

INSTALLATION GUIDE

**FREIGHTLINER CASCADIA (GEN1)
UNDER-CAB LED LIGHT KIT**



Family Owned Motorsports Lighting Since 1989

800.847.1359

www.BoogeyLights.com

Thank you for purchasing genuine Boogey Lights® LED Lighting products! We know you're anxious to get started but we strongly recommend taking time to read through these instructions. You'll likely save yourself some grief and aggravation if you do. For additional installation support refer to www.BoogeyLights.com or give us a call at 800.847.1359 for assistance.

BEFORE YOU START

It's simply not possible to provide detailed instructions for all installation scenarios. Far too many variables and truck variations. **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 however we must assume the installer has the skills, knowledge and tools necessary to do the work using the information we provide. You may need to vary your installation based on your truck. This is particularly the case with electrical wire routing 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.

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 works best if applied when the air temperature is above 40 degrees (and of course is DRY).

Bench test your setup. We know this takes a few extra minutes but we **STRONGLY** suggest you bench test your lights (and LED controller if purchased) on a table before doing anything further. 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. 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). Bench testing takes an extra 10 or 15 minutes. You can also use a common 9vdc battery to test your lights if you don't have a 12vdc bench testing power source available (the lights won't be as bright). It's simple to do and can potentially save you hours of time and frustration down the road. Please take our advice. Bench test your LEDs AND controller before mounting.

Tools You May Need

Sockets/wrenches in the sizes necessary to remove the driver's side steps to access the battery bank, wire cutters/strippers, crimping tool, electrical tape, rubbing alcohol, shop rag or two and a heat gun (or hair dryer) for the heat shrink connections. We also suggest a 12vdc multi-meter to confirm/check voltages.

RGB/MULTI-COLOR KIT Installations

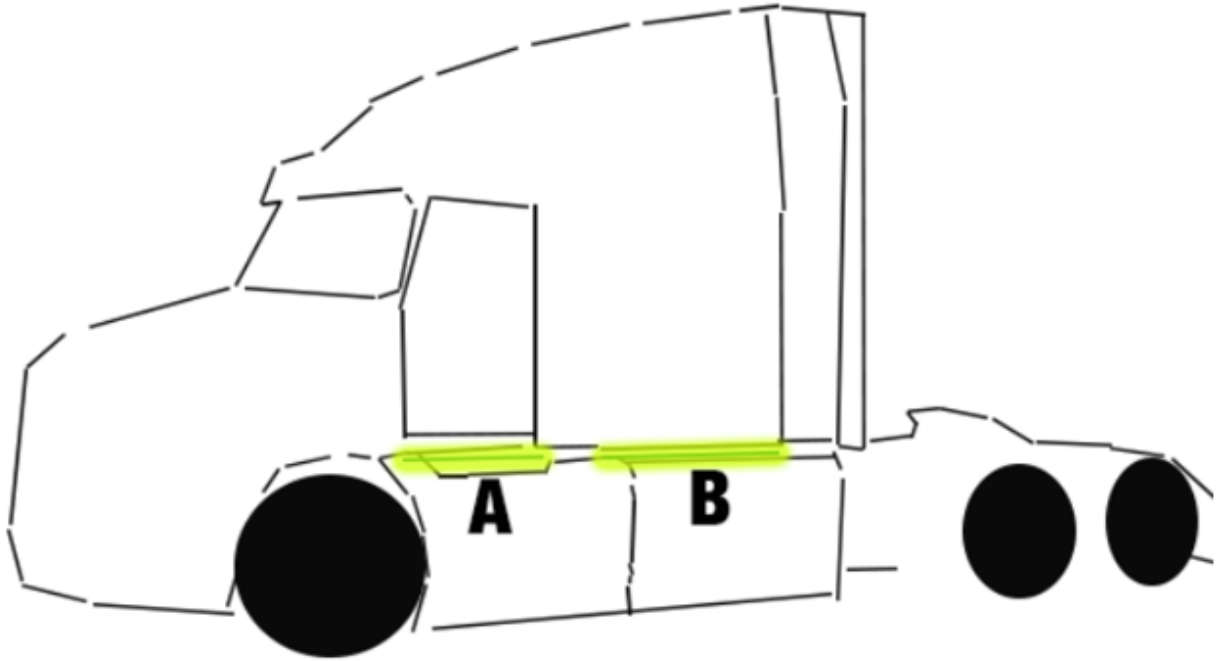
Installation of this led light kit takes 3 to 5 hours depending on whether or not you're adding this light kit to an existing installation such as the UNDER-GLOW kit or installing this kit as a stand-alone. Wiring diagram is included at the end of the guide.

SINGLE COLOR KIT Installations

Installation of our single color kit typically takes 2 to 4 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.

Mounting & Placement Locations / Planning Your Install

All the LED strips in this kit are built on our low profile hi-intensity surface mounted LED strips. In total there are 4 different mounting locations in this kit and all of the power leads need to be carefully run. There are two LED strips on each side of the truck as shown below.



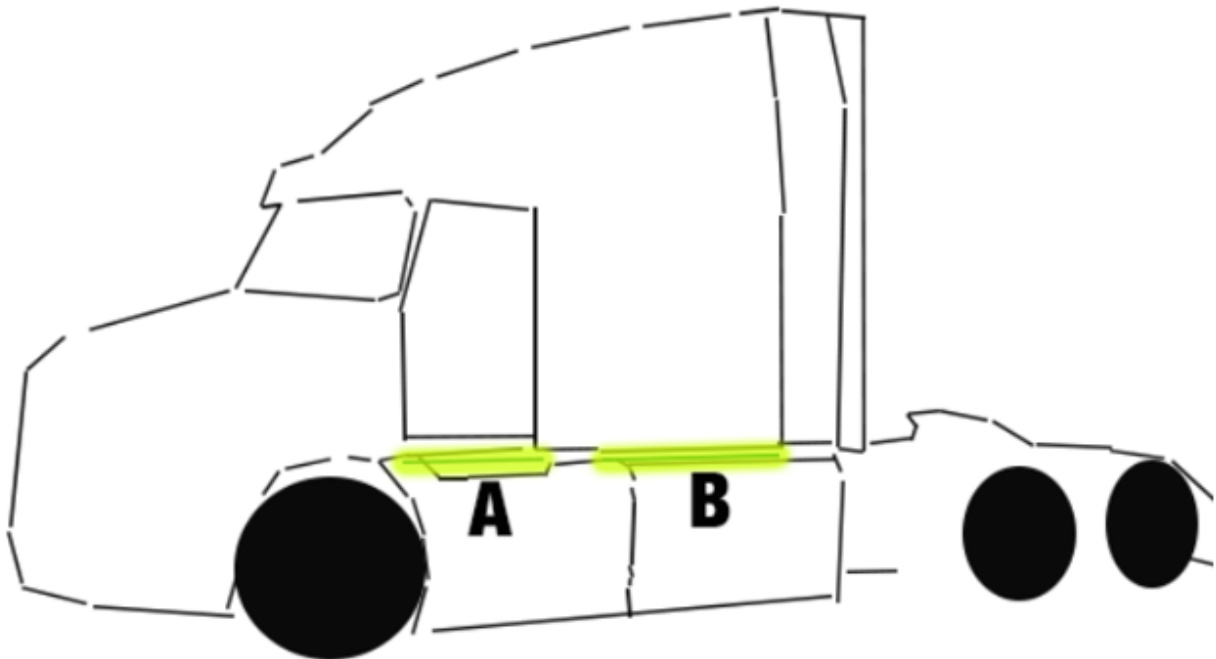
Not Shown: LED strips C & D on passenger's side.
LED C = under passenger's door. LED D = under passenger's sleeper/side

For power, you'll need access to the driver's side steps to access the batteries. Also, 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 use the driver's side as it is closest to the battery bank. 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 driver's 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 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.

We 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.



Not Shown: LED strips C & D on passenger's side.
LED C = under passenger's door. LED D = under passenger's sleeper/side

- A = 42 LED strip mounted under the driver's side door, shining downward.
- B = 72 LED strip mounted under the sleeper deck on the driver's side, shining downward.
- C = 42 LED strip mounted under the passenger's side door, shining downward.
- D = 72 LED strip mounted under the sleeper deck on the passenger's side, shining downward.

Mounting Info

We suggest mounting the LED strips such that the power leads for each LED strip meet in the middle. Doing so makes it possible for both power leads to enter the battery bank area under the truck at the same point. We recommend connecting both power leads together (on each side) and then using feeder cable to connect each pair to the LED controller (or switch if single color). This way there is only two power lead cables connecting to the LED controller instead of four. This is particularly helpful if you're adding this light kit to an existing Boogey Lights installation (e.g. Under-Glow Kit) where there are other power leads already connecting to the LED controller.

WHAT'S INCLUDED

In addition to the LED light strips, power leads (and controller / switch if ordered), this kit includes some additional items you'll need. Here's a quick review of those items and why we include them. Some of the photos at the end of this guide reference these items too.

- 18 (or 20) AWG Feeder Cable – 4 Conductor will work for both RGB and Single Color. Use this cable to extend the LED power leads back to the battery box and/or the LED controller/switch.

- 3M Adhesion Primer. Used to prep the surface before attaching the LED strips AND the 3M quick-lock tape. *Always, always, always* use this adhesion primer with 3M adhesive products if you want the bond to hold.
- Split Wire Loom / ¼". All power leads and the battery extension cables need to be protected from chaffing. Wrap them in this first.
- Split Wire Loom / ½" . We include the ½" split wire loom to be used when you're connecting multiple power leads together. Helps protect that connection.
- Battery Extension Cable (if LED Controller is purchased). We include some 12awg cable to extend the battery power inputs going to the LED Controller to the battery. Be sure to wrap this extension cable in split loom.
- Fuse Holder – 25AMP (if LED Controller is purchased). Insert this fuse holder on the 12vdc positive side of the battery connection before the battery extension cable. This is critical.
- Battery Terminal Lugs (if LED Controller is purchased). We include a couple of battery terminal lugs that attach to the battery extension cable (crimp on) to make it easy to connect the positive and negative power leads to the truck's battery to the LED controller. It's a much better way to make this connection than to just simply wrap the bare cable around the battery post.
- Butyl Tape. We use butyl tape in a number of places to secure the LED power lead to the truck as well as to fill in holes drilled. Butyl will only work if you apply it to a clean surface so make sure you first clean the surface with rubbing alcohol.
- 8" Zip Ties. We include some zip ties which you'll need to secure the LED power leads to the truck.
- Crimp On Wire Connectors. These are used to secure the wire connectors at the LED Controller as well as making all power lead connectors to the feeder cable. We recommend wrapping each connector after it's crimped with electrical tape to protect it from water intrusion.
- **NOTE: Every installation varies a little so you may need to purchase additional items (or more of them such as zip ties) for your install. Here is a LINK to a page on our website that list some of these items: <https://www.boogeylights.com/other-items-you-might-need/>.**

If you purchased a SINGLE COLOR kit without an LED Controller 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 228 LEDs 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 228 more LEDs to the system.

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.



Heavy Duty (single zone) LED Controller Wiring Diagram

COMBO Bluetooth + Wireless RF Controller



NOTE: If the distance from the LED Controller to the battery is more than 18", we strongly recommend adding another INLINE FUSE on the positive side of the circuit at the point at which the 12vdc+ connects to the battery.

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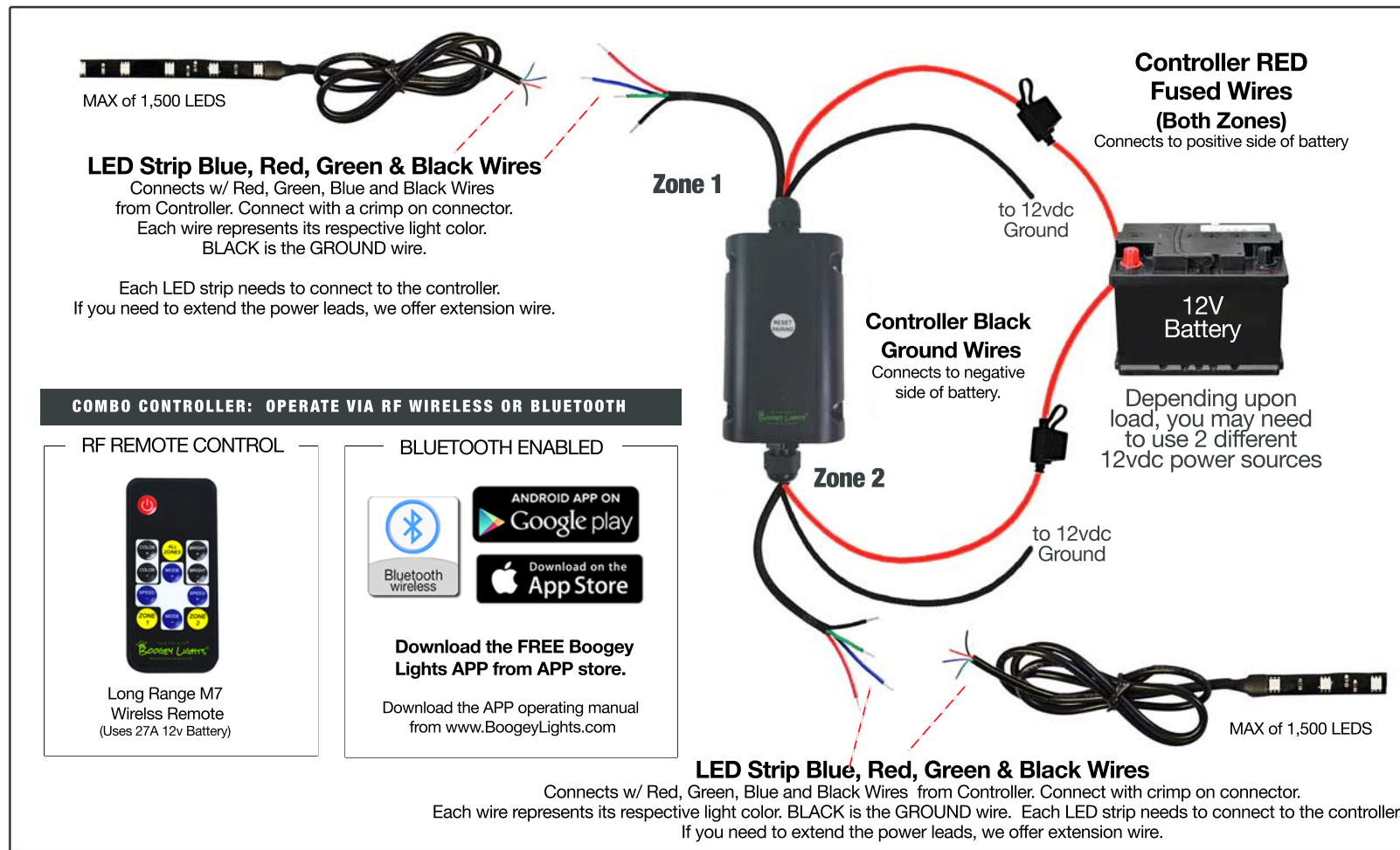
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DUAL ZONE, HEAVY DUTY COMBO CONTROLLER

Bluetooth + RF / Wiring Diagram

The Dual Zone Heavy Duty controller has TWO 12vdc, 20amp inputs. It's important to connect both of them to a 12vdc power source capable of handling the amperage. This controller can power a maximum of 1500 RGB LEDs per zone. Do not overload.

NOTE: If the distance from the LED Controller to the battery is more than 18", we strongly recommend adding another INLINE FUSE at the battery.



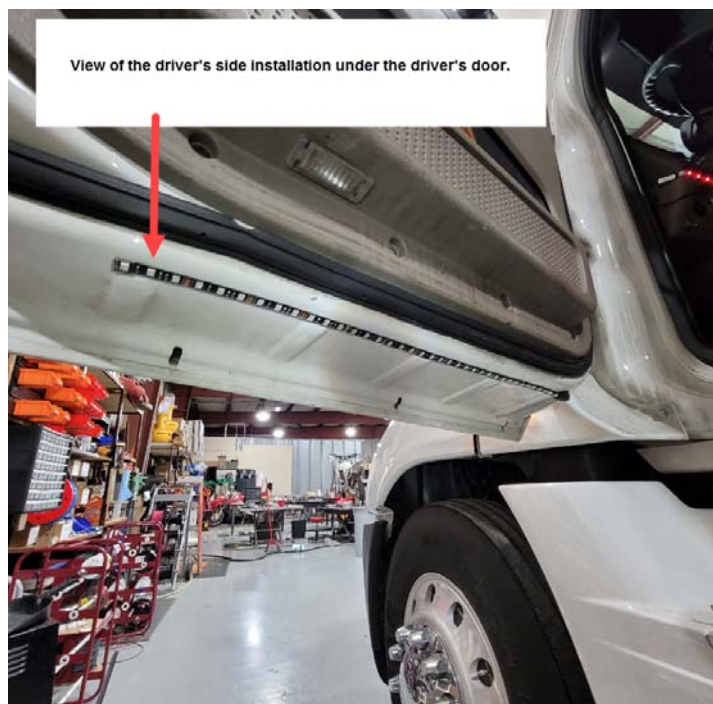
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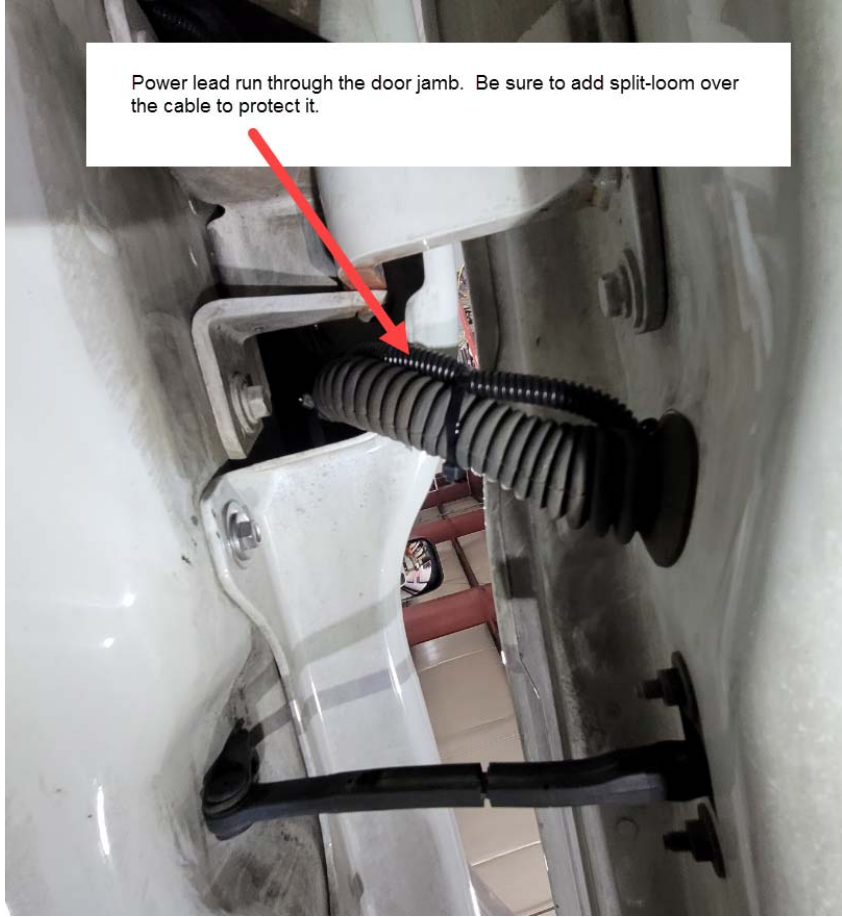
PHOTOS OF INSTALLATION



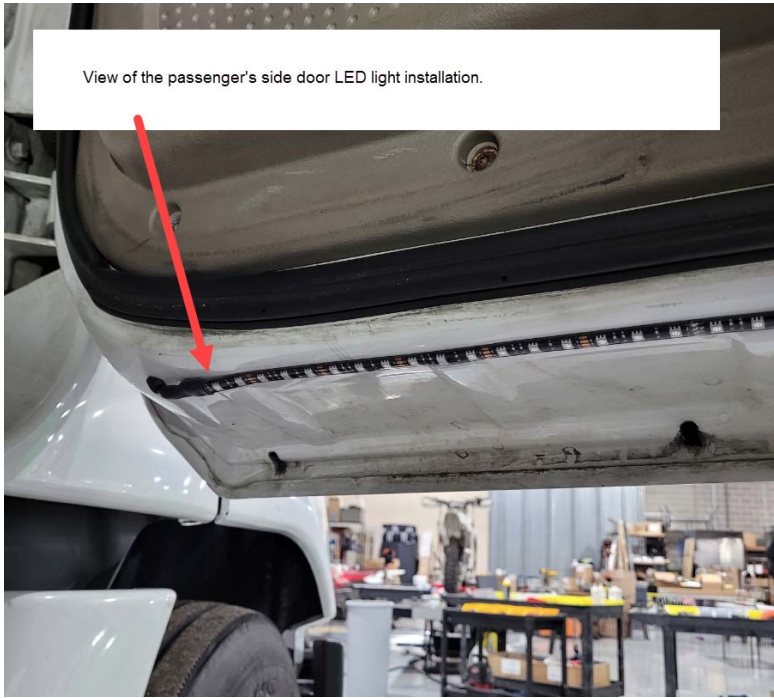
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We drilled a hole in the door (filled with butyl) and fed the power lead up to the door jamb. Makes for a cleaner installation.



Power lead run through the door jamb. Be sure to add split-loom over the cable to protect it.



View of the passenger's side door LED light installation.