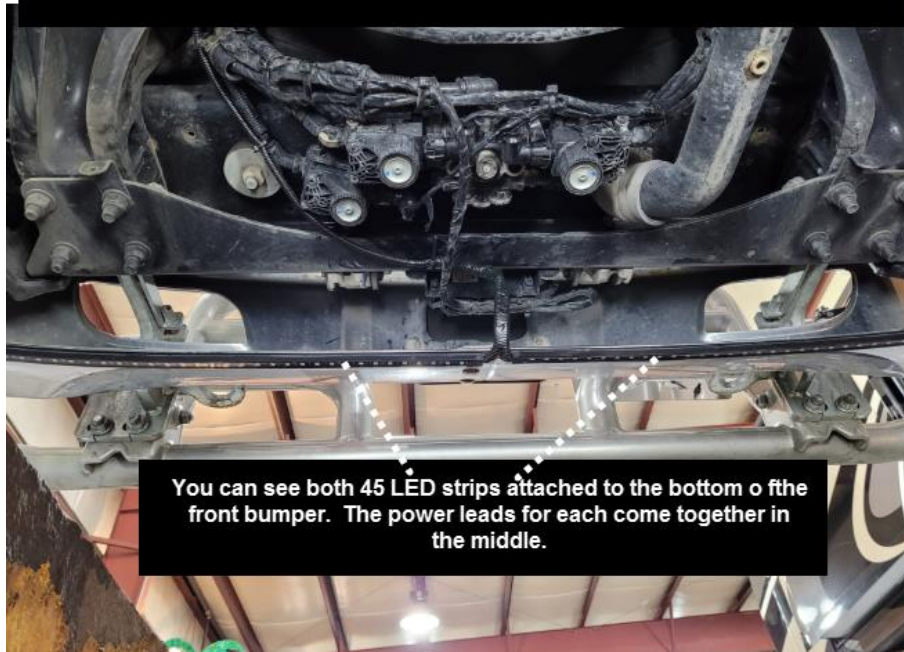


View of where we mounted the LED Controller inside the driver's side storage box. The wires go through a hole in the floor which then connects to the battery and LED strips.



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View from under the truck looking up at the front bumper



You can see both 45 LED strips attached to the bottom of the front bumper. The power leads for each come together in the middle.

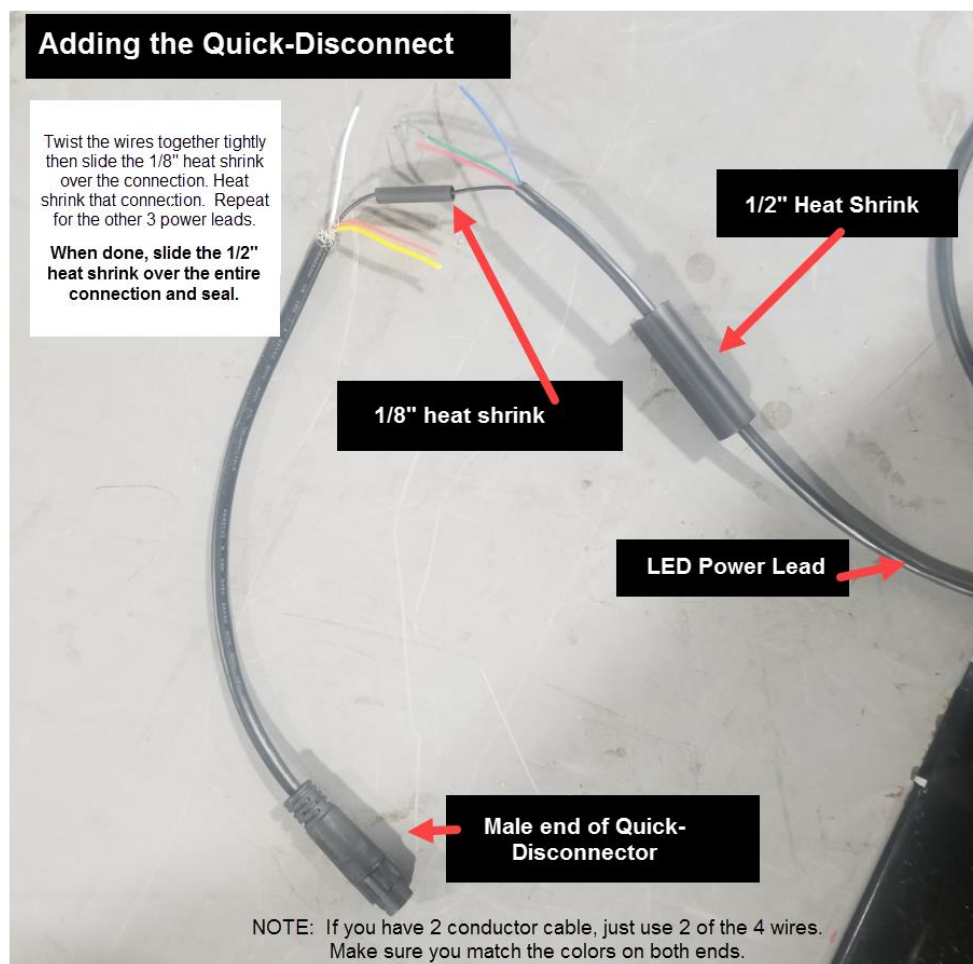
A close up view of how we mount the aluminum flat bar to the truck's sub-structure



Large Zip Ties are used to secure the aluminum to the truck.

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.*



## Additional Resources

- Product Page: <https://www.boogeylights.com/kenworth-t680-led-accent-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>
- 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/>.