RULE THE NITE™

BOOGEY LIGHTS

Family Owned Motorsports Lighting Since 1989!

INSTALLATION GUIDE

Freightliner Cascadia GEN2 Rear Fairing Accent 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?

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 truck. 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).

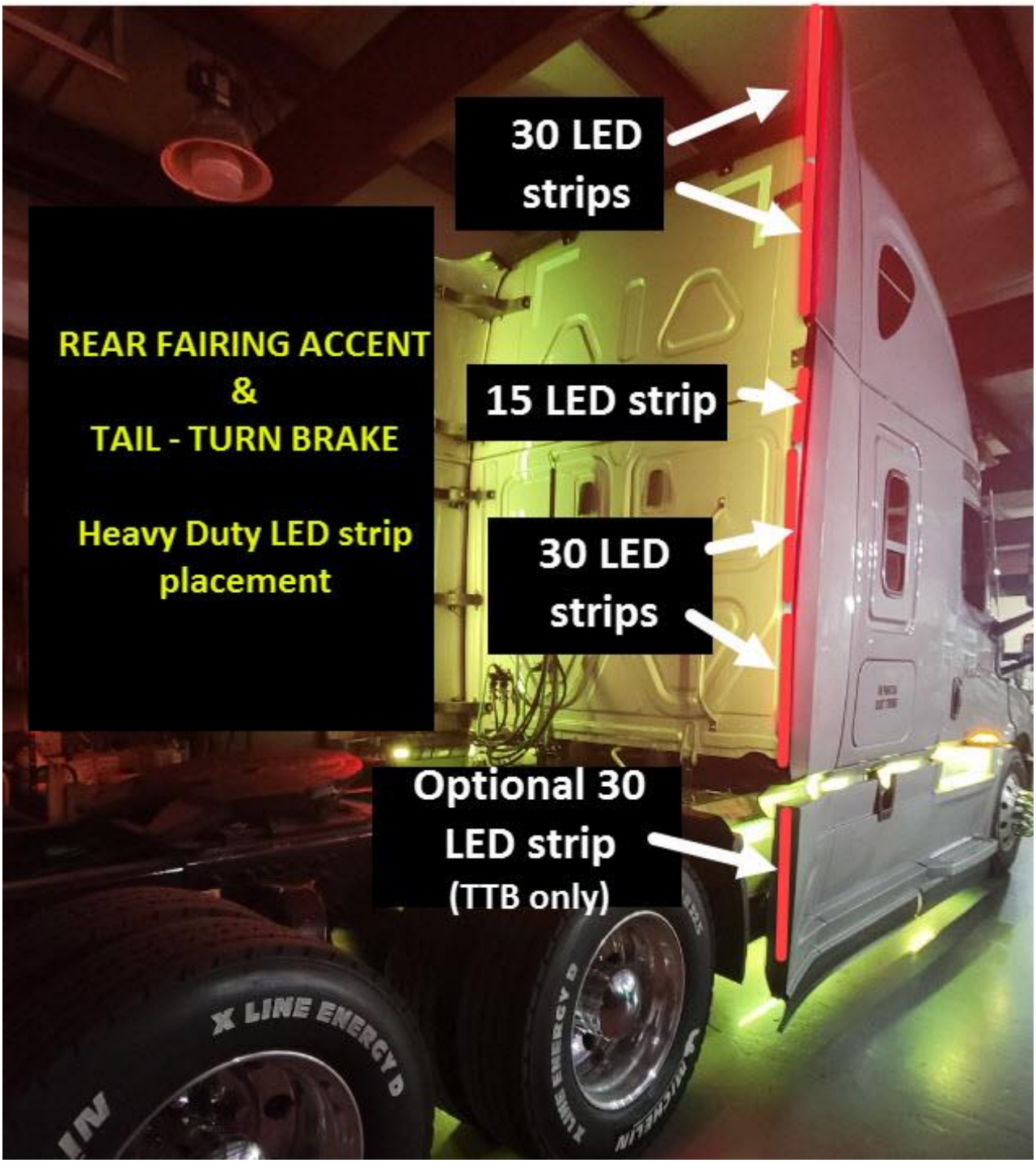
KNOW YOUR AMPERAGE DRAW. Pay attention to the number of LEDs you are lighting and the total amps you will be drawing. We manufacture a number of LED Controllers of varying capacities. If you over-load the LED controller, it will either not work at all or the lights will dim in a short period of time. 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

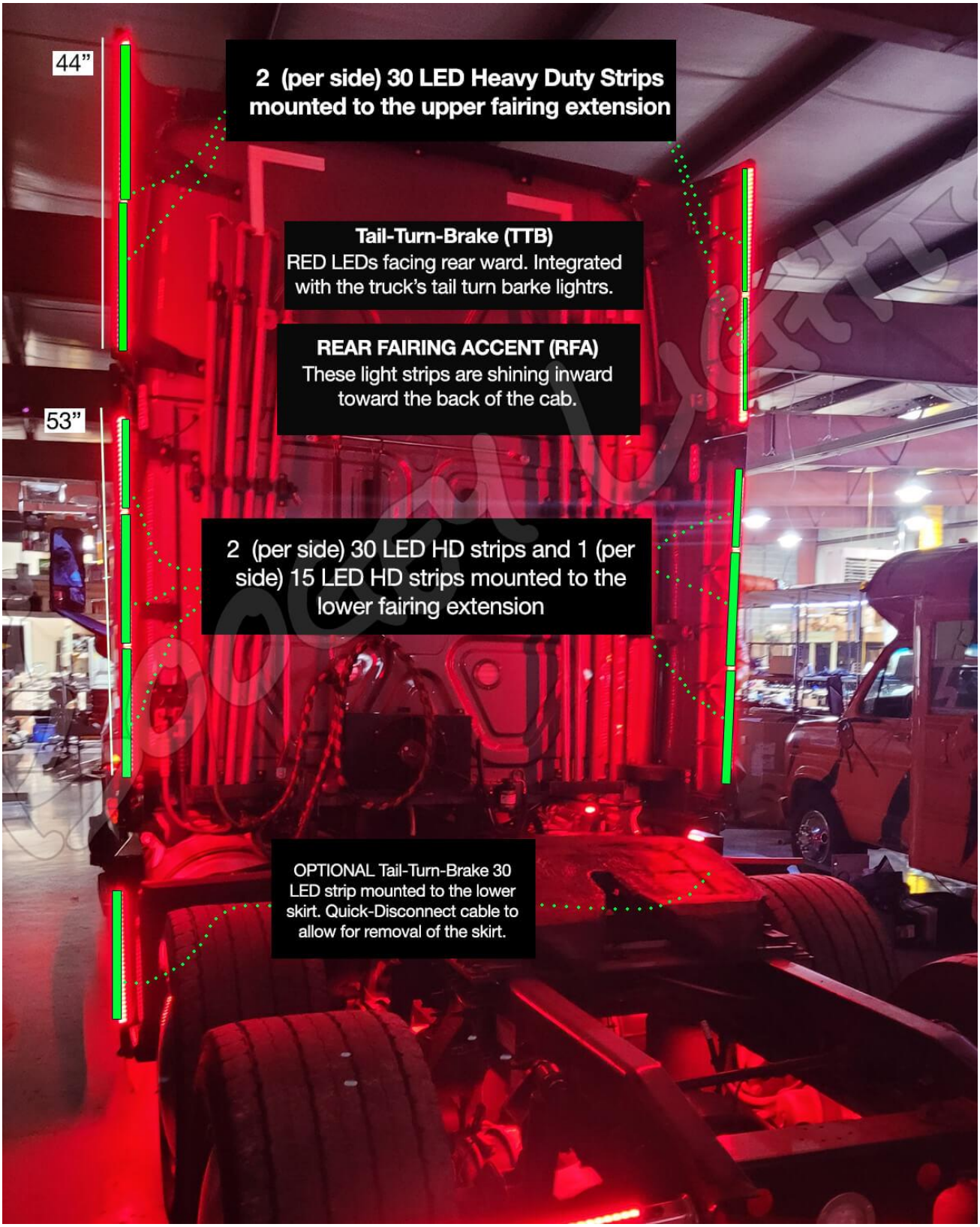
MULTI-COLOR / RGB INSTALLATIONS: The power leads coming from the LEDs will connect to the Boogey Lights LED controller.

SINGLE- COLOR INSTALLATIONS: Single color LEDs do not require an LED controller to operate. They do however require a switch somewhere in the circuit to turn them off/on. There are a number of ways to do this but regardless of how you decide to switch your single color LEDs, you need to be mindful of the amperage that adding 400 or more LEDs will draw. If you're adding these LEDs to an existing circuit (e.g. with your marker or running lights) we strongly suggest using a relay vs tapping into the existing circuit. This especially important on newer trucks where the LCM will likely throw an error when you add 400 more LEDs to the system.

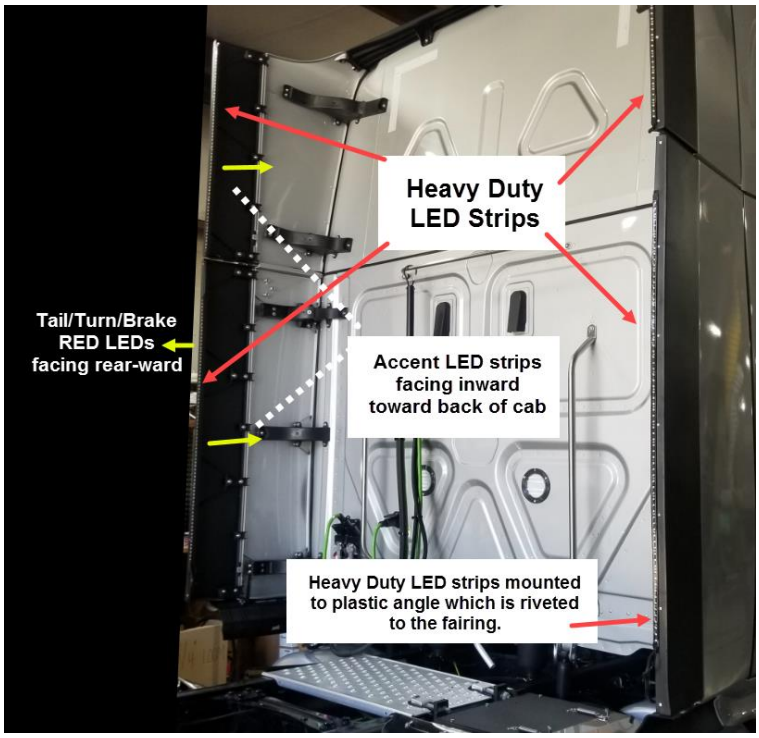
LED PLACEMENT

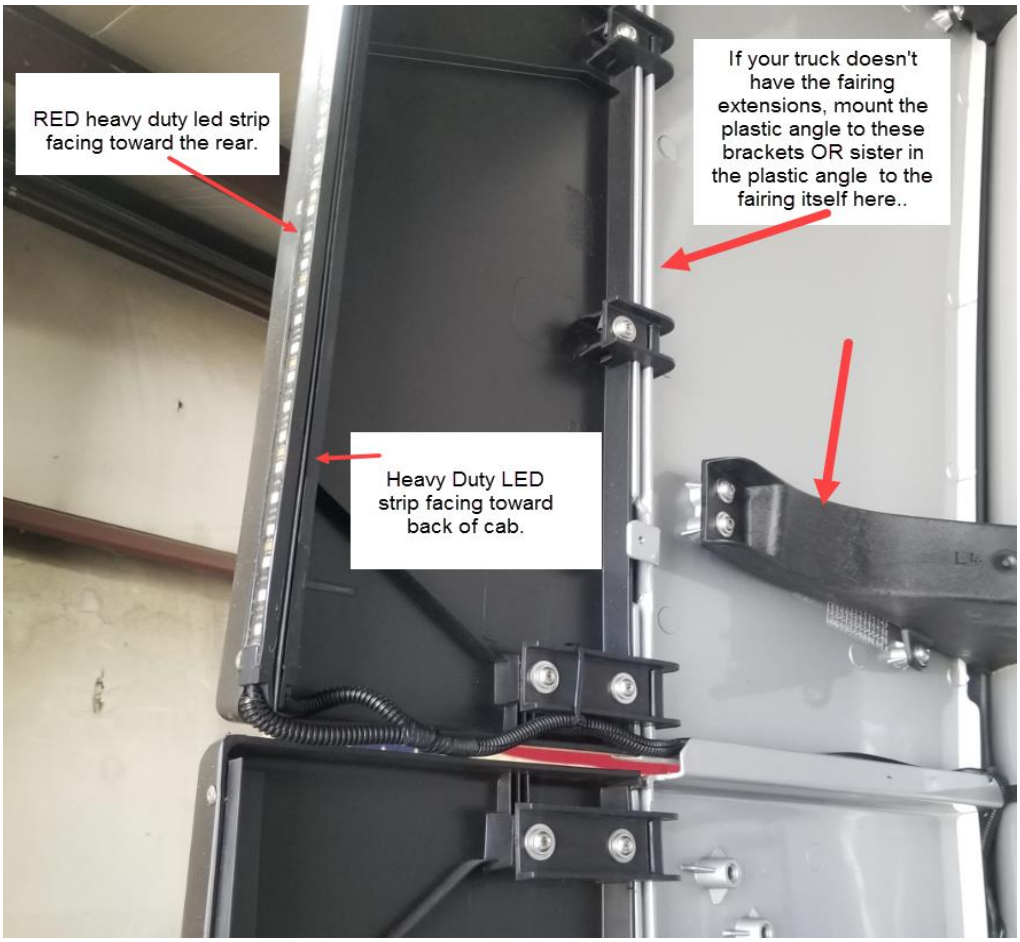
Once you have the black right-angle molding riveted to the fairing it's time to mount the LED strips to that molding. The Heavy Duty LED accent light strips (usually RGB, but not necessarily) face inward toward the back of the cab. These LEDs will flood the rear of the truck with light WITHOUT the LEDs themselves being seen by drivers on either side of the truck. If you're installing the RED tail/turn/brake light Heavy Duty LED strips, those strips face rear-ward as shown in the photo below.




44”
2 (per side) 30 LED Heavy Duty Strips mounted to the upper fairing extension
Tail-Turn-Brake (TTB)
RED LEDs facing rear ward. Integrated with the truck’s tail turn barke lightrs.
REAR FAIRING ACCENT (RFA)
These light strips are shining inward toward the back of the cab.
53”
2 (per side) 30 LED HD strips and 1 (per side) 15 LED HD strips mounted to the lower fairing extension
OPTIONAL Tail-Turn-Brake 30 LED strip mounted to the lower skirt. Quick-Disconnect cable to allow for removal of the skirt.

The inward facing accent lighting LED power leads will connect to the Boogey Lights LED controller (assuming RGB installation) … OR … if this is a single color installation, those power leads will connect to whatever switch you're using to turn them on/off.



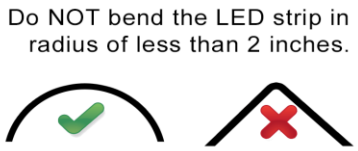


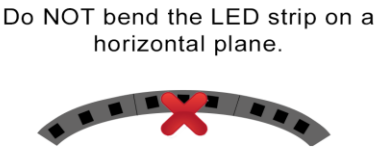
OPTIONAL TAIL / TURN / BRAKE LIGHT INTEGRATION

If you purchased the optional TAIL/TURN/BRAKE Light integration, there are two wiring diagrams at the end of this guide you'll need to complete the installation. The power leads from these LED strips run down the fairing and from there will connect to the relay housing which we suggest locating immediately behind the cab or similar location where the relay housing can be accessed if needed. A 10 awg battery cable needs to be run to the truck's battery and connected to the 12vdc + power with the included fuse holder.

For integration with the truck's tail-turn-break lights to make the system work, you need access to THREE circuits: the truck's tail light circuit, left turn signal and right turn signal. The truck's brake light uses the same light as the turn signals. Where you pull those circuits from is up to you HOWEVER we prefer to pull them directly from the rear tail light assembly on the rear the truck and then run a feeder cable up to the relay housing where the connections are made. We think it's easier (and cleaner) to do it this way while minimizing the possibility you might interfere with any of the truck's other electrical systems (which is always a concern in these situations). The reality however is that you can also find these wires in the wiring harness that runs on the inside of the frame rails back to the rear tail light assembly. On the frame (aka 'chassis') ground, it's super important to make sure the surface you're connecting to is bare metal. In many cases you'll have grind off the painted surface first. Refer to the RELAY wiring diagram at the end of the guide.

MOUNTING THE LED STRIPS



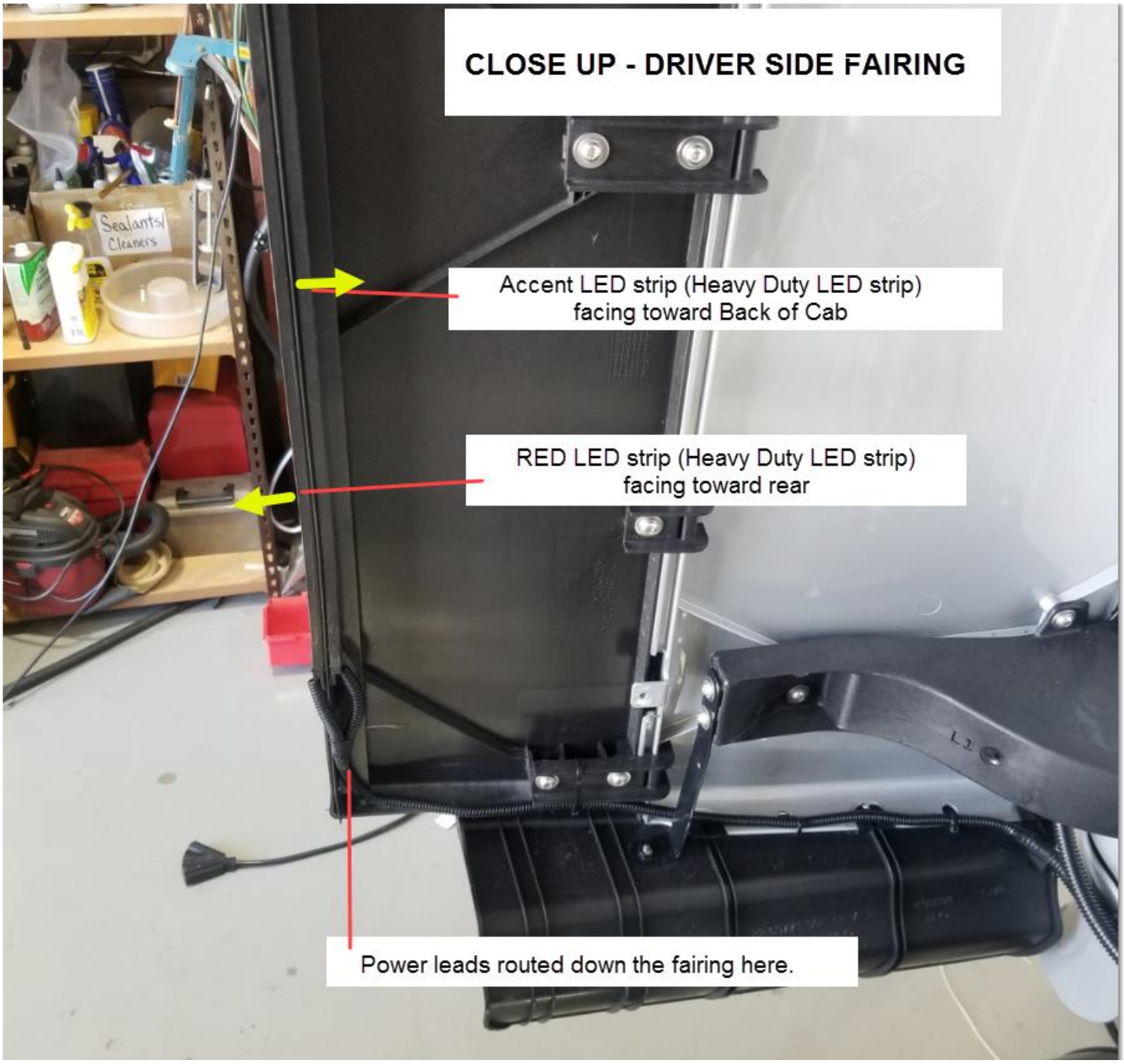


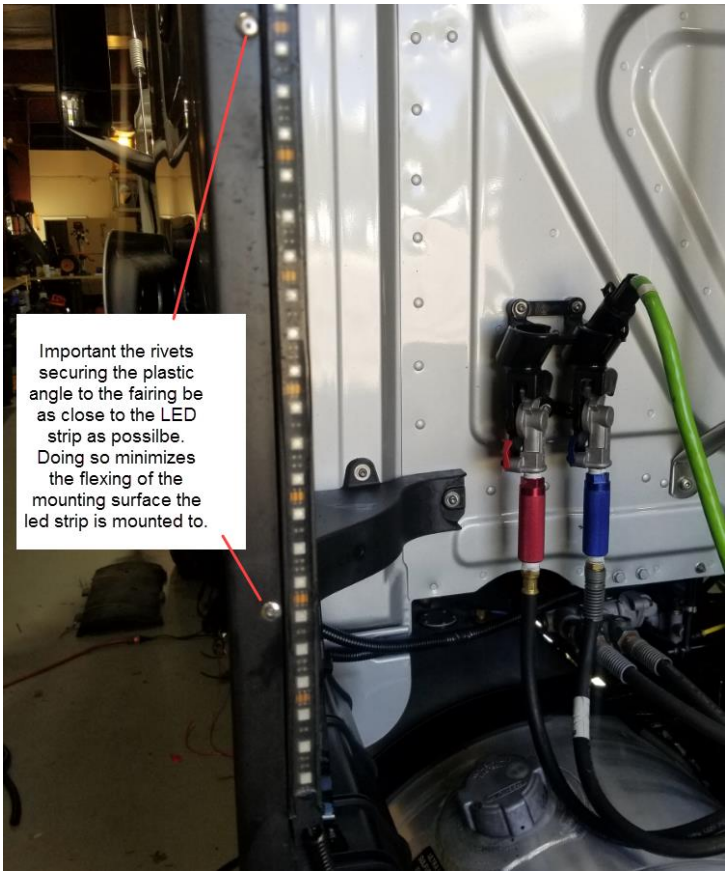
Follow these steps for mounting your LED strips:

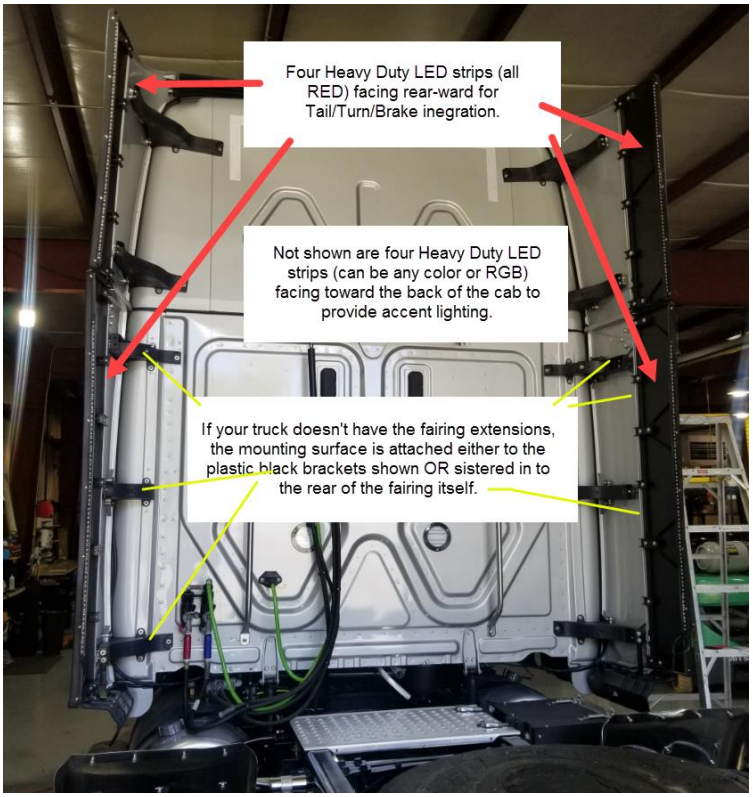
- The area where you are mounting the LEDs has to be clean: free of all dirt, oil or anything that might affect the LED from sticking. You only get one opportunity to mount the LEDs so it's critical the area be prepared properly.
- Use rubbing alcohol to clean the area where you are going to mount the LED strip. Be sure to let the alcohol dry completely before proceeding. (Do not use acetone).
- 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.

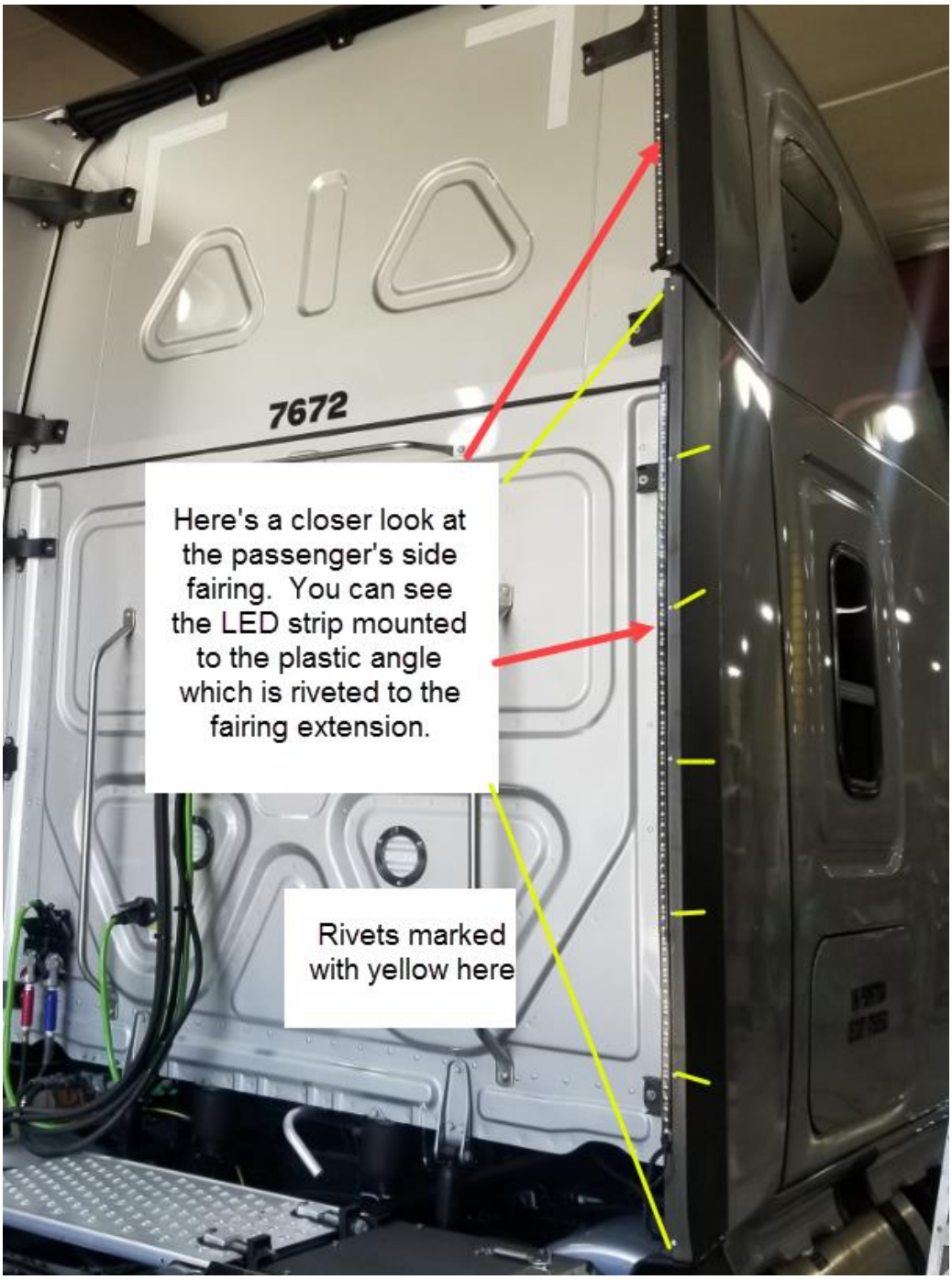
INSTALLATION PHOTOS

Here are some photos with comments on the installation we did in building this kit. We've commented on key parts of the installation along the way.




Important the rivets securing the plastic angle to the fairing be as close to the LED strip as possilbe. Doing so minimizes the flexing of the mounting surface the led strip is mounted to.


Four Heavy Duty LED strips (all RED) facing rear-ward for Tail/Turn/Brake inegration.
Not shown are four Heavy Duty LED strips (can be any color or RGB) facing toward the back of the cab to provide accent lighting.
If your truck doesn't have the fairing extensions, the mounting surface is attached either to the plastic black brackets shown OR sistered in to the rear of the fairing itself.


7672
Here's a closer look at the passenger's side fairing. You can see the LED strip mounted to the plastic angle which is riveted to the fairing extension.
Rivets marked with yellow here

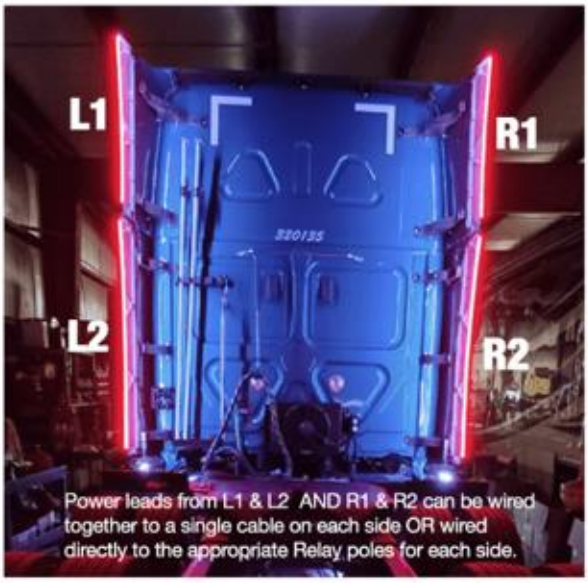
TAIL / TURN / BRAKE LIGHT INTEGRATION

If you purchased the optional TAIL/TURN/BRAKE Light integration, these two diagrams show you how the LED strips need to be wired. NOTE: You must use the RELAYS we provide. Do not attempt to run the Boogey Lights tail/turn/brake light system using the truck's own lighting system power. Doing so will over-load the truck's LCM which will cause all of the lights on the truck to shut down. When that happens, you won't have any lights at all.

Note: Starting May 1, 2023 the L1 and R1 LED segments shown in the photo below consist of TWO Heavy Duty LED strips instead of one. Starting October 1, 2023 the L2 and R2 LED segments shown in this photo have THREE LED strips instead of one (2 – 30 LED strips and 1 – 15 LED strip on each side). See layout diagram earlier on in this guide.

BOOGEY LIGHTS
LED STRIP
LEFT SIDE power leads
coming from L1 & L2

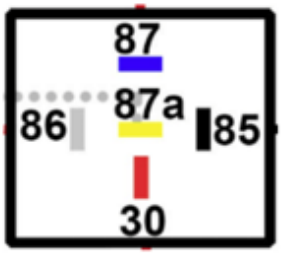
BLACK = chasis ground
BLUE (diode 1) -> RELAY 2
GREEN (diode 2) -> RELAY 1
RED (diode 3) -> RELAY 1



BOOGEY LIGHTS
LED STRIP
RIGHT SIDE power leads
coming from R1 & R2

BLACK = chasis ground
BLUE (diode 1) -> RELAY 2
GREEN (diode 2) -> RELAY 3
RED (diode 3) -> RELAY 3

RELAY 1



view of bottom of relay
each pole is numbered

85: Frame ground.

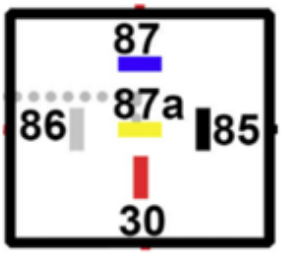
86: 12vdc+ trigger wire INPUT from truck's LEFT turn signal.

87: 12vdc+ OUT to Diodes 2 and 3 on the LEFT SIDE Boogey Lights LED STRIP.

87a: not used. cap the wire

30: Connects to 12vdc+ side of battery (with inline fuse).

RELAY 2



view of bottom of relay
each pole is numbered

85: Frame ground.

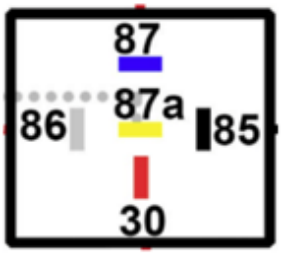
86: 12vdc+ trigger wire INPUT from truck's TAIL LIGHT aka Running Lights.

87: 12vdc+ OUT to Diode 1 on BOTH the LEFT and RIGHT SIDE Boogey Lights LED STRIPS

87a: not used. cap the wire

30: Connects to 12vdc+ side of battery (with inline fuse).

RELAY 3



view of bottom of relay
each pole is numbered

85: Frame ground.

86: 12vdc+ trigger wire INPUT from truck's RIGHT turn signal.

87: 12vdc+ OUT to Diodes 2 and 3 on the RIGHT SIDE Boogey Lights LED STRIP.

87a: not used. cap the wire

30: Connects to 12vdc+ side of battery (with inline fuse).

Be sure the RELAYS are mounted in the provided housing OR something similar to keep them dry. NOTE: The colors of the wires coming out of the wiring harness are not standard and will change. Super important to pay attention to the pole numbers on the relay itself which are standard and do not change.

Additional Resources

- How to Videos: https://www.boogeylights.com/how-to-videos/
- Product Page: https://www.boogeylights.com/freightliner-cascadia-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/.