



STM 2021+ Dodge Ram TRX Intake Installation Manual

Parts Included

- 1x - Modified OEM Battery Box
- 1x - 5" Aluminum Intake Pipe
- 1x - K&N RU-3107HBK 5" Air Filter
- 1x - Intake Support Bracket
- 1x - Fuse Box Support Bracket
- 1x - M8x1.25 16mm Bolt
- 2x - M6x1 20mm Bolt
- 2x - M6 Nut
- 2x - M6 Flat Washer
- 1x - M5x0.8 20mm Bolt
- 1x - M5 Nut
- 2x - M5 Flat Washer
- 1x - 4" Worm Clamp
- 1x - 5" Worm Clamp
- 2x - 5/8" Worm Clamp
- 1x - 4-5" Reducer Coupler
- 1ft - 5/8 Silicone Hose

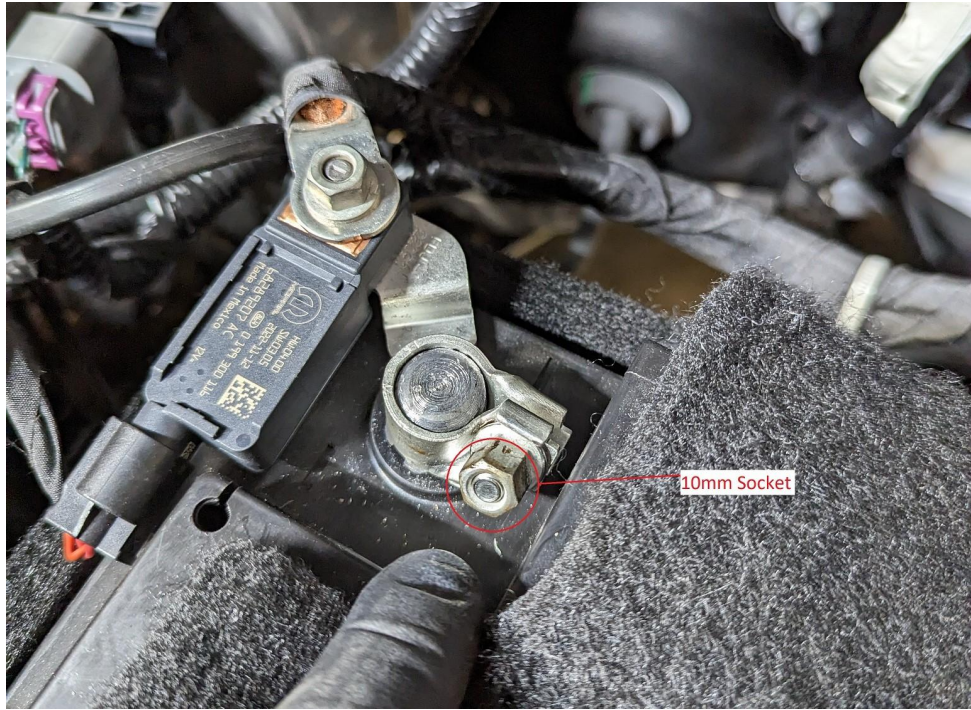


Tools Required

- 7,8,10 and 13mm sockets, ratchet and extensions or wrenches as preferred.
- T30 Torx socket or driver
- Trim clip removal tool
- Flathead screw driver

Parts Removal

1 - Using a 10mm remove the negative terminal on the battery first. Then On the positive side squeeze the tab on the red cover towards the outside of the vehicle and pick straight up to remove. Then again using the 10mm loosen the positive terminal. There is a plastic clip under the terminal that catches the case of the battery. Using a finger or your clip pry tool pull that tab away and lift the cable from the battery.





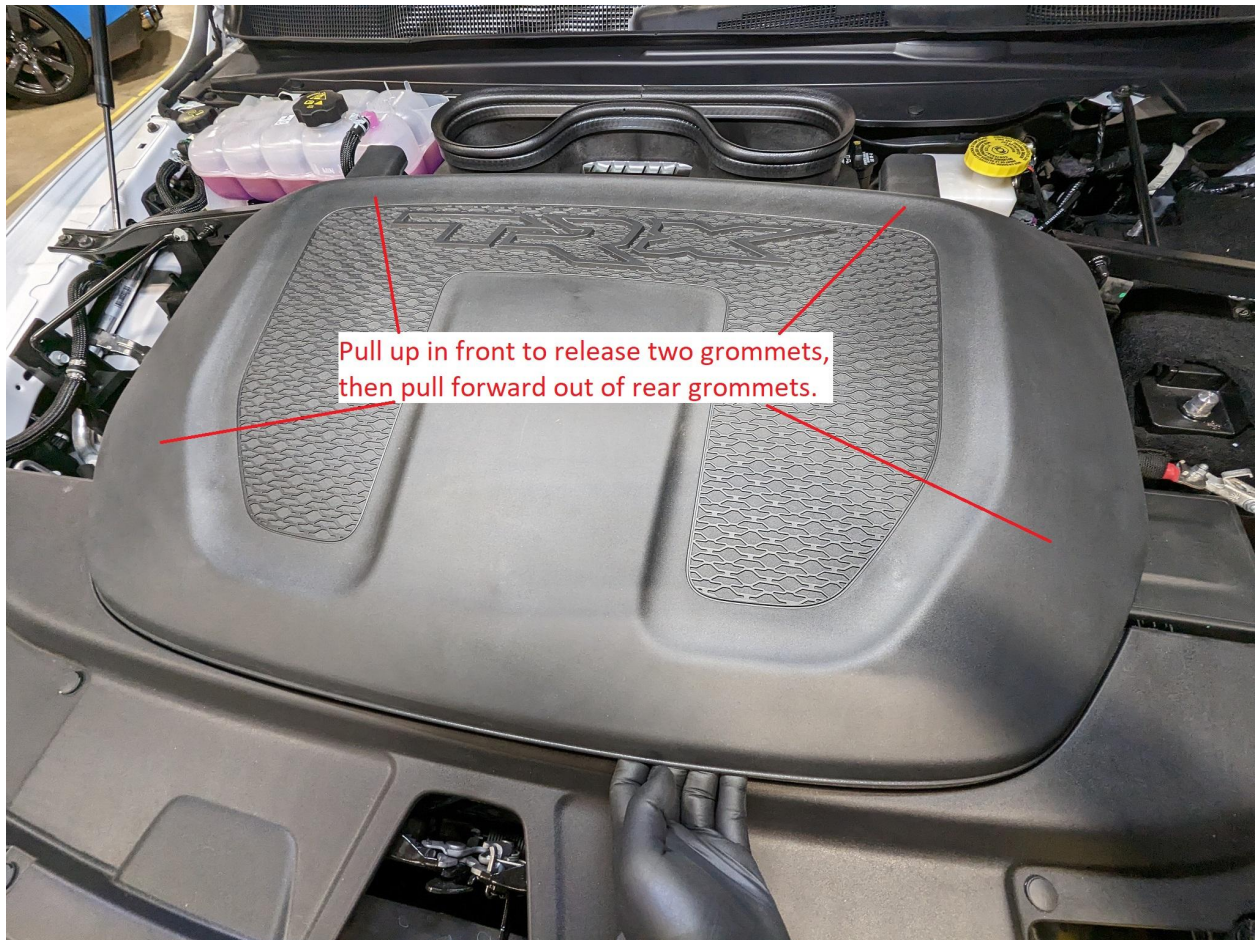
Squeeze
Tab Here



10mm Socket

Release tab with finger or pry tool, then lift straight up off battery post.

2 - Remove “TRX” engine cover by reaching under the front left and right corners and lifting straight up to release from grommets. Then pull cover straight forward to remove from rear grommets.



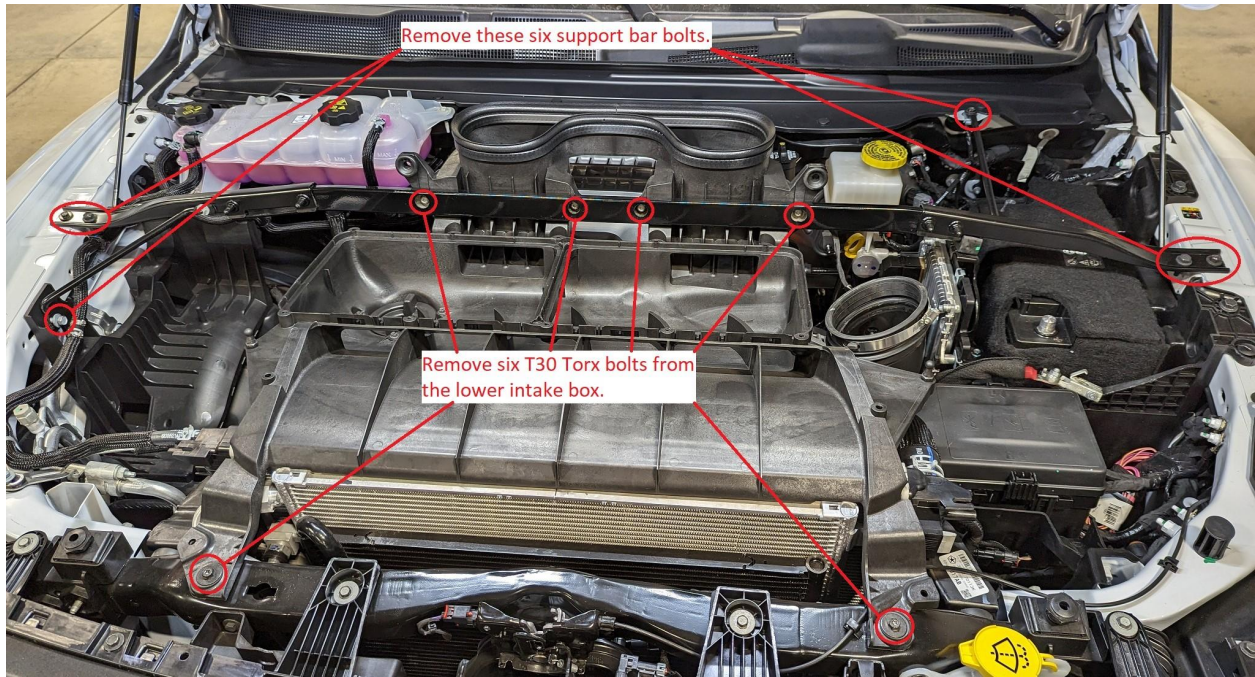
3 - Using an 8mm socket or a screw driver remove the 10 screws holding in the air filter lid. Then using the same tools loosen the worm clamp on the intake pipe to the right side. At this point the lid can be lifted off. With the lid removed the air filter will be sitting open and can also be removed. They are not fastened so they can just be lifted out and set aside.



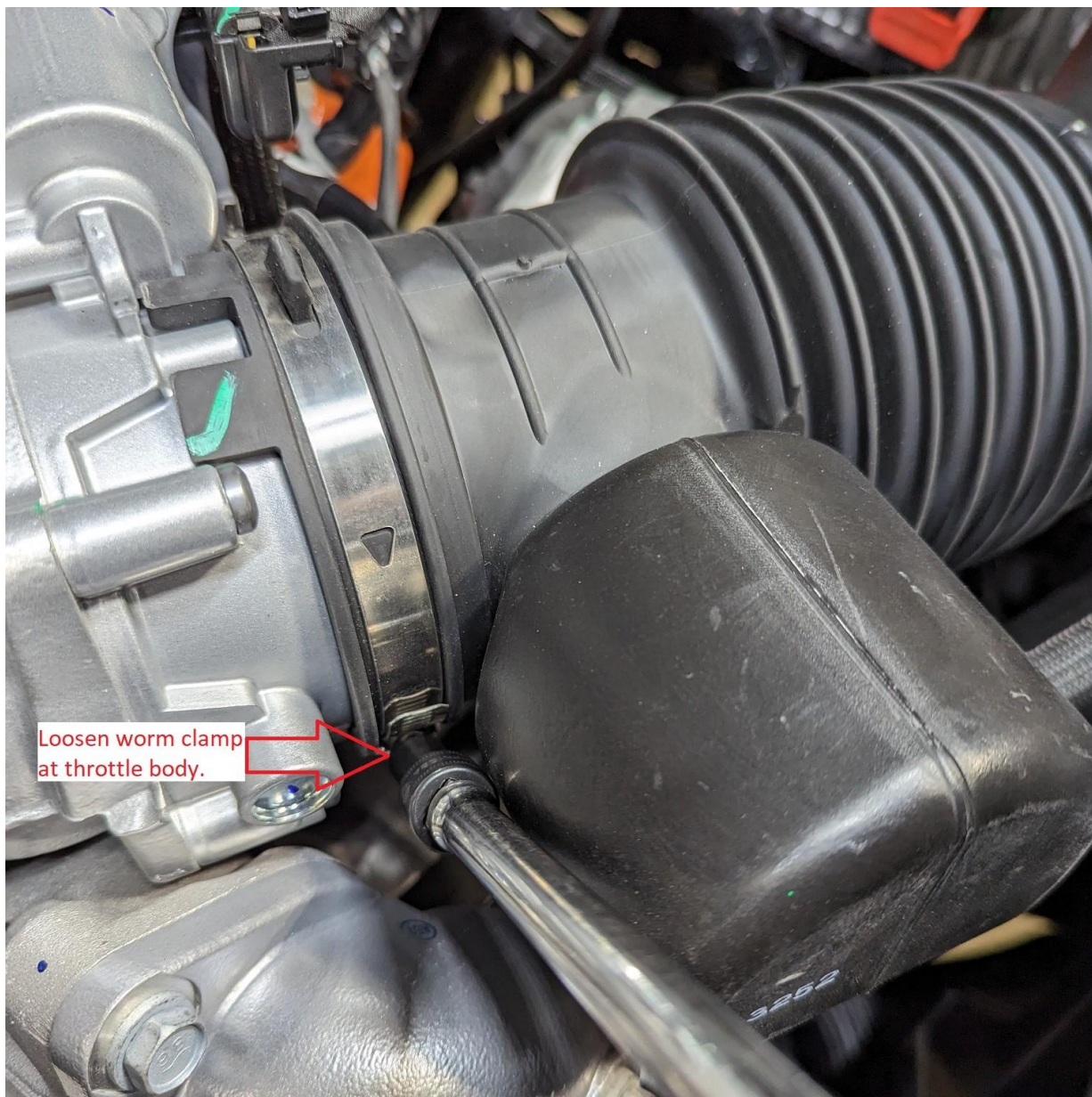
4 - Using your clip removal tool insert between the upper and lower part of the clip and lift to unlock the clip. Remove all 16 clips, then the radiator filler panel can be removed.



5 - Using T30 Torx, 10mm and 13mm tools remove six intake support bar bolts, and six lower intake box mounting bolts.



6 - Remove the intake pipe from the throttle body by using an 8mm socket or screw driver to loosen the clamp. Then Squeeze the clip on the temp sensor to unlock clip and remove from sensor. Then Using a 10mm socket remove three bolts holding the solenoid to the valve cover. On the back side of the solenoid the line will be removed by pressing in the gray tab on the connector, then pulling the solenoid forward and out of the clip. Finally pinch the release tab and remove the wiring from the sensor. At this point there should be able to be removed from the vehicle as shown below.



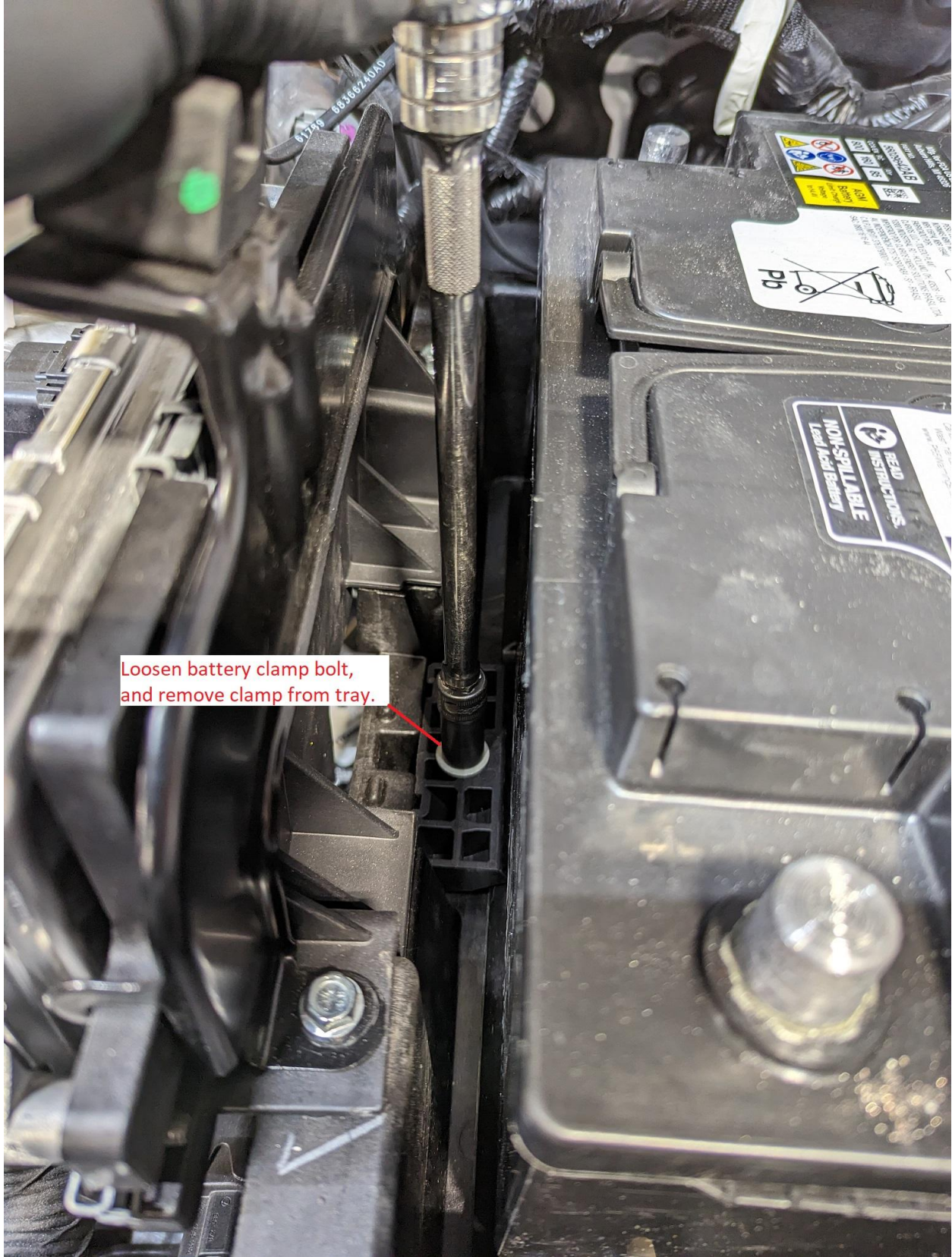


Pinch connector to press in tab,
then pull wiring from sensor.

Removed Intake Pipe Assembly



7 - Lift off battery blanket, then using a 10mm socket loosen and remove battery hold down clamp. Once the clamp is removed, slide the battery backwards and towards the center of the truck. Then flip the handles up on the battery and lift from vehicle. ***The battery is HEAVY (60+ pounds) so have a second person help if necessary!***



Loosen battery clamp bolt,
and remove clamp from tray.

8 - Using an 8mm and clip removal tool, remove the bolts holding the driver front inner fender liner, Then pull and twist the inner fender to remove it from the vehicle. It is plastic and can be flexed and bent to fit out of the wheel well. The lower front wheel well liner can be removed for easier access at this time as well but is not completely necessary.





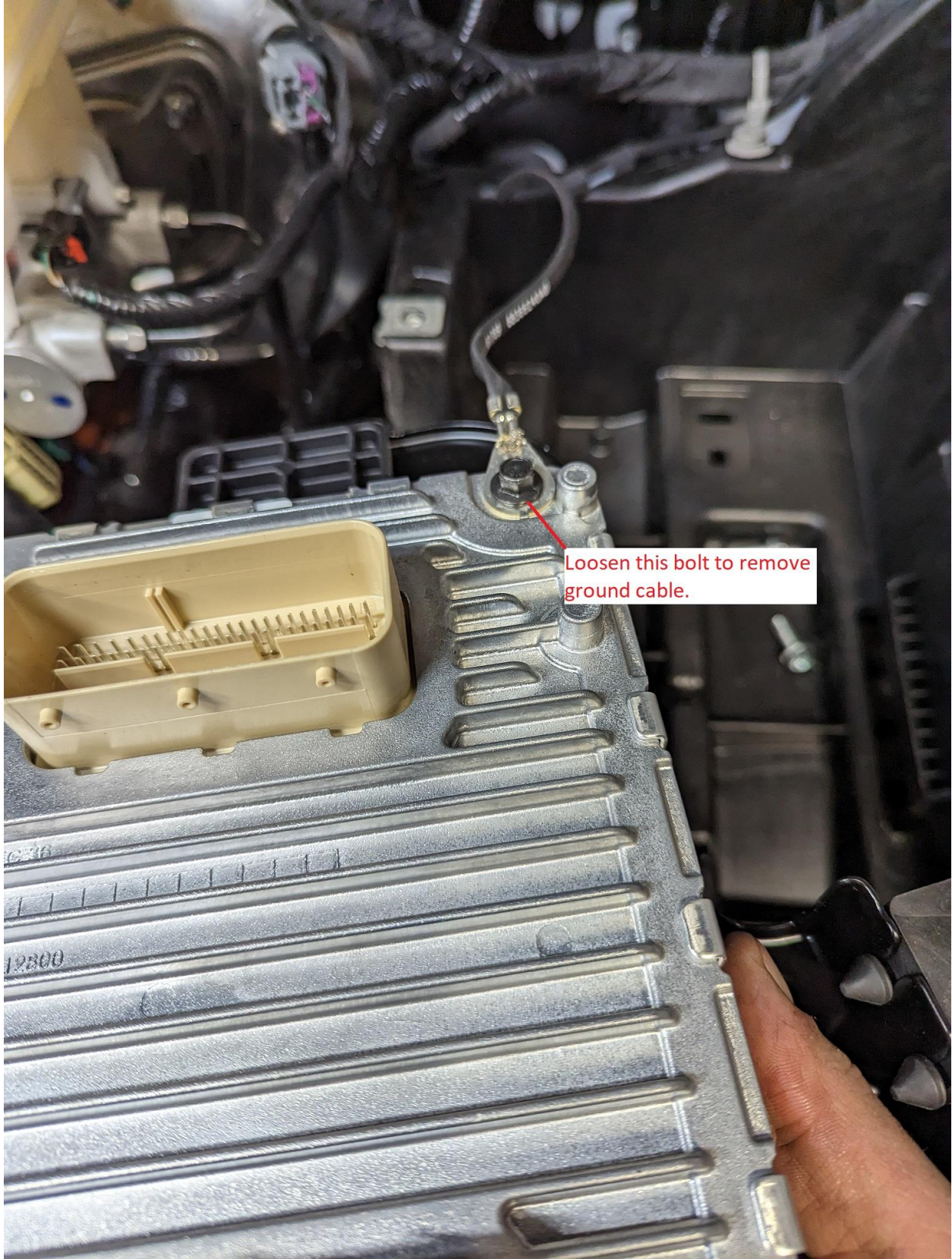
9 - On the PCM there are two large connectors. Just above the red levers on them is a small button. Pressing in on the button with one hand, then use the other to rotate the up about 90 degrees to unlock the wiring from the PCM. Use the same method for the second connector. Then using an 8mm remove the bolt holding the grounding cable to the PCM on the upper rear bolt.

At this point use a 10mm to remove two bolts holding the PCM mount bracket to the battery box. Then remove the assembly from the vehicle. This part should be treated gently and set in a safe area where it won't be damaged or could fall.

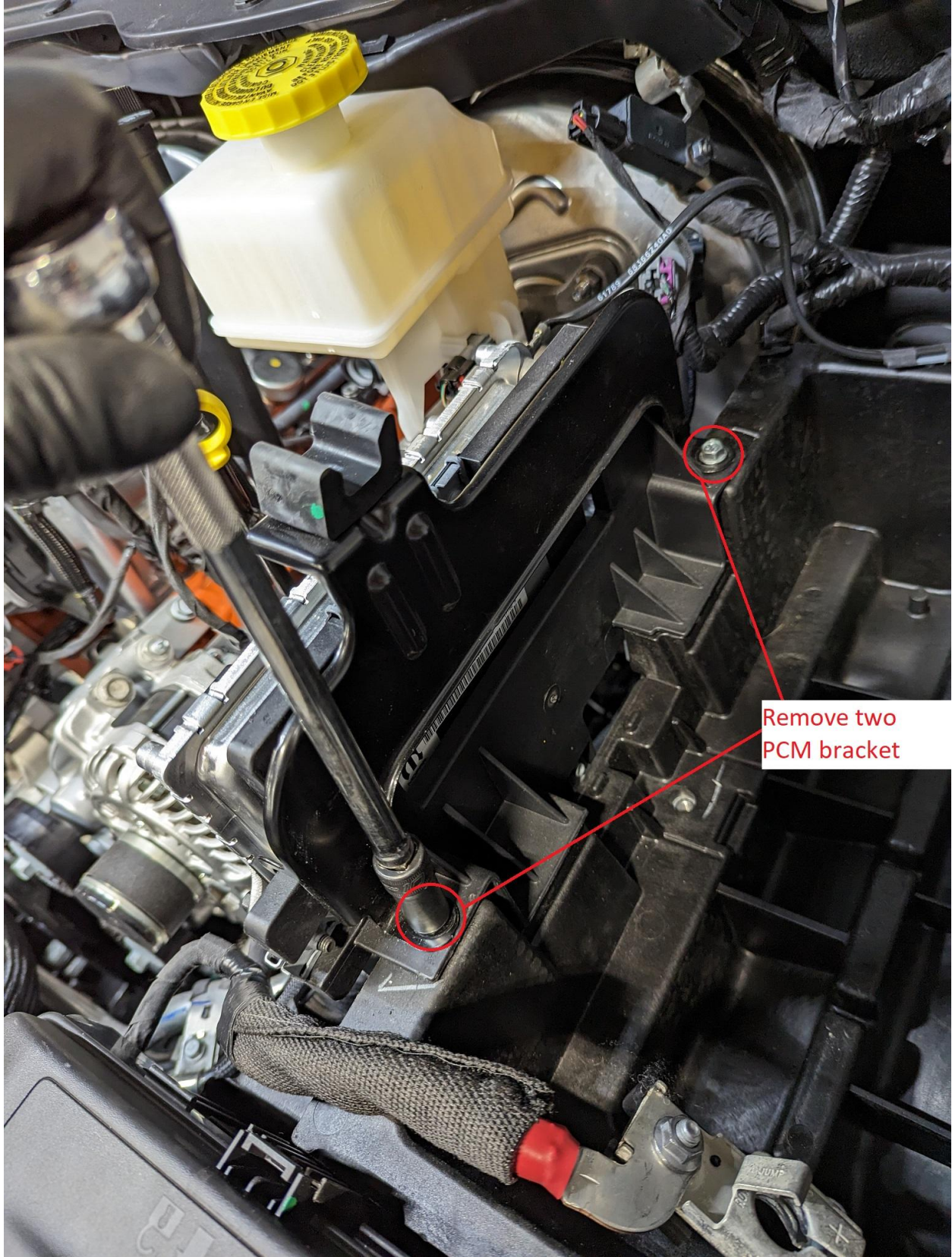




Once arm reaches this stop, the harness can be pulled out of the PCM.



Loosen this bolt to remove ground cable.

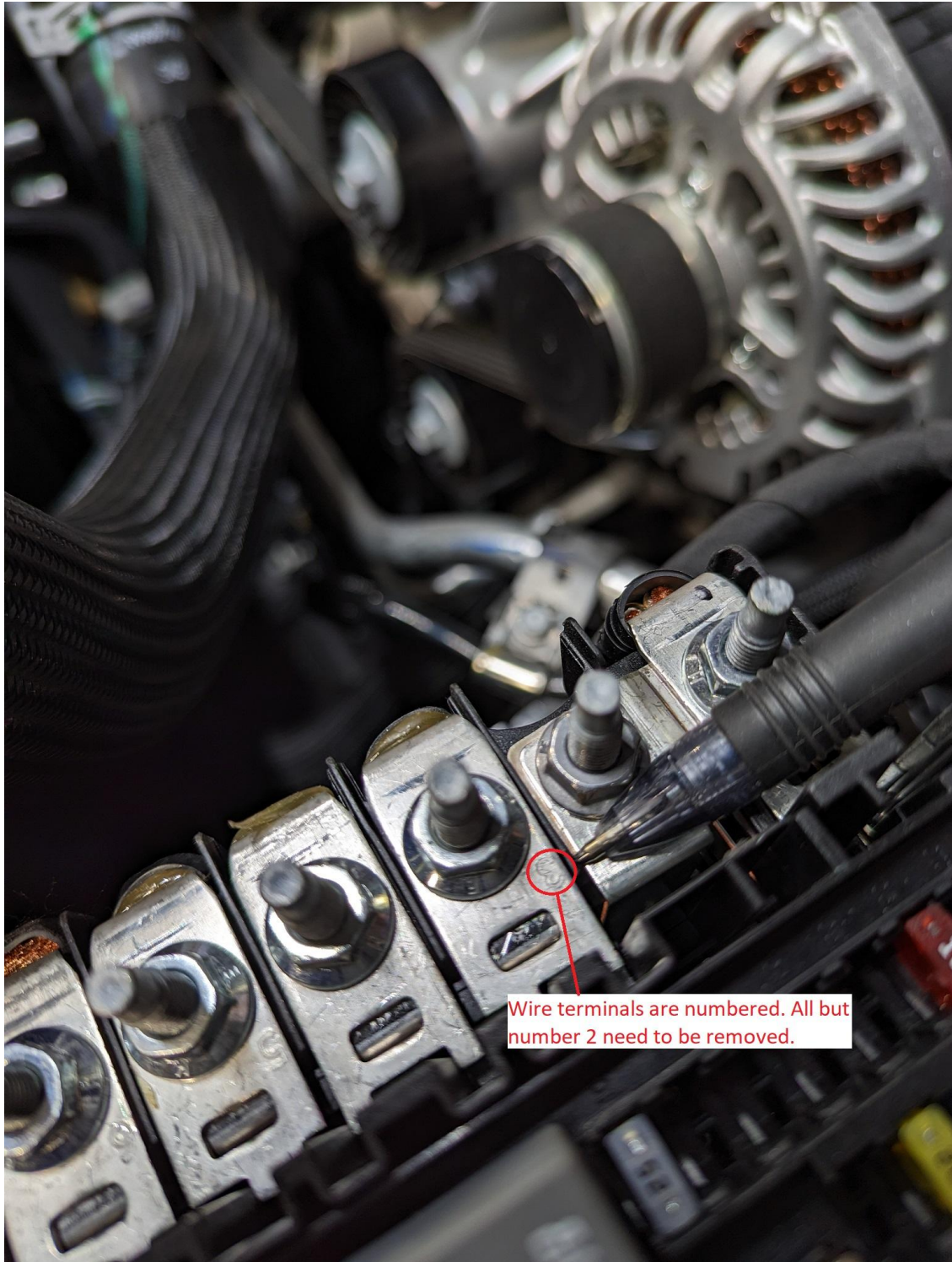


Remove two
PCM bracket

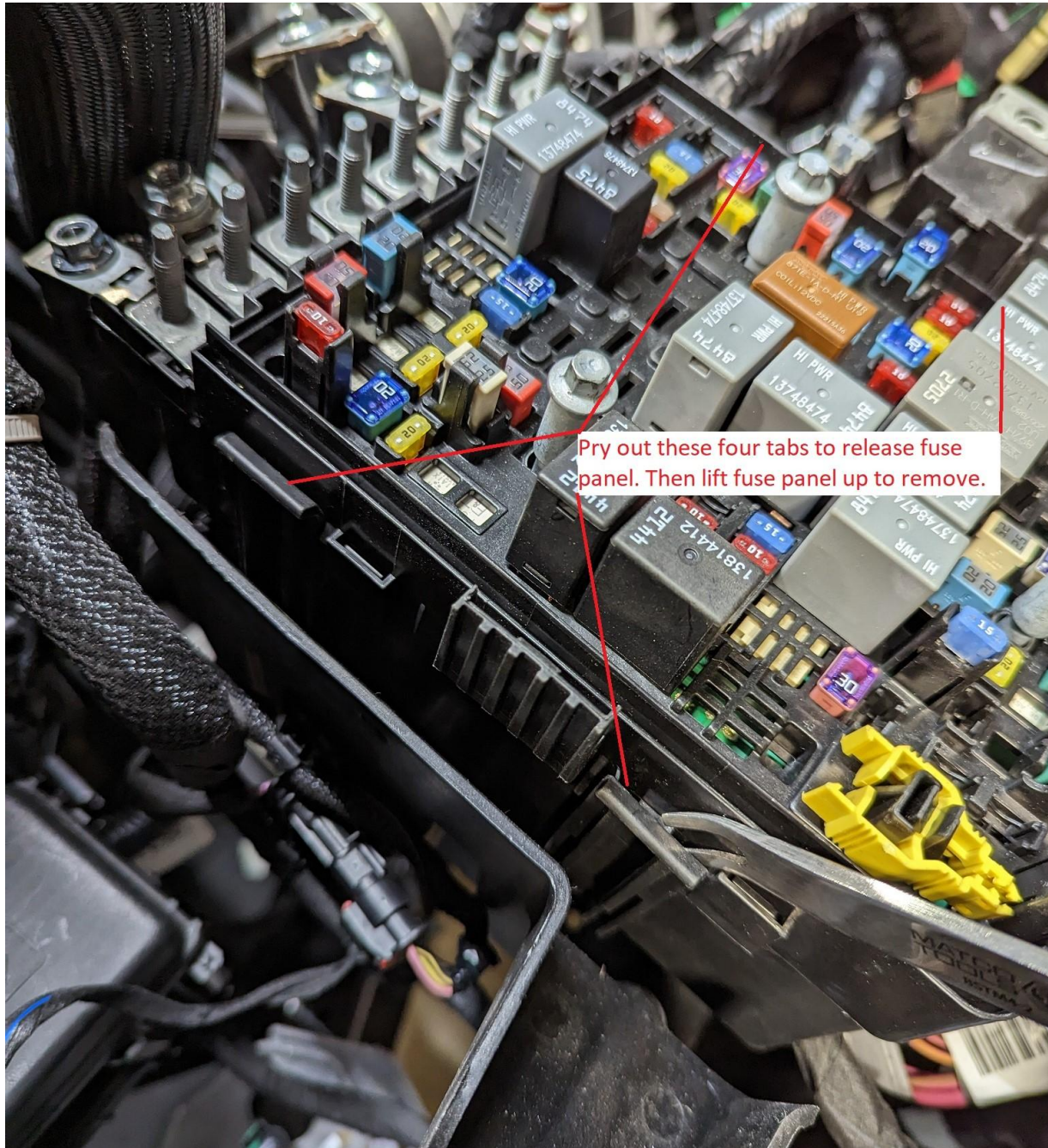
10 - Remove the fuse box cover by pressing in on the two tabs (one front, one rear) on the cover and then lifting upwards.

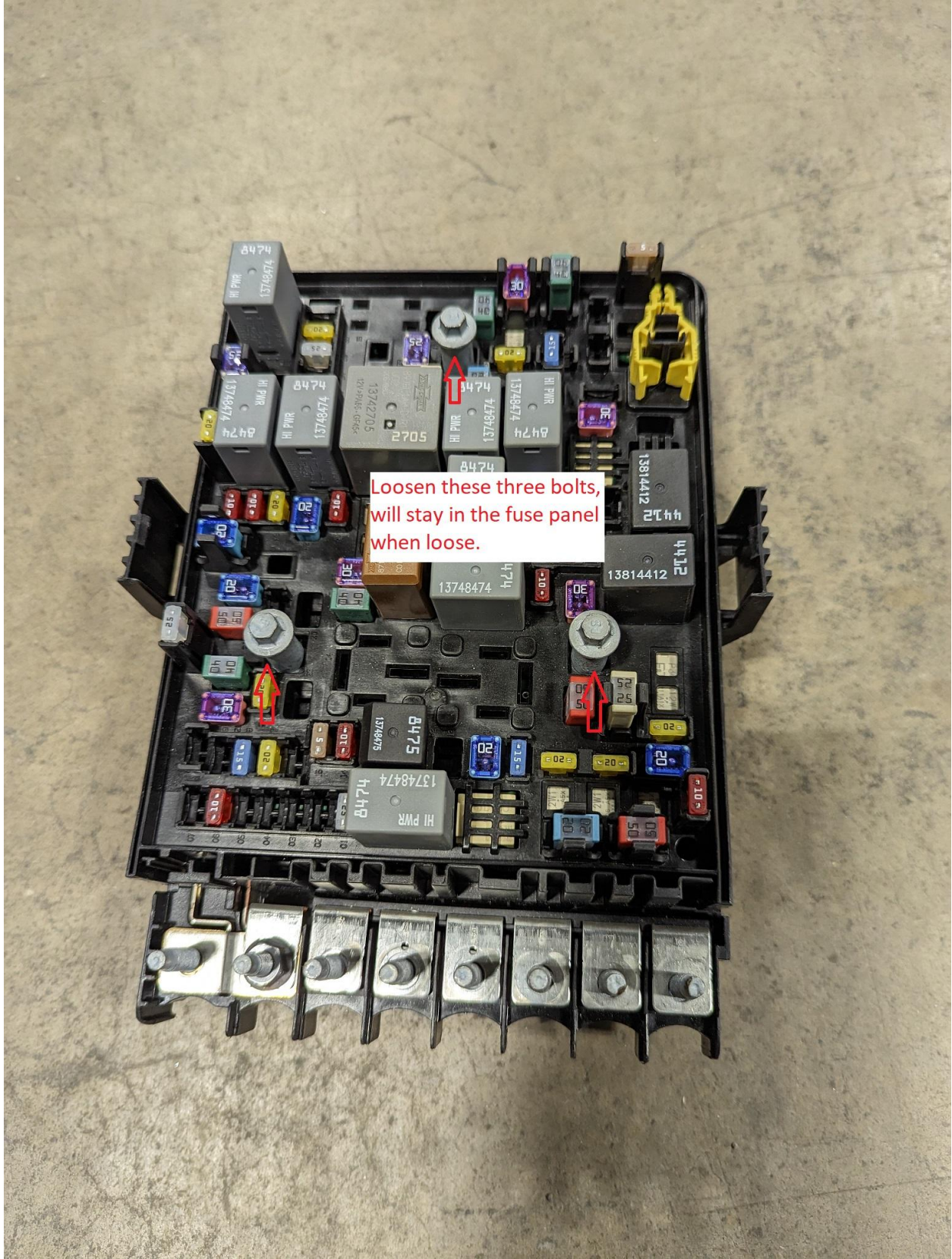


11 - Using a 10mm remove the wires along the left side of the fuse box. They are labeled 1-8, however number 2 does not need to be removed. Push wires out of the way as you will be removing the fuse box assembly.

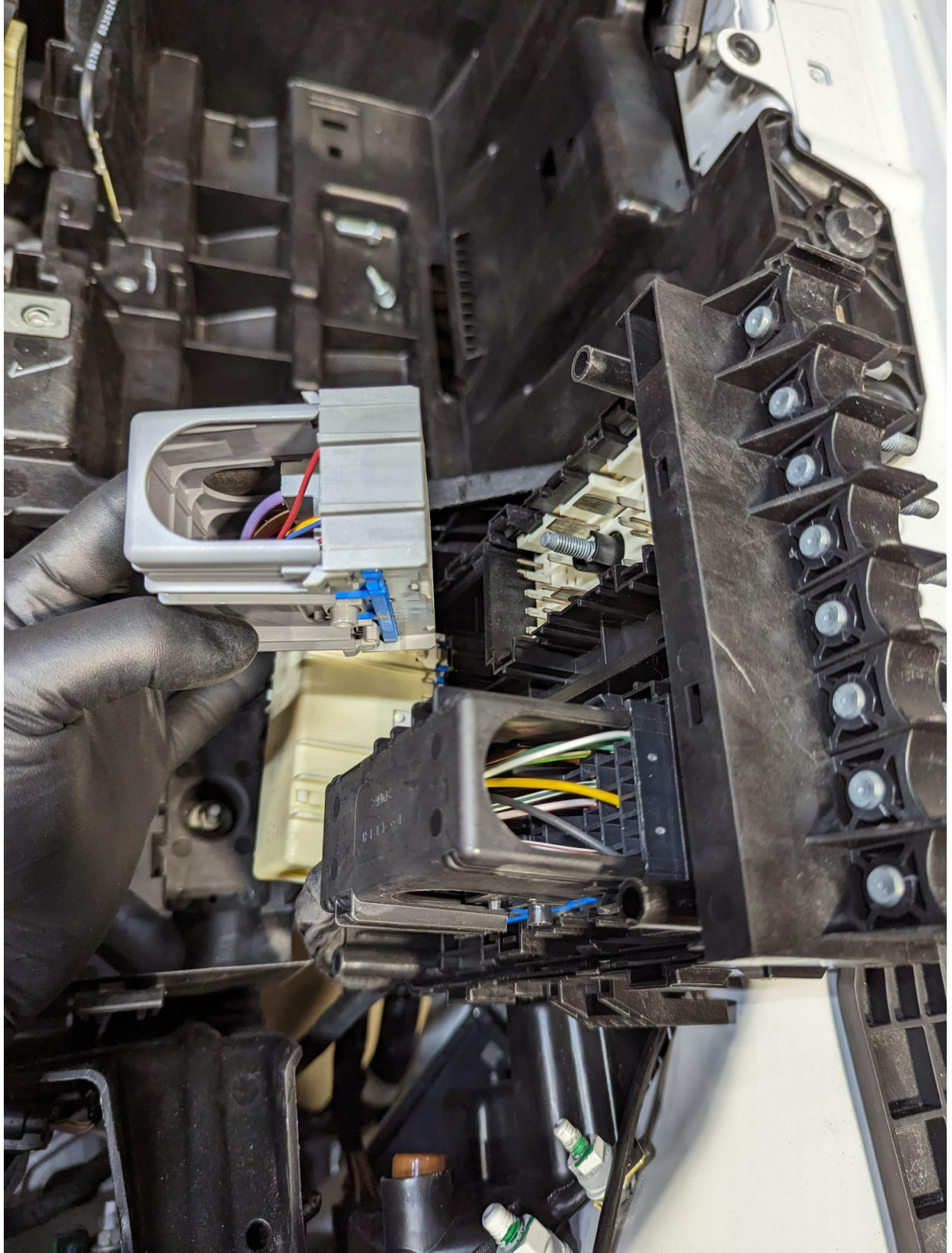


12 - First using the clip removal tool or screw driver pry out on the four locking tabs on the sides of the fuse box. Once all four have been released pick up slightly to separate from the lower cover. Now using an 7mm loosen the three bolts inside the fuse panel. These hold in the wiring connectors on the back side. Once completely loose the connectors can be pulled from the fuse panel assembly.

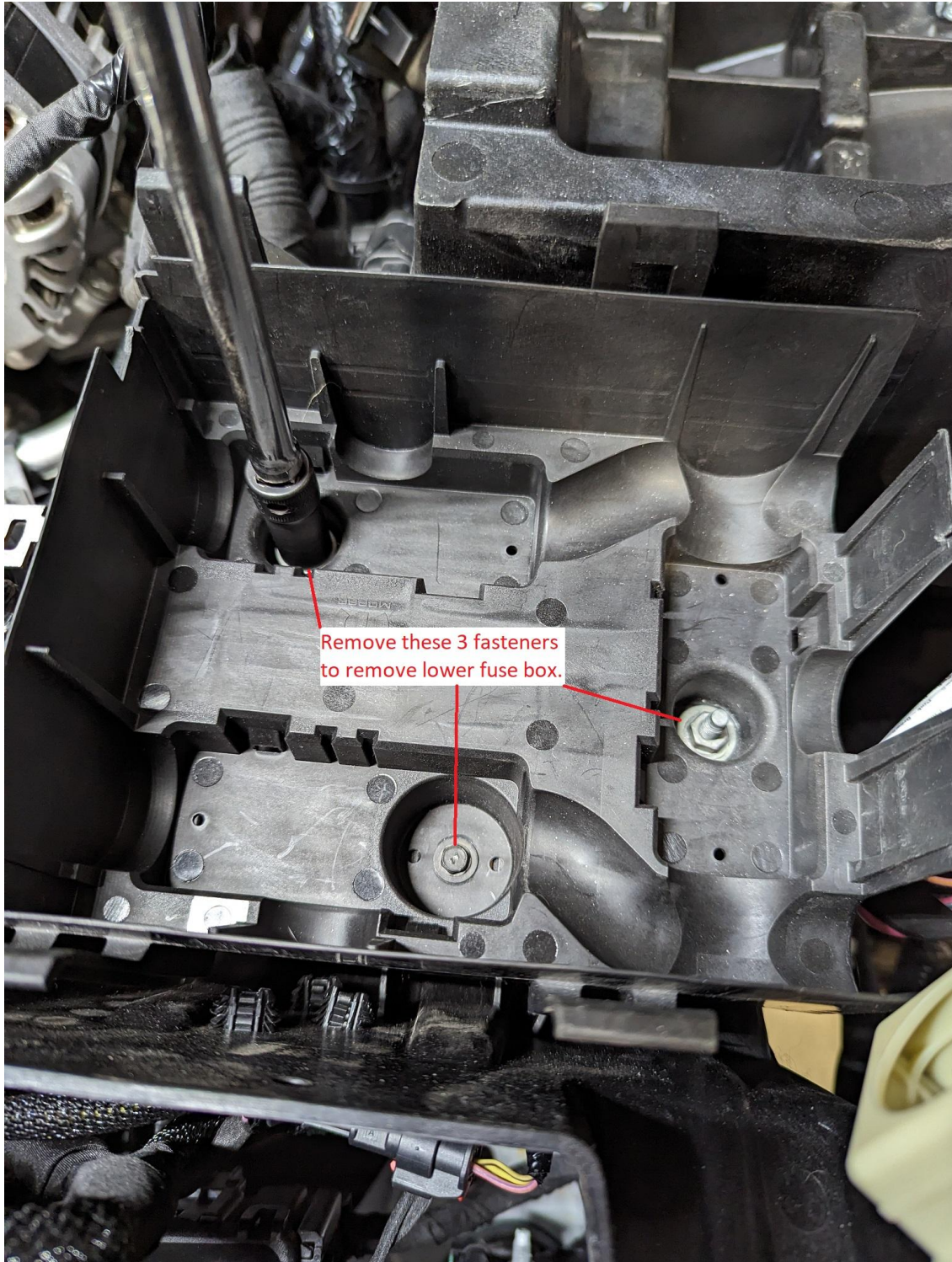




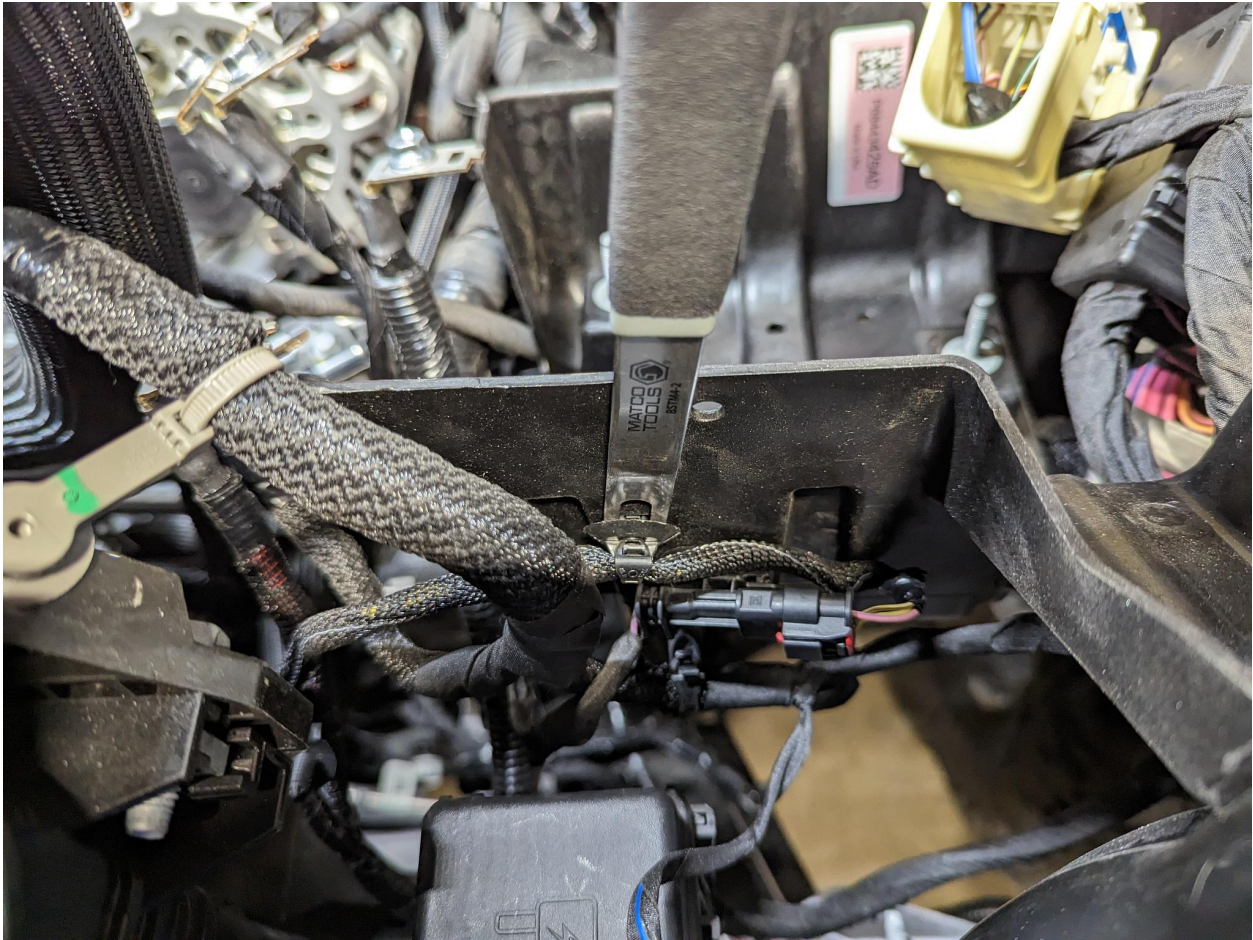
Loosen these three bolts, will stay in the fuse panel when loose.



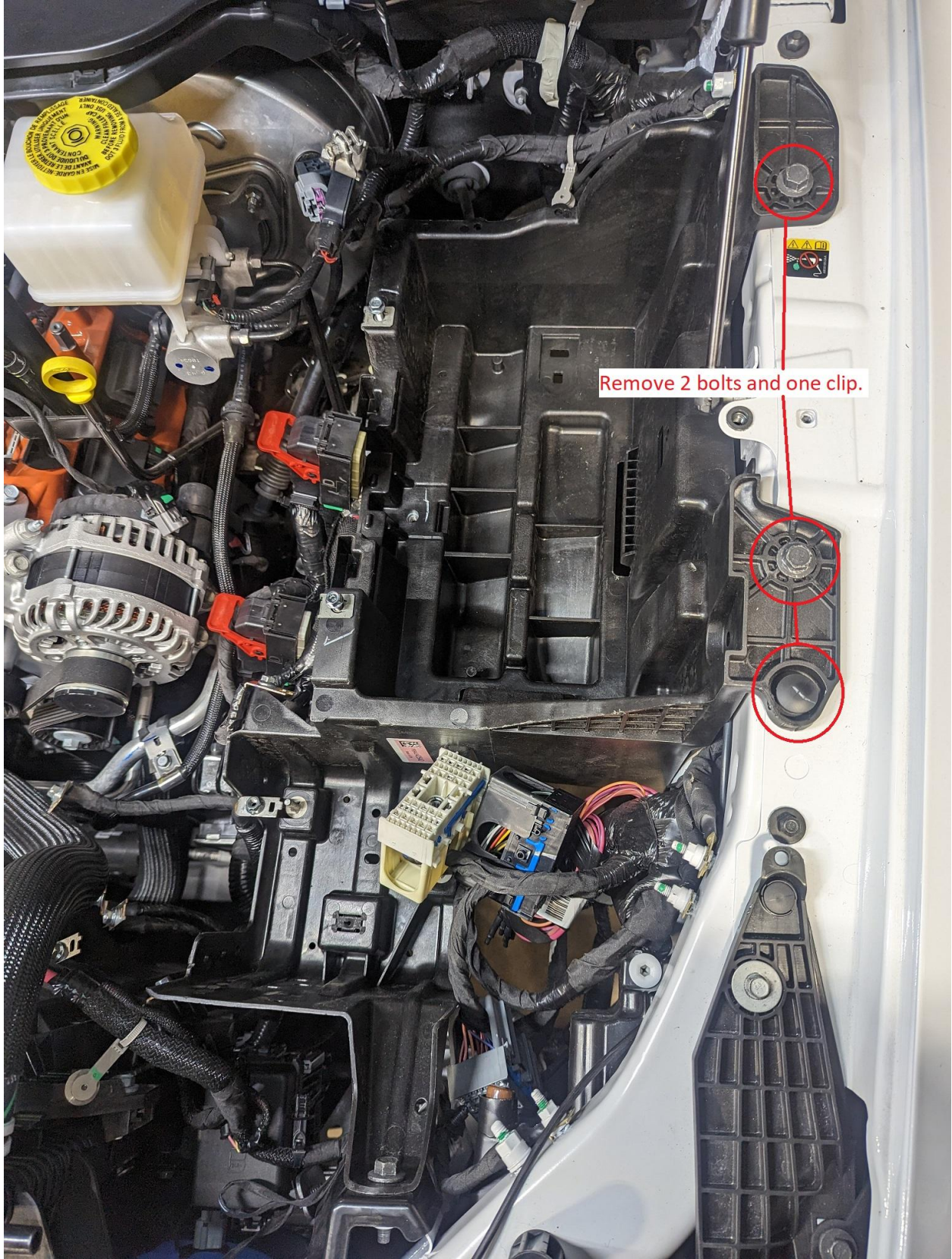
13 - With the fuse box removed, now the lower cover can be removed from the battery box. There are two 10mm bolts and sometimes there will be a 8mm screw holding it down. Remove these fasteners and then remove the lower cover from the vehicle.



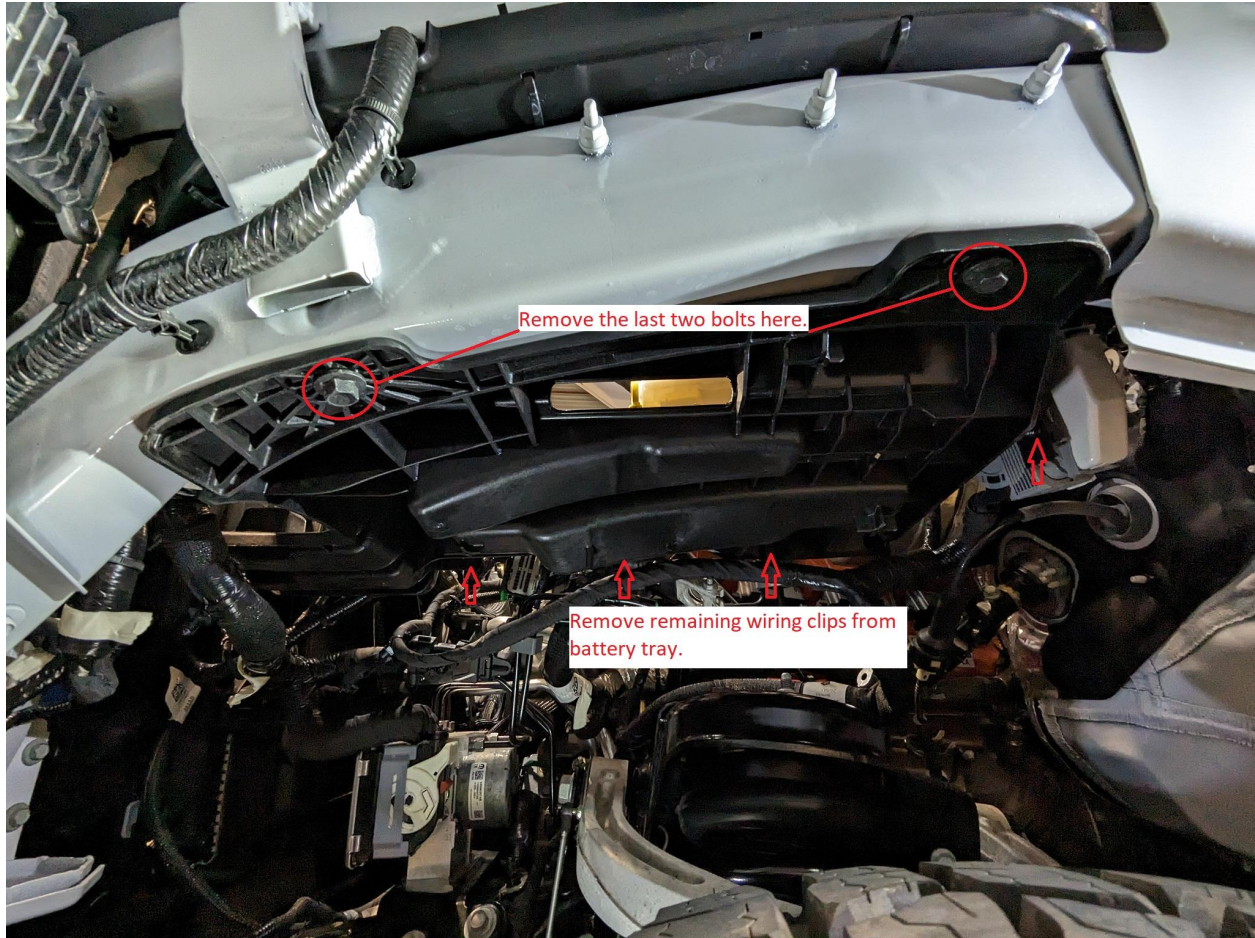
14 - From the top side of the engine bay, go around the battery box using the clip removal tool and pop out all the clips holding the harness to the box. There are multiple on each side.



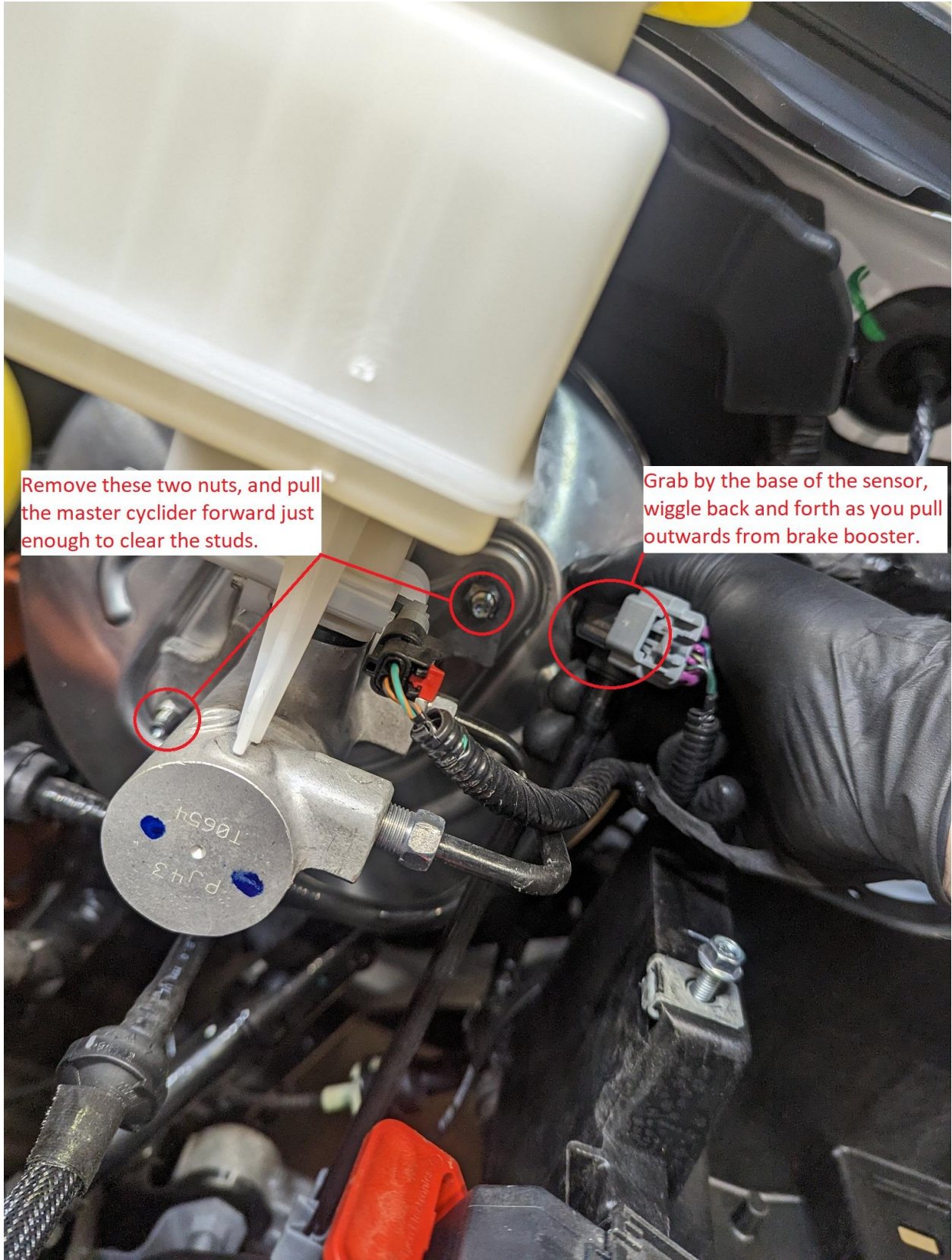
15 - Now using a 13mm, remove the two bolts on the battery tray bolting it to the upper frame rail, as well as one large push pin at the front of it.. Then going in from the wheel well below remove the other two bolts holding it in from the bottom. Using the clip tool again remove the remaining harness clips from the battery box.



Remove 2 bolts and one clip.

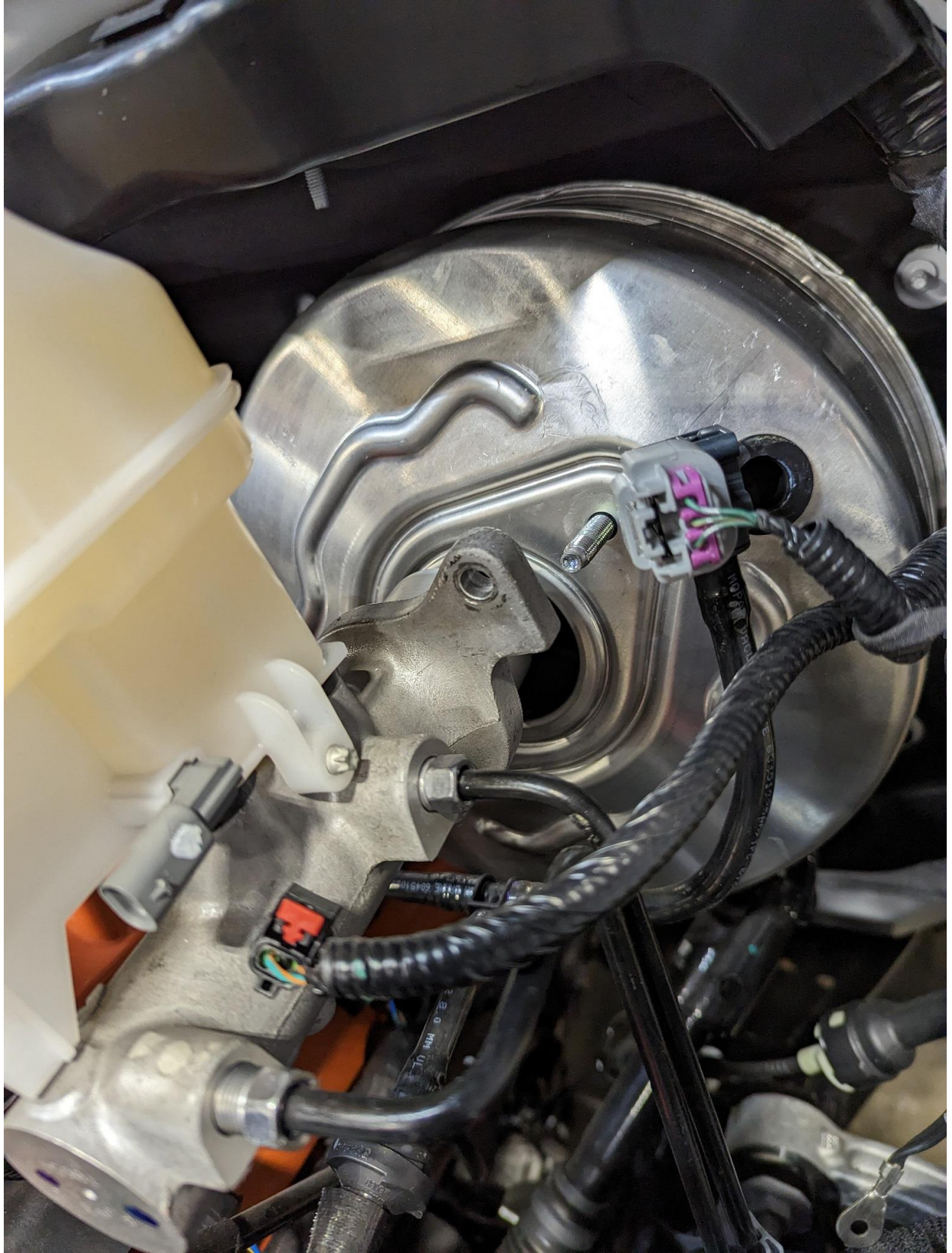


16 - Using a 13mm socket and extensions remove the two nuts holding the brake master cylinder in place. Then slowly pull out on the master cylinder and slide it just past the end of the studs then slightly towards the center of the car to make room for battery tray removal/ installation. Also grab and remove the sensor in the brake booster by lightly twisting and pulling straight out. There will be a vacuum inside the booster holding it in, so there will be a sound of air moving once it's pulled out.

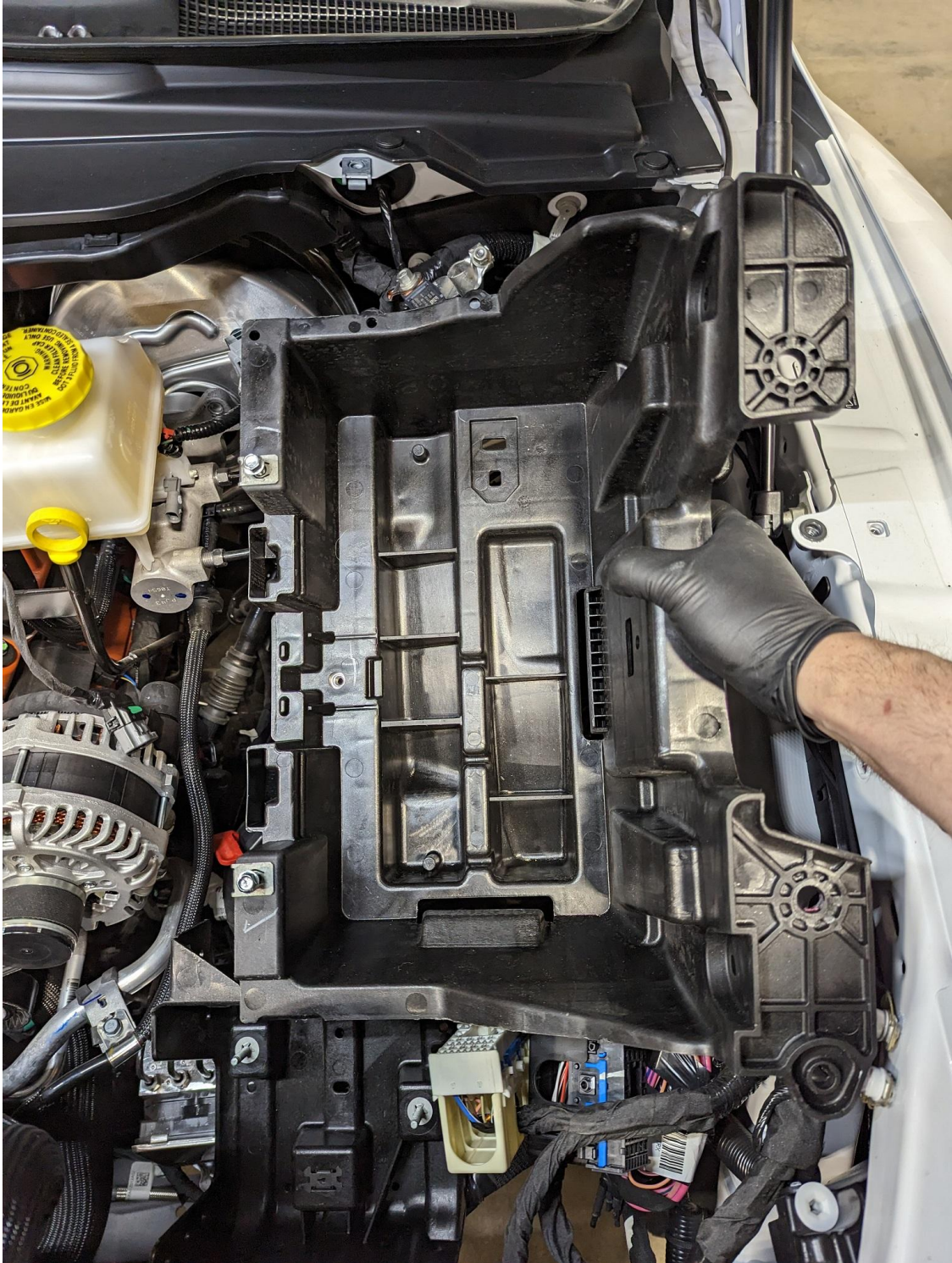


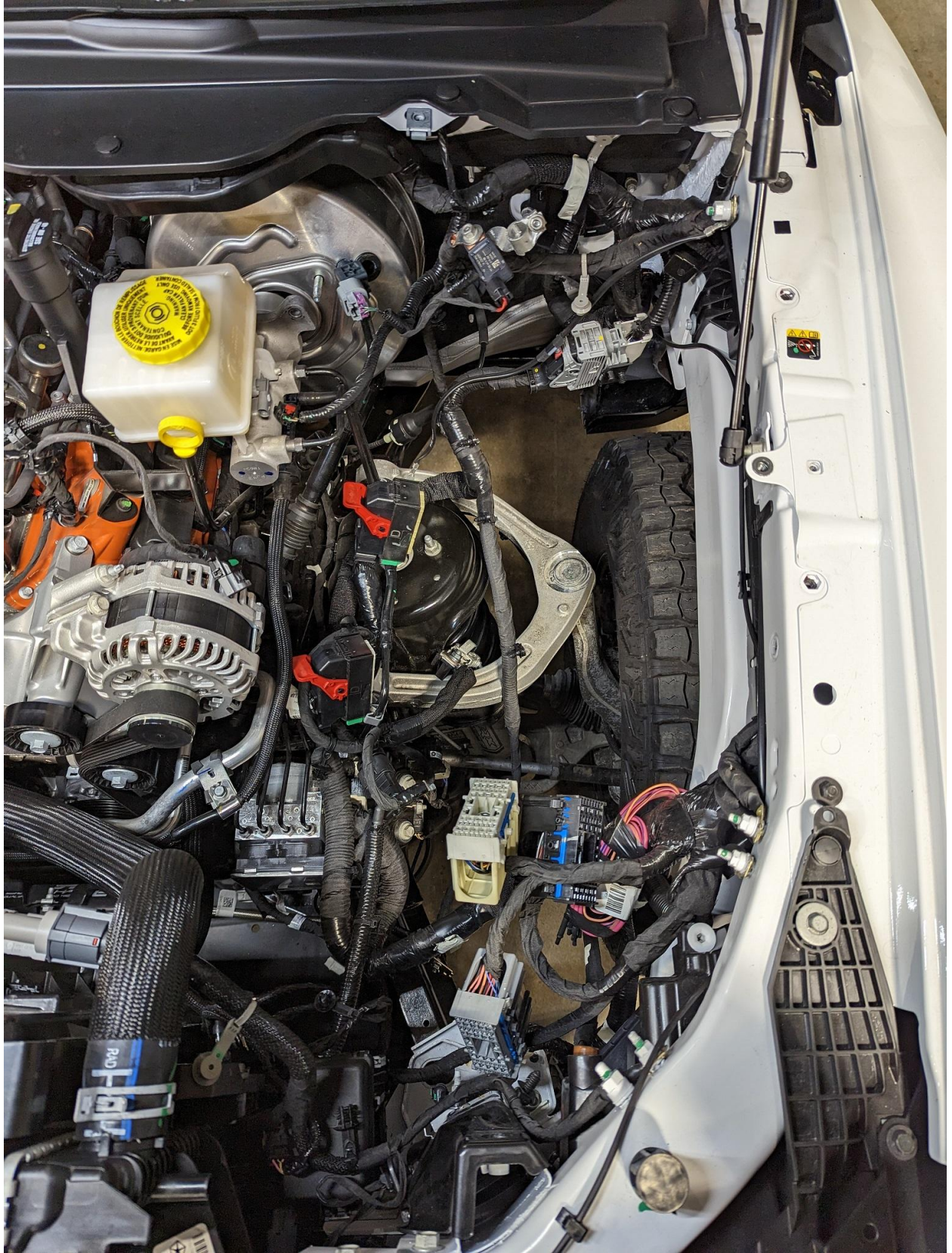
Remove these two nuts, and pull the master cylinder forward just enough to clear the studs.

Grab by the base of the sensor, wiggle back and forth as you pull outwards from brake booster.

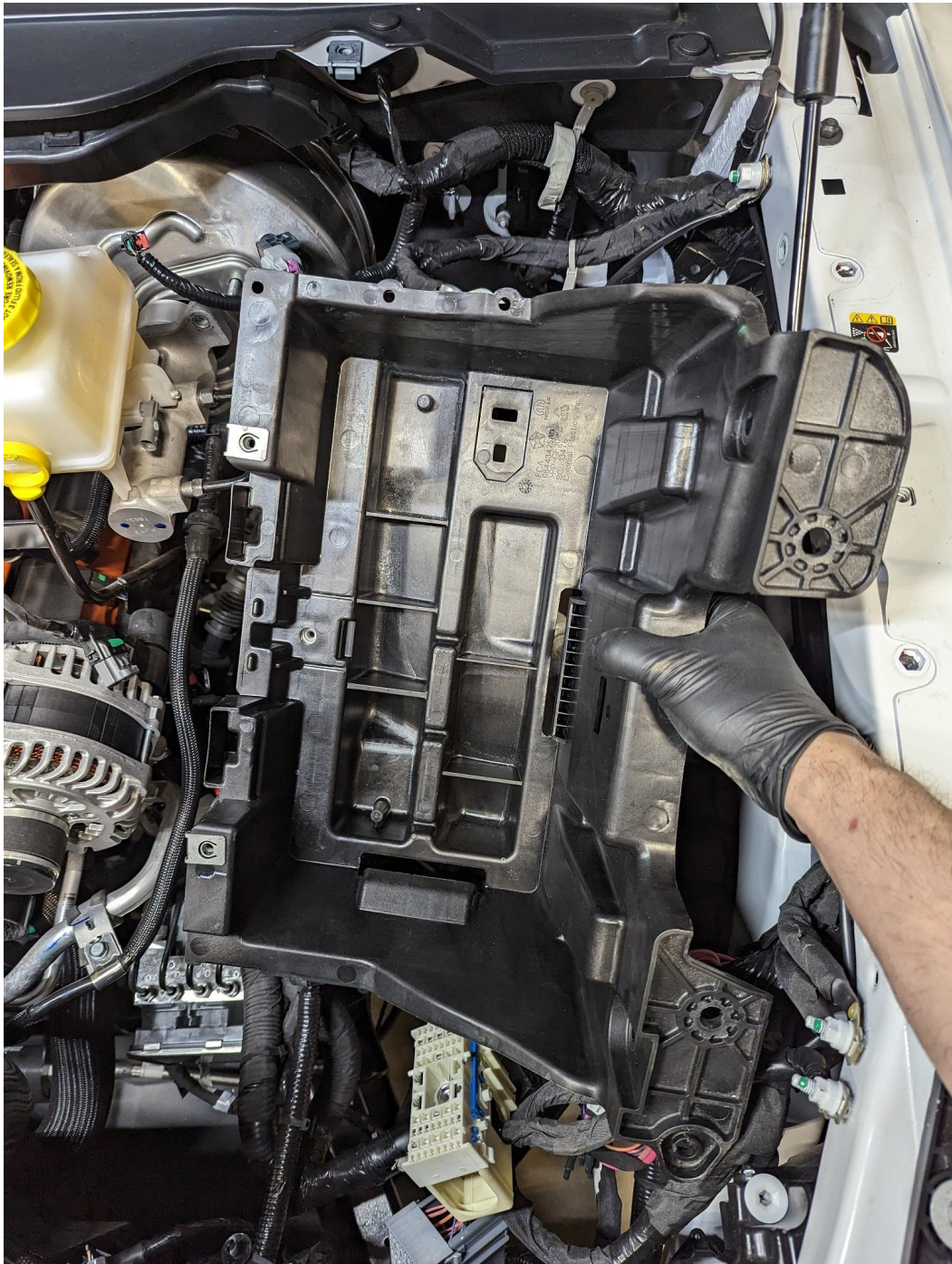


17 - Slide the battery tray towards the center of the vehicle away from the frame rail. Once it is free, twist and remove out the top of the vehicle.





18 - Installation will begin with the modified battery box. Doing the reverse of the previous step, put in the tray from the top side of the engine bay. Slide it down into place on the frame rail, and insert the plastic push pin at the top front to hold it in place while installing bolts. Reinstall the 4 bolts holding the battery tray into frame rail.





Line up the front hole and press the clip in place to hold tray.

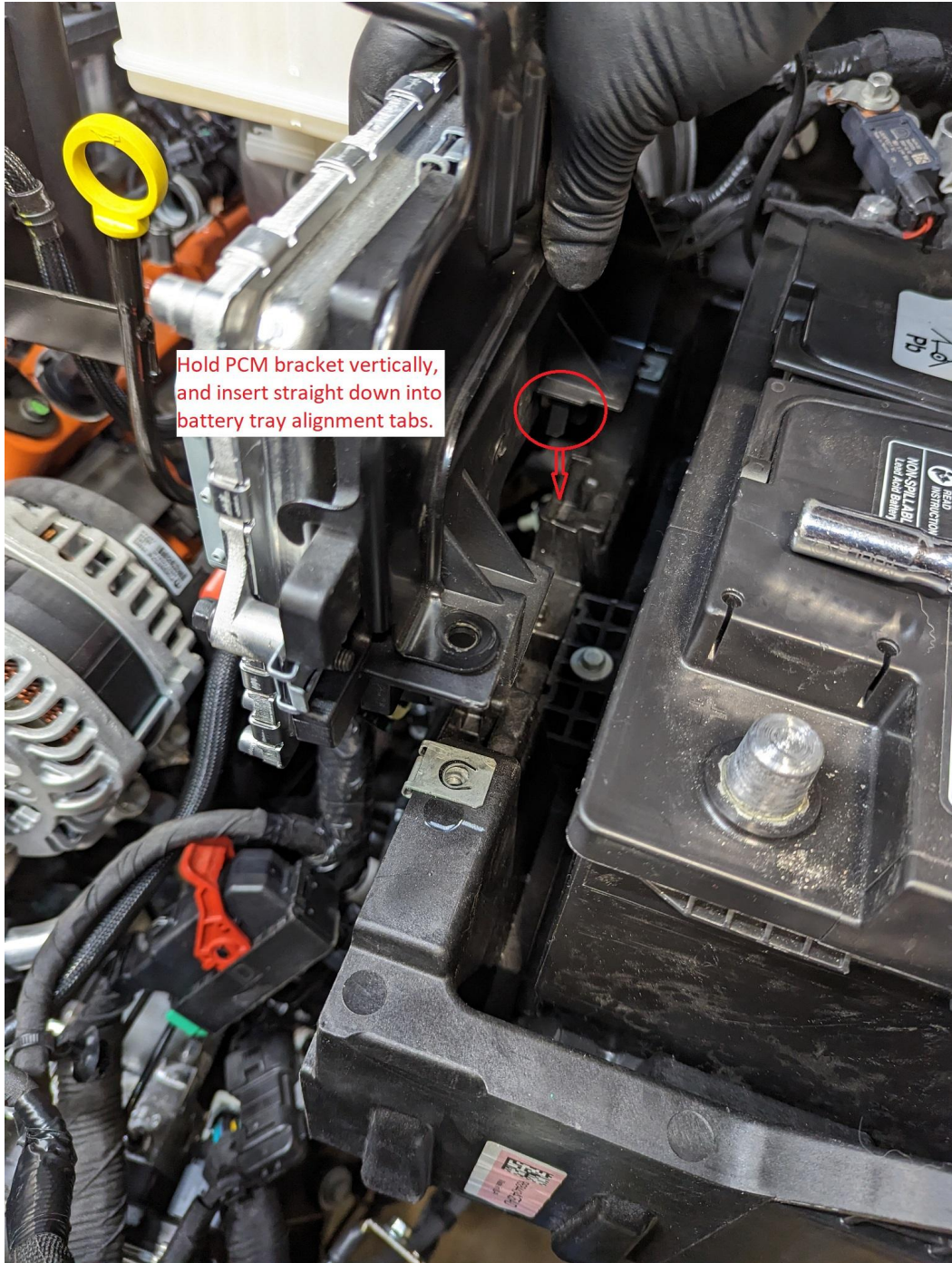
19 - Carefully slide the brake master cylinder back over the studs of the brake booster, then push all the way in. Install the two nuts and the sensor back onto the booster. At this point get in the truck and stp on the brake pedal, make sure it feels how it normally does when first depressed. If the pedal feels different/ soft, the master cylinder will need to be removed again. The rod inside will need to be slid back into place and centered into the master cylinder as it is installed.



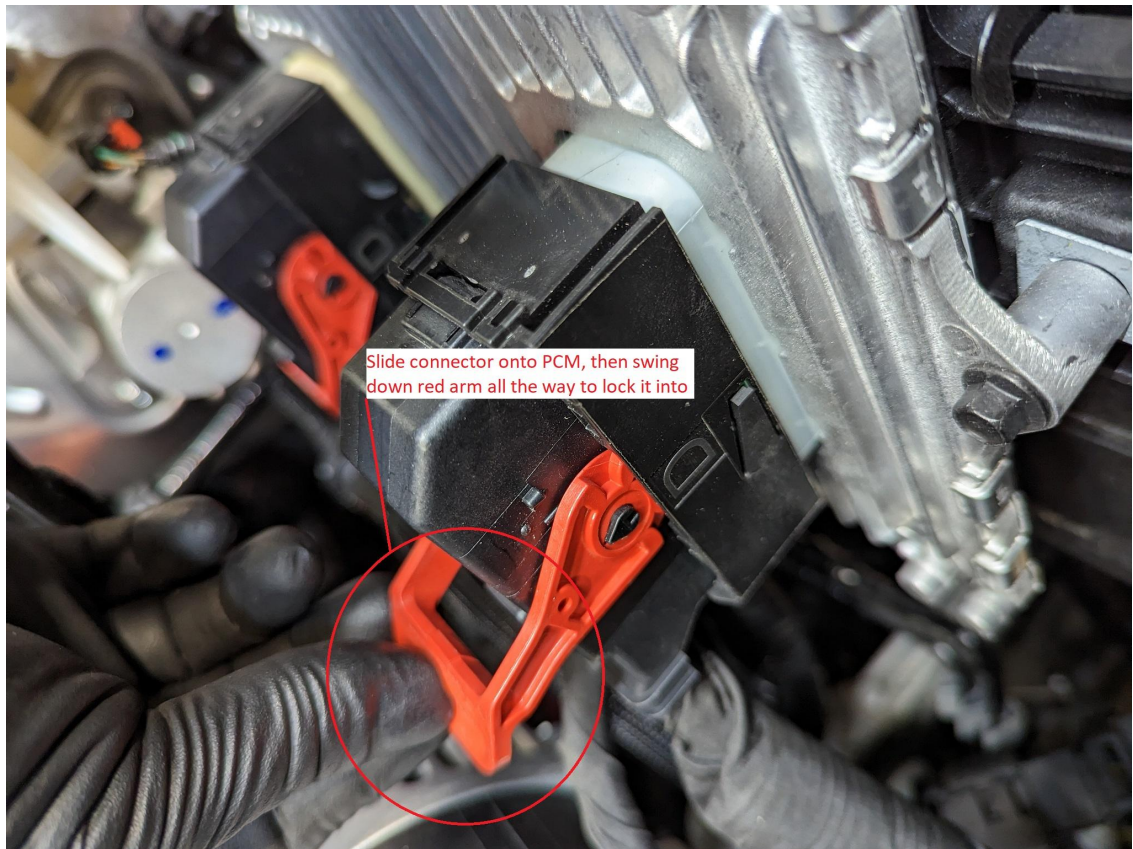
20 - Pickup the battery and set it into the new tray, and slide it forward and towards the driver side to engage it into its tabs. Then reinstall the battery hold down clamp and tighten into place. Next install the PCM and bracket onto the battery box. Slide straight down into slot, then install hardware.



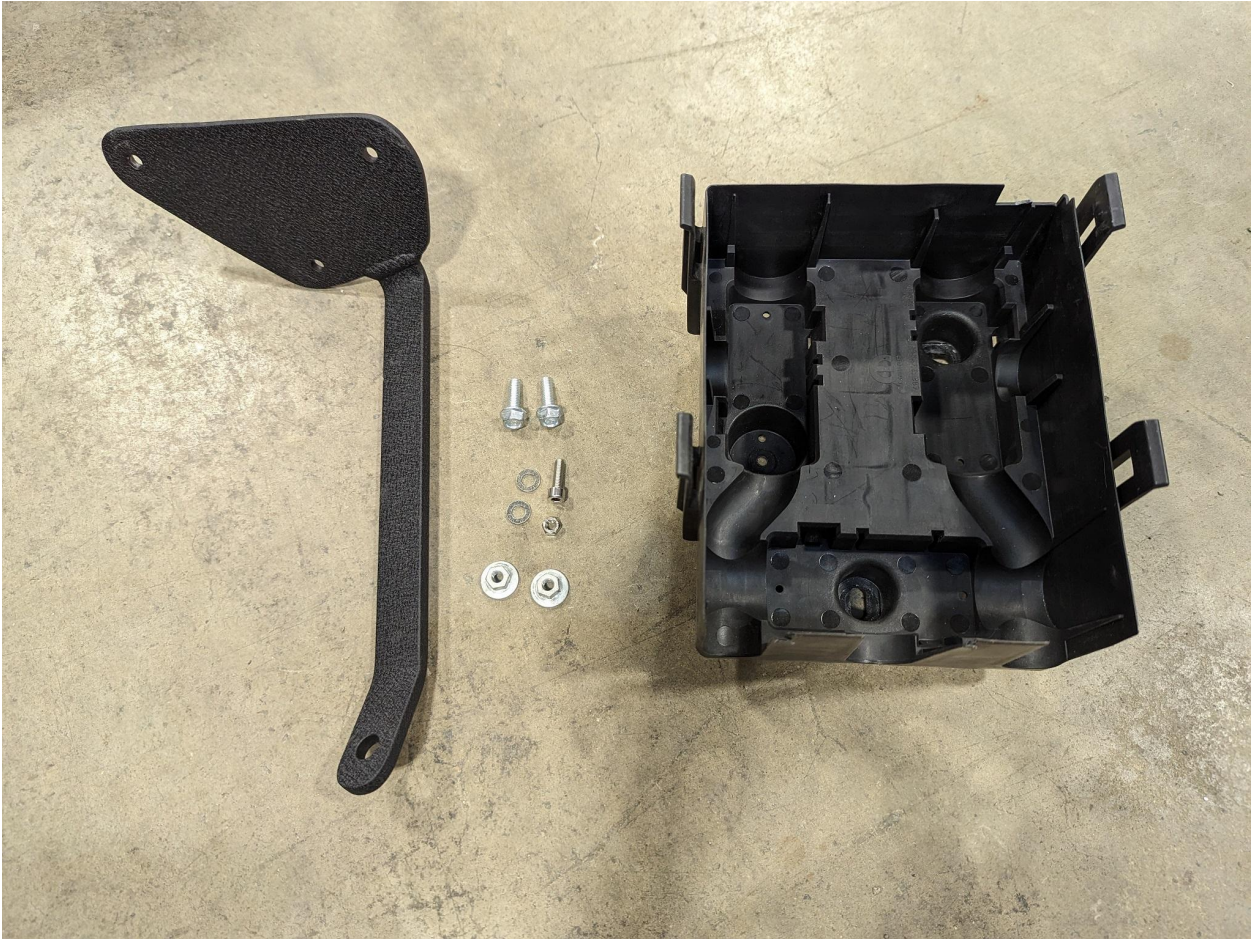
You should have this much space between battery and hold down bolt hole.



21 - Install the ground cable back onto the PCM mount bolt and tighten. Install the two large PCM electrical connectors onto the PCM (grey to grey, and tan to tan). Press the connector squarely into PCM then swing down the red lever to until it clicks to lock fully into place.



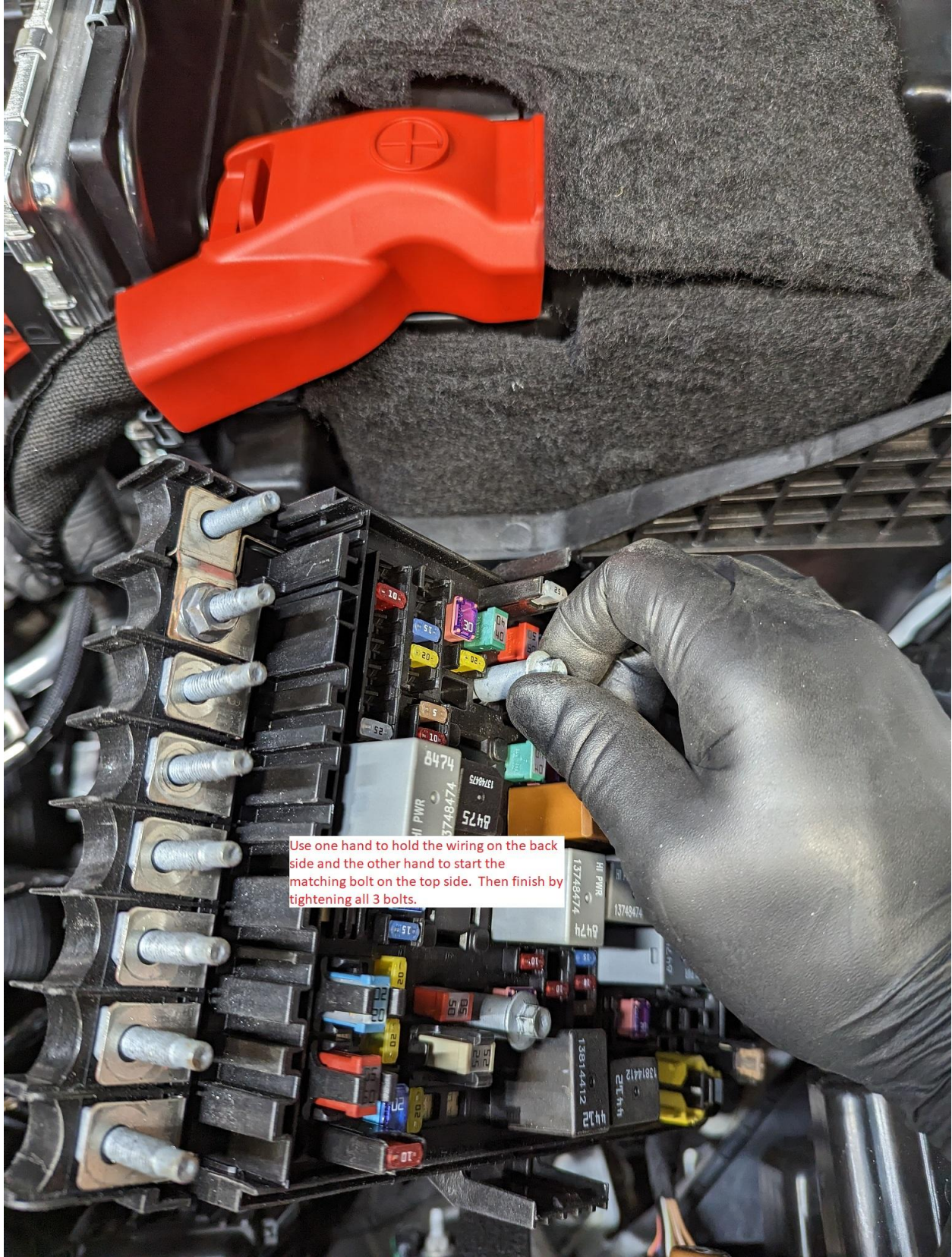
22 - Next will be assembling the fuse box support and fuse box. First picture is of the parts needed for this step and the next is assembled.





23 - Install the fuse box support bracket to the front factory battery box mount hole. Leave this bolt loose at this point for alignment later on. Start the 3 large connectors into the bottom of the fuse box, then start the bolts into them from the opposite side so they do not fall out when tipping down the fuse box into place. Then tip the fuse box back to level with the fuses pointed up, and insert it back into the support bracket/ lower panel. Ensure that all four clips are engaged. Then tighten the three bolts holding the harness connectors in place.



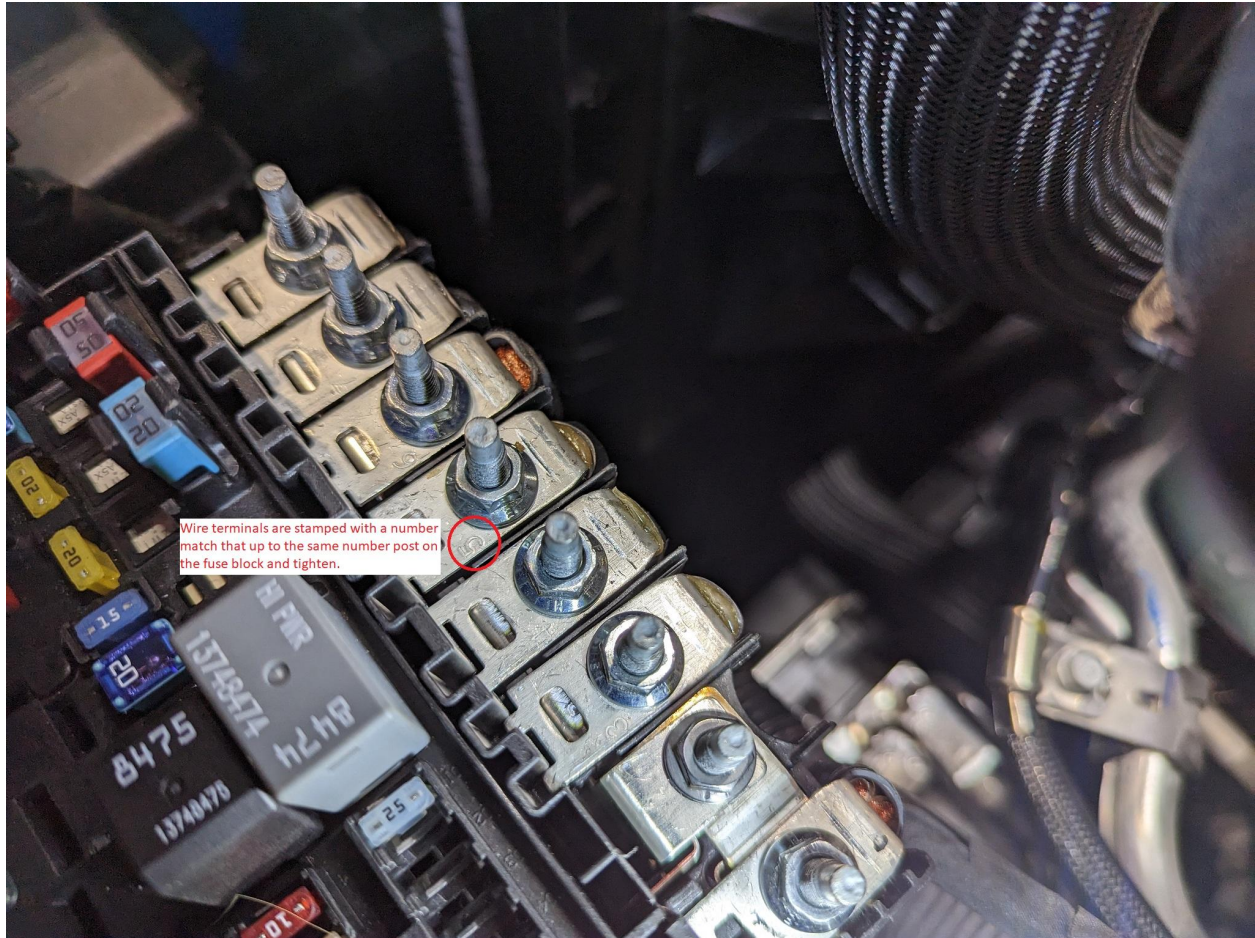


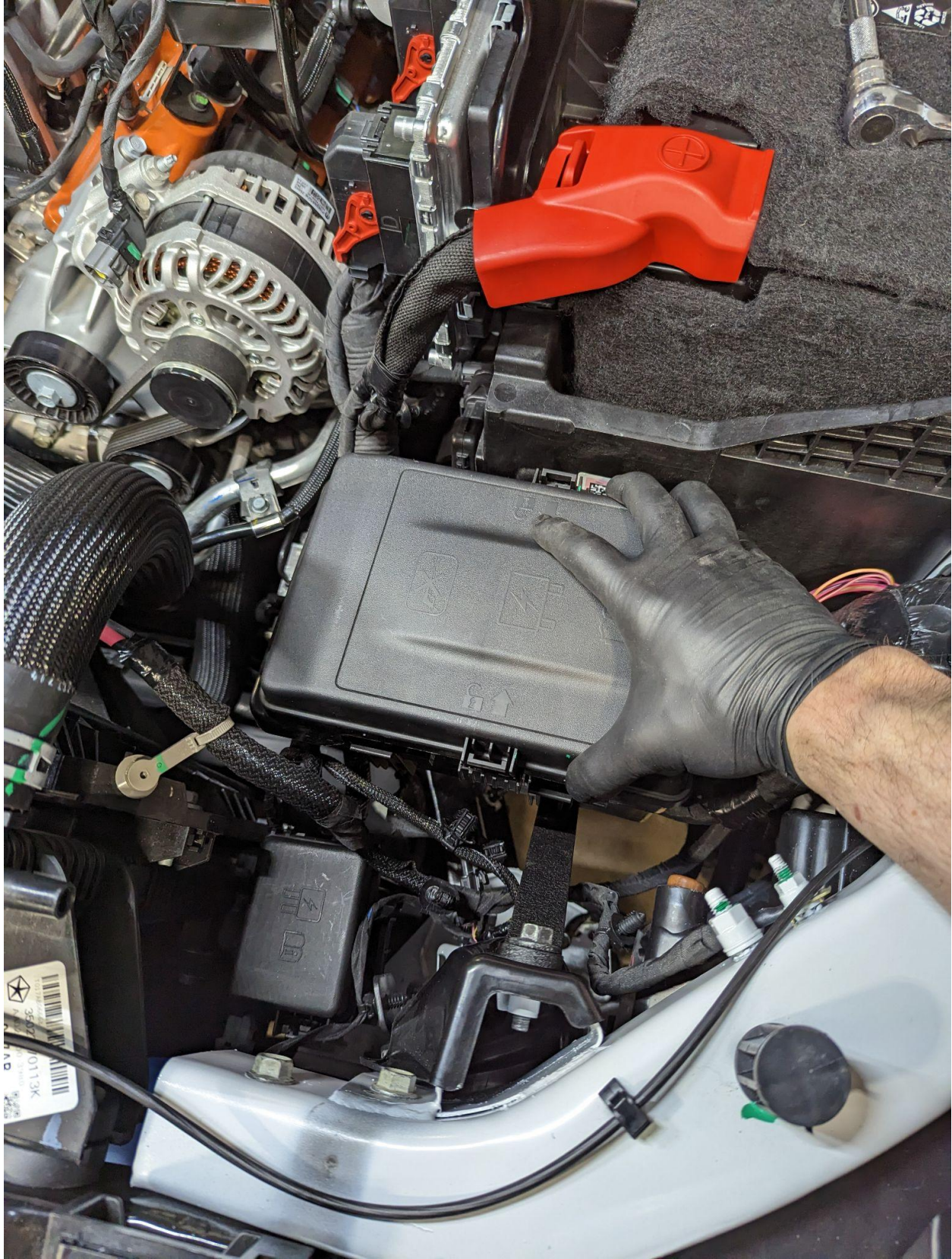
Use one hand to hold the wiring on the back side and the other hand to start the matching bolt on the top side. Then finish by tightening all 3 bolts.



Set fuse block squarely into lower tray until all four locking tabs are fully engaged.

24 - Install the main power cables back onto the fuse box studs. They are labeled 1-8, ensure each cable is in the corresponding location. Then put in the fuse box cover. At this point swing the whole assembly until it is level with the fuse box, then tighten the fuse box support bolt.





25 - Locate the factory intake pipe, you will need to the sensors off of it. Using a sharp nice, slice through the tubing off the valve cover mounted sensor. On the smaller air temperature sensor, use a screwdriver to lift the tab, then rotate the sensor about ¼ turn and pull out from tube. Then using the supplied section of 5/8" silicone tubing clamp one end onto the barbed nipple.

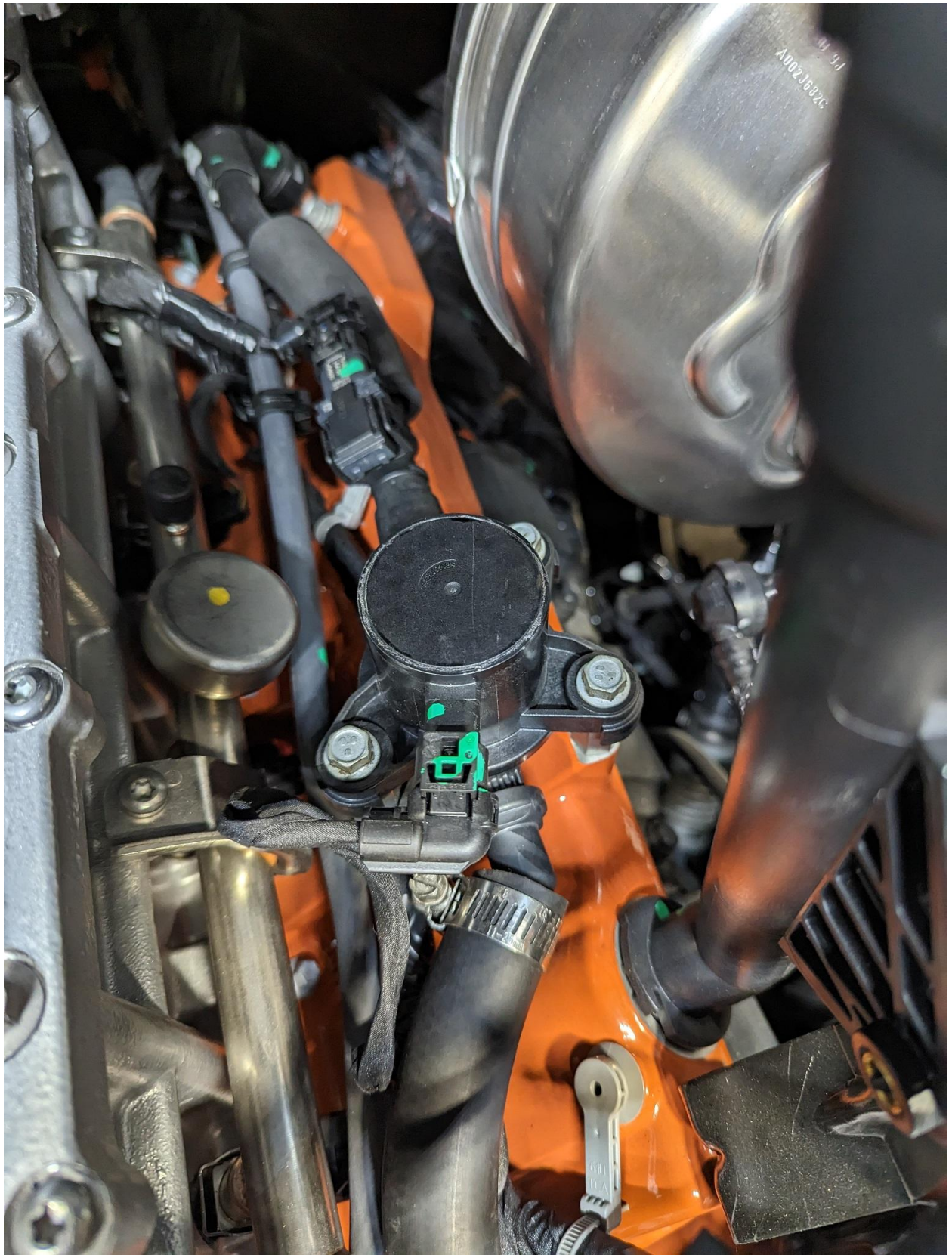






26 - Now slide that sensor back into its hose on the valve cover, then bolt into place. Ensure hose and wiring are fully connected.





27 - Slide the smaller side of the reducer coupler onto the throttle body all the way to the first step, then snug the clamp to hold it in place for now. This may need to be slightly adjusted once the rest of the intake is in place.

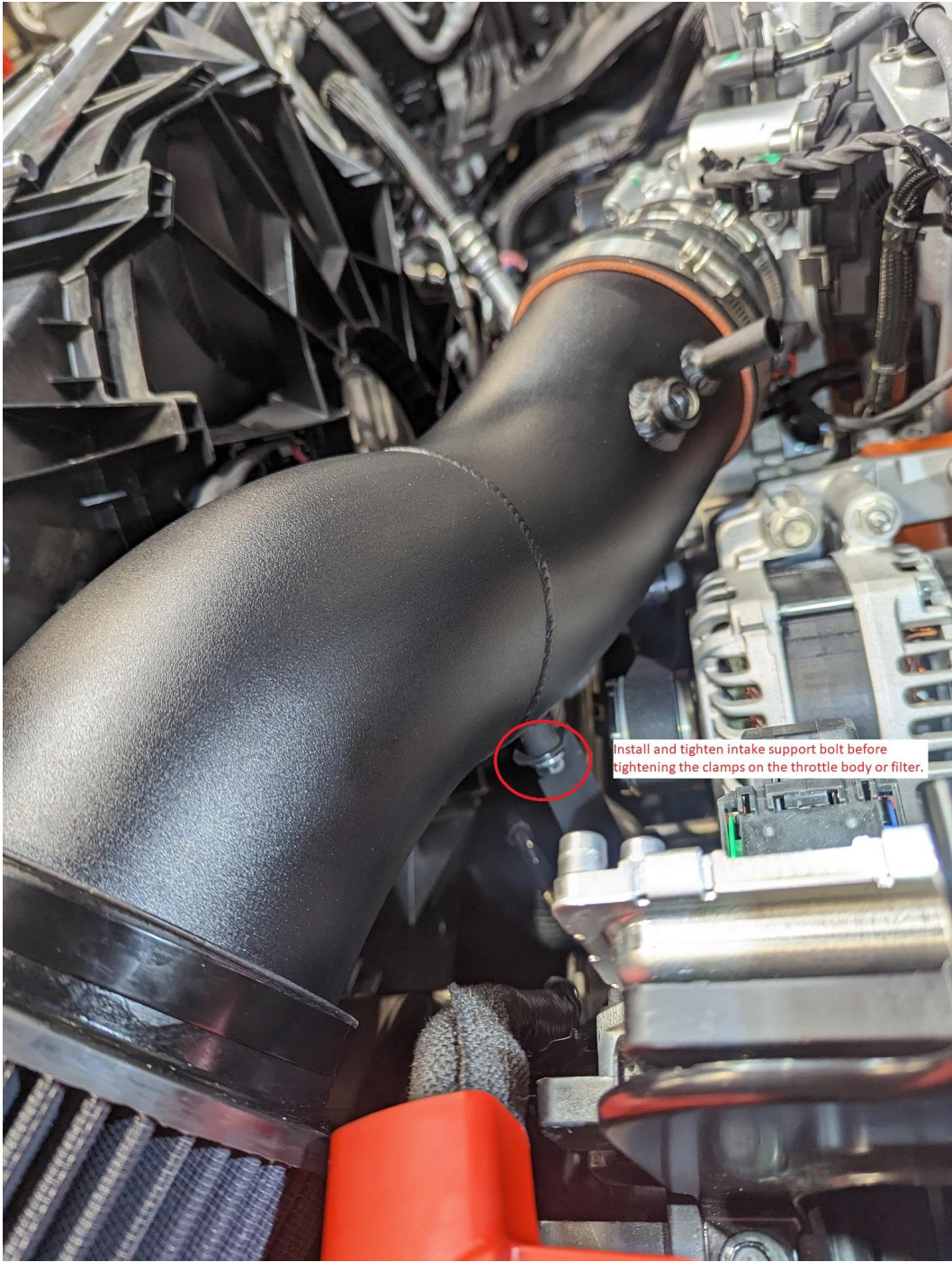


28 - Slide the intake tube (the end closer to the 2 bungs) into the throttle body coupler, then slide the air filter onto the other end. Leave these clamps loose for now. Roughly center the intake pipe between radiator hose and the battery terminal cover. The end of the air filter should be about ½” away from the the studs sticking off the frame.



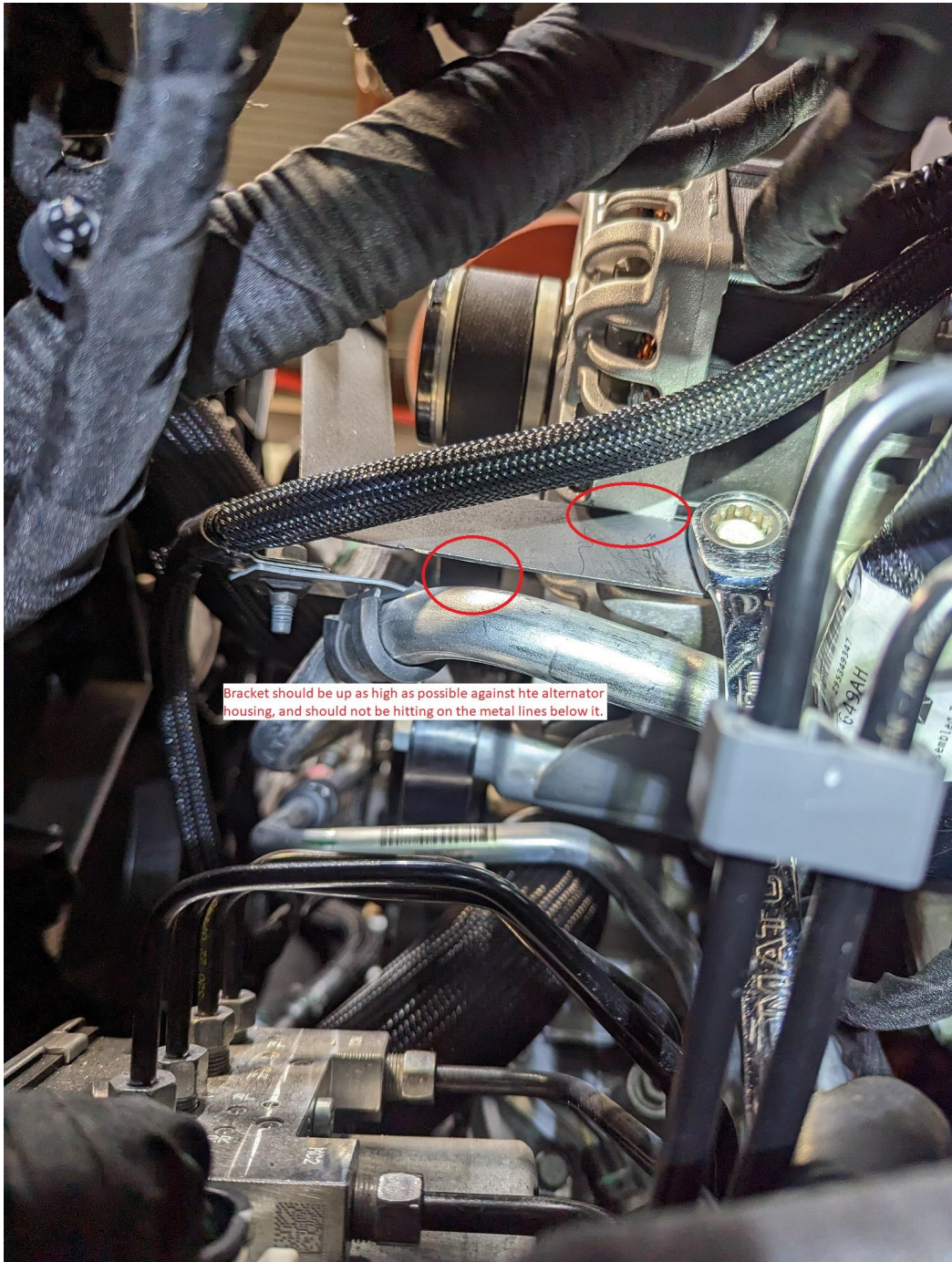
29 - Using a 13mm wrench or socket remove the highlighted alternator bolt. Insert the bolt through the flat side of the intake support bracket then reinstall bolt and bracket onto alternator. Leave this just slightly loose so the bracket can be moved around for alignment of intake. Now install the supplied M8 bolt through the other end of the bracket into the bottom of the intake pipe.





Install and tighten intake support bolt before tightening the clamps on the throttle body or filter.

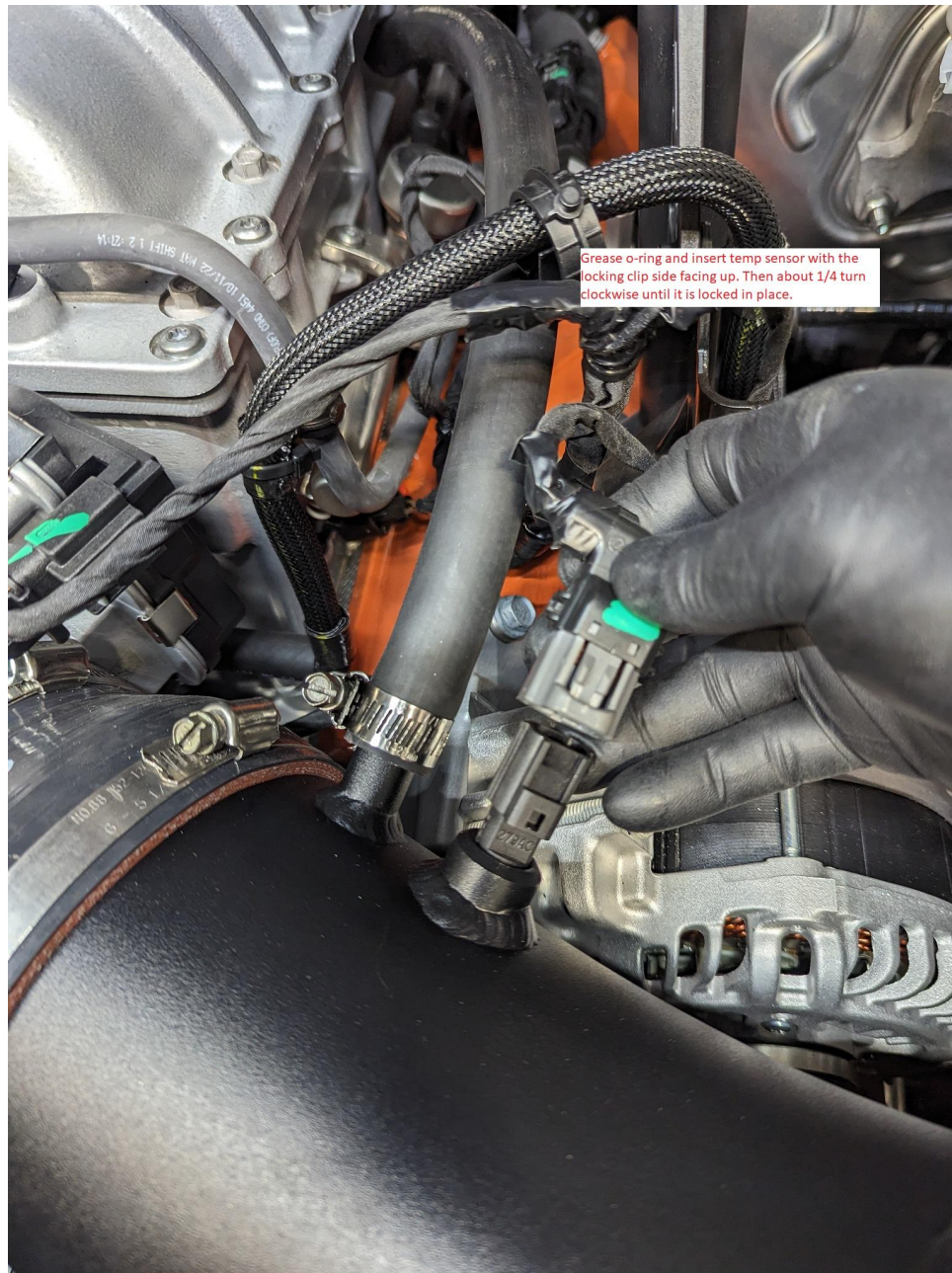
30 - Now with all the parts loosely in place begin aligning the parts and tightening all the bolts and clamps. Start with the bracket off the alternator, ensure that it is pushed up to the alternator housing and is not resting on the metal lines that run below it. Once both bolts are tight, then go onto the clamps at the throttle body, and then finally align the filter on the end and tighten that last clamp.





Center intake between radiator hose and battery terminal cover then tighten clamps on throttle body. Then align filter so that there is space between the filter and grounding post.

31 - With the intake tight, the $\frac{5}{8}$ " silicone hose from the earlier steps can be cut to length and clamped onto the $\frac{5}{8}$ " nipple on the intake pipe. Then the Intake temperature sensor can be inserted into the intake pipe and plugged in. The o-ring should be greased or oiled before installation. There will be slight resistance but if it is not going in, do not force it. Double check it is rotated the correct direction, as it will only slide in one way, once its all the way seated rotate about $\frac{1}{4}$ turn to lock in place.



32 - Finish by reinstalling the factory intake support brace and inner fender liners. While doing this double check that all wires and hoses are connected, as well as all the wire harness support clips have been clipped back into place. Once complete the vehicle can be started.

BEFORE SHIFTING FROM PARK WITH THE VEHICLE RUNNING AGAIN DOUBLE CHECK THAT THE BRAKE PEDAL FEELS CORRECT. IF IT FEELS OFF DO NOT SHIFT OUT OF PARK!! LOOSEN THE BOLTS ON THE MASTER CYLINDER AND REALIGN THE PIN IN THE BACK OF IT. IF THERE ARE ANY ISSUES PLEASE CONTACT US IMMEDIATELY FOR HELP.



