

INSTALLATION GUIDE

MACK ANTHEM **Rear Fairing Accent / Optional TTB** **LED LIGHT KITS**



Family Owned Motorsports Lighting Since 1989

800.847.1359

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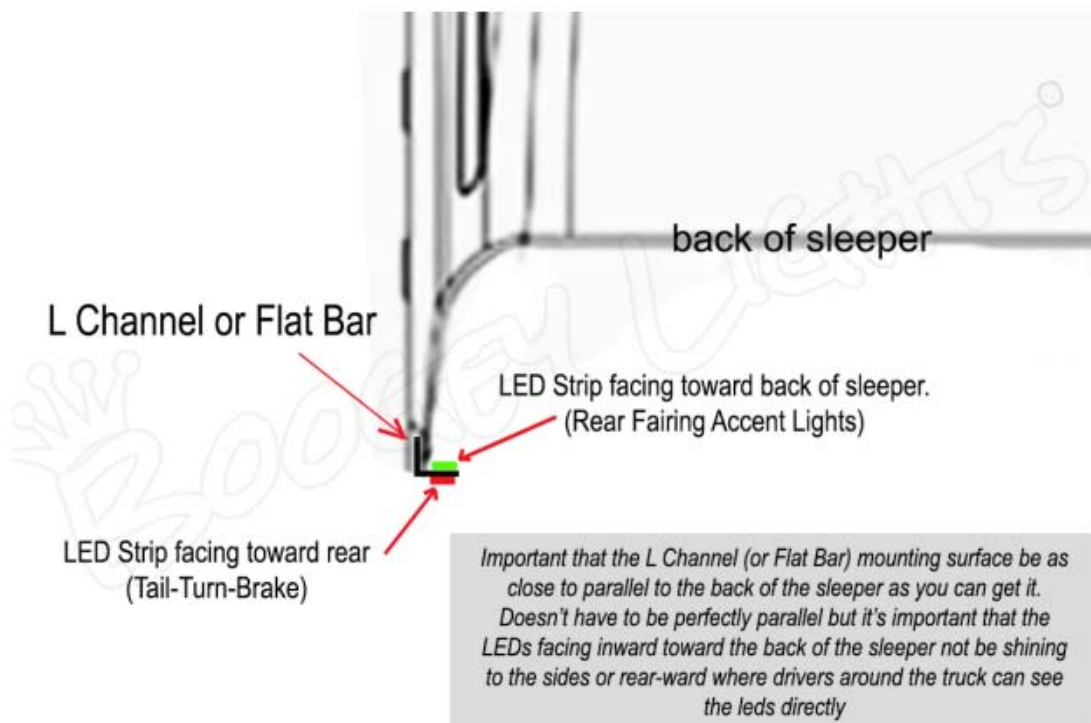
Thank you for purchasing genuine Boogey Lights® LED Lighting products! We know you're anxious to get started but we strongly recommend taking time to read through these instructions. You'll likely save yourself some grief and aggravation if you do. For additional installation support refer to www.BoogeyLights.com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

JULY 2022 UPDATE – IMPORTANT!

We have made two changes to this light kit which are not reflected in the installation documentation.

The first change relates to the type of LED strips we use for all rear fairing accent light kits installed on semi-trucks. All rear fairing accent light kits now use our HEAVY DUTY LED strips versus the low profile strips which are shown in some of the photos for this installation guide. Our Heavy Duty LED strips are better able to handle the vibration and flexing when the strips are mounted to the vertical fairings. They are installed the same way as the low profile strips. They're just a little wider and taller.

The second change is the type of mounting surfaces we include with the kit. We now include three different types of plastic mounting surfaces: two types of 'L' channel and one type of plastic flat bar. Previously, we only included one 'L' channel type. The reason we include three different types is because not all trucks – even the same make and model year -- have the same fairing structure. It's important to use the mounting surface that works best for your truck. How do you know what's best? Choose the one that provides a rigid, flat mounting surface such that the led strips are mounted facing directly toward the back of the cab. Below is a close-up diagram showing what we're referring to. In some cases, you may have to secure the mounting surface to the actual brackets that hold the fairings to the truck. In others, you can rivet the mounting piece directly to the fairing itself (assumes the fairing is rigid). Whichever method you choose, it's important the mounting surface be solid – if it's mounted in such a way that it can twist or flex as the truck drives down the road, the LED strip that's secured to it will fail prematurely due to the constant flexing/twisting. Note: If your truck has a flexible rubber boot tip at the end of your fairing, do not mount to that rubber boot.



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.

Installation Time

Installation takes 2-4 hours depending on whether or not you're integrating with the Tail-Turn-Brake light kit and/or other Boogey Lights kits. Single color vs Multi-Color will also impact the time required to do this installation.

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.

- Feeder Cable (18 or 20awg) – 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.
- If you purchased the optional Tail Turn Brake light kit your kit will also include 3 – 40 amp relays and the relay housing along with 2 pairs of male-female quick disconnect connectors.
- **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/>.**

Mounting & Placement Locations / Planning Your Install

All the LED strips in the Rear Fairing Accent light kit are built on our low profile hi-intensity surface mounted LED strips. There are three low profile LED strips mounted on each side of the rear fairing; each of them facing in-ward toward the back of the cab. There are three different LED lengths (with power leads) that will fit on the inside of the aluminum fairing for each side. The shortest on top (15 LEDs – marked as segment A in our photo), the next shortest (39 LEDs - segment B) in the middle and the longest (81 LEDs – segment C) on the bottom. We have included a photo of the layout on the passenger's side fairing further down on this page showing the mounting of these three LED strips along with how the power leads are routed. You'll need to repeat the process for the driver's side.

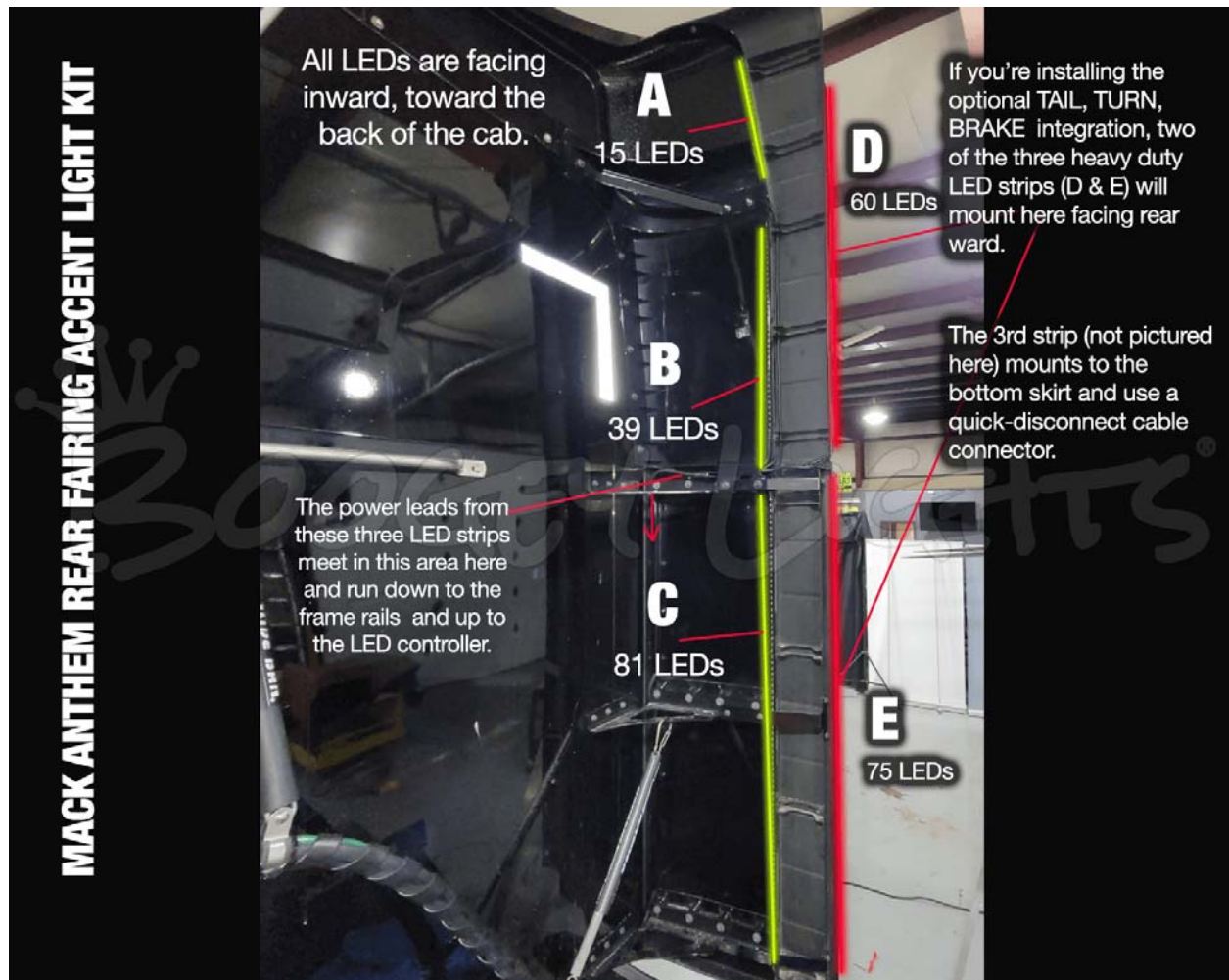
For power, you'll need access to the driver's side steps to access the batteries. Also, if you're installing an LED controller, the LED controller can be mounted in either the driver's side storage box or the passenger's. We prefer to use the driver's side as it is closest to the battery bank. While 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.

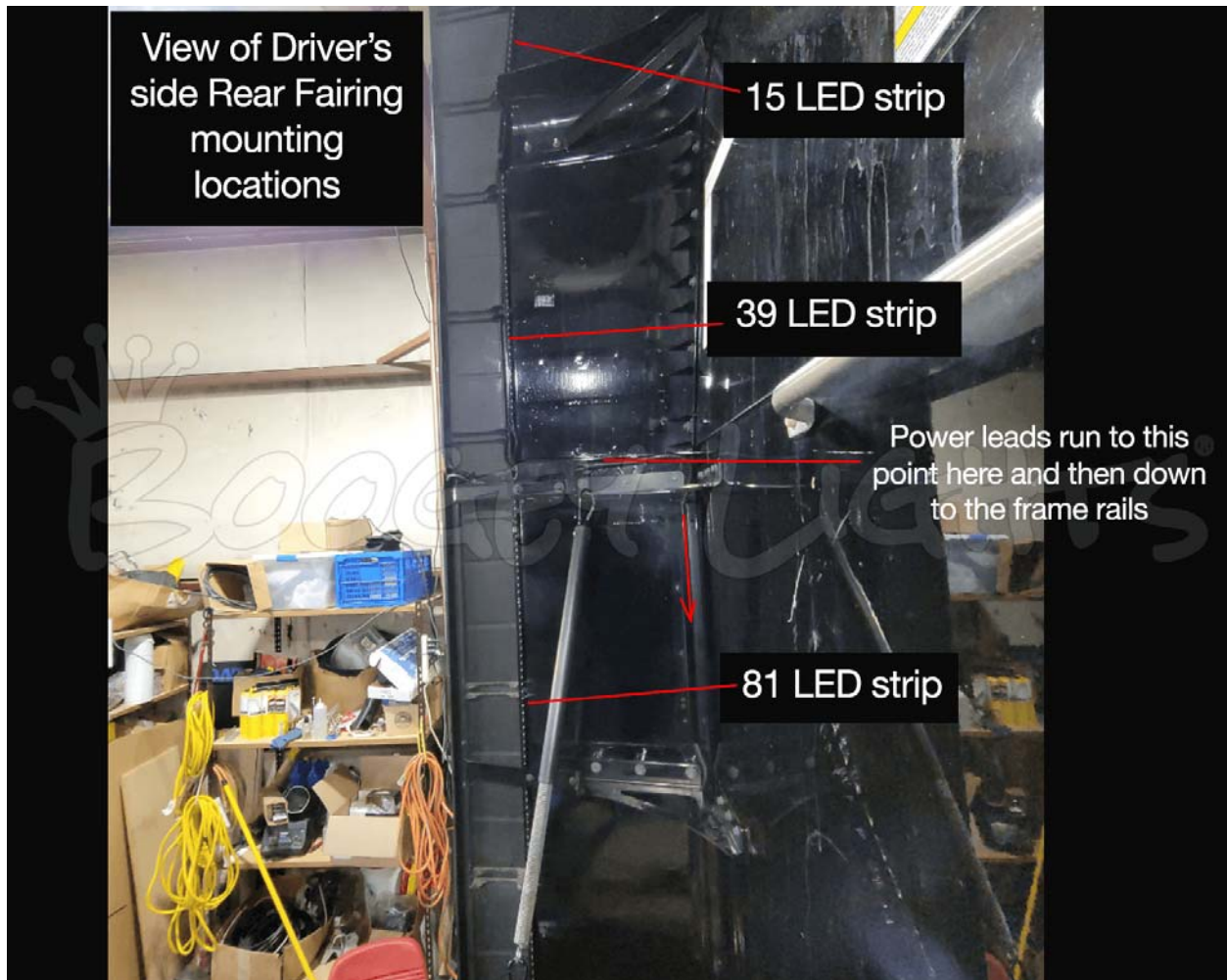
LED PLACEMENT

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.

Note LED segments D and E on this photo are for our optional Tail-Turn-Brake light integration. More details about that further along in this guide.



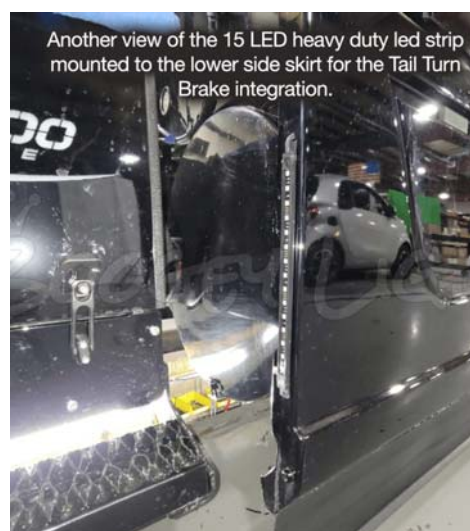
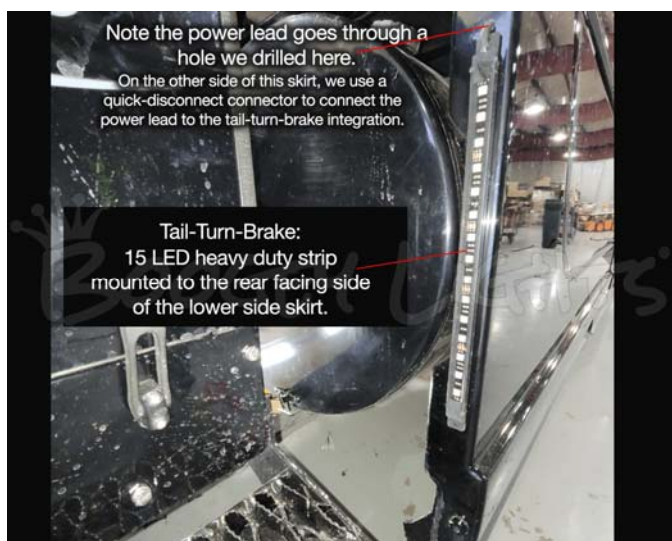
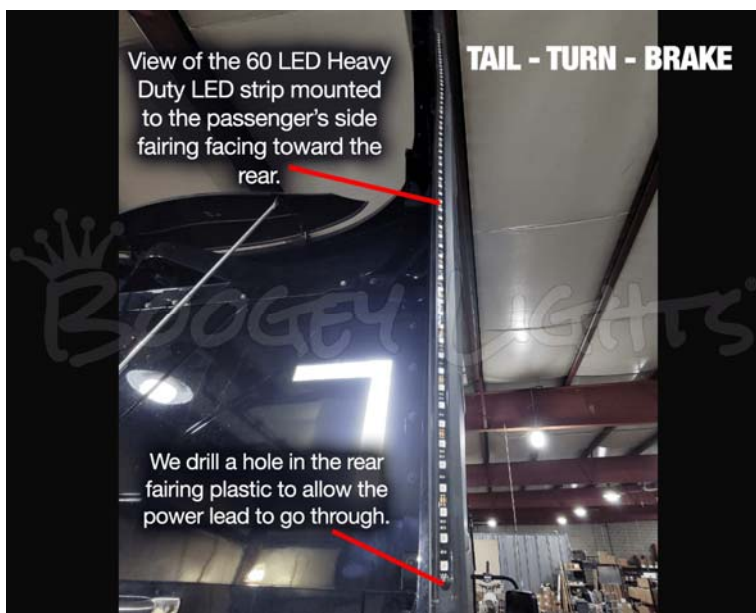
Here's a view of the Driver's side rear fairing mounting locations.



All of the power leads coming from the Rear Fairing Accent light leds will need to be routed up to the LED Controller (if RGB) or the switching mechanism you're using if single color. Be sure to wrap these power leads in split loom.

Tail – Turn – Brake

All of the LED strips in our Tail-Turn-Brake light kit are built on our Heavy Duty LED strips. There are three Heavy Duty LED strips (RED only) mounted on the leading edge of the plastic fairing extension of each side of the truck facing rearward. The two longest Heavy Duty LED strips are on that fairing extension (marked as segments D - 60 LEDs and E - 75 LEDs in the photo above). The shorter heavy duty LED strip (15 LEDs), mounts to the back side of the lower side skirt on each side of the truck. We install a quick-disconnect connector on that LED strip only since the side skirt may need to be removed for service at some point. We include both photos below of how we wire the tail-turn-brake system using a series of 3 relays.



TAIL / TURN / BRAKE LIGHT INTEGRATION

For the MACK ANTHEM, there are THREE LED strips on each side (not 2 as shown here)

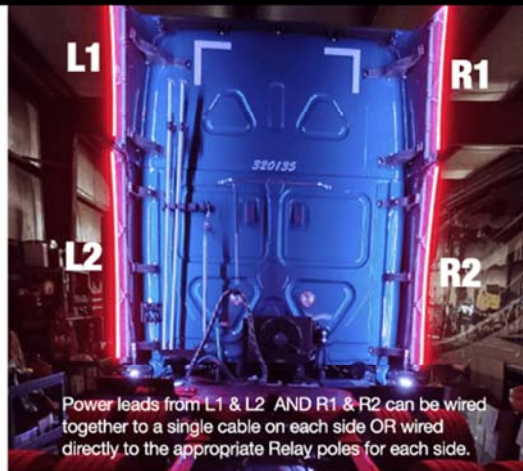
BOOGIE LIGHTS

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



Power leads from L1 & L2 AND R1 & R2 can be wired together to a single cable on each side OR wired directly to the appropriate Relay poles for each side.

BOOGIE LIGHTS

LED STRIP

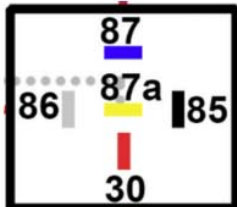
RIGHT SIDE power leads coming from R1 & R2



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

RELAY WIRING

RELAY 1



view of bottom of relay
each pole is numbered

85: Frame ground.

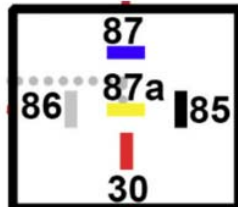
86: 12vdc+ trigger wire INPUT from truck's LEFT turn signal.

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.

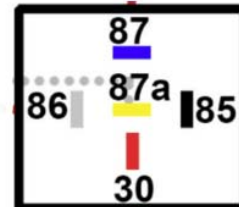
86: 12vdc+ trigger wire INPUT from truck's TAIL LIGHT aka Running Lights.

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.

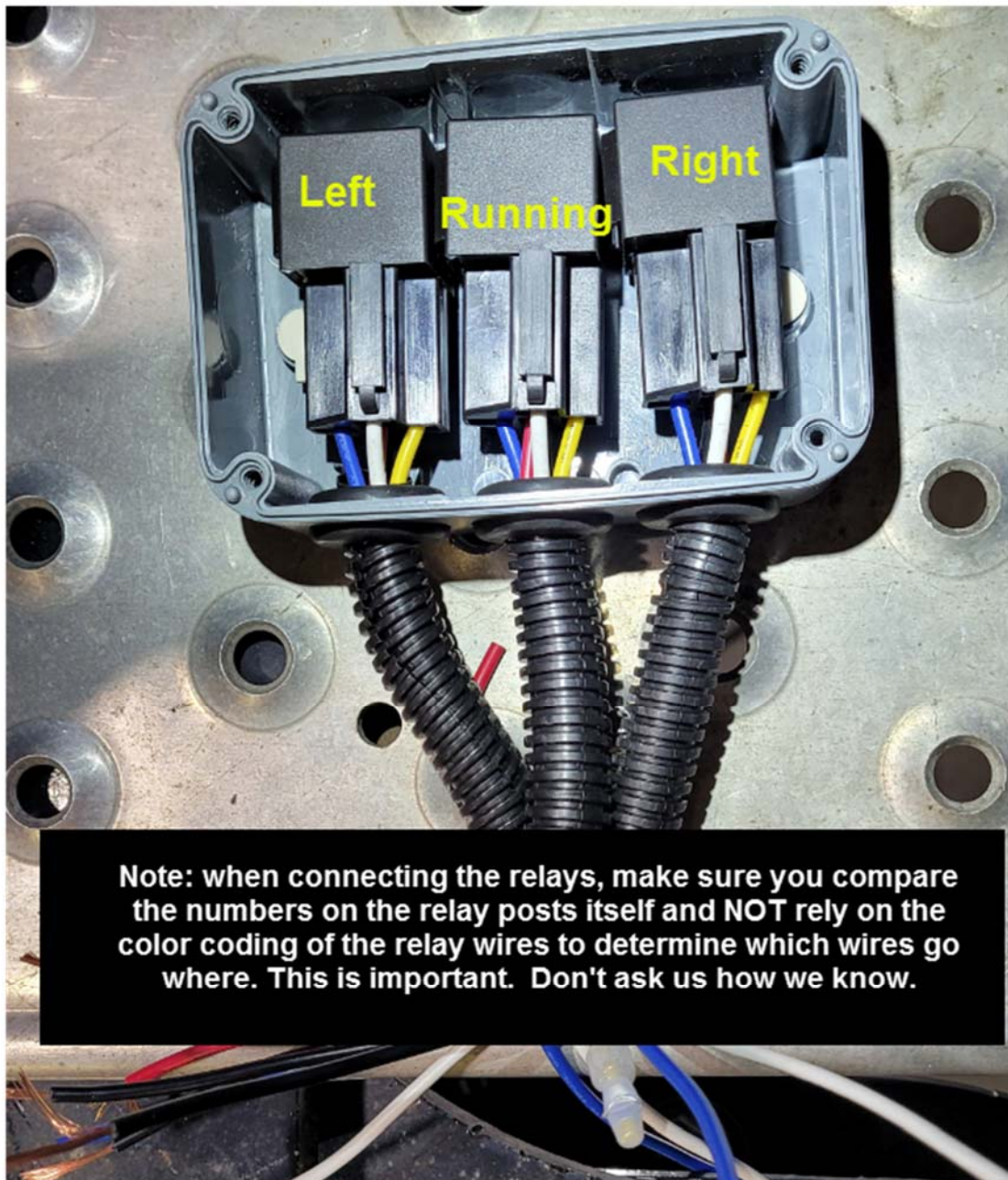
86: 12vdc+ trigger wire INPUT from truck's RIGHT turn signal.

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

87a: not used. cap the wire

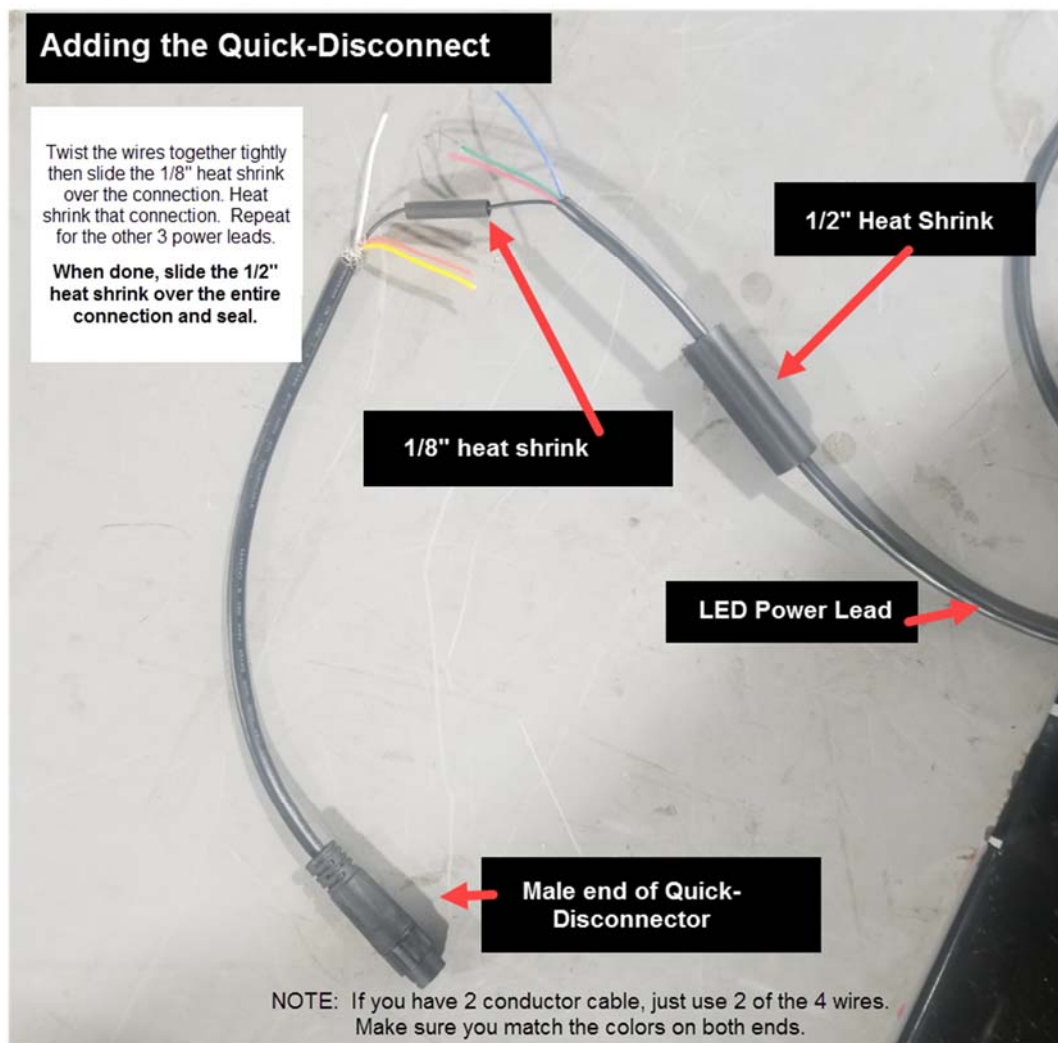
30: Connects to 12vdc+ side of battery (with inline fuse).

View of the 3 relays in the water proof housing.



QUICK – DISCONNECTS

For the two 15 LED strips mounted on each of the lower side skirts you'll need to add a quick-disconnect connector in the circuit (included in the kit if the tail turn brake light option is ordered). This will allow the side skirts to be removed from the truck without having to cut the power lead cables going to each of the 15 LED strips mounted on each side. Below is a diagram of how we suggest making those connections using 1/8" and 1/2" heat shrink.



MOUNTING YOUR 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).

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.

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



- 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.

Do NOT bend the LED strip on a horizontal plane.



- 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.