

## INSTALLATION GUIDE

# PETERBILT 379/389 BREATHER LED LIGHT KIT



Family Owned Motorsports Lighting Since 1989

800.847.1359

[www.BoogeyLights.com](http://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](http://www.BoogeyLights.com) or give us a call at 800.847.1359 for assistance.

## BEFORE YOU START

Please review this material before starting your installation.

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. You may need to vary your installation based on your truck. This is particularly the case with electrical wire routing and switching.

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'll Likely Need

Sockets/wrenches in the sizes necessary to remove the breather caps as well as the driver's side steps to access the battery bank, drill with 5/16" drill bit, wire cutters/strippers, crimping tool, electrical tape, rubbing alcohol, shop rag or two, ladder to reach the top of each breather. You'll also need a heat gun or hair dryer for the heat shrink.

### RGB/MULTI-COLOR KIT Installations

Installation of this led light kit takes 3 to 4 hours depending on whether or not you're adding this light kit to an existing installation or installing this kit as a stand-alone. If the LED Controller is already installed with another kit (e.g. Under-Glow), this kit will simply tie into that controller. If you need to also install the LED Controller, it will take additional time to do this. Wiring diagram is included at the end of the guide.

### SINGLE COLOR KIT Installations

Installation of our single color kit typically takes 2 to 3 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 breather lights in this kit are the only lights you're switching on it. The single color on/off wiring diagram is included at the end of this guide.

## Mounting Locations

There is only one mounting location for each breather in this kit (inside the breather) – see photo of exact placement. The power lead coming from each LED strip mounted inside the breather needs to be carefully run out of the breather cap (2 ways you can do this) and then into the engine compartment where each will connect to the switching mechanism or, another light kit (e.g. Under Glow). To do this you will obviously have to remove each breather cap first. And, you'll likely need to remove the driver's side step to gain access to the truck's battery for power. Note too we include a set of male/female quick-disconnect connectors that will need to be wired into the circuit. These allow the breather cap to be easily removed for service without damaging the electrical connections. When possible, we suggest pulling power directly from the positive side of the battery bank directly vs somewhere else on the truck. That way you know you're not overloading an existing circuit in the truck.

If you're installing an LED controller (or wireless on/off switch) with this kit, you'll need to remove the driver's side steps to access the batteries. You can mount it anywhere you have a dry area. We prefer to mount our led controllers in either the driver's or passenger's side storage box but it's not required. You can just as easily mount the controller in the engine compartment or also inside the battery box. The key is making sure you're mounting it where it is protected from water or extreme heat. There should be air flow too around the controller. If mounting inside either of the storage boxes, 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 provide some butyl tape to seal this hole.

## What You Need to Know

In putting together this installation guide we assume the installer has access to and has a basic understanding of using the tools needed to complete this installation. We also assume the following:

- The installer knows how to remove the breather caps.
- The installer knows how to remove the truck's driver side steps to access the batteries.
- The installer understands 12vdc electricity, the importance of not overloading a circuit, making electrical connections using crimp on connectors, the importance of having a fuse in the circuit at the battery location and polarity.
- How to access the batteries, remove / connect battery connections, how to make electrical connections (e.g. crimping) and the importance of making sure all electrical connections are sealed properly (e.g. no water intrusion).
- How to run power lead cabling such that the power leads and related wiring are secured in a way as to protect them from chafing, pinching or melting because they're too close to the engine or other extreme heat source.

## WHAT'S INCLUDED

In addition to the LED light strips, power leads, quick-disconnects (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.

- 18AWG or 20AWG Feeder Cable – 4 Conductor for RGB, 2 Conductor for 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.
- 3M Quick Lock Reclosable Tape. This is a heavy duty “Velcro like” product. Used to mount the LED controller (if purchased) to the wall in the storage compartment or similar location.
- 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.
- Heat shrink. 1/8” and ½”. Use this heat shrink to make and seal your quick-disconnect connections. Use the 1/8” to cover each of the power lead connections to the connector. Then, use the ½” to cover that group. See photo. You'll have to do this for both breathers.
- 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 lights to the inside of the breather (see photo) as well as to seal up any holes drilled in the truck. 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.**

**CUTTING YOUR LEDS-** If you need to cut your LED strip you can do so as long as you cut in the proper location – which is every three LEDs as shown in the below photo. Cutting incorrectly could damage your lights and is not covered by the warranty. If you cut the strip, be sure to use the included heat shrink tubing to seal the cut end. You can also use silicone found at your local hardware or RV store. If you do need to cut your LED strip, we strongly suggest doing so BEFORE you mount the strip.



## Cut Locations

*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).
- 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.

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



Do NOT bend the LED strip on a horizontal plane.



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

1. Remove the top of the breather. There are usually 4 bolts. Take the top of the breather to a workbench or flat surface where it's easier to work on it. NOTE: If your breather has a rubber or plastic boot (see photos at the end of this guide), the installation is easier since you can mount the LED strips to that boot vs mounting them directly to the breather can itself. If your breather has the one piece boot/air cleaner, you'll need to mount the LED strips on the inside of the top of the breather. See photo on the next page for LED placement.
2. Determine how you're going to run the power lead that attaches to the LED strip from inside the breather top and into the engine compartment. There are two ways you can run the power lead from inside the breather top into the engine compartment where you'll make your electrical connections (or, connect to an existing Boogey Lights light kit already installed). We provide a diagram on the next page showing both options. Pick the option that works best for you.
3. The first way is to route the power lead down into the air intake manifold hose that connects the breather to the engine and then exit that intake manifold hose once inside the engine compartment. We find this to be the easiest and cleanest since it doesn't require removing the entire breather can from the truck. It might not however always be that way depending upon your truck.
4. The second option is to route the power lead out of the back of the top of the breather. This is done by drilling a hole through the screen mesh at the back of the breather top at the seam and then routing the power lead through an existing hole in the truck behind the breather and either into the cab area or the engine compartment. This option may require removing the entire breather can from the truck to gain access to a suitable access hole.
5. Once you've determined which method of routing the power lead cable you're going to use, you'll need to either drill a 5/16" hole into the base of the breather top (see photo) for wiring option one OR into the screen seam for wiring option two (see photo).
6. Clean the LED mounting surface with rubbing alcohol and then apply the 3M Adhesion Primer. At this point you can mount the LED strips. Make sure you plan the layout such that the power lead points toward the rear of the breather. Use the supplied Butyl tape to secure the power lead firmly against the breather top (see photo).
7. Route the power lead wire through the hole you drilled in the breather top. Once you have the power lead through the hole, you can wire in the supplied male end of the quick disconnect plug. Important that the breather top be able to be removed easily for service with the LEDs installed inside. Installing the quick-disconnect plug does that. We suggest allowing 12" to 18" of slack in the power lead cable so you have some room to work; but not too much that you have to coil up excess cable inside the air intake hose. The female end of the quick-disconnect plug needs to be wired to the included feeder cable with the opposite end going through the hole you'll drill in the intake hose inside the engine compartment (see photo). The male and female quick-disconnect plugs will connect together inside the air intake hose just inside the engine compartment.

8. Once you have the power lead cable in the engine compartment, you can continue with wiring the LEDs to power and/or a switch.

Here's a photo of the breather referenced above. Ideally you want to mount the LED strips to the inside of the rubber boot. If that's not possible, mount them to the inside of the top of breather. We prefer the rubber boot option because it completely hides the LEDs. You only see the glow. If your breather however has a one piece boot/filter, that's not possible since you'd have to replace the LEDs every time you changed out the filter. In that scenario mount them to the inside of the top of the breather. The LEDs are designed to make a full circle of light. In some cases you may want but those LED strips such that you only have a semi-circle of light with the LEDs mounted in such a way that they face inward toward the truck (vs outward toward other drivers).



Here's a diagram of the two power lead routing options. We prefer OPTION 1 however either will work.



Diagram of the larger picture with the power lead routed into the engine compartment. Note the location of the quick-disconnect connectors.

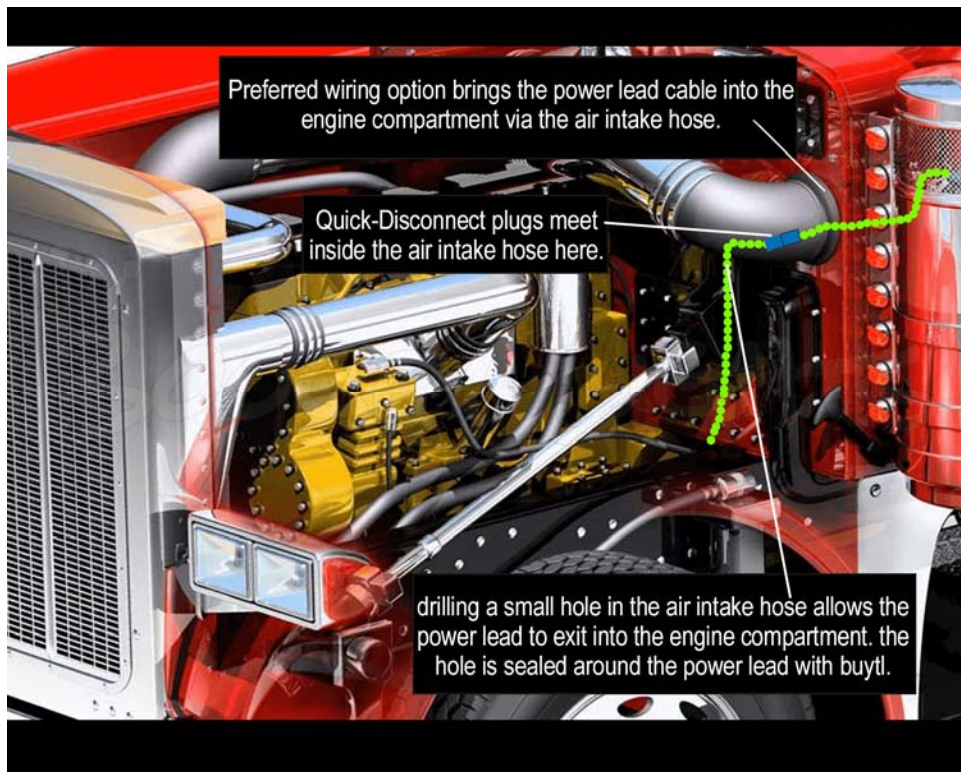




Photo of a LED strip that fit inside the breather. Note there are two LED strips that mount side by side inside each breather. They share one power lead which is fed out of the breather cap and into the engine compartment.



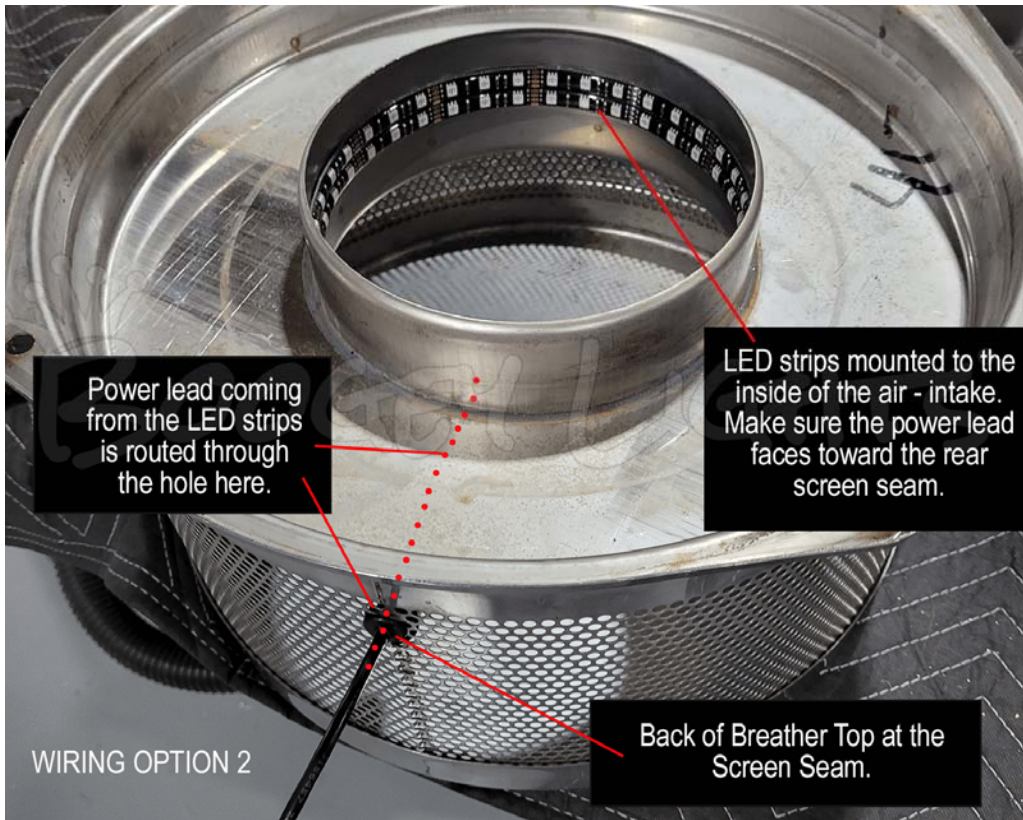
#### WIRING OPTION 1

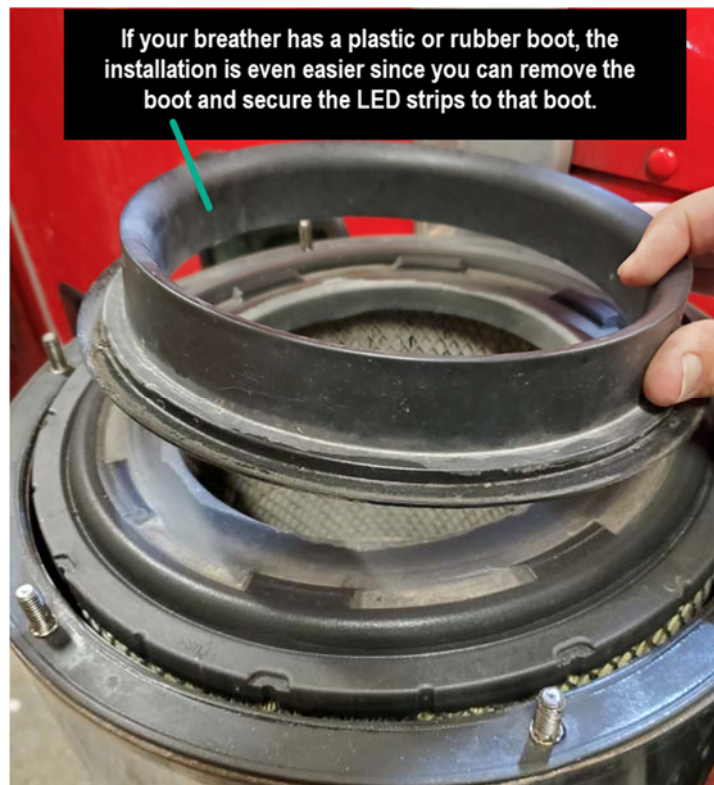
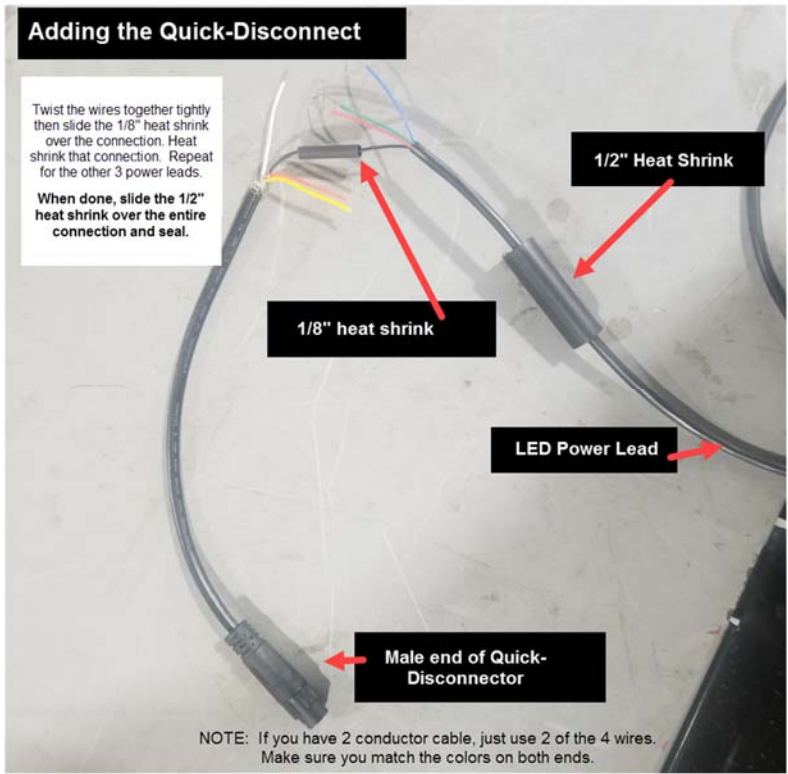
The power lead is routed into the engine compartment by using the air intake manifold hose attached to the breather can.

Drill a 5/16" hole here. It needs to be near the outside edge so the power lead cable will drop down into the air cleaner can just outside of the air filter (and then routed into the air intake manifold in the engine bay). This hole should be in line with the seam of the screen at the back of the can.



Screen Seam





Example of the LED strips installed using the plastic boot



Once the boot is removed from the breather, you can secure the LED strips to the boot and then replace the boot with the LEDs attached.

