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2020+ Toyota Supra BIG MOUTH LIT KIT Ram Air Intake Installation Guide

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Kit Contents (Full Kit)

Kit Contents	Qty
M5 x 20mm Cap Screw	2
M5 x 35mm Cap Screw	2
Silicone 90° Elbow	1
Cutout Template	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/ Crimped Connector	1
8" Zip Ties	8
M6 Lock Nut	1
Assembled LIT KIT BIG MOUTH	1
Dump Tube	1

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Kit Contents (LIT Flare Only)

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	1
M6 Lock Nut	1
Assembled LIT Flare	1

If you already own the GEN 4 Toyota Supra BIG MOUTH, skip ahead to slide 22 for wiring instructions

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Bumper Removal

Your best resource for bumper removal is to Google Search
“How to remove 2021 Supra Bumper”

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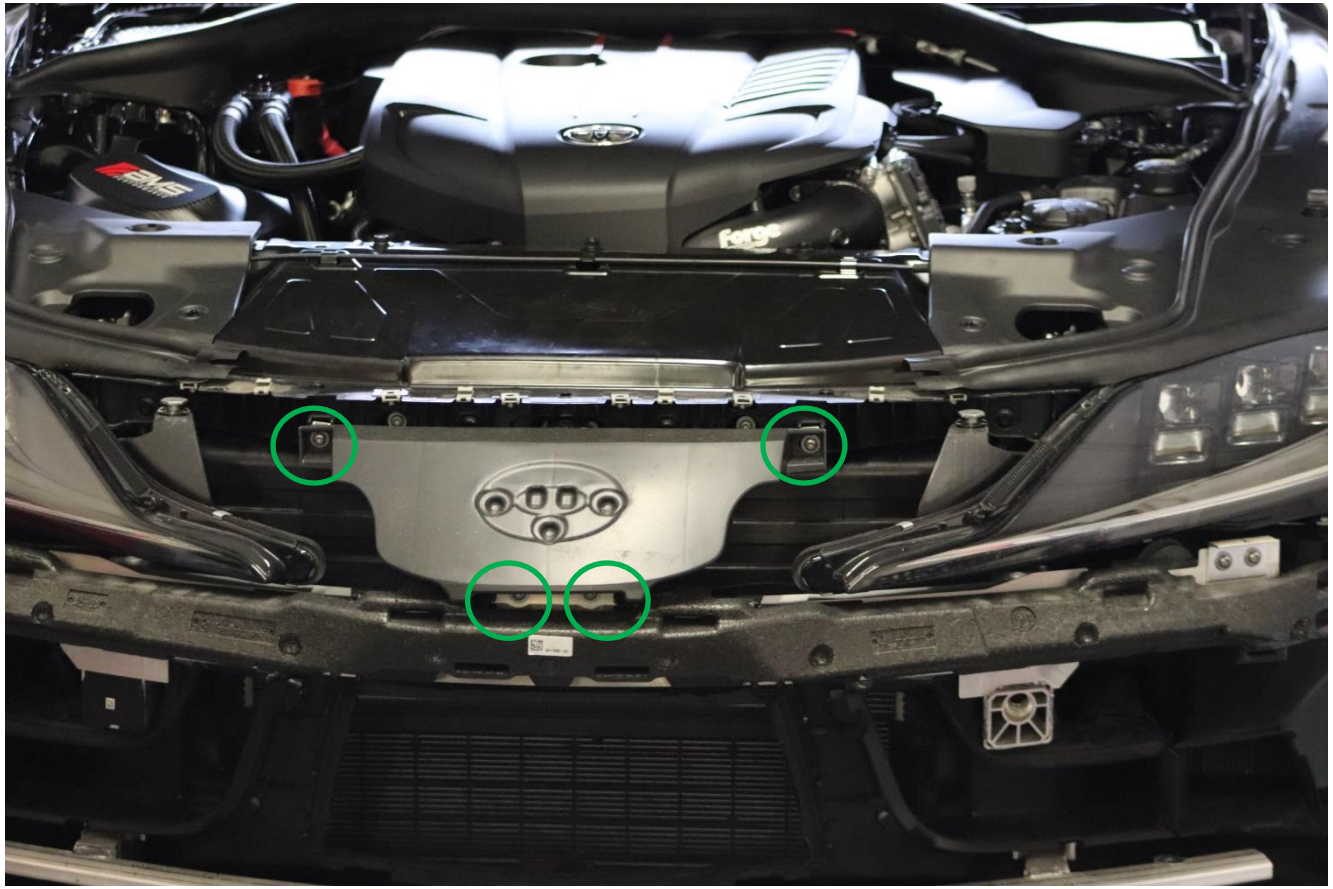
Shroud Trimming

Remove the plastic cover by unscrewing at these four locations.



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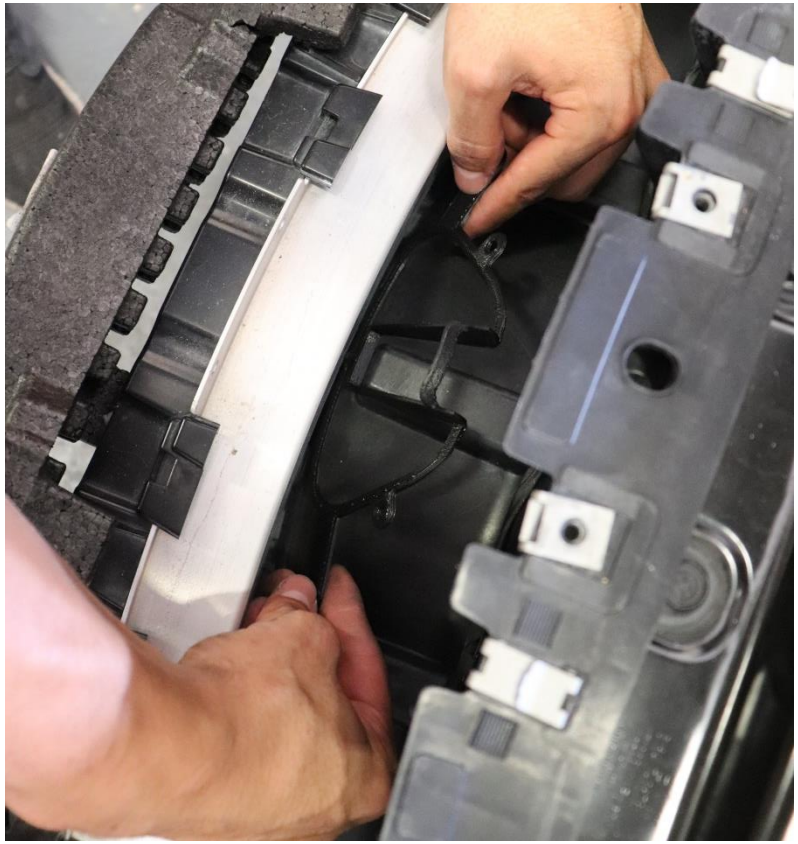
Shroud Trimming

Lay the supplied template as shown. It is critical that it sits in the correct position.



Ensure that the template is seated as shown, and make sure it is pushed as far **towards the rear of the car** as possible.

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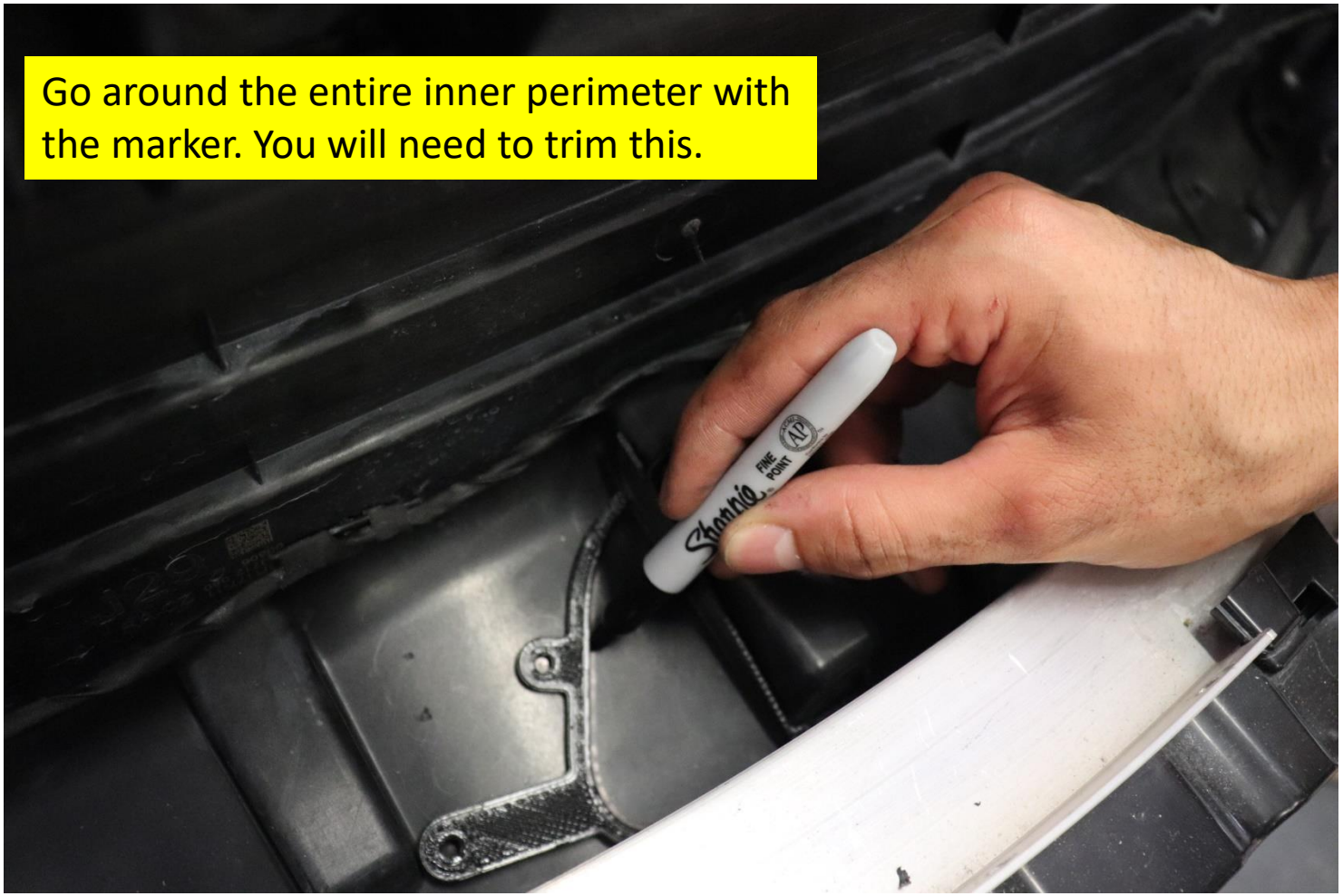
Shroud Trimming

Use a marker to mark the shroud against the INNER face of the template.



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Shroud Trimming

The final cuts will require you to cut across the plastic bulge here as shown, be careful not to cut the OEM wire loom on the top cut.

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Shroud Trimming

Next you will mark the four, hole locations.

Ensure the template doesn’t shift out of position during this process.

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Shroud Trimming

Drill the four marked holes using a ¼” drill bit.

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Shroud Trimming

Trim the marked line using a Dremel with router bit or a tool that you are comfortable with.

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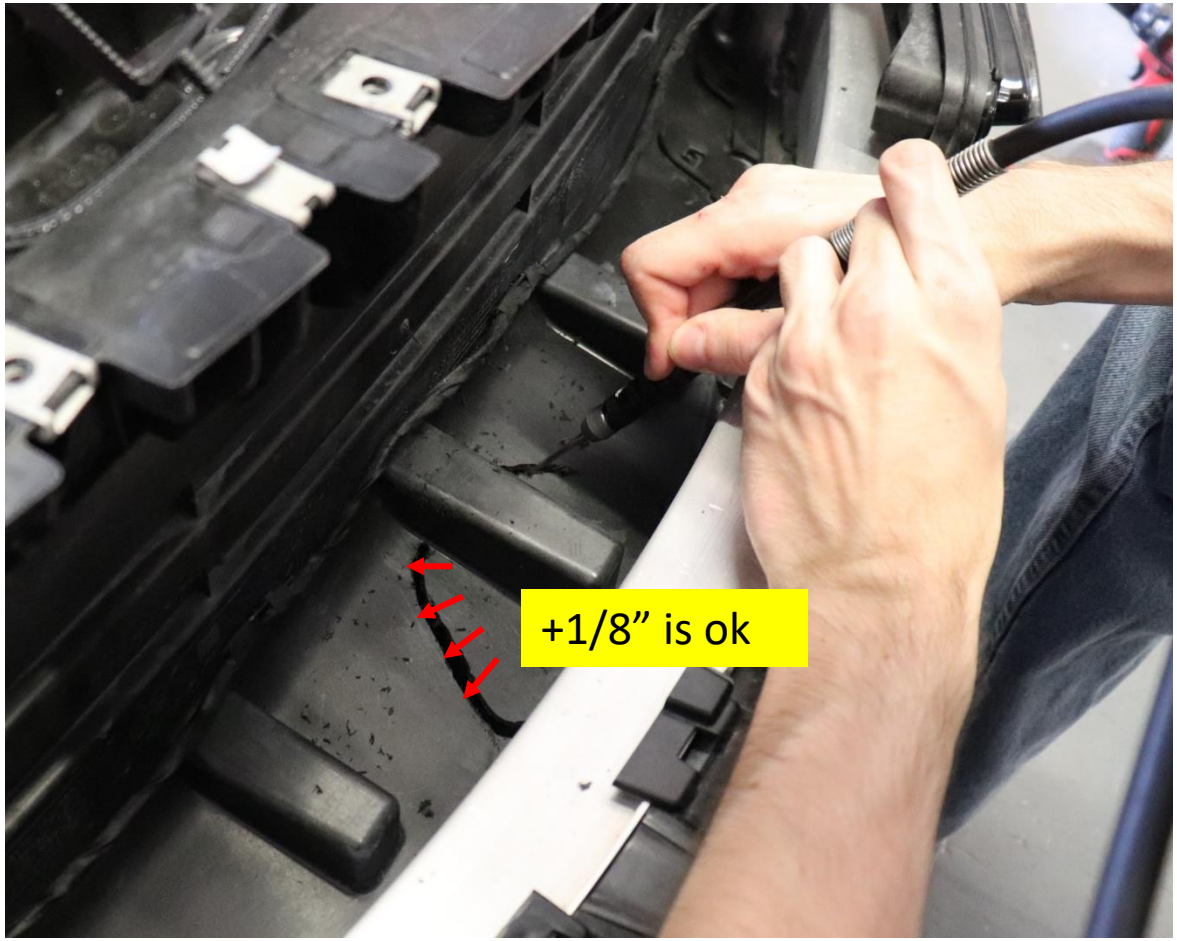
Shroud Trimming

You may be generous with the amount trimmed, this will help add clearance between the shroud and BIG MOUTH duct. You may trim up to 1/8” farther out from the line drawn.



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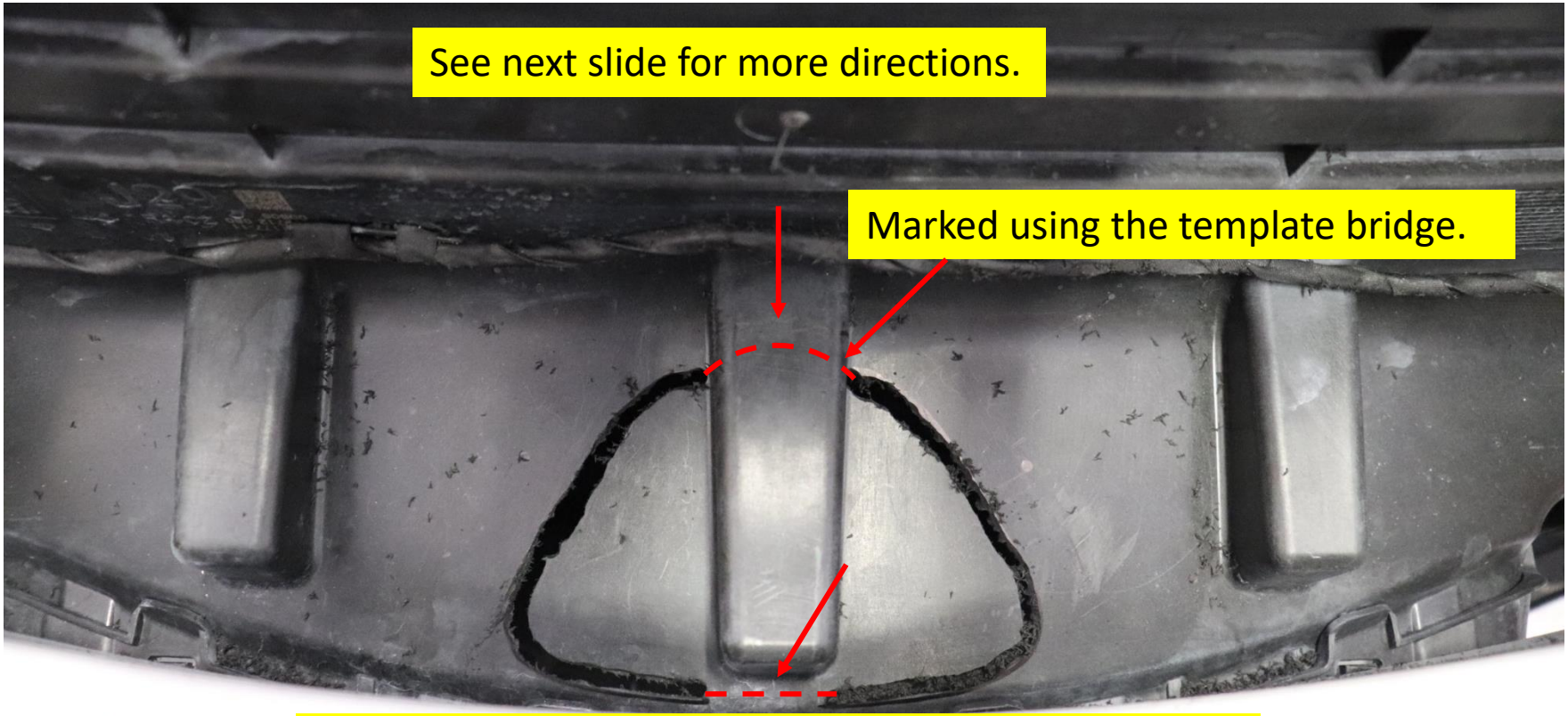
Shroud Trimming

The final cuts will require you to cut across the plastic bulge here as shown, be careful not to cut the OEM wire loom near this area.



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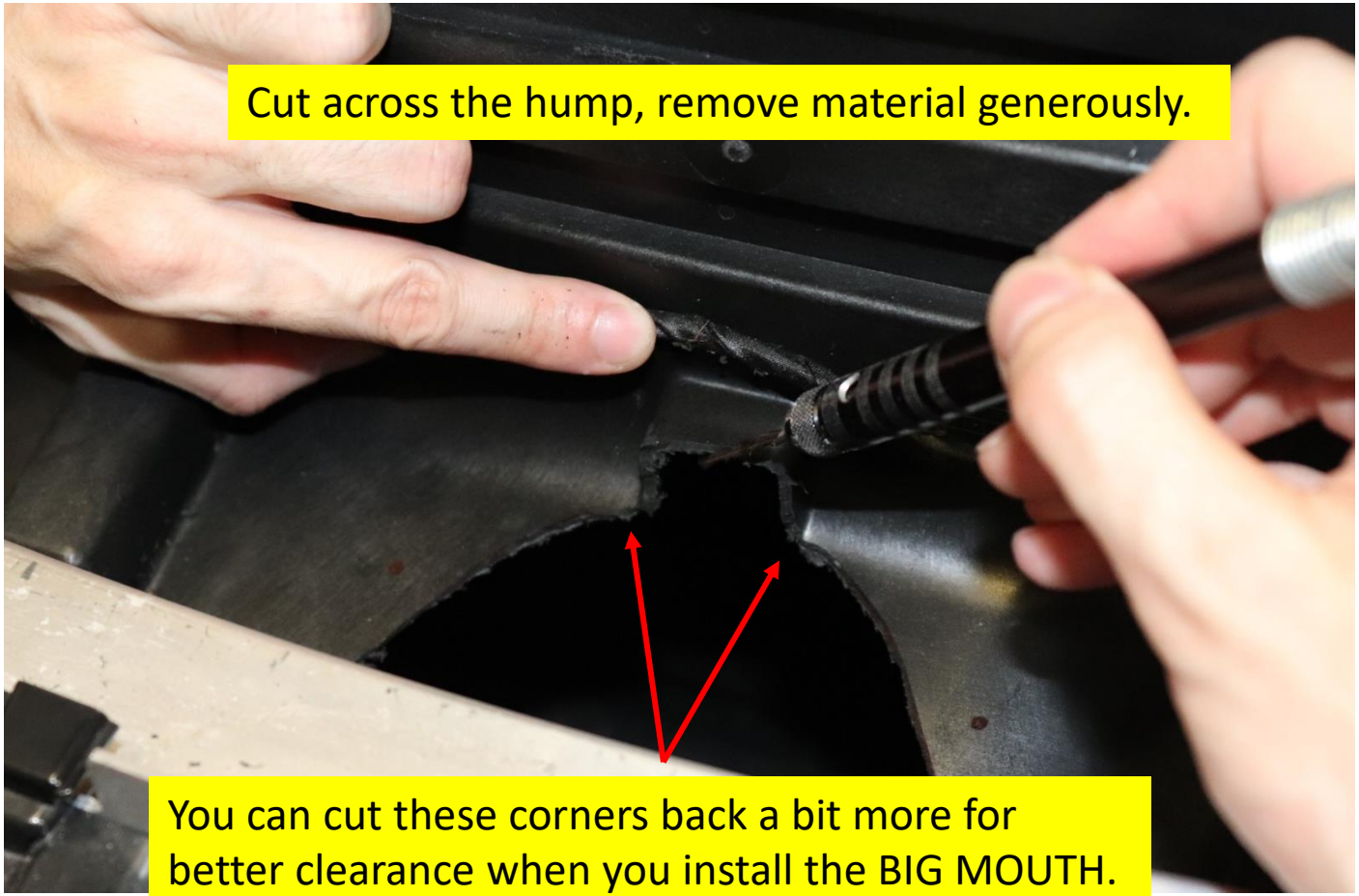
Shroud Trimming

When cutting across the bulge, be generous with removing material.



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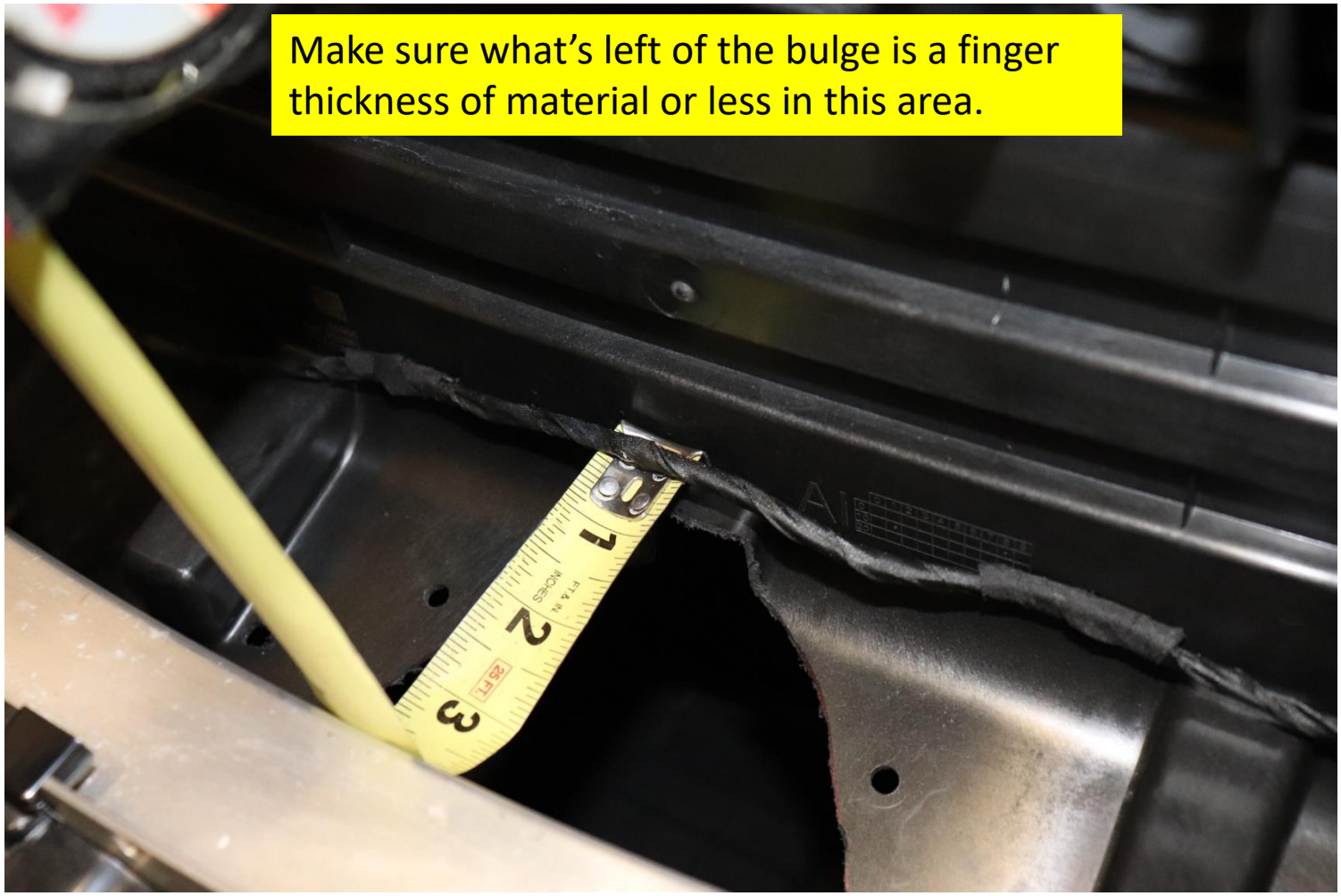
Shroud Trimming

Use a tape measure, you should have ½” of material or less left as shown.



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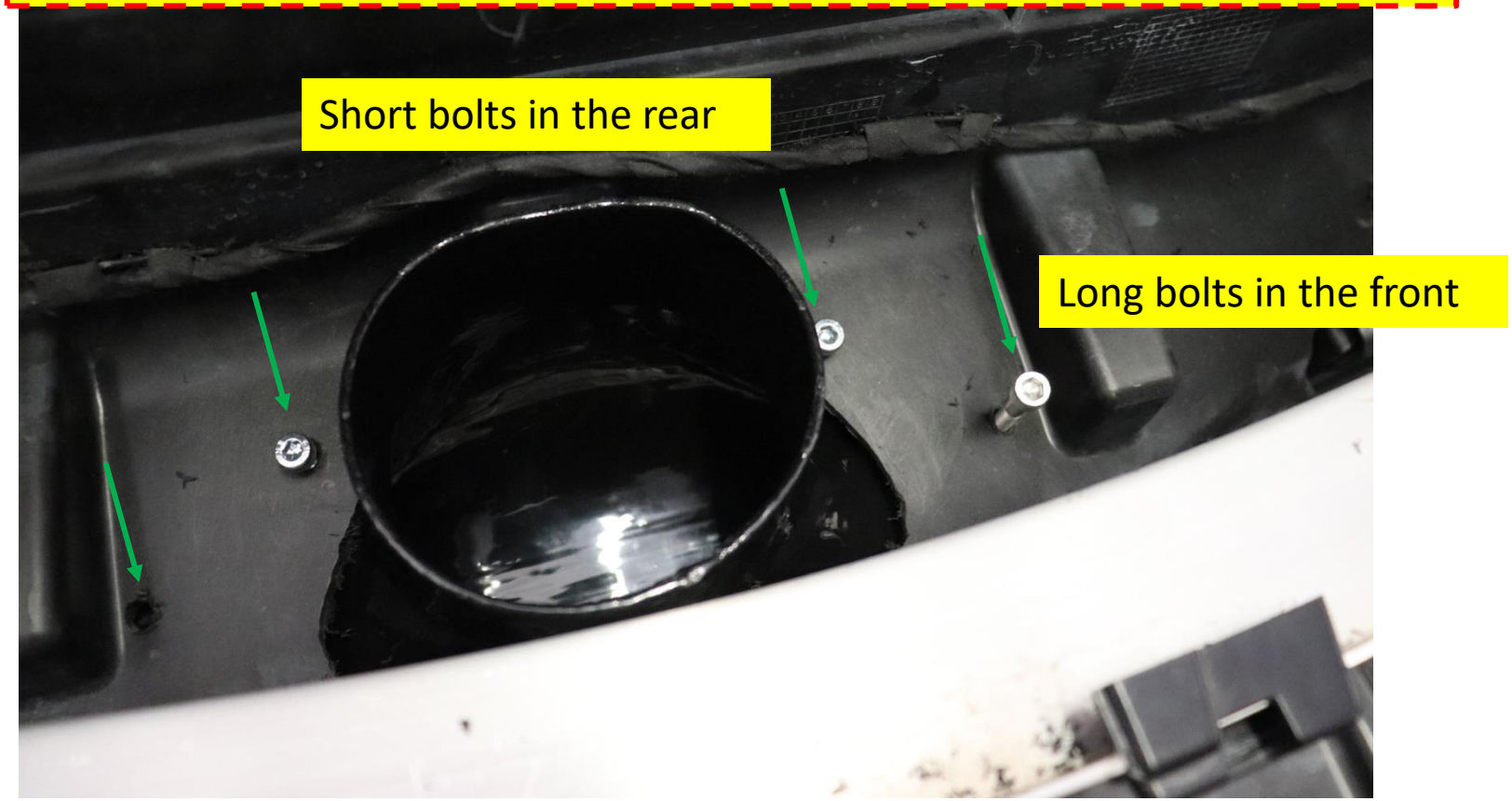
BIG MOUTH Installation

Slide the BIG MOUTH up from the bottom and perform the gap check.

Do not tighten bolts yet, you will need to perform the gap check on the next slide. Thread in the bolts just enough to support the BIG MOUTH.



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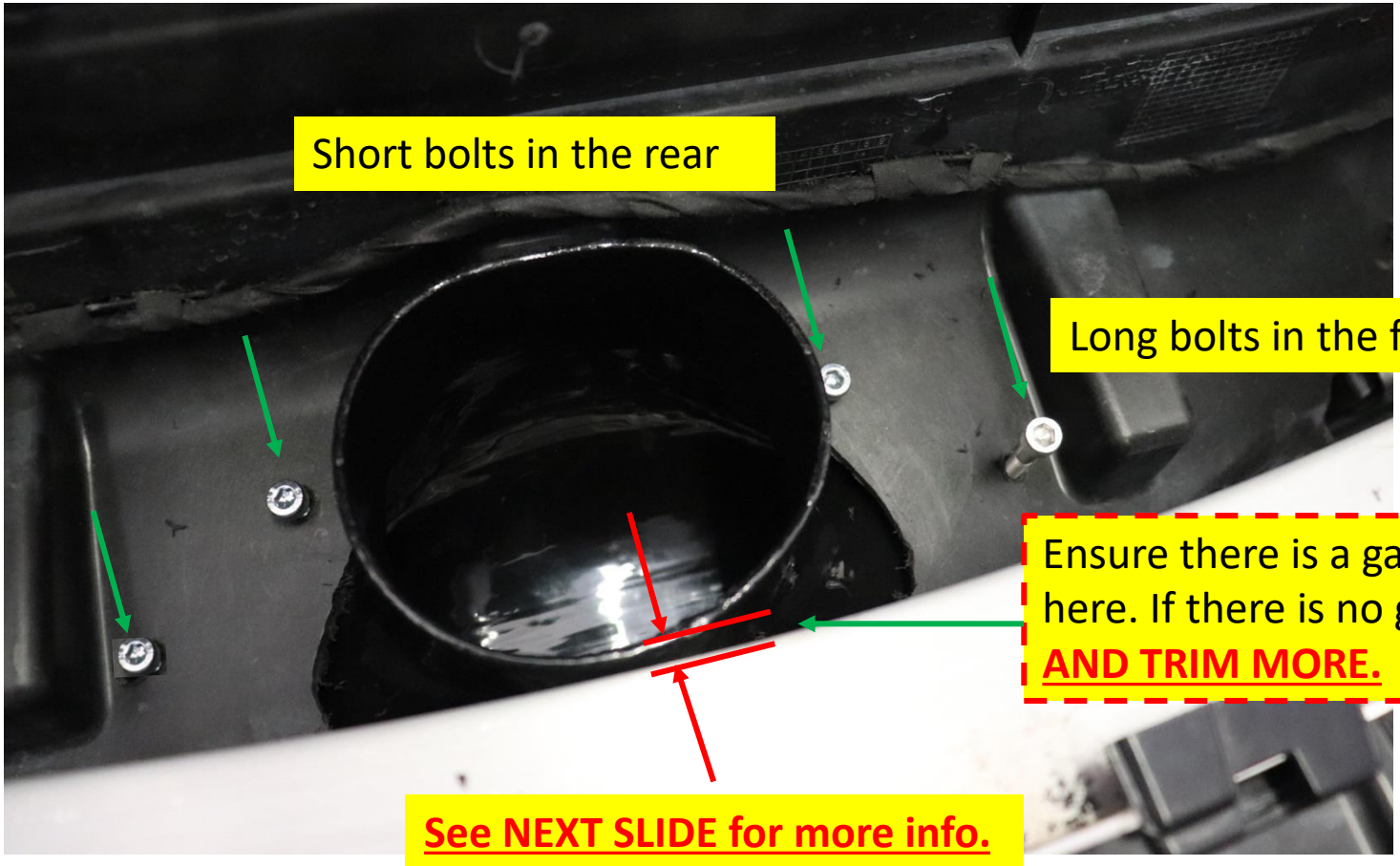
BIG MOUTH Installation

The gap shown below means the duct is in the correct position. This position is important so you will be able to get the silicone elbow on the part once it is installed. The elbow is about ¼" thick and this gap needs to be present to allow the elbow to seat over the round duct opening.



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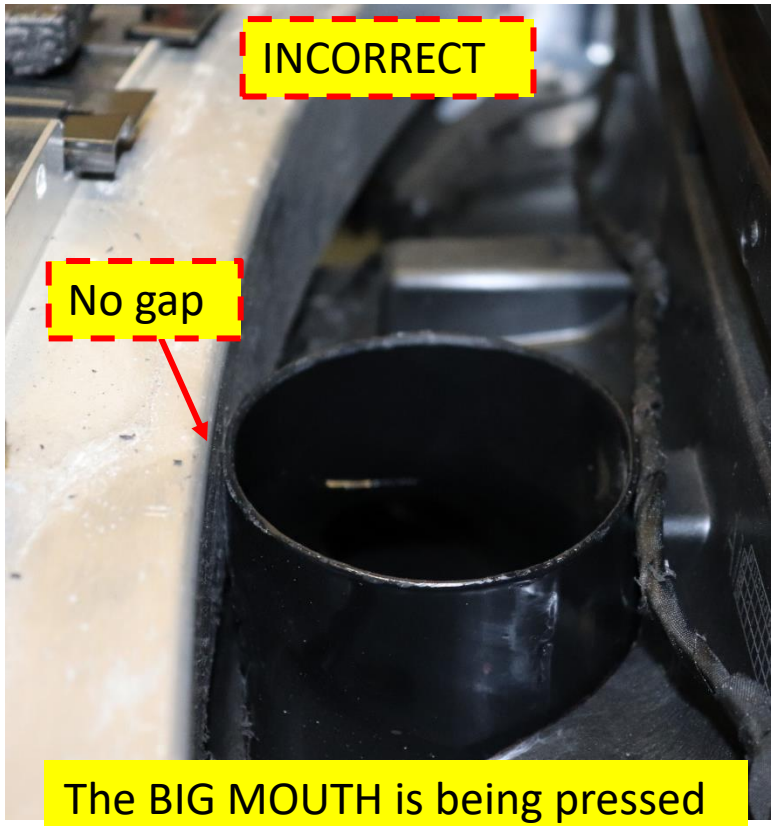
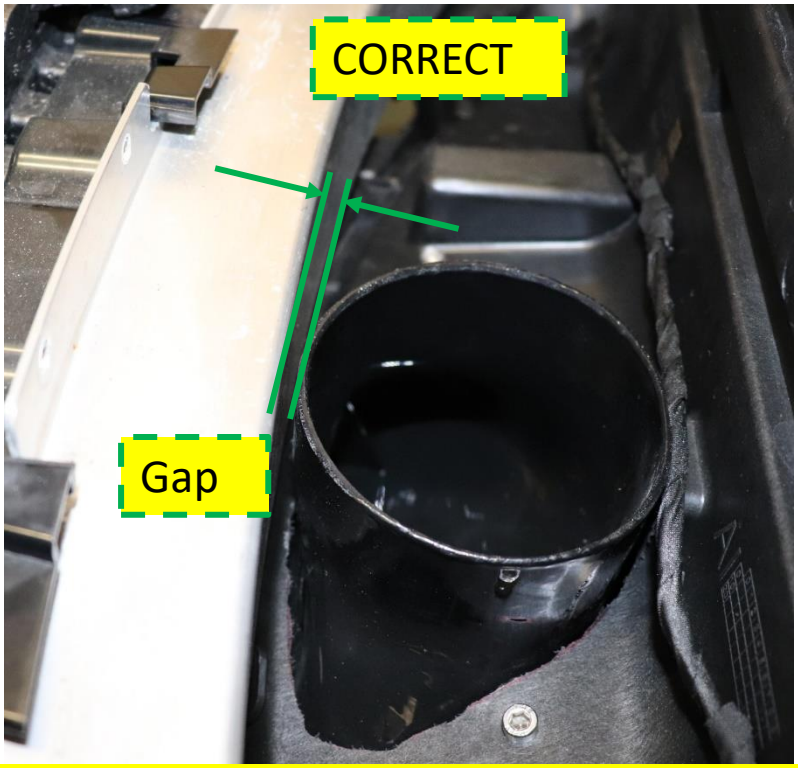
BIG MOUTH Installation

The gap shown below means the duct is in the correct position. This position is important to be able to get the elbow on the part once it is installed. The elbow is about ¼" thick and this gap needs to be present to allow the elbow to seat over the round duct opening.



The BIG MOUTH is being pressed up against the crash bar.



The BIG MOUTH should naturally create a slight gap here.

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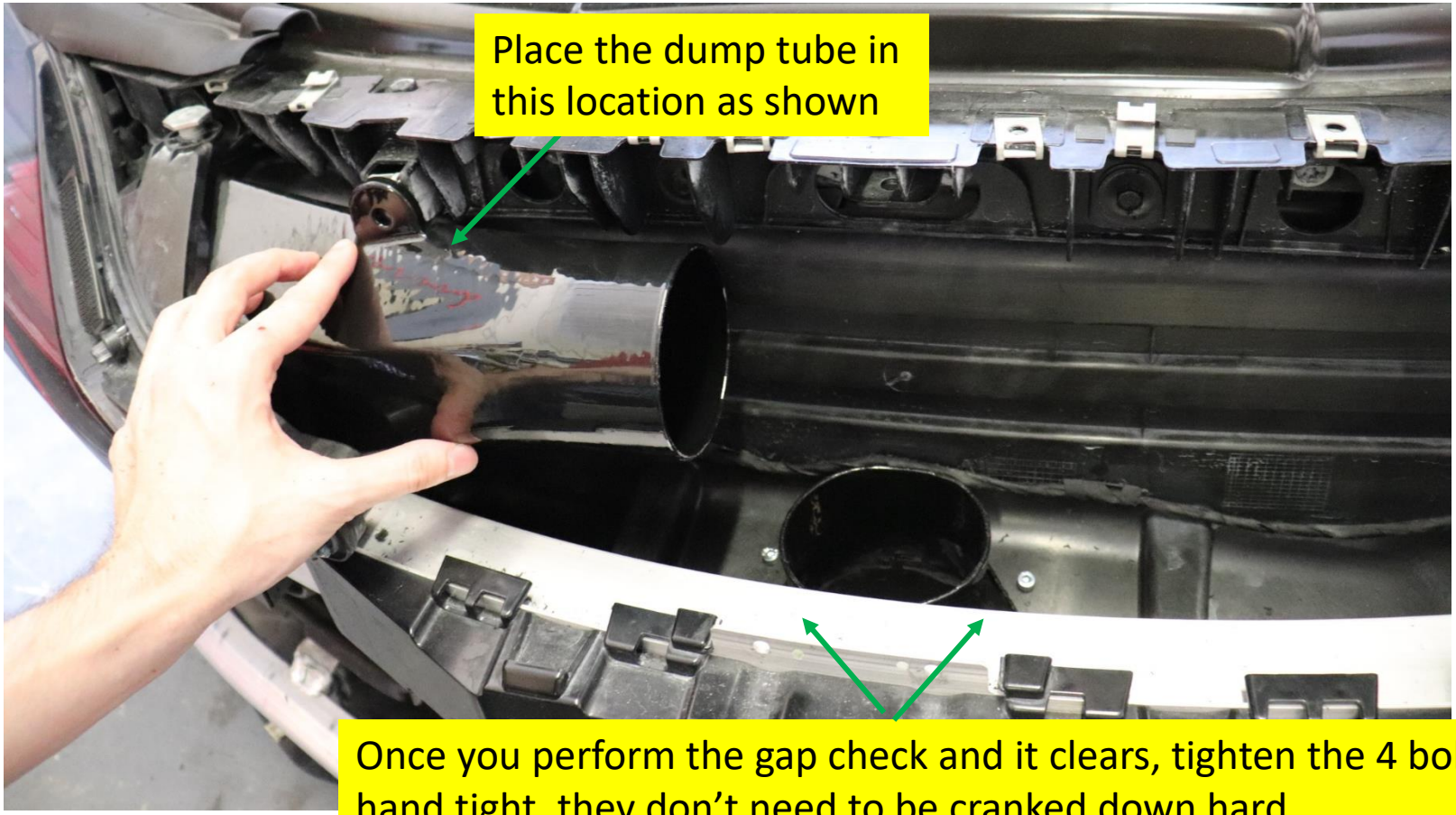
Dump Tube

Insert the dump tube in the following location and line up the holes as shown.



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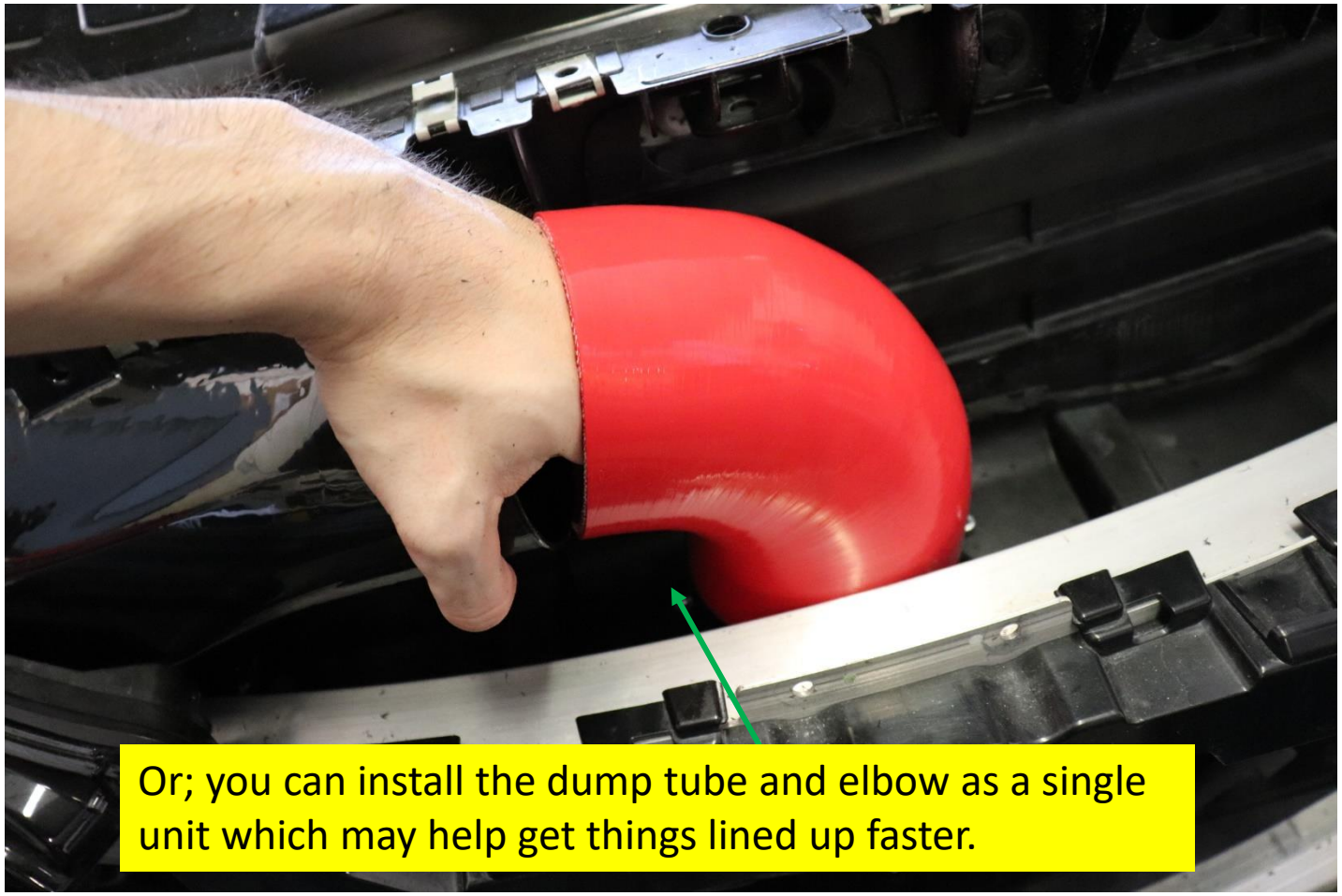
Silicone Elbow

Place the silicone elbow in the following orientation you can insert your hand inside it to get the bottom lip of the elbow around the bottom lip of the dump tube.



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Components Mounted

Once all the components are mounted, the system will look like this. You will NOT need hose clamps on the silicone elbow since it is not under boost pressure.

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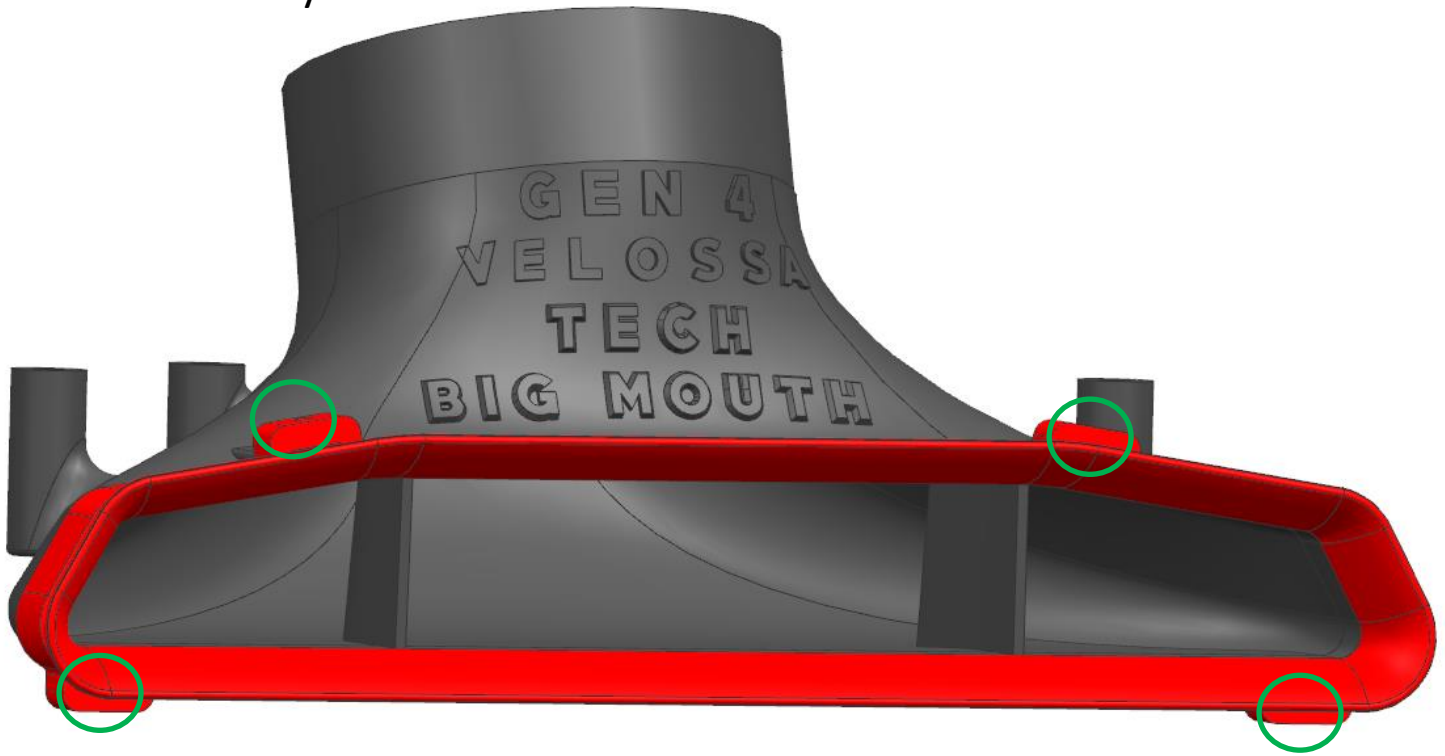
LIT Flare-Only Kit

If you already own a BIG MOUTH and want to upgrade it to the LIT KIT, you will need to remove the BIG MOUTH and remove the 4 set screws in the flare and mount the new LIT flare to the body.



Ignore this slide if you are installing a full kit.

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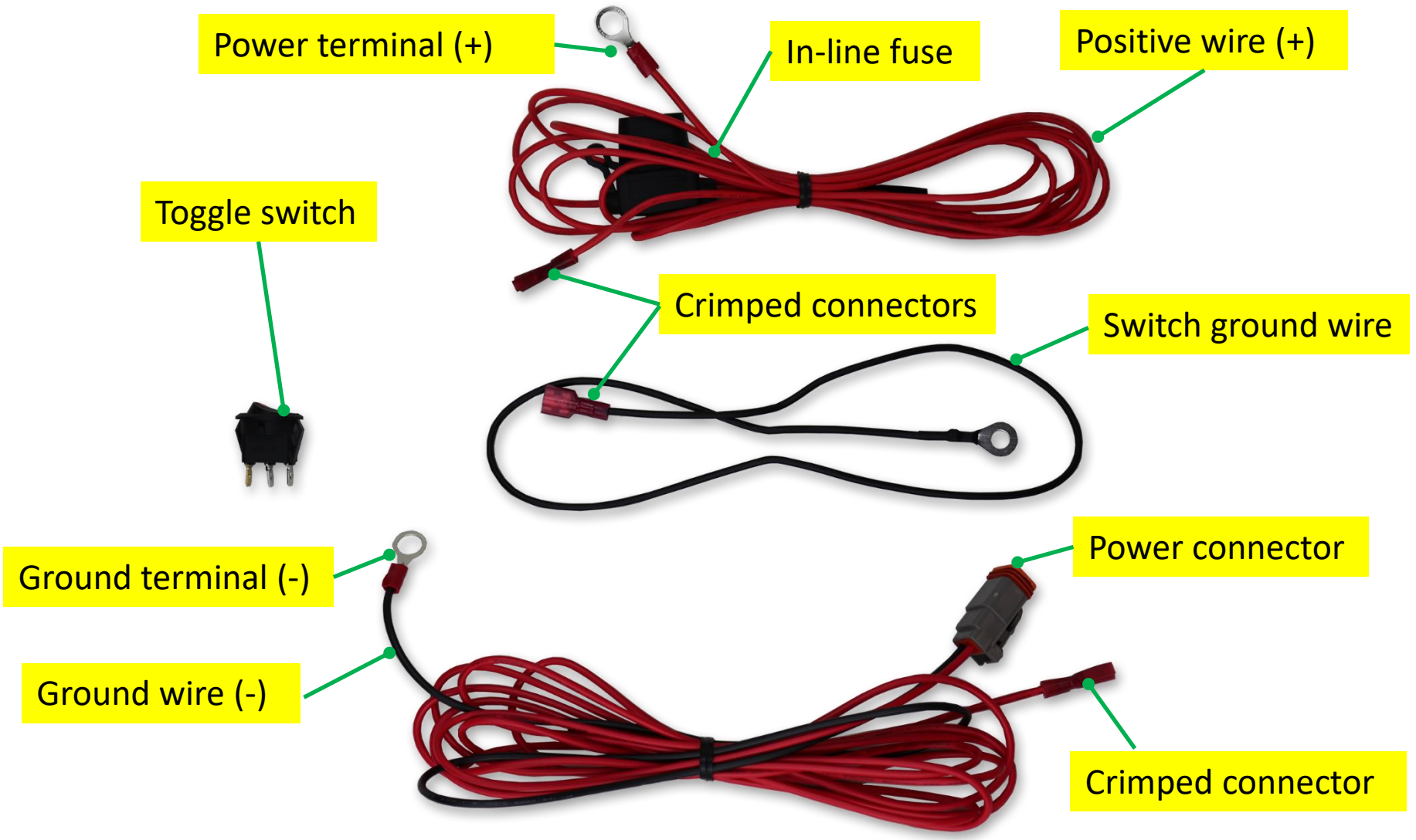
Wiring Harness



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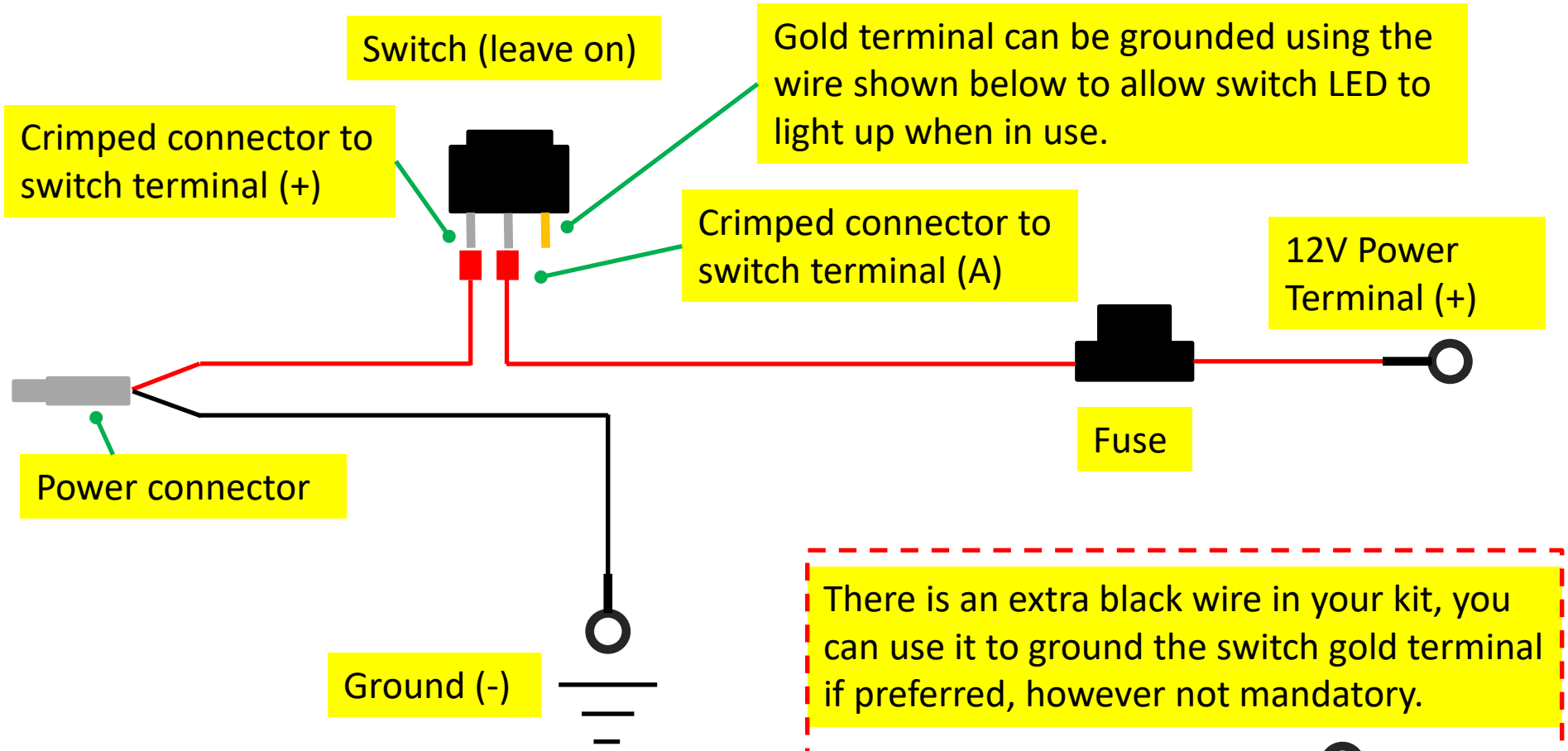
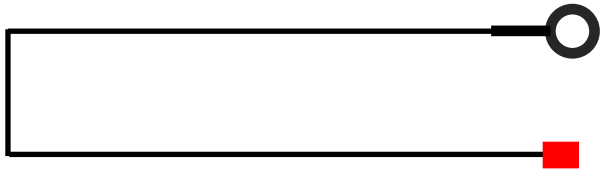
Wiring Harness Schematic



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



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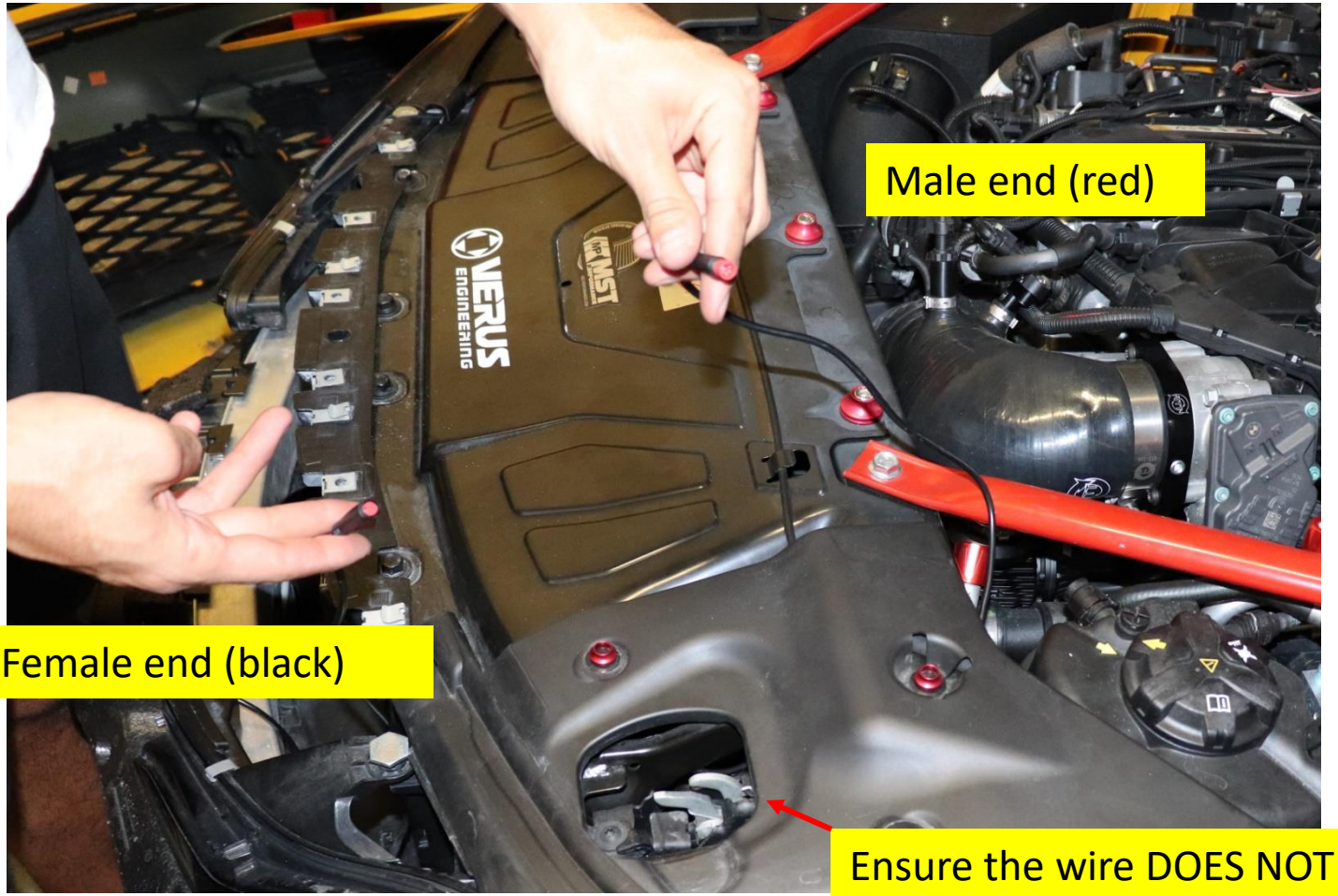
Wire Routing

Route the LED extension wire as shown, note which ends are exiting which location.



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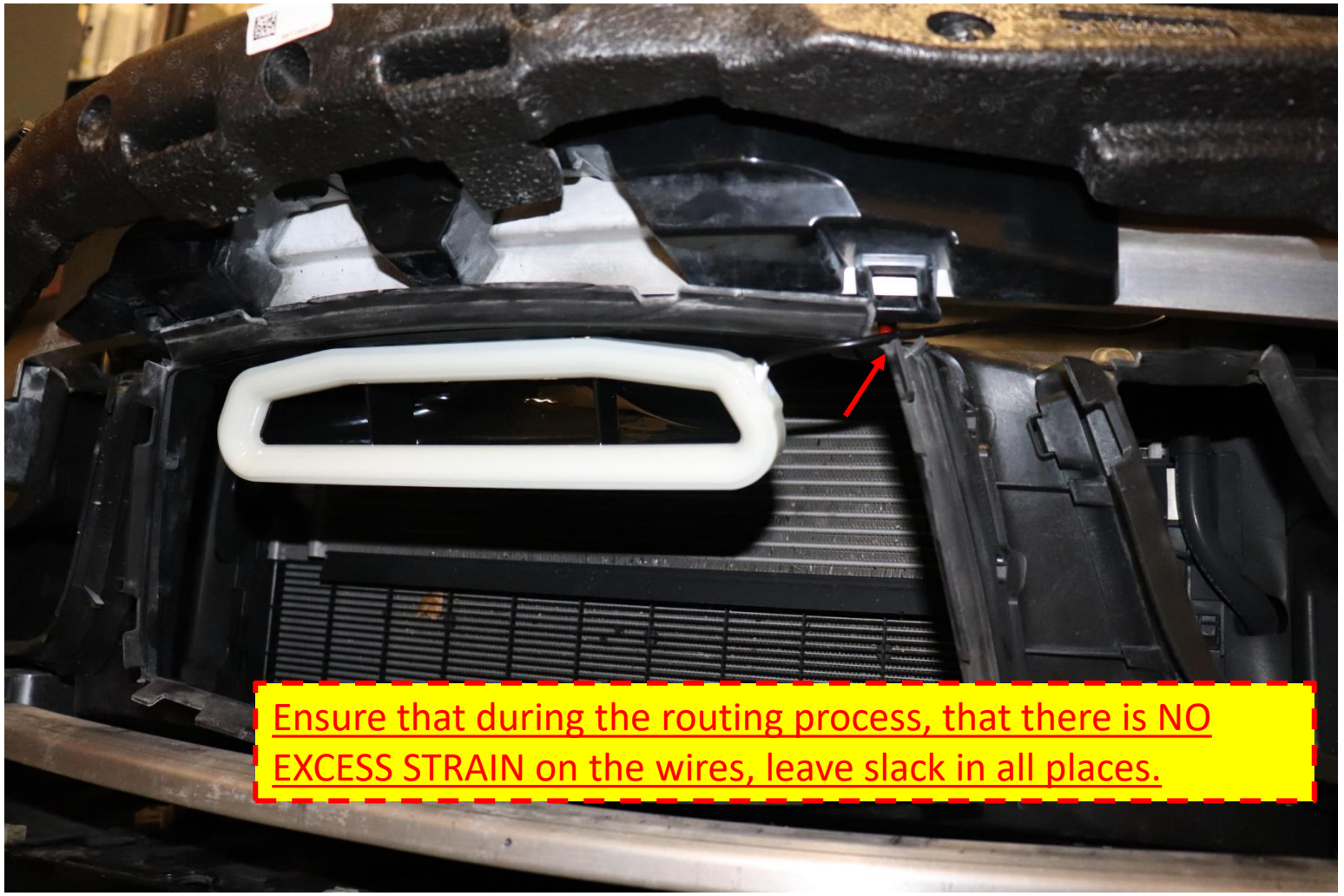
Wire Routing

Route the LED wire through the OEM shroud through the slit as shown.



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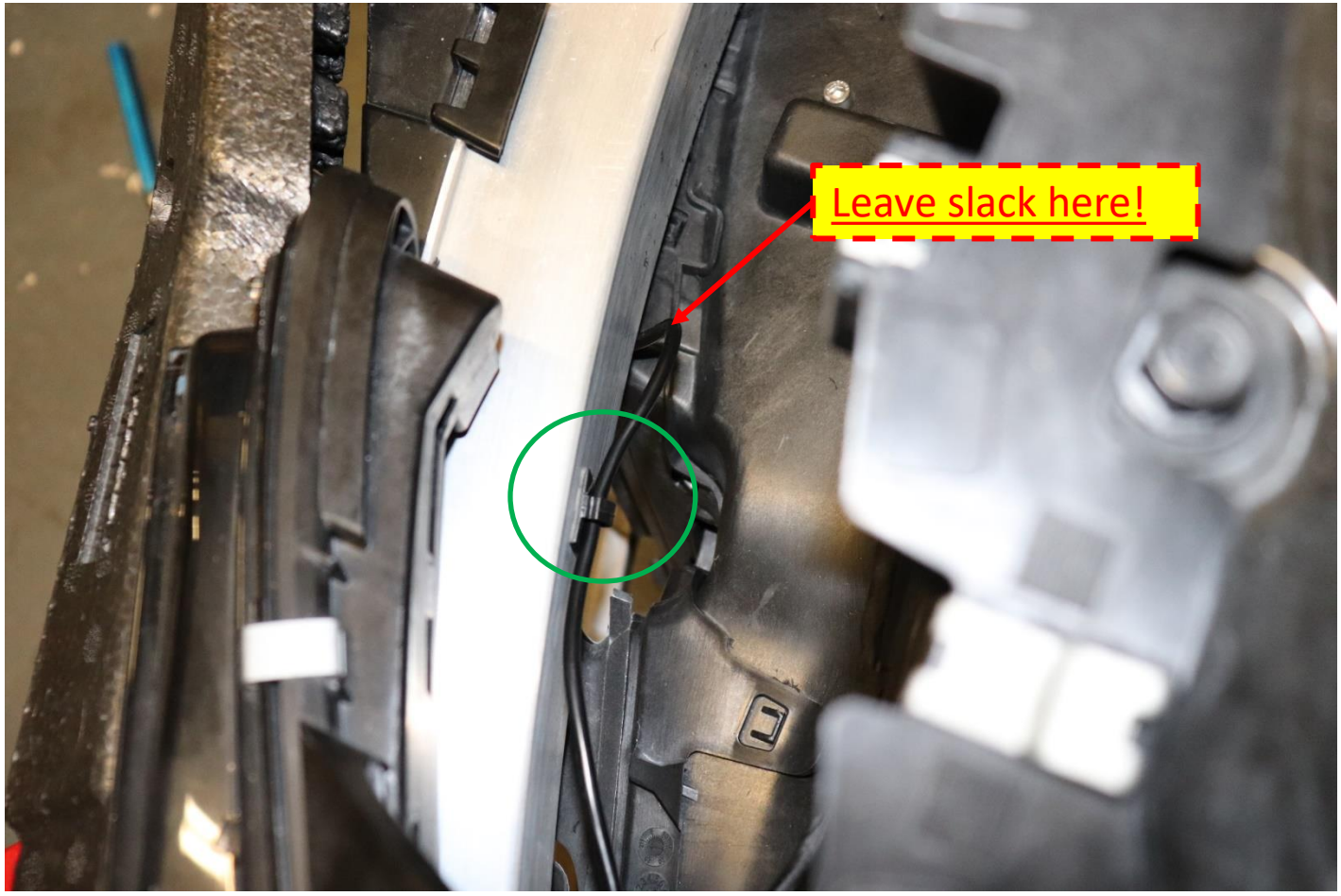
Wire Routing

Clean the surface of the crash bar and then stick the wire tie in the following location.



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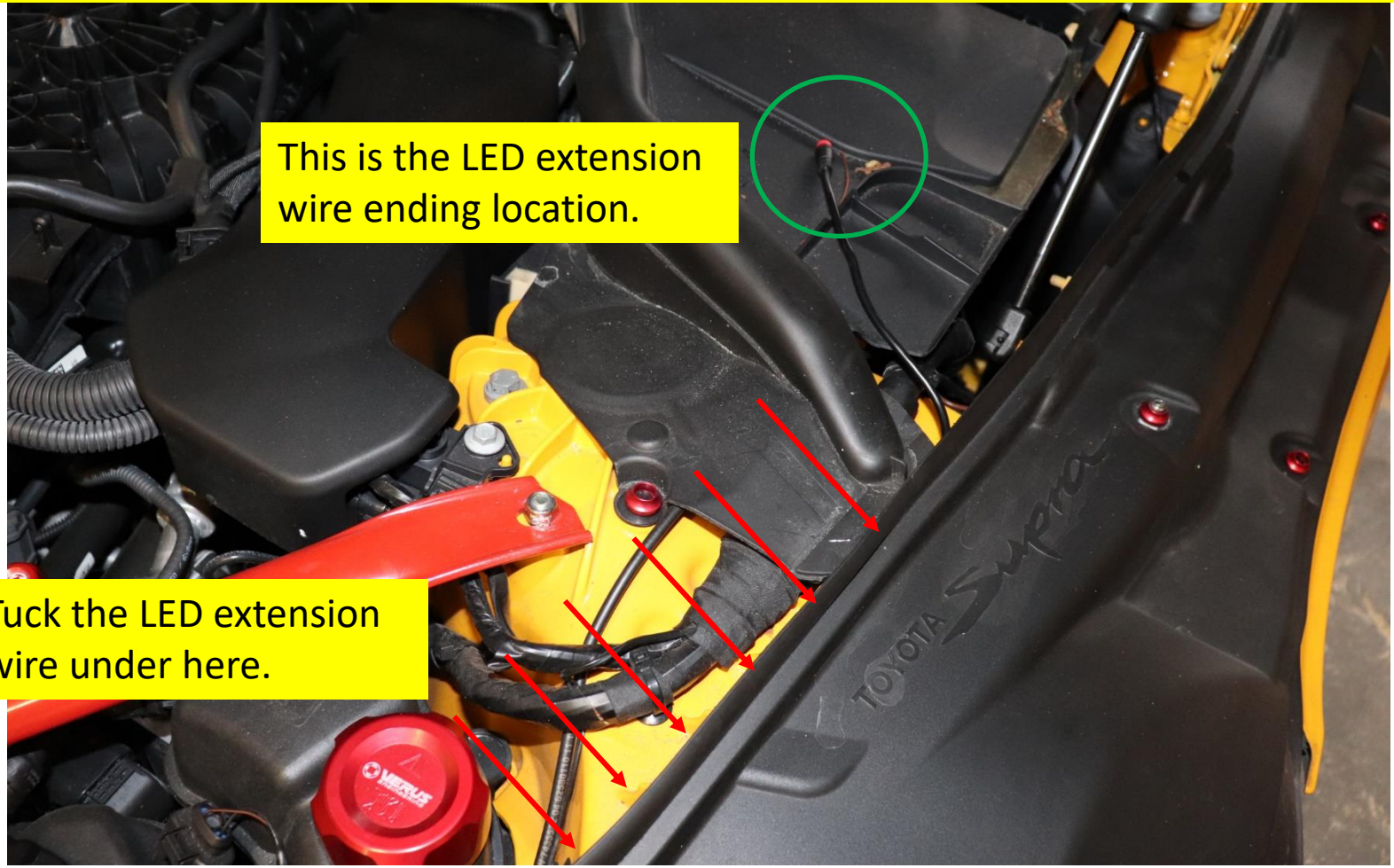
Wire Routing

Route the LED extension cable towards the driver side firewall area and tuck it underneath the plastic panels.



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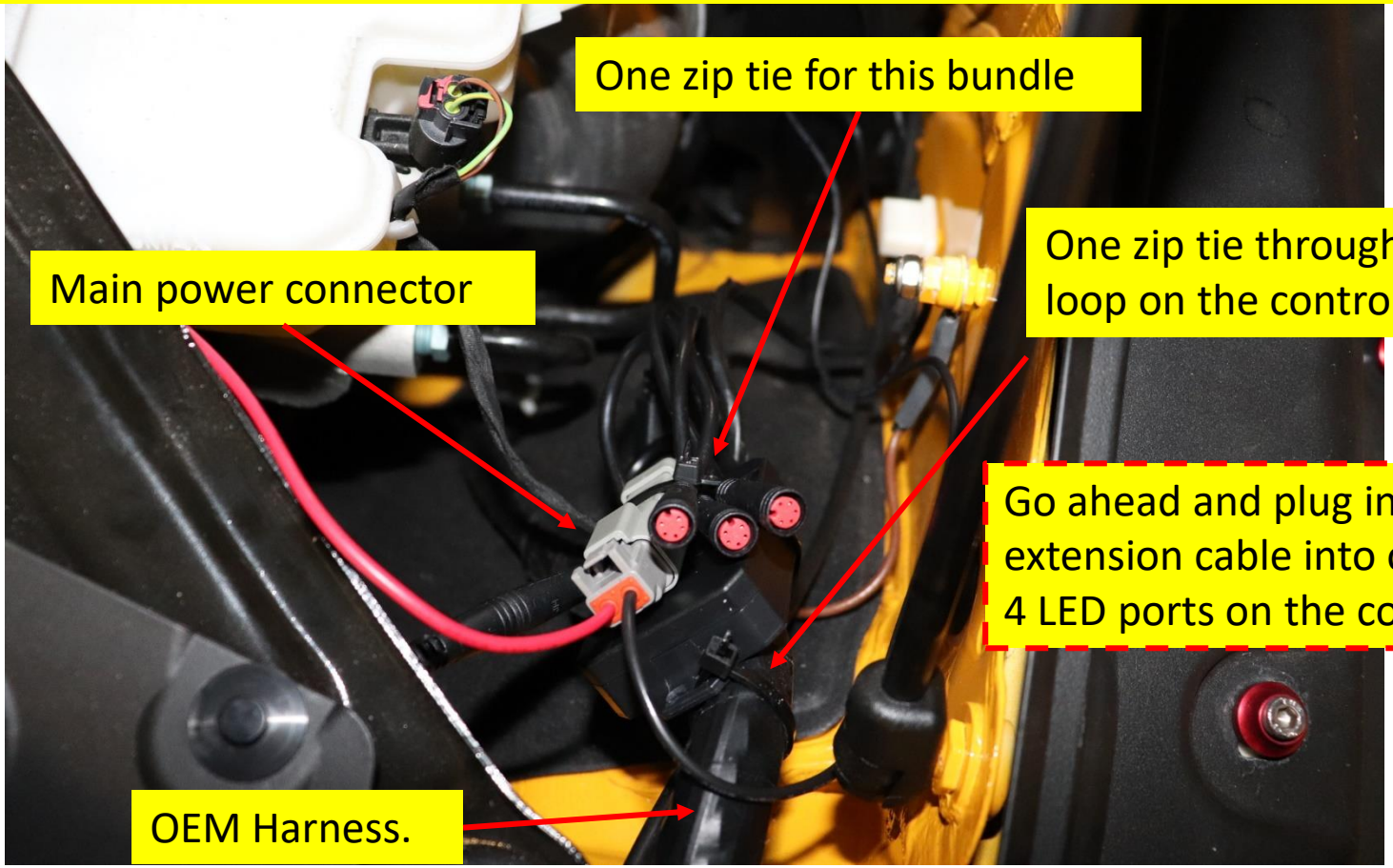
Wire Routing

The **Bluetooth Controller + 4 x LED power cables + Main Power Connector all** get zip tied into a bundle to the OEM harness that is inside the front driver side firewall pocket compartment.



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Wire Routing

Plug in both ends of the LED extension cable.

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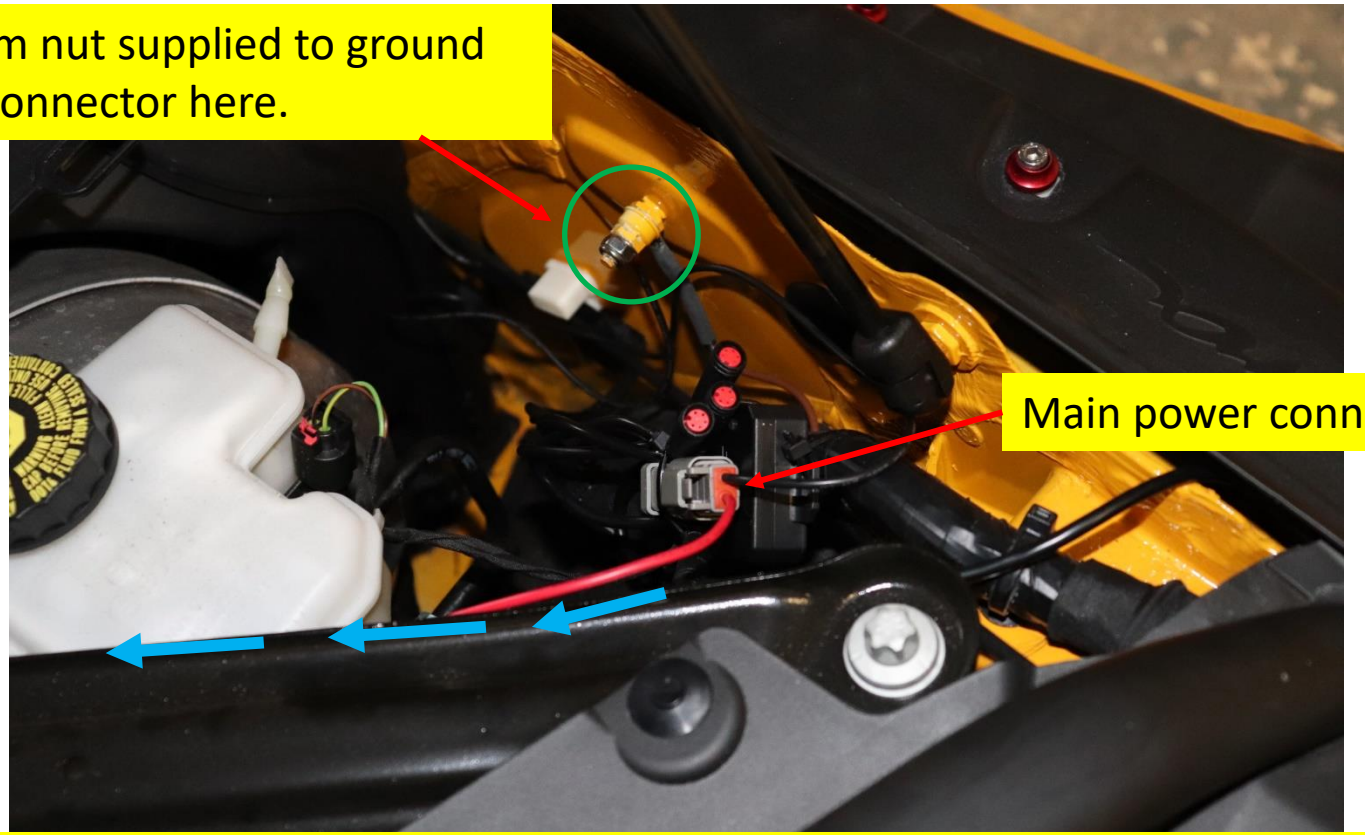
Wire Routing

After you plug in the main power connector, you may ground the short black wire exiting the power connector to the following location.

Use the 6mm nut supplied to ground the power connector here.



Begin routing the red power wire to the driver side firewall pocket compartment.

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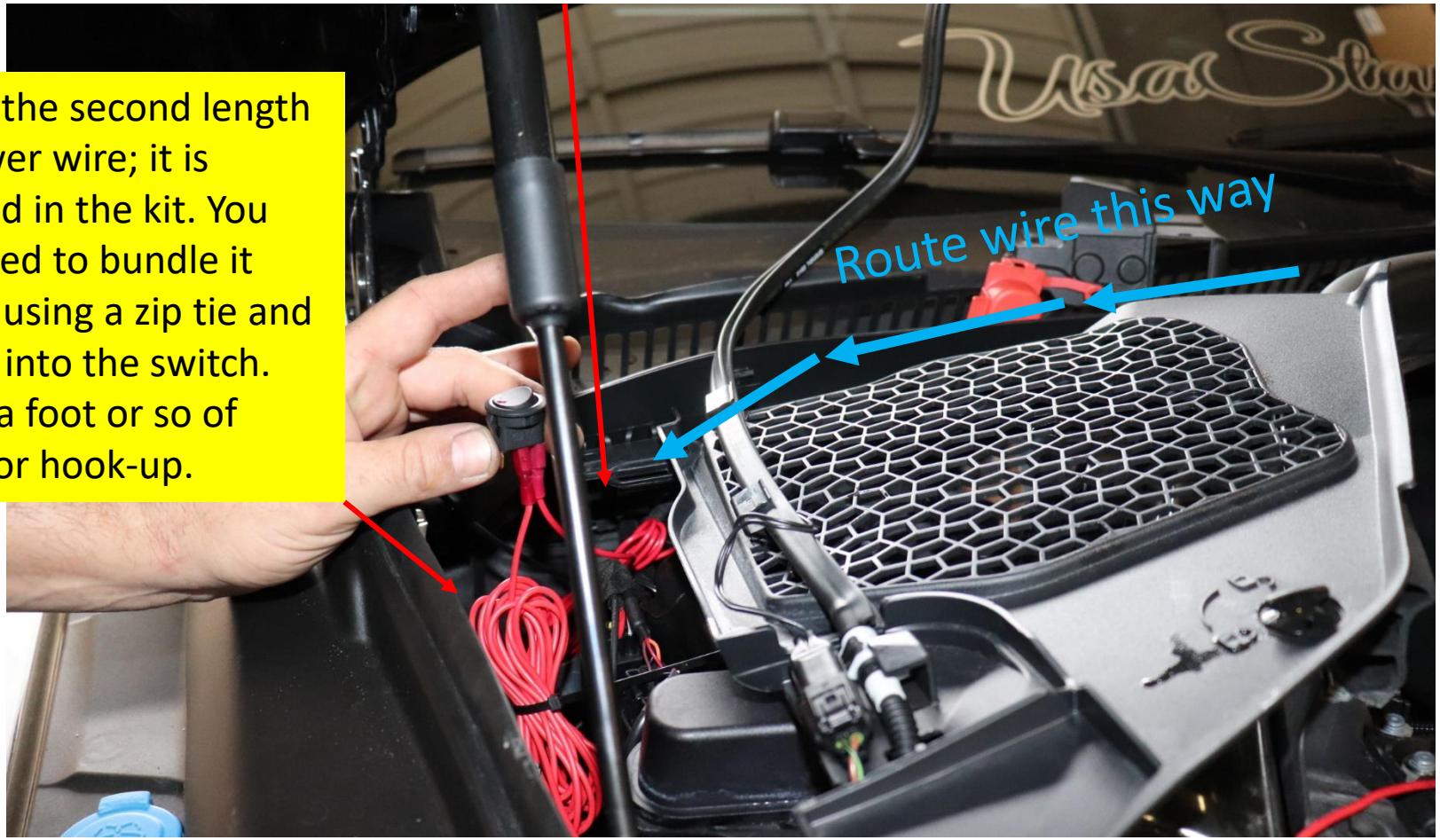
Wire Routing

Pop off the passenger side pocket cover. When you get the wire across to the passenger side, bundle it up and zip tie it as shown. Plug it into the switch following the diagram on slide 23.

This is the second length of power wire; it is suppled in the kit. You will need to bundle it neatly using a zip tie and plug it into the switch. Leave a foot or so of slack for hook-up.



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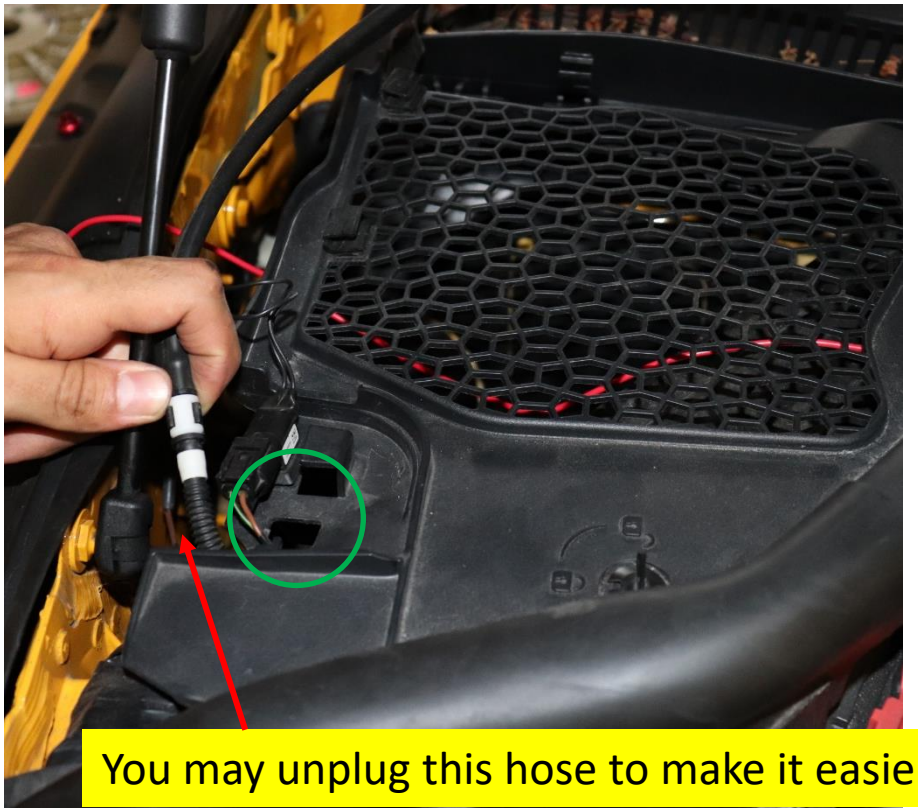
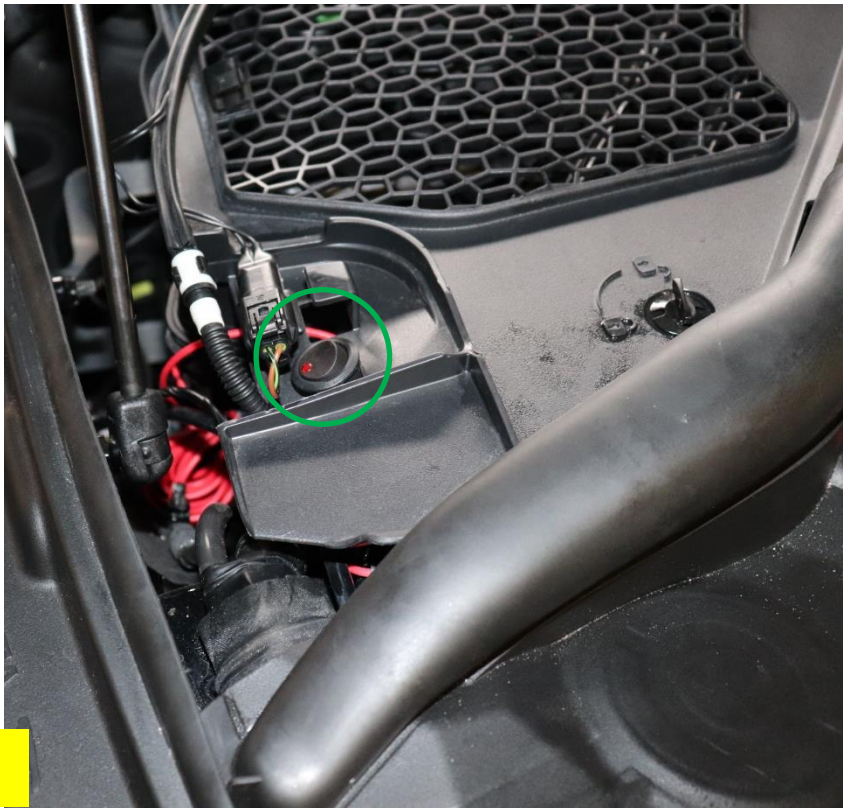
Switch Mounting

You may place the switch in the OEM panel as shown. With the panel removed, you can insert it neatly in this opening.





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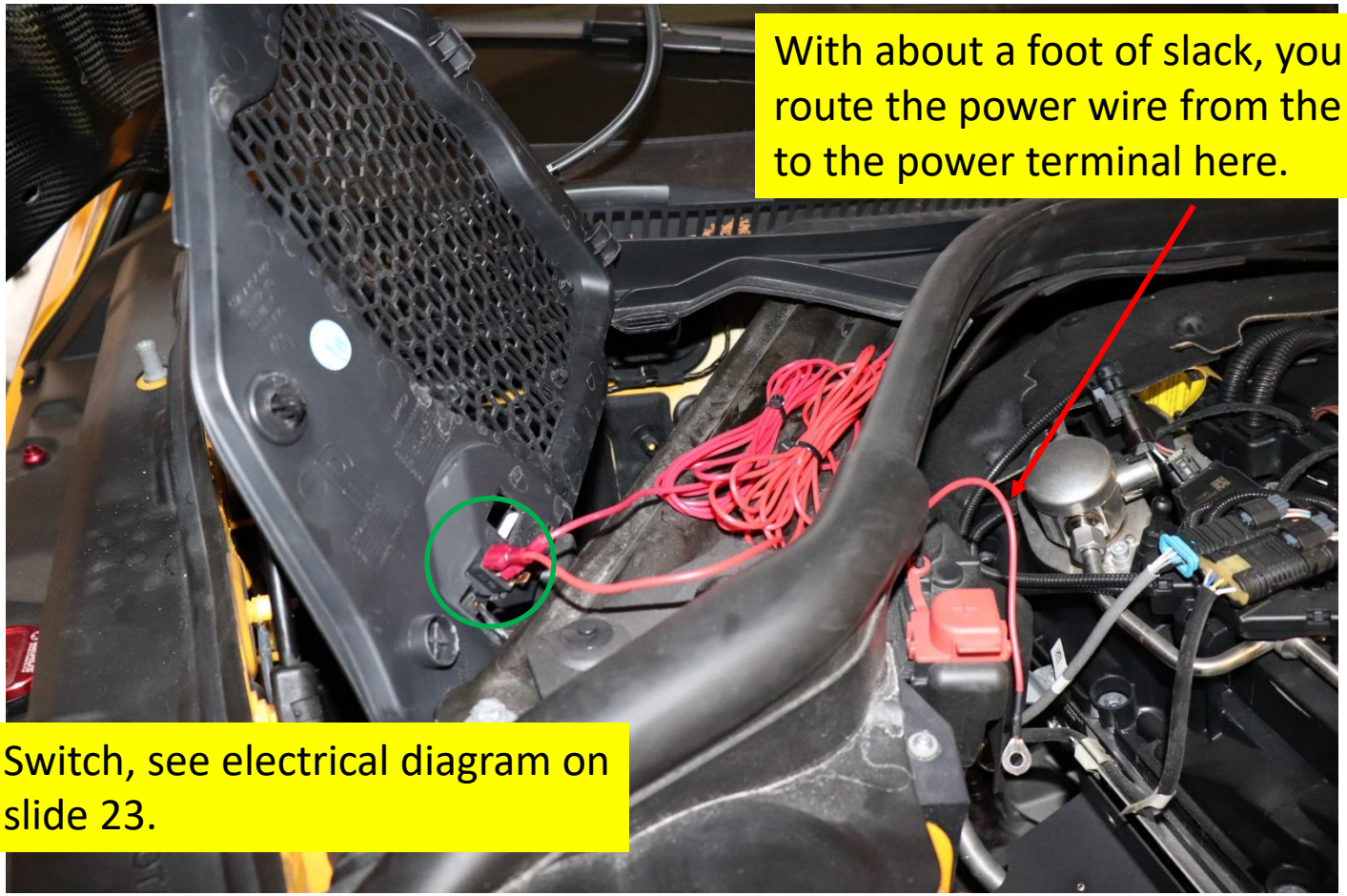
Switch Mounting

This is how the switch looks mounted in the panel from the under side. Note the two bundles are resting neatly in this crevice.



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Switch Mounting

You may ground the switch using the supplied black wire.

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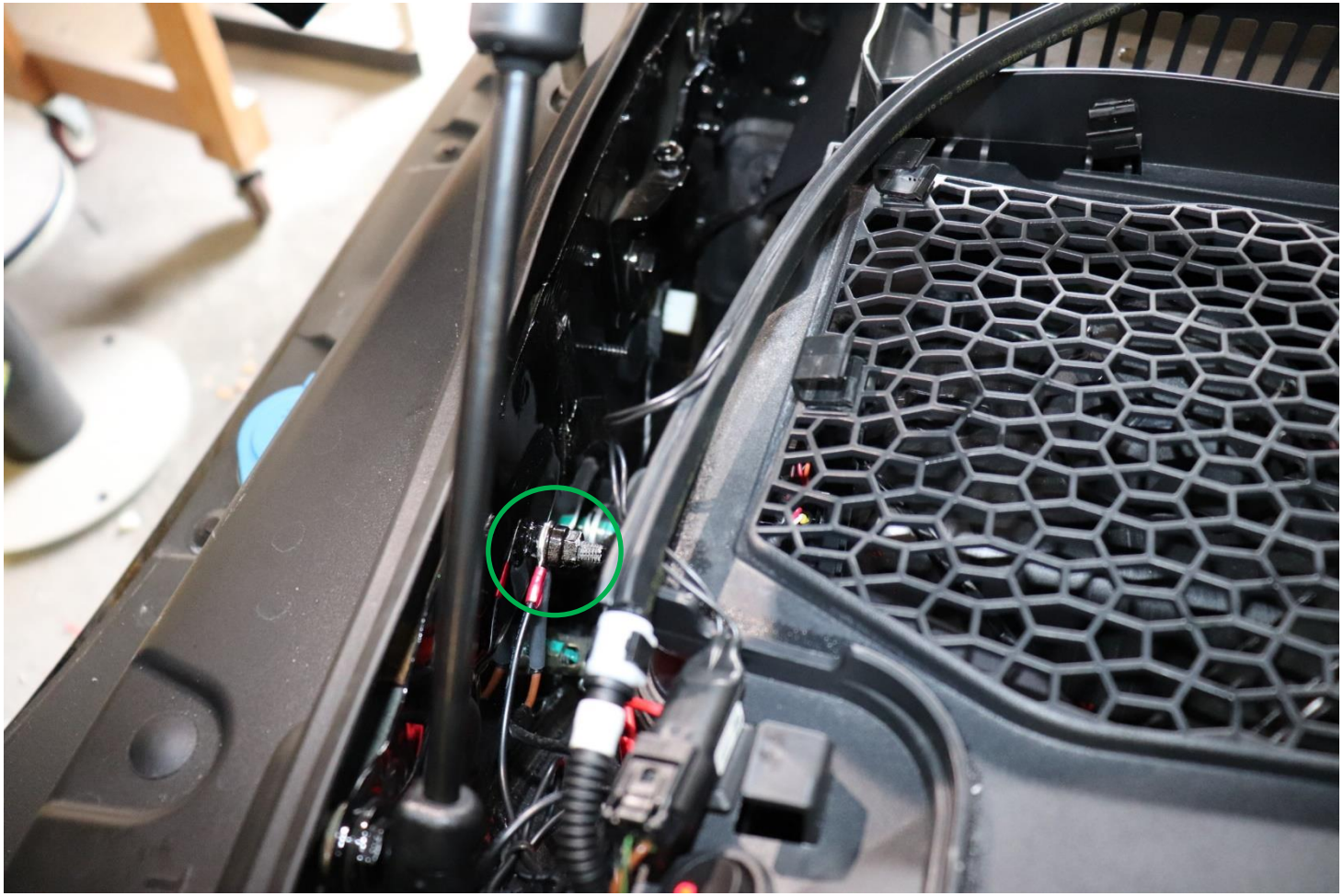
Switch Mounting

You can ground the switch using this OEM ground location.



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Switch Mounting

You will need to carefully keep the wires from twisting off the switch when you are ready to close the panel, it must CLEAR the metal frame before you can lock the plastic cover in place.

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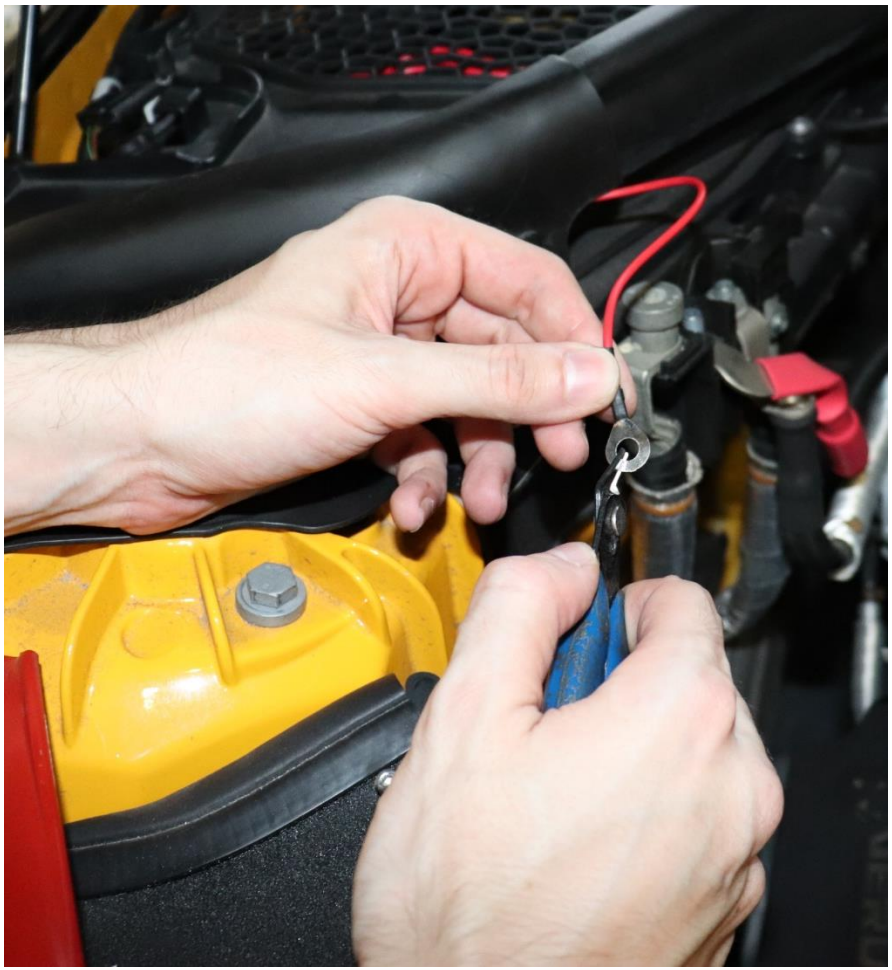
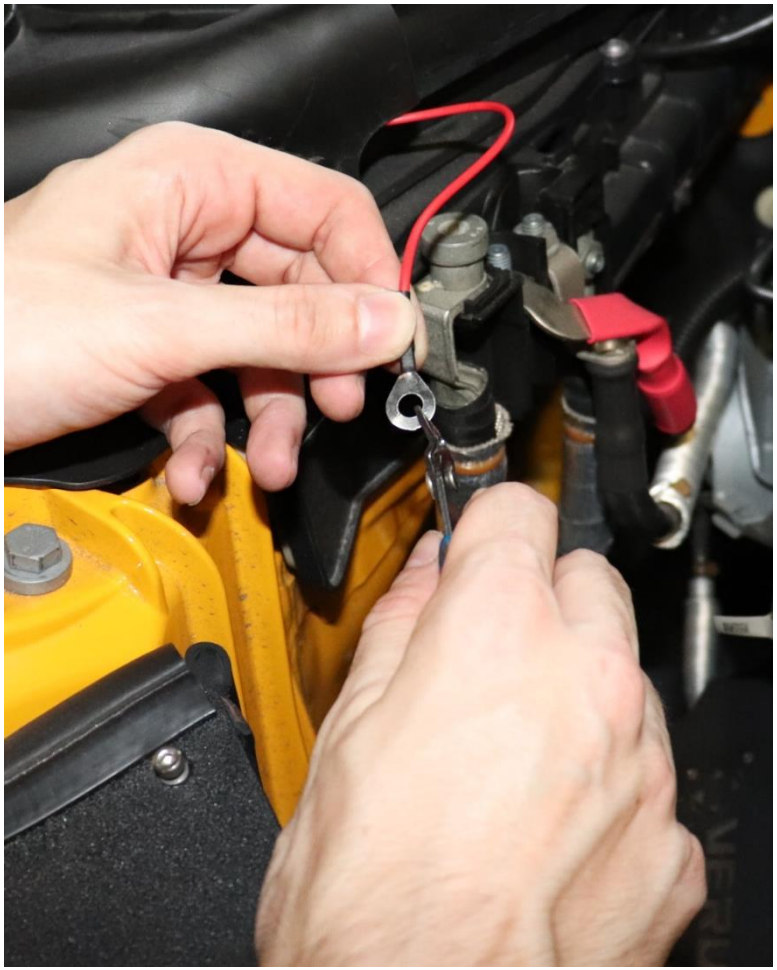
Power

Cut the ring terminal into a U-shape using snippers. This will allow it to fit around the OEM positive terminal.





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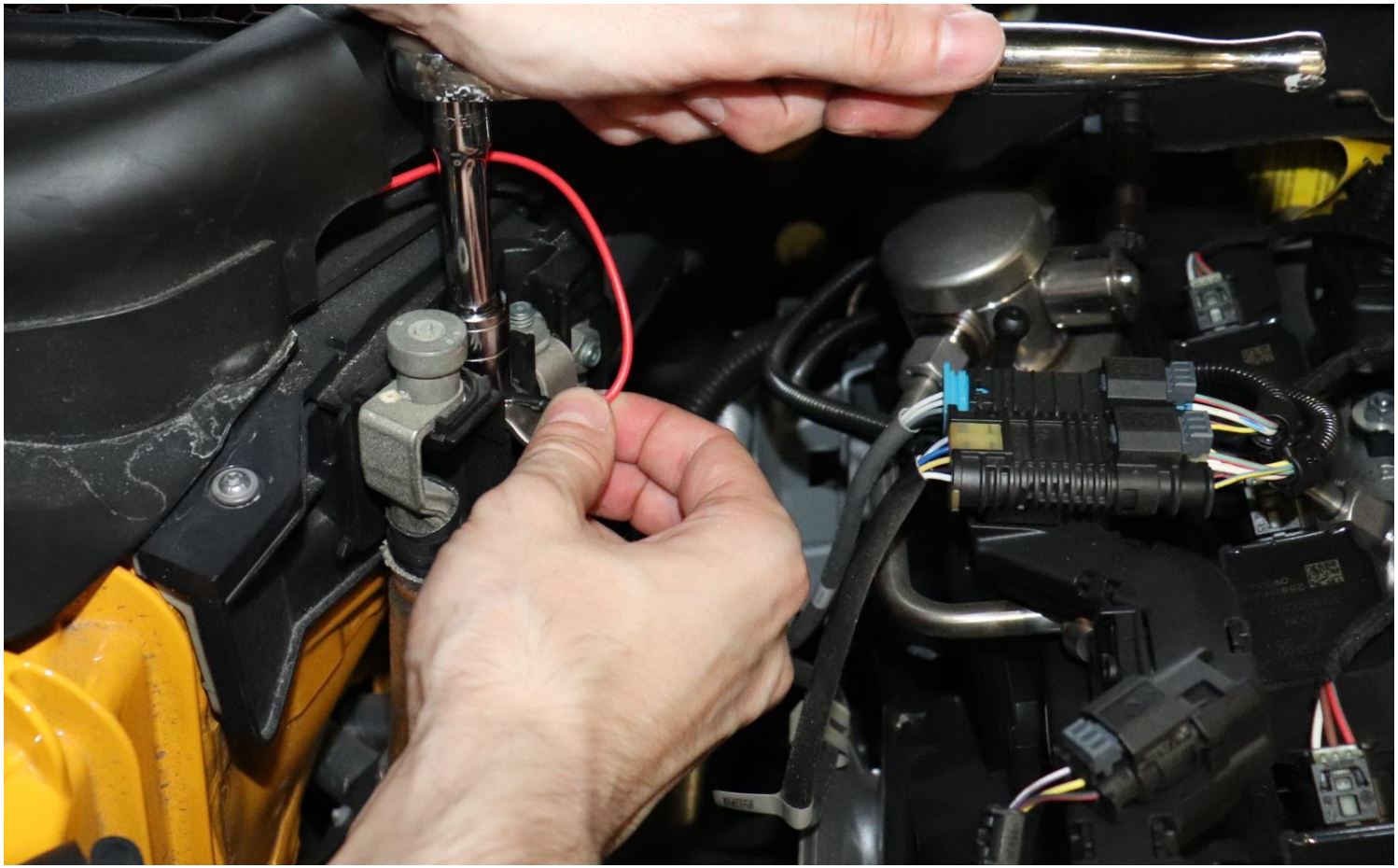
Power

Loosen the OEM positive terminal nut, slide the U terminal under the nut and tighten the nut.



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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.

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Re-install Bumper

Make sure you have full and reliable connectivity before re-installing the bumper. Follow slide 40.

Re-install the bumper the same way it was removed.

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Finalize

You may close both firewall compartments