



**2014-2022+ Toyota 86/FRS/BRZ
“LIT KIT” BIG MOUTH Ram Air
Installation Guide**

VELOSSA TECH

Kit Contents (Full Kit)

Please review this document before attempting installation.

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

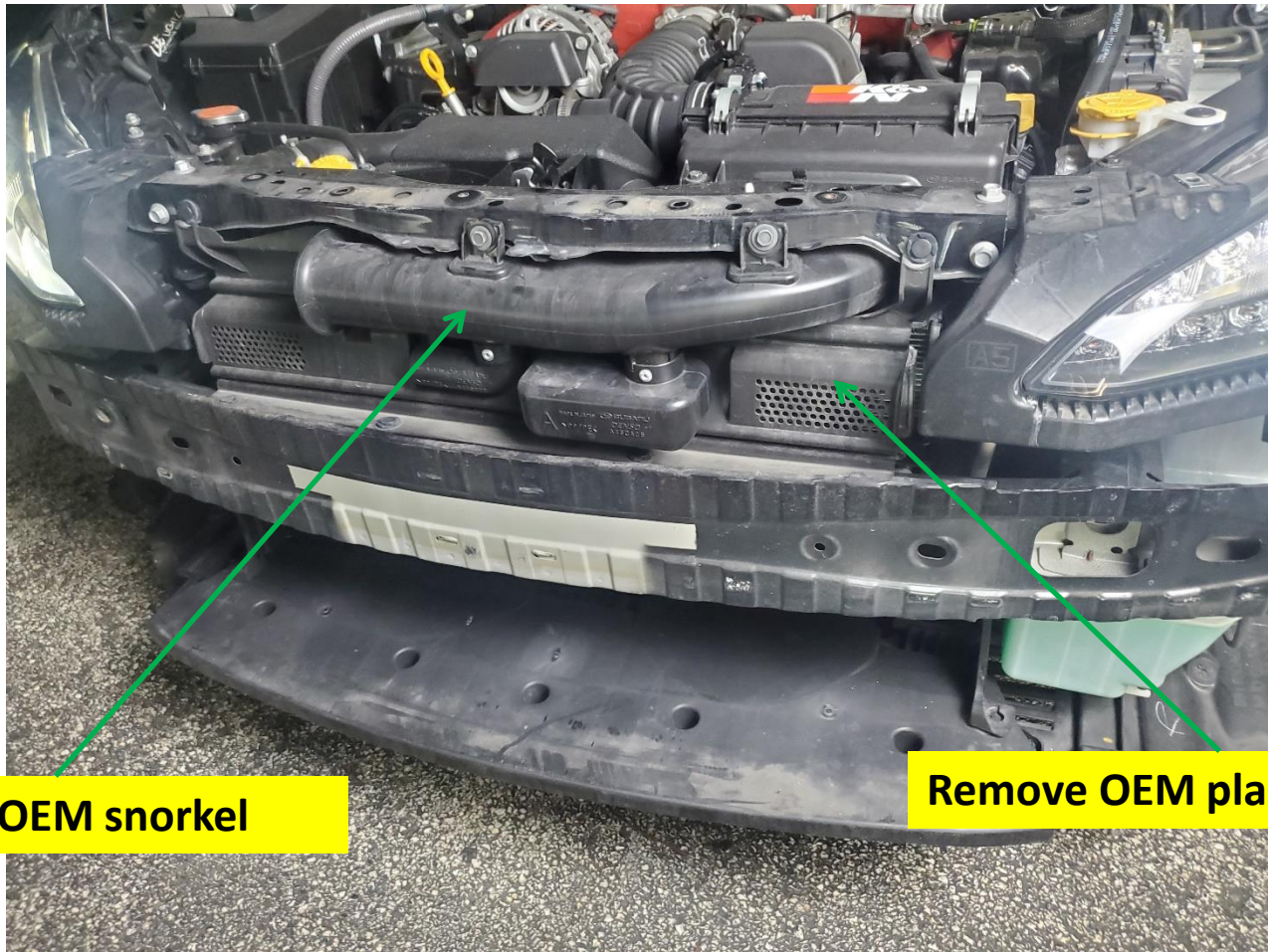
Kit Contents	Qty
M6 x 25mm Cap Screw	2
#8 x 3/4" Flat Head Phillips Screw	6
Push Retainer Clip	1
M6 Lock Nuts	1
Diode Dynamics RGBW Controller	1
Positive Cable w/ In-Line Fuse	1
Power Cable w/ Pigtail Connector	1
Switch	1
Switch Ground Cable w/ Pigtail Connector	1
8" Zip Ties	8
Brackets (1,2,3)	1
LIT KIT BIG MOUTH upper and lower body	1





Stock Components Removal

It is best to google “how to remove bumper” for your particular trim, after the bumper is removed, you will see the following.



Remove OEM snorkel

Remove OEM plastic plate

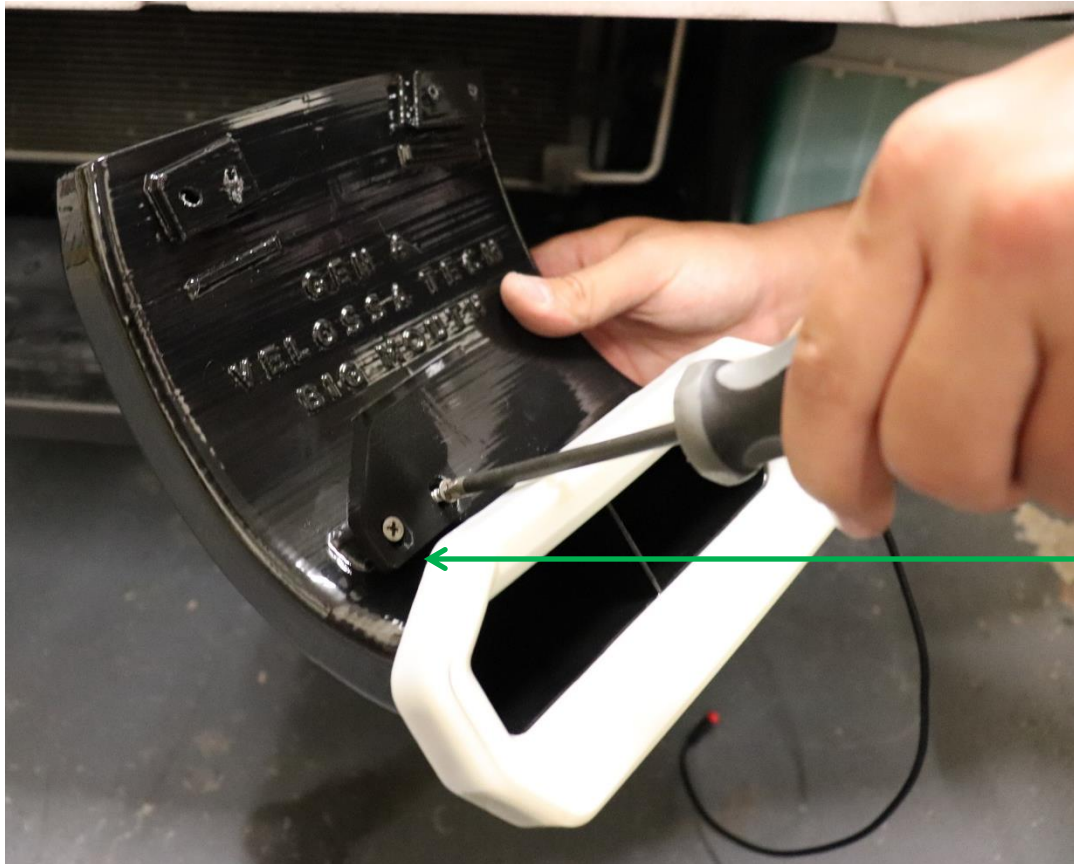
Big Mouth Installation

The top of the BIG MOUTH slides into position as shown, DO NOT fasten yet. Keep it loose so the bottom section can easily slide into position.

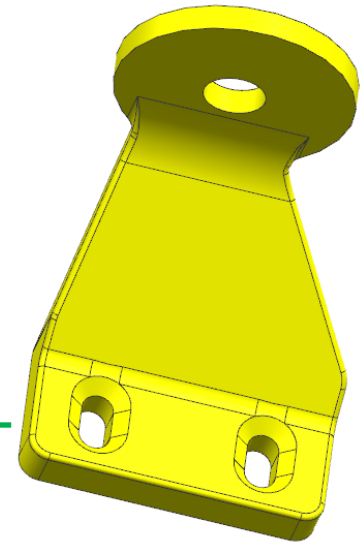


Bracket 3 Installation

Bottom section first needs Bracket 3 to be installed, do not tighten the screws all the way yet. These screws should be left somewhat loose until you position the bottom body correctly.

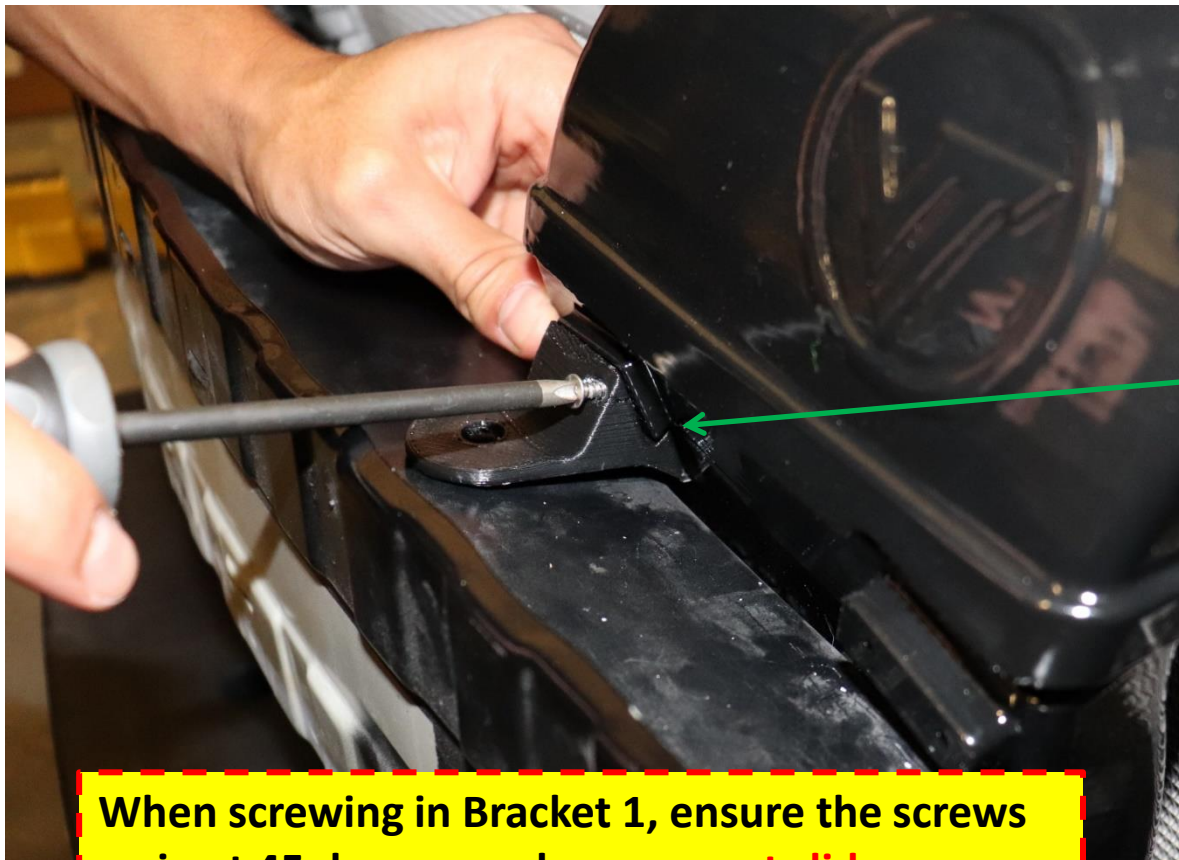


Bracket 3

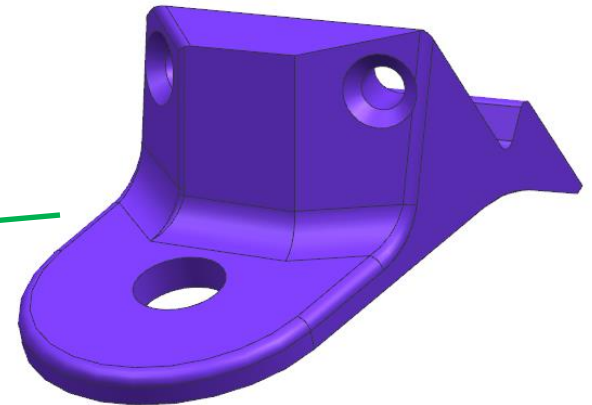


Bracket 1 Installation

Slide the bottom section of the BIG MOUTH into the position as shown, it should tuck under the top half of the BIG MOUTH assembly. Begin to screw in Bracket 1, ensure that the dovetail joint that hooks into the body is secure.



Bracket 1

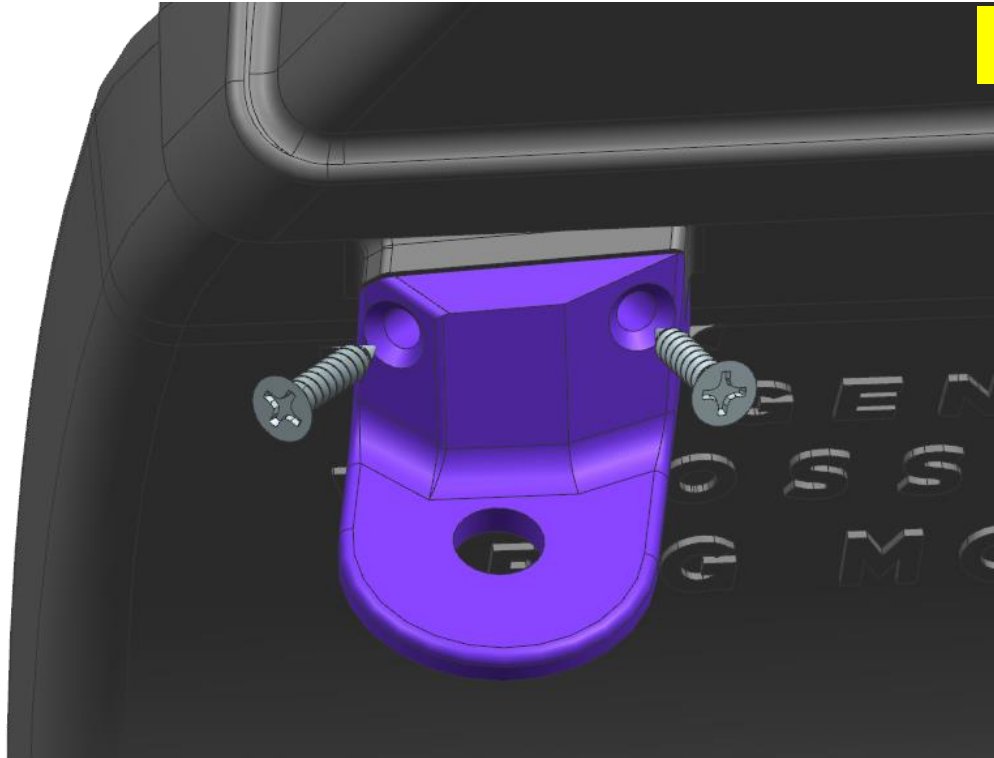


You may slide in bracket 1 from the side so the hook engages the body.

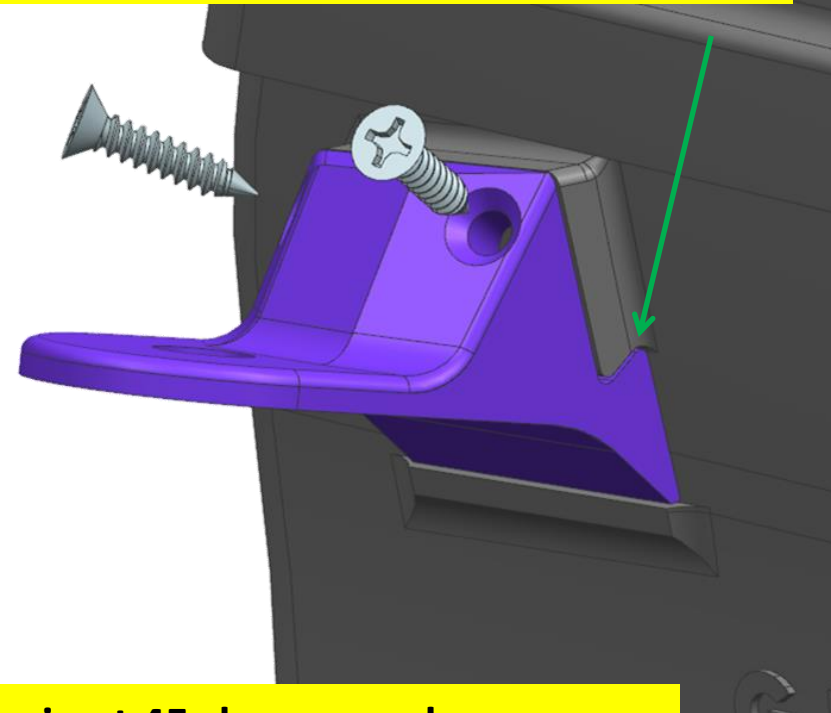
When screwing in Bracket 1, ensure the screws go in at 45 degree angles, [see next slide](#).

Bracket 1 Installation

Note the angle by which the screws must enter the assembly, they will self tap. Be sure to slowly screw them in by hand (do not use an electric drill to drive these screws as you risk mis-aligning them and damaging the body by over-torquing).



Ensure the dovetail hook is engaged.



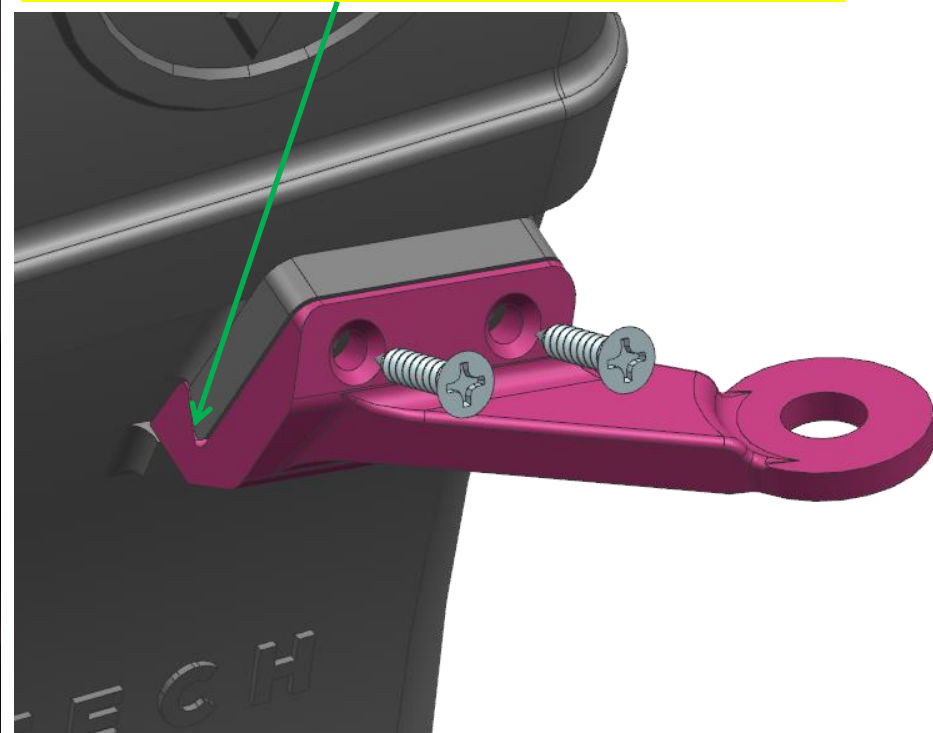
When screwing in Bracket 1, ensure the screws go in at 45-degree angles.

Bracket 2 Installation

Bracket 2 will be installed similarly to bracket 1. Engage the hook and screw by hand slowly, note the 45-degree angle by which to insert the screws. Be patient with alignment.



Ensure the dovetail hook is engaged.



You may slide in bracket 2 from the side to engage the dovetail hook.

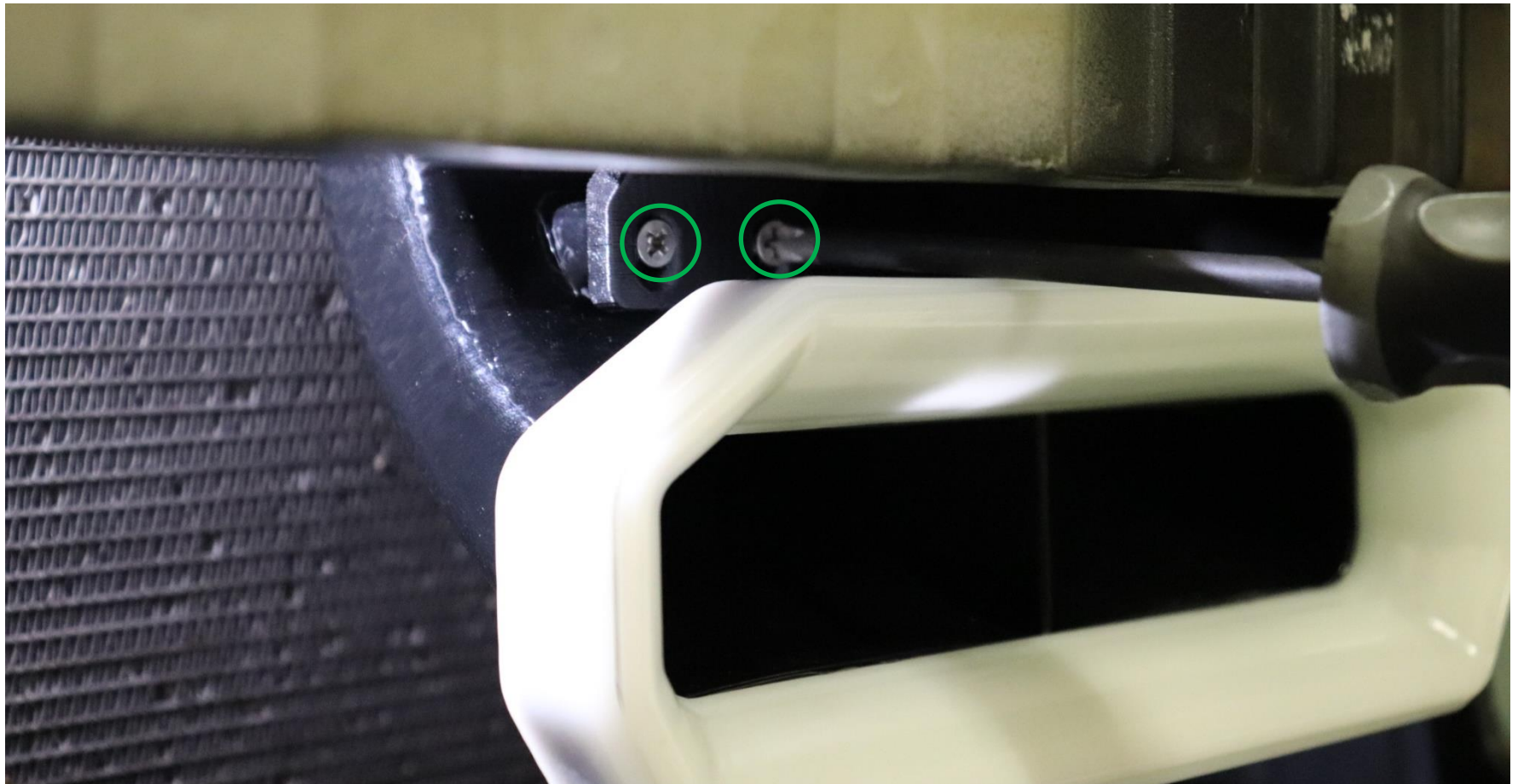
Clip Bracket 3

All brackets should be in place. You will need to go under the crash bar and insert the supplied Christmas-tree clip to fasten bracket 3 to the crash bar (there is a hole in the crash bar).



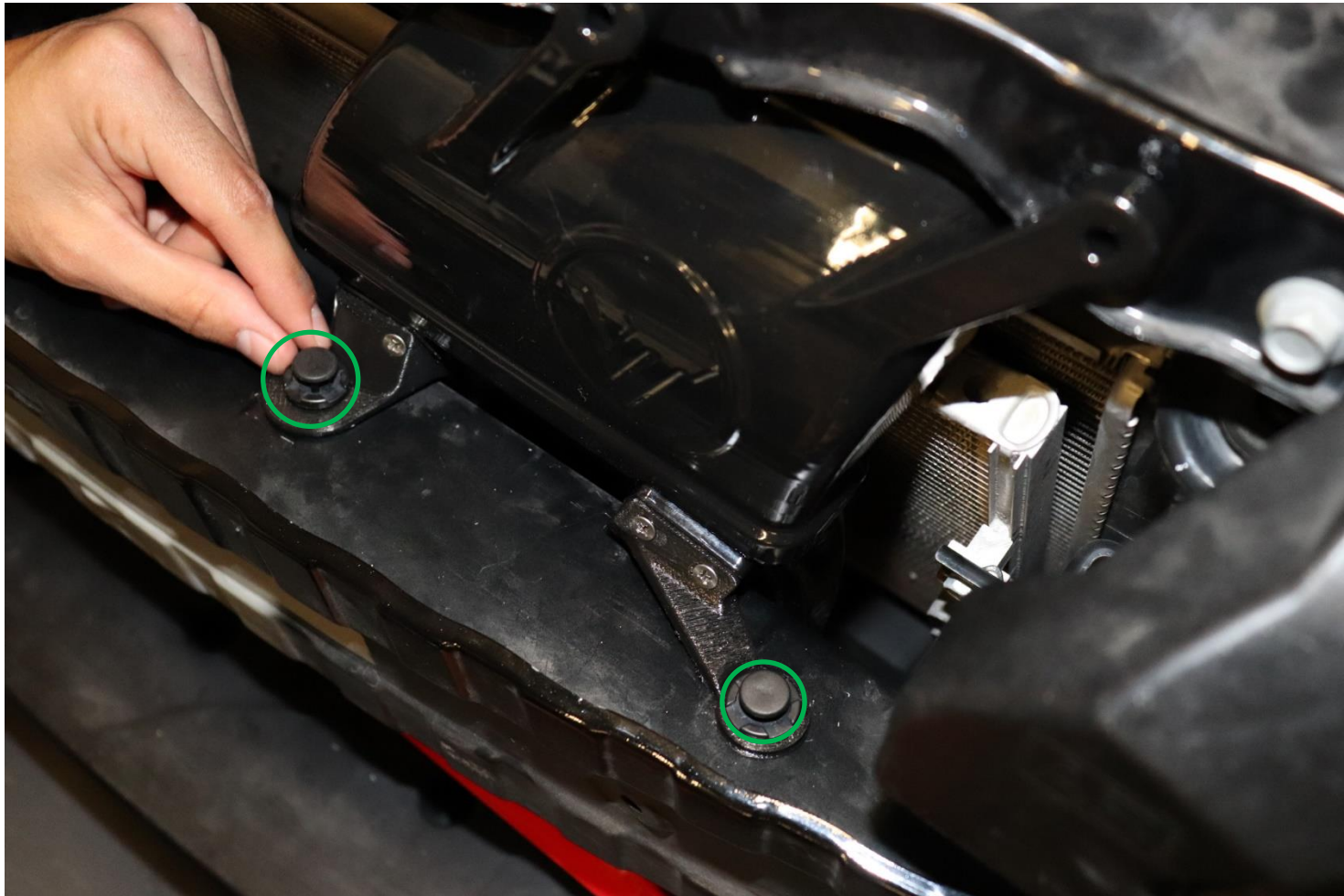
Tighten Bracket 3

Once Bracket 3 has been clipped into the crash bar, you may tighten these screws with a Phillips screwdriver. The slots in the bracket allow there to be adjustment.



Clip Brackets 1 and 2

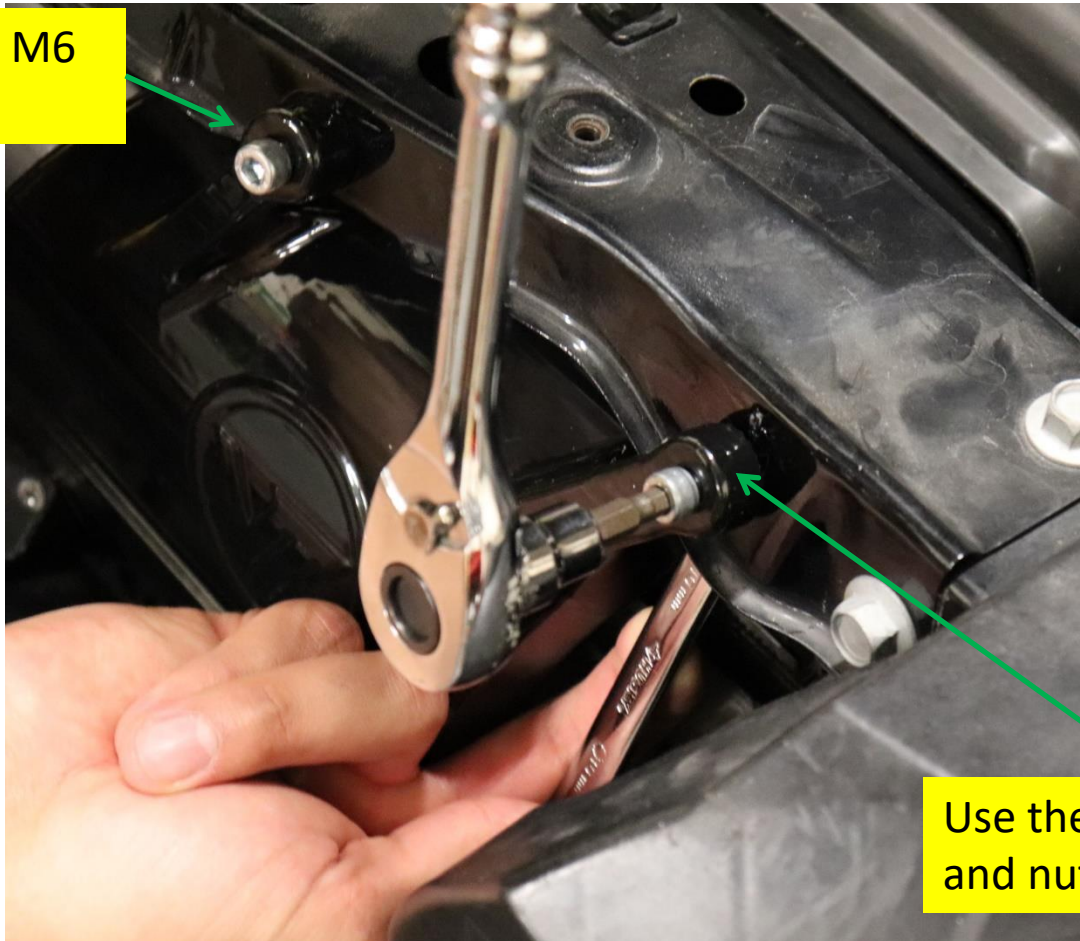
Insert the OEM clips as shown. These clips will securely snap brackets 1 and 2 into the crash bar.



Fasten Upper Section

Once the lower body is secure, you may fasten the upper body as shown.

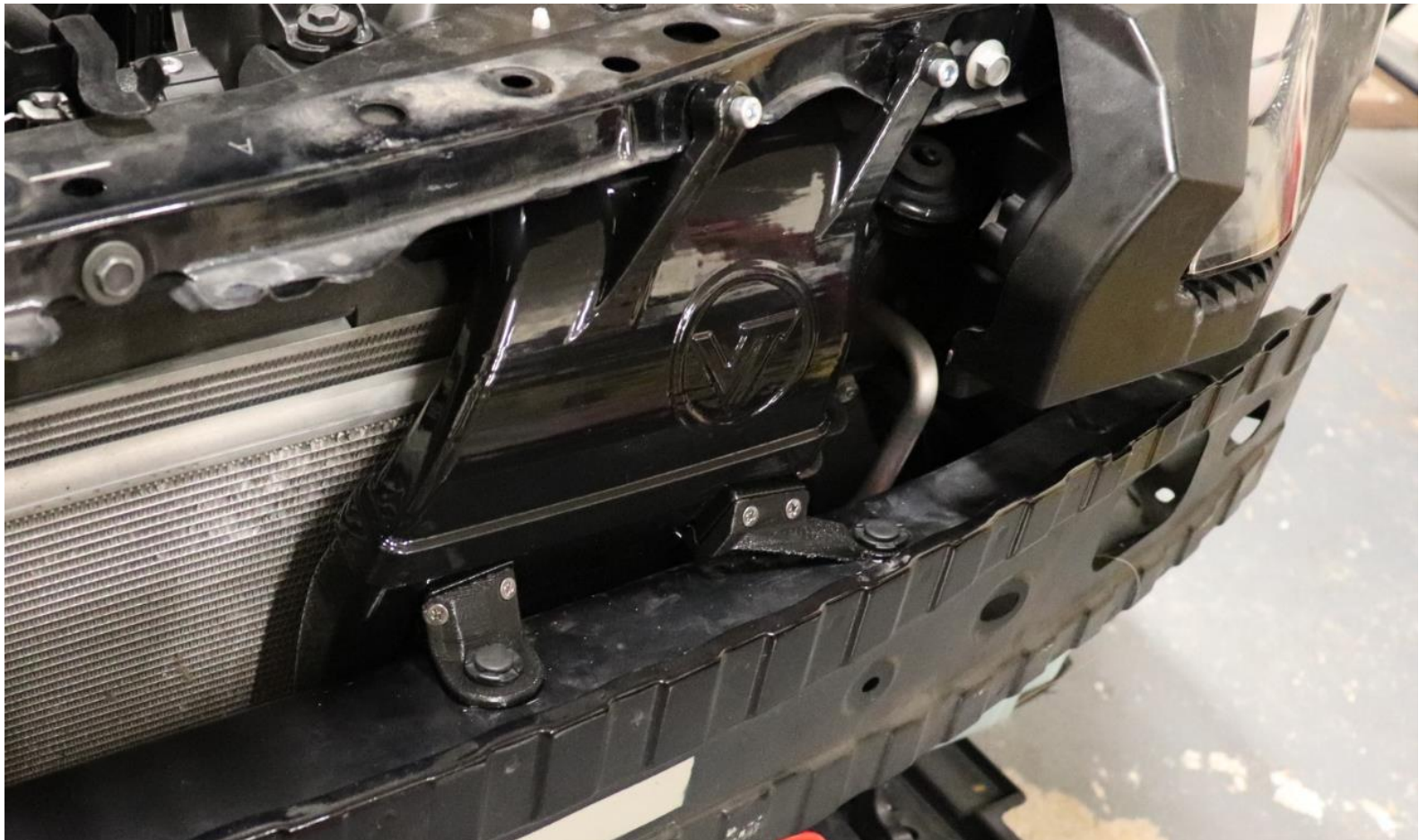
Use the supplied M6 bolt on this side.



Use the supplied M6 bolt and nut on this side.

Assembly Review

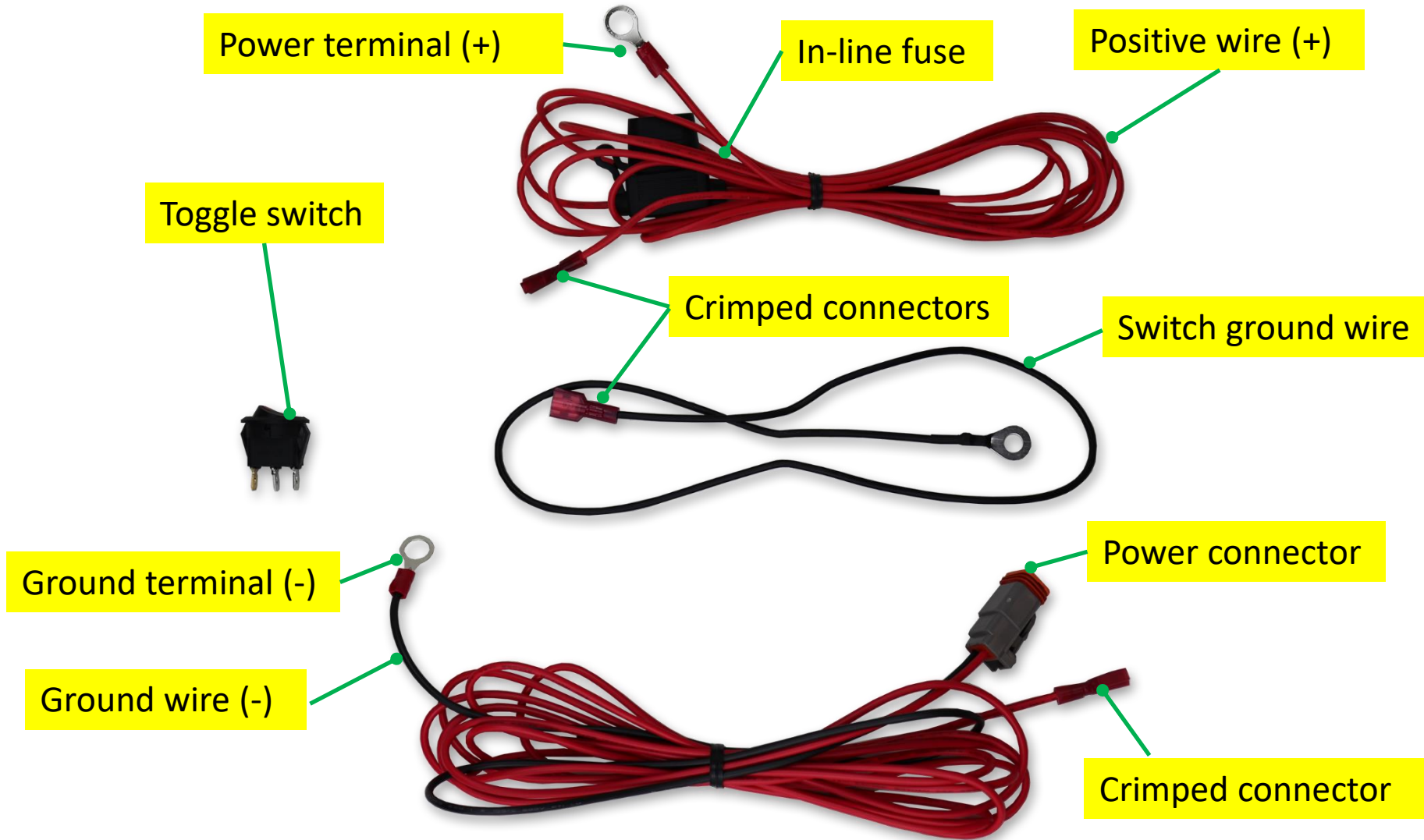
Review the install and make sure nothing is binding or causing any preload on any parts, loosen and retighten if adjustment is necessary.





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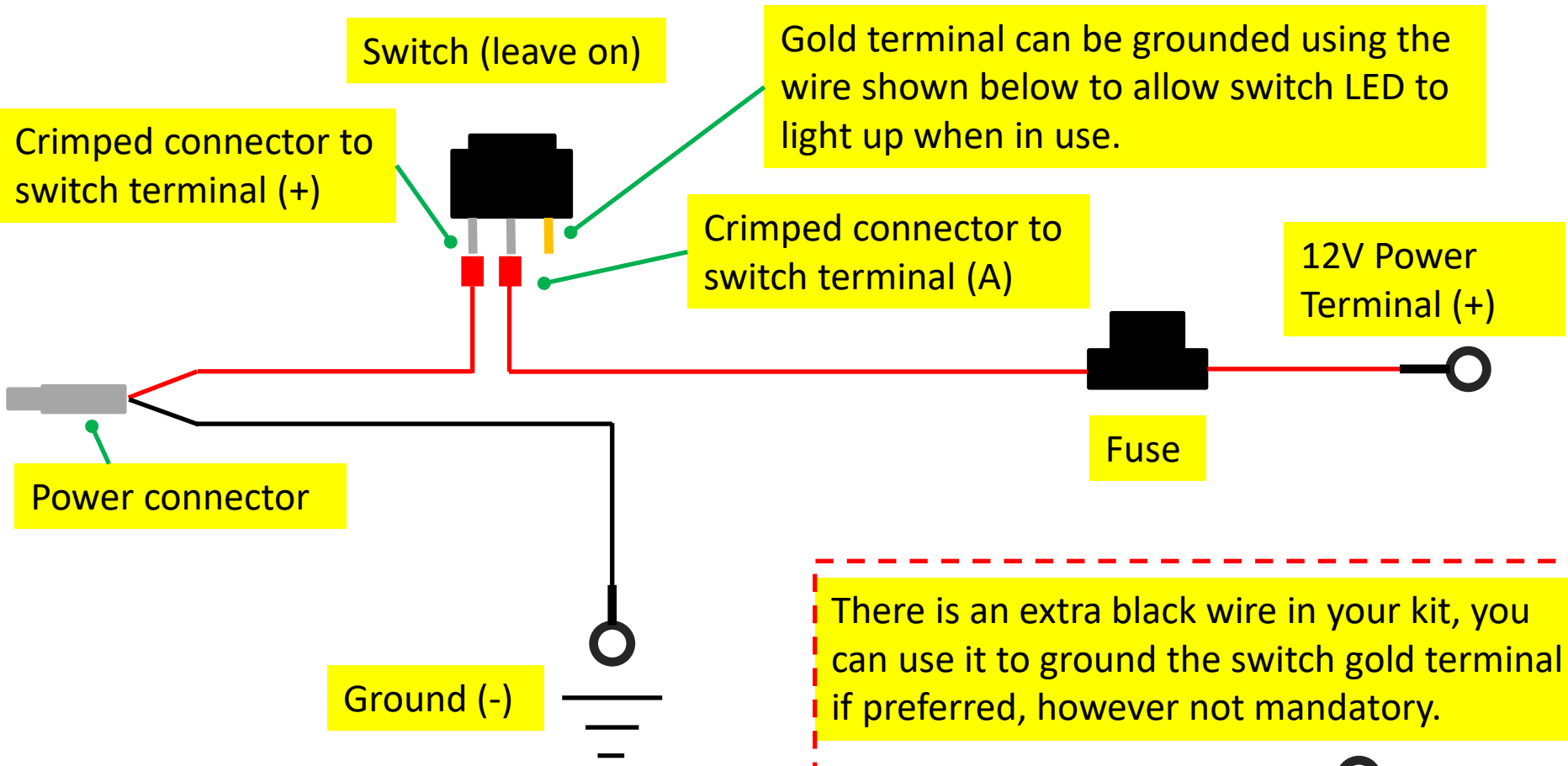
Wiring Harness





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Wiring Harness Schematic



There is an extra black wire in your kit, you can use it to ground the switch gold terminal if preferred, however not mandatory.

The diagram shows a black wire with a terminal on the right end connected to a red terminal on the left end, enclosed in a dashed red box.

LIT KIT Wiring

Route the wiring up through this part of the car, make sure the wire is not strained or kinked.



LIT KIT Wiring

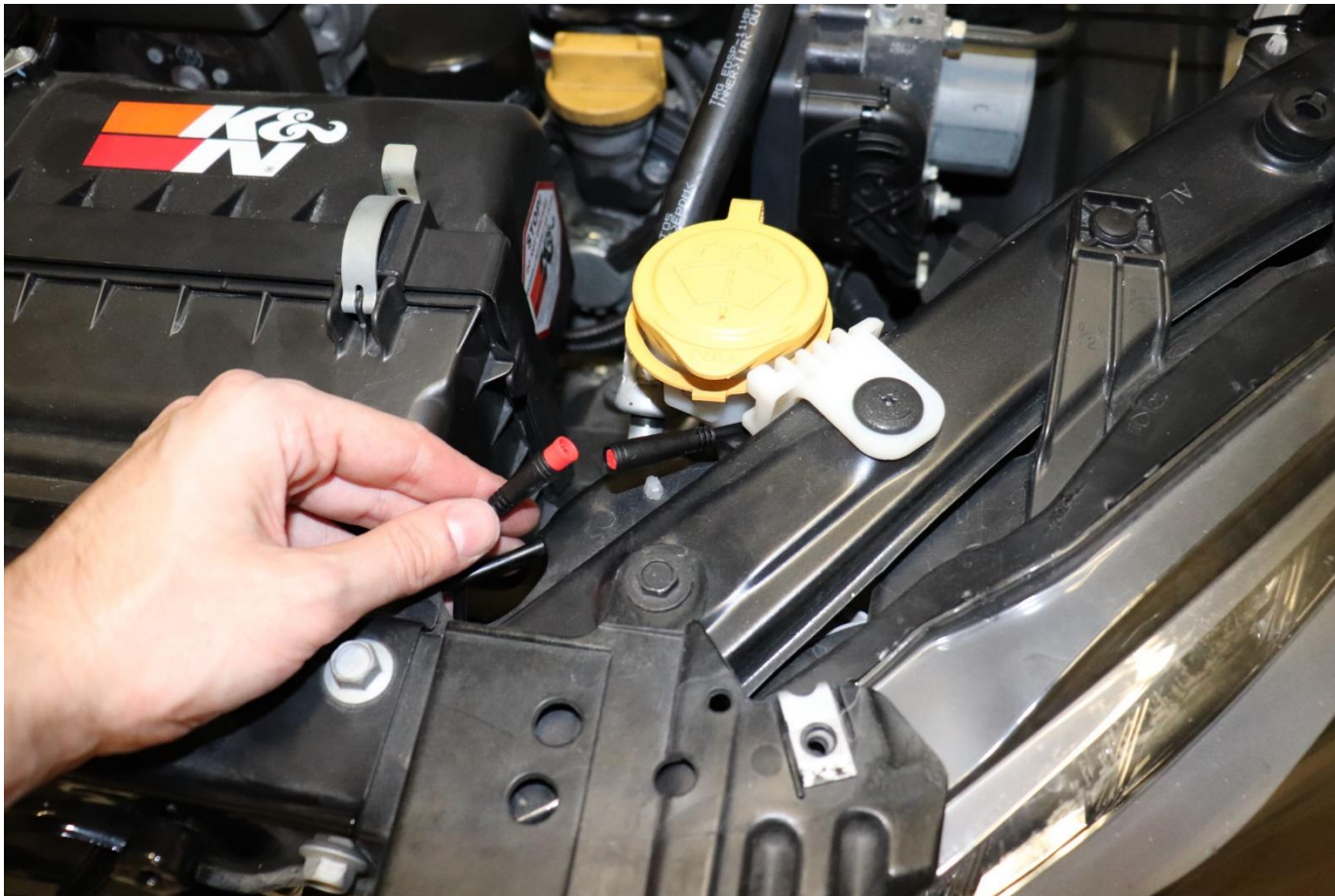
Feed the LED wire through this location as shown. You may mount the controller as shown below using a zip tie.



Controller can be zip tied here.

LIT KIT Wiring

Connect the LEDs to one of the four ports on the controller, snake the controller wire behind the washer fluid tank tube for a clean look.



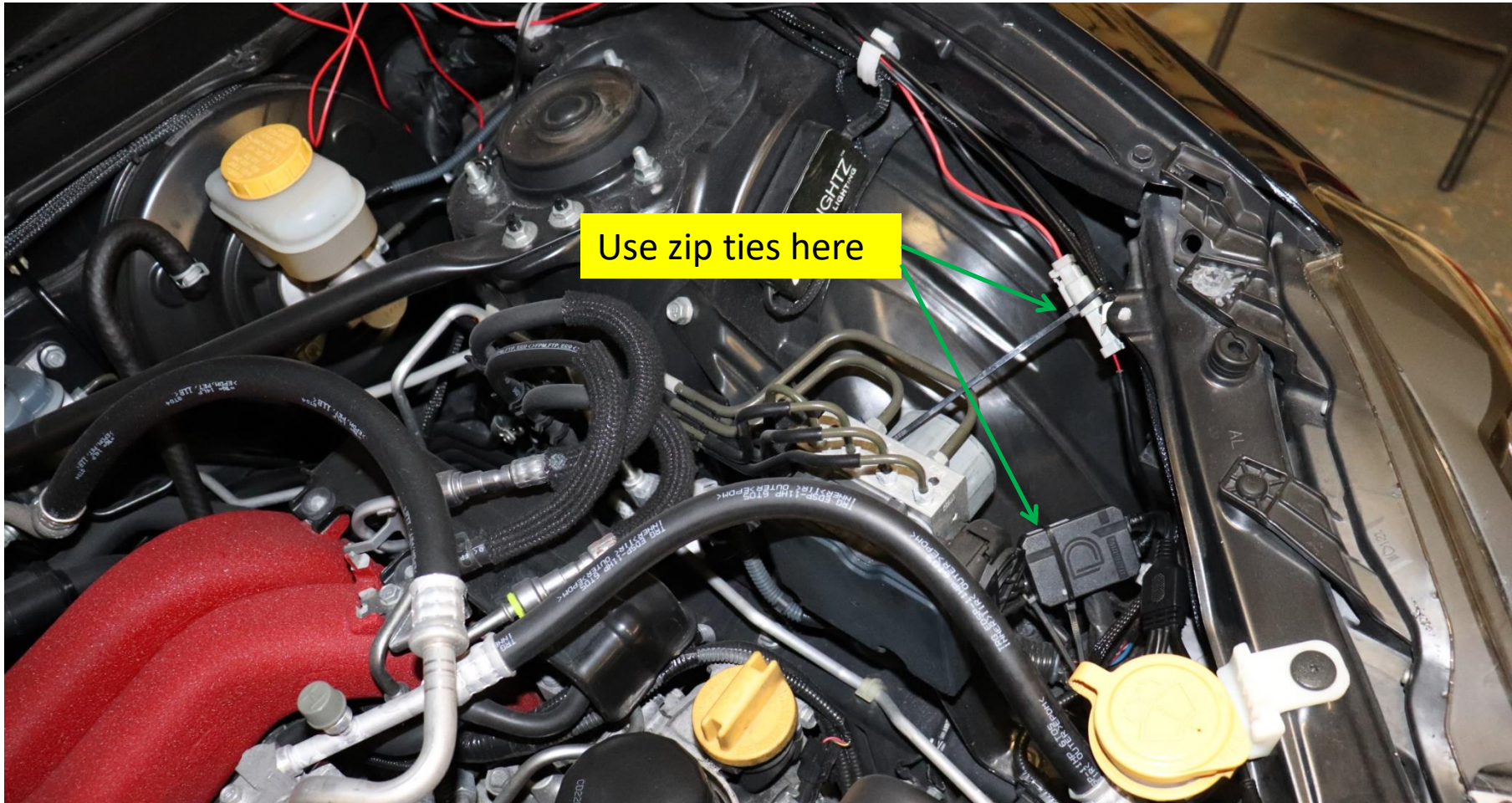
LIT KIT Wiring

Plug the harness into the controller as shown.



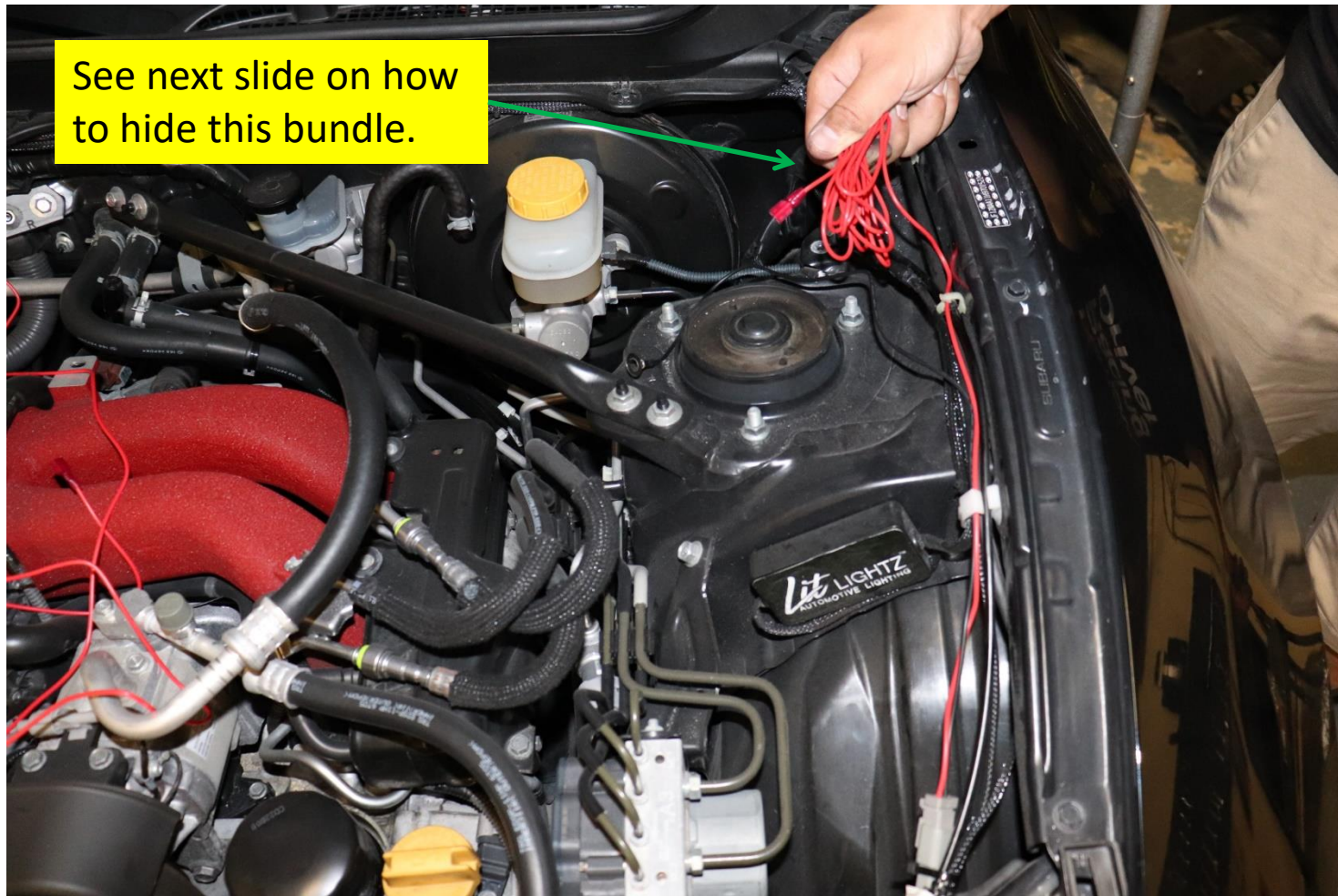
LIT KIT Wiring

Use zip ties to secure the components up until this point.



LIT KIT Wiring

There will be excess wire, bundle it as shown and zip tie the bundle to the tunnel as shown on the next slide.



LIT KIT Wiring

Tuck the wire bundle into this sheet metal tunnel and zip tie it securely through one of the holes nearest the edge.

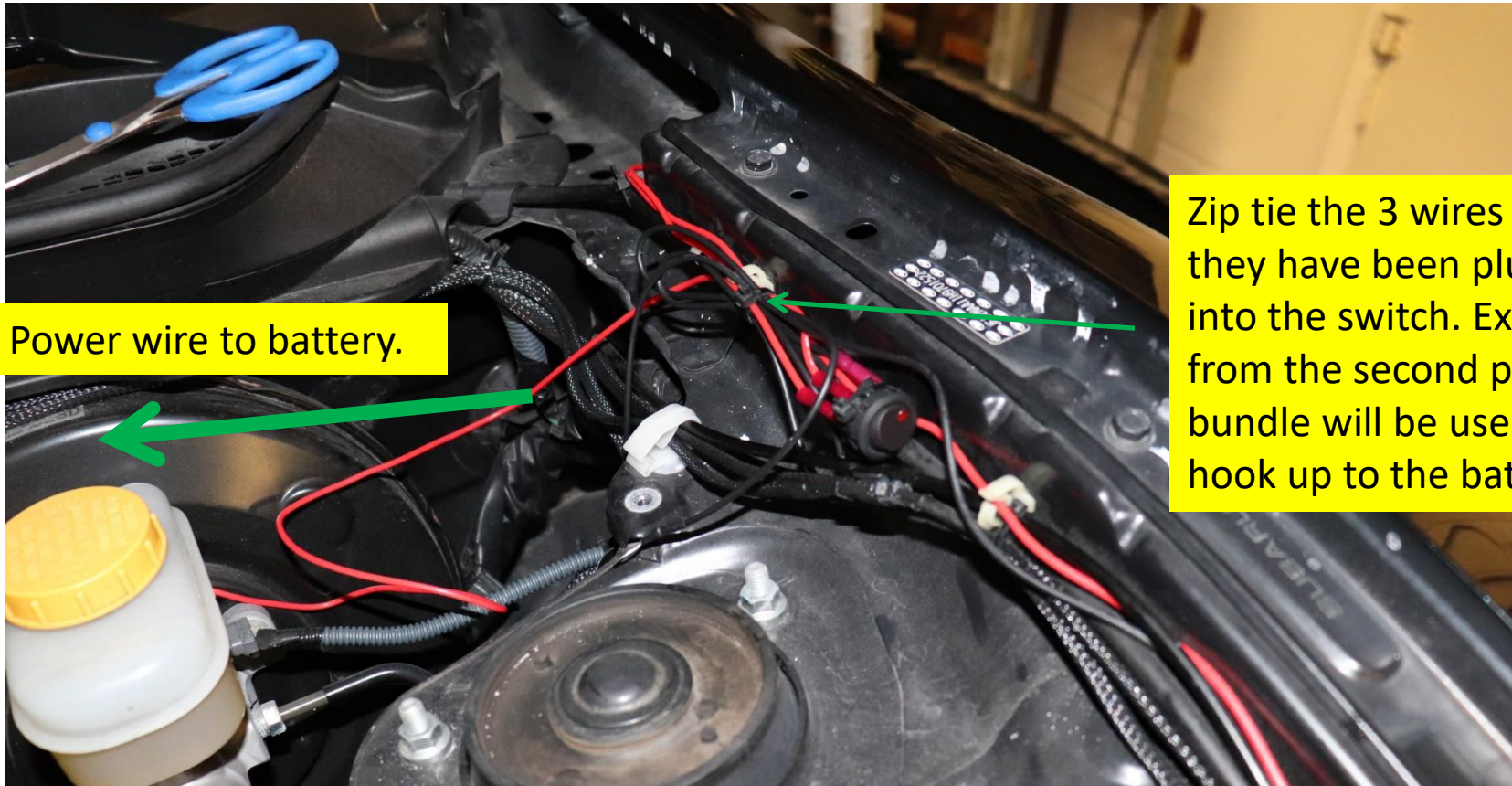


LIT KIT Wiring

Plug in the controller power harness (+) terminal into the switch as per the schematic on slide 15.

Plug in the second power harness lead into the switch as per slide 15.

Plug in the short ground wire into the switch as per slide 15.



Power wire to battery.

Zip tie the 3 wires once they have been plugged into the switch. Excess wire from the second power bundle will be used to hook up to the battery.

LIT KIT Wiring

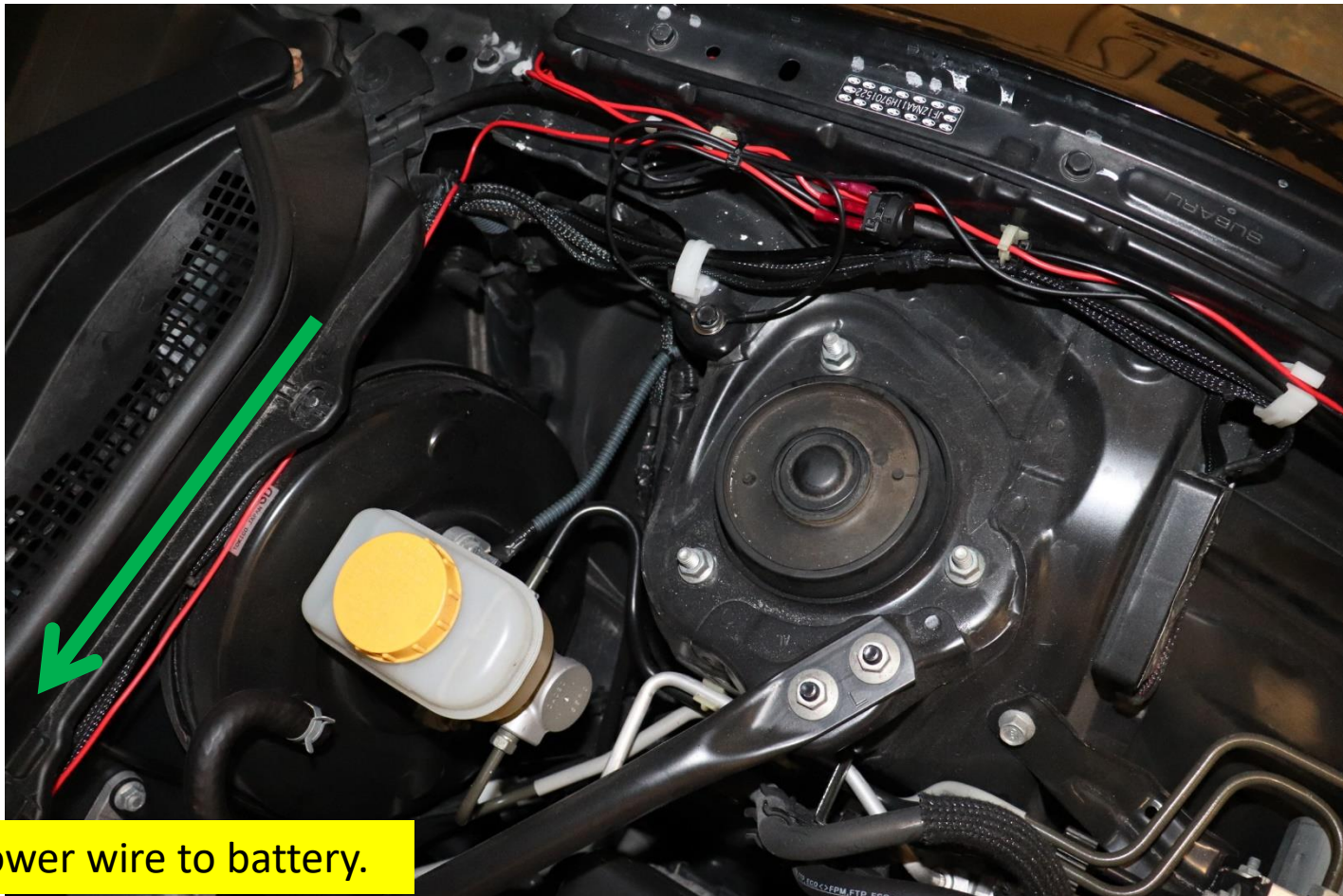
Fasten both grounds in the following location using the stock fastener.



Both ground wires bolt down here. **Ensure a good ground!!!!**

LIT KIT Wiring

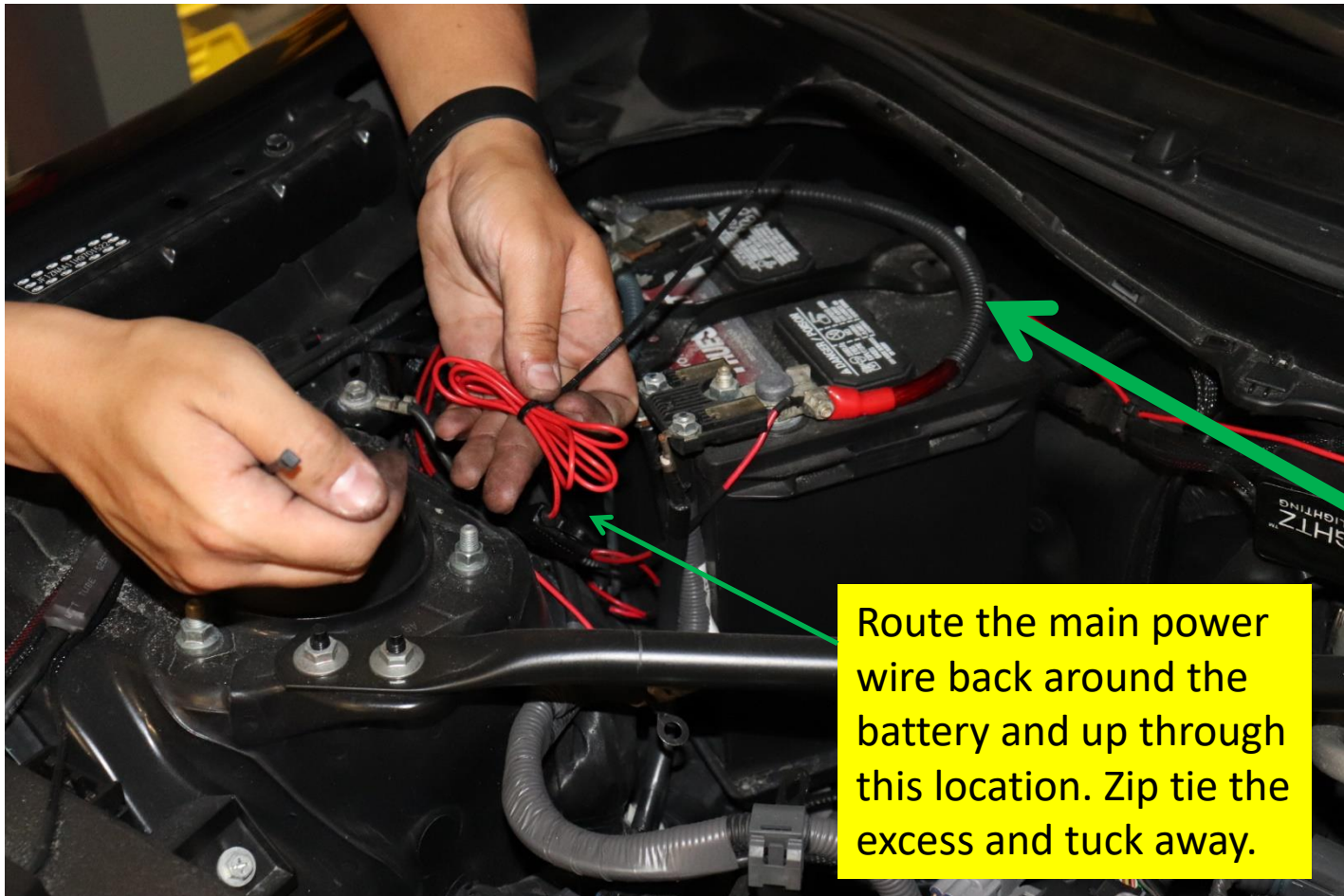
Start routing the second power wire towards the passenger side where the battery is located.



Power wire to battery.

LIT KIT Wiring

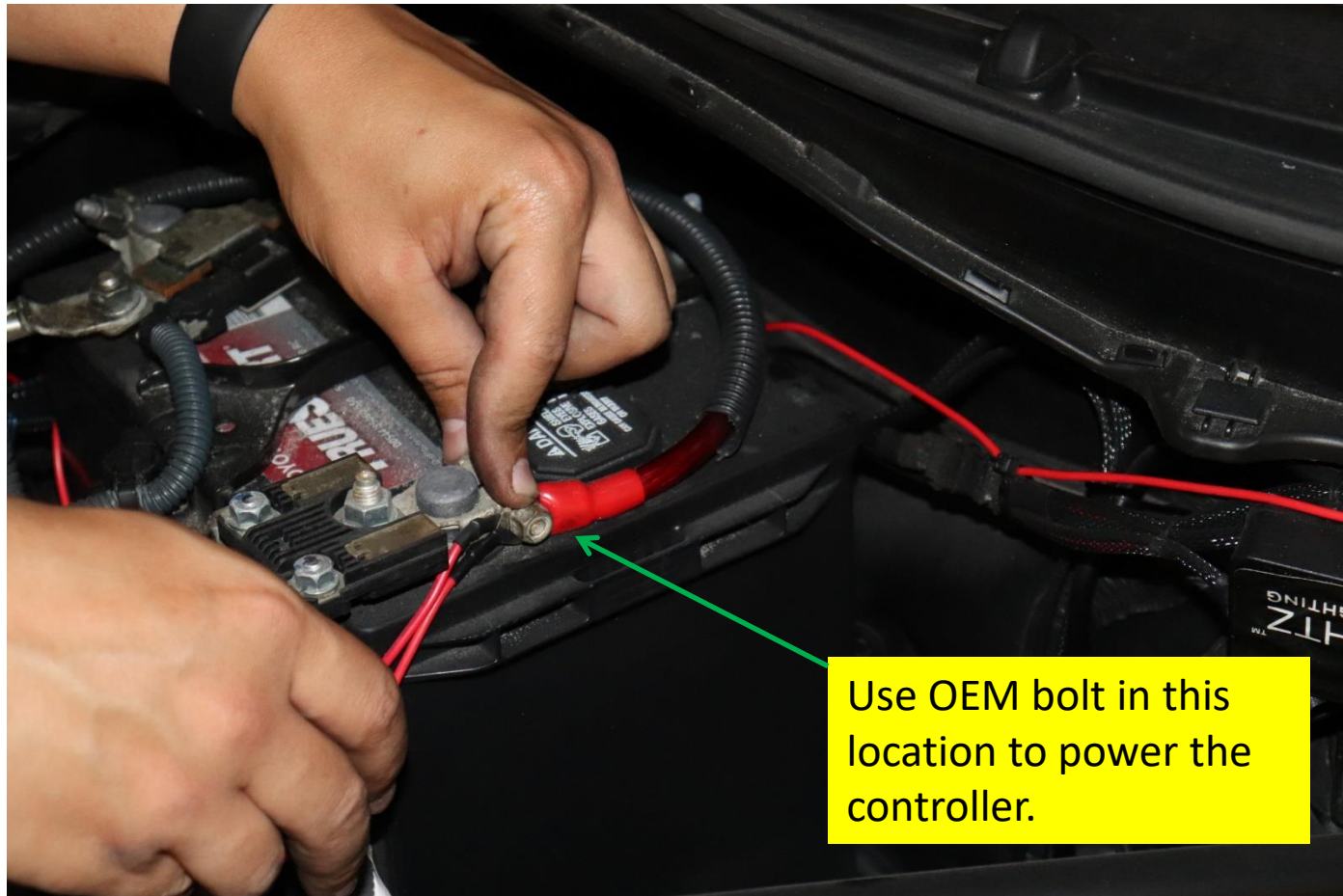
Start routing the second power wire towards the passenger side where the battery is located.



Route the main power wire back around the battery and up through this location. Zip tie the excess and tuck away.

LIT KIT Wiring

Power the unit using the OEM fastener as shown.
Re-install the bumper the same way it was removed.



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

Play around with the app and be sure to share pictures with us for a chance to be featured!

