

FRONT BUMPER

2022-UP/RIVIAN R1T

F940423070103



TOOLS REQUIRED

- 1/8", 5/32", 7/32" Allen
- T15, T20, T27, T30 Torx
- 10mm, 3/8", 9/16", 3/4" Wrench/Socket
- Panel Trim/Pry Tool
- Riv Nut Installation Tool
- Scissors
- Side Cutters
- Flush Cutters
- Cutting Tool
- 25/64" Drill Bit
- Epoxy (Plastic Compatible)



TIME REQUIRED

- Approximately 8 Hours (This installation guide covers the installation of the product only. It does not include instructions and time for wiring)

SKILL LEVEL



- VERY DIFFICULT -
**PROFESSIONAL
INSTALLATION
RECOMMENDED**

⚠ WARNINGS/CAUTIONS BEFORE STARTING INSTALLATION ⚠

-BEFORE YOU INSTALL THIS KIT-

Read and understand all instructions, warnings, cautions, & notes contained in this installation instruction guide. Consult your vehicle owner's manual for proper disconnection of electrical and lifting of vehicle if required for installation of this product.

This install may require some technical skills and knowledge of basic mechanical work. If you do not feel that you are capable of performing this install please take this product to a trained professional.

After reading this guide please contact us with any questions or concerns before installing product.

Customer Service: 830-896-7571

Rago Fabrication is **not** responsible for any bodily injury or harm to you or your vehicle as a result of an improper install.

Proper installation of this kit required knowledge of the factory recommended procedures for removal and installation of original equipment components.

We recommend that the factory shop manual and any special tools needed to service your vehicle be on hand during the installation. Installation of this kit without proper knowledge of the factory recommended procedures may affect the

performance of these components and the safety of the vehicle.

Inspect all contents of this package to make sure product is not damaged and all installation hardware has been included. If parts are missing from kit, please be prepared to provide the following information:

1. Name of purchase location
2. Bar Code on side of box
3. Date above bar code
4. Date inside box cover

***ALWAYS WEAR EYE PROTECTION
WHEN OPERATING POWER TOOLS***

HARDWARE

A1.



#10-24 X 3/4" SOCKET HEAD BOLT

QTY: 8

A2.



#10-24 X 1" BUTTON HEAD BOLT

QTY: 3

A3.



M6 FLAT WASHER

QTY: 30

A4.



#10-24 NYLON LOCK NUT

QTY: 11

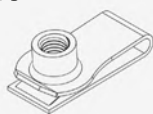
B1.



1/4"-20 X 3/4" BUTTON HEAD BOLT

QTY: 8

B2.



1/4"-20 U-NUT

QTY: 8

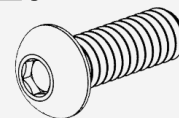
C1.



3/8"-16 X 1" CARRIAGE BOLT

QTY: 2

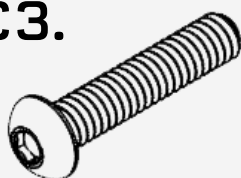
C2.



3/8"-16 X 1" BUTTON HEAD BOLT

QTY: 5

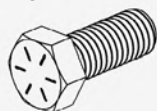
C3.



3/8"-16 X 1-1/4" BUTTON HEAD BOLT

QTY: 2

C4.



3/8"-16 X 1-1/2" HEX BOLT

QTY: 2

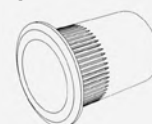
C5.



3/8 FLAT WASHER

QTY: 16

C6.



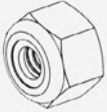
3/8"-16 RIVET NUT

QTY: 5



HARDWARE

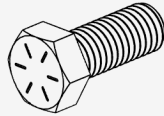
C7.



3/8"-16 NYLON LOCK NUT

QTY: 6

D1.



1/2"-13 X 1-1/2" HEX HEAD BOLT

QTY: 6

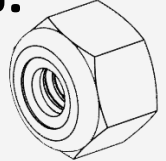
D2.



1/2" FLAT WASHER

QTY: 12

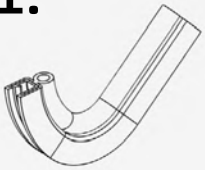
D3.



1/2"-13 NYLON LOCK NUT

QTY: 6

E1.



PUSH-ON EDGE TRIM

QTY: 1



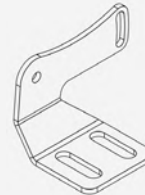
PARTS

F.



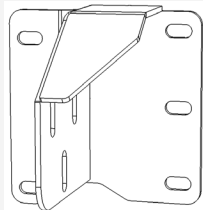
SPL0928 (PUMP RAIL RISER)
QTY: 1

G.



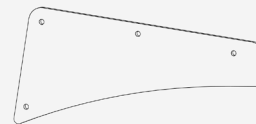
UUS0068, UUS0068-M (LIGHT MOUNT TABS)
QTY: 1ea

H.



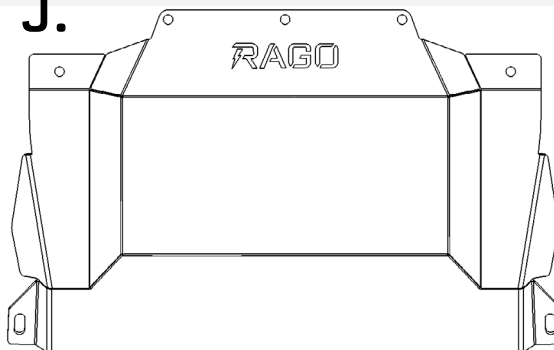
WELD ASSY 2, WELD ASSY 3 (MOUNT ADAPTERS)
QTY: 1ea

I.



APL0648 (SIDE POD ACCESS PANELS)
QTY: 2

J.



APL0568 (SKID PLATE)
QTY: 1



□ STEP 1

Begin removal of the panel shown below by lifting the front outer corners and flexing the panel to release the (2) molded plastic trim hooks.

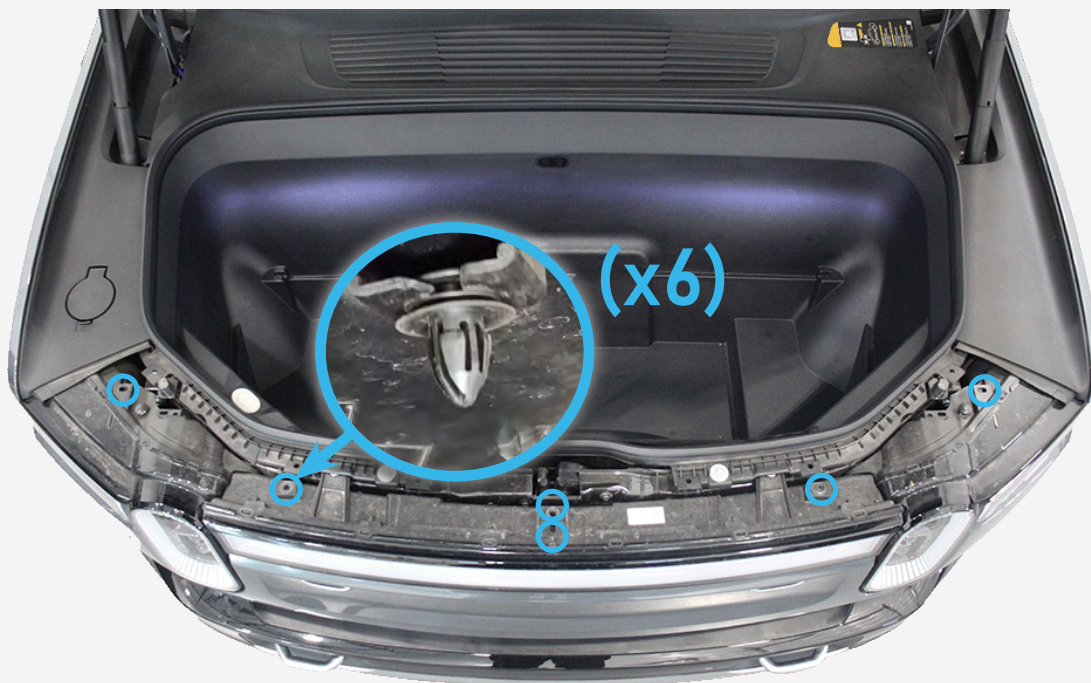
(Work slowly to minimize the risk of breaking tabs)



□ STEP 2

Next, working from one side to the other, locate the (6) concealed panel clips indicated below and use a (panel trim tool) to release each retainer.

(Work slowly to minimize the risk of breaking tabs)



□ STEP 3

Locate the trim retainer indicated below and use a (panel trim tool) to remove.
(Repeat on other side. Keep the hardware)



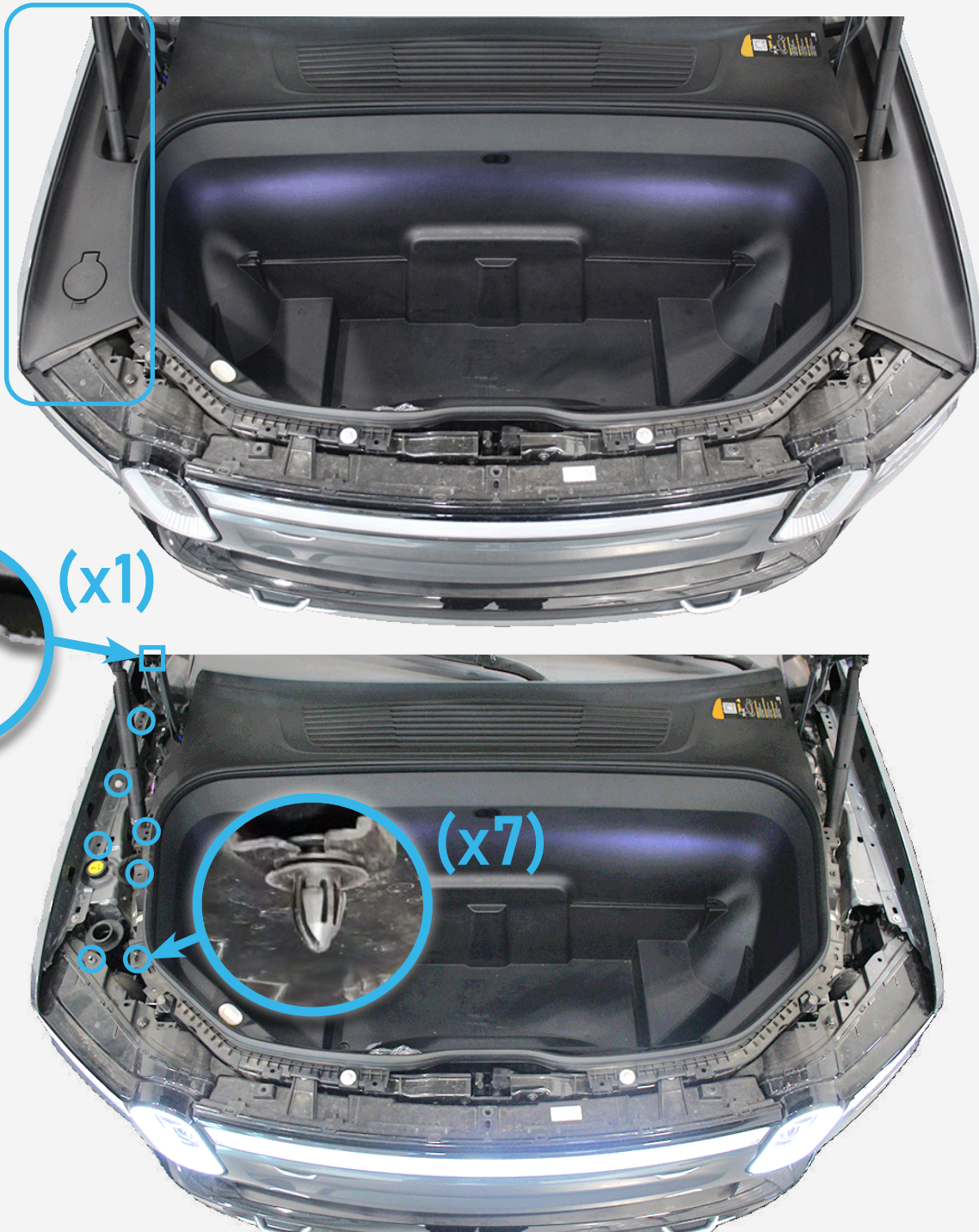
(x1)



□ STEP 4

With the use of a (panel trim tool), remove the panel shown below by lifting the front edge and flexing the panel to expose the (7) plastic panel clips indicated below and the metal panel clip in the rear.

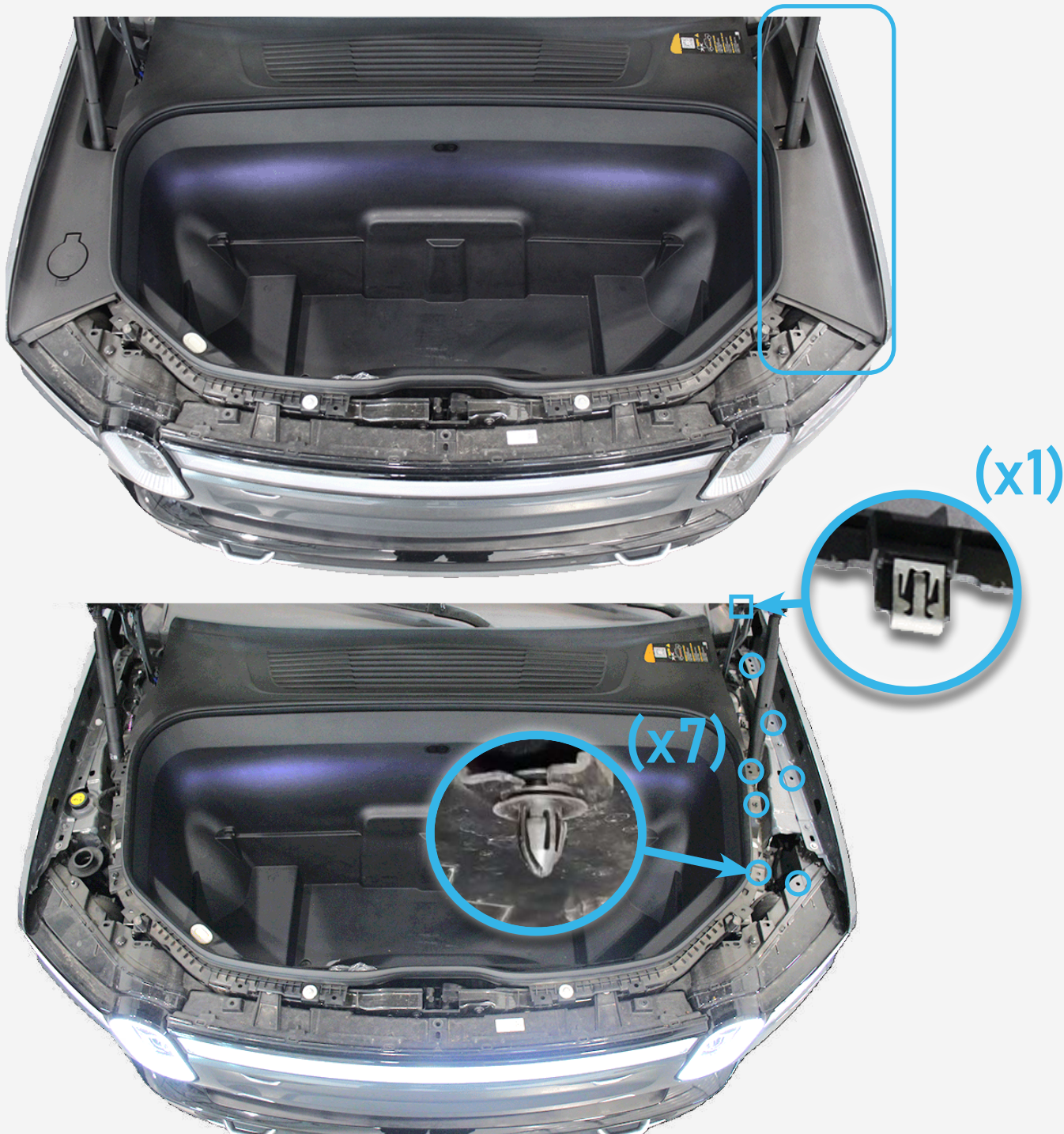
(Work slowly to minimize the risk of breaking tabs)



□ STEP 5

With the use of a (panel trim tool), remove the panel shown below by lifting the front edge and flexing the panel to expose the (7) plastic panel clips indicated below and the metal panel clip in the rear.

(Work slowly to minimize the risk of breaking tabs)



□ STEP 6

With the use of a (panel trim tool), remove the panel shown below by lifting from one side and flexing the panel to expose the (10) plastic panel clips indicated below.
(Work slowly to minimize the risk of breaking tabs)



(x10)



□ STEP 7

Locate the (6) frunk liner screws indicated in the image below and use a (10mm) to remove.
(Keep the hardware)



(x6)

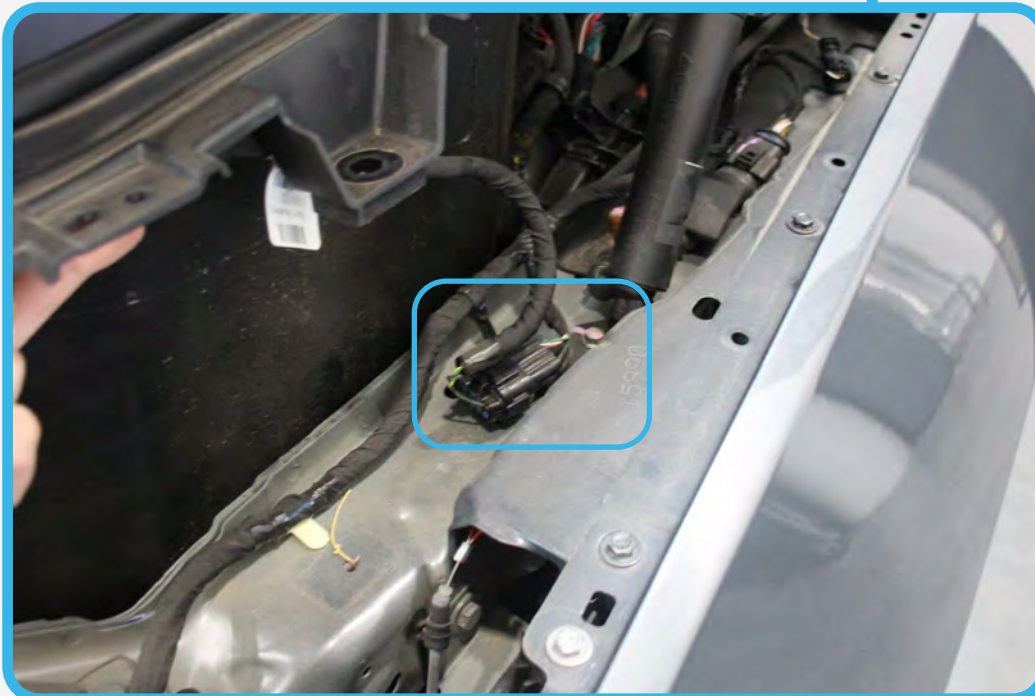


□ STEP 8

Locate the wire connector indicate below and depress the tab and pull to disconnect.
(Do NOT pull from the wires. Repeat on other side)



(x2)



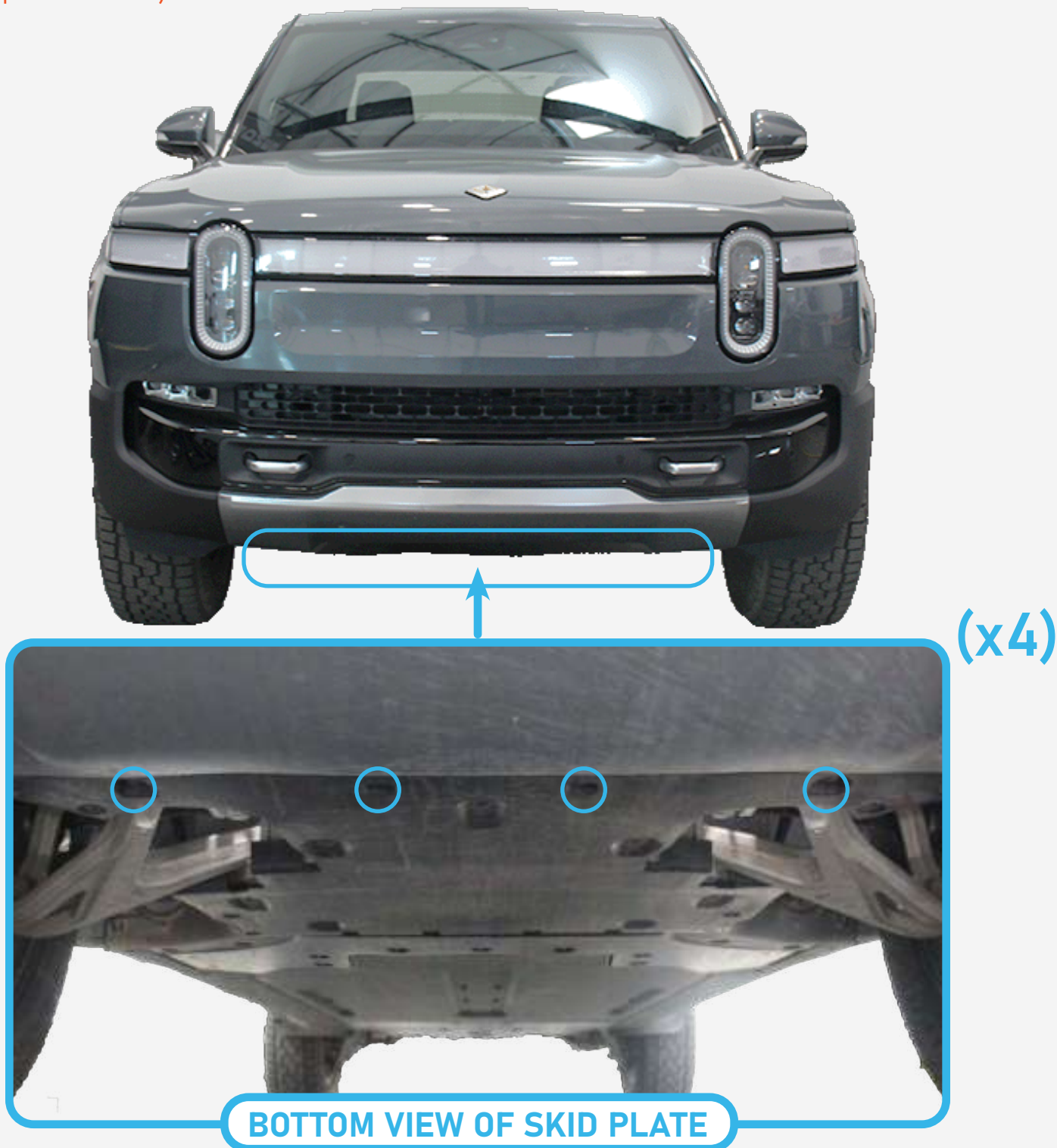
□ STEP 9

With the wire connectors disconnected and the mounting bolts removed, lift the plastic frunk liner out of the compartment and set it aside.



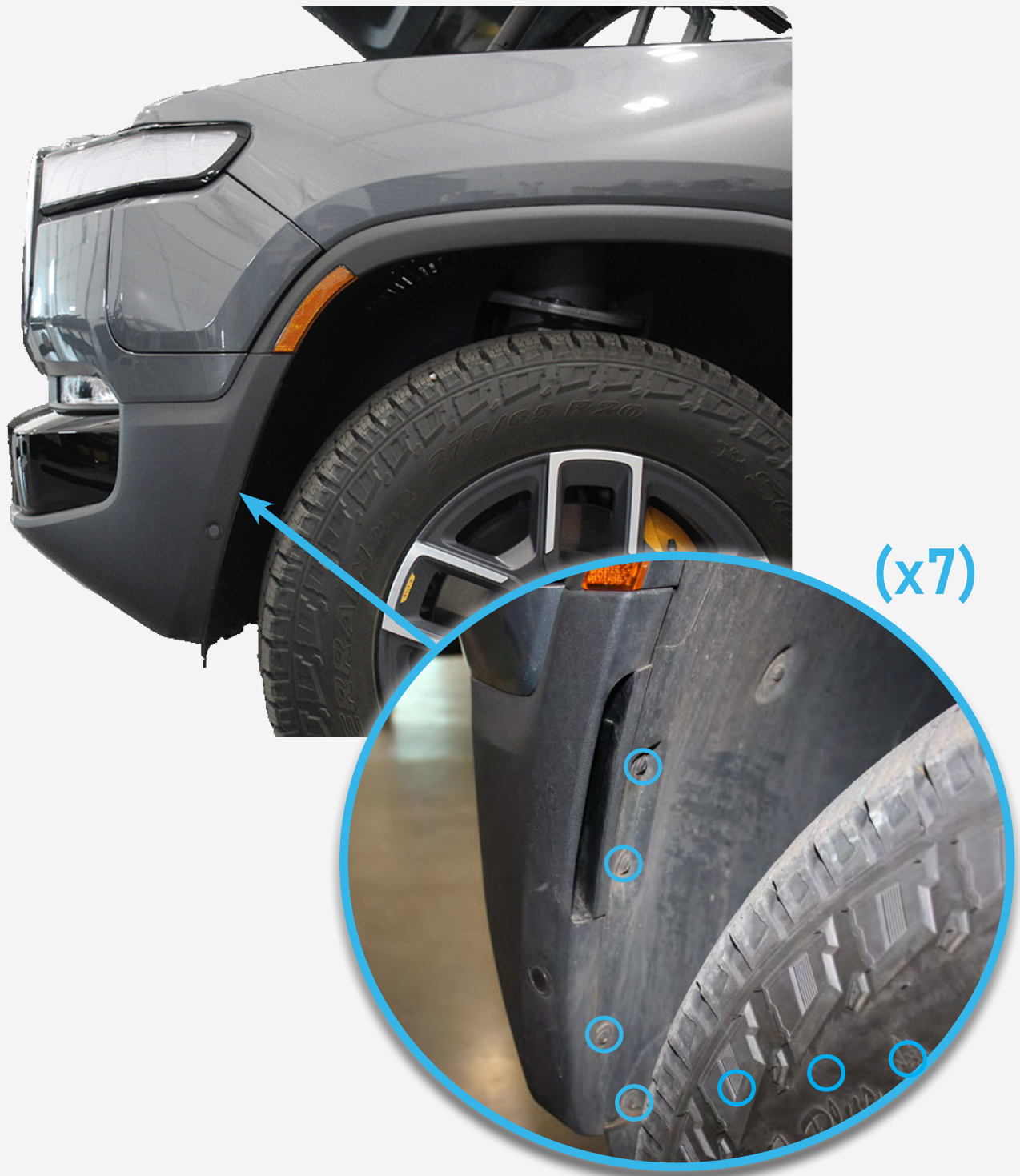
□ STEP 10

Locate the (4) rearmost bumper skid plate mounting bolts (located under the truck, just in front of the lower control arms) and use a (T20 Torx) to remove them.
(Keep the hardware)



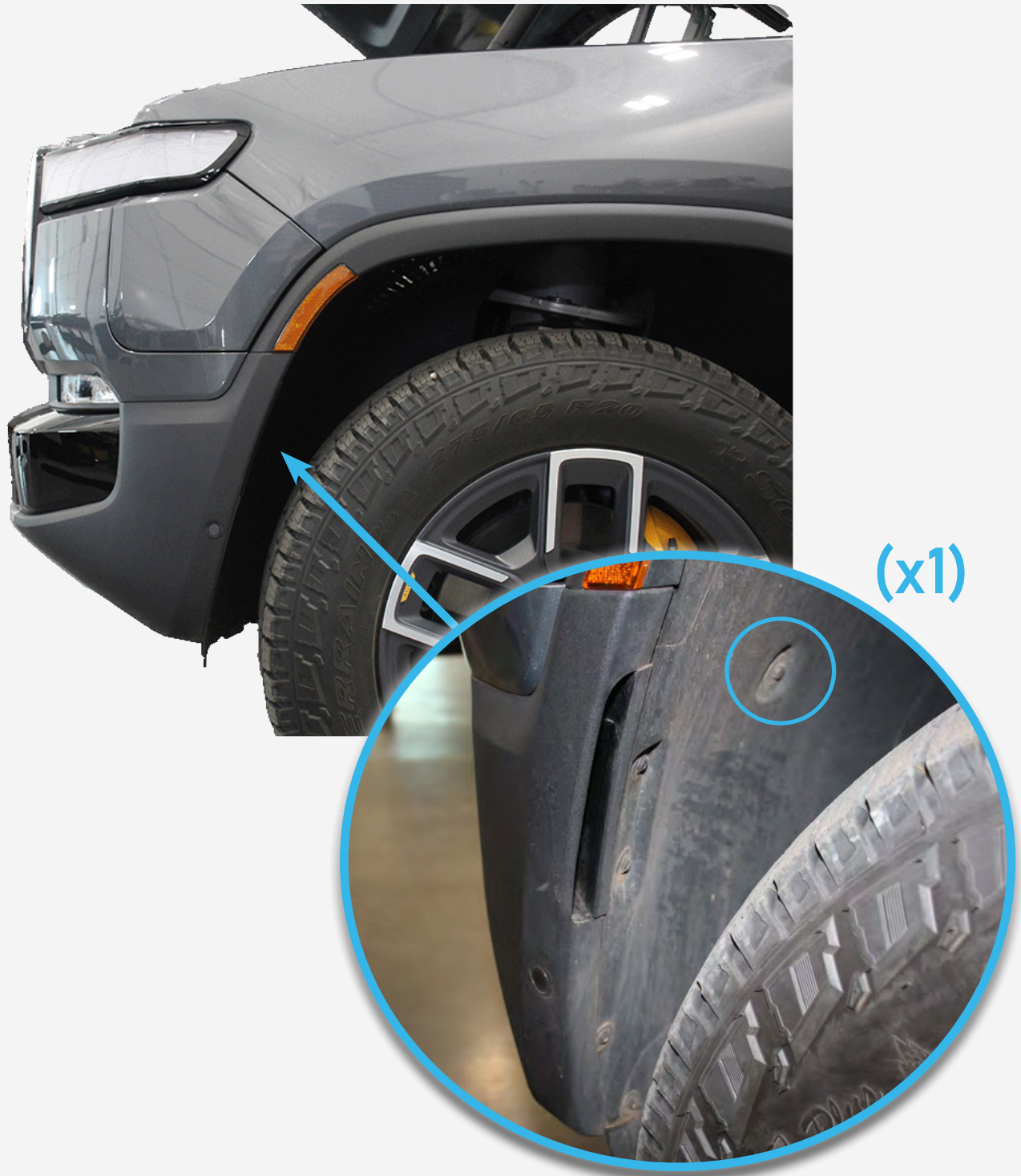
□ STEP 11

Locate the (7) inner fender liner screws indicated in the image below and use a (T20 Torx) to remove.
(Keep the hardware. Repeat on other side)



□ STEP 12

Locate the driver side inner fender liner screw indicated in the image below and use a (10mm) to remove.
(Keep the hardware)



□ STEP 13

Reach through the seam where the front fascia and inner fender liner meet to locate the support bracket shown below, then use a (10mm) to remove the bolt from the location indicated below.
(Repeat on other side)



□ STEP 14

Reach through the seam where the front fascia and inner fender liner meet, then squeeze the reflector mounting tabs and pop out the reflector. Unplug and remove the reflector, then locate the (2) fender trim screws indicated in the image below and use a (T15 Torx) to remove.
(Keep the hardware. Repeat on other side)



STEP 15

Locate the screw indicated in the image below and use a (T30 Torx) to remove.



□ STEP 16

Locate the passenger side main bumper harness plug and camera connection along the frame, on the front side of the inner fender liner, near the crash bar mounts. Depress connector lock tabs and pull to unplug connections.

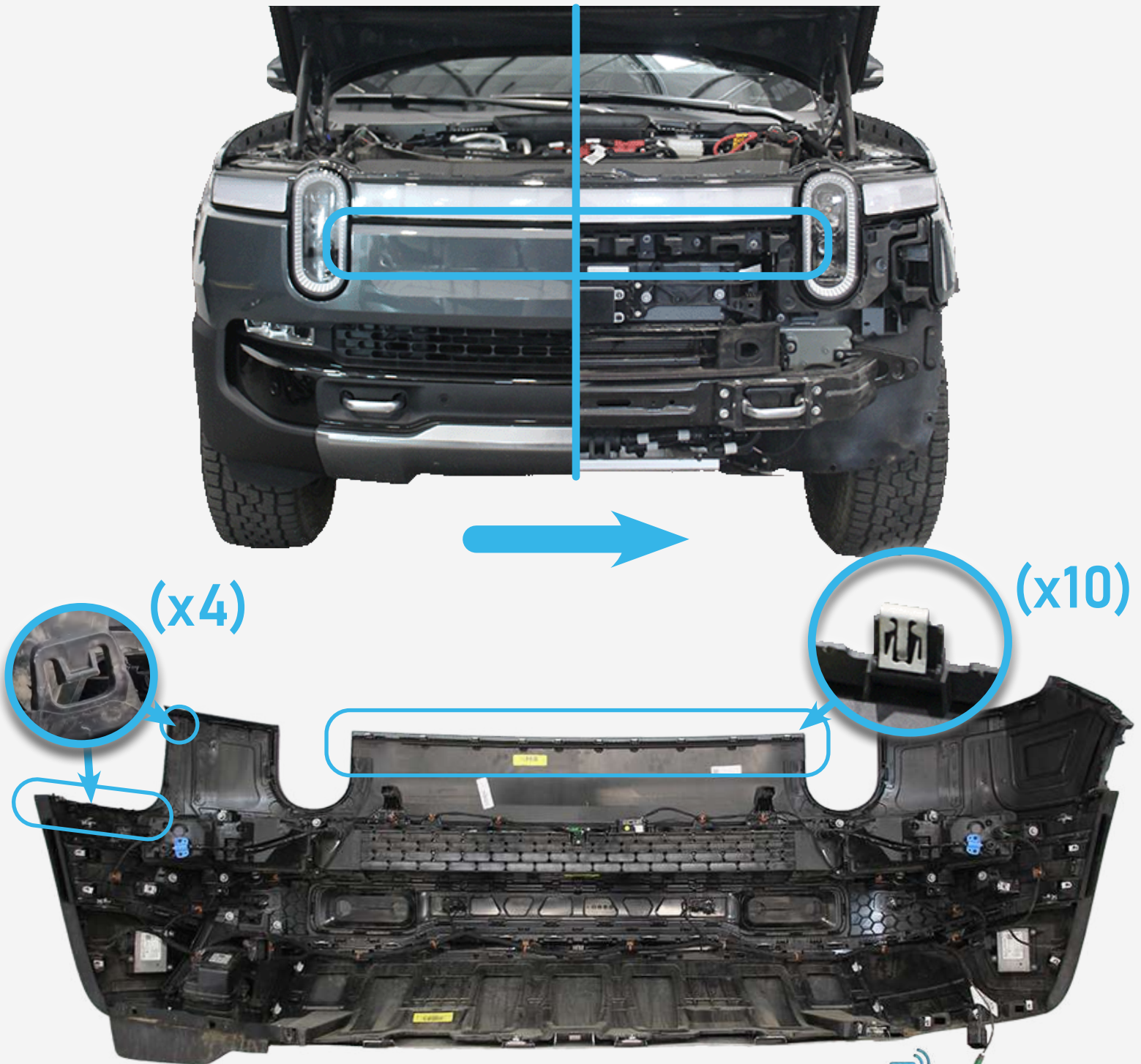
(Repeat on other side. The camera plug is on the passenger side only)



□ STEP 17

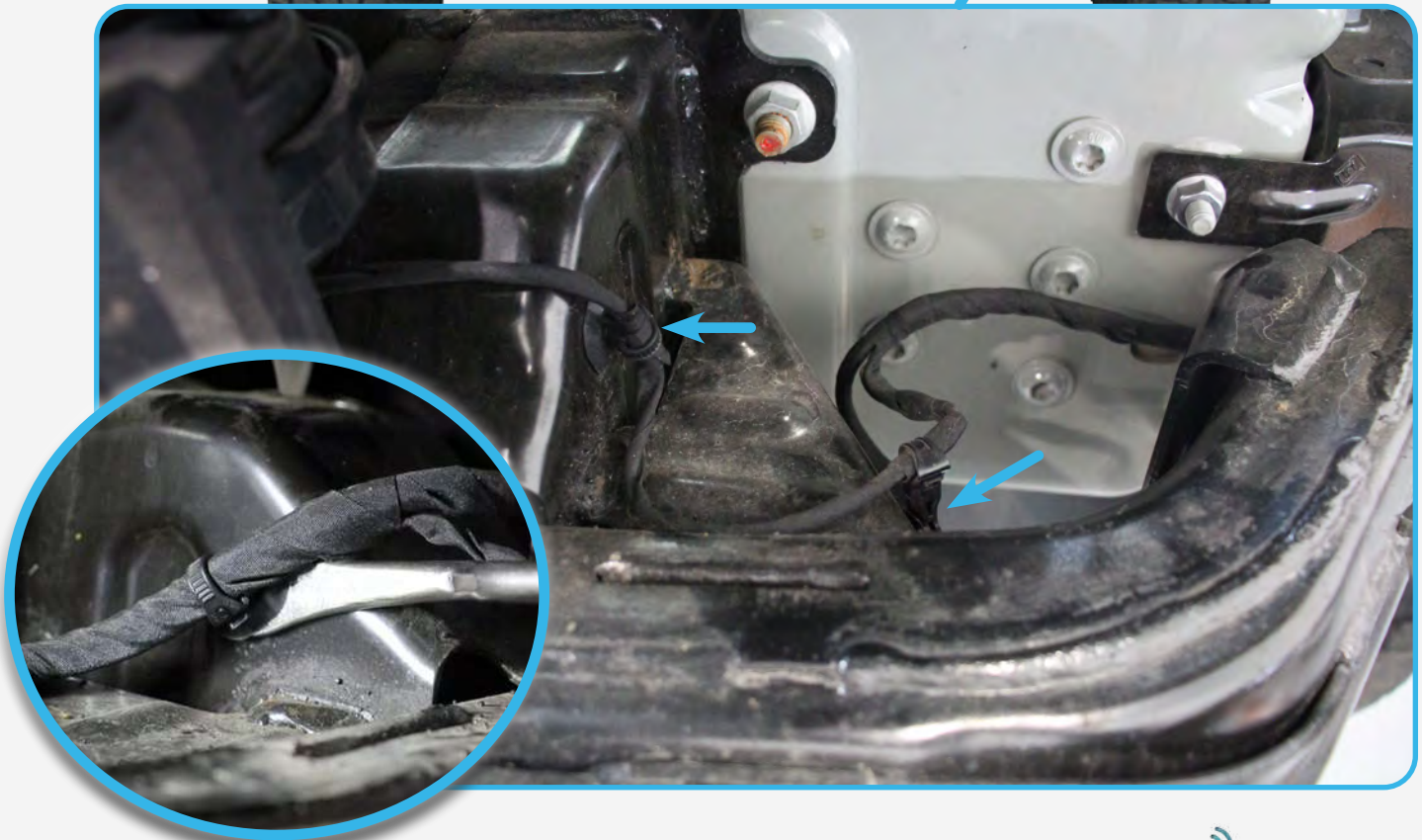
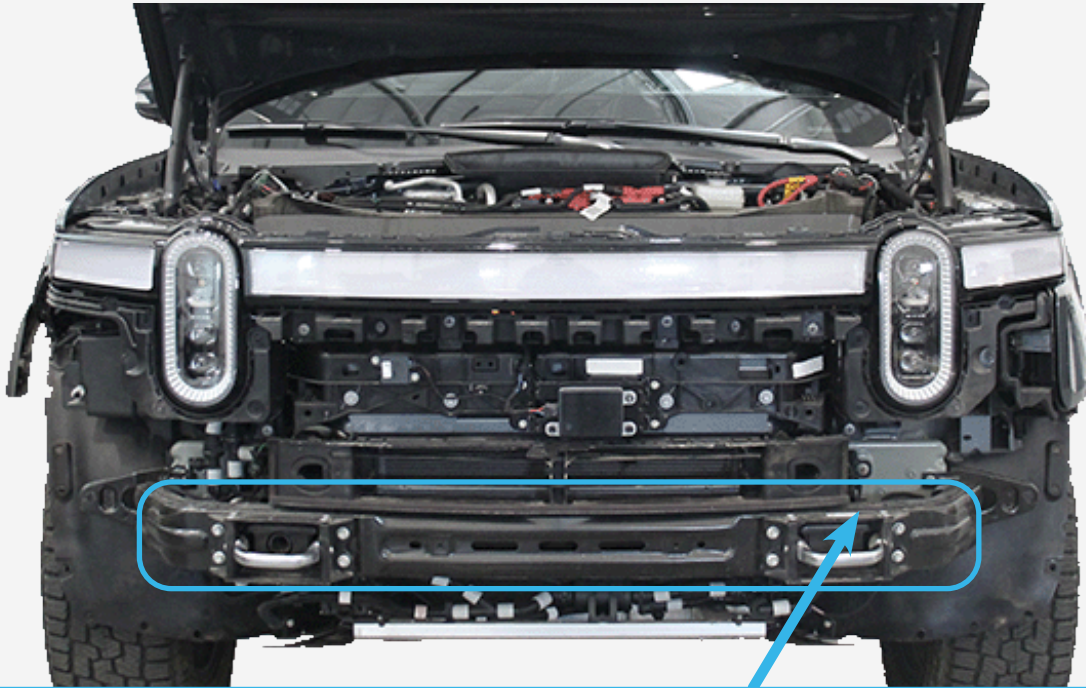
At this point, the front valance is connected by the (10) center metal clips and (4) plastic clip in tabs shown below, along with an assortment of plastic press in tabs along the remaining top perimeter of the fascia. Working from driver to passenger side, reach through the inner fender liner to release the (4) tabs around the charge door, then locate each remaining retention points and pull firmly one by one to release the fascia.

(Work slowly to minimize the risk of breaking tabs)



□ STEP 18

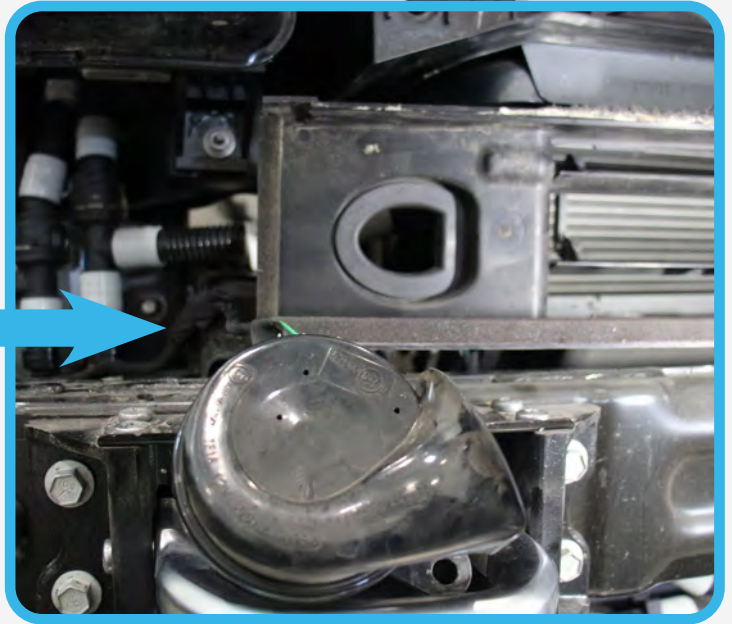
With the front fascia removed, trace down each wire harness retainer that secures the harness to the crash bar, and use a (pry tool) to dislodge the retainers. Repeat this along the full length of the crash bar.



□ STEP 19

Using an (8mm) locate and remove the horn mounting bolt shown below, then temporarily move the horn out of the way.

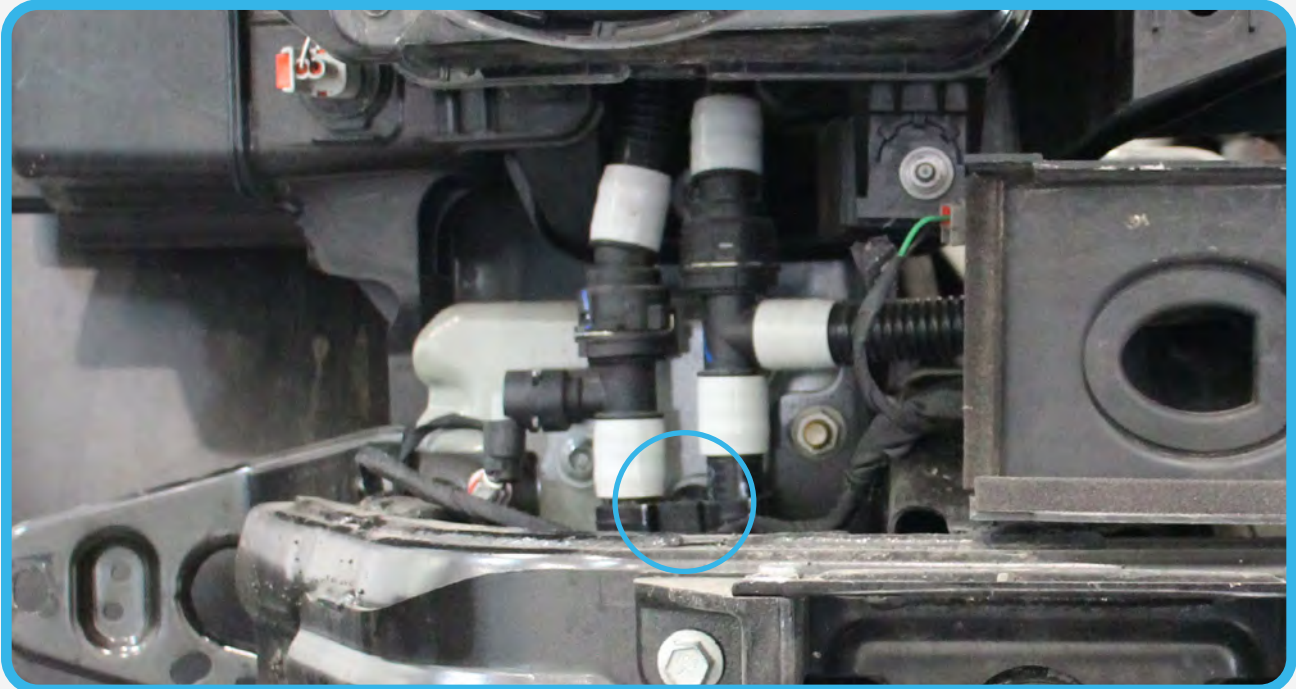
(Keep the hardware. Repeat on other side)



□ STEP 20

Using a (pry tool), locate the cooling line retainer attached to the passenger side crash bar mounting plate and pry loose.

(Use caution to not damage the cooling lines)



(x1)



□ STEP 21

Locate the indicated crash bar/fan shroud mounting bolt through the frunk compartment, and use a (13mm) remove.

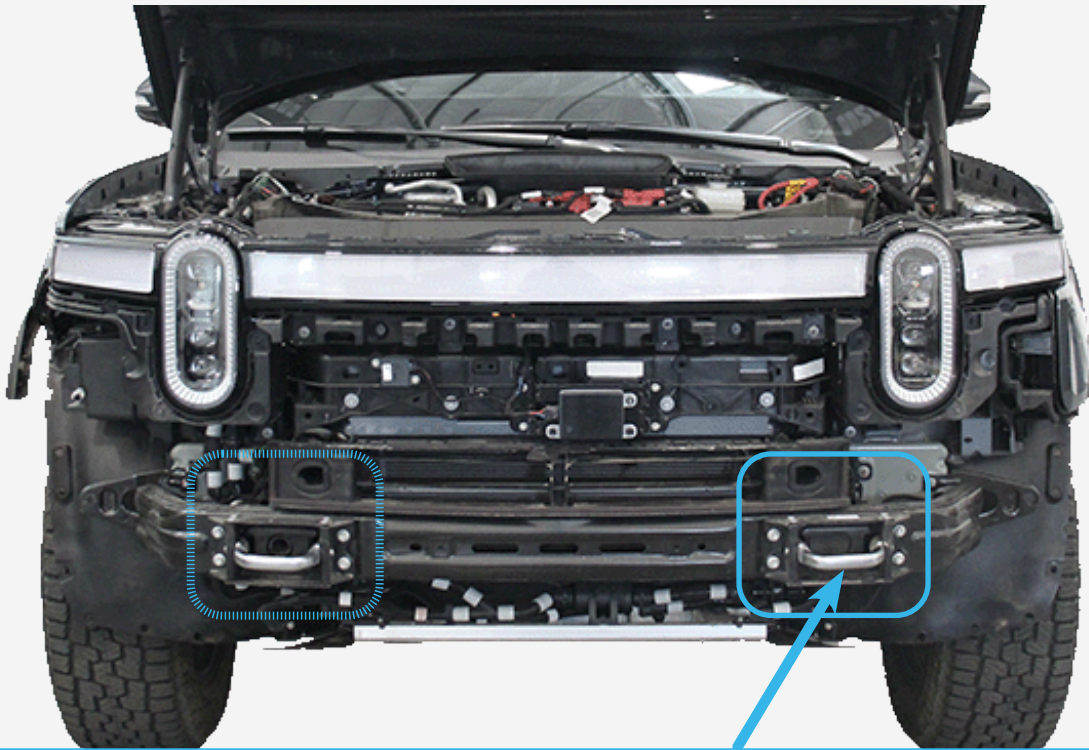
(Repeat on other side)



□ STEP 22

Locate the (3) indicated crash bar mounting bolts from the front side of the truck, and use a (15mm) to remove.

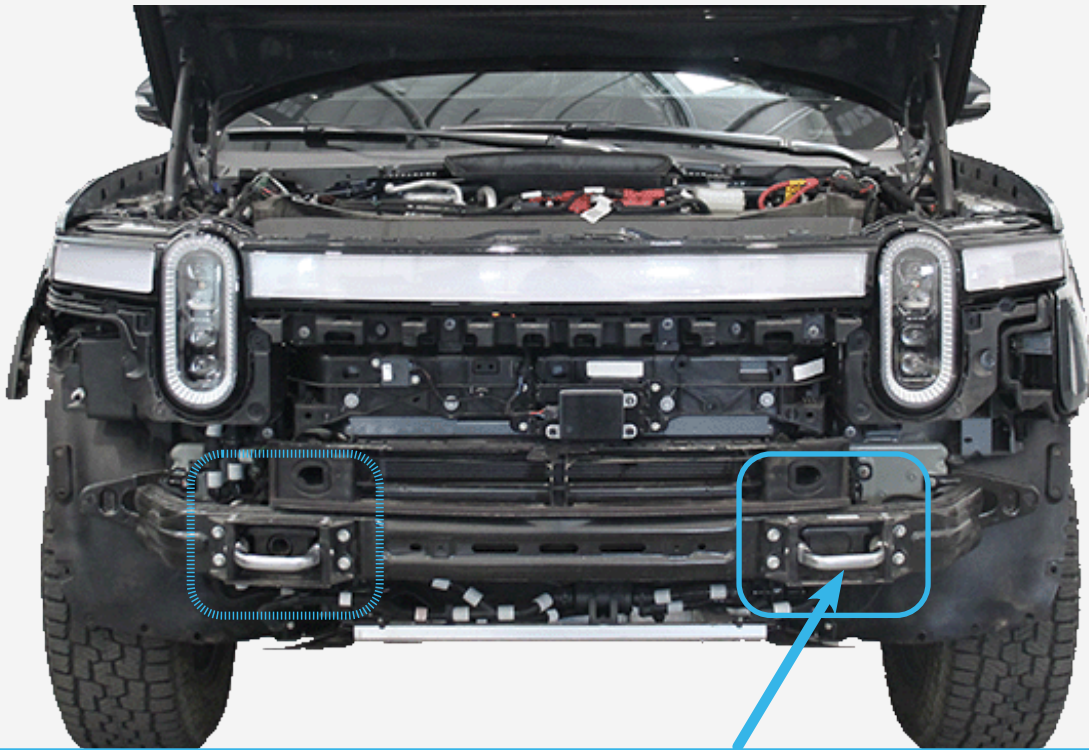
(Keep the hardware. Repeat on other side)



□ STEP 23

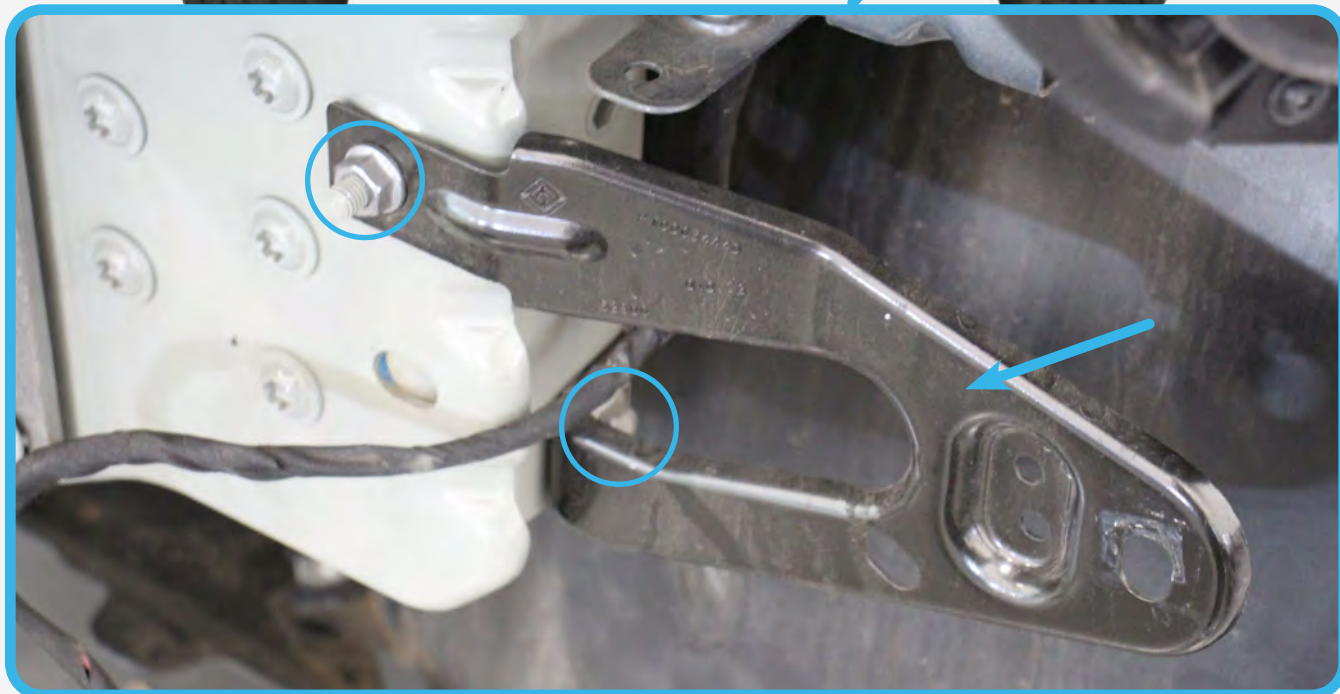
Locate the (4) indicated crash bar mounting bolts from the front side of the truck, and use a (13mm) to remove.

(Keep the hardware. Repeat on other side)



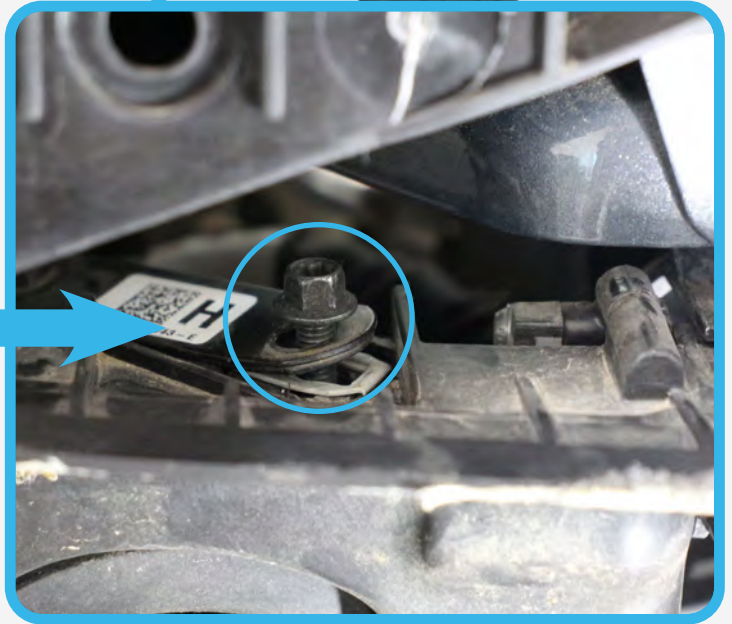
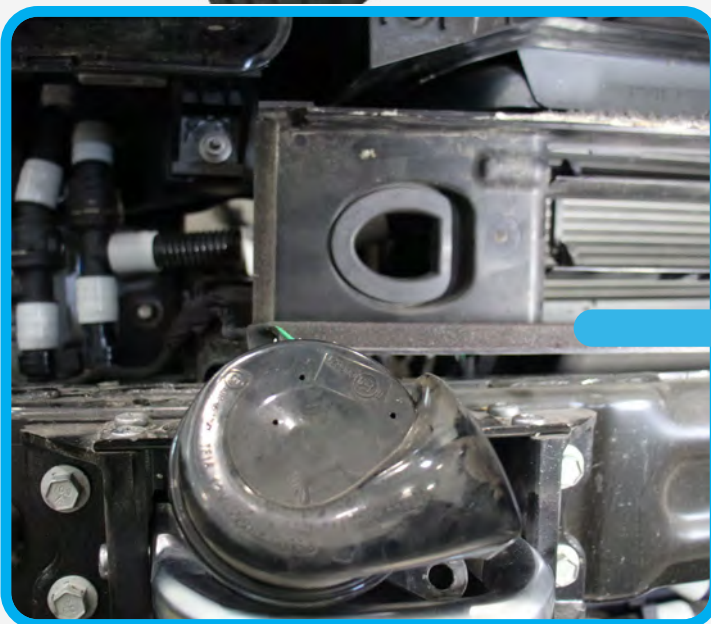
□ STEP 24

Using a (13mm), remove the nut, bolt and support bracket indicated below.
(Repeat on other side)



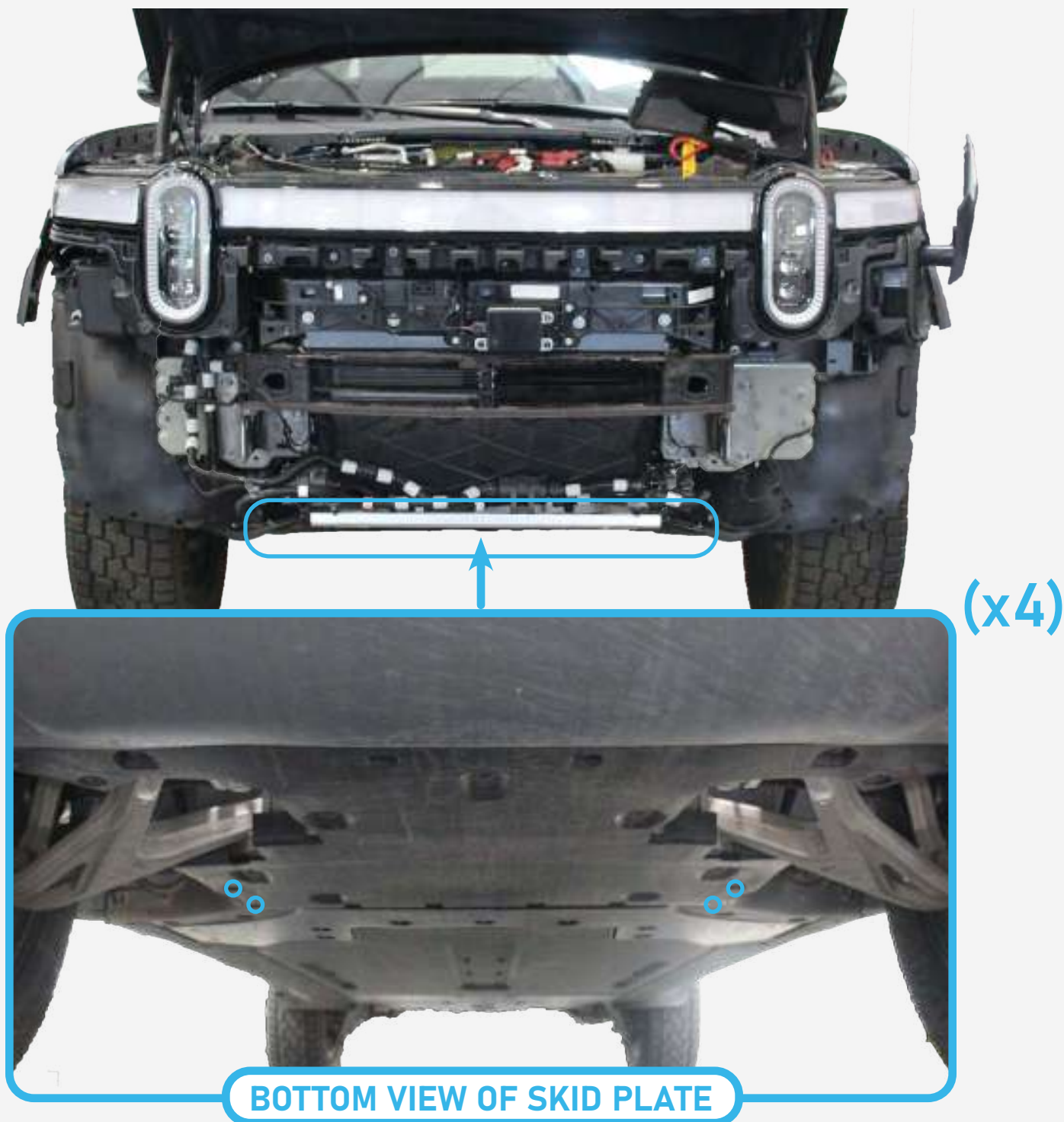
□ STEP 25

Using an (8mm), reinstall the horn with its original factory hardware (from step 19) that was previously removed. *(Repeat on other side)*



□ STEP 26

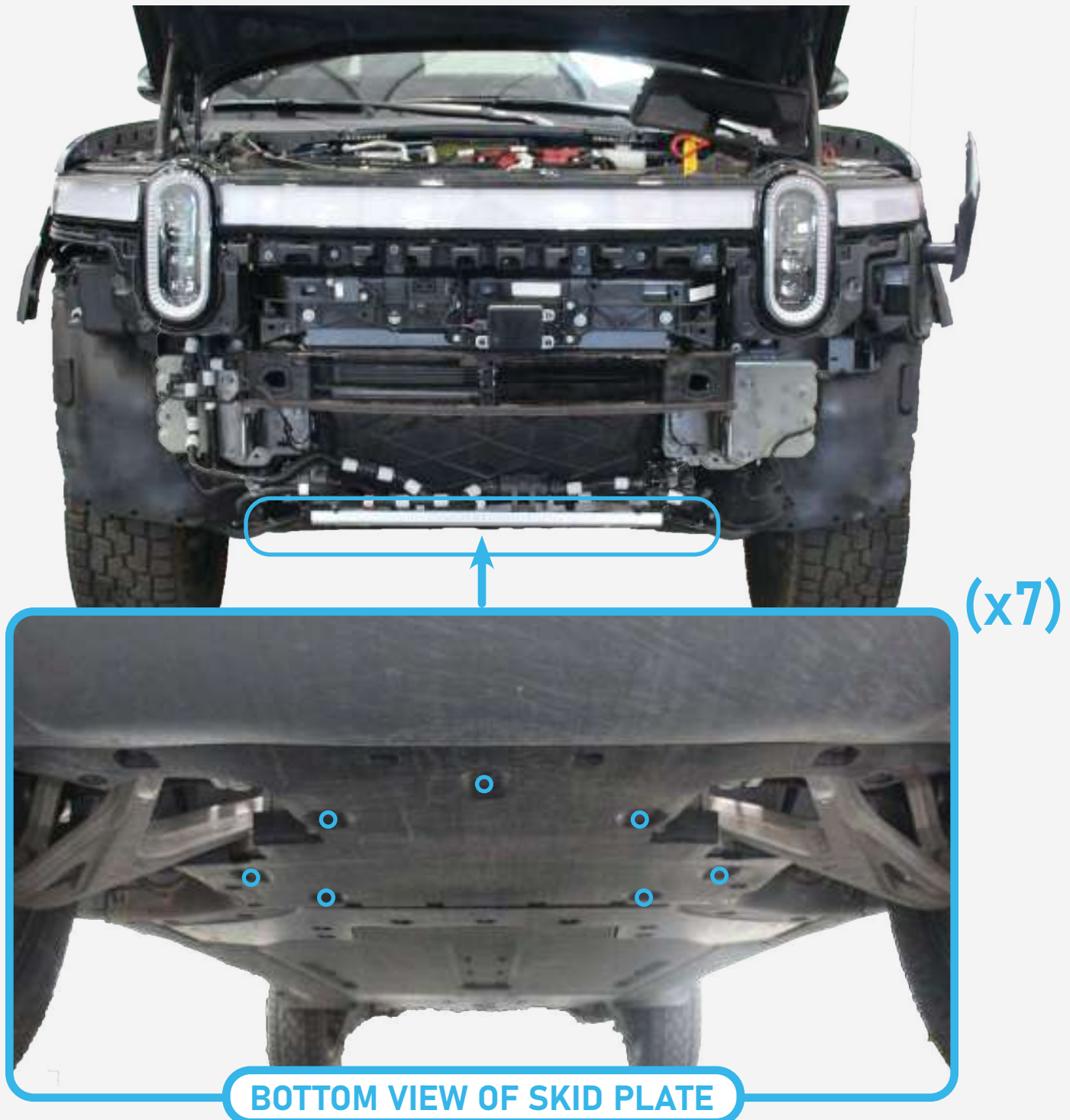
Using a (T15 Torx), locate and remove the (4) skid plate mounting bolts indicated below.
(Keep the hardware)



□ STEP 27

Using a (T30 Torx), locate and remove the final (7) skid plate mounting bolts indicated below, then remove the skid plate from the truck.

(Keep the hardware and skid plate)



STEP 28

With the skid plate removed from the truck, reference the **dashed lines** shown below, then use your preferred **(cutting tool)** to trim and remove the sections indicated below. **(Take your time)**

Using the original hardware (from steps 26 and 27) along with a **(T15 Torx)** and **(T30 Torx)**, reinstall the trimmed skid plate onto the truck.



STEP 29

Using a (25/64" drill bit), drill out and remove the riv nut shown below, then use the drill bit to drill out the original riv nut mounting hole.

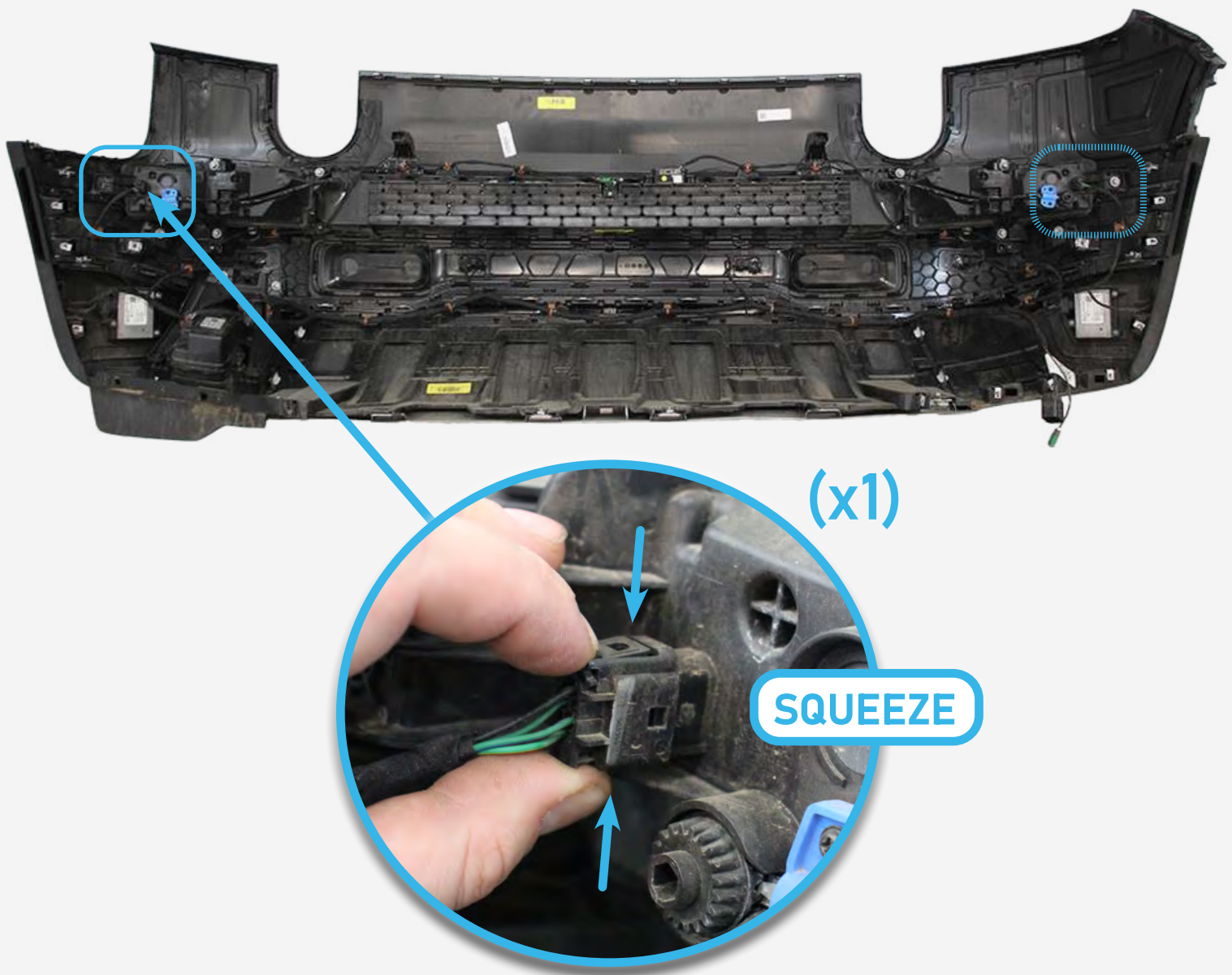
(Repeat on other side)



□ STEP 30

Locate the plug for the fog light indicated below. Depress the lock tabs and pull connector to disconnect.

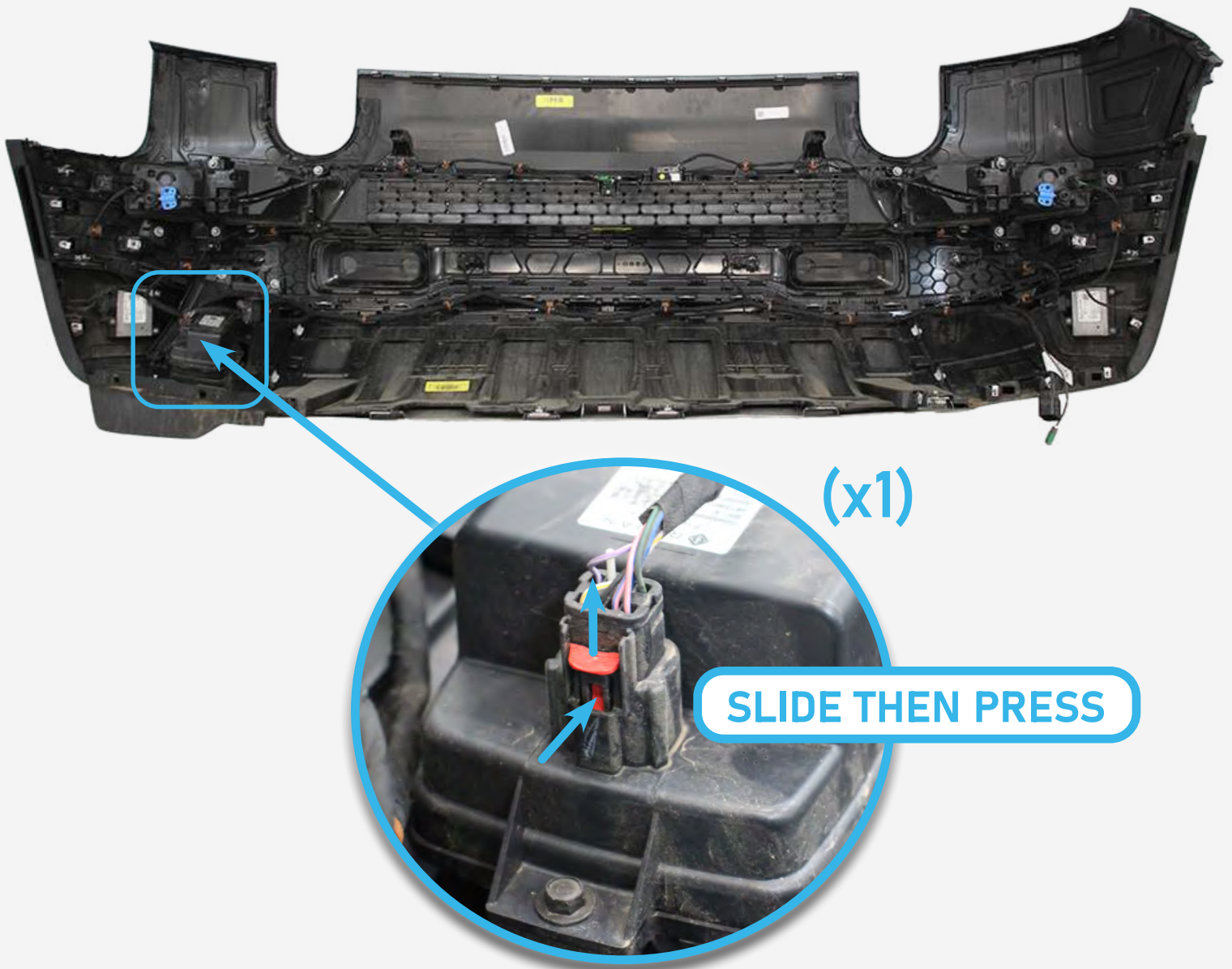
(Do NOT pull from the wires. Repeat on other side)



□ STEP 31

Locate the plug for the AVAS speaker on the driver side. Slide out the red lock then depress the lock tab and pull connector to disconnect.

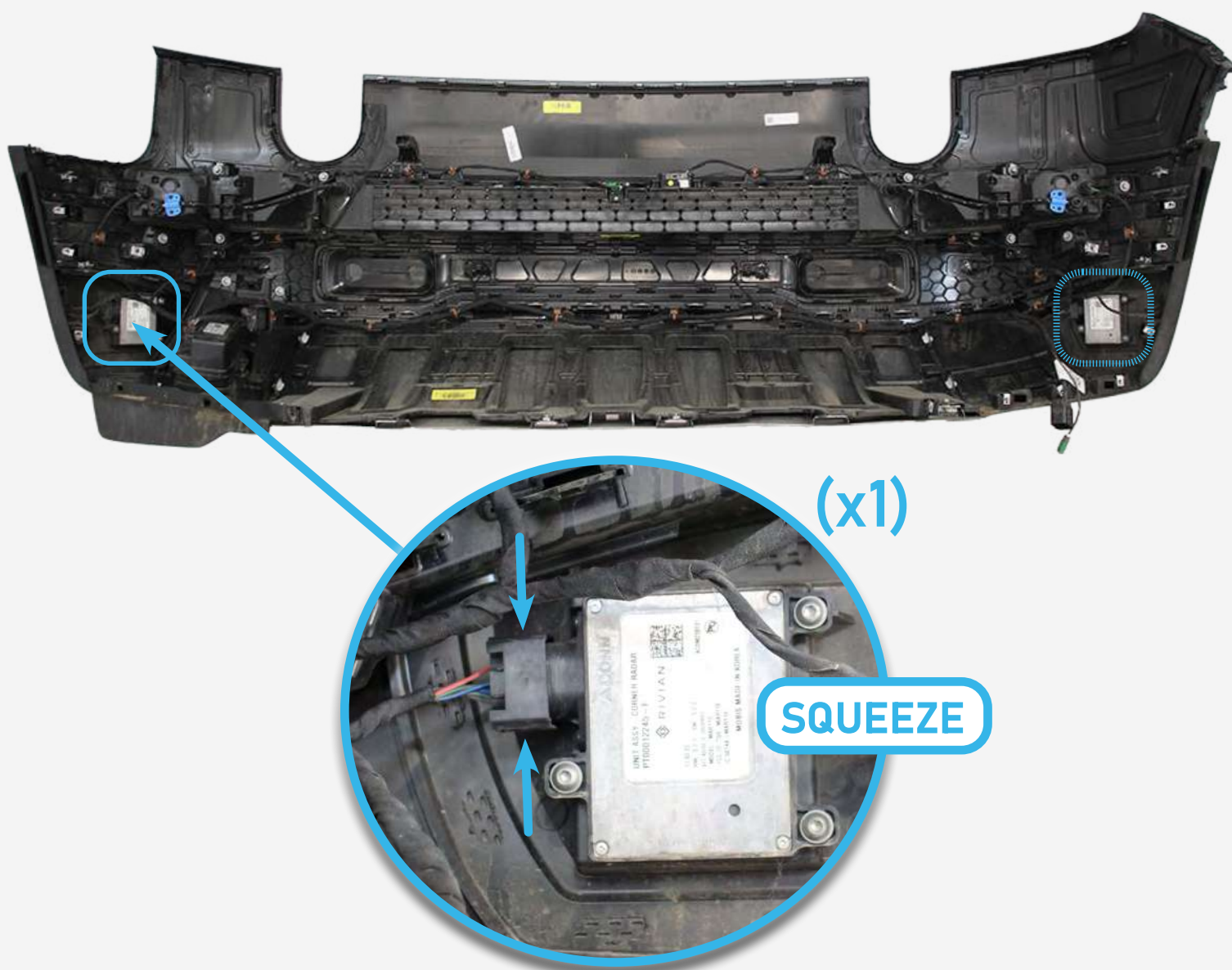
(Do NOT pull from the wires)



□ STEP 32

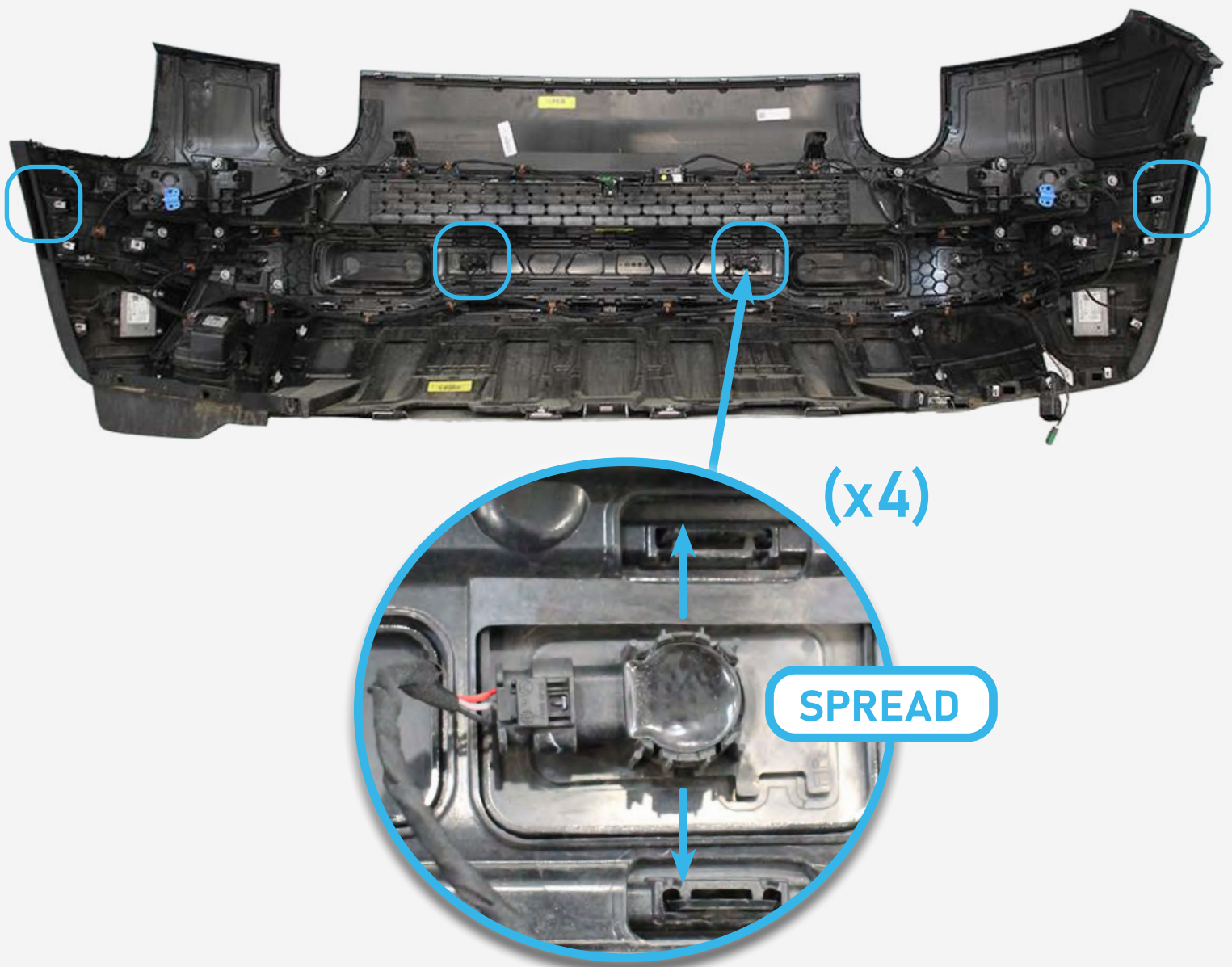
Locate the plugs for the BSM sensor indicated below. Depress the lock tabs and pull connector to disconnect.

(Do NOT pull from the wires. Repeat on other side)



□ STEP 33

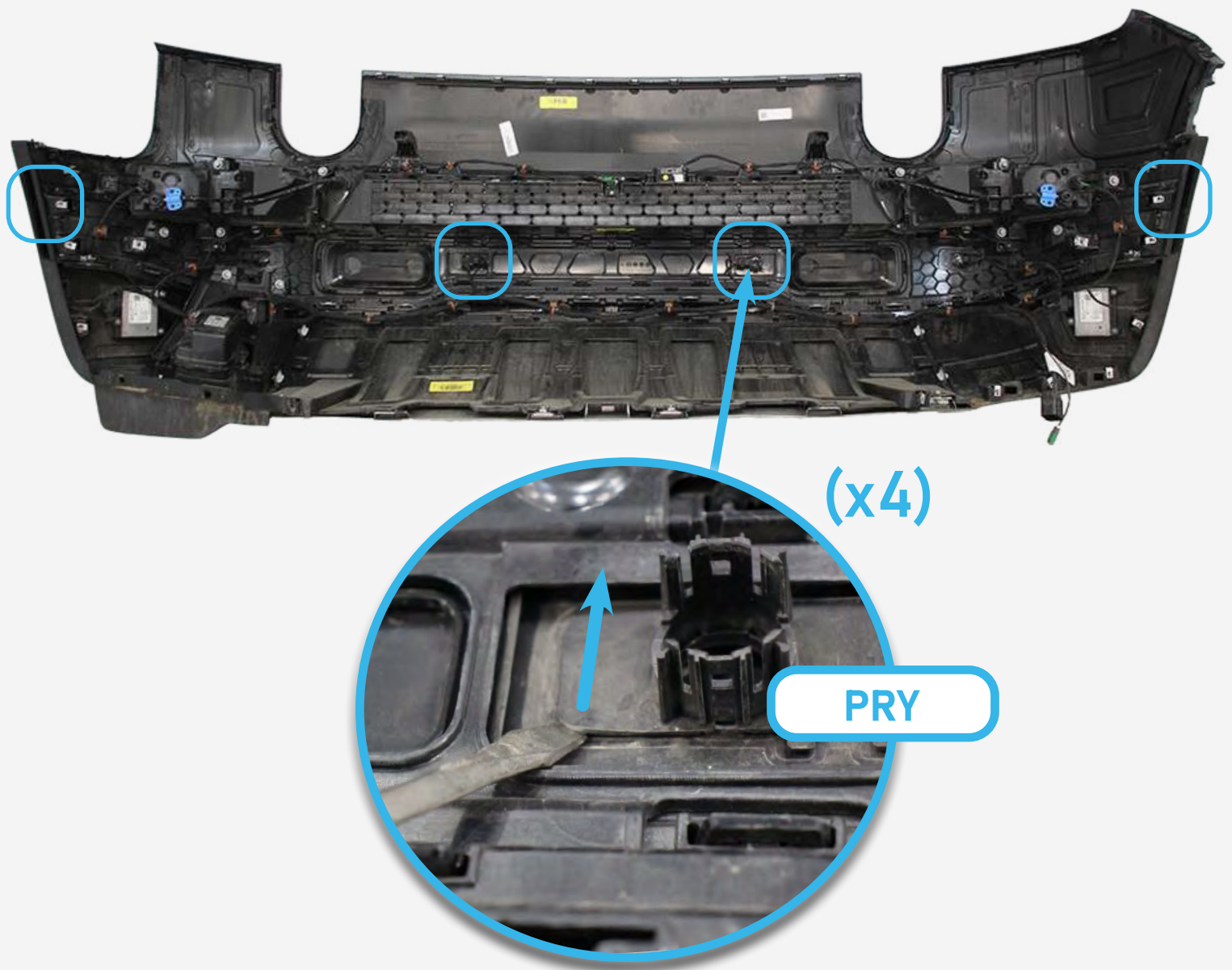
Locate the (4) parking sensors indicated below. **GENTLY** spread the top and bottom bezel tabs to release the parking sensor, then push the sensor from the face side of the bumper to remove.
(Be gentle when handling bezels. These will break if excessive force is used)



□ STEP 34

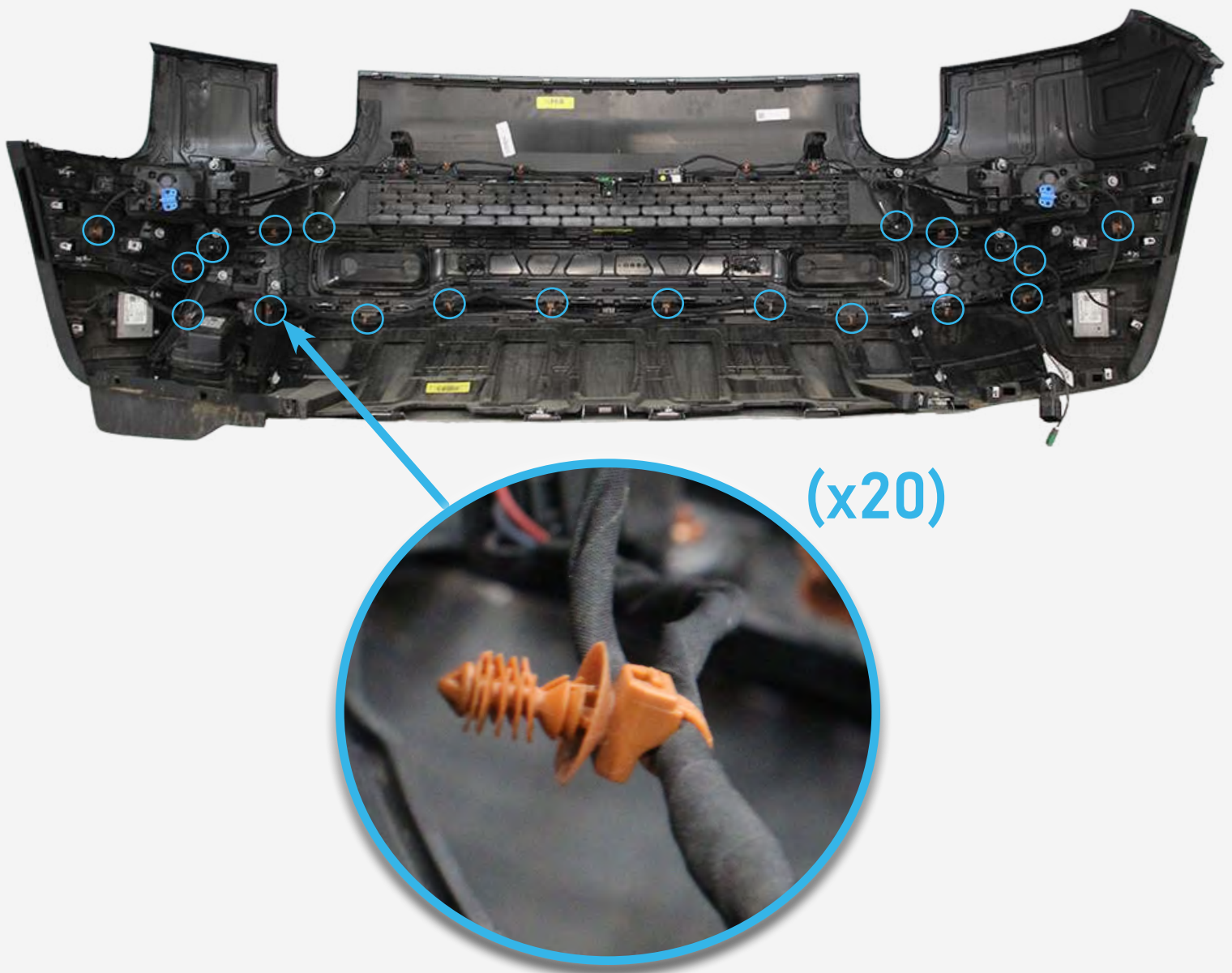
With the parking sensors removed, slowly apply medium heat to the (4) parking sensor bezels and use a (pry tool) to remove.

(Be gentle when handling bezels. These will break if excessive force is used)



□ STEP 35

Use a (pry tool) to dislodge the (20) wire harness retainers from the locations indicated below.
(Work slowly to avoid damaging retainers)

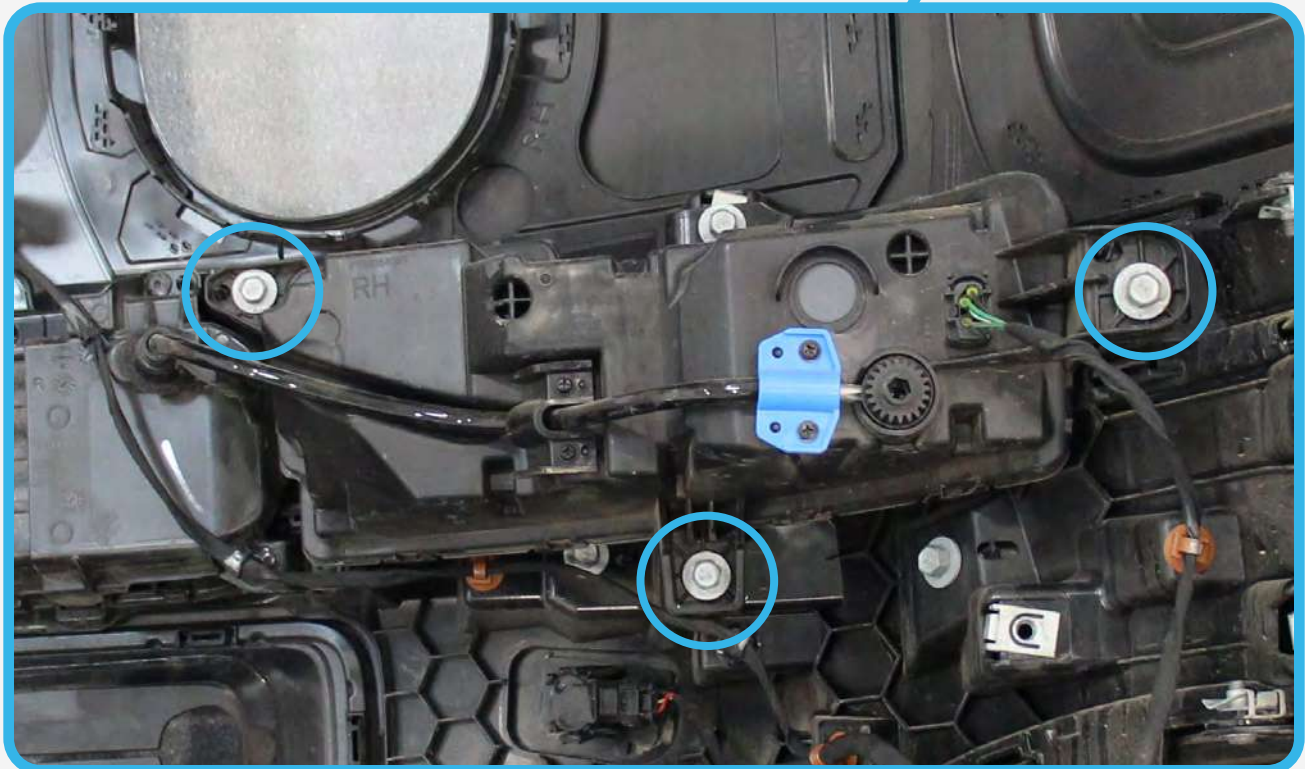


□ STEP 36

Use a (10mm) to remove the (3) fog light mounting bolts indicated below.
(Keep the hardware. Repeat on other side)



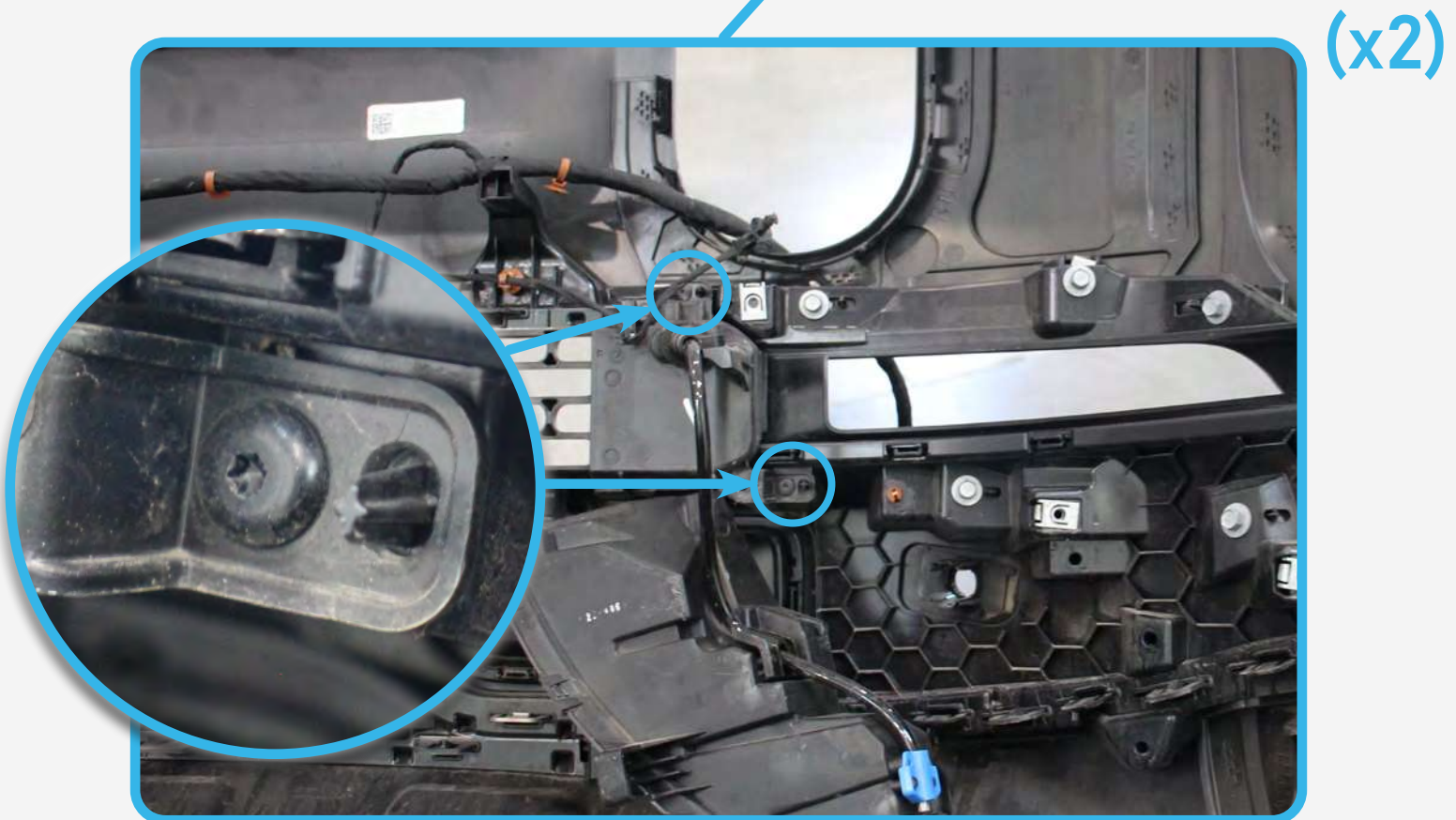
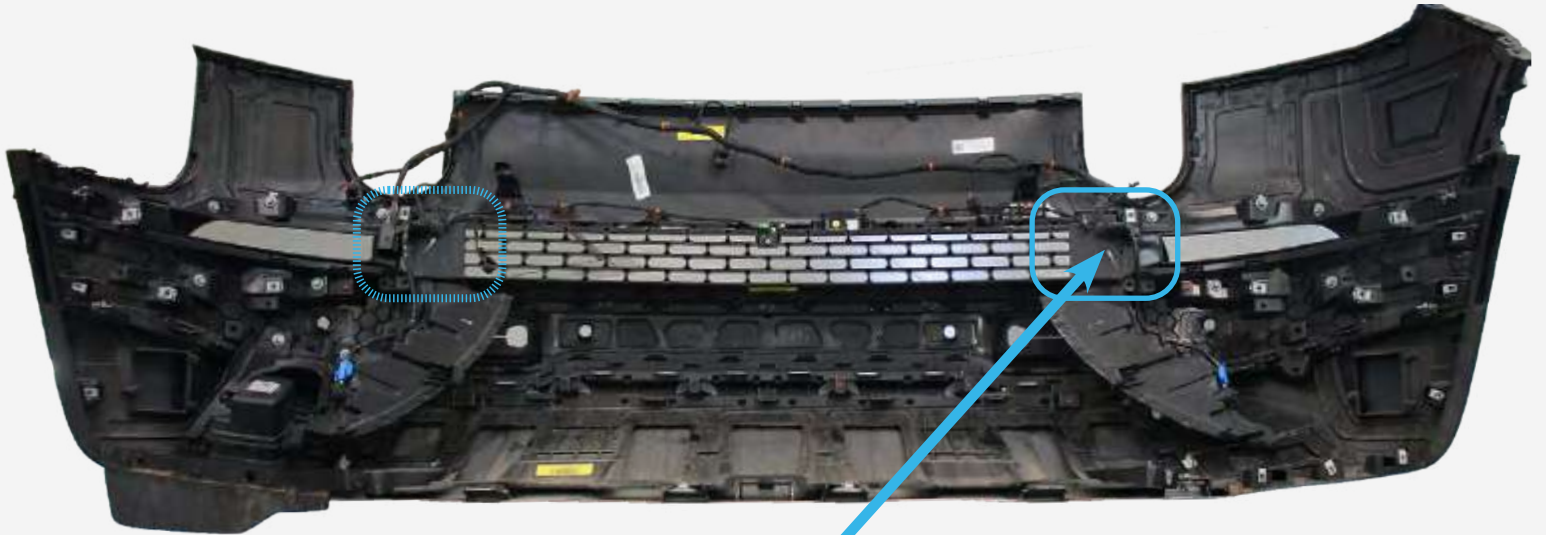
(x3)



□ STEP 37

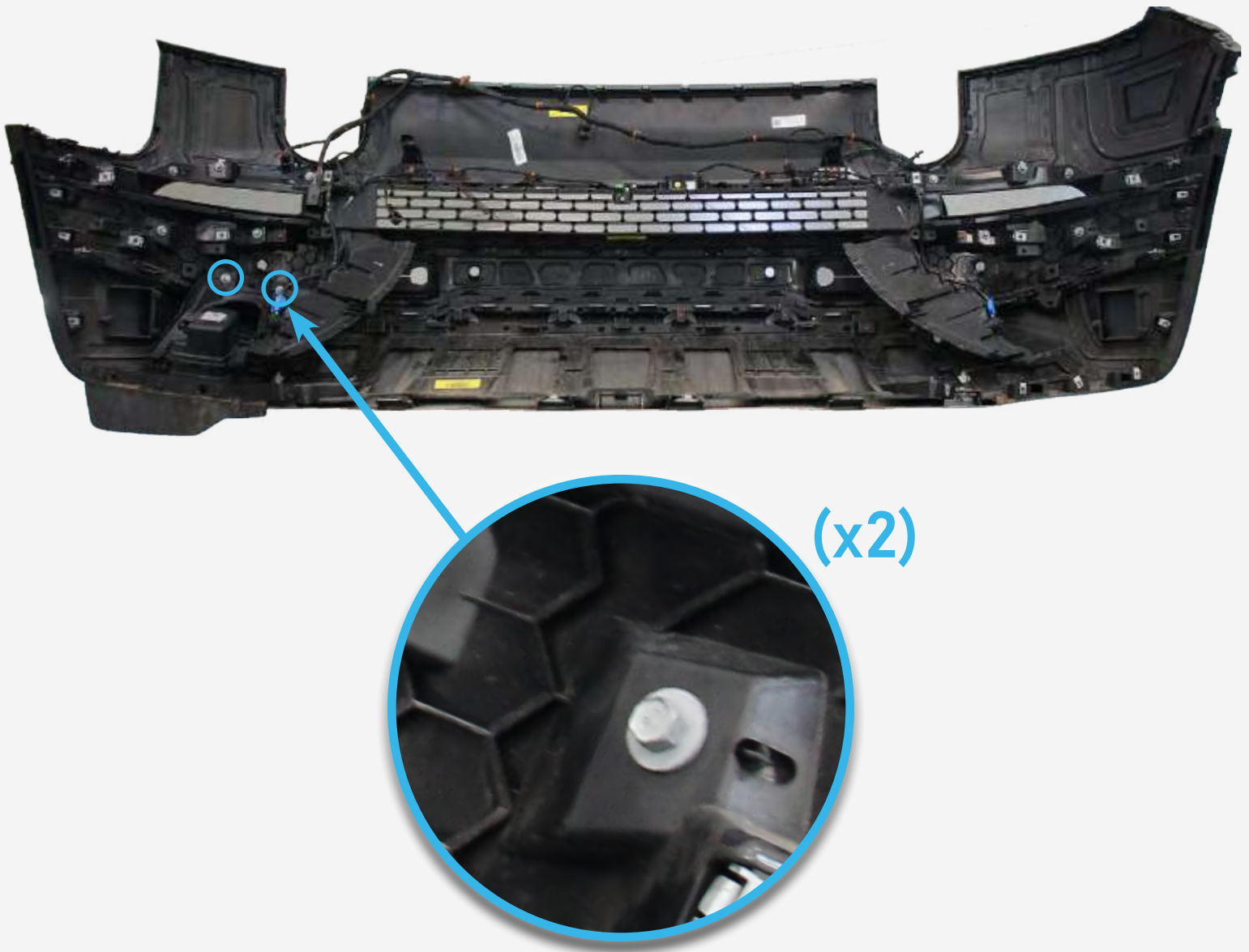
Using a (T15 Torx), remove the (2) indicated fog light adjuster mounting screws and remove the complete fog light assembly.

(Keep all parts and hardware. Repeat on other side)



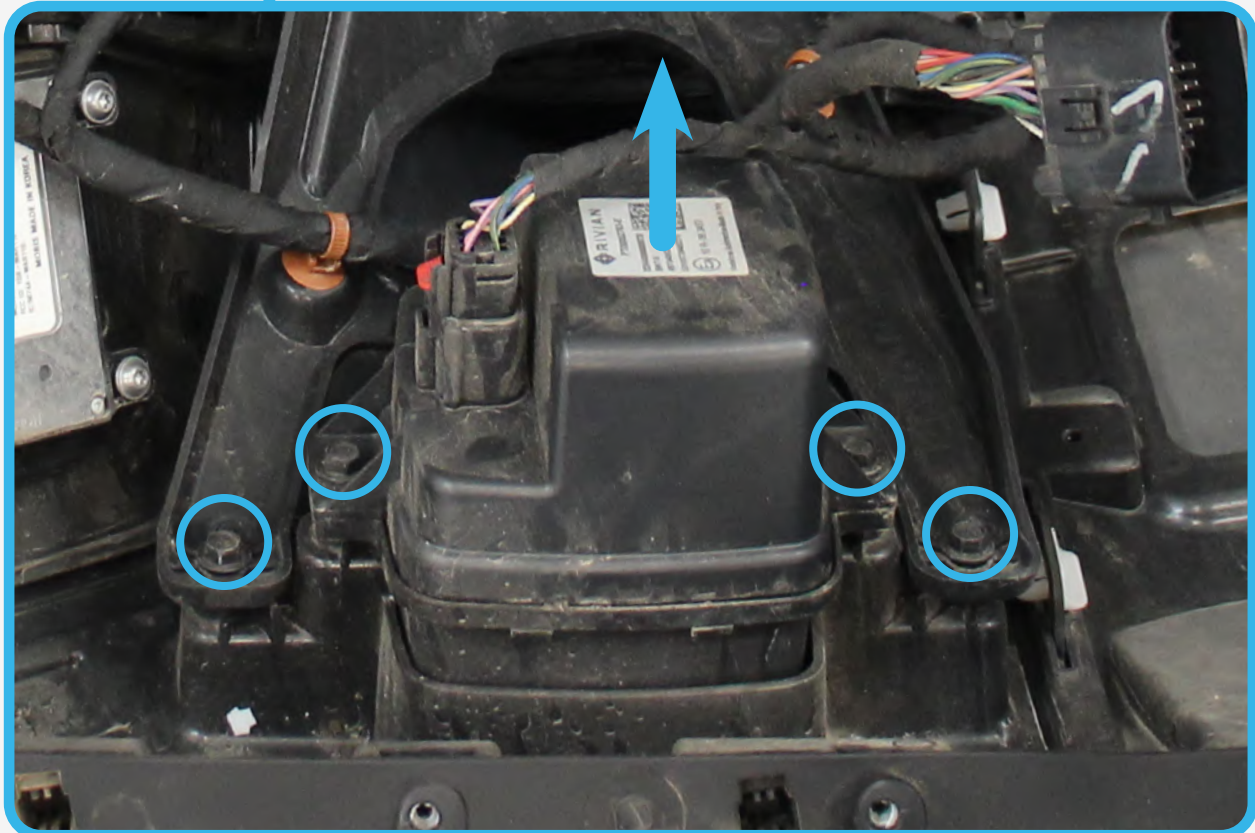
□ STEP 38

Using a (10mm), remove the (2) indicated mounting bolts.



□ STEP 39

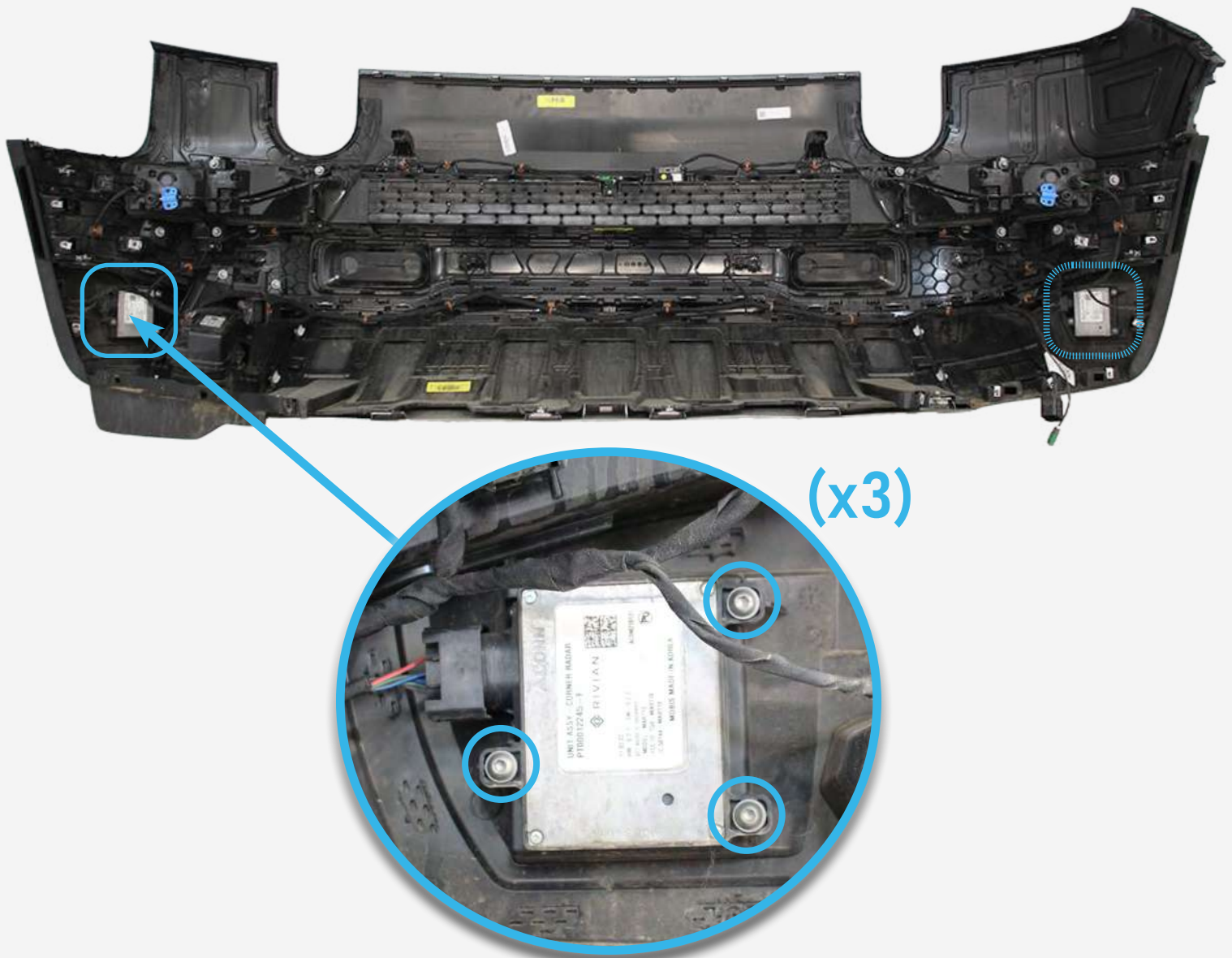
Using a (10mm), remove the (4) indicated mounting screws, then remove the AVAS speaker and speaker support brace.
(Keep the AVAS speaker)



(x4)

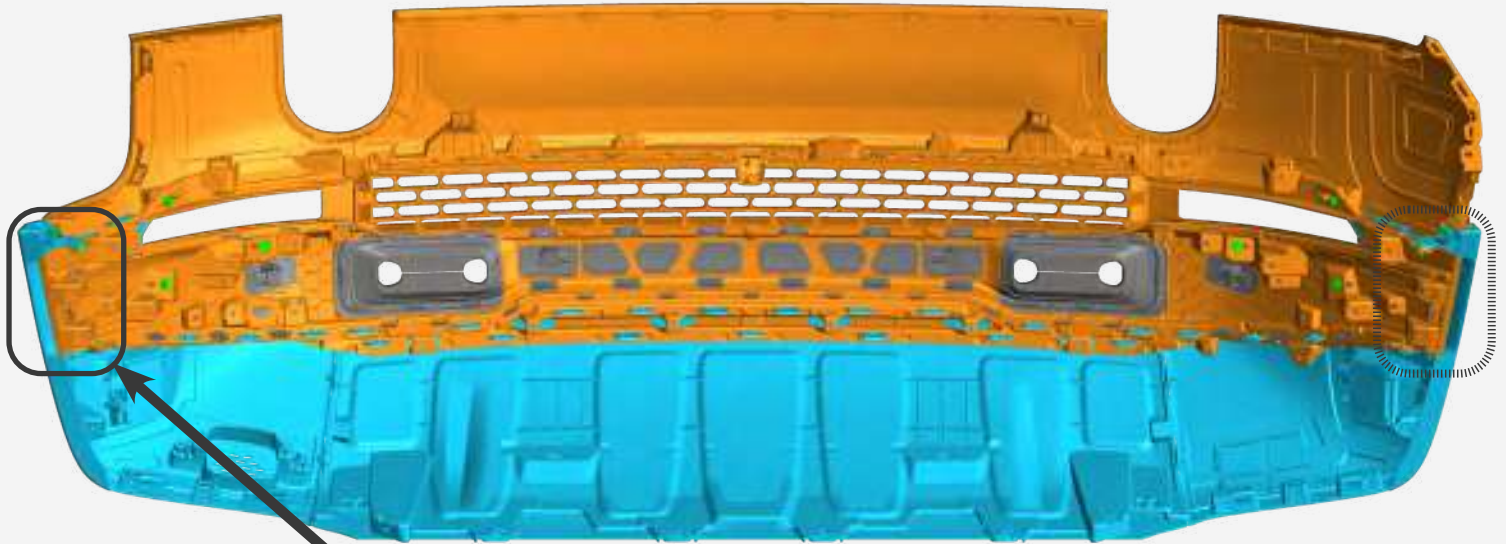
□ STEP 40

Using a (T20 Torx), remove the (3) indicated mounting screws and remove the BSM Sensor from the bumper. (Use care when handling sensors. This is delicate equipment and will be reused. Repeat on other side)

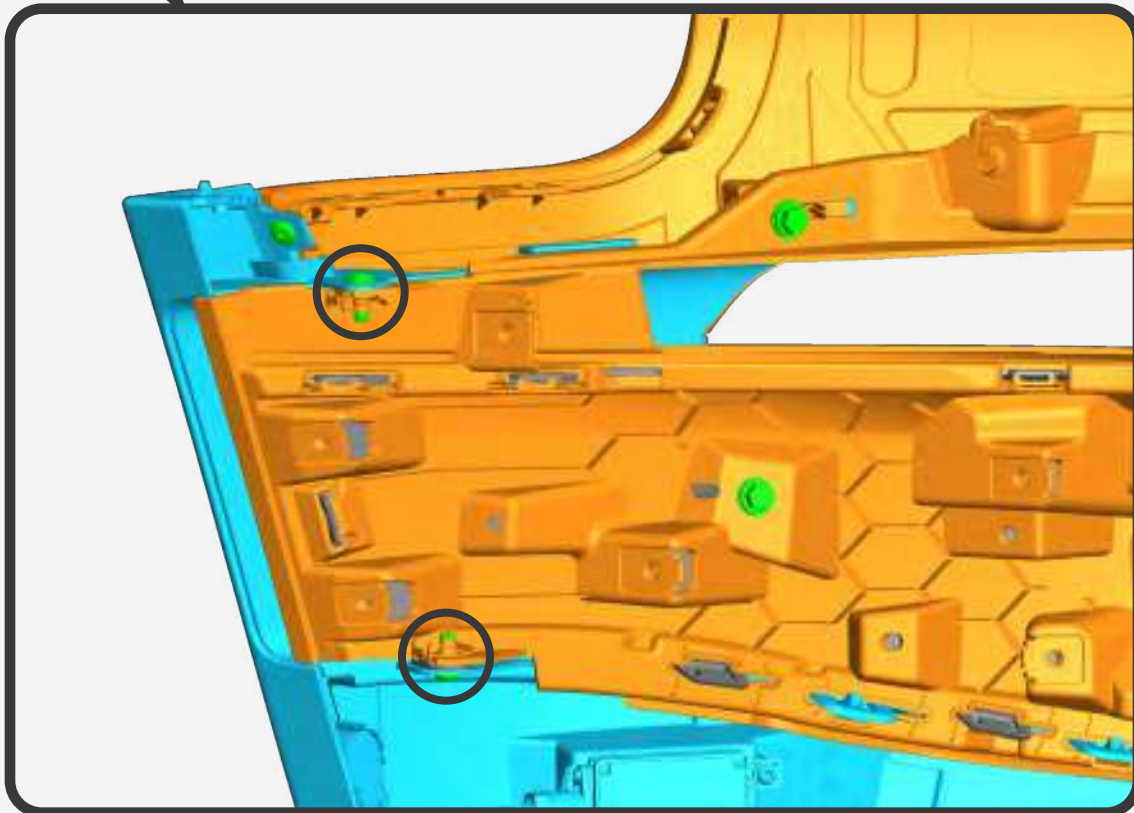


□ STEP 41

Using a (T20 Torx), remove the (2) bolts indicated below.
(Use caution to not damage the paint. Repeat on other side)

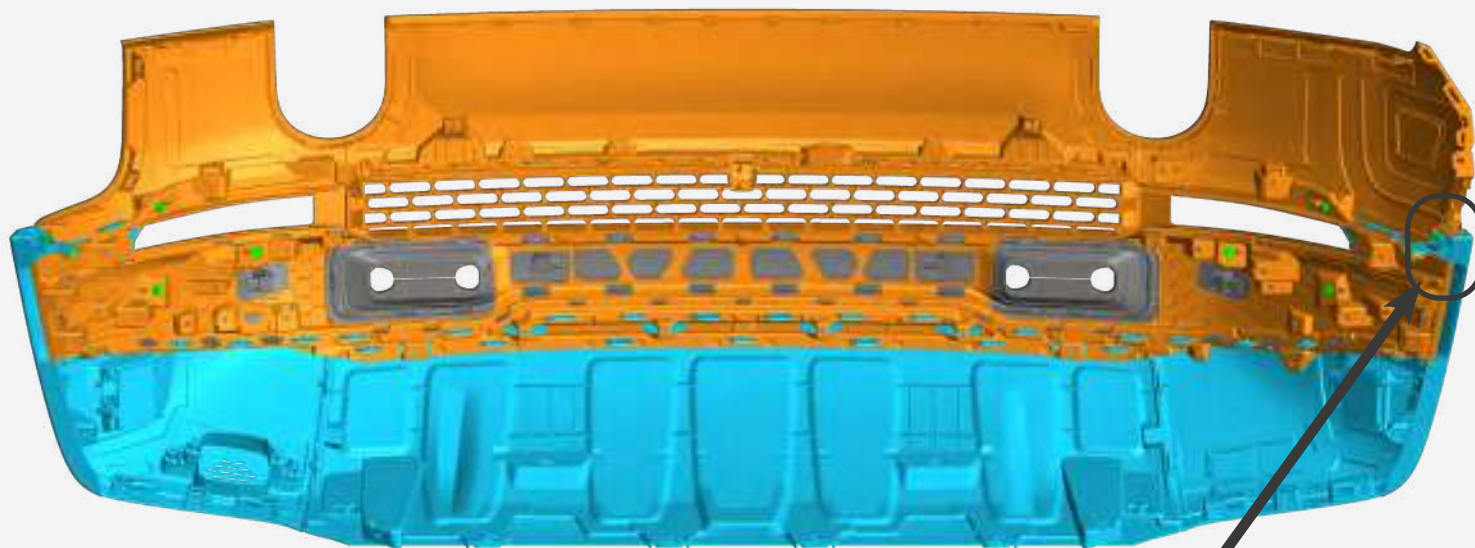


(x2)

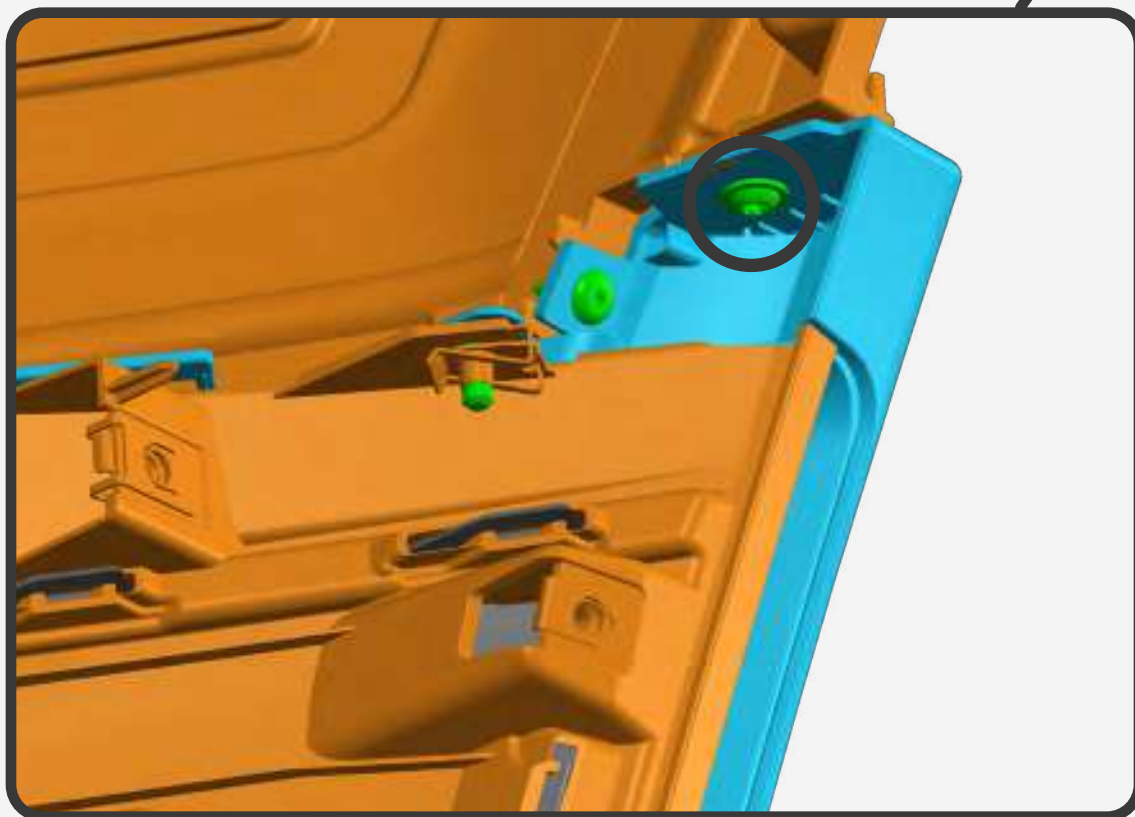


□ STEP 42

Using a (T20 Torx), remove the bolt indicated below.
(Use caution to not damage the paint)

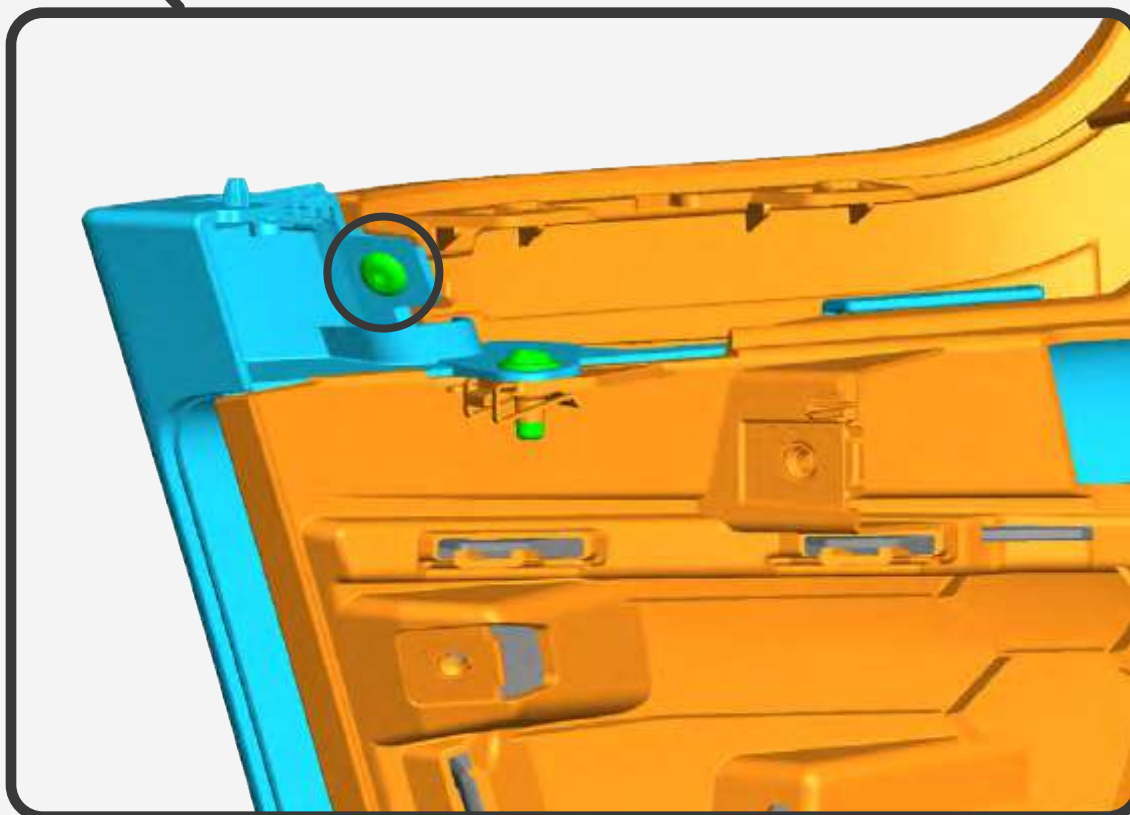
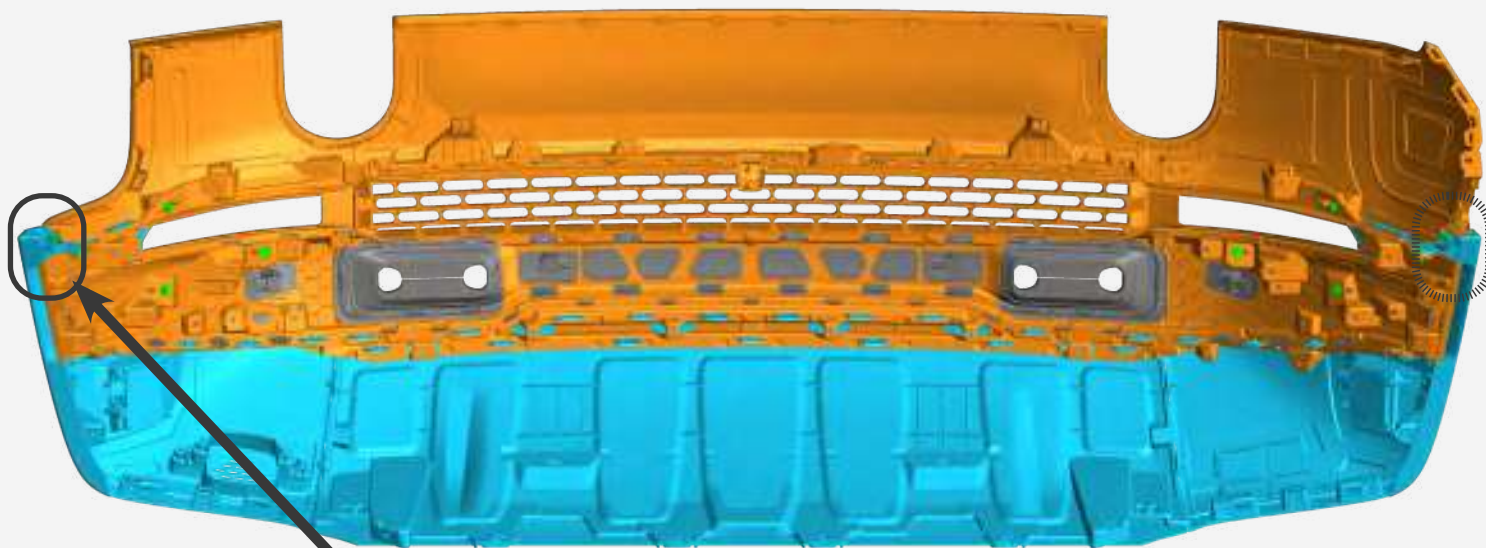


(x1)



□ STEP 43

Using a (T15 Torx), remove the bolt indicated below.
(Use caution to not damage the paint. Repeat on other side)



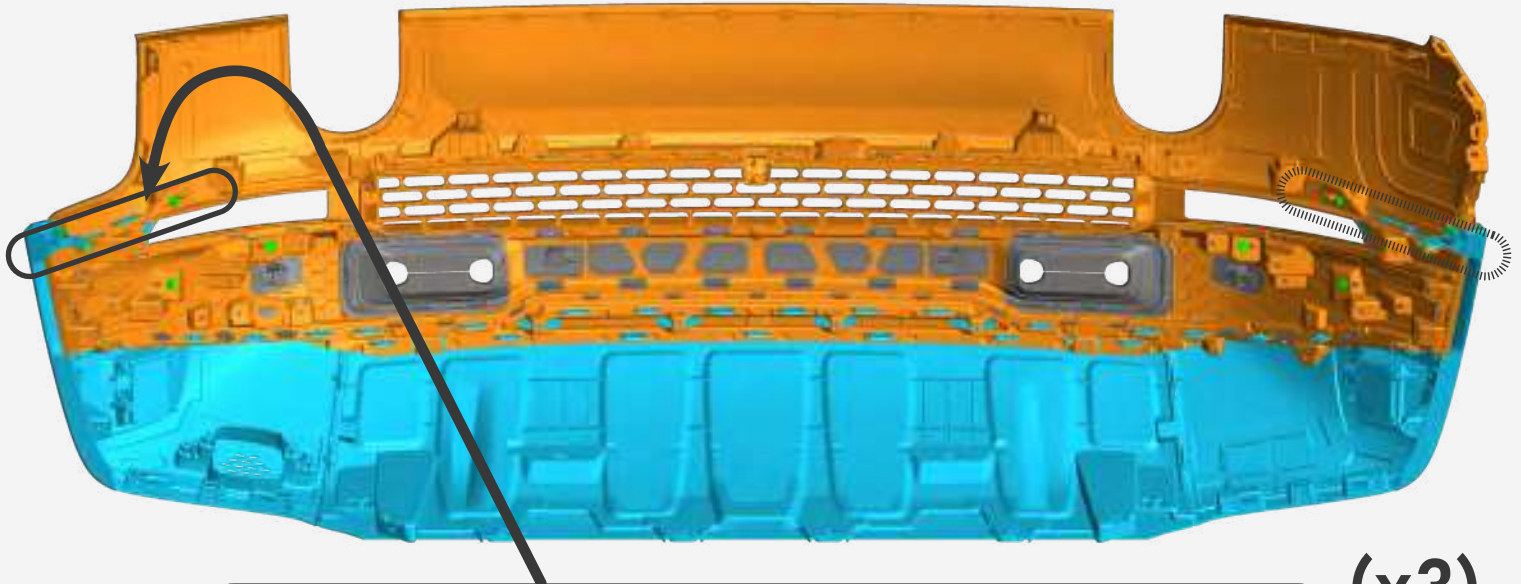
(x1)



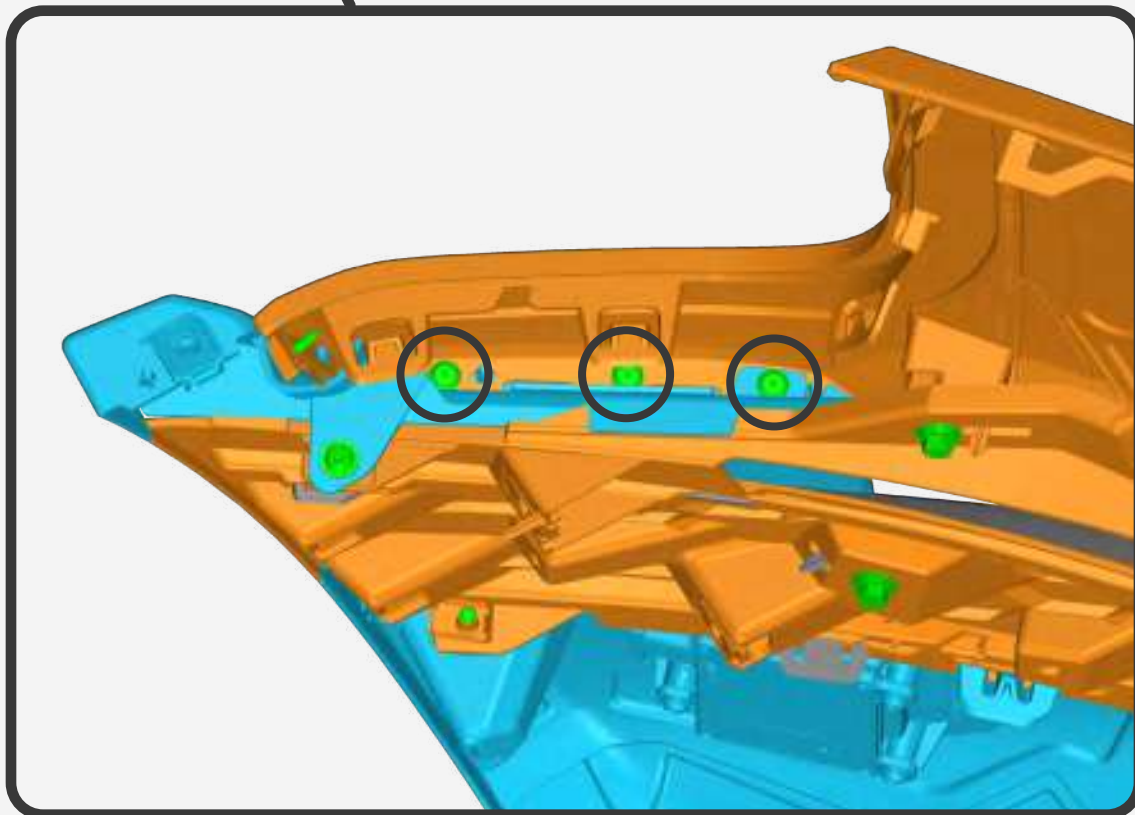
□ STEP 44

Using a (T15 Torx), remove the (3) bolts indicated below. These are located in a pocket that can be accessed from the top side.

(Use caution to not damage the paint. Repeat on other side)

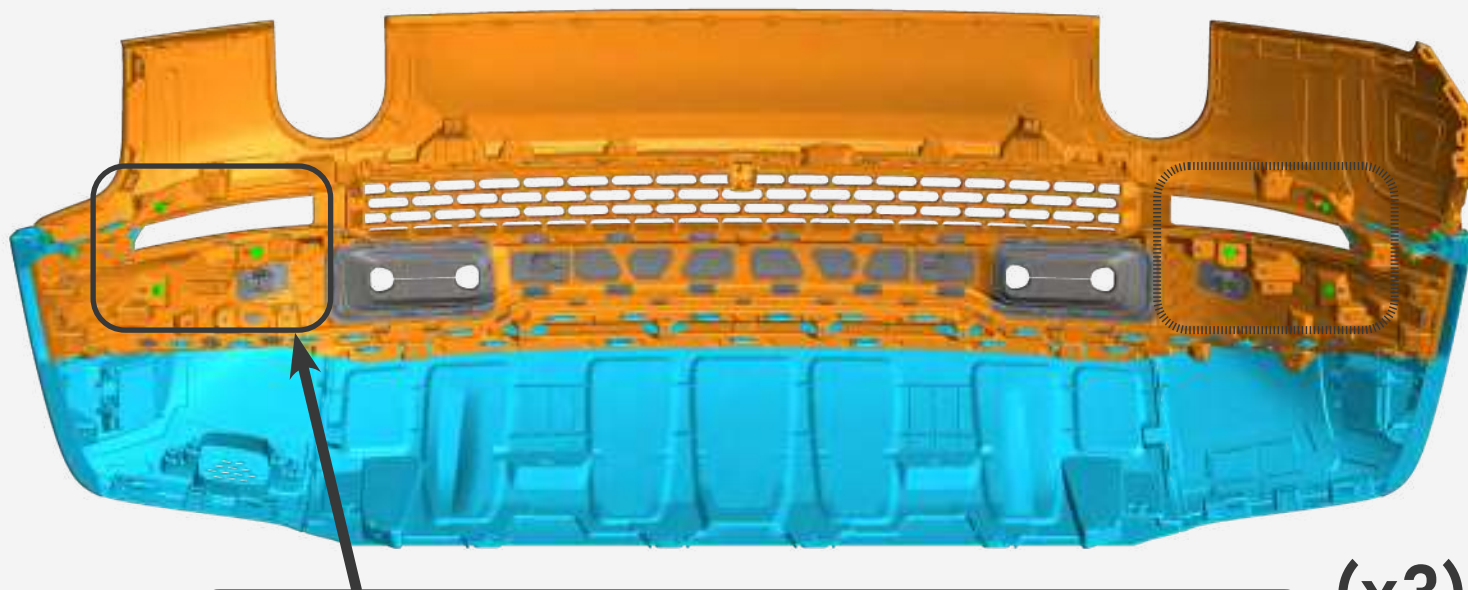


(x3)



□ STEP 45

Using a (10mm), remove the (3) bolts indicated below.
(Use caution to not damage the paint. Repeat on other side)



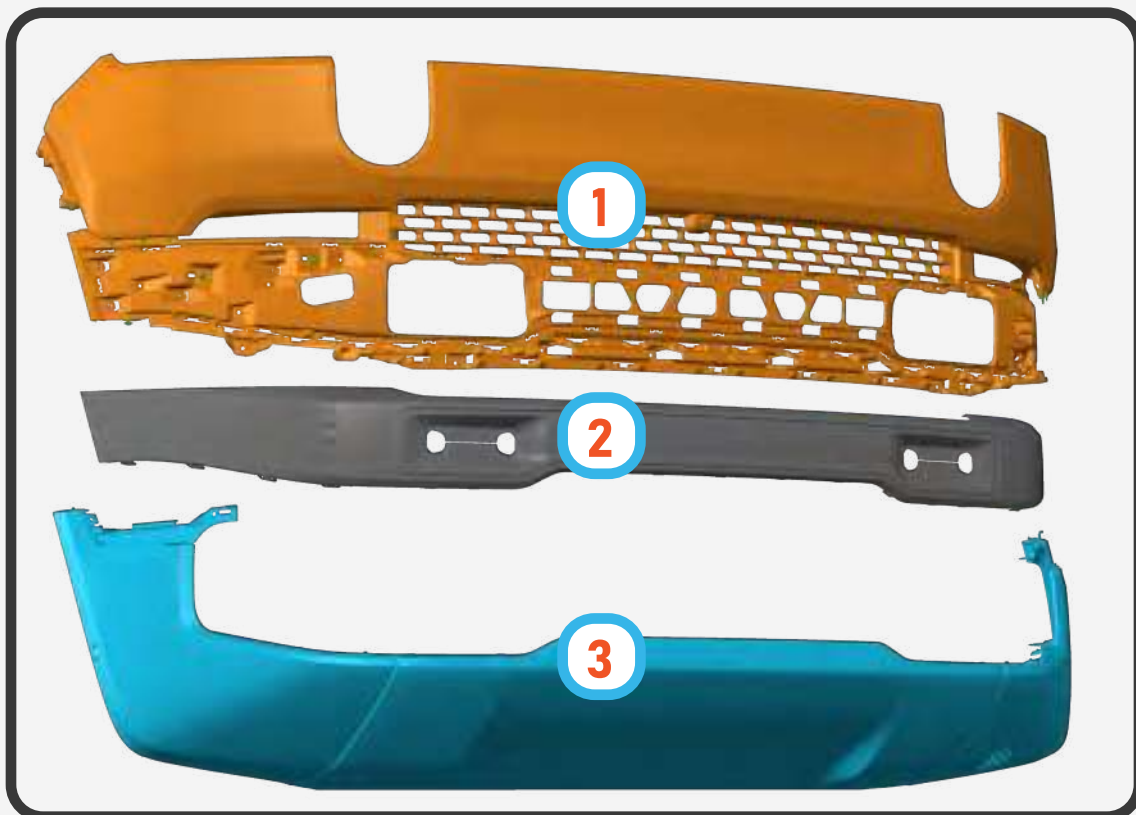
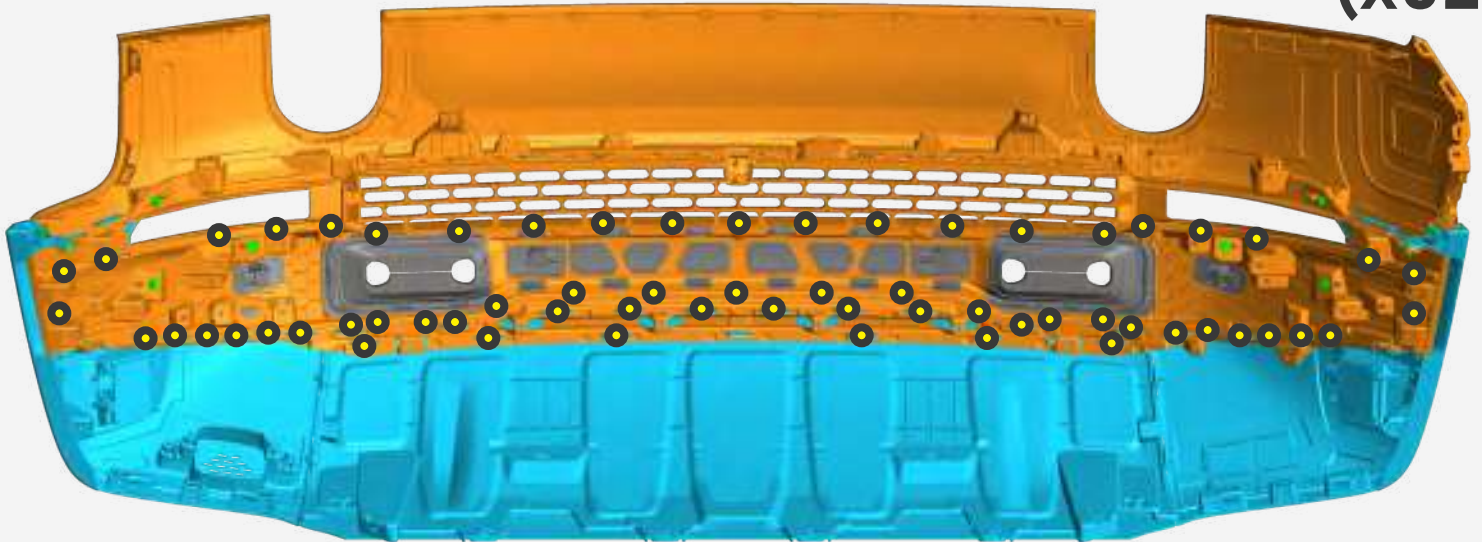
(x3)



□ STEP 46

Release the (62) tabs from the locations indicated below, then separate the (3) fascia sections as shown.
(Use caution to not damage the paint)

(x62)



□ STEP 47

Referencing the **dashed line** shown below, and following the molded edges of the part, mark out the indicated cut line, then use a (**cutting tool**) of your choice to remove the specified section.
(**TAKE YOUR TIME and use caution to not cut any wires.** Repeat on other side)



□ STEP 48

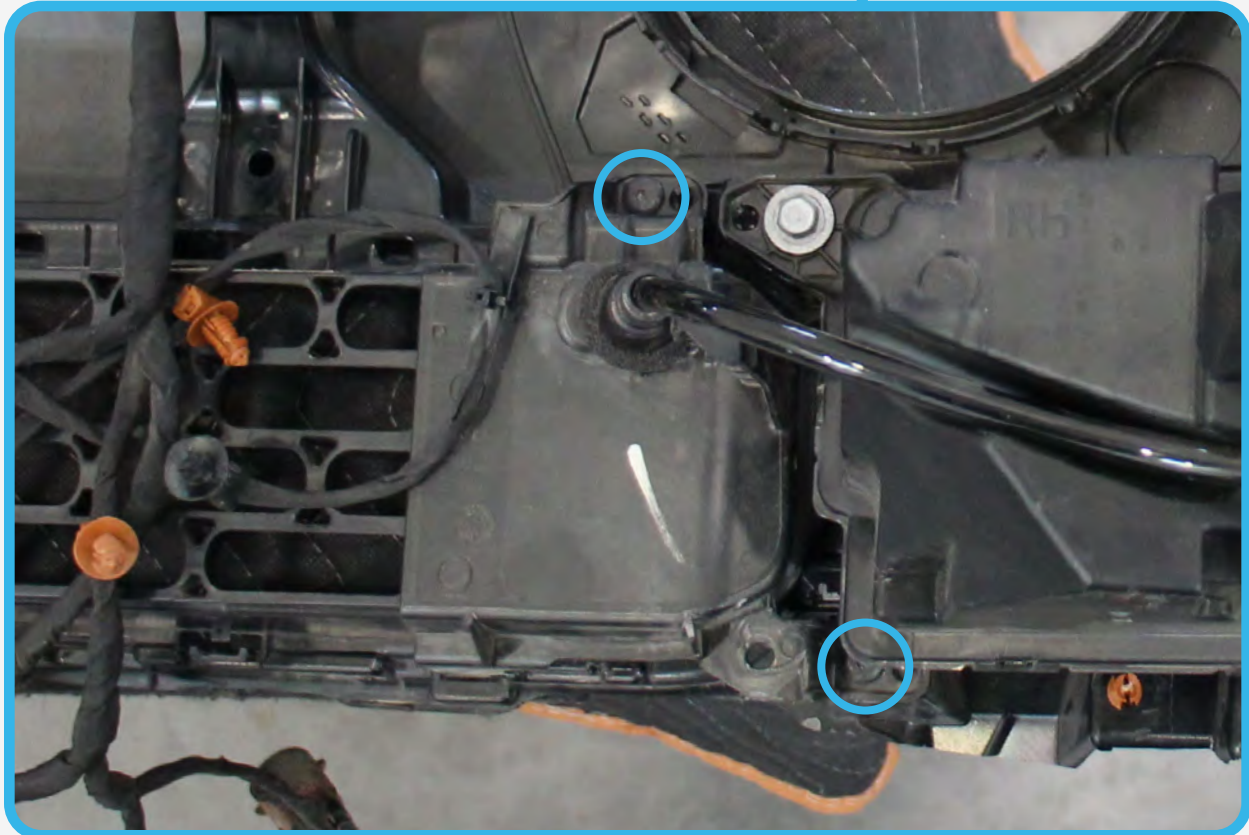
Referencing the **dashed line** shown below, and following the molded edges of the part, mark out the indicated cut line, then use a (**cutting tool**) of your choice to remove the specified section.
(TAKE YOUR TIME and use caution to not cut any wires)



□ STEP 49

Using the original factory hardware (from step 37) and a (T15 Torx), reinstall the fog light adjuster assembly indicated below.

(Repeat on other side)

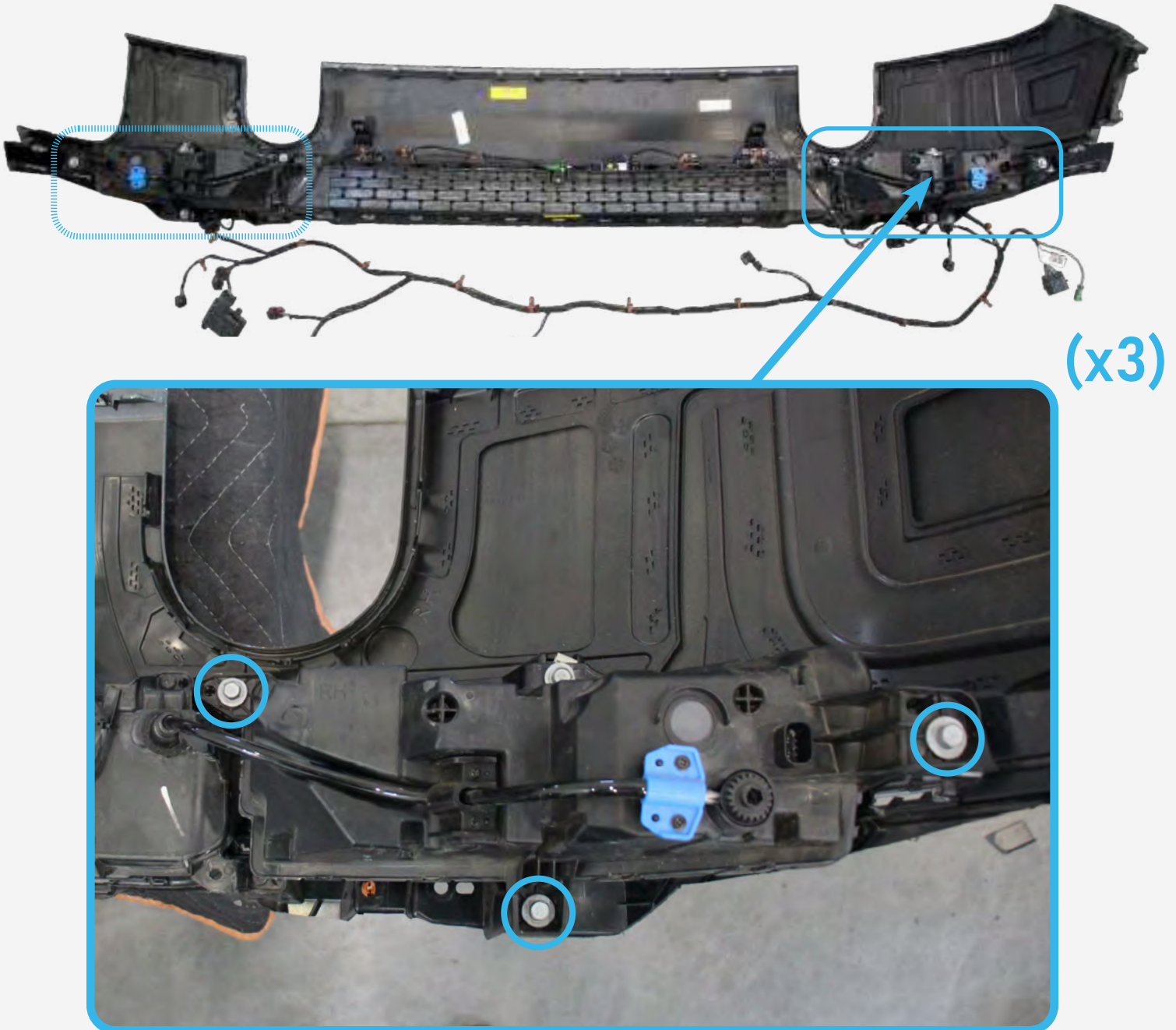


(x2)

□ STEP 50

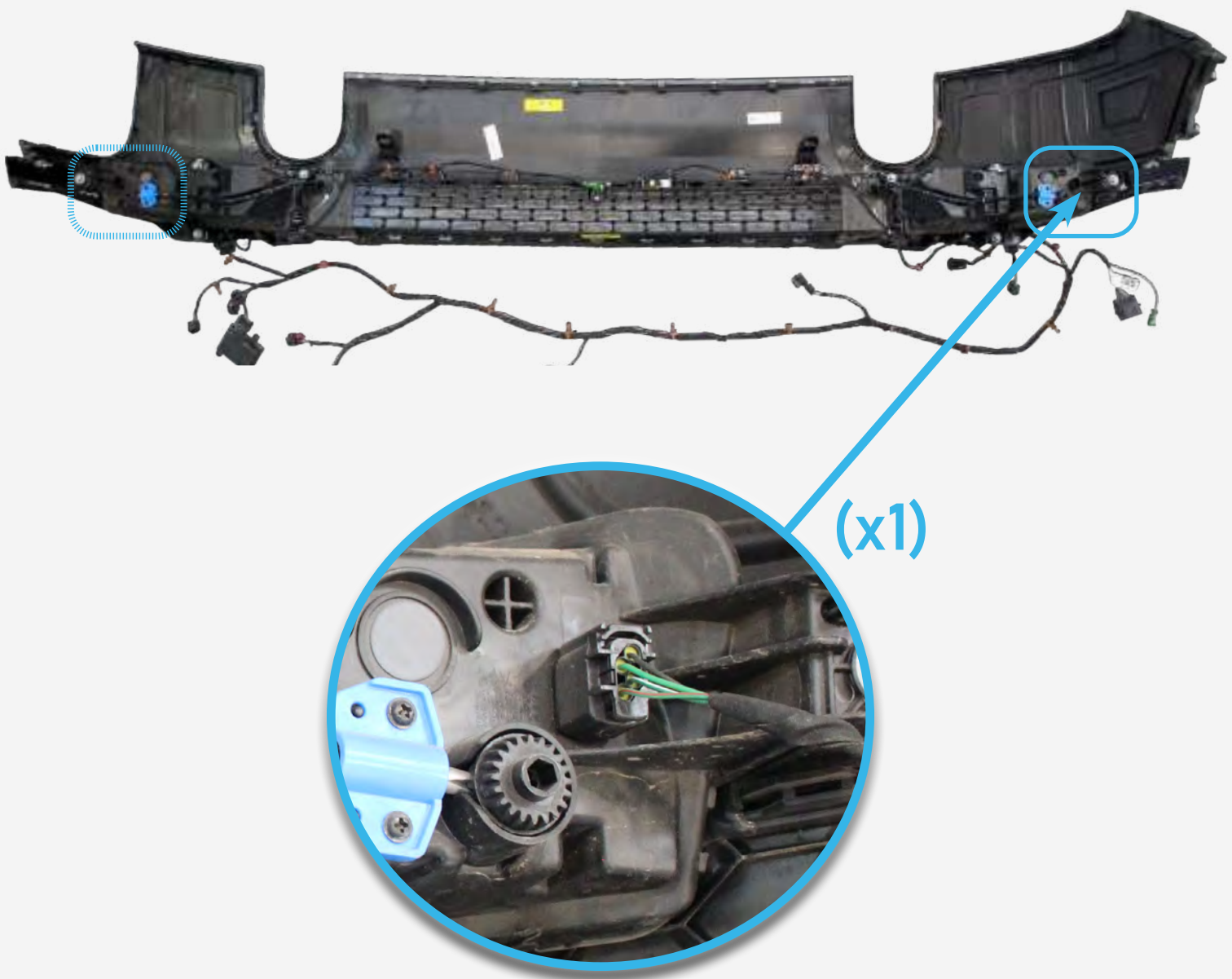
Using the original factory hardware (from step 36) and a (10mm), reinstall the fog light assembly indicated below.

(Repeat on other side)



□ STEP 51

Reconnect the fog light plug shown below. Press firmly and ensure a proper and clean connection.
(Repeat on other side)



STEP 52

At this point the trimmed front fascia assembly is prepped to reinstall on the truck. Thoroughly inspect each tab, panel clip, bolt/screw and wire connection for components that have been reinstalled up to this point.

(Reinstall/replace retainers and repair as needed)



STEP 53

Reinstall the front fascia assembly onto the truck by reinserting the tabs/clips into the slots on the truck that were released in prior steps.

(For best results, work from driver to passenger side and focus on 1 tab at a time to make sure each one is properly seated)



□ STEP 54

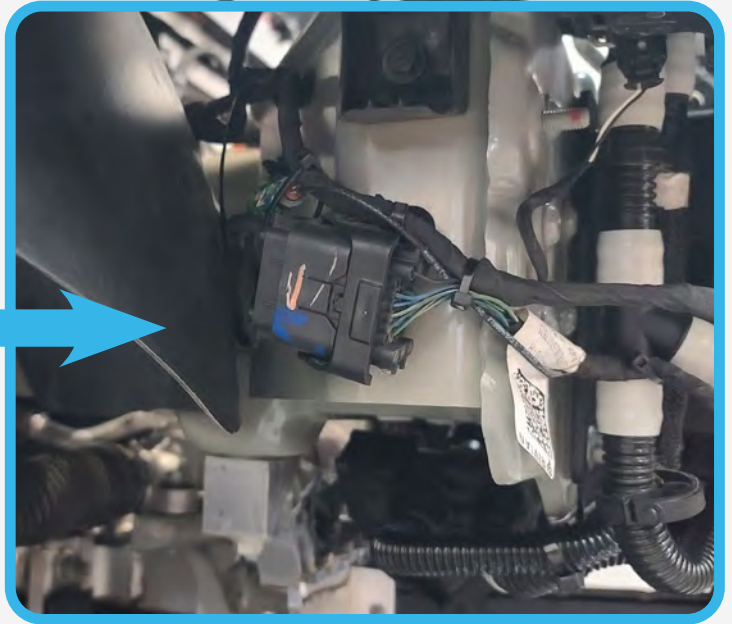
Using a (T15 Torx), reinstall the (2) original fender trim screws (from step 14), then reconnect the reflector and pop it back into place.

(Repeat on other side)



□ STEP 55

Using a (10mm), remove the main bumper wire harness bracket bolt indicated below and use a (pry tool) to remove the bracket from the connector. Reconnect the bumper harness and camera connections, then tie up the wiring to relocate the connectors above the bottom of the frame mount as shown below. (Repeat on other side)



□ STEP 56

Using an (8mm), locate and remove the (2) coolant pump mounting bolts indicated below, then lift each of the (2) pumps from the cooling pump frame.

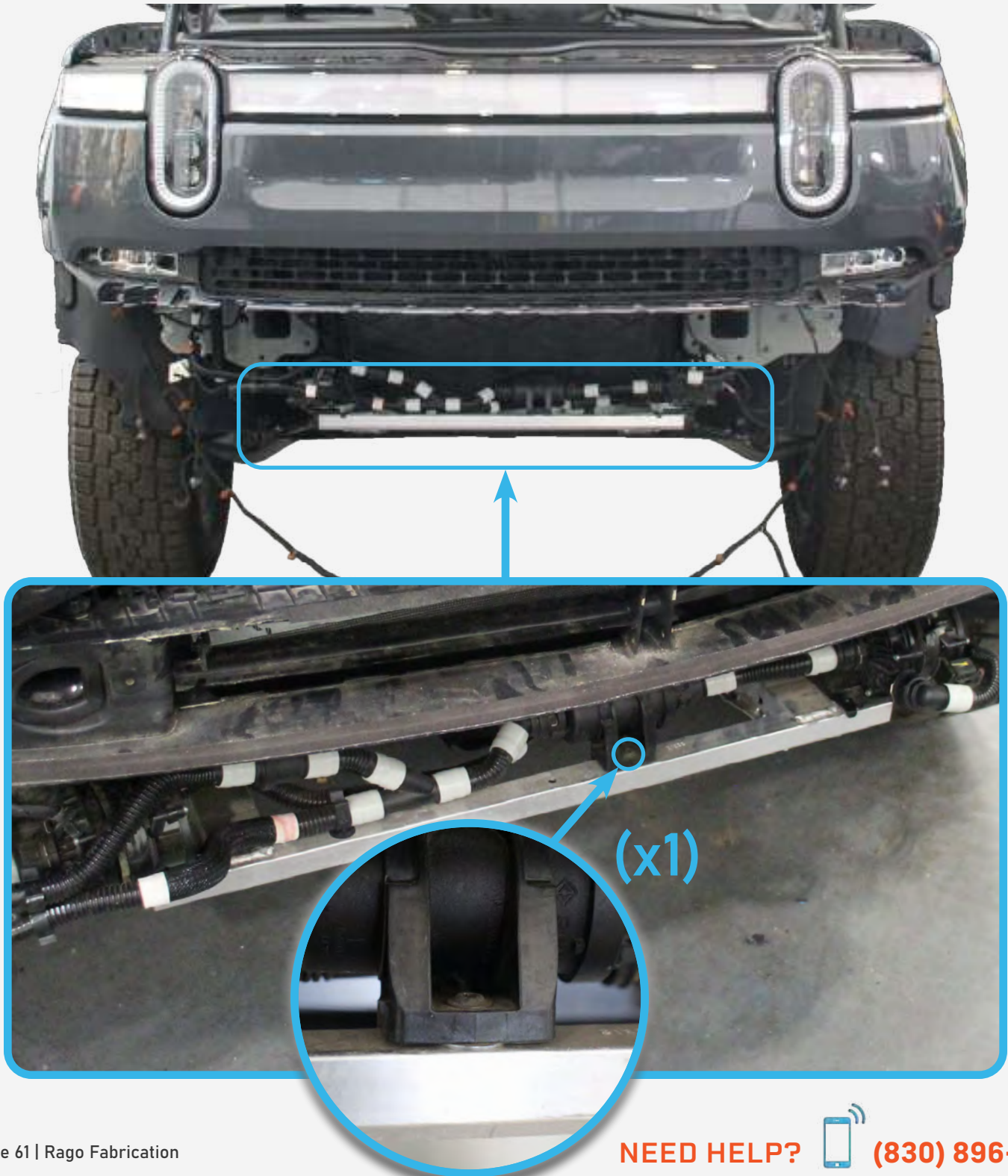
(Use caution to not damage the cooling lines. Keep the hardware)



□ STEP 57

Using a (T27 Torx), locate and remove the coolant filter mounting bolt indicated below, then lift the coolant filter from the cooling pump frame.

(Use caution to not damage the cooling lines. Keep the hardware)



□ STEP 58

Using a (pry tool), locate and release the (2) cooling line retaining tabs indicated below.
(Use caution to not damage the cooling lines)



□ STEP 59 (OPTIONAL)

Using a (T30 Torx), locate and remove the (4) indicated cooling pump frame mounting bolts, then remove the **cooling pump frame** from the truck and paint for a less conspicuous final installation. Reinstall with original hardware when done. (Paint black for best results)



□ STEP 60

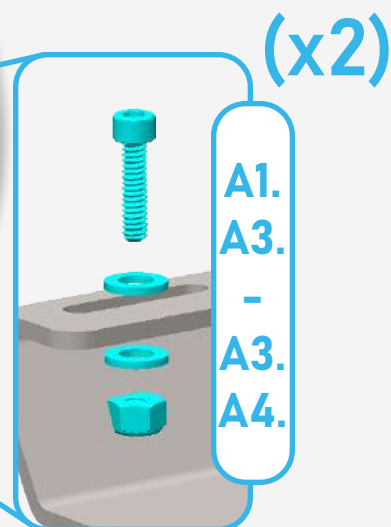
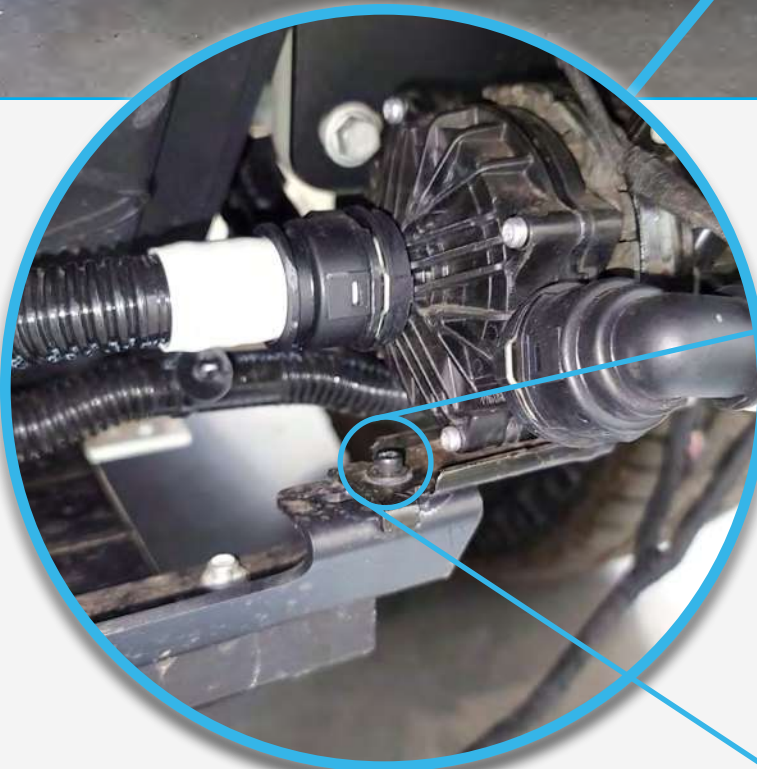
Locate the supplied pump rail riser (F.) and (6) of the supplied 3/8" washers (C5.). Orient the pump rail riser as shown below and stack (2) of the 3/8" washers between the factory cooling pump frame and the supplied pump rail riser at each of the (3) mounting points. Install the pump rail riser with the original factory pump bolts (from steps 56 and 57).

(Use a drop of blue loctite on each bolt. Leave the bolts loose at this time)



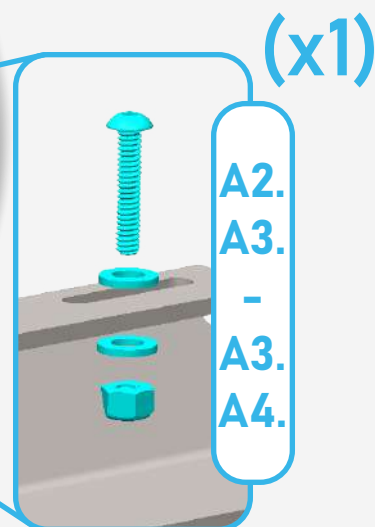
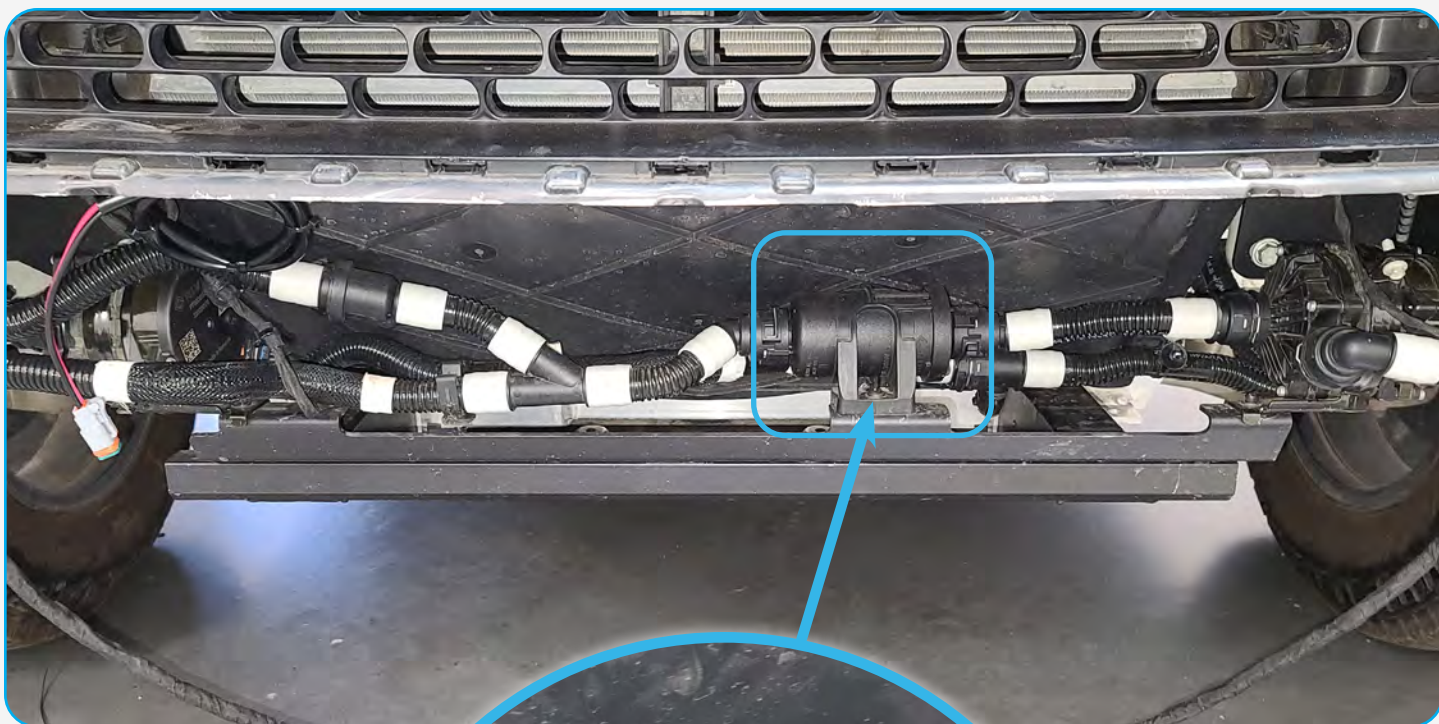
□ STEP 61

Using the supplied hardware specified below, along with a (5/32" allen) and a (3/8" wrench), mount the (2) coolant pumps to the pump rail riser.
(Leave the bolts loose at this time)



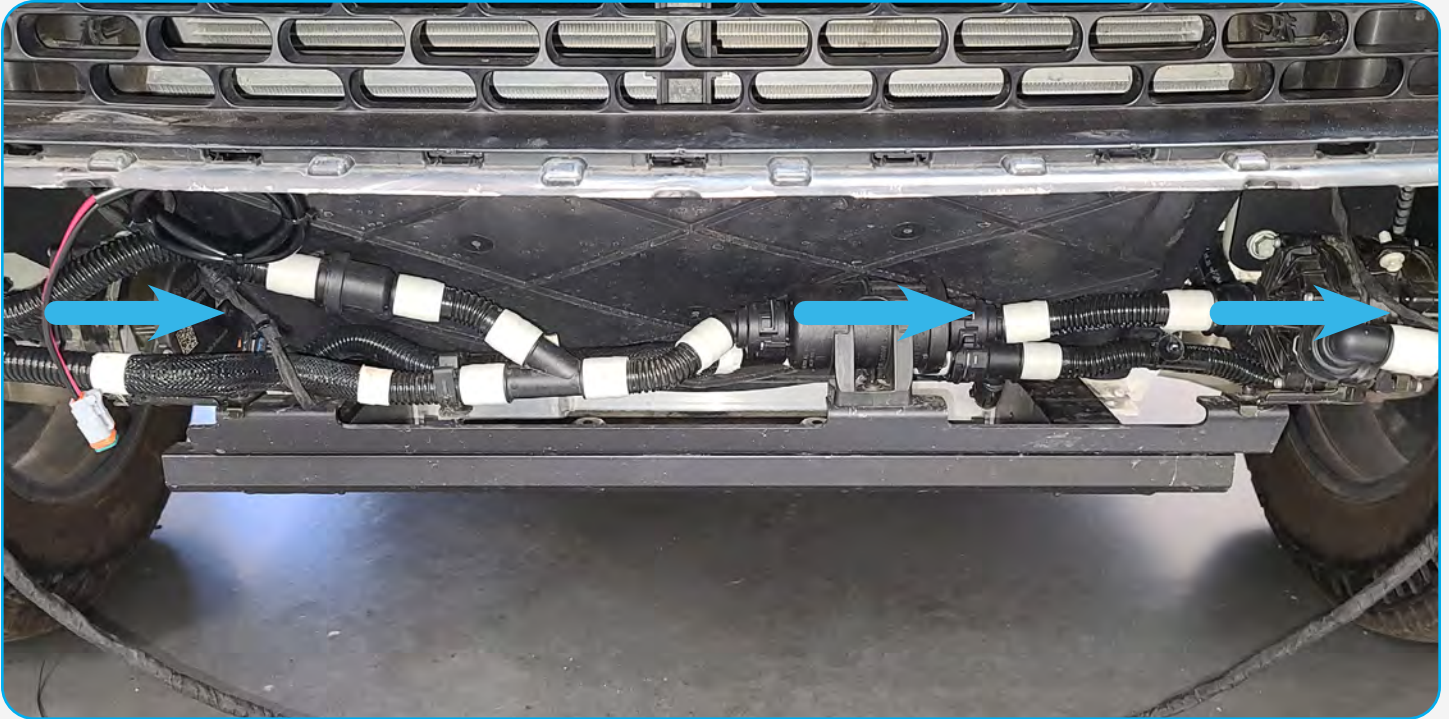
□ STEP 62

Using the supplied hardware specified below, along with an (1/8" allen) and a (3/8" wrench), mount the coolant filter to the pump rail riser as shown below.
(Leave the bolt loose at this time)



□ STEP 63

Starting from the driver side, slide the cooling pumps and coolant filter as far to the driver side as possible, then tighten the hardware holding the components to the pump rail riser.



STEP 64

With the cooling pumps and coolant filter adjusted and tightened down, slide the pump rail riser assembly towards the rear of the vehicle, then tighten the mounting bolts to the cooling pump frame. (Check clearances prior to tightening to ensure that there is no contact between components. Make certain the cooling lines are not in a bind)



□ STEP 65

Use a zip tie to secure the cooling lines to the bottom hole at the center of the passenger side crash bar mounting plate as shown below.

(Avoid over tightening to prevent crushing the cooling lines. Repeat on other side)



□ STEP 66

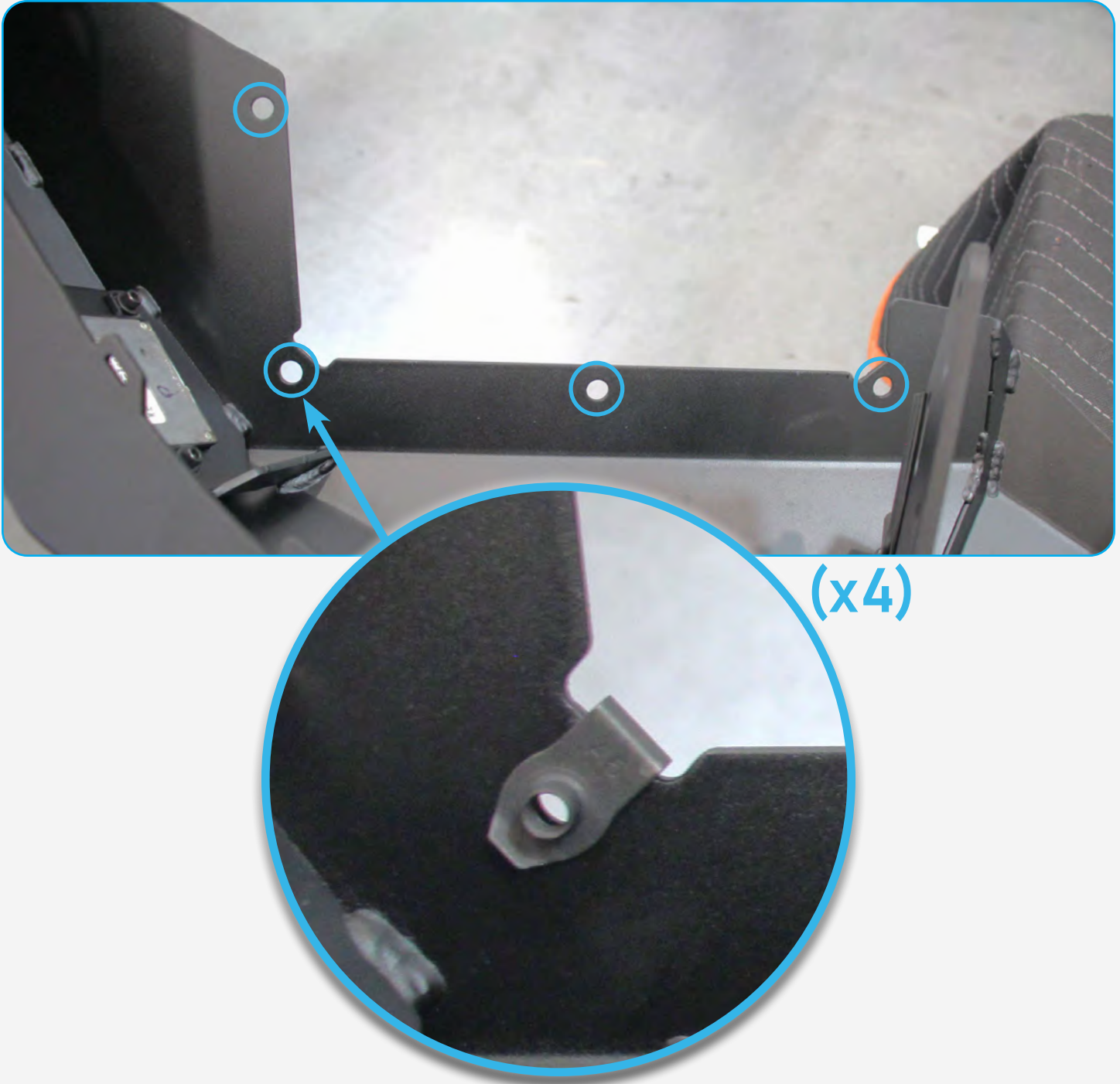
Using a pair of (flush cutters), locate the (3) indicated tab slots under the fog light and trim off half of the height from each of the (3) vertical tabs inside each slot.

(Be careful to not remove too much material. If needed, more can be trimmed later. Repeat on other side)



STEP 67

Install (4) of the supplied 1/4"-20 U-Nuts (C6.) onto the bumper side pod at the locations indicated below.
(Install with the protruded threads towards the inside of the bumper. Repeat on other side)



□ STEP 68

Using a (riv nut installation tool), install the (5) supplied 3/8"-16 rivet nuts (C6.) into the bumper locations indicated below from the front side of the bumper.

(Install as centered and square as possible for best hardware alignment in upcoming steps)

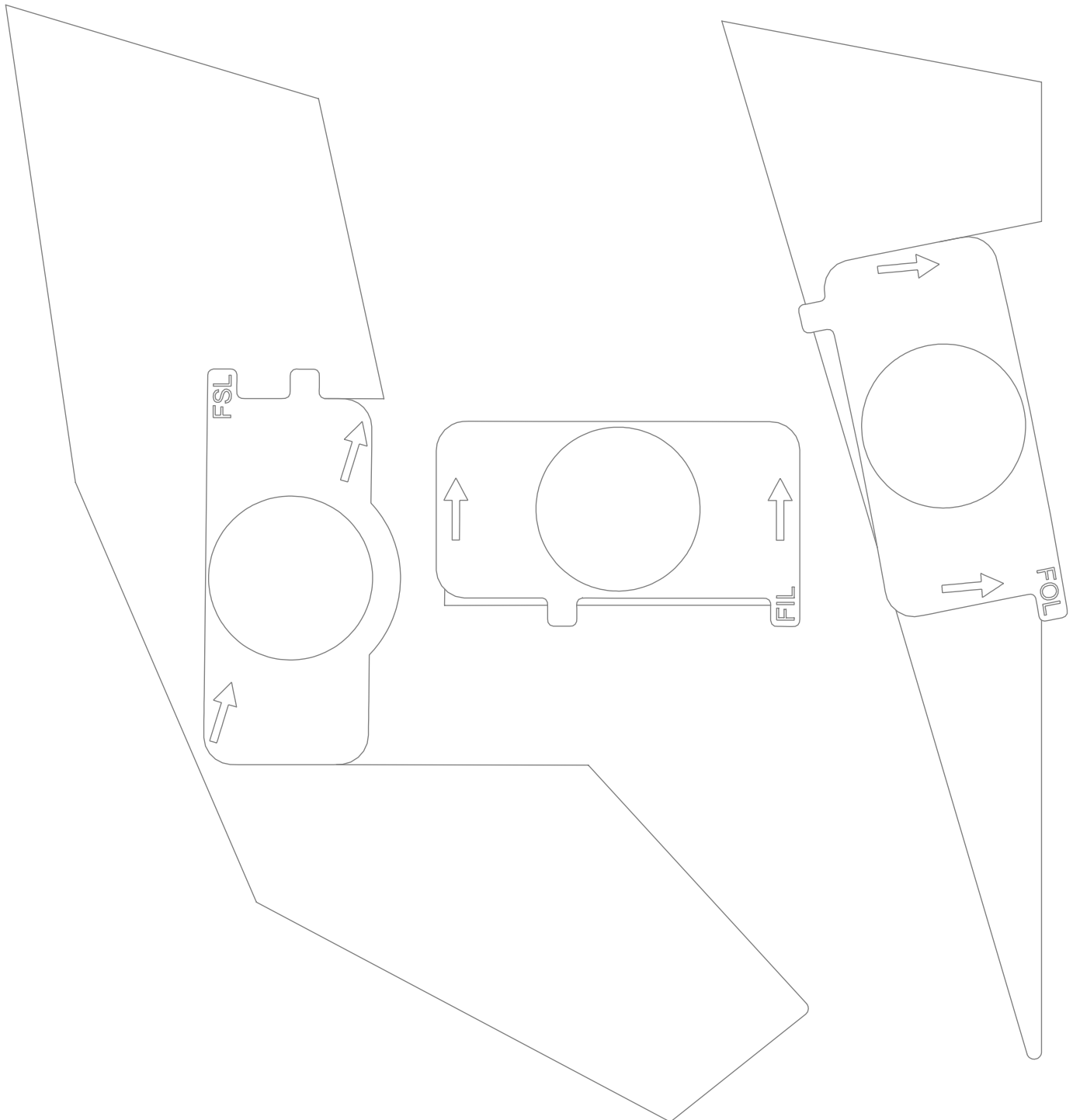


(x5)



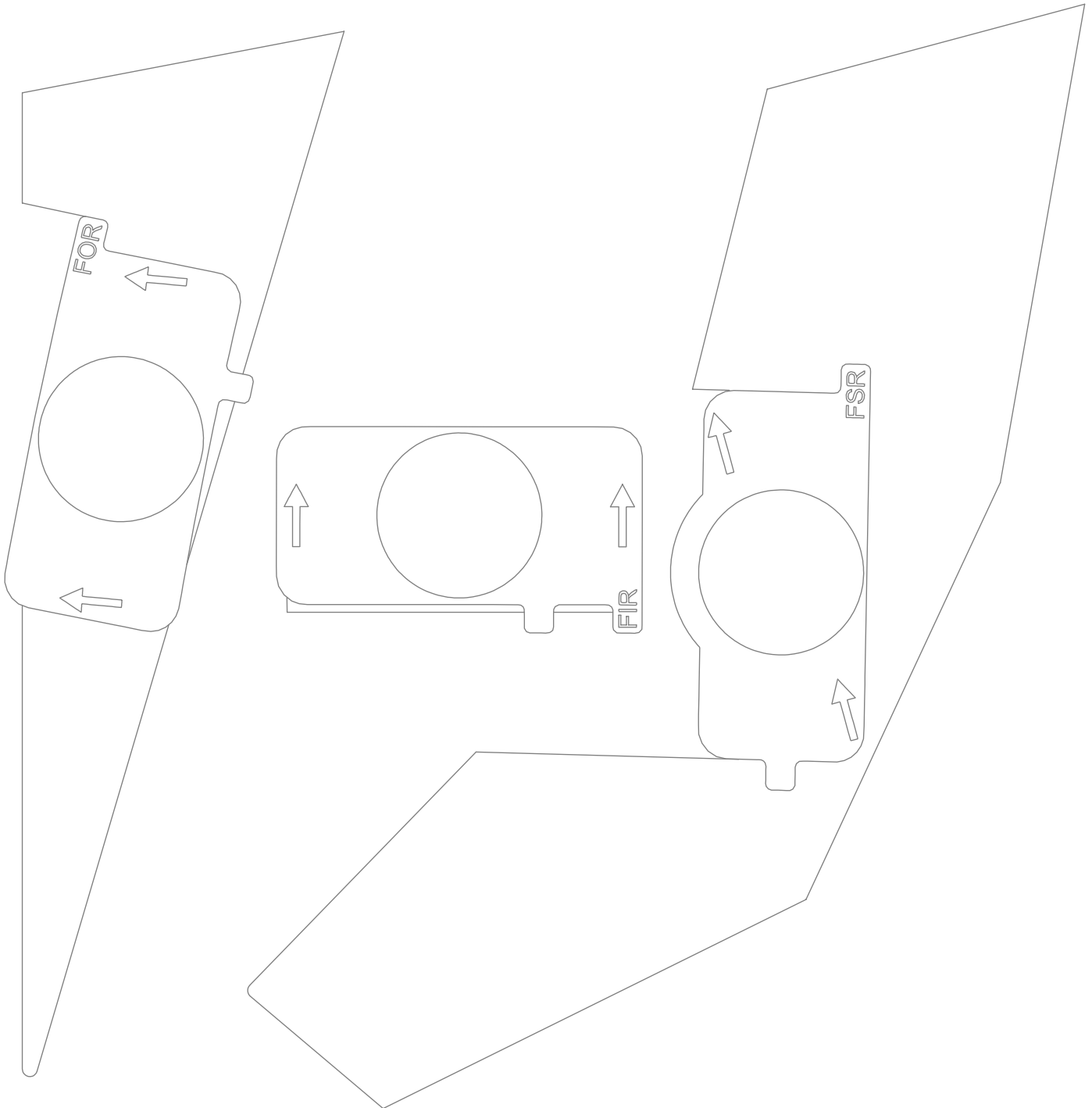
□ STEP 69

Print this page to actual size then trim out each template along the border and remove the center hole.
(These templates will be used to install the **driver side** sensor bezels in the upcoming steps)



□ STEP 70

Print this page to actual size then trim out each template along the border and remove the center hole.
(These templates will be used to install the **passenger side** sensor bezels in the upcoming steps)



STEPS 71-78 ARE CRUCIAL TO PROPER SYSTEM FUNCTION
PAY CLOSE ATTENTION AND TAKE YOUR TIME

□ STEP 71

Using the **Driver Side Outer Sensor Bezel** template (labeled **FSL** to match the sensor bezel), position the template as shown below with the arrows pointed up and the hole aligned with the cutout in the bumper, then mark the bumper along the indicated edge. Remove the template, and use a suitable (epoxy) to bond the corresponding sensor bezel into the bumper in the orientation indicated on the template. (Make certain that surfaces are clean for best bond. Apply constant pressure during cure time to ensure proper fitment. **System errors will be present if these are not installed properly**)



□ STEP 72

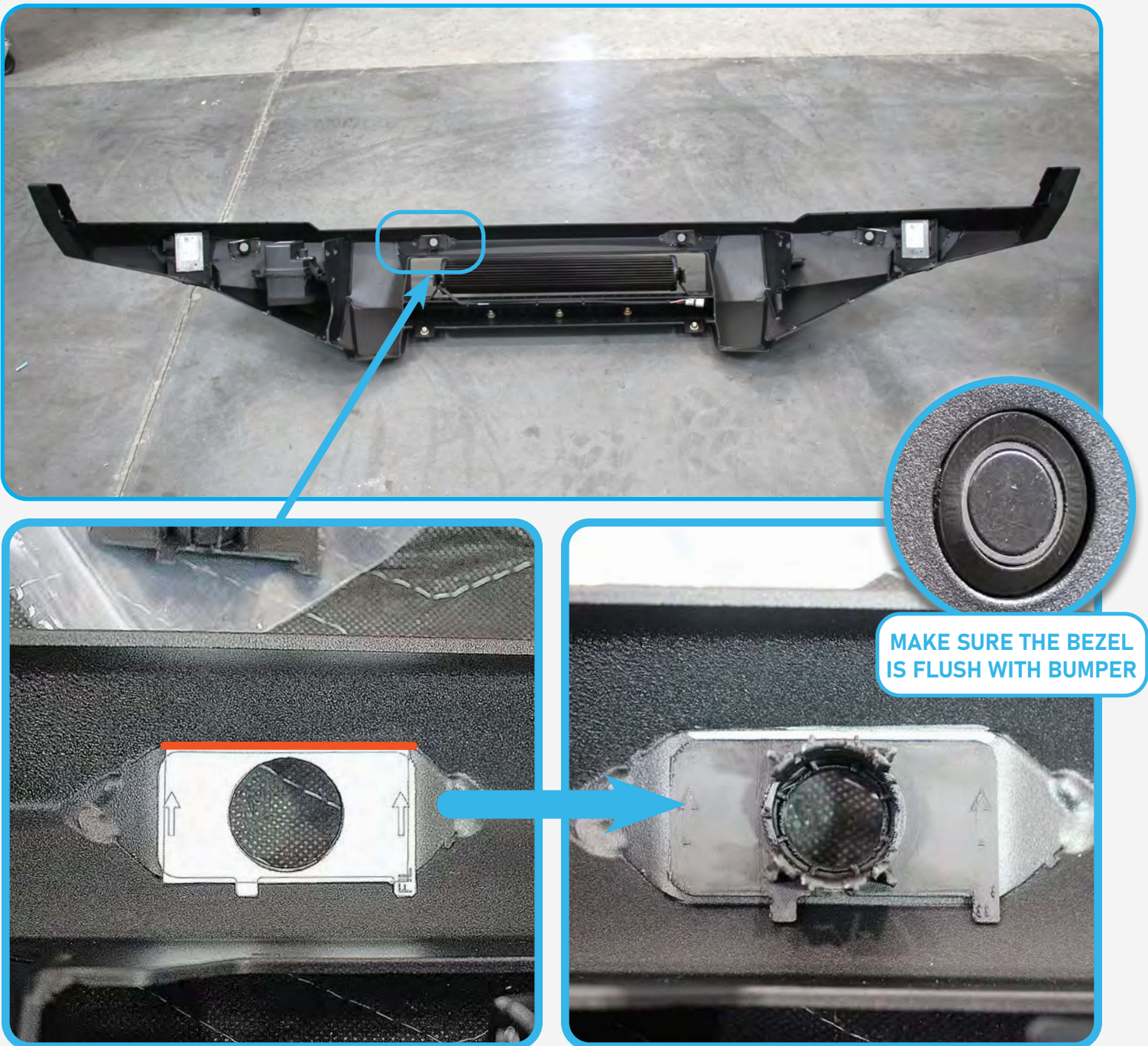
Using the **Driver Side Middle Sensor Bezel** template (labeled **FOL** to match the sensor bezel), position the template as shown below with the arrows pointed up and the hole aligned with the cutout in the bumper, then mark the bumper along the indicated edge. Reference the **dashed line** below to trim the bezel. Remove the template, and use a suitable (epoxy) to bond the corresponding sensor bezel into the bumper in the orientation indicated on the template.

(Make certain that surfaces are clean for best bond. Apply constant pressure during cure time to ensure proper fitment. **System errors will be present if these are not installed properly**)



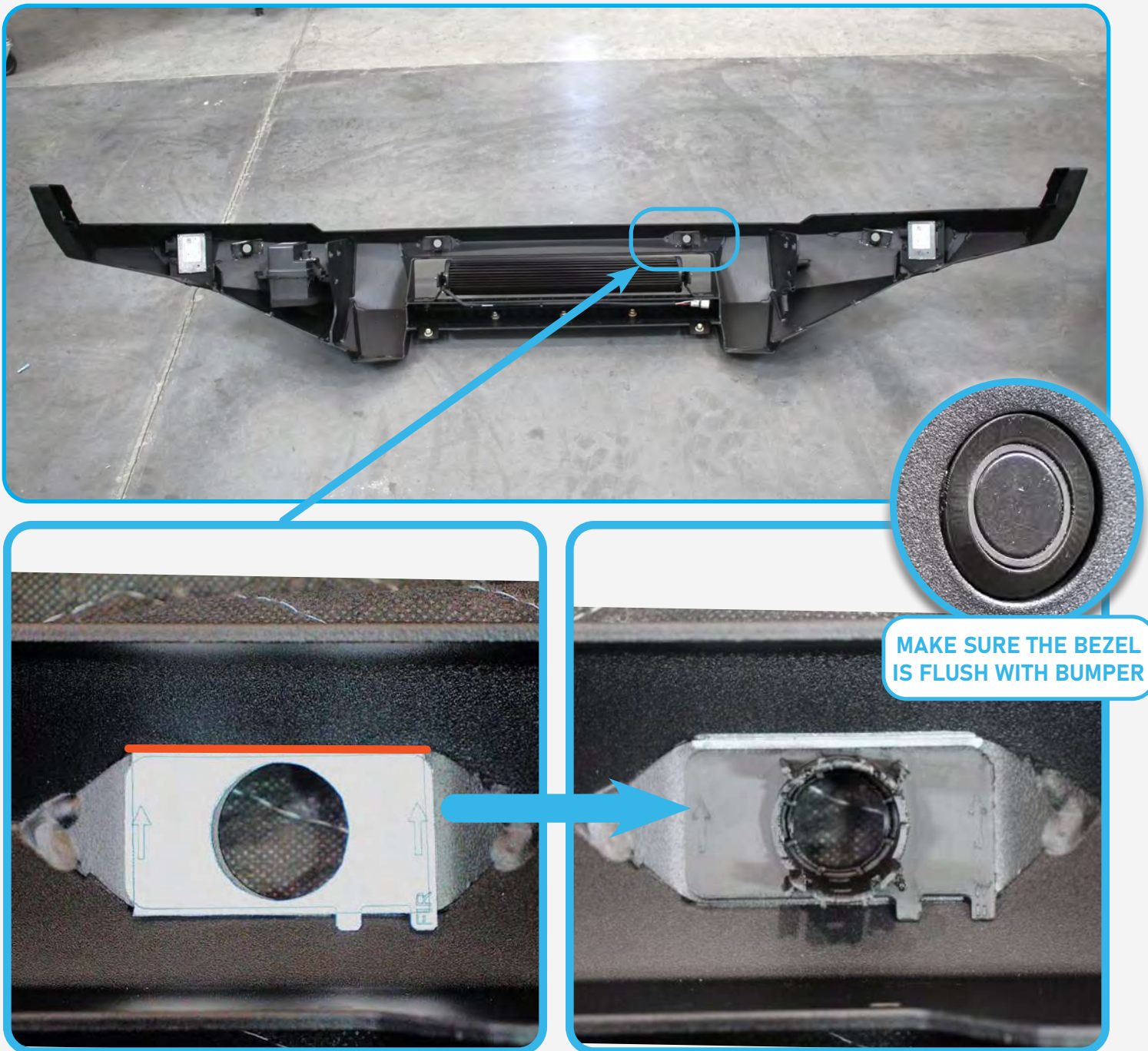
□ STEP 73

Using the **Driver Side Inner Sensor Bezel** template (labeled **FIL** to match the sensor bezel), position the template as shown below with the arrows pointed up and the hole aligned with the cutout in the bumper, then mark the bumper along the indicated edge. Remove the template, and use a suitable (epoxy) to bond the corresponding sensor bezel into the bumper in the orientation indicated on the template. (Make certain that surfaces are clean for best bond. Apply constant pressure during cure time to ensure proper fitment. **System errors will be present if these are not installed properly**)



□ STEP 74

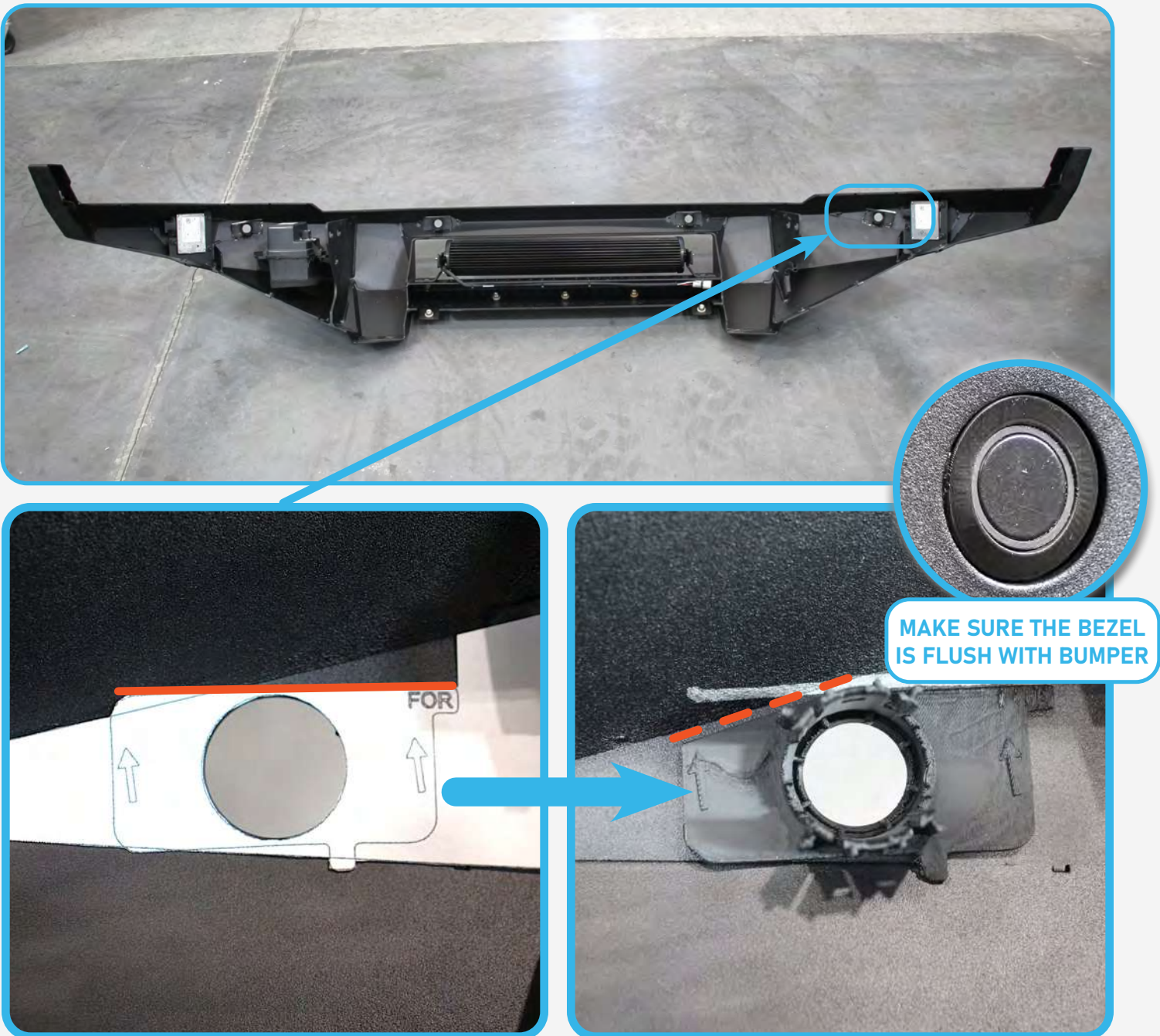
Using the **Passenger Side Inner Sensor Bezel** template (labeled **FIR** to match the sensor bezel), position the template as shown below with the arrows pointed up and the hole aligned with the cutout in the bumper, then mark the bumper along the indicated edge. Remove the template, and use a suitable (epoxy) to bond the corresponding sensor bezel into the bumper in the orientation indicated on the template. (Make certain that surfaces are clean for best bond. Apply constant pressure during cure time to ensure proper fitment. **System errors will be present if these are not installed properly**)



□ STEP 75

Using the **Passenger Side Middle Sensor Bezel** template (labeled **FOR** to match the sensor bezel), position the template as shown below with the arrows pointed up and the hole aligned with the cutout in the bumper, then mark the bumper along the indicated edge. Reference the **dashed line** below to trim the bezel. Remove the template, and use a suitable (epoxy) to bond the corresponding sensor bezel into the bumper in the orientation indicated on the template.

(Make certain that surfaces are clean for best bond. Apply constant pressure during cure time to ensure proper fitment. **System errors will be present if these are not installed properly**)



□ STEP 76

Using the **Passenger Side Outer Sensor Bezel** template (labeled **FSR** to match the sensor bezel), position the template as shown below with the arrows pointed up and the hole aligned with the cutout in the bumper, then mark the bumper along the indicated edge. Remove the template, and use a suitable (epoxy) to bond the corresponding sensor bezel into the bumper in the orientation indicated on the template. (Make certain that surfaces are clean for best bond. Apply constant pressure during cure time to ensure proper fitment. **System errors will be present if these are not installed properly**)



□ STEP 77

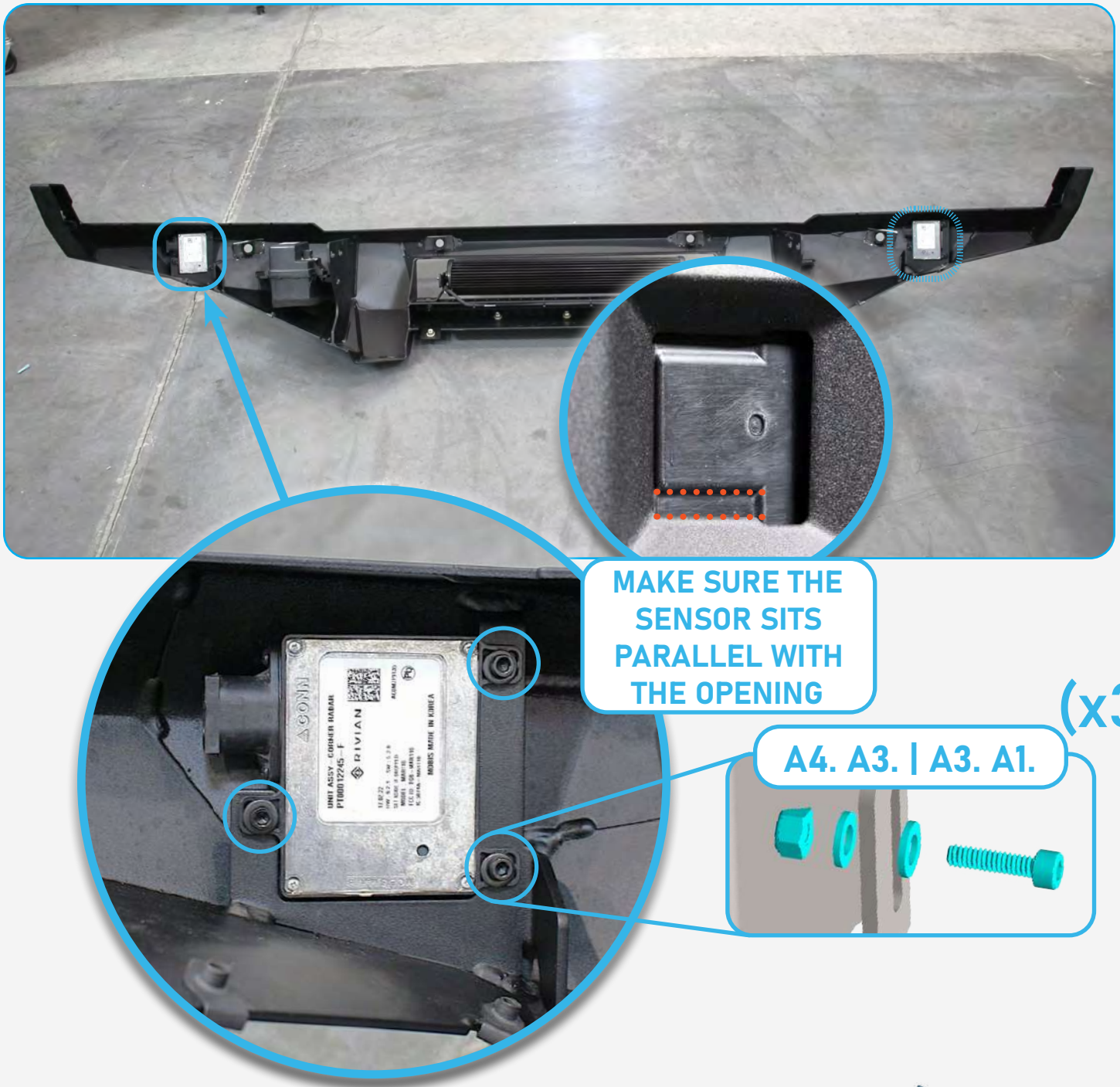
Using the supplied hardware specified below, along with an (1/8" allen) and a (3/8" wrench), mount the AVAS speaker to the bumper as shown below with the plug oriented up and to the center of the bumper.
(Use caution to not over tighten)



□ STEP 78

Using the supplied hardware specified below, along with a (5/32" allen) and a (3/8" wrench), mount the blind spot sensor to the bumper as shown below with the plug oriented up and towards the driver side. Before fully tightening, inspect the sensor alignment from the front side of the bumper to ensure that the sensor is parallel to the sensor opening.

(Handle the sensor with care and use caution to not over tighten. Repeat on other side)



□ STEP 79

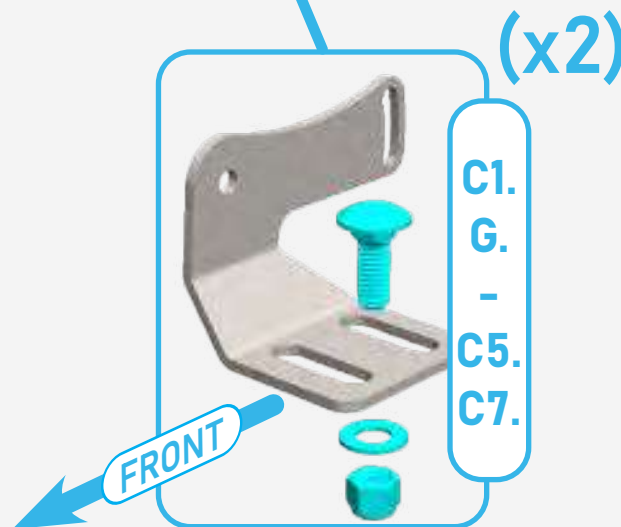
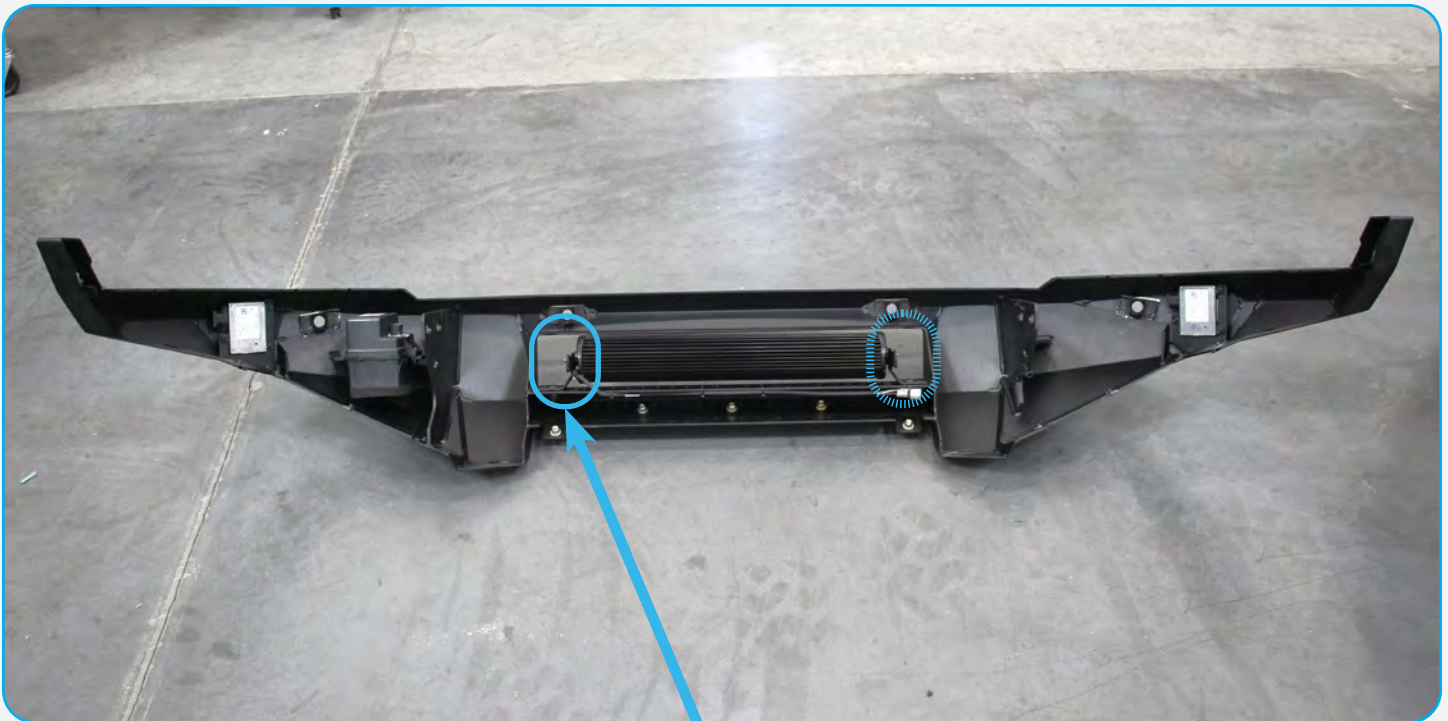
Install the supplied push-on edge trim (E1.) to the area of the passenger side mount shown below. Use a pair of (side cutters) to trim the length flush with the edge of the mount.

(Ensure that the metal core of the trim is not left exposed to avoid potential damage to the cooling lines)



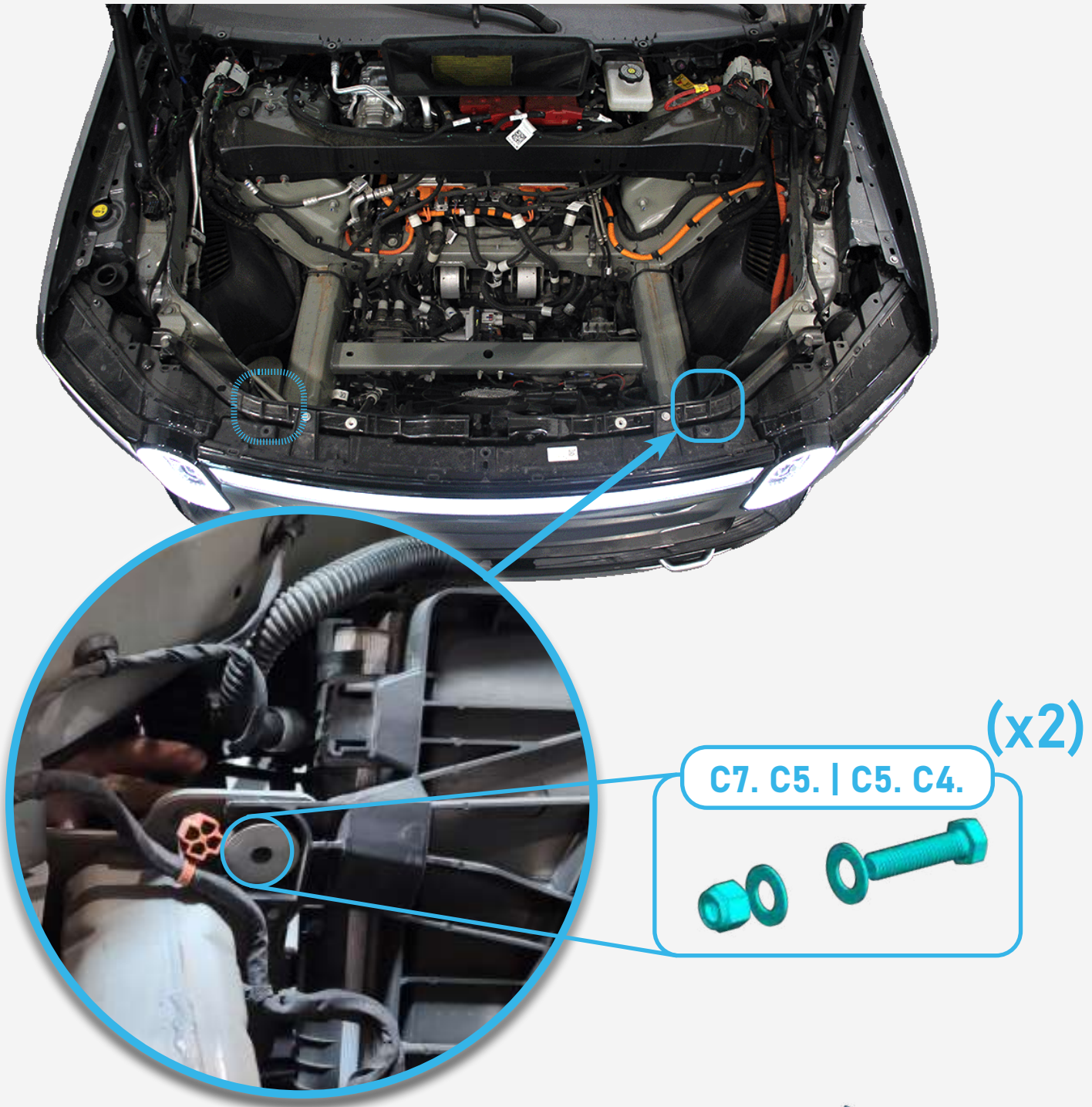
□ STEP 80

Prior to installing your bumper onto the truck, use the supplied light mounts (G.) and hardware specified below, along with a (9/16" wrench) to install your center light bar (sold separately) into the bumper. (These supplied light tabs are universal, so the install position and orientation will be unique to your configuration. Check position prior to tightening and adjust for best results)



□ STEP 81

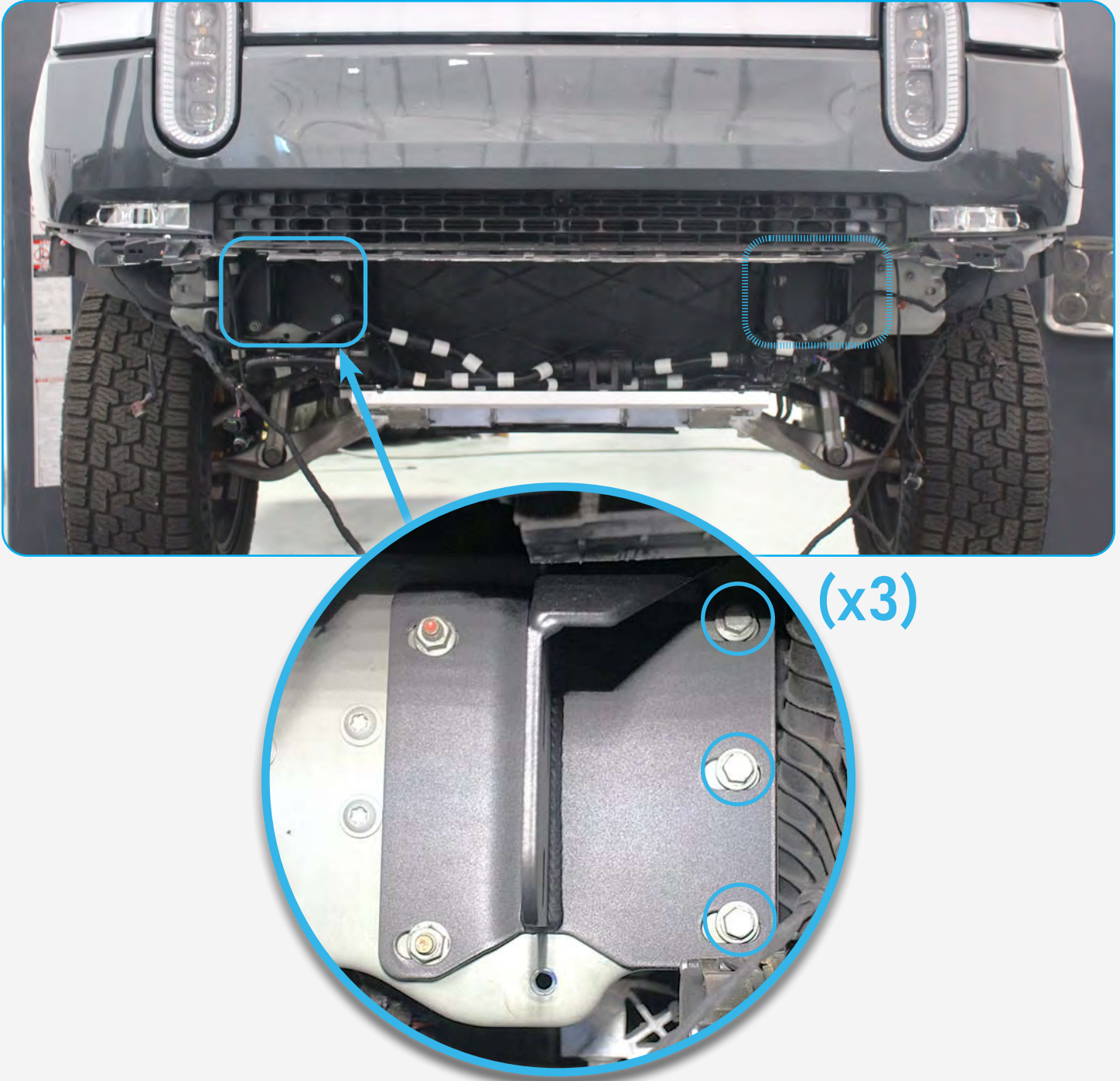
Using the supplied hardware specified below, along with a (9/16" wrench and socket), through bolt the upper fan mount tabs in the frunk to the crash bar mount with the nut to the front.
(Repeat on other side)



□ STEP 82

Reusing the original hardware (from step 23) and a (13mm), install the supplied mount adapter (H.) as shown below and loosely install the (3) specified bolts.

(Take up the slack but do not fully tighten at this time. Repeat on other side)



□ STEP 83

Reusing the original hardware (from step 22) and a (15mm), loosely install the (2) specified mount adapter nuts as shown below.

(With the mount adapter adjusted all the way towards the center of the truck, take up the slack but do not fully tighten at this time. Repeat on other side)



□ STEP 84

Position the bumper as close as possible to the truck and support it's weight while you make the upcoming connections. The mount plates of the bumper should sit to the outside of the previously installed mount adapters with the wire harness siting freely in the cradle above the bumper mounts. (Use caution to avoid contact with painted surfaces. Use masking tape, or a similar product, to provide a protective surface during installation. 2 people are recommended for installation)



□ STEP 85

Plug in the driver side outer parking sensor, then with the plug pointed down, insert the sensor into the sensor bezel as shown below.

(Ensure that the sensor and it's connector are both fully seated, with all tabs fully clicked in. **System errors will be present if these are not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



**MAKE SURE THE
SENSOR FACE IS
FLUSH WITH BEZEL**



□ STEP 86

Plug in the driver side BSM sensor connector as shown below.

(Ensure that the sensor connector is fully seated, with all tabs fully clicked in. **System errors will be present if this is not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



**MAKE SURE THE
SENSOR SITS
PARALLEL WITH
THE OPENING**



□ STEP 87

Plug in the driver side middle parking sensor, then with the plug pointed towards driver side, insert the sensor into the sensor bezel as shown below

(Ensure that the sensor and it's connector are both fully seated, with all tabs fully clicked in. **System errors will be present if these are not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



**MAKE SURE THE
SENSOR FACE IS
FLUSH WITH BEZEL**



□ STEP 88

Plug in the AVAS speaker connector and slide the red lock tab down as shown below.

(Ensure that the connector is fully seated, with both tabs fully clicked in. **System errors will be present if this is not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



□ STEP 89

Plug in the driver side inner parking sensor, then with the plug pointed towards passenger side, insert the sensor into the sensor bezel as shown below.

(Ensure that the sensor and it's connector are both fully seated, with all tabs fully clicked in. **System errors will be present if these are not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



**MAKE SURE THE
SENSOR FACE IS
FLUSH WITH BEZEL**



□ STEP 90

Plug in the passenger side inner parking sensor, then with the plug pointed towards driver side, insert the sensor into the sensor bezel as shown below.

(Ensure that the sensor and it's connector are both fully seated, with all tabs fully clicked in. **System errors will be present if these are not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



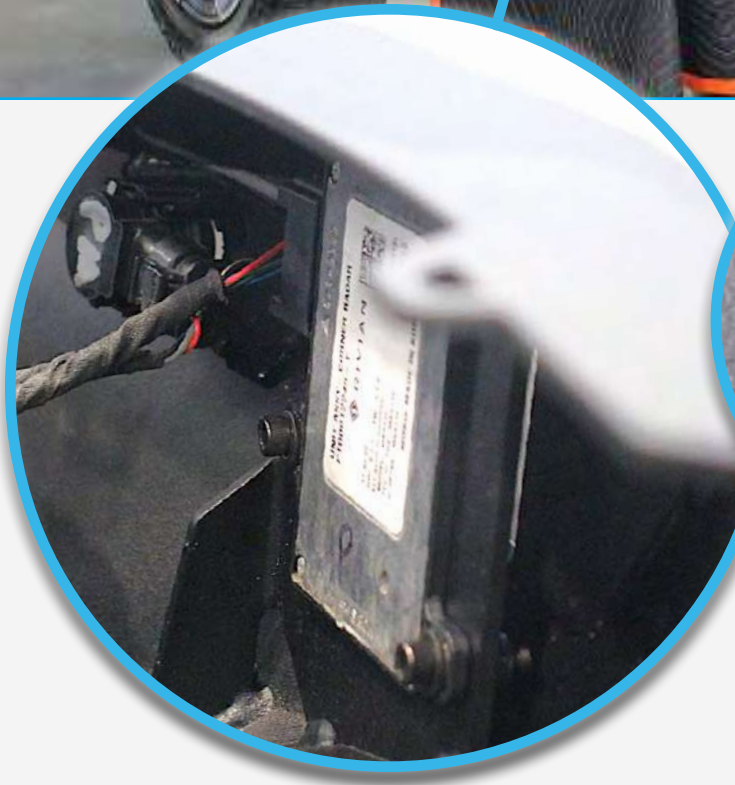
**MAKE SURE THE
SENSOR FACE IS
FLUSH WITH BEZEL**



□ STEP 91

Plug in the passenger side BSM sensor connector as shown below.

(Ensure that the sensor connector is fully seated, with all tabs fully clicked in. **System errors will be present if this is not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



**MAKE SURE THE
SENSOR SITS
PARALLEL WITH
THE OPENING**



□ STEP 92

Plug in the passenger side middle parking sensor, then with the plug pointed towards passenger side, insert the sensor into the sensor bezel as shown below.

(Ensure that the sensor and it's connector are both fully seated, with all tabs fully clicked in. **System errors will be present if these are not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



**MAKE SURE THE
SENSOR FACE IS
FLUSH WITH BEZEL**



□ STEP 93

Plug in the passenger side outer parking sensor, then with the plug pointed down, insert the sensor into the sensor bezel as shown below.

(Ensure that the sensor and it's connector are both fully seated, with all tabs fully clicked in. **System errors will be present if these are not installed properly.** It's recommended to take detailed photos of this installation at this time to have available as reference if troubleshooting is required at the end)



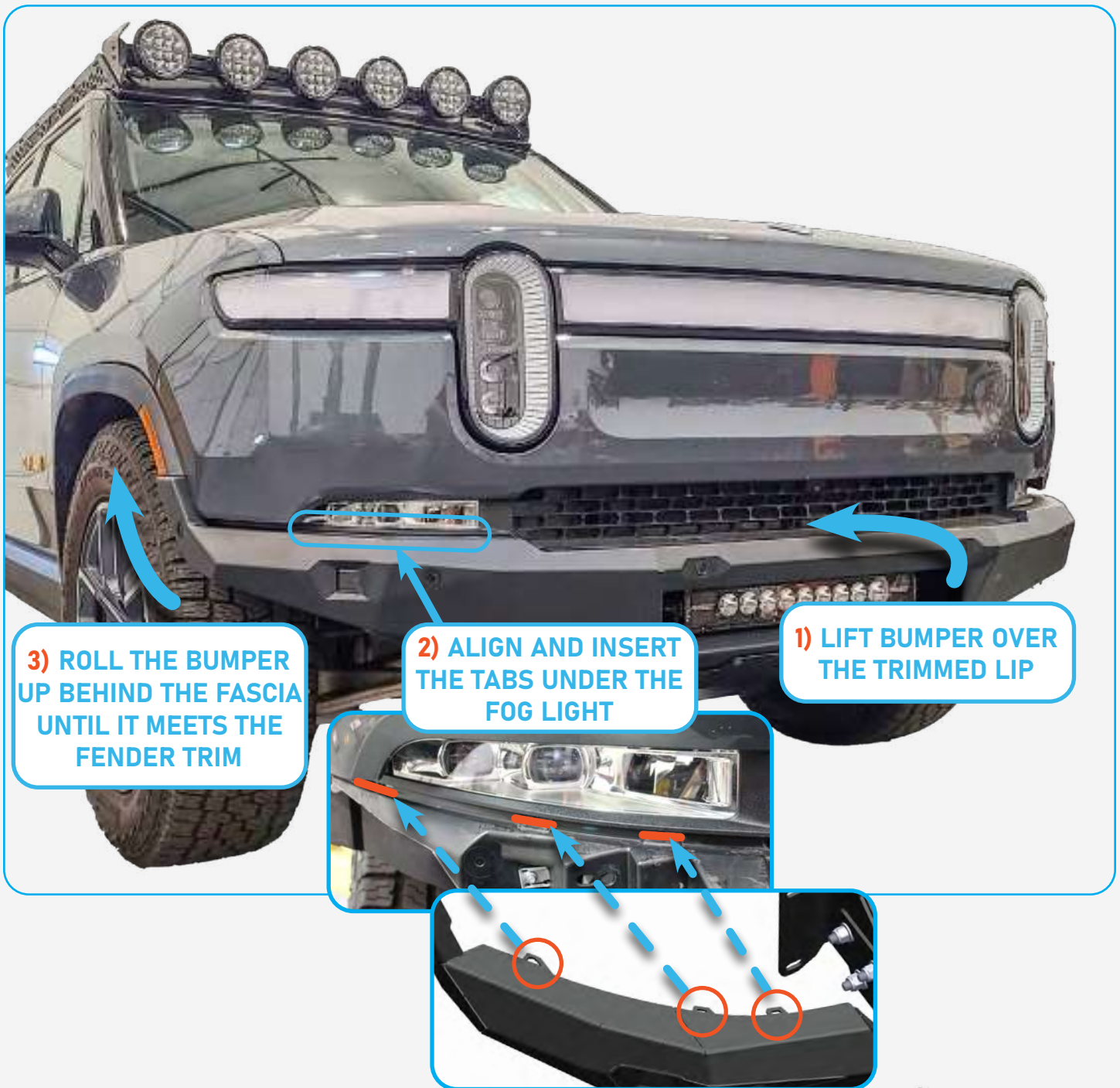
**MAKE SURE THE
SENSOR FACE IS
FLUSH WITH BEZEL**



□ STEP 94

With all bumper components installed and reconnected, grab a second person to help position the bumper onto the truck as shown below.

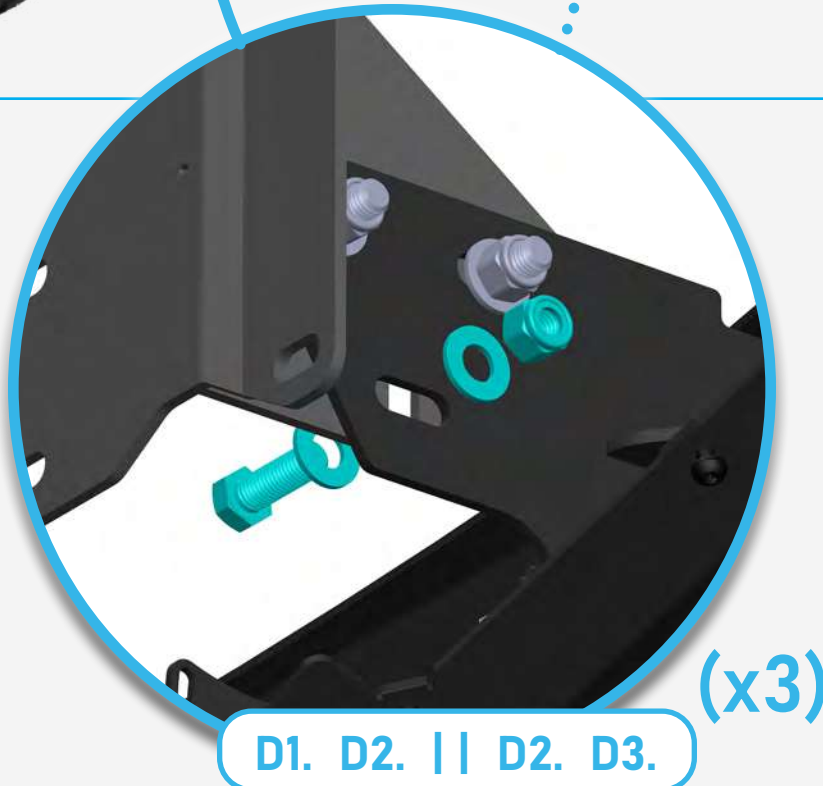
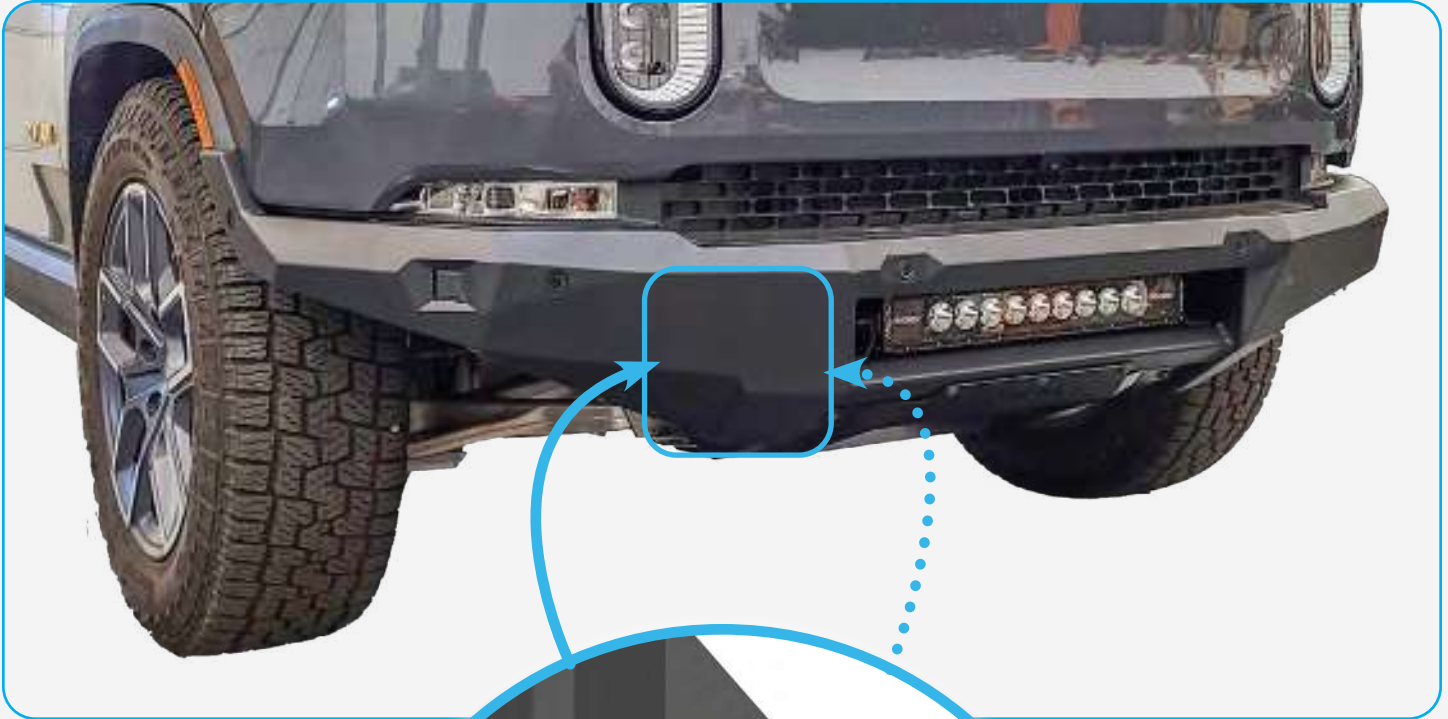
Once the bumper is loosely in position, continue to support the weight, then reach through the opening at the bottom of the side pod and insert (1) of the supplied 1/2" bolts (D1.) into any of the mounting holes on each side of the bumper to help support the weight.



□ STEP 95

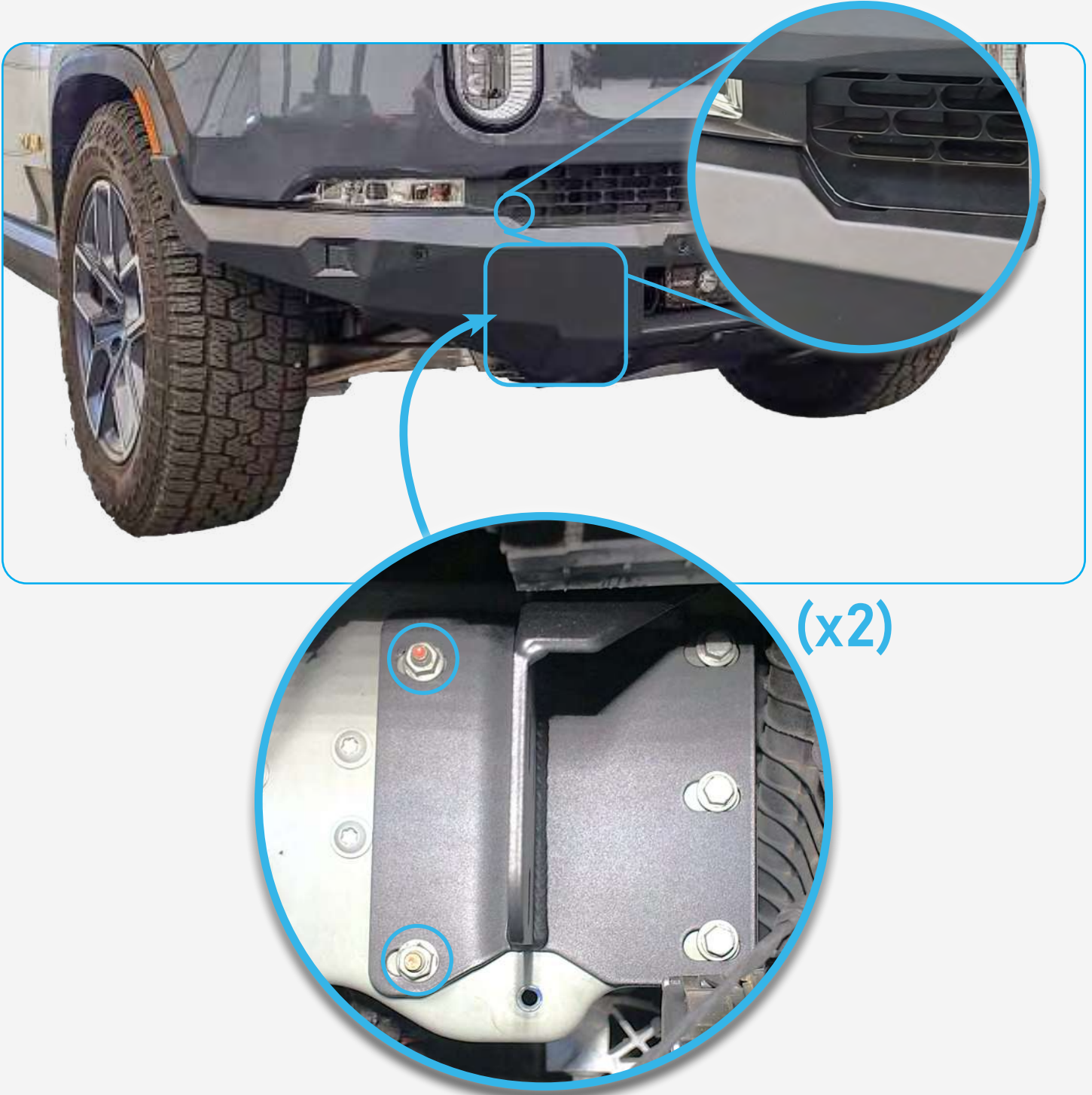
Using the supplied hardware specified below, along with a (3/4" wrench and socket), reach through the access hole in the bottom of the side pod and through the skid plate access to bolt the bumper to the mount adapter.

(Take up the slack but leave the bolts loose at this time. Repeat on other side)



□ STEP 96

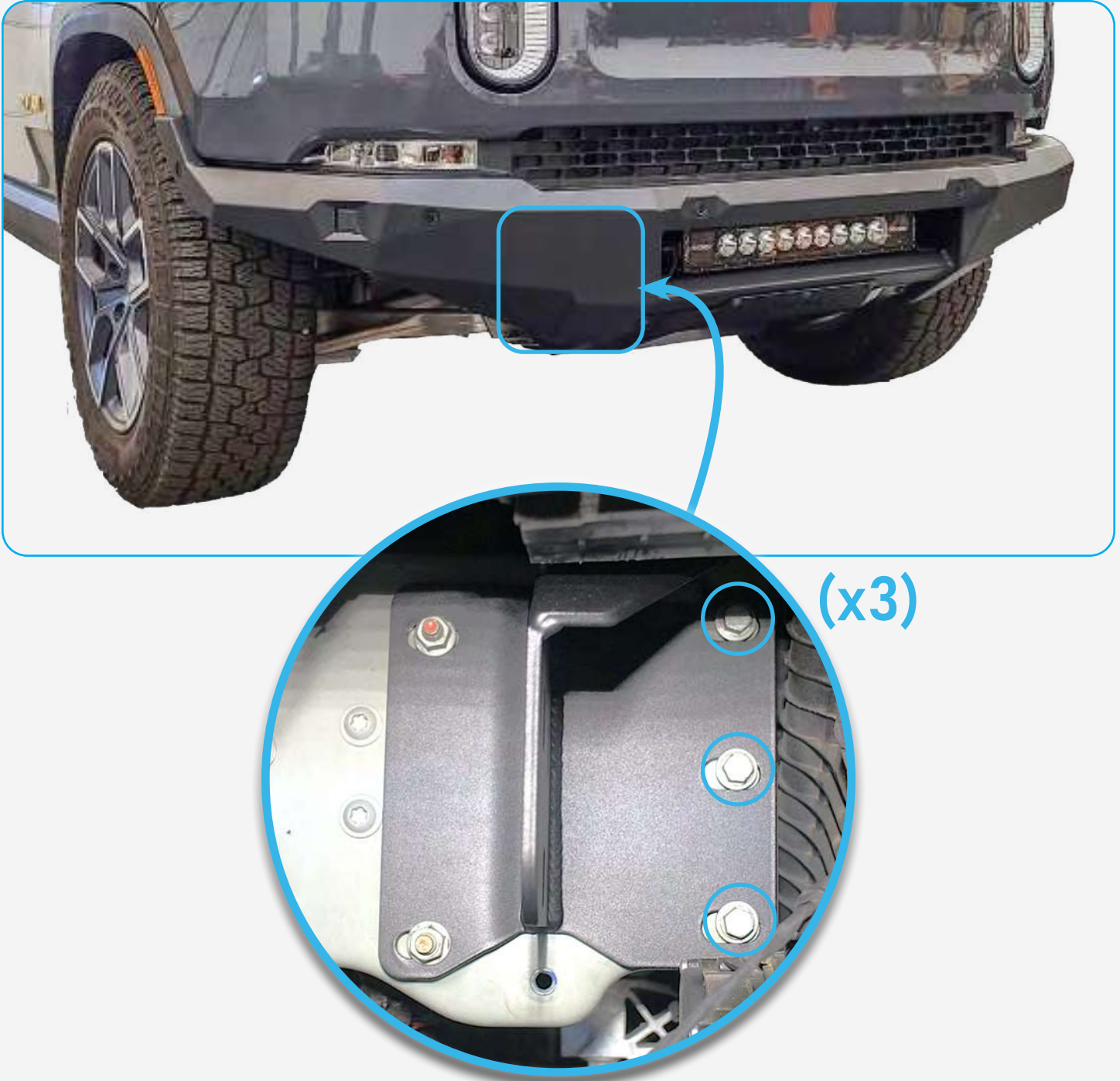
Adjust the bumper side to side to center it on the truck, then using a (15mm), reach through the access hole in the bottom of the side pod and tighten (2) nuts fastening the mount adapter to the truck. (Reference the fitment where the grille and fog light meet for best results. Repeat on other side)



□ STEP 97

Using a (13mm), reach through the skid plate access and tighten the (3) bolts fastening the mount adapter to the truck.

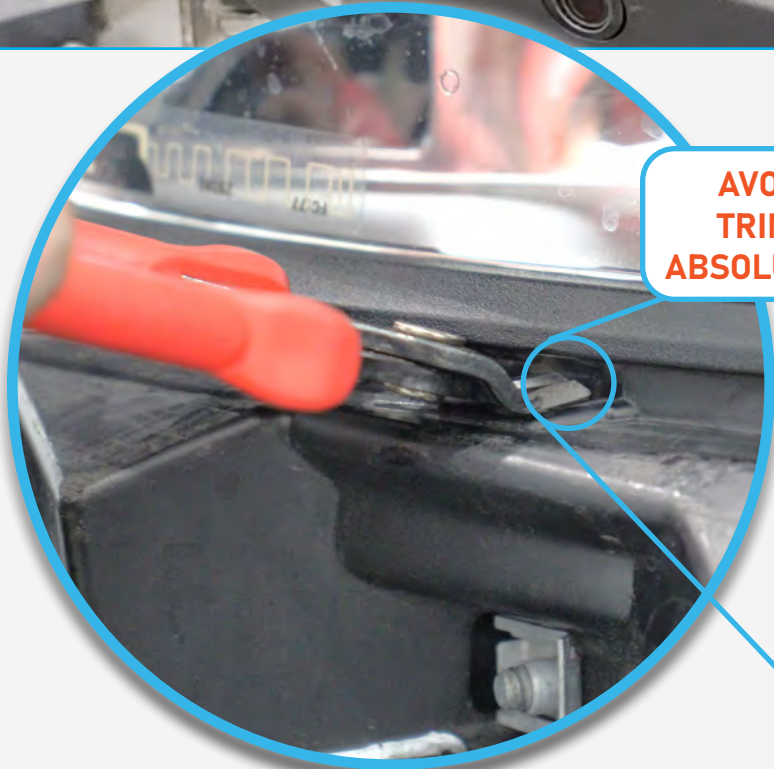
(Repeat on other side)



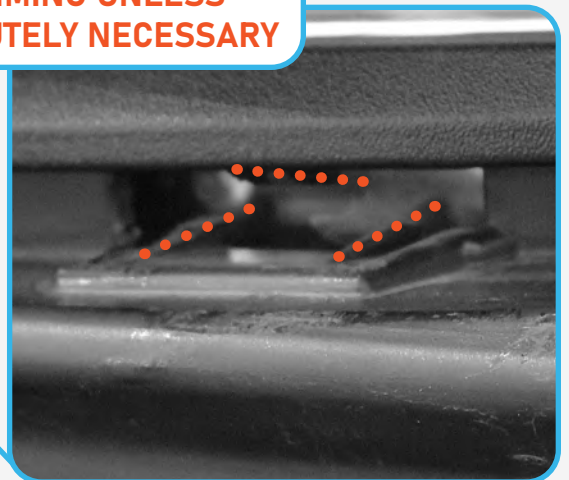
□ STEP 98

Reaching through the side pod access, support the back side of the fog light, then with your other hand press the bumper into the light from the front side to firmly seat the bumper tabs into the fog light slots. Reference the image below for proper final fitment.

(This should be a tight fit. If the bumper tabs will not insert into the fog light slots, trim a minimal amount of material from the vertical tabs until proper fitment is achieved)



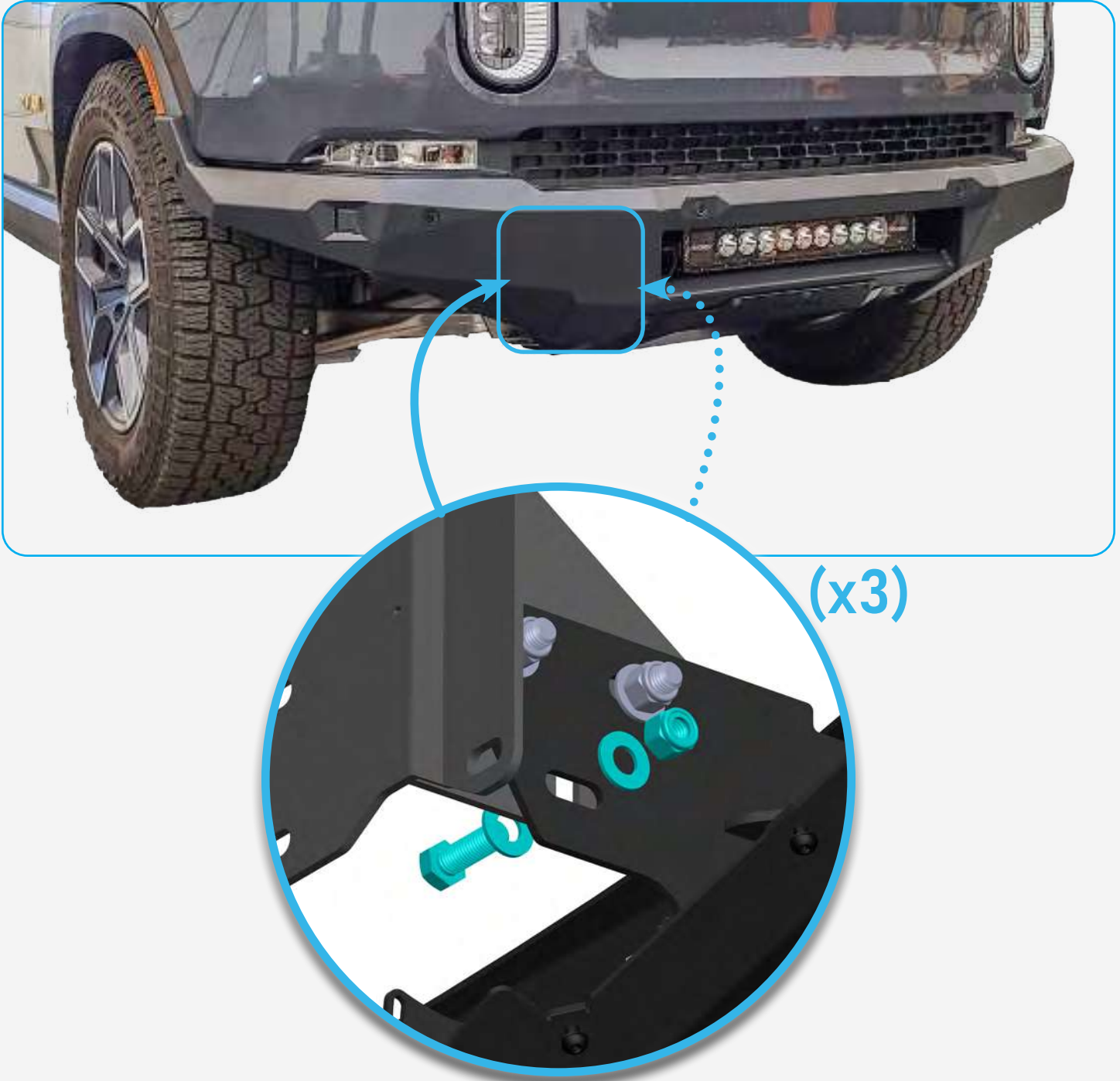
**AVOID ADDITIONAL
TRIMMING UNLESS
ABSOLUTELY NECESSARY**



STEP 99

With the desired bumper fitment achieved, use a (3/4" socket) and a (3/4" wrench) and reach through the access hole in the bottom of the side pod and through the skid plate access to tighten the bumper to the mount adapter.

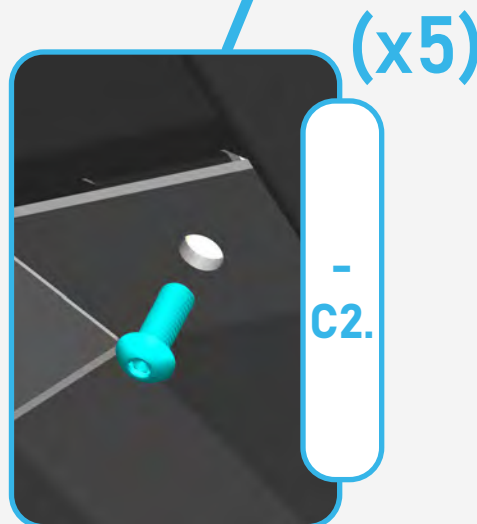
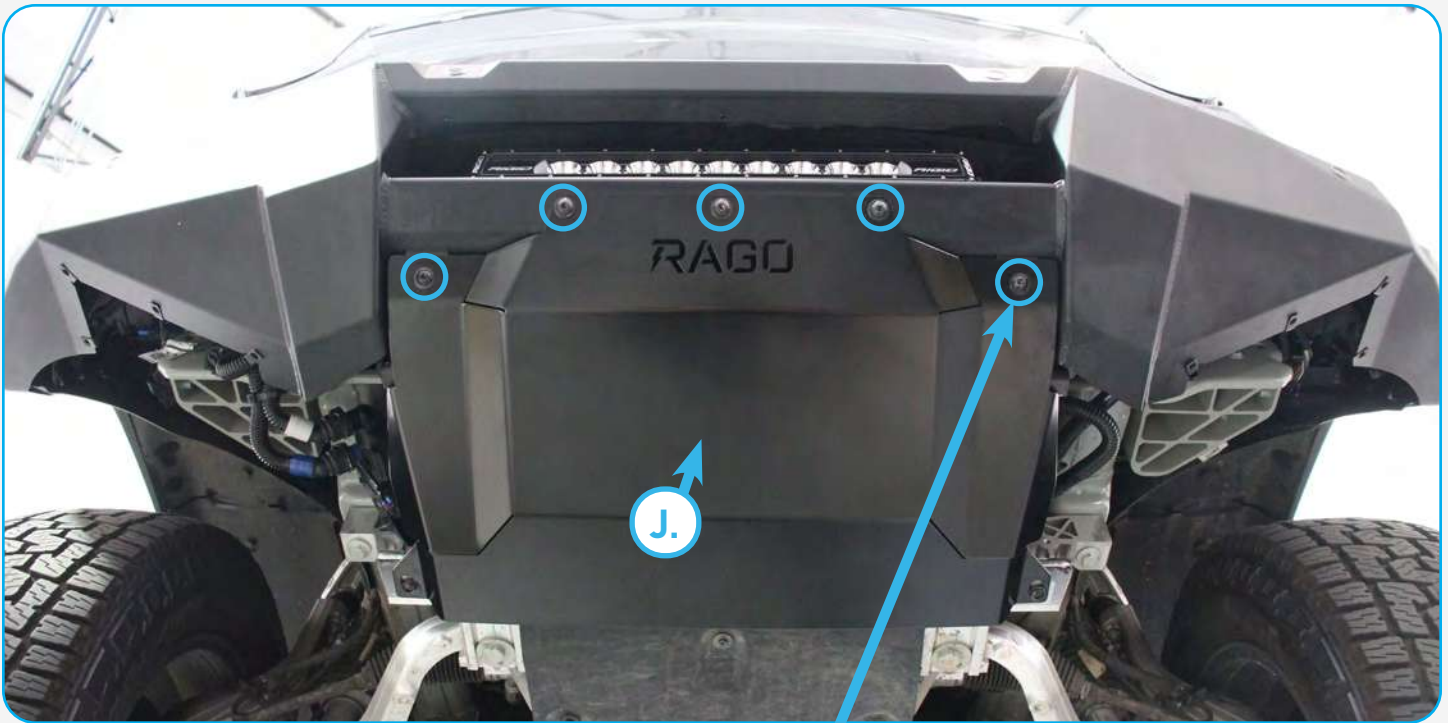
(Repeat on other side)



□ STEP 100

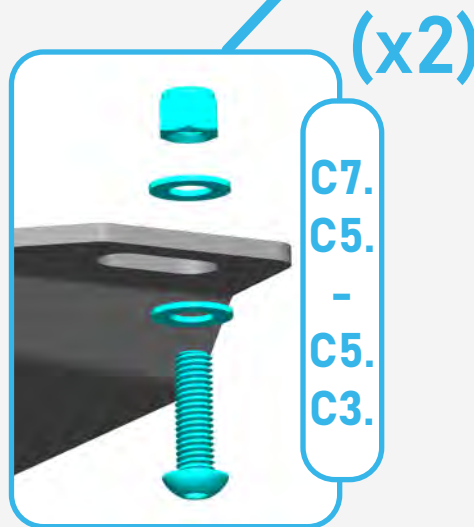
Using a (7/32" allen) and the (5) supplied bolts specified below, loosely mount the skid plate (J.) to the bumper.

(Leave bolts loose at this time)



□ STEP 101

Using the supplied hardware specified below, along with a (7/32" allen) and a (9/16" wrench), through bolt the bottom skid plate mounting tab to the corresponding tab on the truck.
(Leave loose at this time)



STEP 102

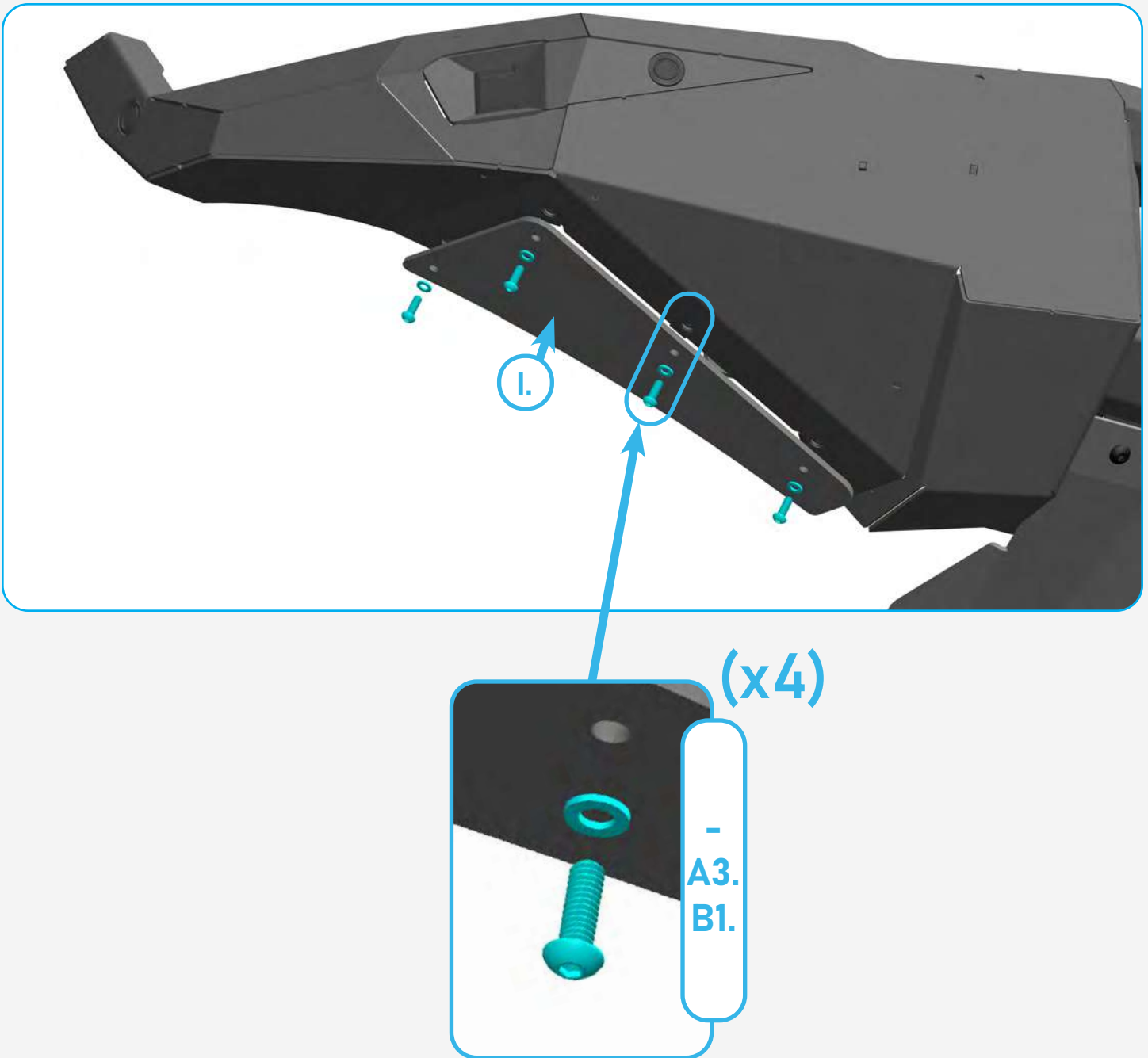
Using a (7/32" allen) and a (9/16" wrench), position the skid plate for best fitment, then tighten the indicated hardware working from the top group to the bottom.

(Work from the center out for best results)



□ STEP 103

Using a (5/32" allen) and (4) of supplied hardware specified below, install the side pod access panel (I.) to the bumper.
(Repeat on other side)

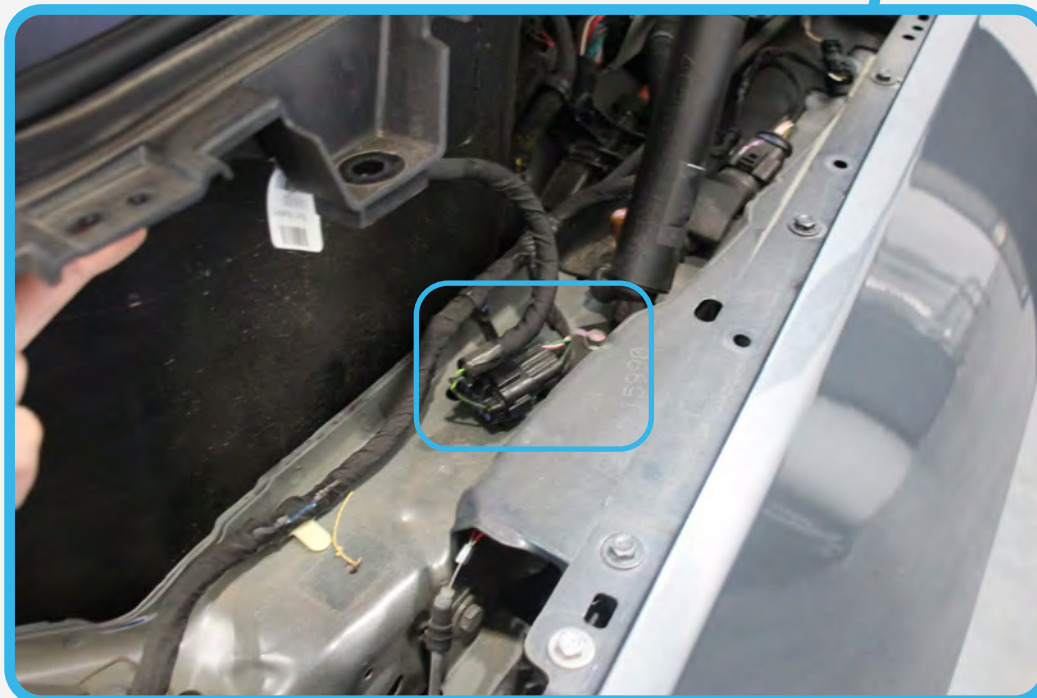


□ STEP 104

Set the frunk liner back into it's place in the truck and reconnect the wire connections on both sides.
(Make sure wires are tied up and will not get pinched)



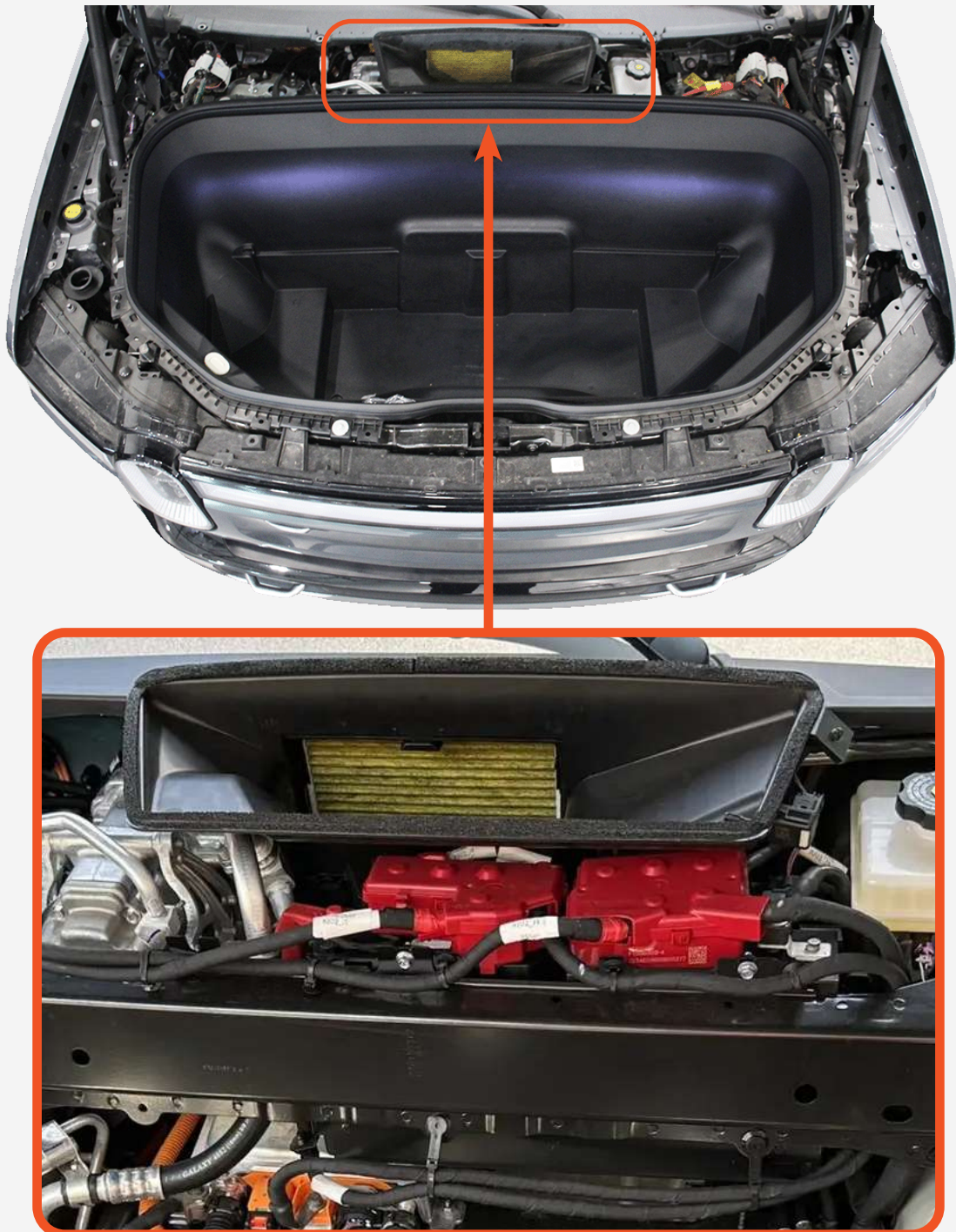
(x2)



□ STEP 105 (OPTIONAL)

This would be a good time to run any new accessory wiring. The 12v battery in the location shown below has been used as a power source for aftermarket accessories.

(Refer to the Rivian for best wiring practices and recommendations. Make certain to keep wiring clear of any moving parts and in locations where it will not get damaged)



□ STEP 106

Reinstall the rear frunk panel.

(Press firmly at each tab to ensure proper engagement)



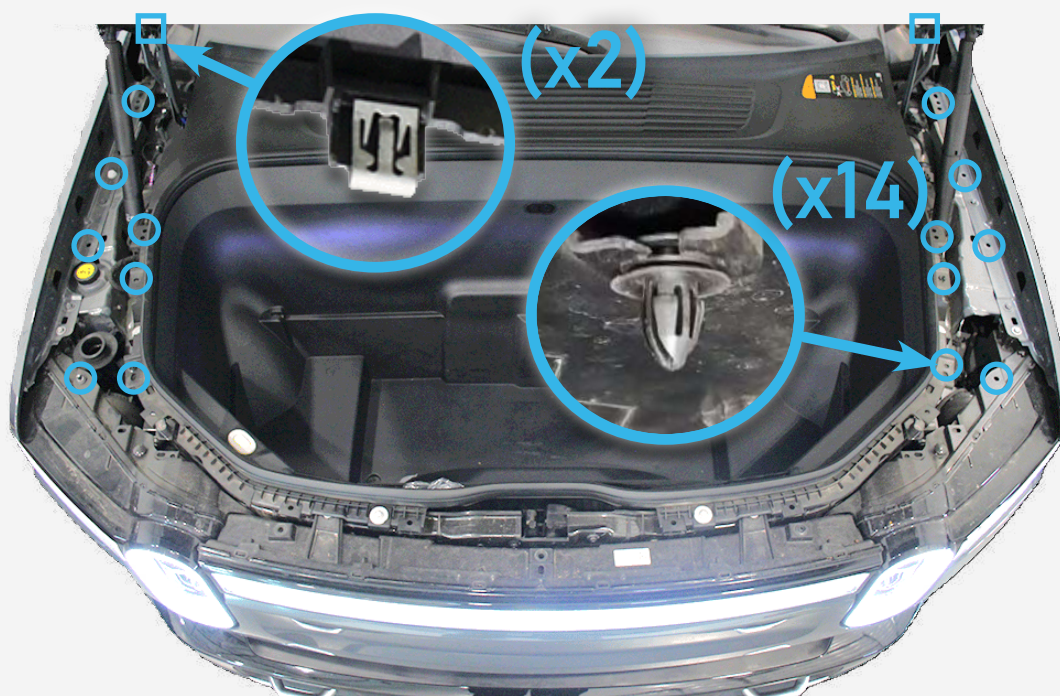
(x10)



□ STEP 107

Reinstall both frunk side panels.

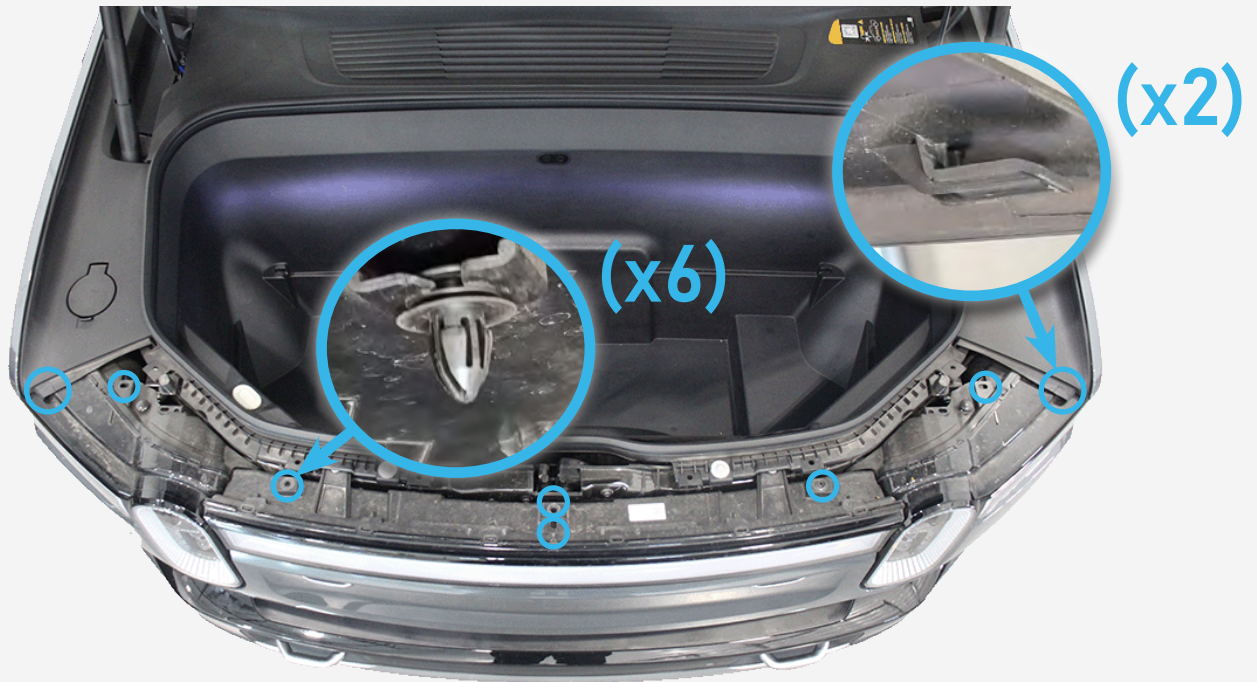
(Press firmly at each tab to ensure proper engagement)



□ STEP 108

Reinstall the front frunk panel.

(Flex the corner tabs into place first, then press firmly at each tab to ensure proper engagement)



□ STEP 109

Reinstall the trim retainers (from step 3).

(Press firmly at each tab to ensure proper engagement. Repeat on other side)

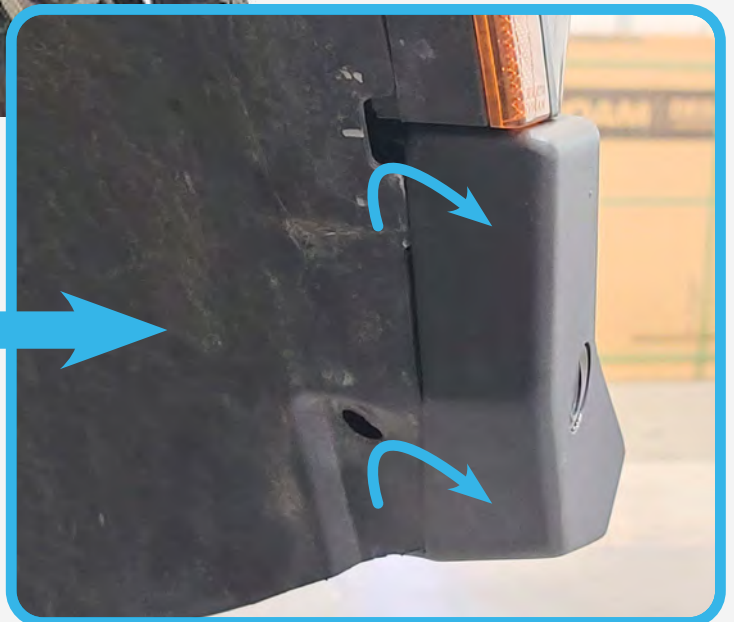


(x1)



□ STEP 110

Using the bottom corner of the bumper at the fender as a starting point, reference the **dotted lines** below to mark and trim the excess material from the fender liner that hangs below the bumper. Next tuck the edge of the fender liner into the bumper and use a **(T20 Torx)** and a **(10mm)** to reinstall the original fender liner hardware (from steps 11 and 12) into the remaining mounting holes.
(Take your time. Repeat on other side)



□ STEP 111 (OPTIONAL TROUBLESHOOTING)

If system errors are present, it may be necessary to perform a full system reset/hard reset after installation. Refer to the following procedure:

Full reset

Hold the far left button on the steering wheel and the emergency flasher button for about 15 seconds. The entire computer will restart.

According to Rivian support **DO NOT RESET AGAIN FOR AT LEAST 1 HOUR** after this procedure. Multiple systems may take a bit longer to fully come up after this reset.



□ STEP 112

Stand back and enjoy your new RAGO Fabrication Rivian Front Bumper.

Check and re-tighten all mounting hardware after 100 miles and periodically thereafter.

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