



**2022+ Subaru WRX BIG MOUTH LIT  
KIT Ram Air Installation Guide**

## 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 button head screw	2
M6 x 20mm cap screw	2
6mm large washer	2
#8 x 1/2" round head screw	1
#6 x 1/2" screw	2
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	2



## 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 Clips	2
M6 Lock Nut	2
Assembled LIT Flare	1



**If you already own the Velossa Tech GEN 4 2022 Subaru WRX BIG MOUTH, skip to slide 21 to see install and wiring instructions.**



# VELOSSA TECH

## Remove Stock Components

It is best to Google “How to remove bumper” for your particular trim. Once the bumper has been removed, start by removing the stock air duct by removing the two pop-up clips in the indicated locations.

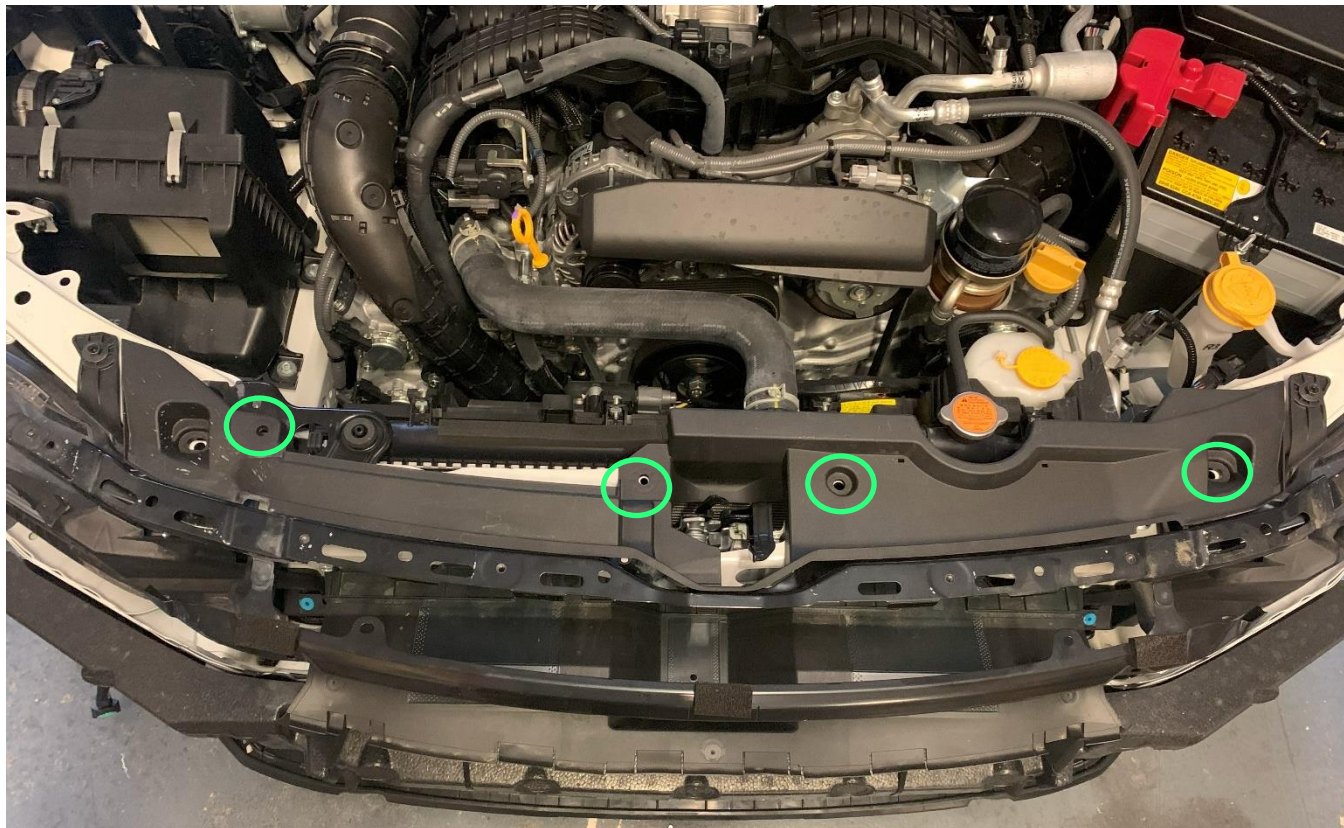




# VELOSSA TECH

## Remove Stock Components

Remove the plastic shroud shown below by removing the clips in the indicated locations. This plastic shroud will need minor modifications (which are discussed later in the manual) in order to reinstall. Put aside for now.





# VELOSSA TECH

## Remove Stock Components

Remove the plastic radiator shroud indicated below. This radiator shroud will also need modifications if you desire to reinstall, but those instructions are not laid out in this manual. Put aside or store away.



## Assemble Big Mouth Components

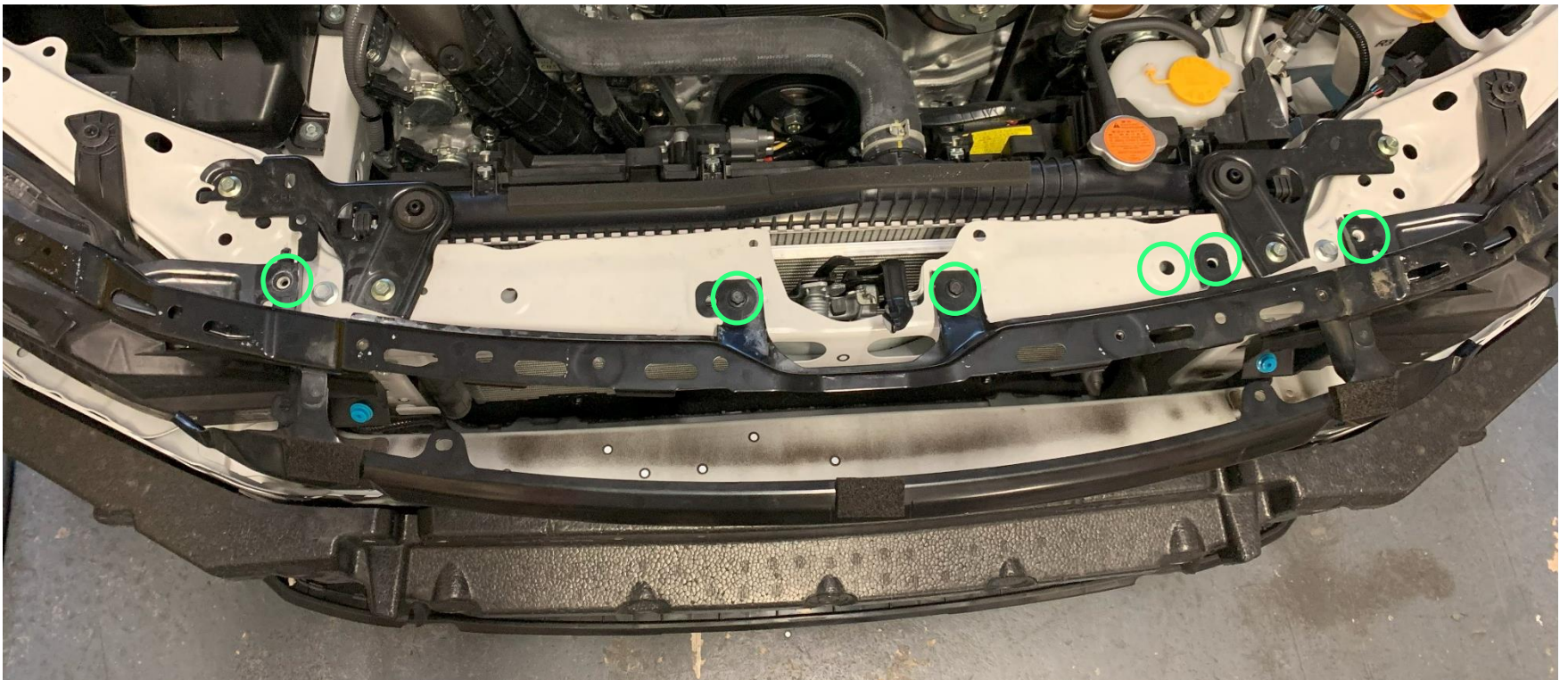
If not done yet, use the #6 x ½" screws supplied in the hardware kit to assemble these two pieces. This is the left side of the upper body.



The screws are being threaded directly into the plastic. **DO NOT OVERTIGHTEN.**

## Remove Stock Components

Undo the fasteners indicated below while trying to keep the frame piece in place. The frame piece does not need to be fully removed from the vehicle; it only needs to be tilted for the next part of the install.

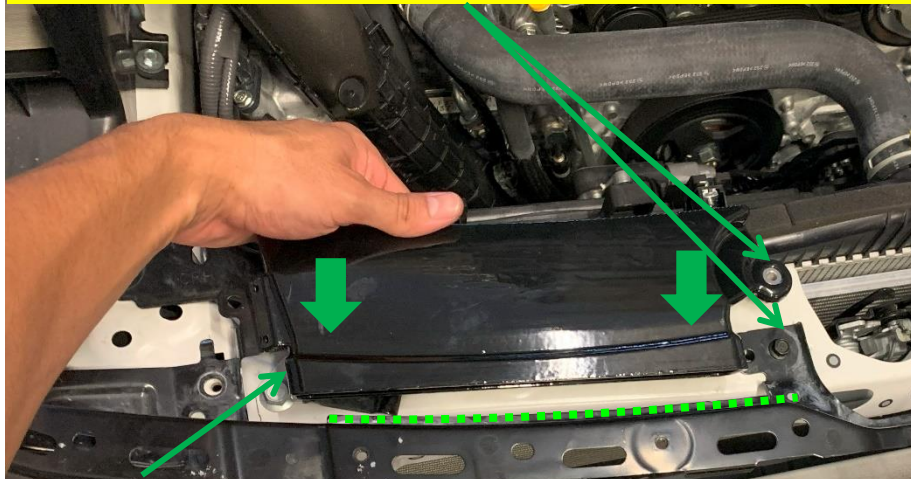




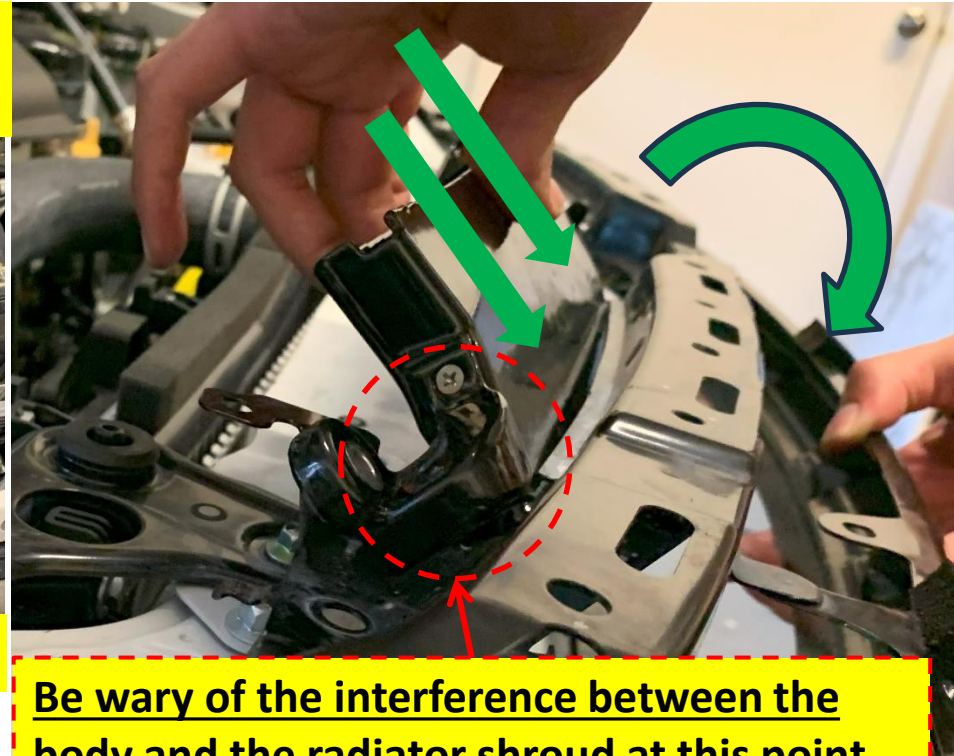
## Installing Big Mouth: Upper Body

While tilting the frame piece forward with one hand, use the other hand to slide the body into the opening until the indicated lip (image on left) is positioned beyond the thin edge of the frame piece (dotted line) and the holes between the body and the radiator support are aligned. Tilt the body and frame piece back once the body has been properly inserted.

Insert until these holes are aligned  
(disregard the bolt)



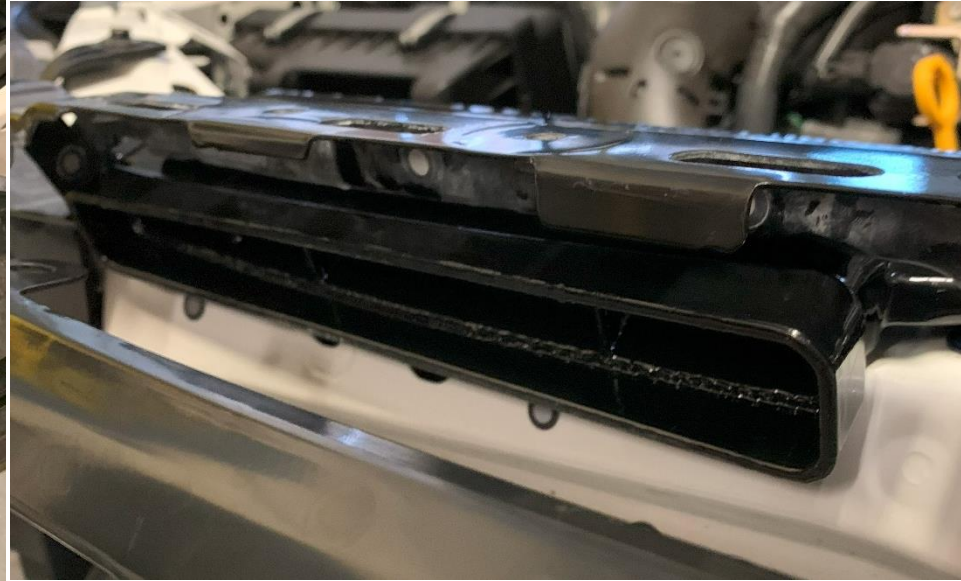
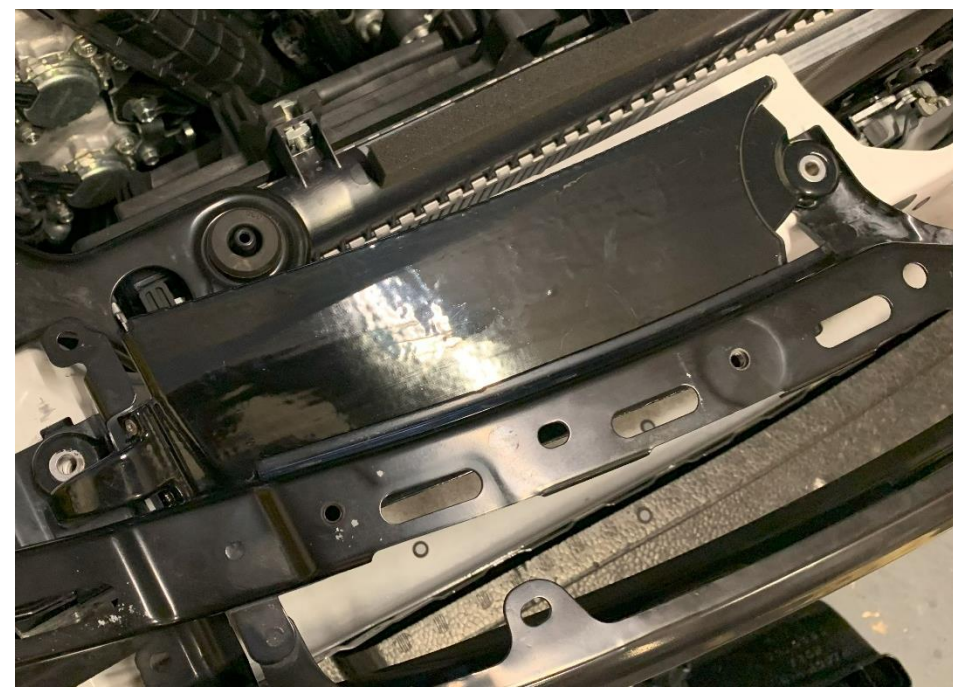
Lip must be fully inserted past dotted line



**Be wary of the interference between the body and the radiator shroud at this point**

## Installing Big Mouth: Upper Body

If the upper body was properly installed, it should appear as shown below. It should sit flat on the radiator support, should be free of interference and the holes should be aligned without the need for forced alignment.



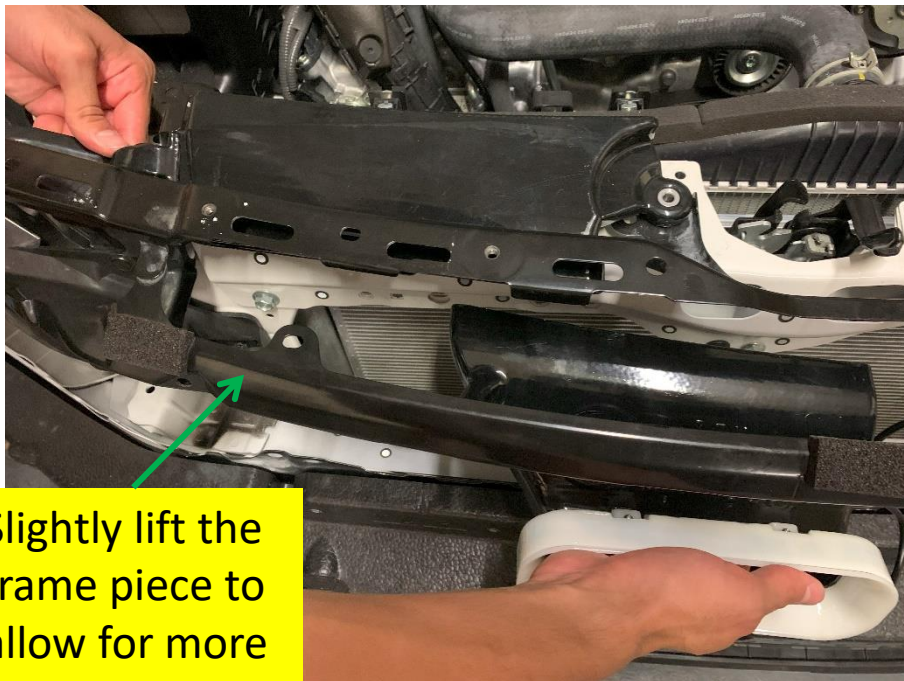
## Installing Big Mouth

Locate one of the supplied M6 x 25mm screws and thread it into the indicated hole about a ¼". It will be used just to keep the frame piece from falling for the next step of the install.



## Installing Big Mouth: Lower Body

Start by positioning the lower body to the right of the upper body and positioning the protruding arm in the crevice of the frame piece (image on right). Once in position, slide the body from right to left to try and get it to sit within the lip of the upper body. You may slightly lift the frame piece to provide more room. Avoid using excessive force.



Slightly lift the frame piece to allow for more room to navigate



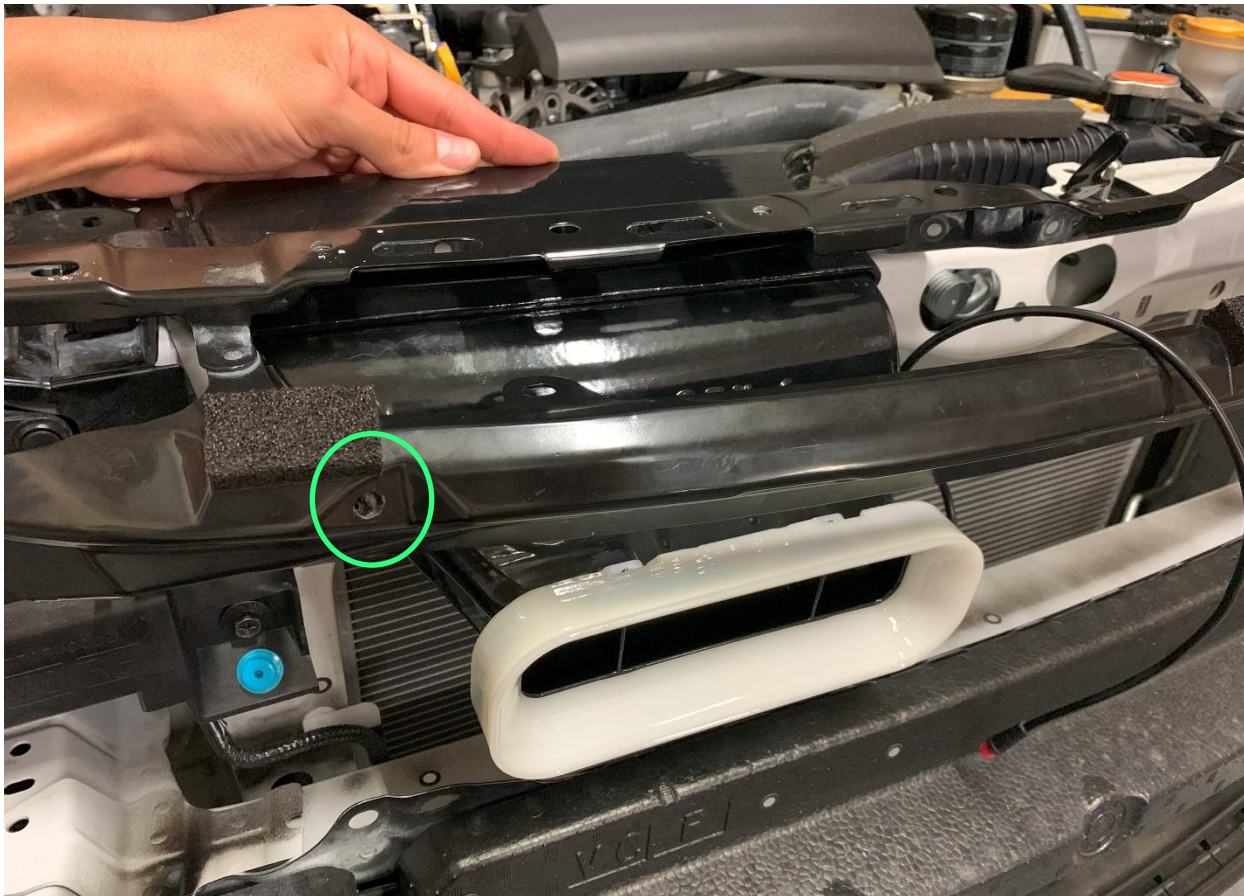
Keep the arm in the crevice as it slides from right to left



# VELOSSA TECH

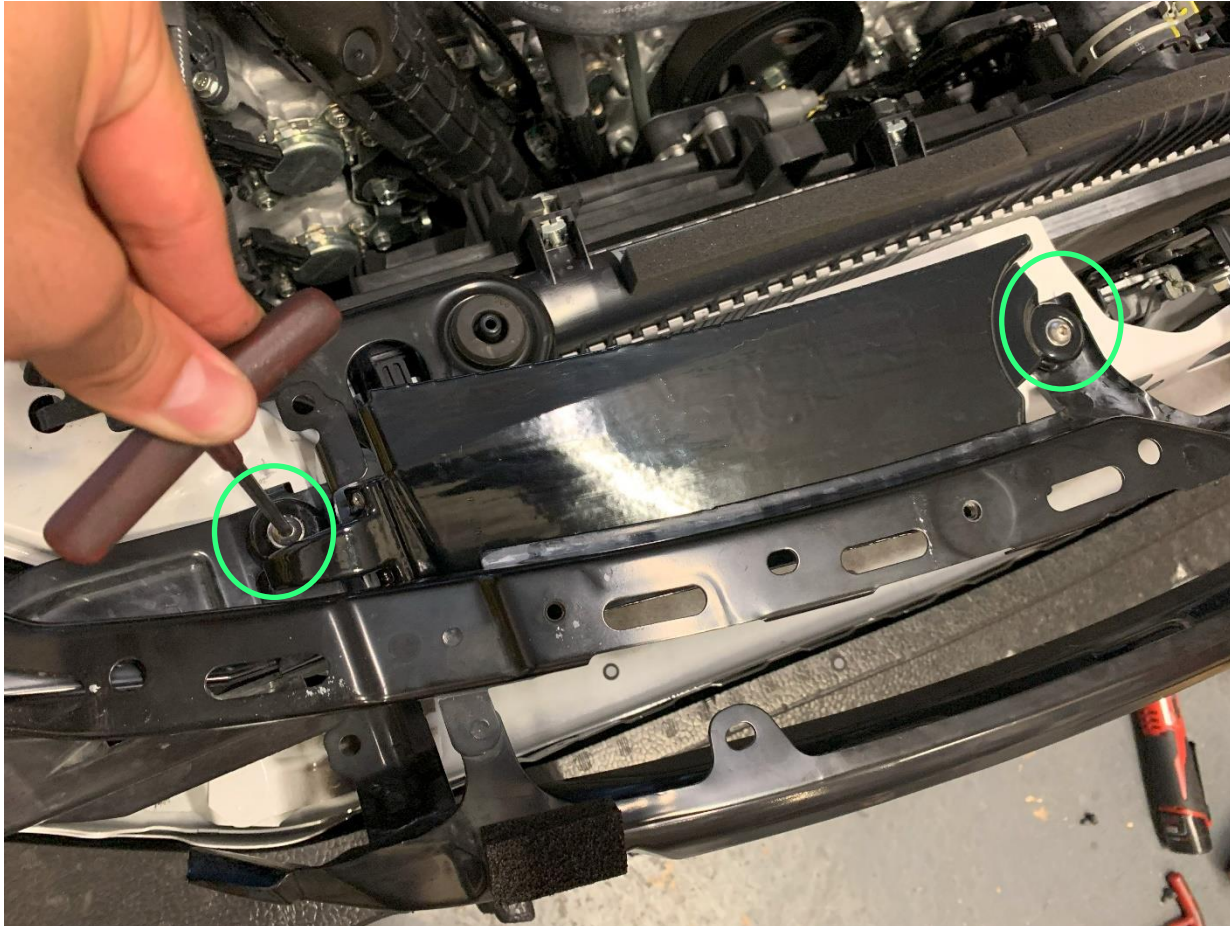
## Installing Big Mouth: Lower Body

The lower body is in position once it is fully seated within the upper body and the hole at the end of the protruding arm is visible through the indicated hole in the frame piece.



## Installing Big Mouth

Use the M6 x 25mm button head screws (no washers) to fasten the upper body to the radiator shroud. You may fully fasten the frame piece at this time.



## Installing Big Mouth

Use the supplied M6 x 20mm socket head cap screws and 6mm large washers to fasten the lower body to the radiator shroud. Washers go on the side of the screw's head.





# VELOSSA TECH

## Installing Big Mouth

Screw the #8 x 1/2" round head screw into the hole on the protruding arm of the lower body. **DO NOT OVERTIGHTEN.**





## Trimming Plastic Shroud

In order to reinstall the plastic shroud, some minor trimming will need to be done (left side) using a rotary tool such as a Dremel. Use the markings from the picture to estimate the cut that will need to be made. Use proper safety equipment and take the necessary precautions. If you are uncomfortable with this procedure, you can store the shroud away as it is mostly for aesthetic purposes. You may refer to the next slide for more visual context before cutting.



## Trimming Plastic Shroud

Once the cutout is made, use a deburring tool or metal file to clean up the edges.



## Trimming Plastic Shroud

Lastly, locate this section of the plastic shroud at the rear-left corner of the Big Mouth upper body. Use the rotary tool to trim off the indicated area. Deburr and reinstall the plastic shroud.

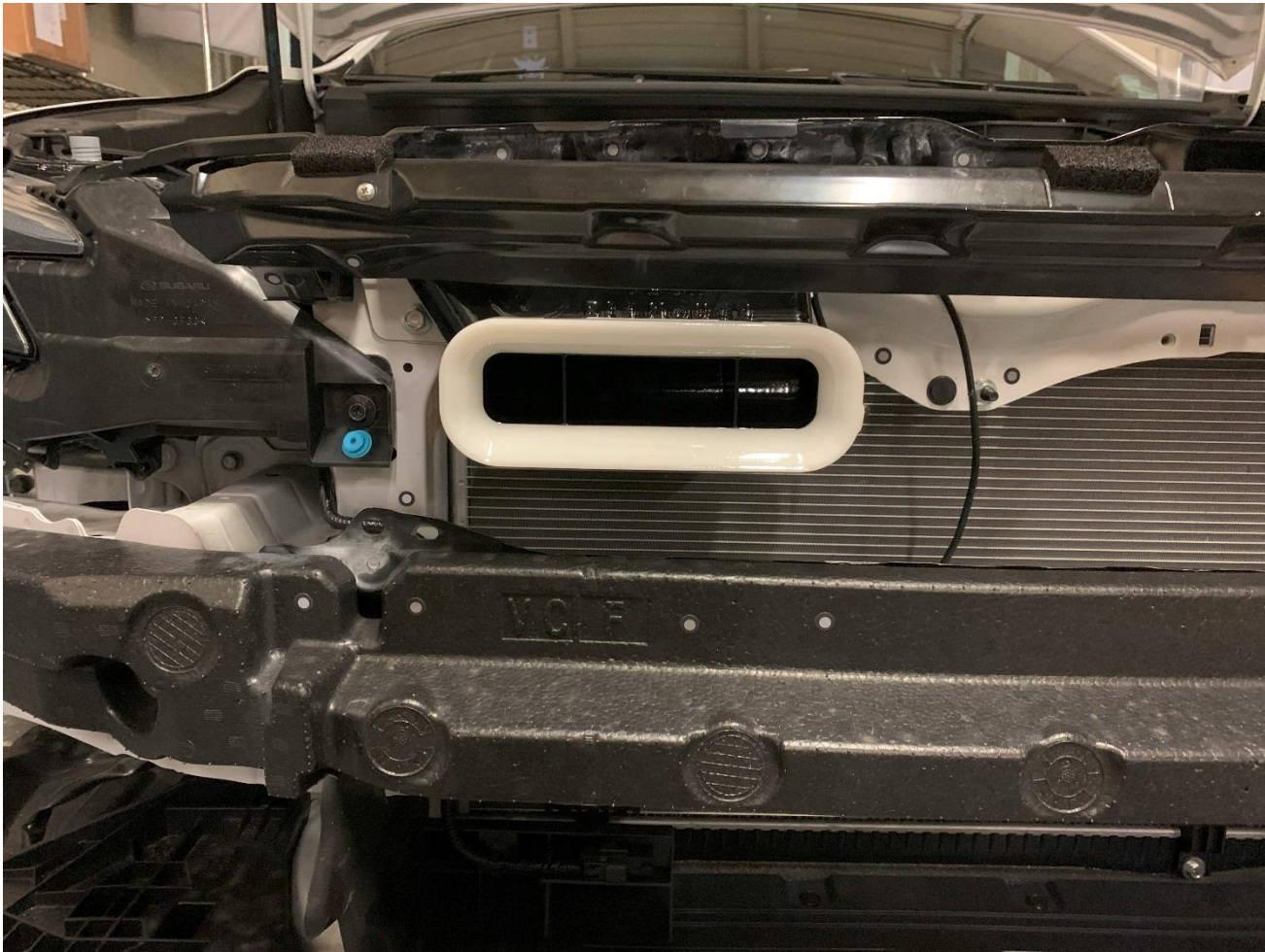




# VELOSSA TECH

## Finalizing Big Mouth Install

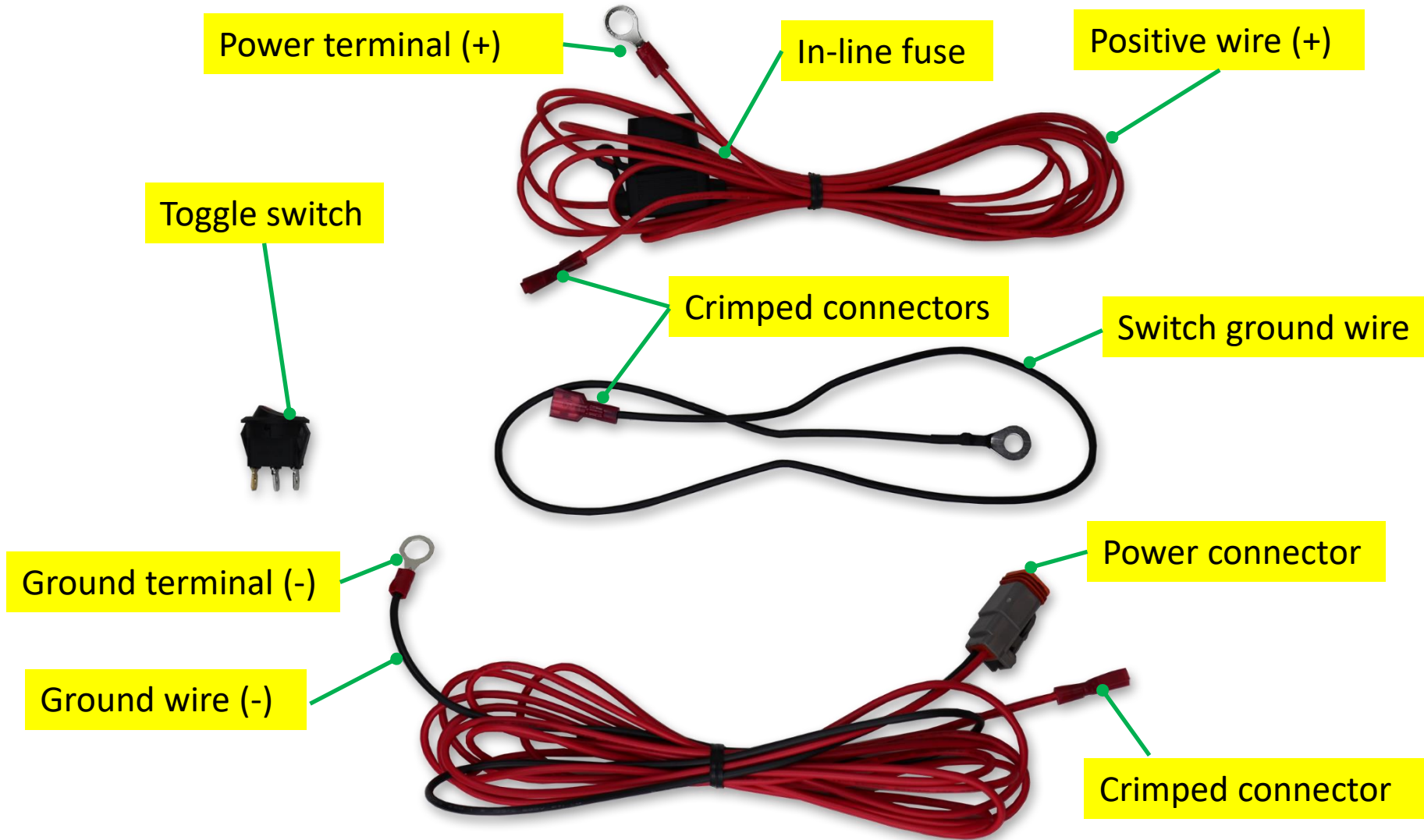
Ensure all the screws are tight and that the Big Mouth feels secure and free of interference before moving on to wiring the Lit Kit.





# VELOSSA TECH

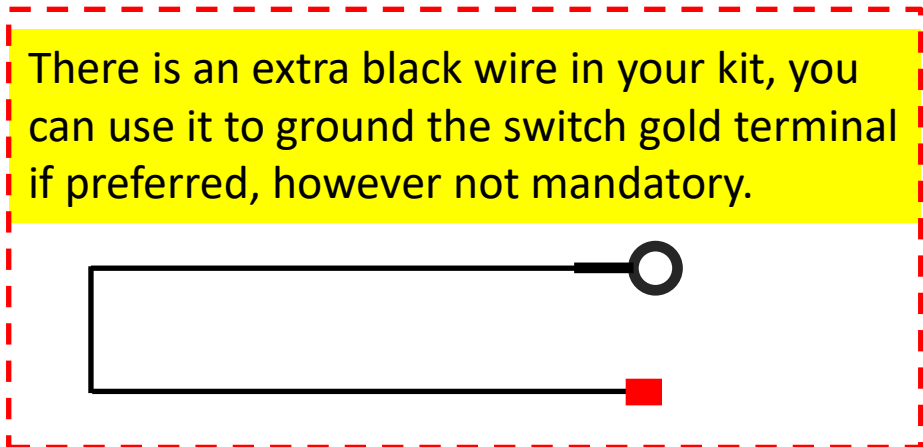
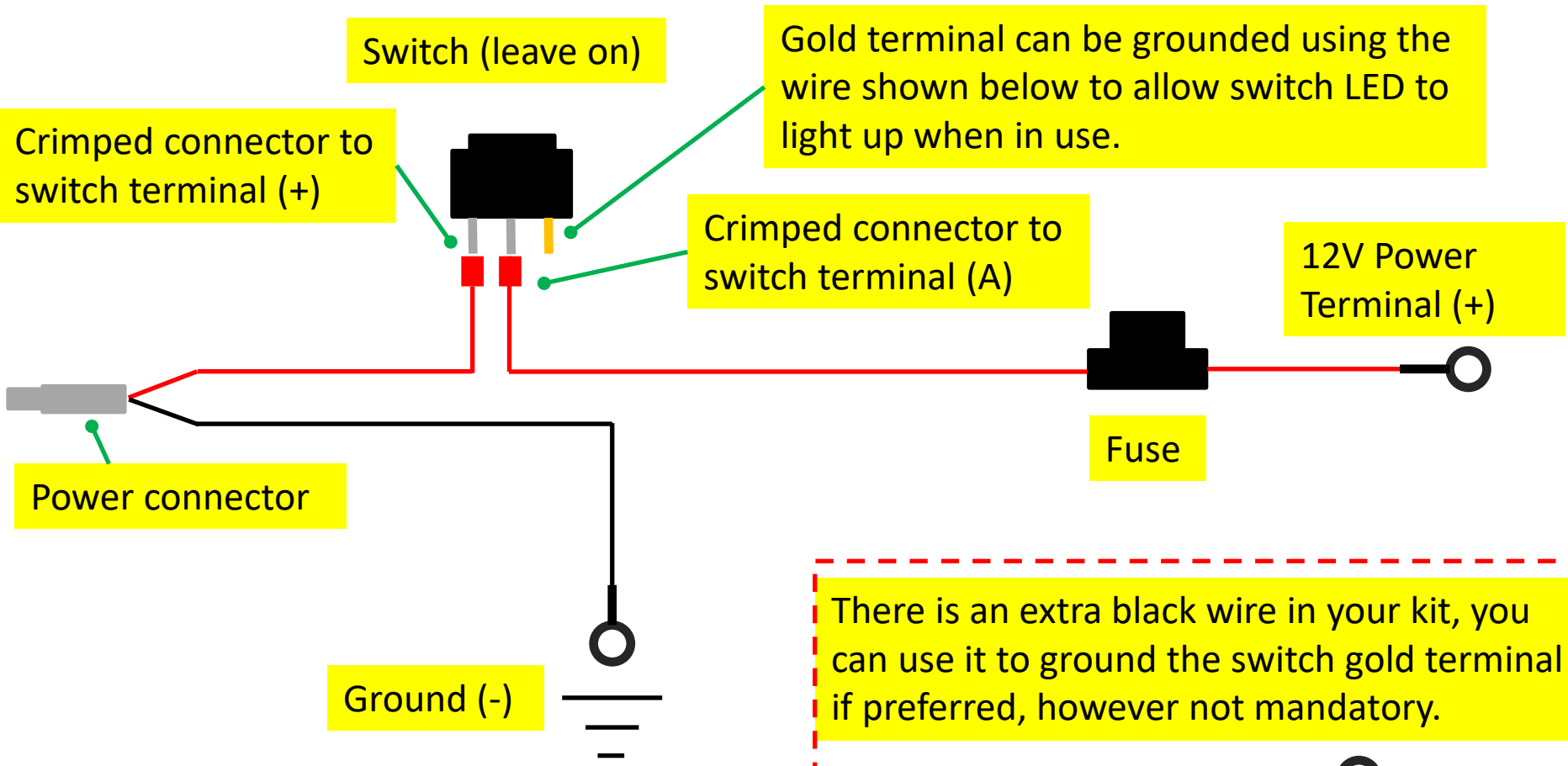
## Wiring Harness





# VELOSSA TECH

## Wiring Harness Schematic



## Wire Routing

Drill a hole through the plastic shroud at this point to allow the LED cable to enter the engine bay. Start with a pilot hole and size up to 3/8" drill bit.

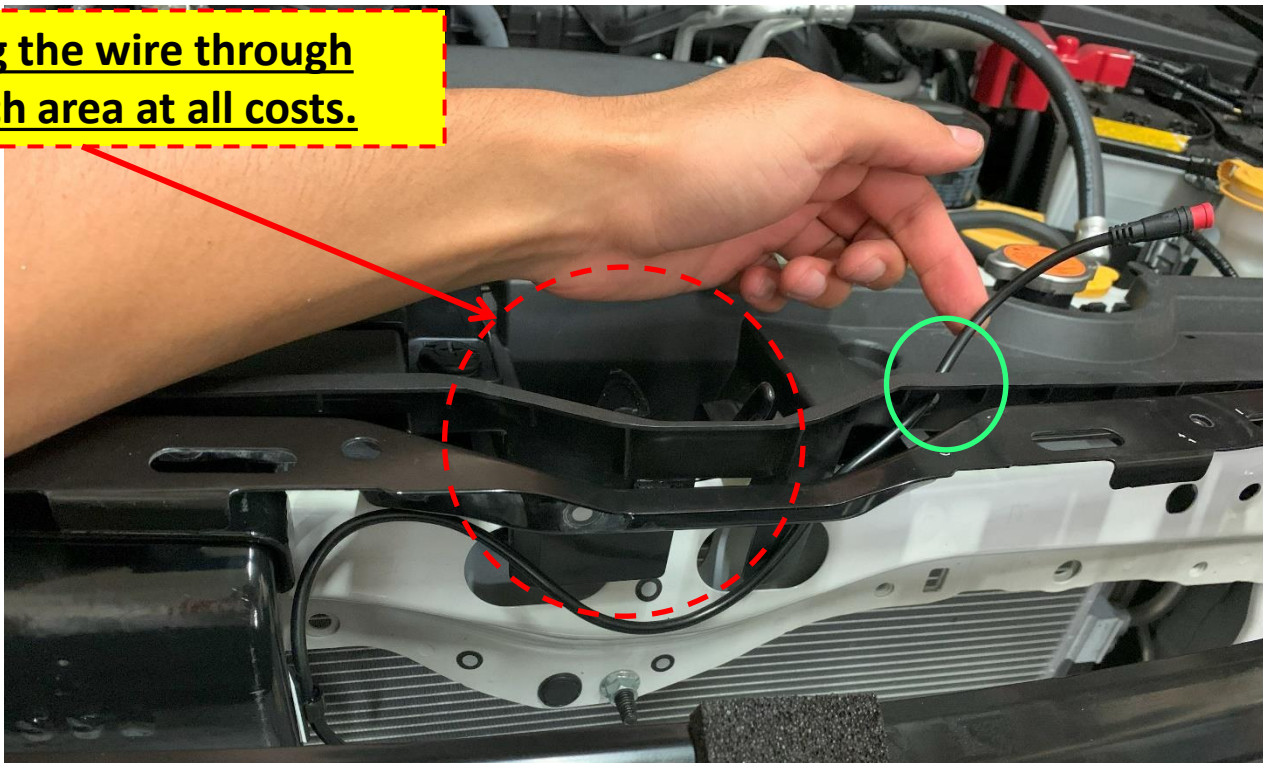


**Be careful of surrounding components**

## Wire Routing

Route the LED cable through the hole. **DO NOT ROUTE THE WIRE THROUGH THE HOOD LATCH AREA.** Doing so can result in damage to the LED cable and inability to open and close your hood.

**Avoid routing the wire through the hood latch area at all costs.**

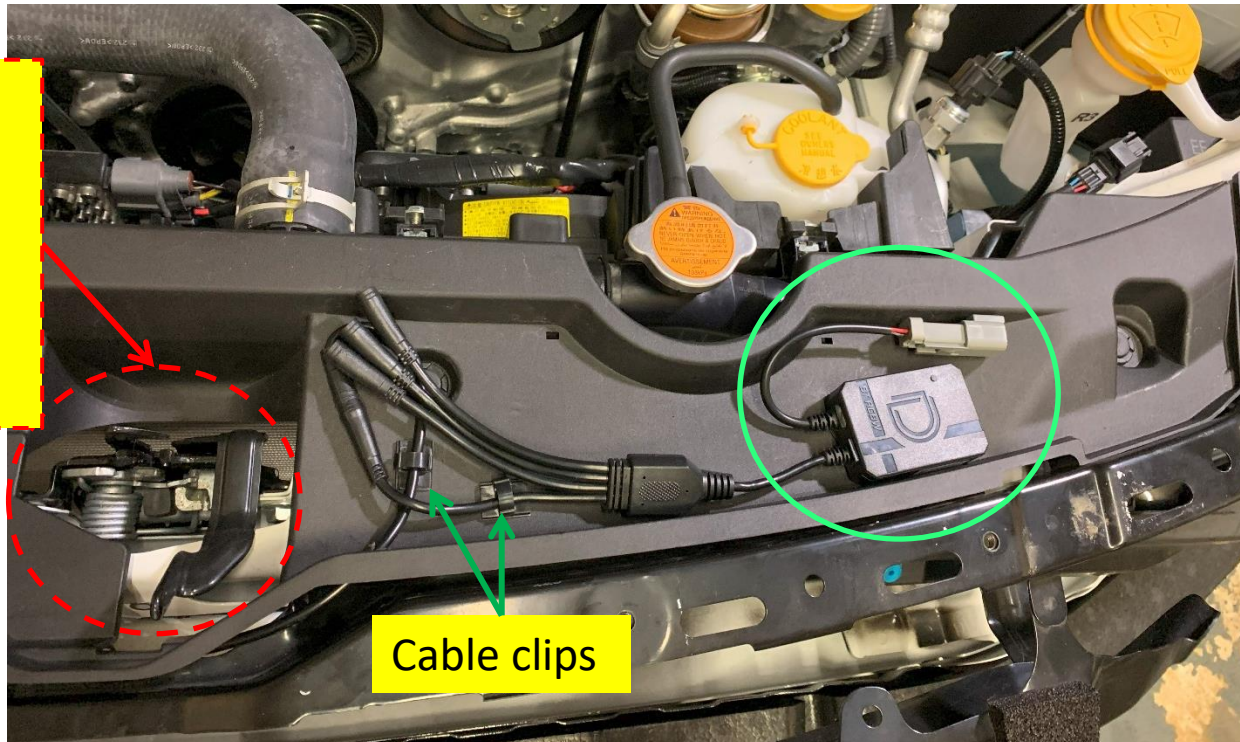




## Wire Routing

Clean the shroud where the Diode Dynamics controller will be adhered. Use the supplied double-sided tape to adhere the controller to the indicated spot (take note of the controller orientation). Connect the LED cable to one of the 4 controller M8 ports (does not matter which one). Lastly, use the supplied cable clips to manage the cables as such to prevent wire strain and avoid them reaching into the hood latch area. Use high-strength glue to ensure that the cables clips do not come undone over time.

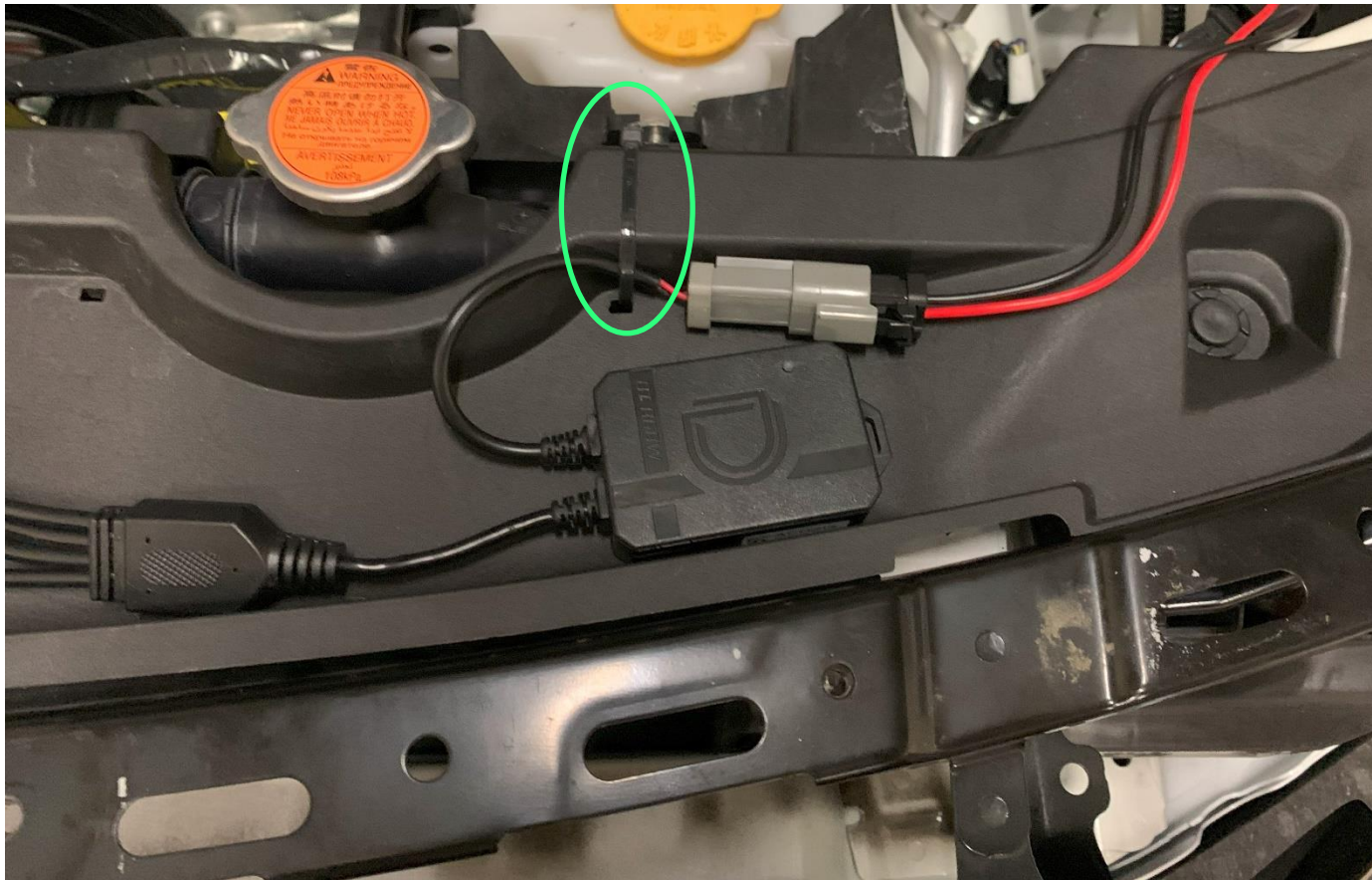
**Avoid routing the wire through the hood latch area at all costs.**



Cable clips

## Wire Routing

Connect the pigtail connectors and use one of the supplied zip ties to secure the Diode Dynamics controller to the plastic shroud.

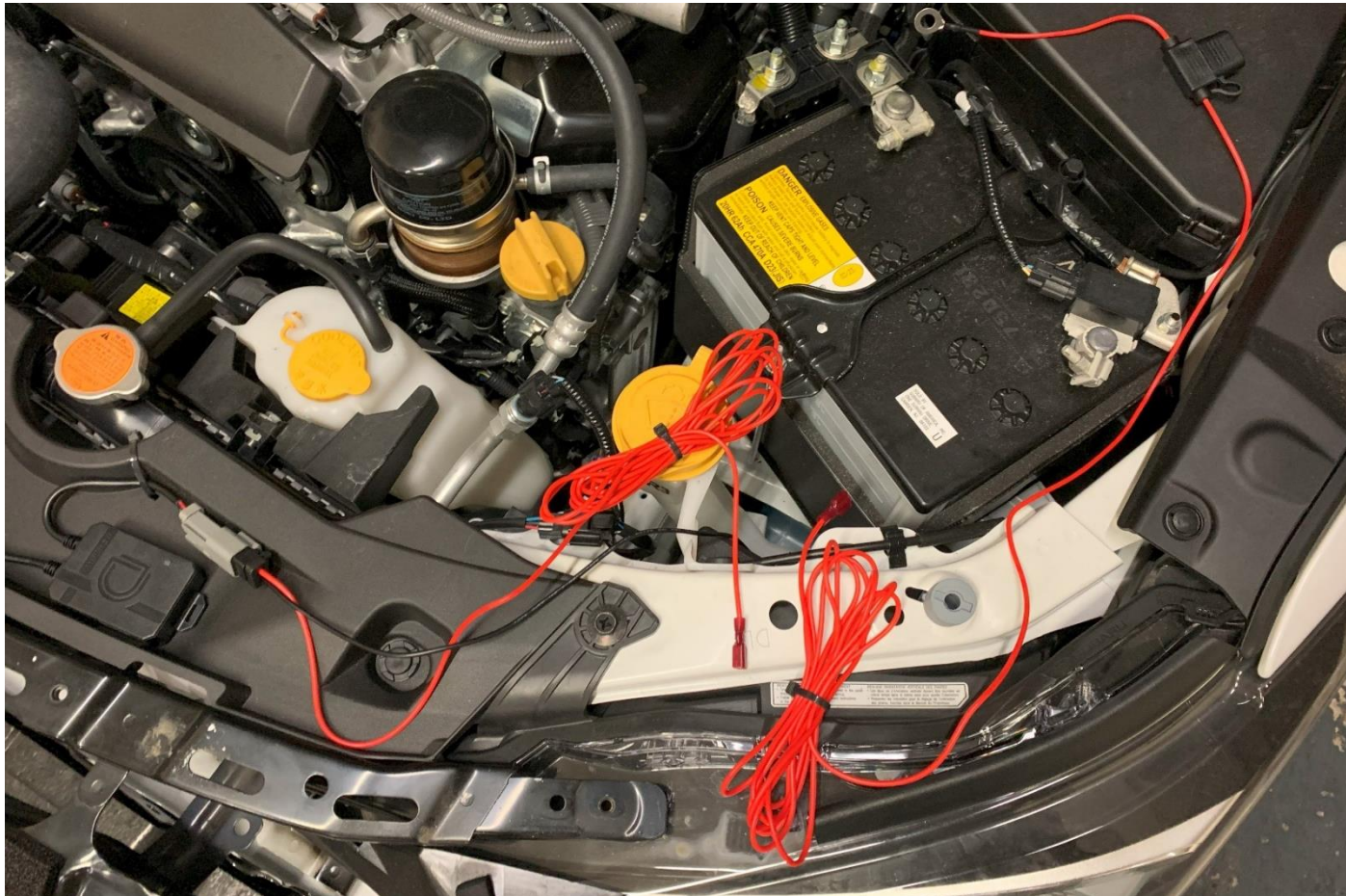




# VELOSSA TECH

## Wire Routing

Bundle the power wires as such. For the positive wire with the in-line fuse, put aside around 20" of wire to continue routing along the perimeter of battery.

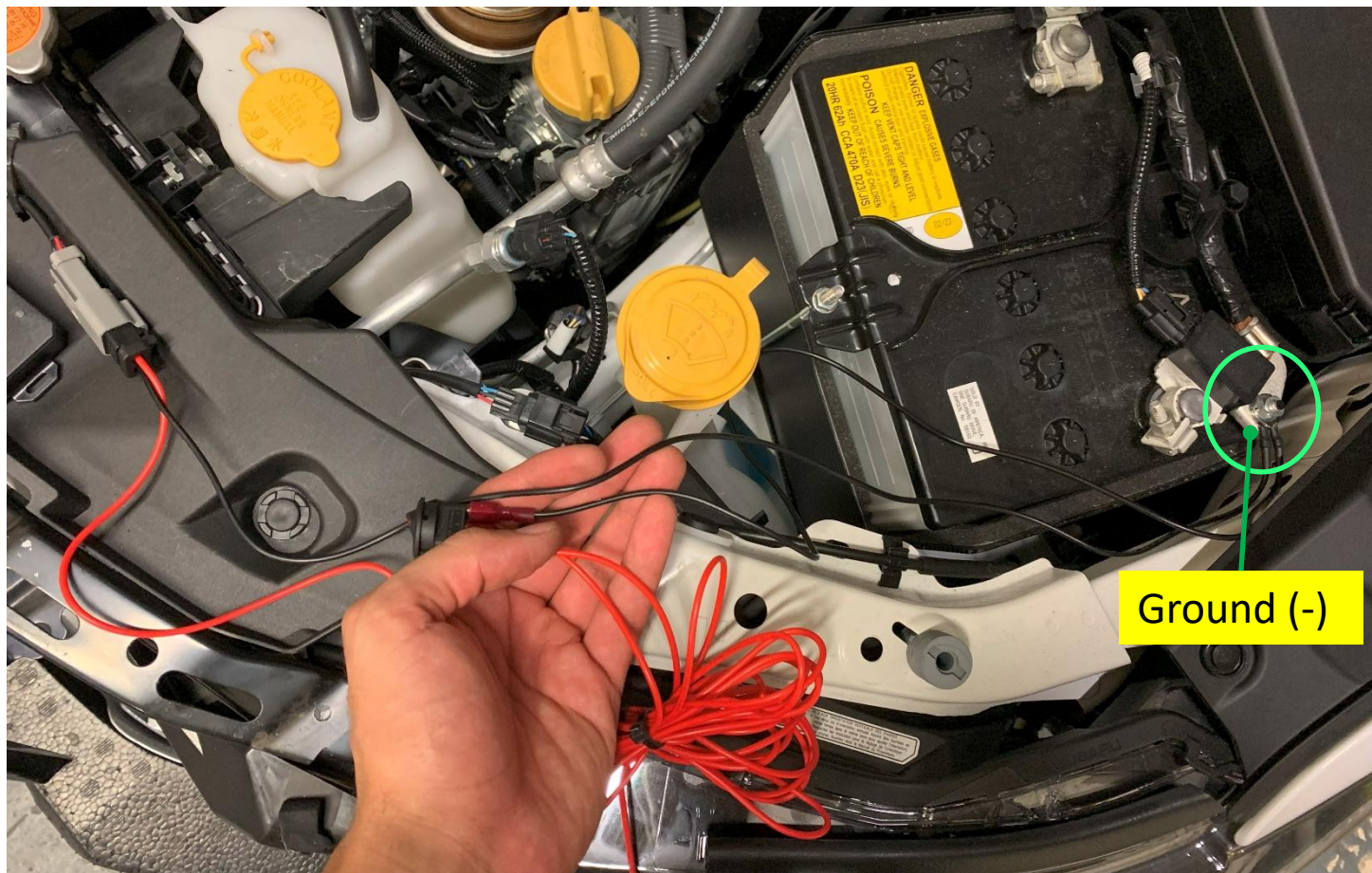




# VELOSSA TECH

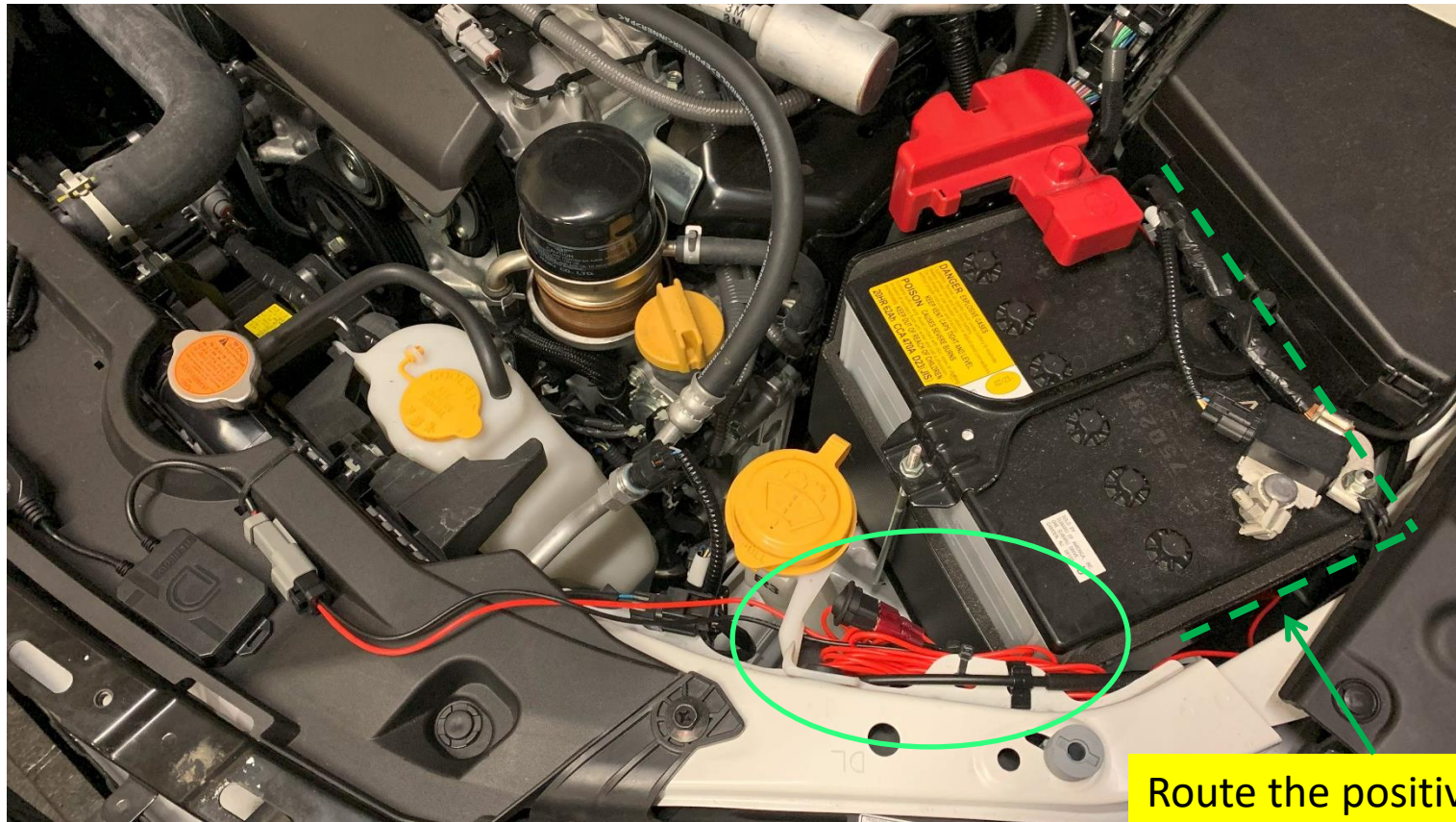
## Connect the Switch + Ground

Connect the switch in accordance with the wiring harness schematic and ground both the wires at the indicated location.



## Wire Routing

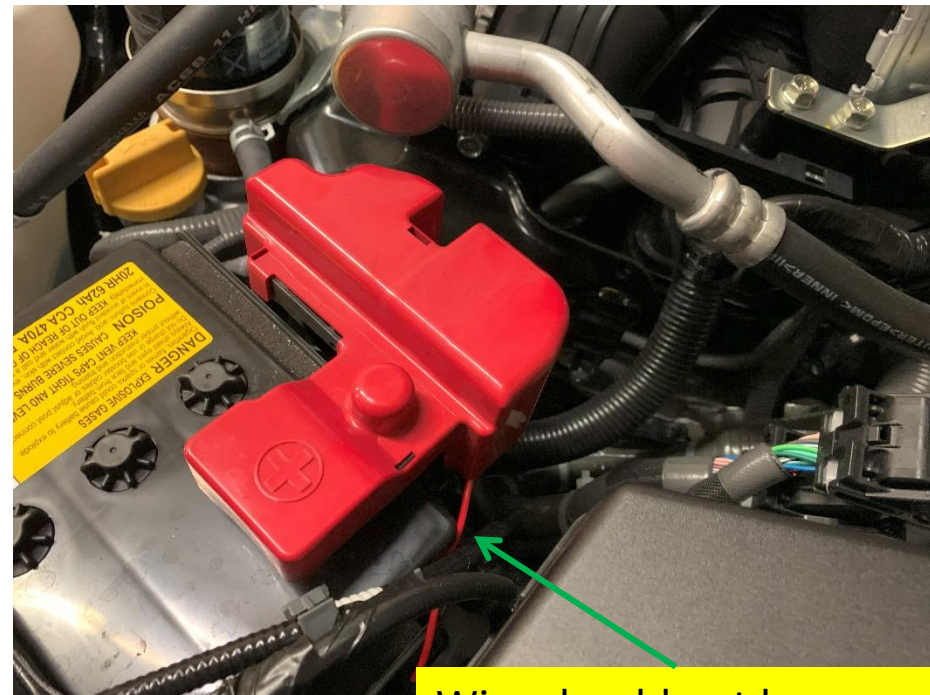
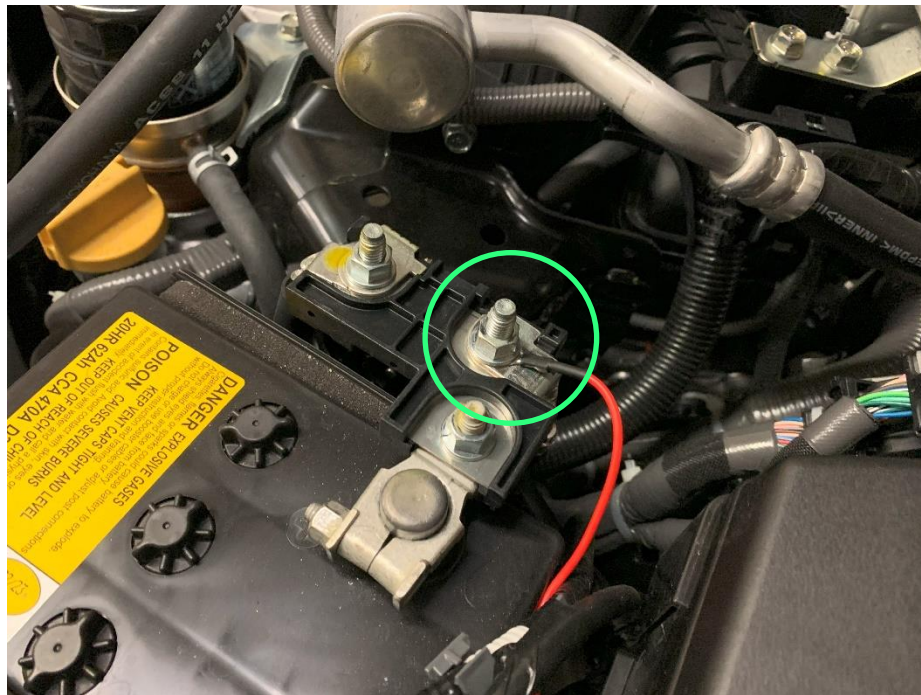
Organize the bundles of wire and switch as such and route the leftover positive wire along the perimeter of the battery. Use zip ties to maintain clean cable management.



Route the positive wire along perimeter

## Wire Routing

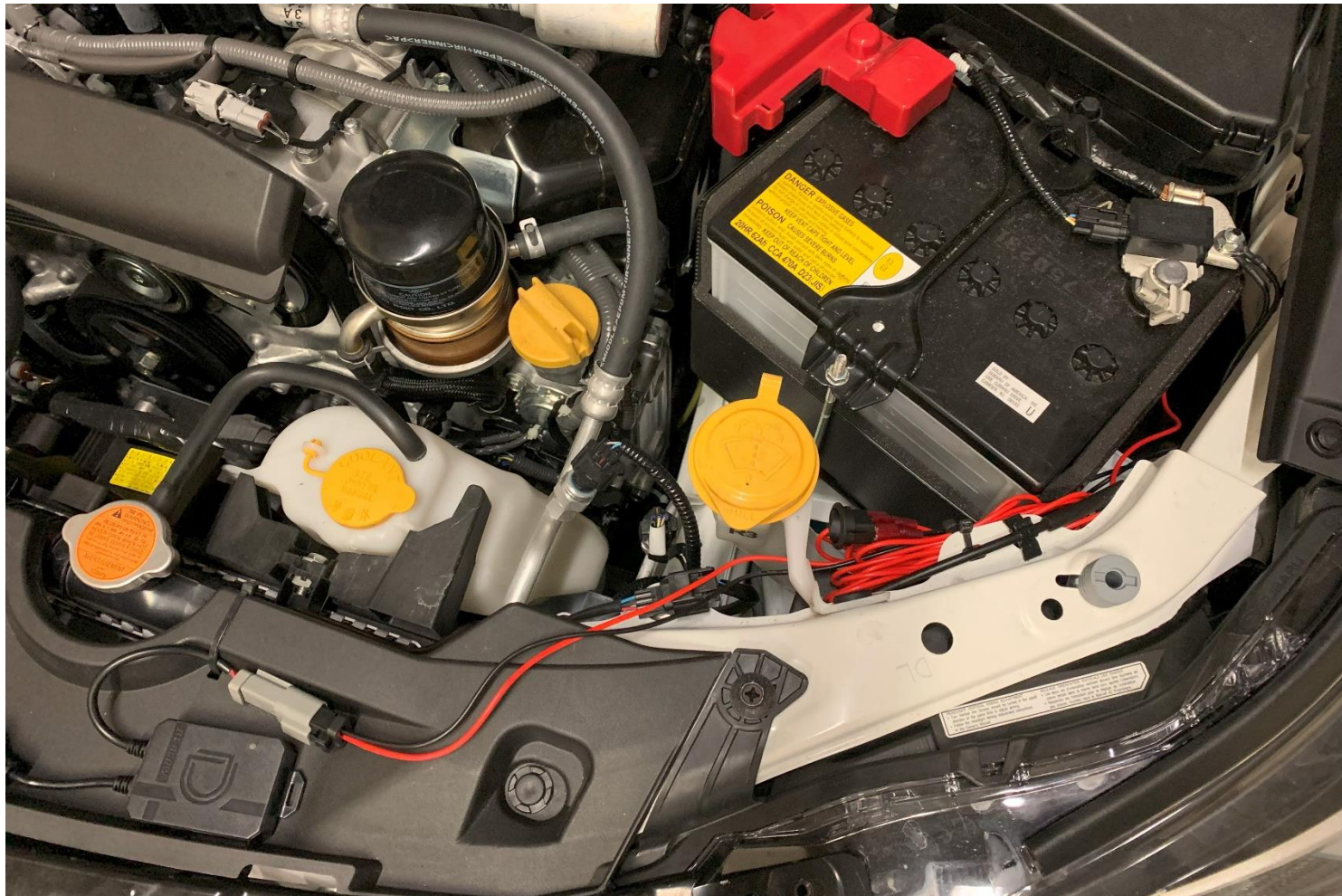
Connect the positive wire to the battery (take note of the orientation). Ensure that the terminal cover is not pinching or crushing the positive wire once reinstalled.



Wire should not be pinched or strained

## Power the Lit Kit

The final install should look as such with clean cable management and no wire strain. Turn the switch on.



## 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.





## Final Assembly Review

Review the install and make sure nothing is binding or causing any preload on any parts, ensure that screws are tight and that your hood can close properly.



Re-assemble the bumper the same way it was removed to complete installation.