



**2022+ Cadillac CT5-V Blackwing BIG MOUTH
“LIT KIT” Ram Air Intake Installation Guide**

Kit Contents (FULL LIT KIT)

Please review this document before attempting installation.

You will need basic hand tools and 2 hours of installation time.

Kit Contents	Qty
#8 x 1/2" Round-Head Screw	6
Diode Dynamics RGBW Controller	1
Positive Cable w/ In-Line Fuse	1
Power Cable w/ Pigtail Connector	1
Switch	1
Switch Ground Cable w/ Crimped Connector	1
8" zip ties	8
Cable clips	4
Assembled LIT KIT BIG MOUTH	2



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Kit Contents (LIT Flare Only)

Please review the table below and make sure you have received the kit contents.

Kit Contents	Qty
Diode Dynamics RGBW Controller	1
Positive Cable w/ In-Line Fuse	1
Power Cable w/ Pigtail Connector	1
Switch	1
Switch Ground Cable w/ Crimped Connector	1
8" Zip Ties	8
Cable Clip	2
Assembled LIT KIT BIG MOUTH	1



If you already own the Velossa Tech Cadillac CT5-V Blackwing BIG MOUTH, skip to slide 13 to see install and wiring instructions.

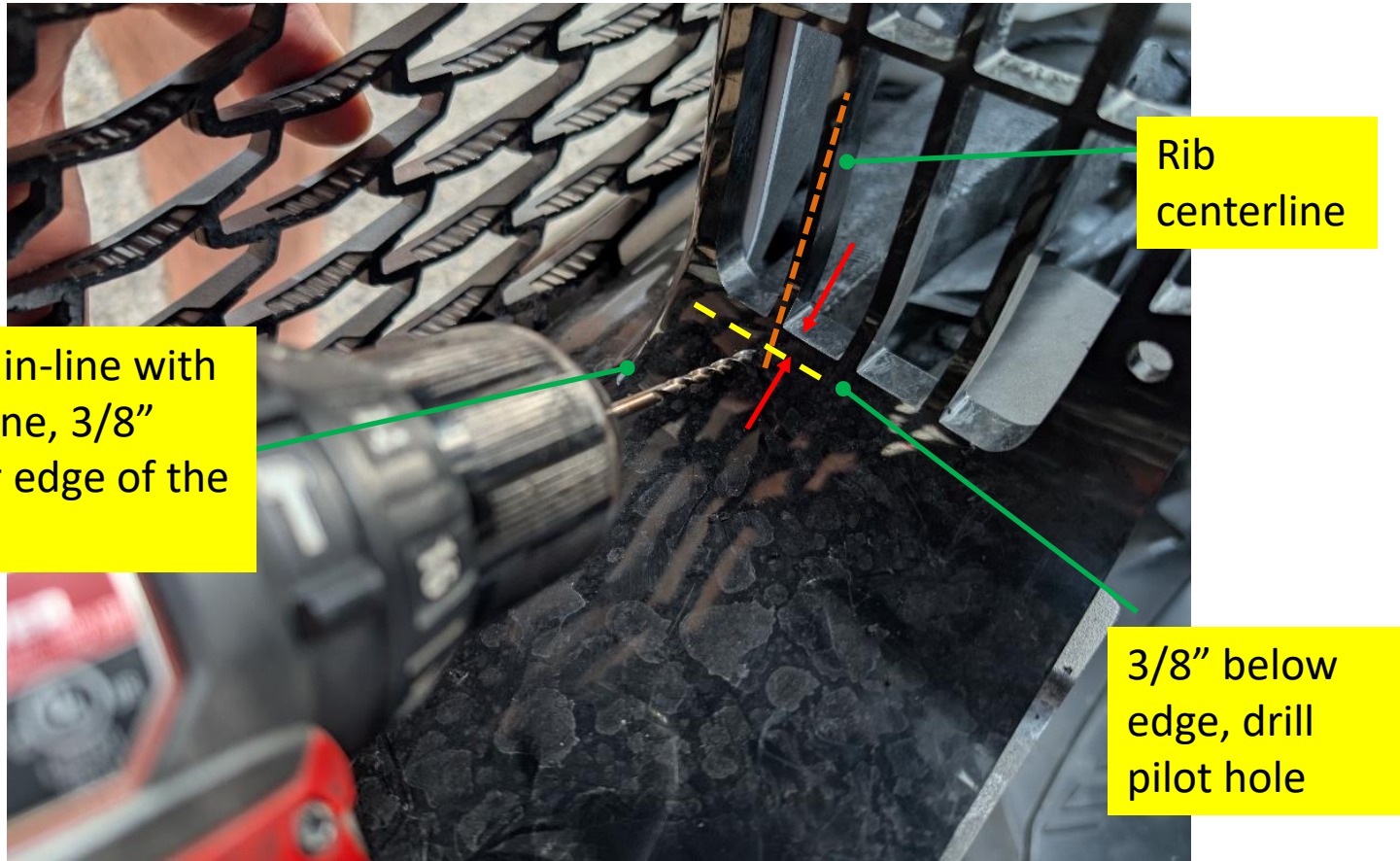


Stock Components Removal

Use the resources available online to research how to remove the bumper for your specific trim level. There is no need to undo the wiring harness. Propping the bumper up with a non-abrasive support while maintaining slack in the wiring harness will suffice for this install.

Marking 1st Hole Location: Passenger Side

There are 6 holes that need to be drilled into the shroud (3 on each side) to fasten the BIG MOUTH intakes. Starting with the inlet on the passenger side, use the indicated vertical rib (closest to grille) as a reference for where the first hole must be. Follow the rib's centerline down to a 3/8" below the rib's termination point. Drill a pilot hole with a 1/8" bit and then size up to a 1/4" hole.



The hole will be in-line with the rib's centerline, 3/8" below the lower edge of the opening

Rib centerline

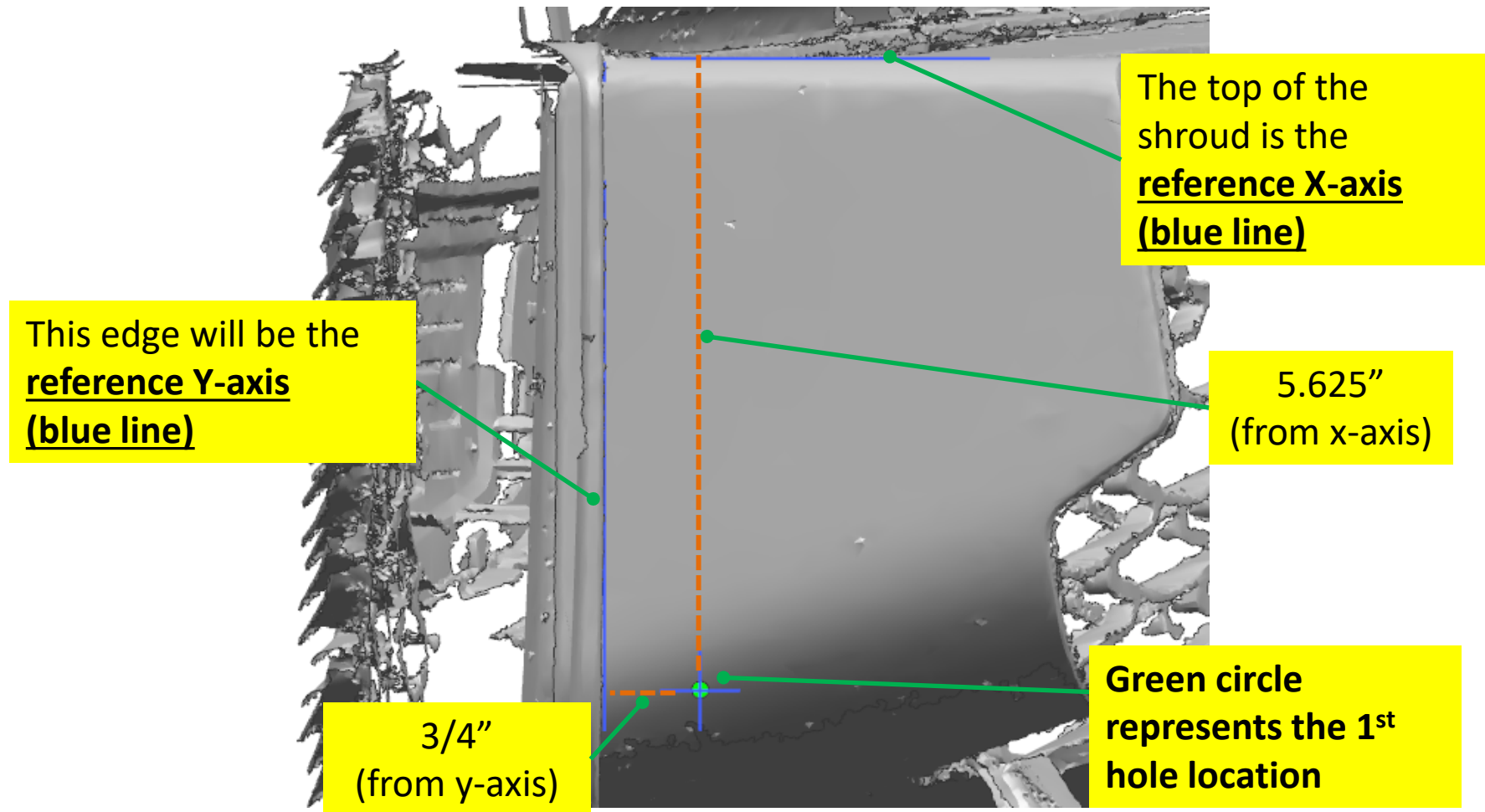
3/8" below edge, drill pilot hole



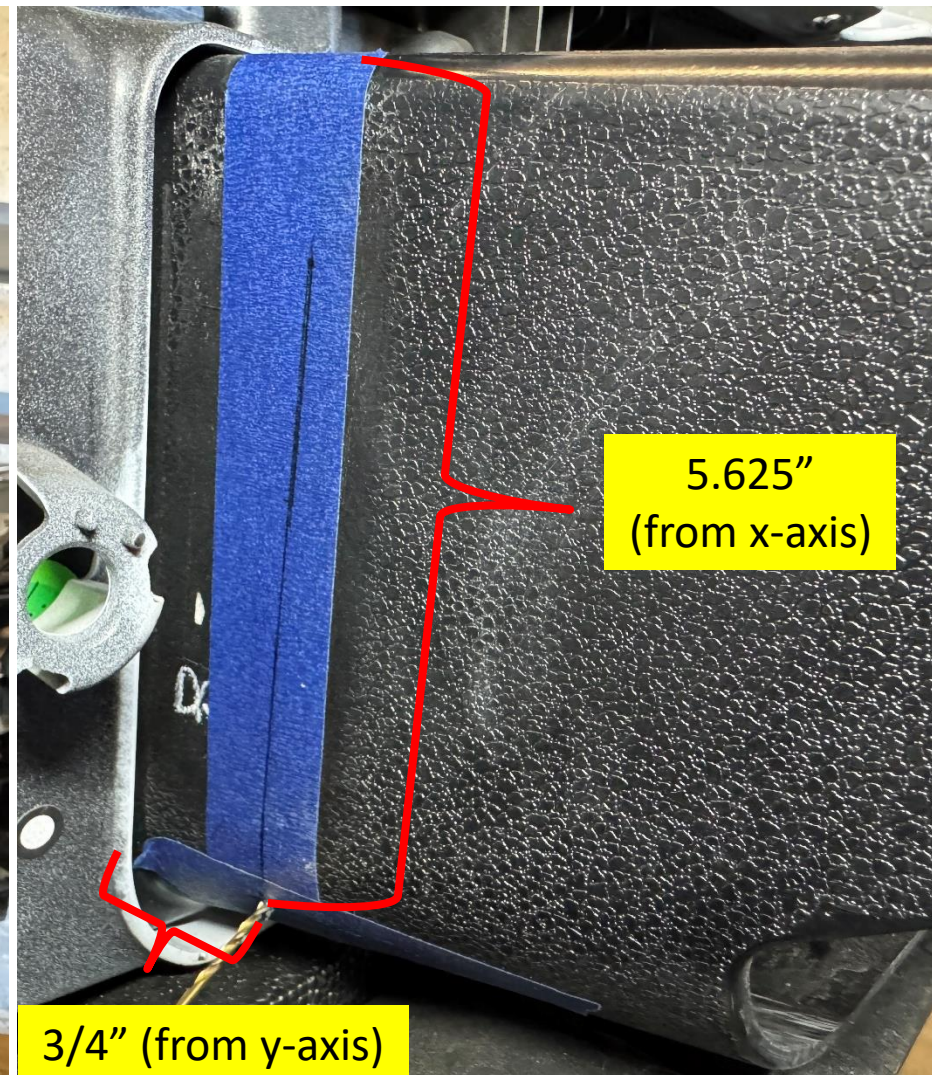
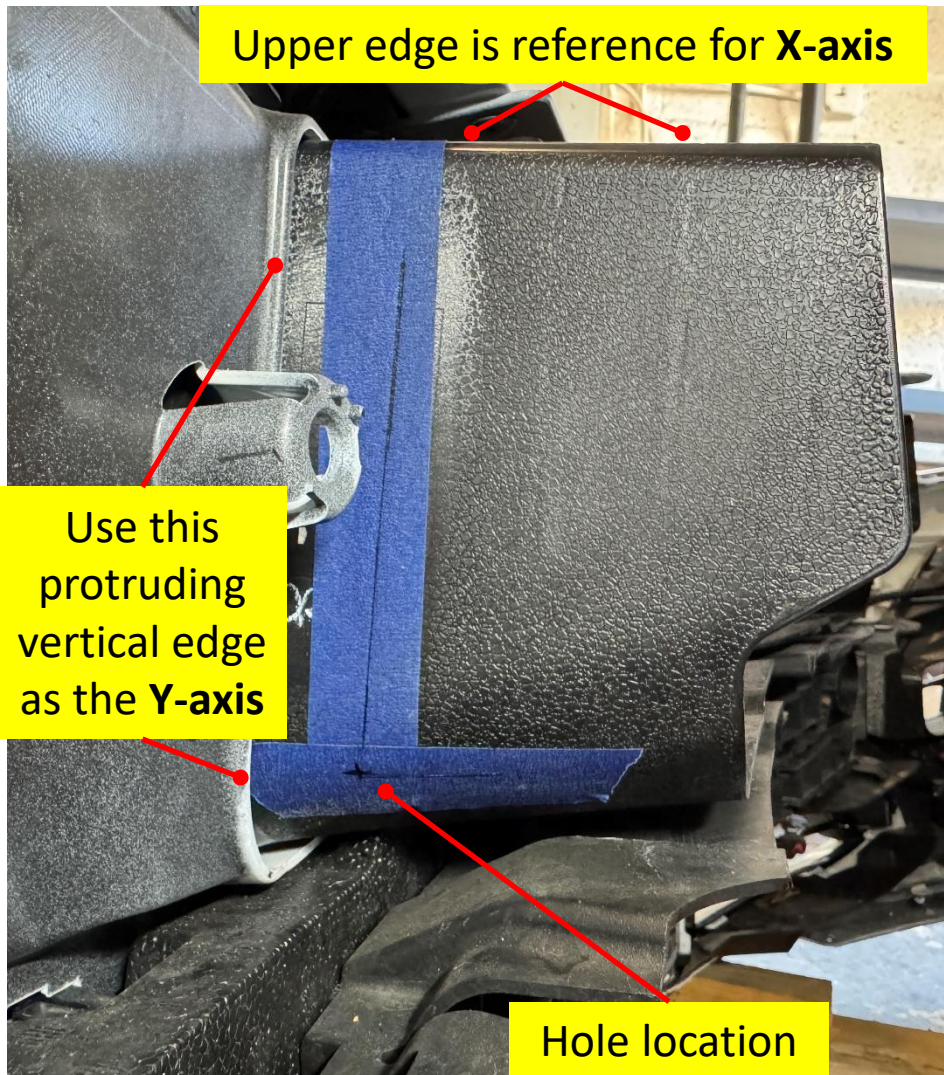
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Marking 1st Hole Location: Driver Side

The driver side BIG MOUTH will fasten to the wall opposite the inlet. This wall does not have any ribs, so it's best to use a ruler/tape measure and the measurements outlined below. Use the 1/8" drill bit for a pilot hole and size up to a 1/4" hole. Images on next slide.



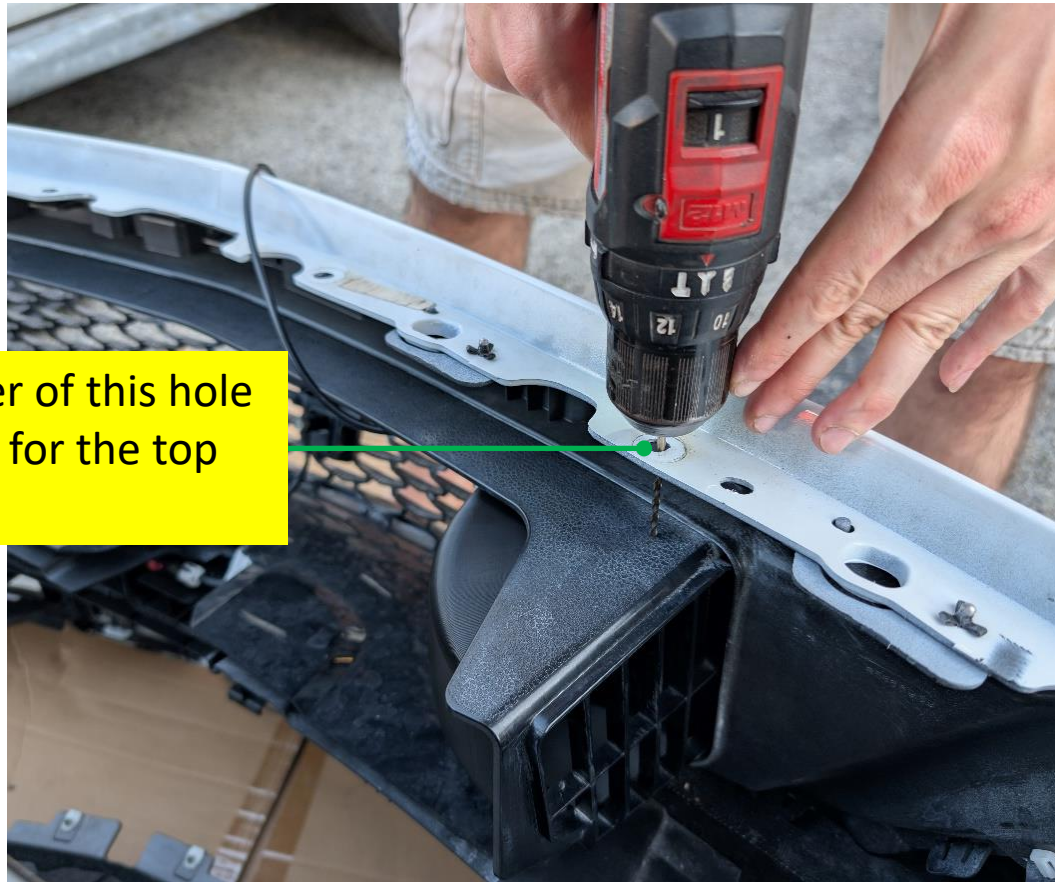
Marking 1st Hole Location: Driver Side Cont'd



Drilling Top 2nd Hole Location (both sides)

Center your 1/8" drill bit with the center of the indicated hole on the bumper. Once you are confident the drill bit is in line with the center of the hole, drill the pilot hole.

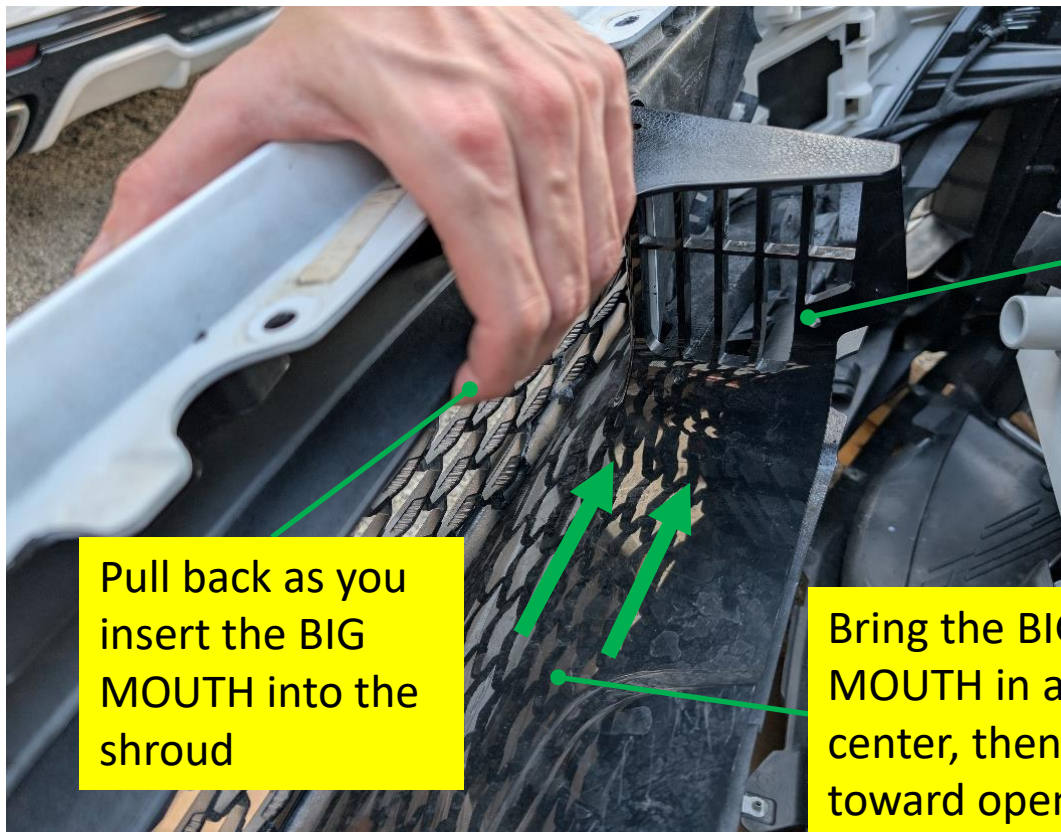
The BIG MOUTH should not be placed over the opening during this step. Drill out the 1/8" hole to a 1/4" hole for extra clearance . Repeat for the driver side.



Use the center of this hole as your guide for the top pilot hole.

Positioning BIG MOUTH for 3rd Hole Location

Bring the BIG MOUTH intakes into the shroud behind the grille while pulling up on the upper wall. Start at the center and slide each BIG MOUTH over to their respective side where each will be fastened. Line up the bottom fastening point with the holes that were made in the previous step.



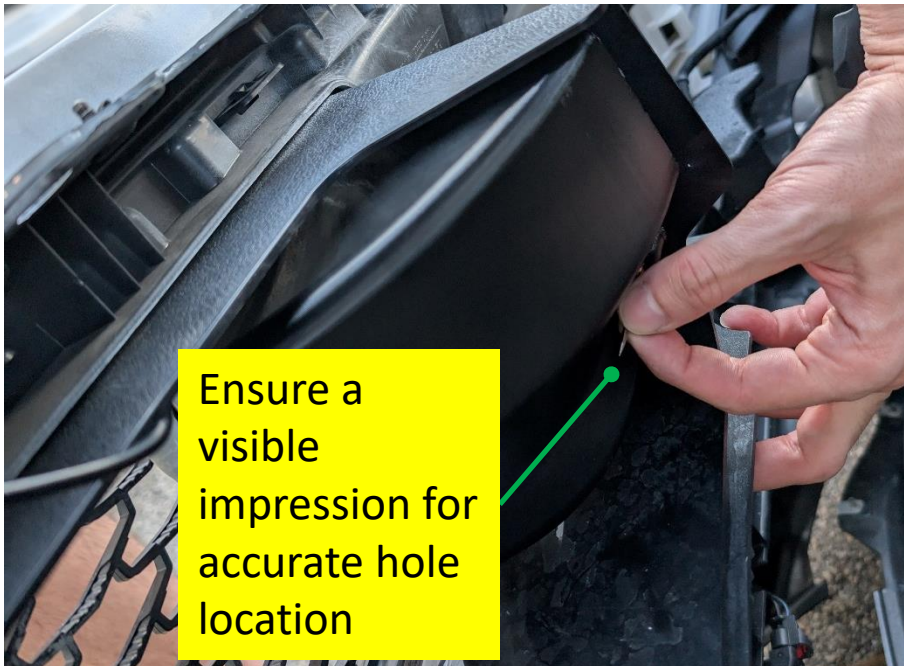
For better airflow, you may trim out the plastic ribs before installation.

Pull back as you insert the BIG MOUTH into the shroud

Bring the BIG MOUTH in at the center, then slide toward opening

Identifying 3rd Hole Location and Drilling

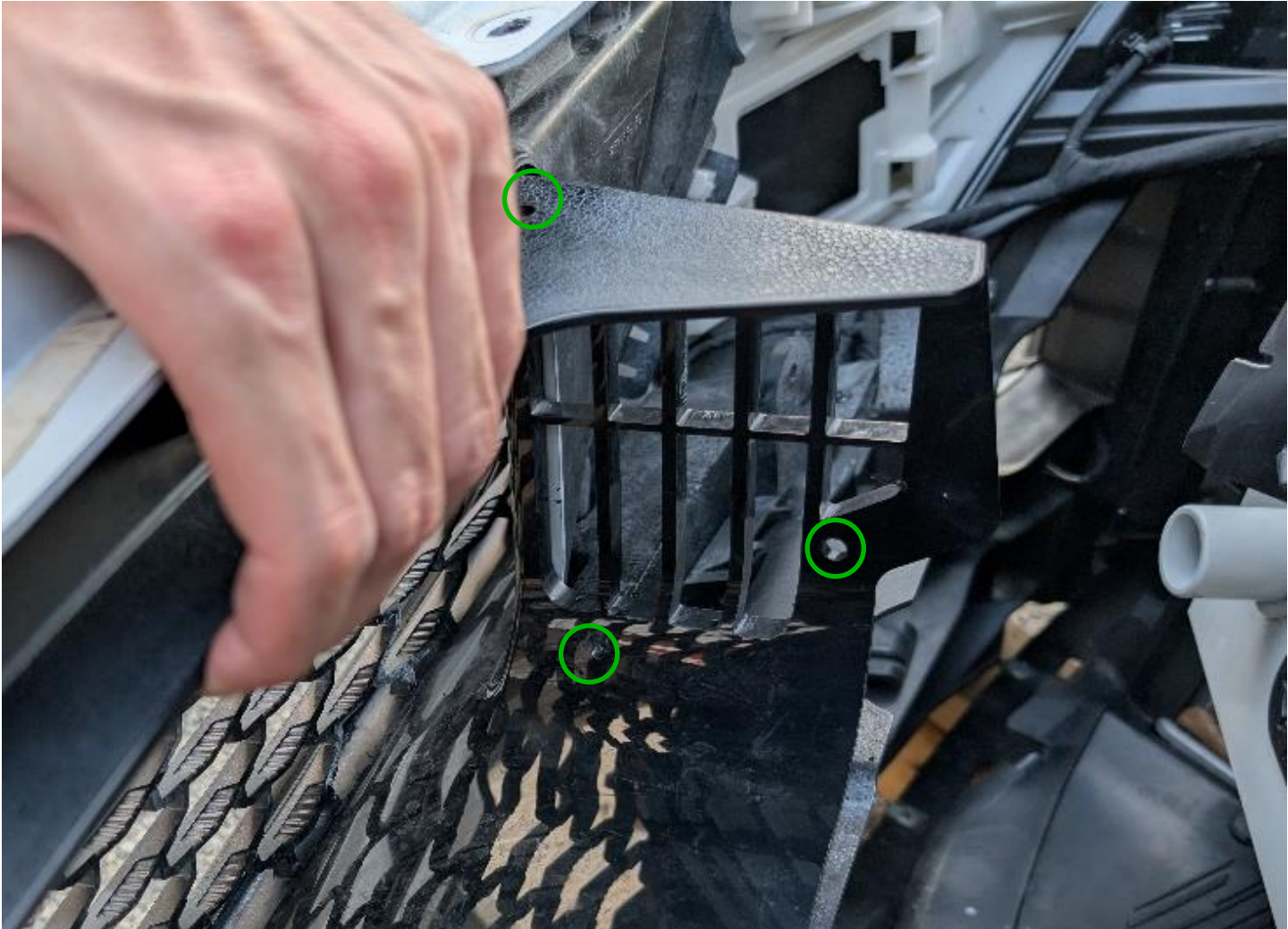
For the last hole, use the BIG MOUTH itself as the reference. Starting with the passenger side BIG MOUTH, line up the intake with the previously drilled holes and the edges of the inlet. Once you are confident everything is lined up, take very small drill bit and mark the shroud. Ensure you make a visible impression that accurately represents the hole position. Move the BIG MOUTH out of the way and drill the pilot hole with the 1/8" drill bit. Double check the hole location and size up to a 1/4" hole. Repeat for the driver side.





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Hole Locations Finalized





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Fastening the BIG MOUTH Intakes

Use the provided round-head #8 screws to fasten the BIG MOUTH intakes to the shroud. The screws are self-tapping and will create threads in the plastic. The ¼" hole is oversized to allow for some adjustability. **BE CAREFUL NOT TO OVERTIGHTEN; THE SCREWS SHOULD ONLY BE HAND-TIGHT.**



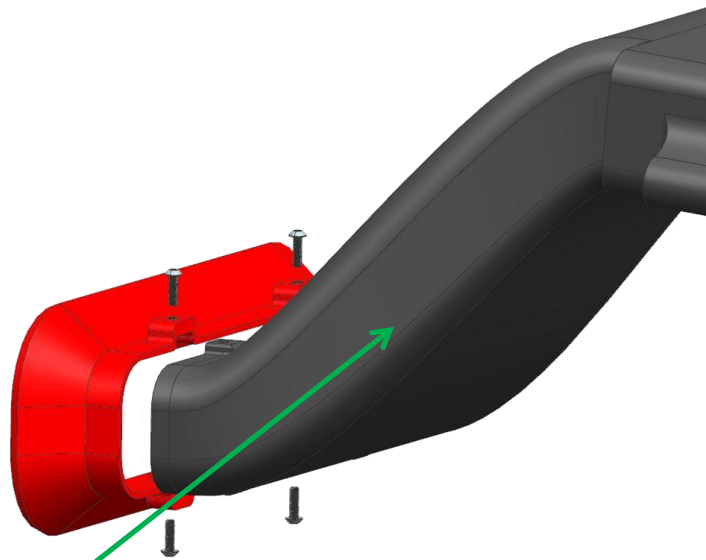


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Install the LIT BIG MOUTH Flare

SKIP THIS SLIDE IF YOU PURCHASED A FULL "LIT KIT"

Attach the supplied cable clip to your BIG MOUTH as shown. Fasten the cable and provide enough slack to not strain the cable.



Attach the 3M cable clip here

If you purchased a LIT flare-only and already have a Gen 4 BIG MOUTH. Remove old flare and install the LIT flare with the 4 screws as shown.



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Wiring Harness

Power terminal (+)

In-line fuse

Positive wire (+)

Toggle switch

Crimped connectors

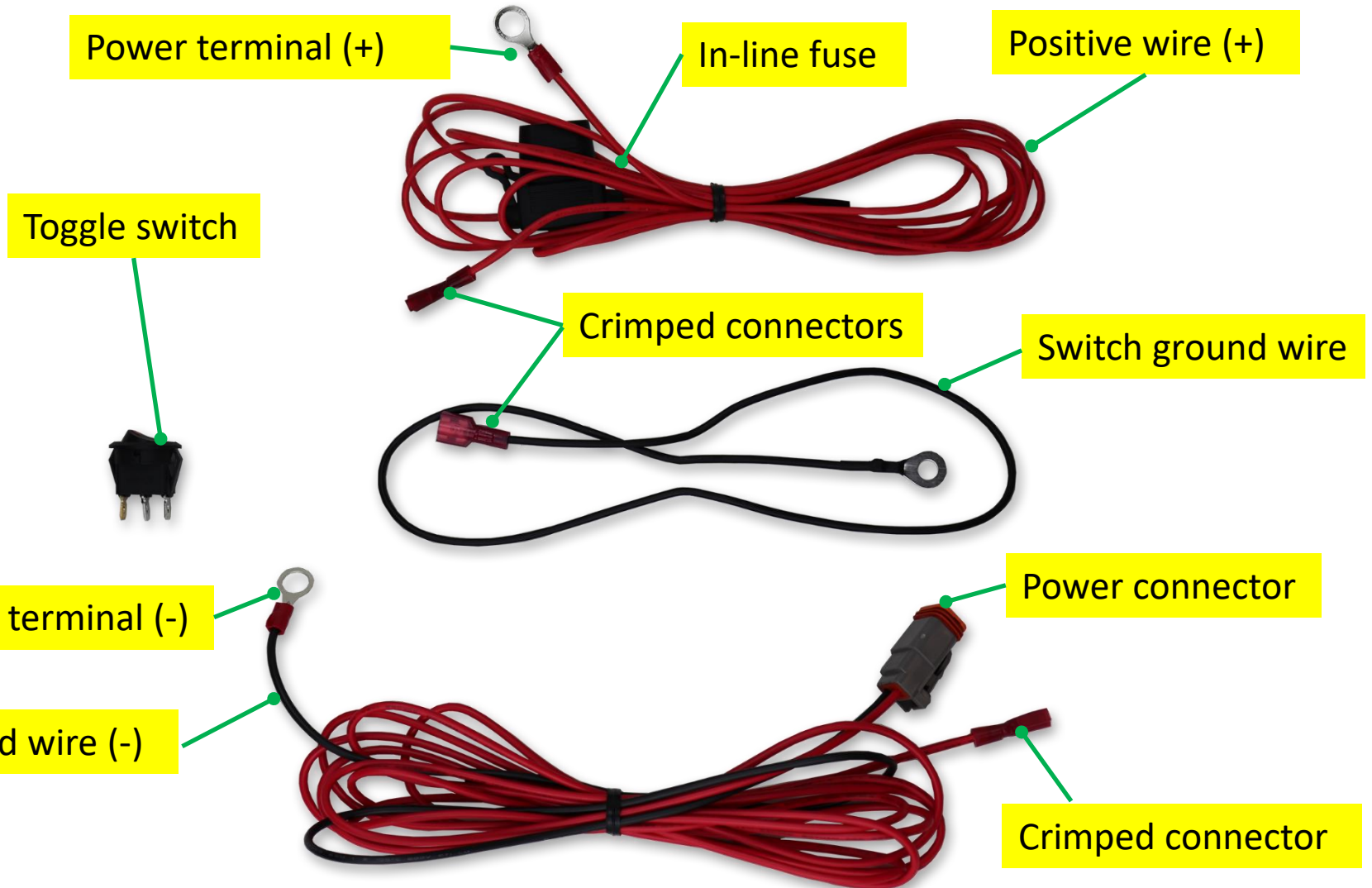
Switch ground wire

Ground terminal (-)

Power connector

Ground wire (-)

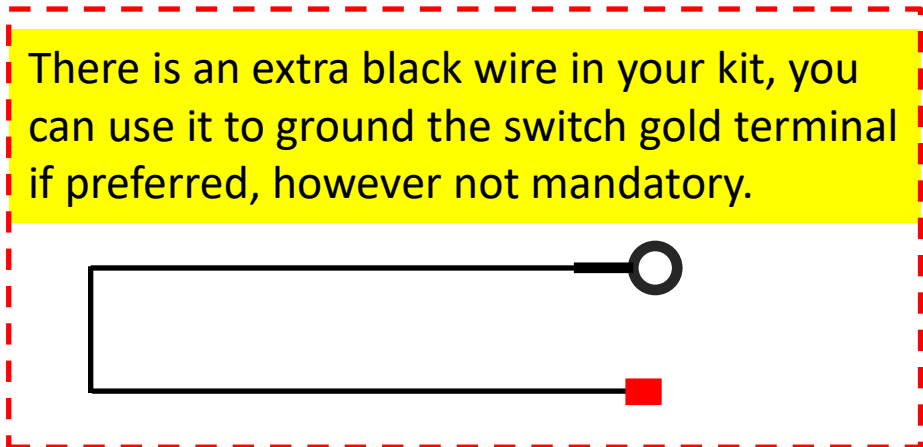
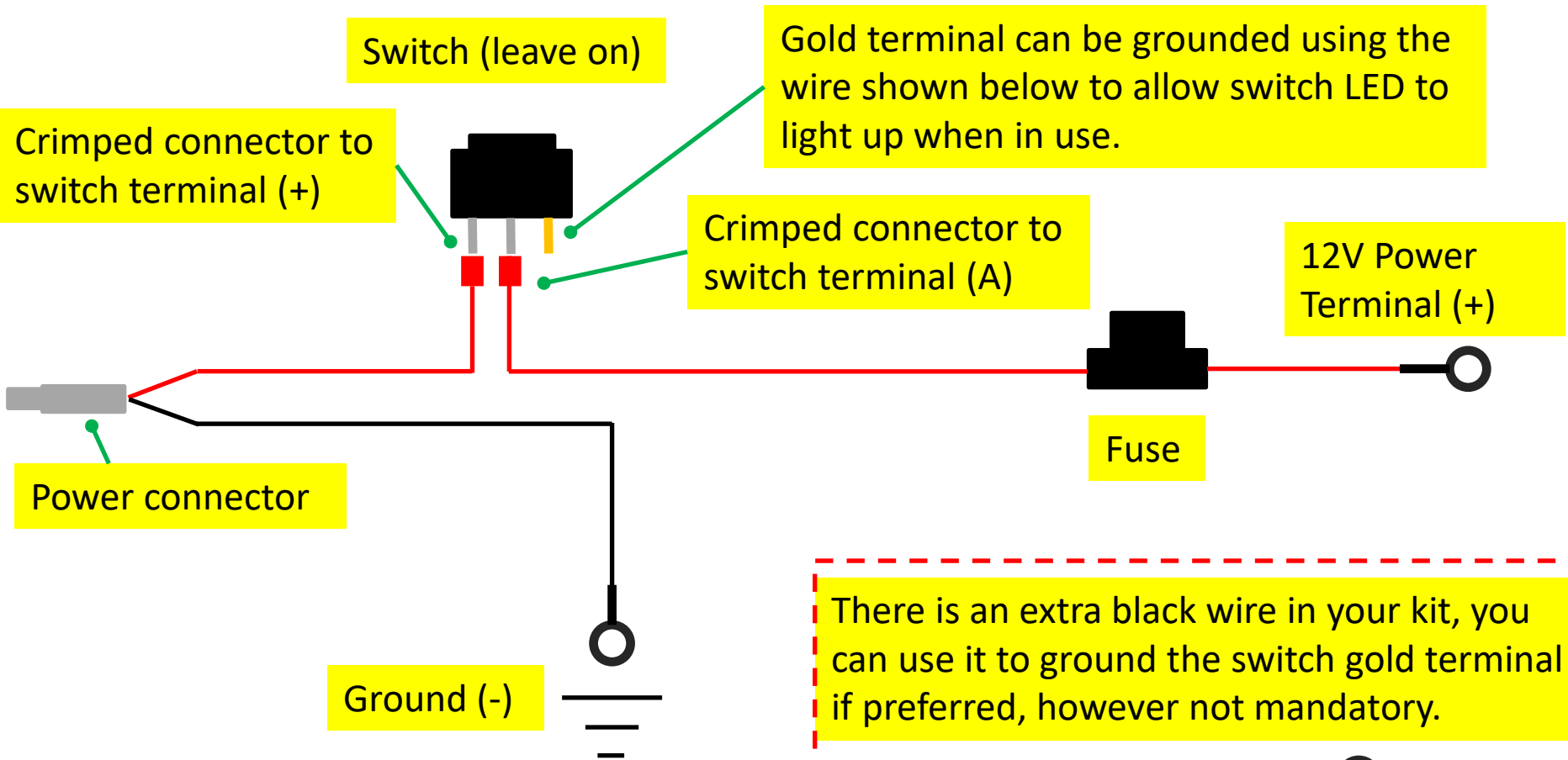
Crimped connector





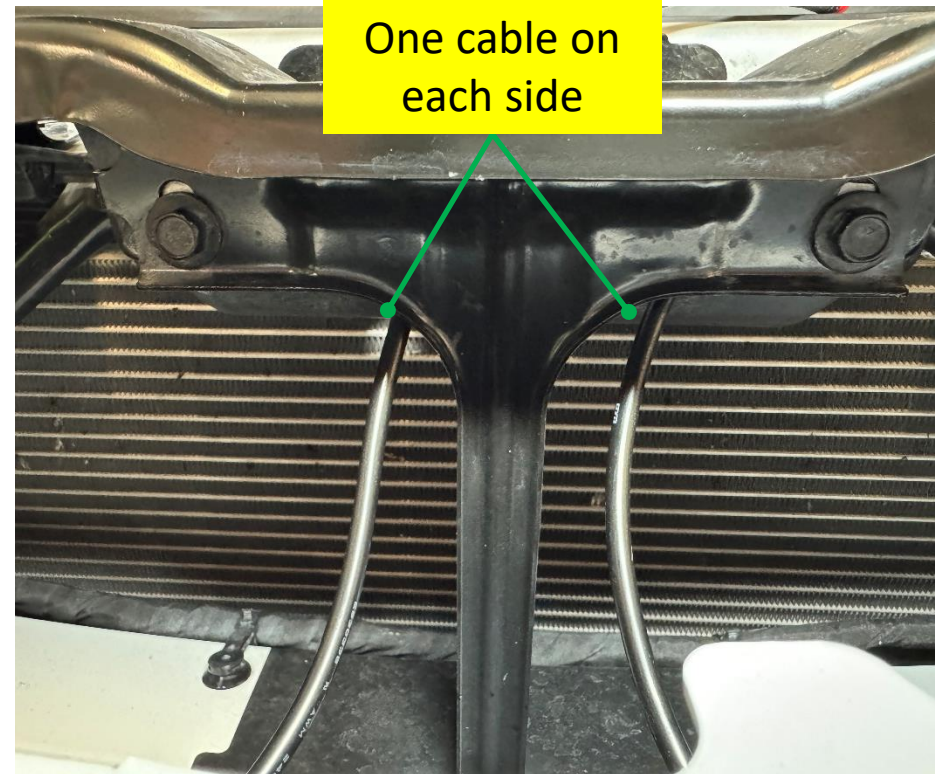
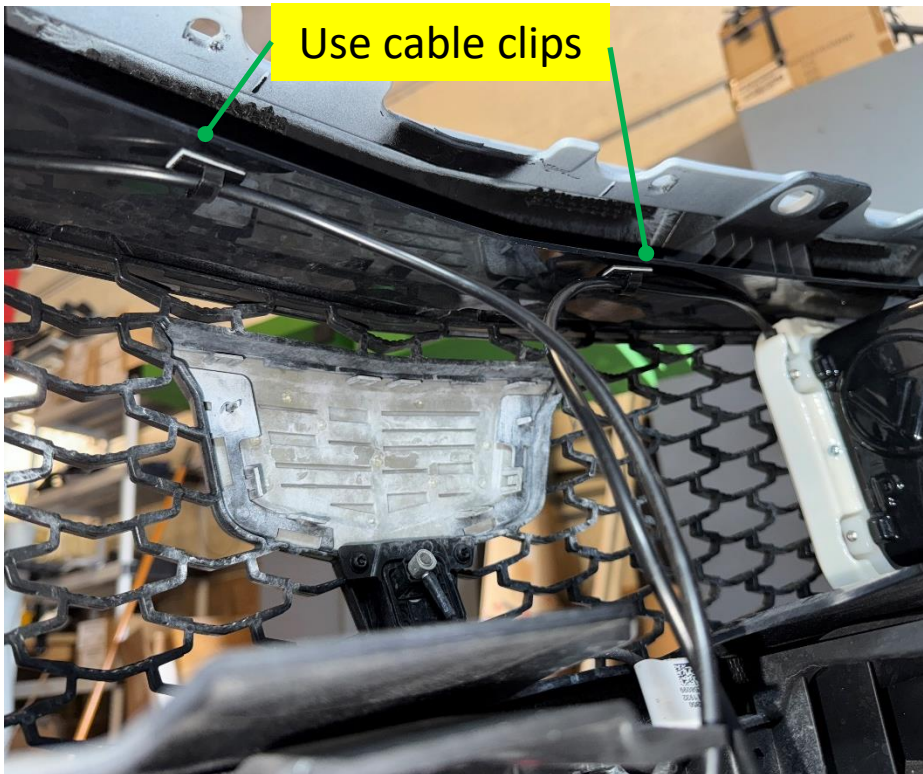
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Wiring Harness Schematic



BIG MOUTH Bumper Re-install

Notes specific to Cadillac CT5-V Blackwing LIT KIT: You can set the bumper back on the car and clip it on but DO NOT FULLY FASTEN YET until all electrical connections are made and confirmed working. Use cable clips to secure the LED cables to the shroud. As you manipulate the cables into the engine bay, make sure that one cable goes on each side of the T-frame. See pictures on next slide for reference.



BIG MOUTH Bumper Re-install

Push down on the plastic trim to make room for the cables and route them into the engine bay through the indicated gap.





LIT KIT TIPS: Controller Placement

When considering where to place your Bluetooth controller, pay attention to the following factors:

- **Distance:** The controller leads need to be able to reach the LEDs so proximity to the BIG MOUTH is important.
- **Bluetooth signal:** Placing the controller as close as possible to the driver will help with signal strength. Place the controller in a location where there is minimal metal mass in between the driver and controller.
- **Heat and weathering:** Avoid subjecting your controller to excessive heat and limit its exposure to environmental wear.

Some commonly found solutions for controller placement include:

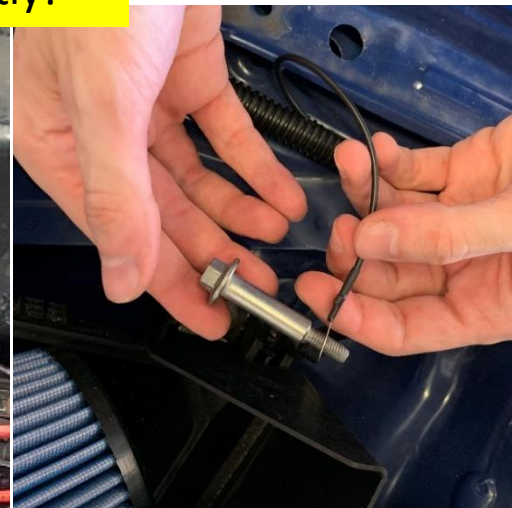
- Adhere to a flat spot on the cowl, inside or near battery box, radiator support (driver side if possible), behind headlight, airbox, etc. using the supplied double-sided tape
- If using a location near the hood latch, take the necessary precautions to ensure the wiring will not get entangled with the hood latch.
- Using zip ties to attach the controller to a thick wire loom is also a handy solution
- Some locations near the firewall/battery tend to be good locations for signal and low temperature.

LIT KIT TIPS: Ground

When considering where to ground the circuit, pay attention to the following factors:

- **Location:** The best and most reliable ground connections exist on the chassis, on the engine block or on the negative terminal of your battery. These can exist as a threaded hole, shoulder bolt or stud.
- **Conductivity:** The ground point should be clean, unpainted and free of rust or grease for a solid connection. Fasten it securely to avoid vibration loosening the connection.
- **Distance:** Make sure the location of your chosen ground point is within range of the provided ground wiring.

Reference images only, your vehicle may vary slightly!

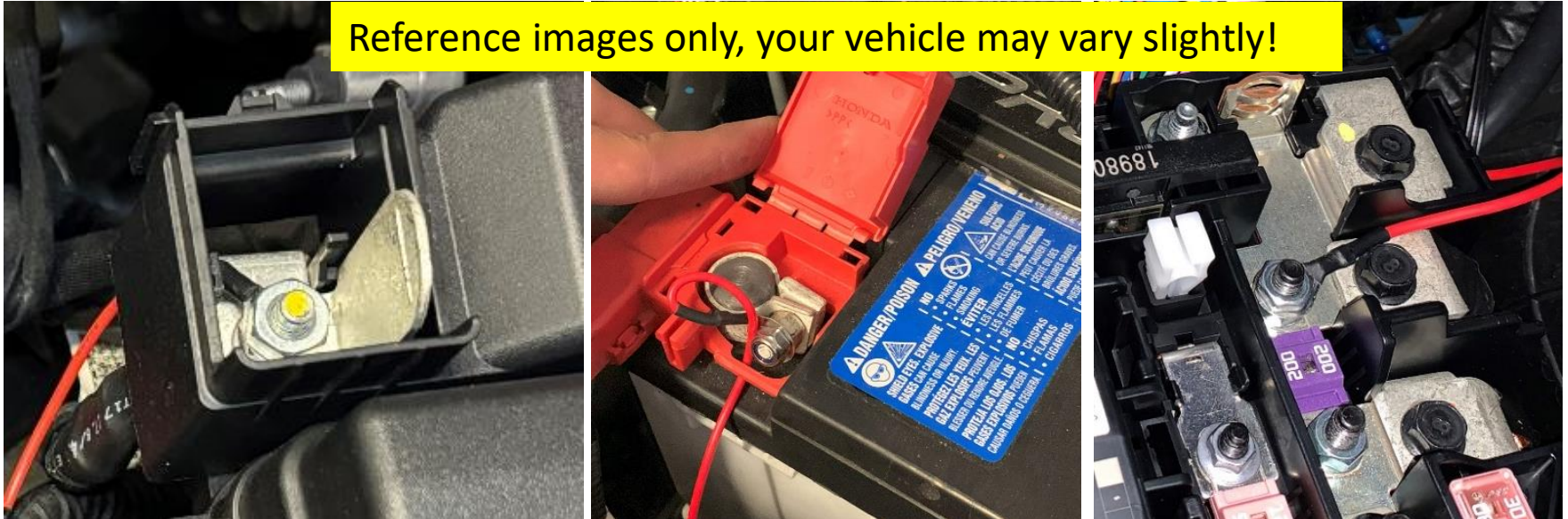


LIT KIT TIPS: Power

When considering the power side of the circuit, pay attention to the following factors:

- **Location:** By default, our LIT KIT is powered using the positive terminal on the battery. If you decide to re-configure your kit for a switchable power source, we recommend you research the use of a fuse tap and follow best practices outlined online.
- **Conductivity:** The connection to the battery must be tight and secure. Loose connections create excess heat and shorten the life of the electronics. Ensure the terminal is free from corrosion, damage or debris.
- **Safety:** When working with a car battery, exercise best safety practices such as using insulated tools and wearing the correct protective equipment.

Reference images only, your vehicle may vary slightly!



LIT KIT TIPS: Wiring Best Practices

When considering how to route the wiring through your engine bay, consider the following:

- **Strain relief:** Use the provided zip ties and cable clips to secure wiring to its environment while maintaining slack at each point. All wiring should be free from strain and tension.
- **Components to avoid:** Avoid moving parts, such as hood latches and pulleys, and exhaust components that can melt wiring. Also take care to avoid pinch points.
- **Routing:** Whenever possible, route the wiring along factory harnesses, underneath trim or along the perimeter of the engine bay. Bundles of wire should be tucked underneath plastic covers and secured using zip ties.

Reference images only, your vehicle may vary slightly!





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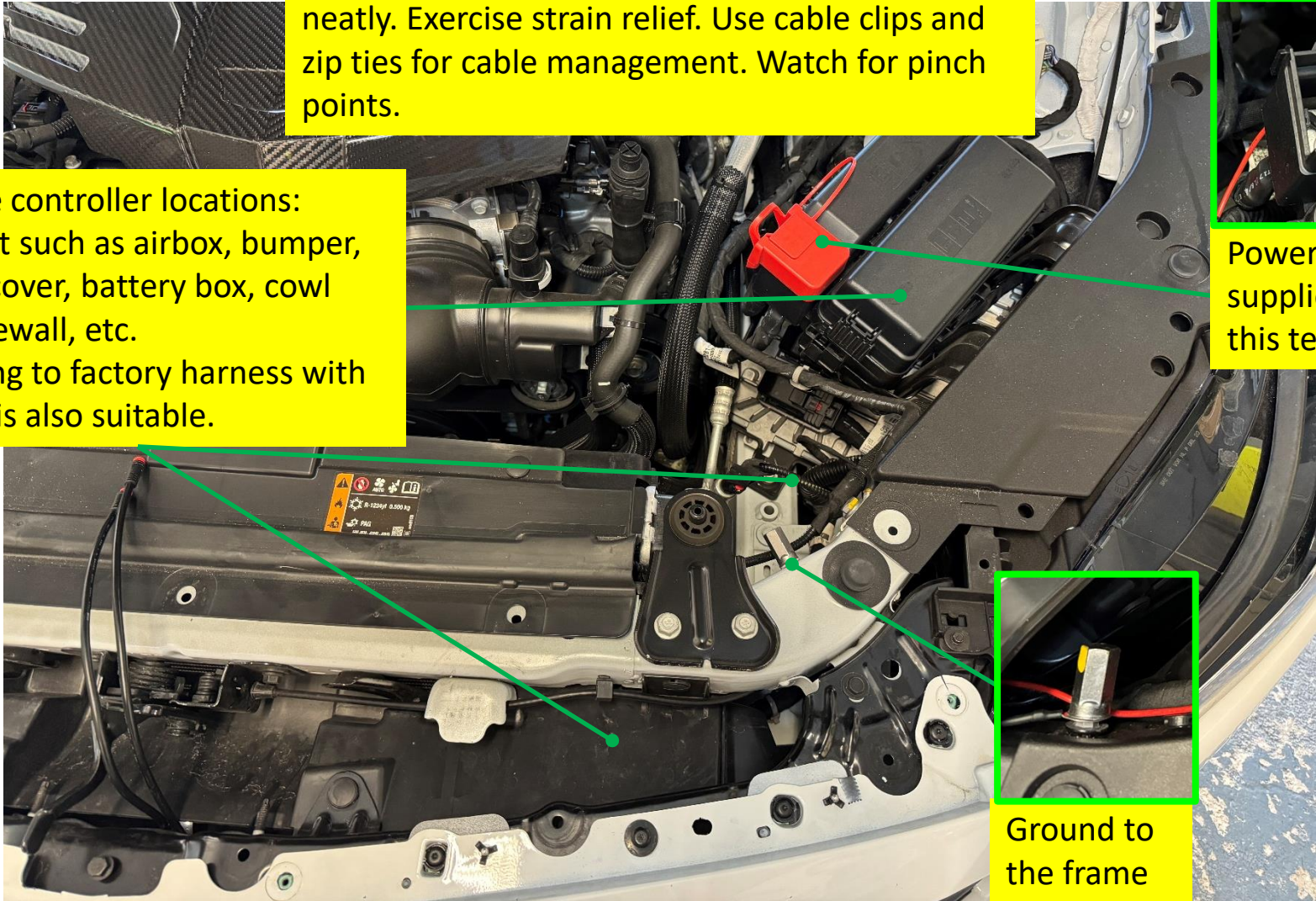
LIT KIT TIPS: Visual Aid

Wiring should be routed cleanly and bundled neatly. Exercise strain relief. Use cable clips and zip ties for cable management. Watch for pinch points.

Suitable controller locations:
Flat spot such as airbox, bumper, plastic cover, battery box, cowl near firewall, etc.
Attaching to factory harness with zip ties is also suitable.

Power is supplied from this terminal

Ground to the frame



Phone App

Download the Diode Dynamics app and connect via Bluetooth.

How to connect to the app:

1. After installing the app from the app store, open the app on your device.
2. Cycle the power to the Bluetooth controller by unplugging it and plugging it back in or flick the power switch and wait a few seconds, then turn it back on.
3. Wait for the app to detect the controller, it will pop up on the app screen as a Bluetooth controller. If necessary, cycle the power once more to refresh the controller.
4. Once the controller shows up on the app, click it and connect. You have 30 seconds to select the controller once it shows up on the app. After 30 second you will need to refresh again to detect the controller again.
5. Note that if you mounted your controller behind a lot of metal components, this may degrade the signal and range.





Finalize

Reinstall the bumper the same way it was removed and enjoy!

