

PERFORMANCE BY



## INSTALLATION GUIDE

**IE TRUEFLEX SENSOR KIT FOR B9/B9.5 S4/SQ5  
IEELCK2**



This installation guide is for instructional purposes only. For best results, professional installation by an experienced technician is always recommended. By reading this guide you agree Integrated Engineering is not responsible for any damage or personal injury caused by incorrect installation.

## DIFFICULTY

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Expect roughly 2-3 hours on average

## REQUIRED TOOLS

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- 13mm Socket
- Flat head screwdriver
- Pick
- 8mm Socket
- T30 Torx Bit
- Wire Cutters
- Heat Gun
- 10mm Socket

## BEFORE YOU BEGIN

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It is highly recommended to pre-read this entire guide ahead of your installation to familiarize yourself with each step. Always park your vehicle in a safe and level location and allow plenty of time for the engine bay and exhaust to completely cool. Locate and prepare your work space with each required tool listed above. Unbox all components and verify the contents and quantities before you begin. If anything is missing or damaged, please contact us for immediate help at [support@performancebyie.com](mailto:support@performancebyie.com)

## REQUIRED PARTS

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- No additional parts are required for this install

## OPTIONAL PARTS

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- IE TrueFlex Tune

### SPECIAL NOTE:

This install guide has been photographed and written on a 2022 Audi SQ5. Some steps and factory hardware specifications may vary depending on vehicle model, year, and region. This guide is for reference purposes only. If you are unsure of the installation procedure for any individual step or part, please seek professional help before proceeding.



# INCLUDED PARTS

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- 01 - EA839 Ethanol CAN bus Module
- 02 - B9 TrueFlex Signal Harness
- 03 - AcDelco Flex Fuel Sensor 13577429
- 04 - B9 TrueFlex Sensor Harness
- 05 - Nylon Plastic Cable Tie 6" (2x)
- 06 - Automotive Fuse, Mini Blade Style, 3A, 12V DC (2x)
- 07 - 1"x3" VHB Double-Sided Tape
- 08 - Solder-Loaded Crimp-on Butt Splices (4x)
- 09 - Tight-Seal Bolt Clamps (2x)
- 10 - Flange Nut
- 11 - 9.49MM Push Lock to 3/8" Barb Connector (2x)



Some items may be partially assembled.

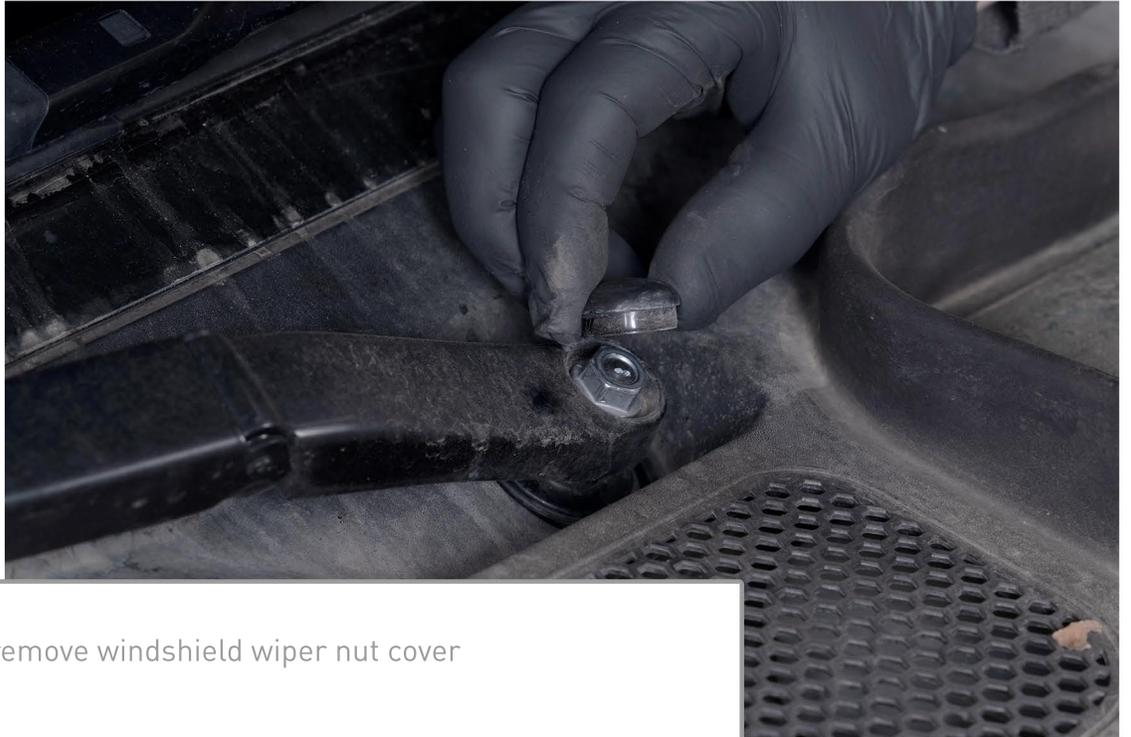


1



Park your vehicle on a flat level surface and allow the engine to cool.  
Begin by removing cowl trim by pulling upwards.

2



Use flathead to remove windshield wiper nut cover



3



Remove 13mm wiper nuts

4



Wiggle the wiper arm up and down while applying upward pressure. They can sometimes be very stiff. Repeat steps 2-4 on the other side.

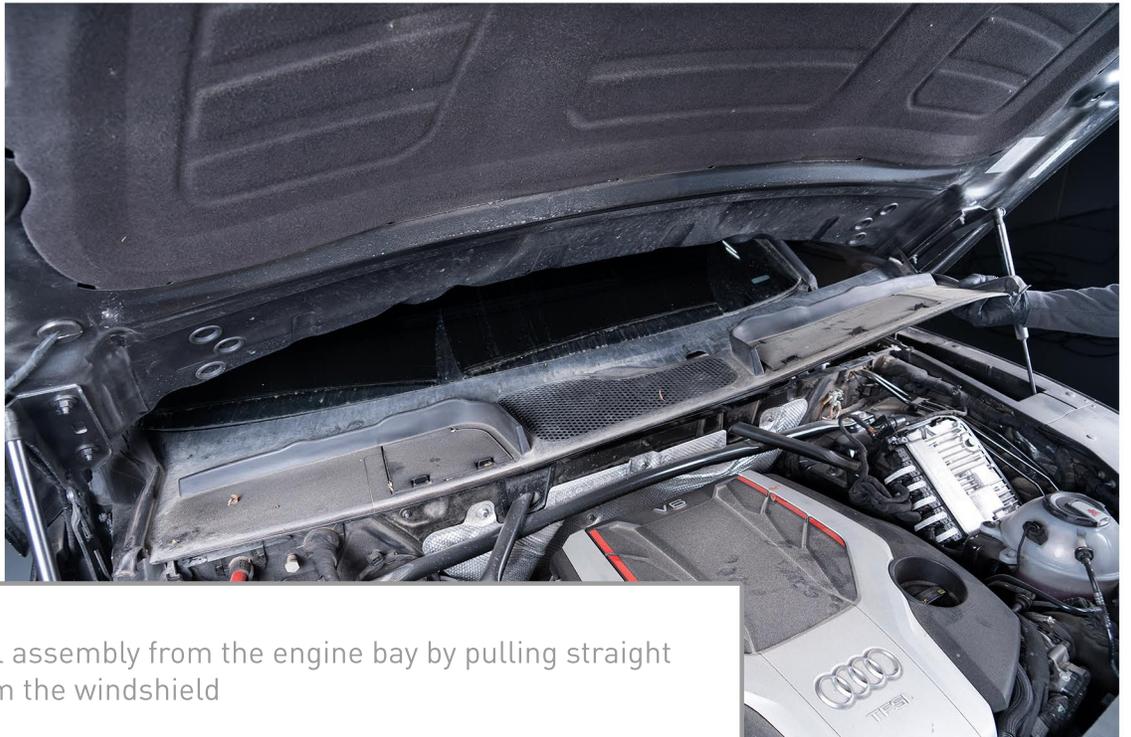


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Pop the corner of the cowl out from underneath the window trim

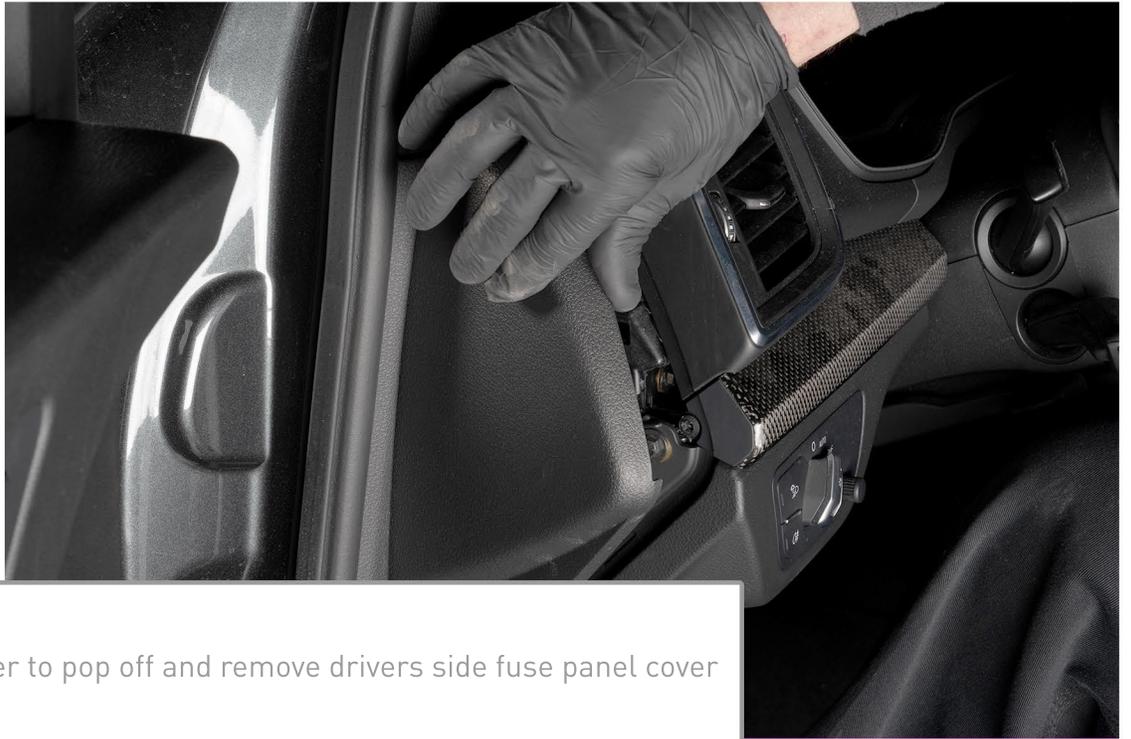
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Remove the cowl assembly from the engine bay by pulling straight up and away from the windshield

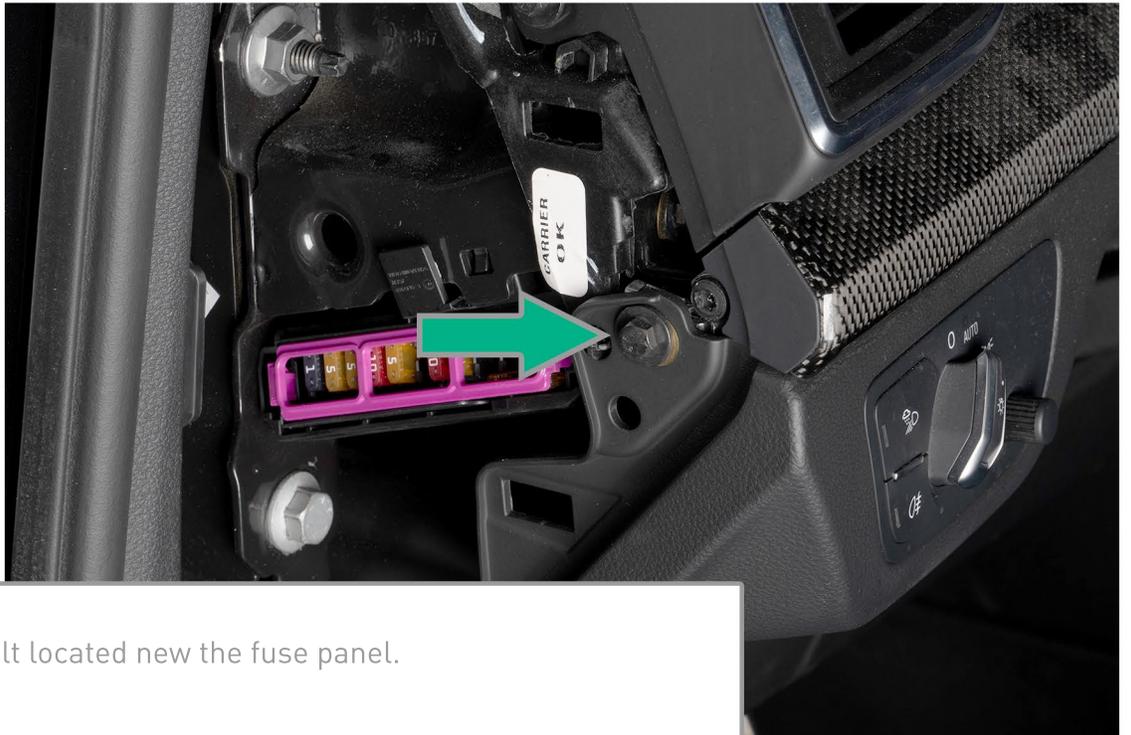


7



Use a screwdriver to pop off and remove drivers side fuse panel cover

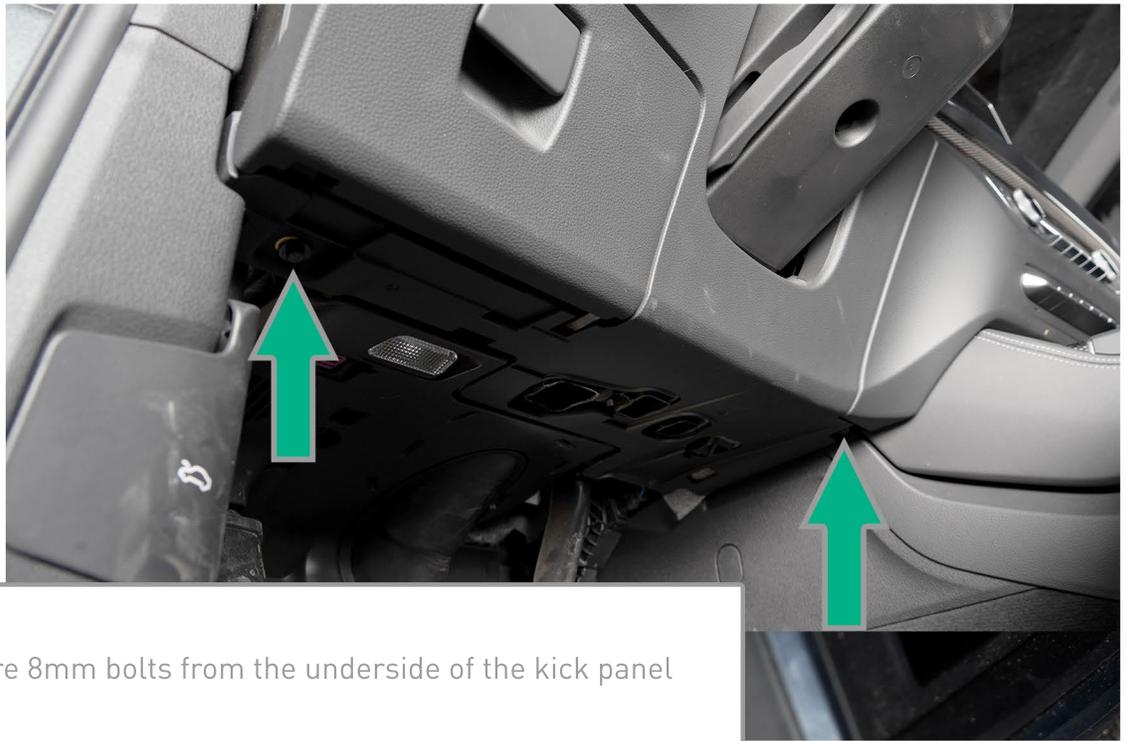
8



Remove 8mm bolt located new the fuse panel.

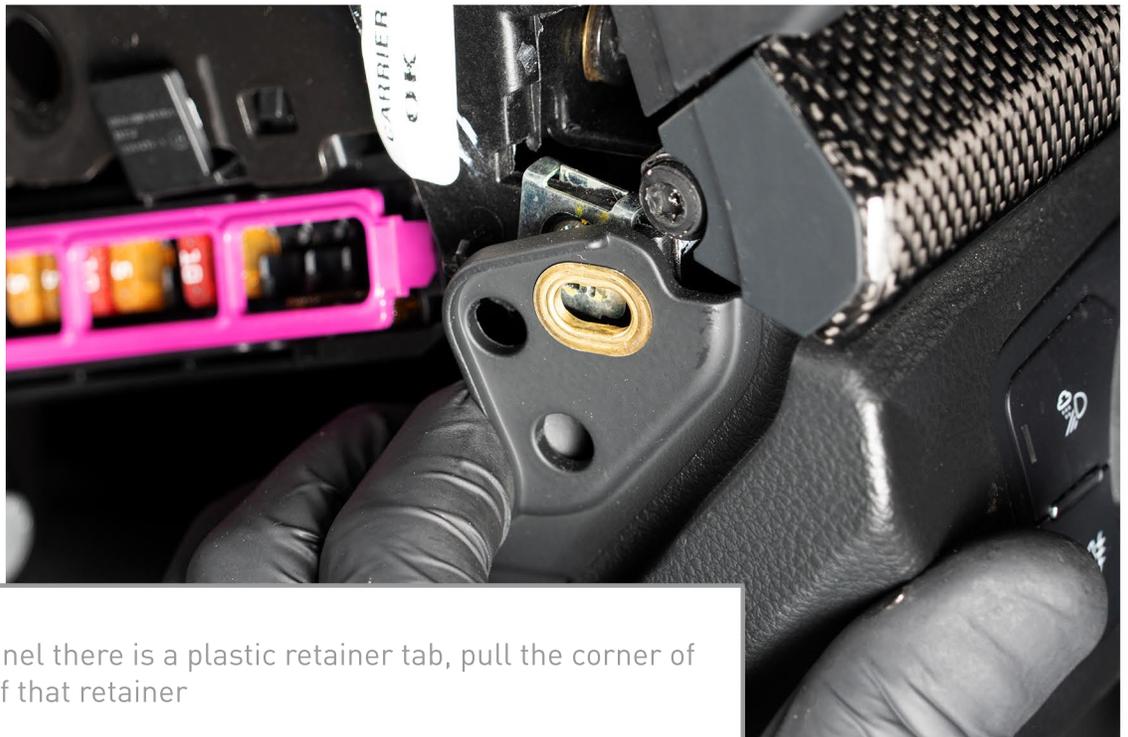


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Remove two more 8mm bolts from the underside of the kick panel

10



Near the fuse panel there is a plastic retainer tab, pull the corner of the kick panel off that retainer

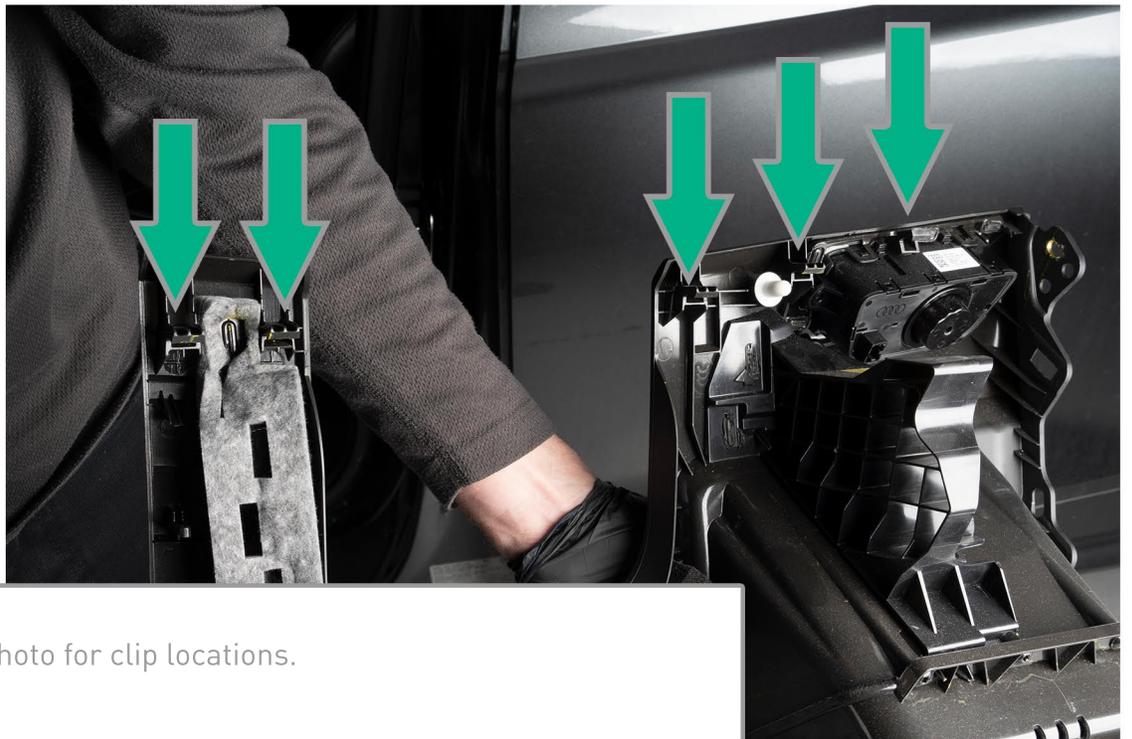


11



Carefully pull kick panel away from dash. Once unclipped, do not remove fully as there is a wire harness that needs to be unplugged first

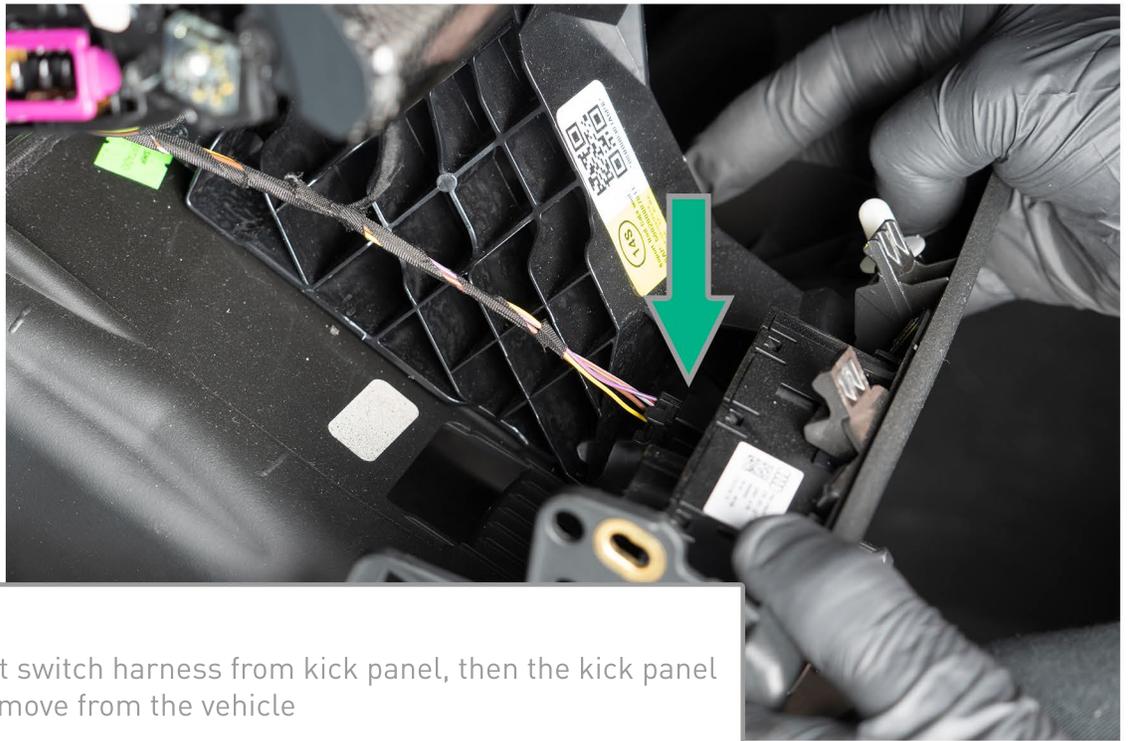
12



Reference this photo for clip locations.



13



Unplug headlight switch harness from kick panel, then the kick panel will be free to remove from the vehicle

14



Use a flathead to pop out rubber cover on the dead pedal

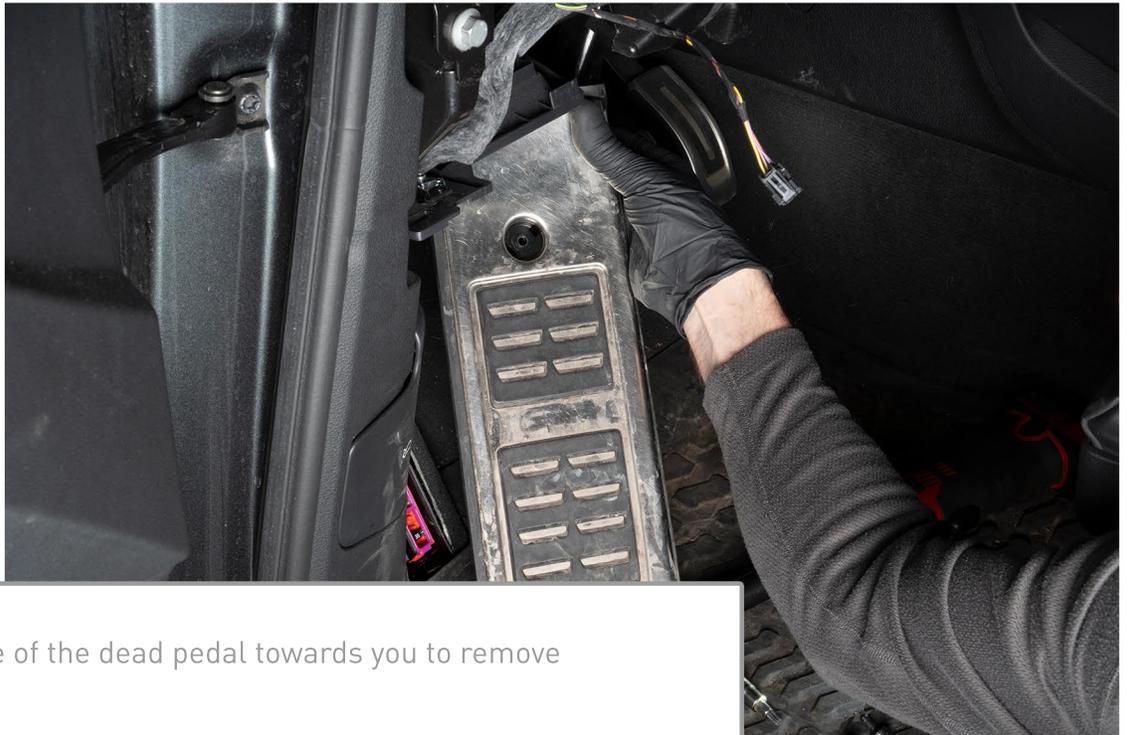


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Use a T30 torx bit to remove the dead pedal bolt

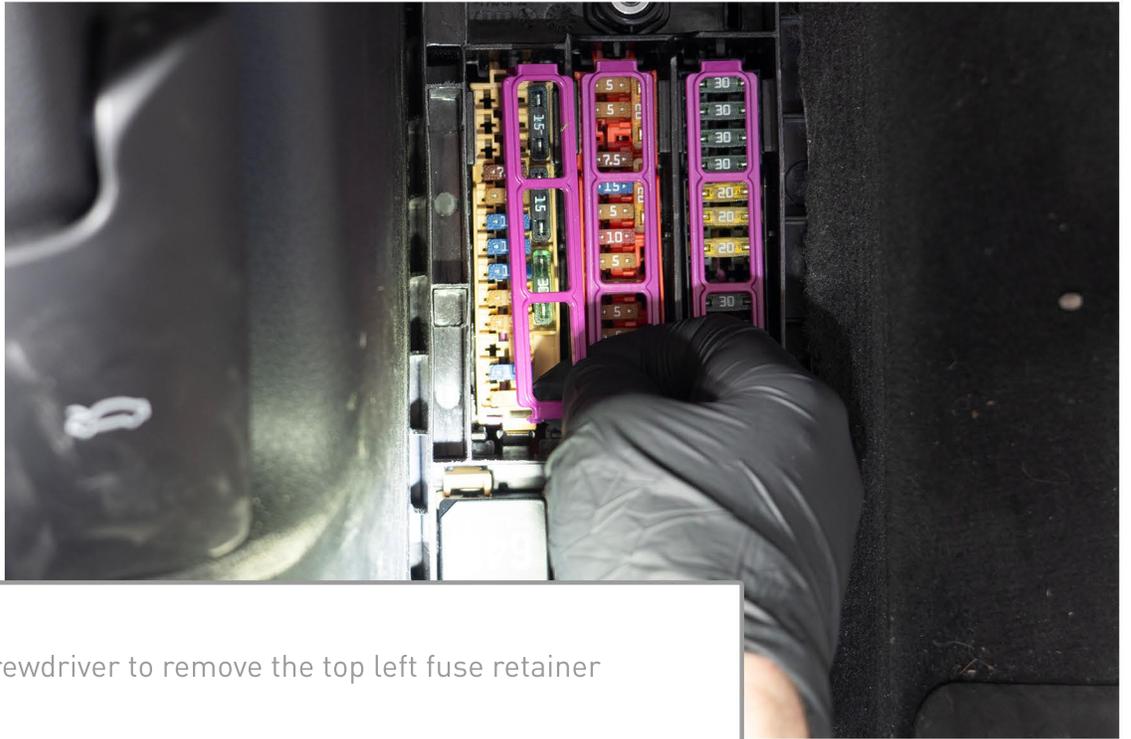
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Pull the top edge of the dead pedal towards you to remove

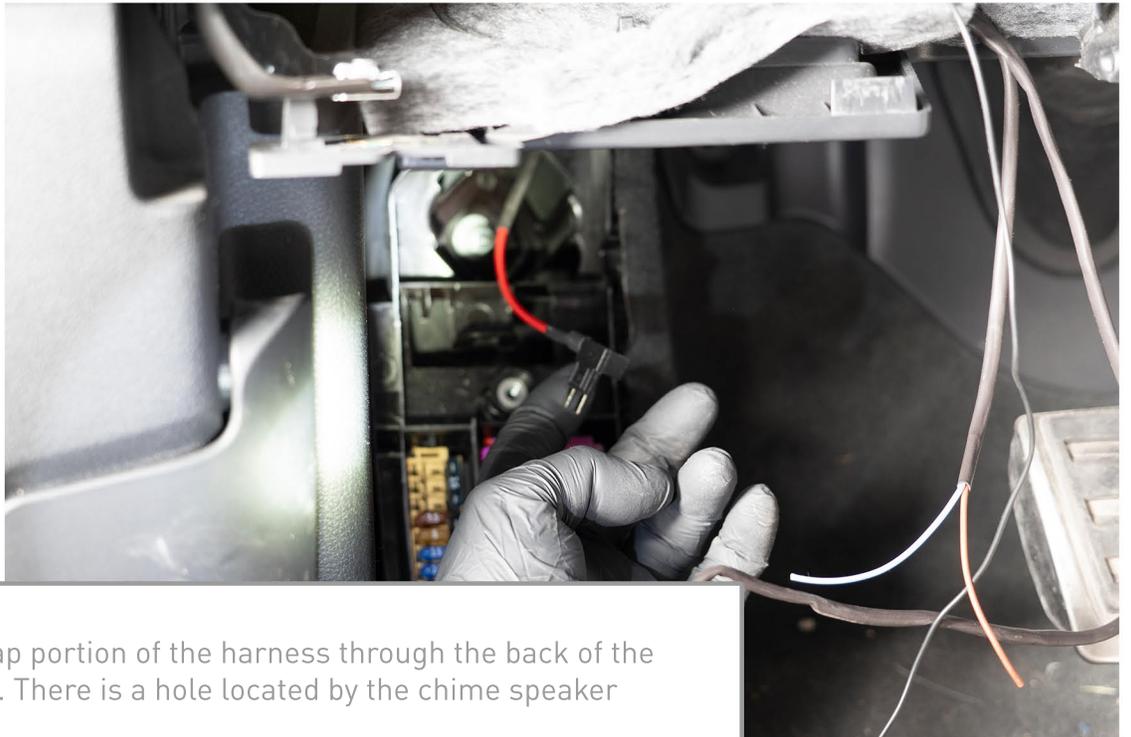


17



Use a pick or screwdriver to remove the top left fuse retainer

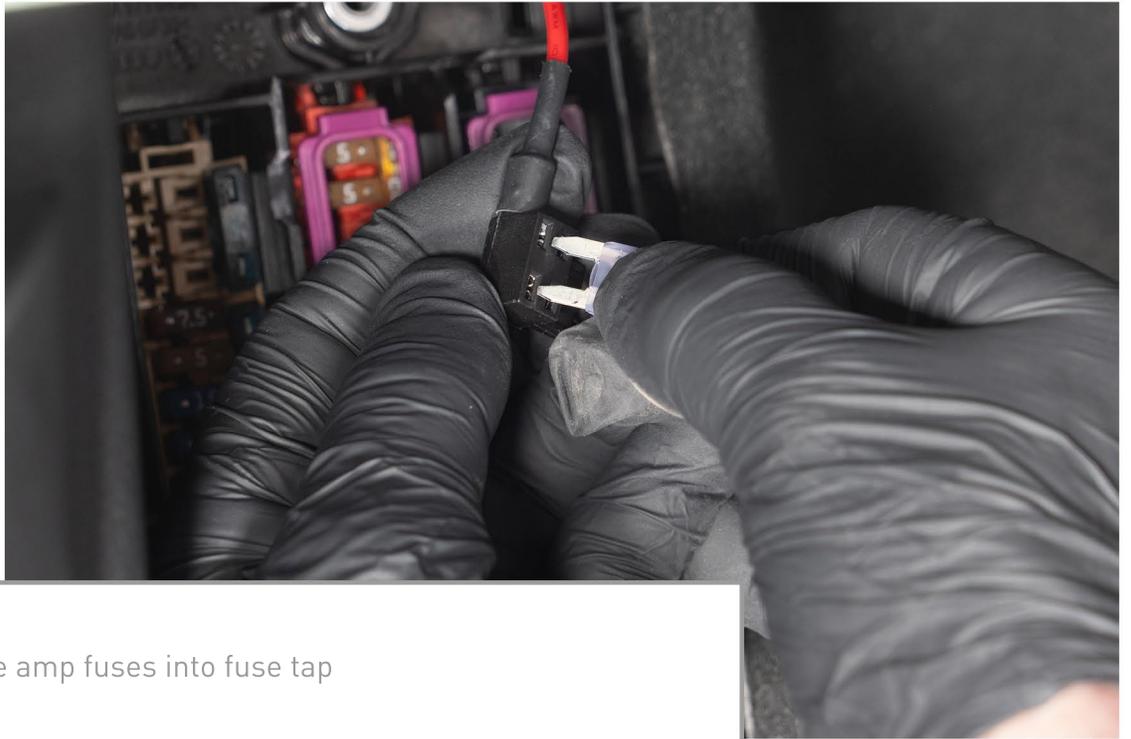
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Route the fuse tap portion of the harness through the back of the lower kick panel. There is a hole located by the chime speaker



19



Install both three amp fuses into fuse tap

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Then plug fuse tap into #1 slot on the top left of the fuse bar



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Plug the harness into the top left signal port

22



Route the ground wire through the upper fuse panel

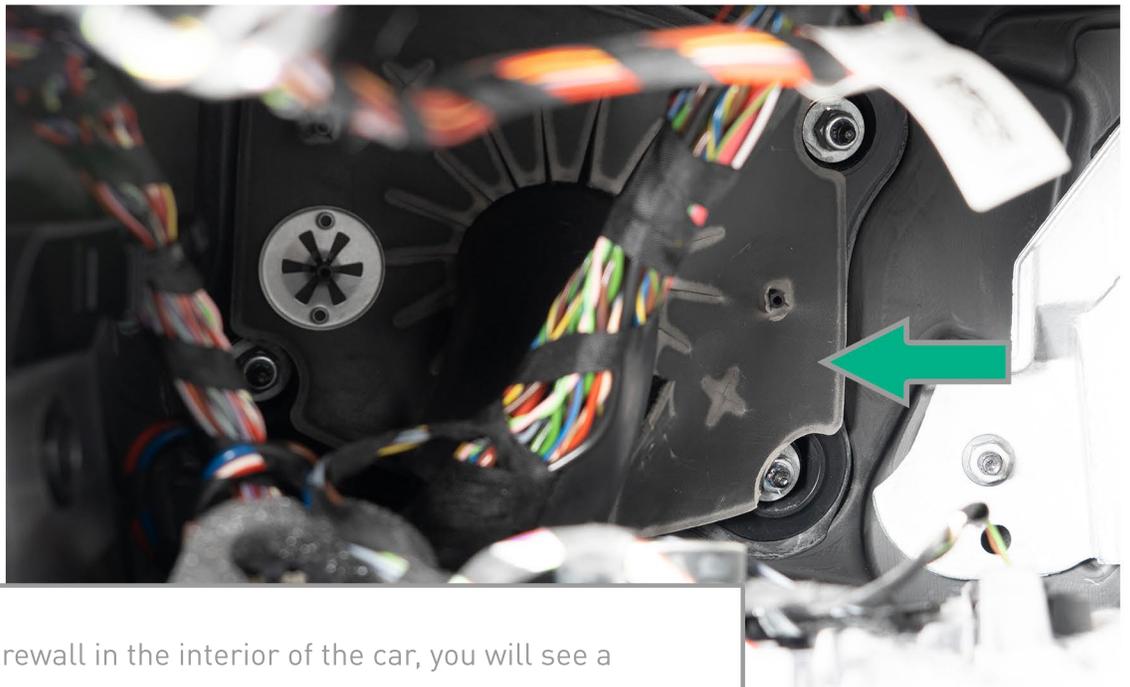


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Remove 13 mm ground nut then attach the ground wire to the stud and tighten nut

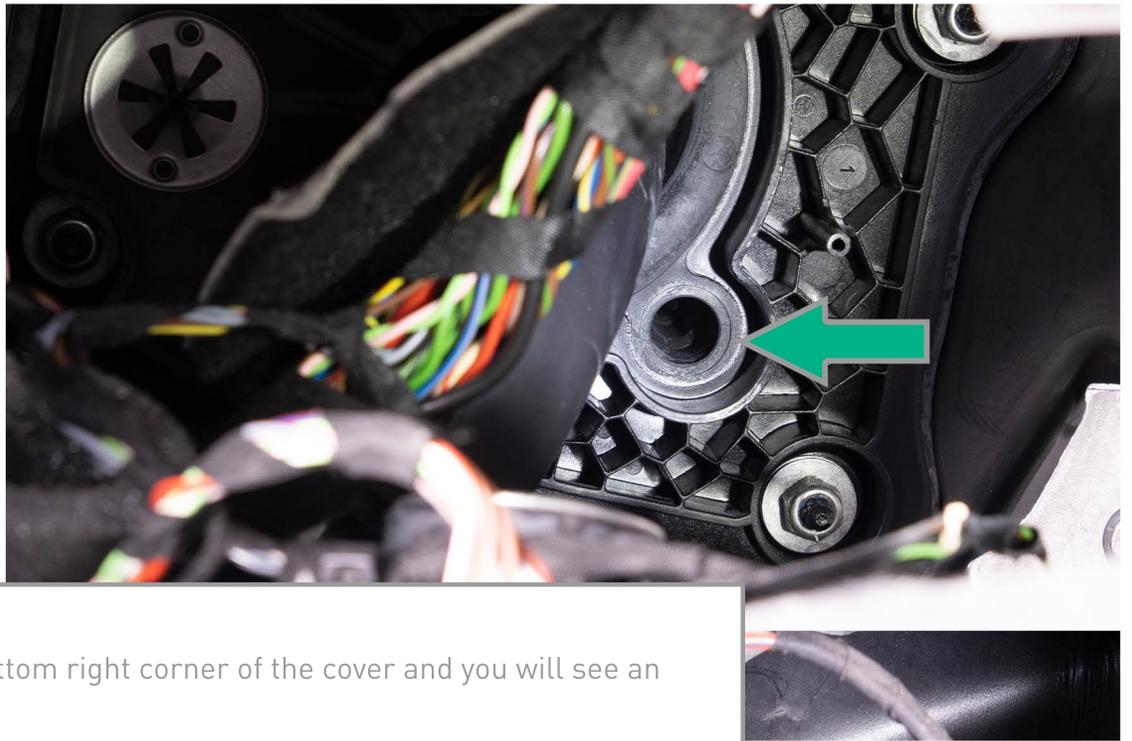
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Located on the firewall in the interior of the car, you will see a rubber cover

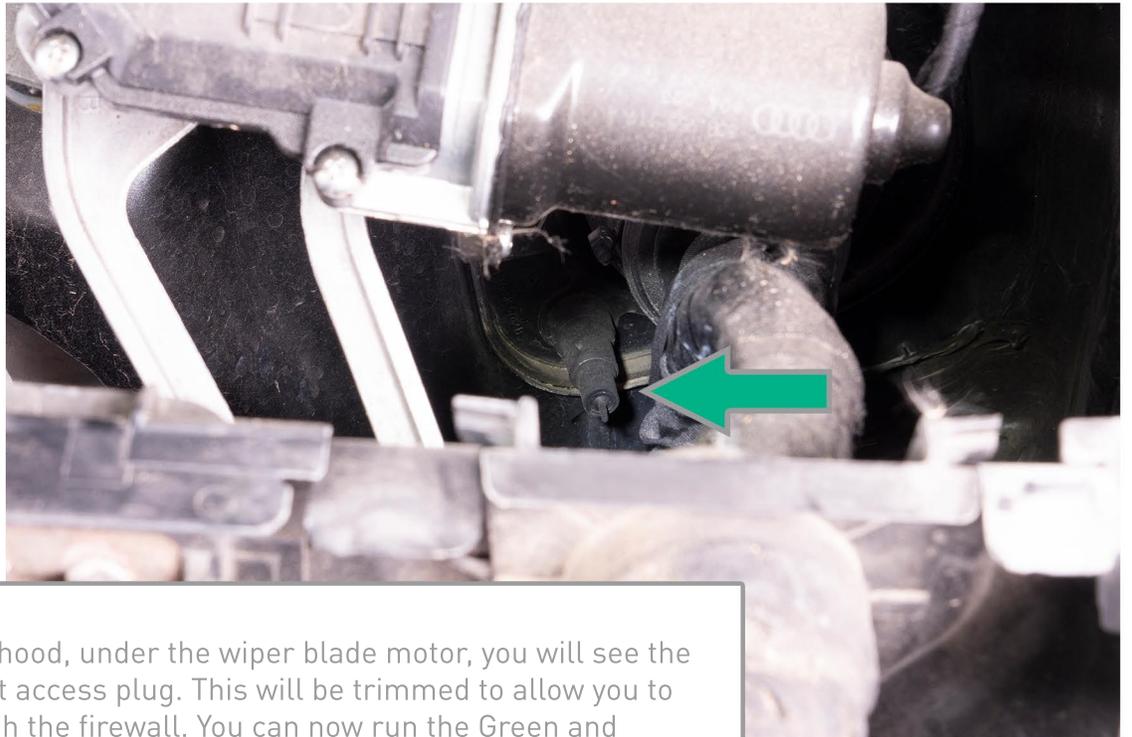


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Pull back the bottom right corner of the cover and you will see an access plug.

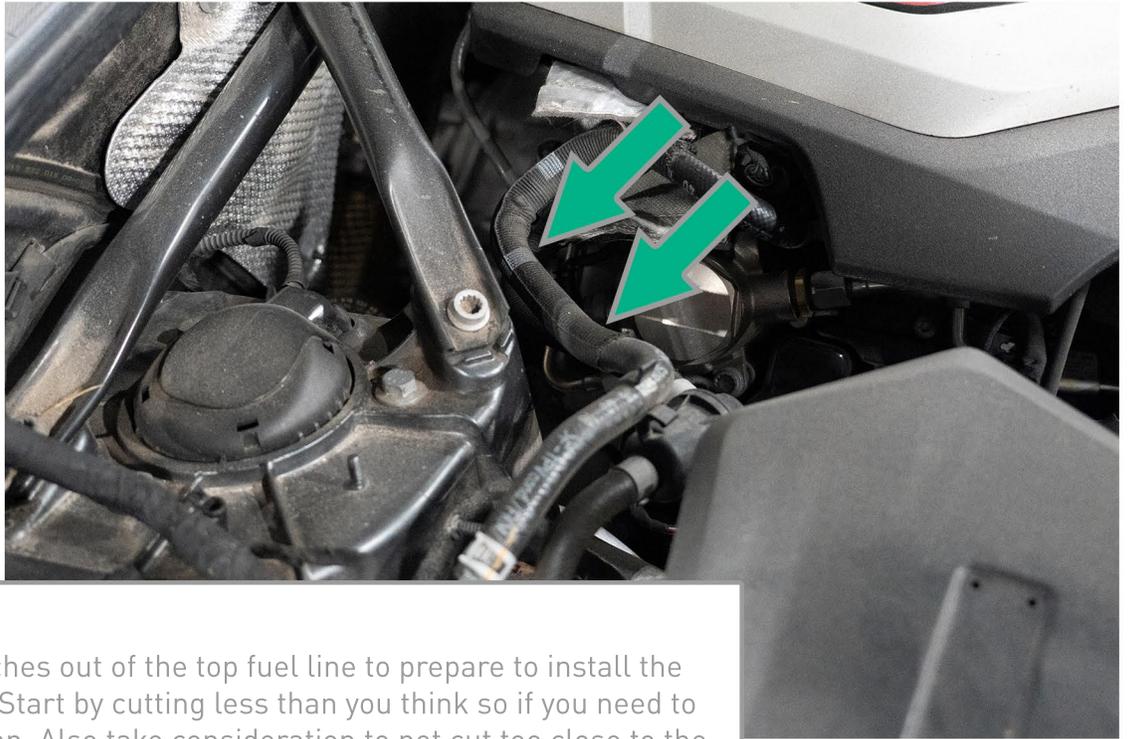
28



Underneath the hood, under the wiper blade motor, you will see the other side of that access plug. This will be trimmed to allow you to run wires through the firewall. You can now run the Green and Orange wires through the firewall and into the engine bay through this opening.

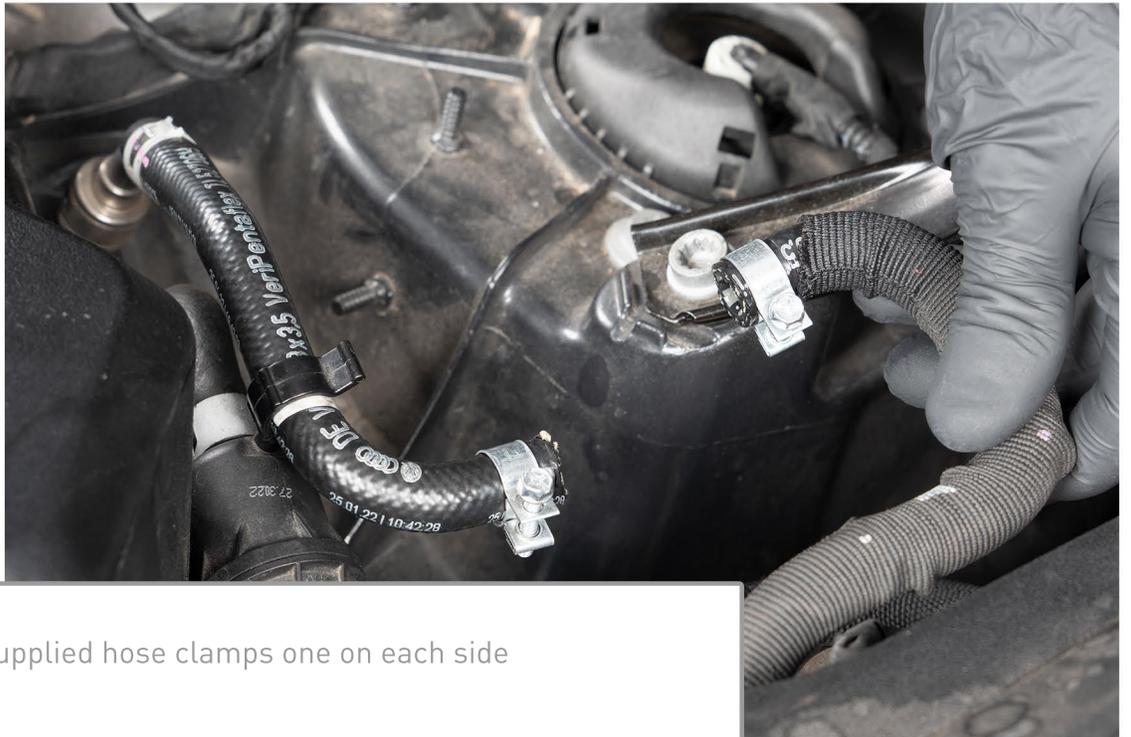


29



Cut roughly 2 inches out of the top fuel line to prepare to install the flex fuel sensor. Start by cutting less than you think so if you need to trim more you can. Also take consideration to not cut too close to the bends in the line as the flex sensor barbs will be inserted into the line

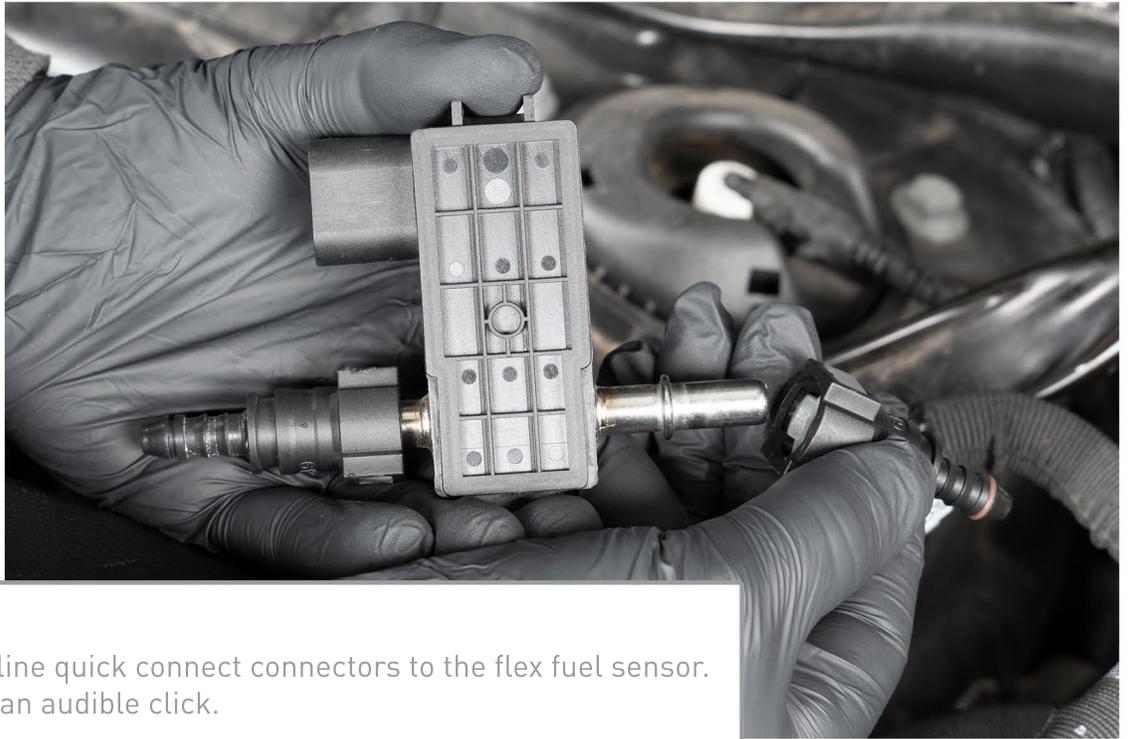
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Loosely install supplied hose clamps one on each side

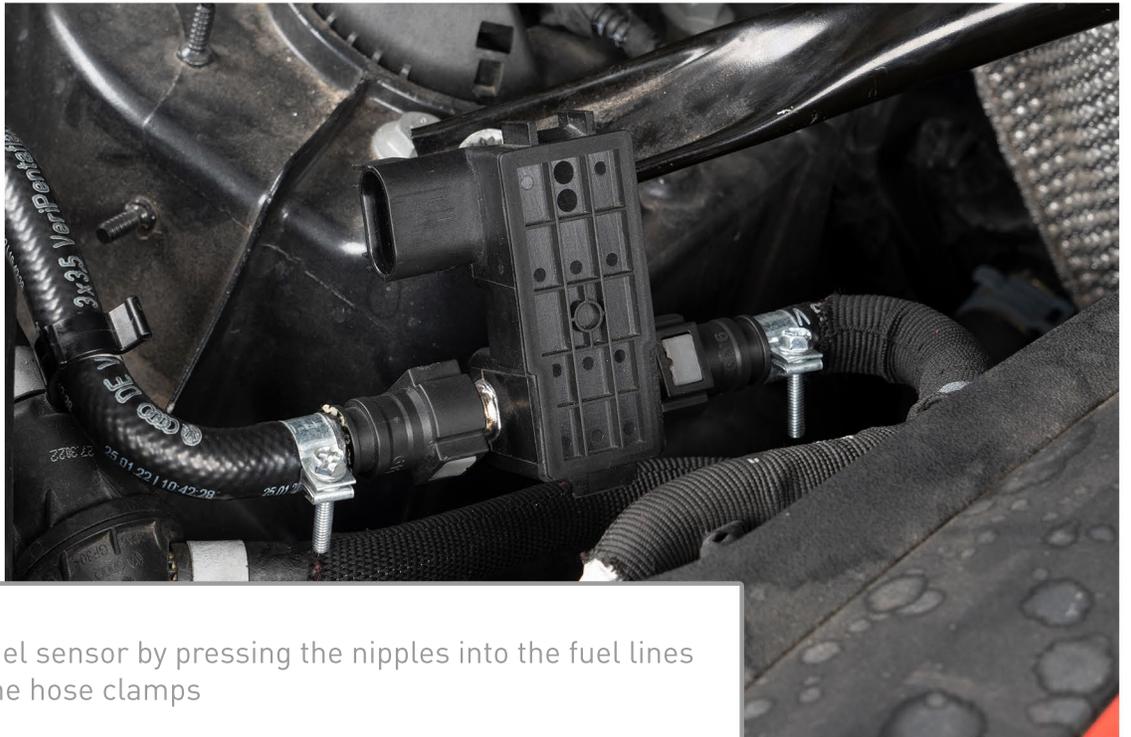


29



Install both fuel line quick connect connectors to the flex fuel sensor. You should hear an audible click.

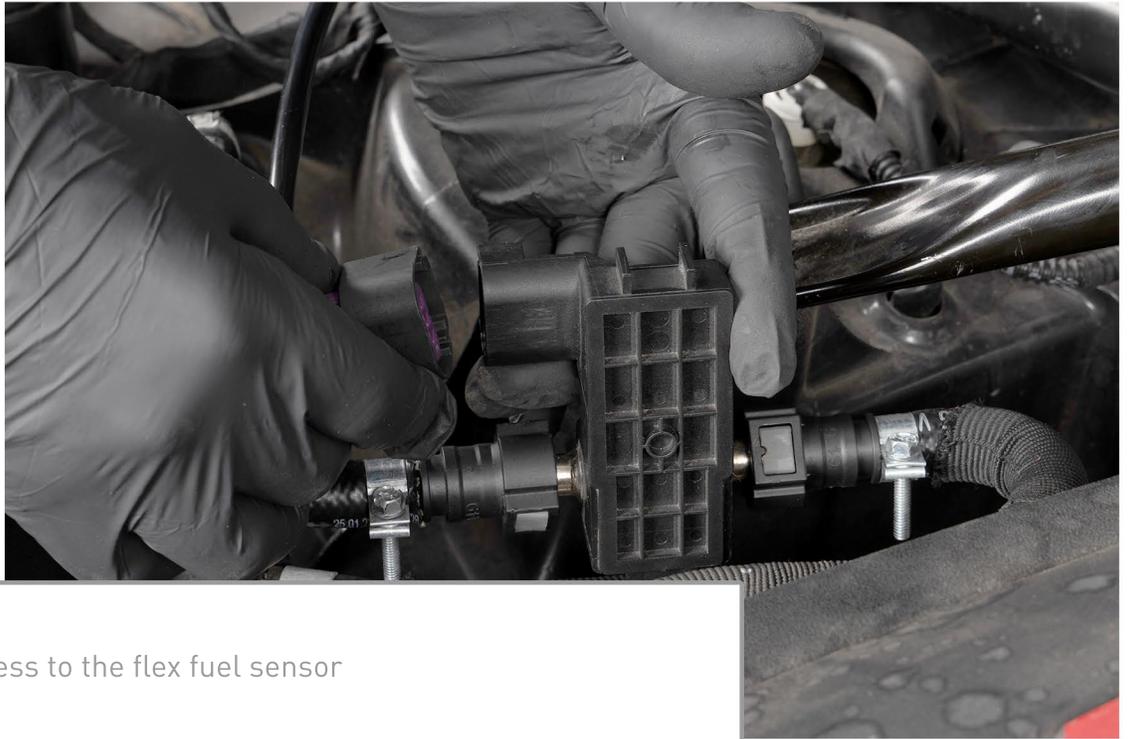
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Install the flex fuel sensor by pressing the nipples into the fuel lines and tightening the hose clamps



31



Plug in the harness to the flex fuel sensor

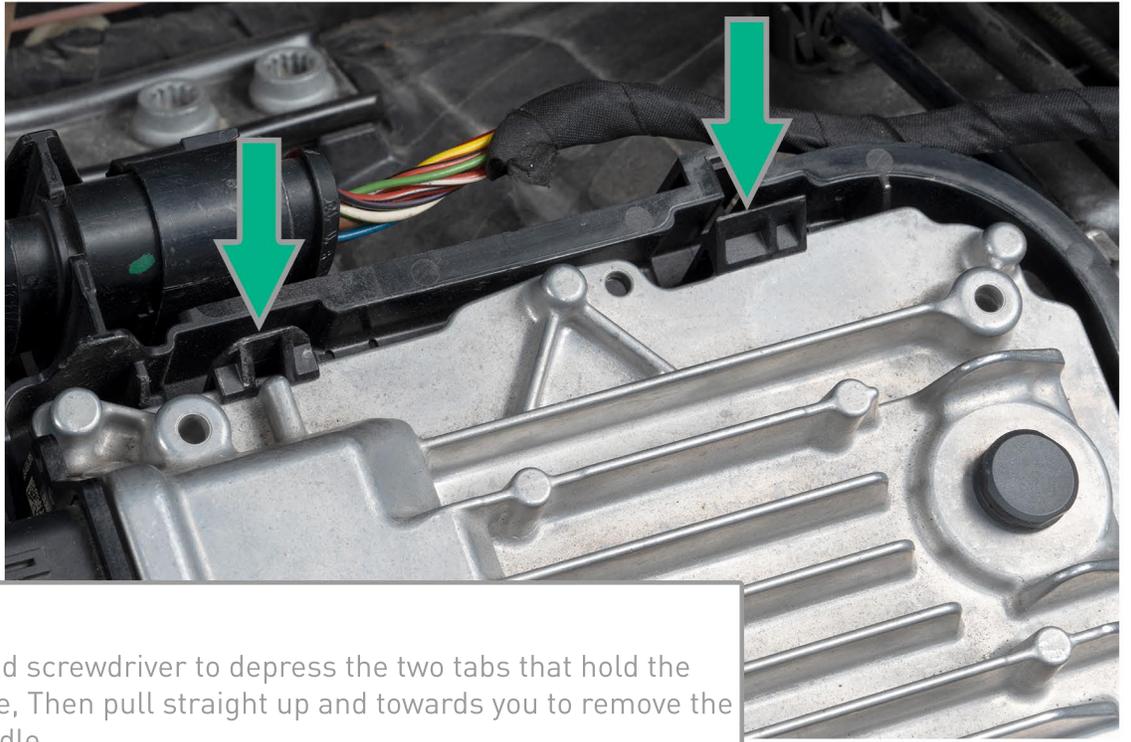
32



Open up the secondary firewall positive clamp and run the flex fuel harness wire through the opening and along the secondary firewall, then run the harness through the same firewall hole you trimmed earlier

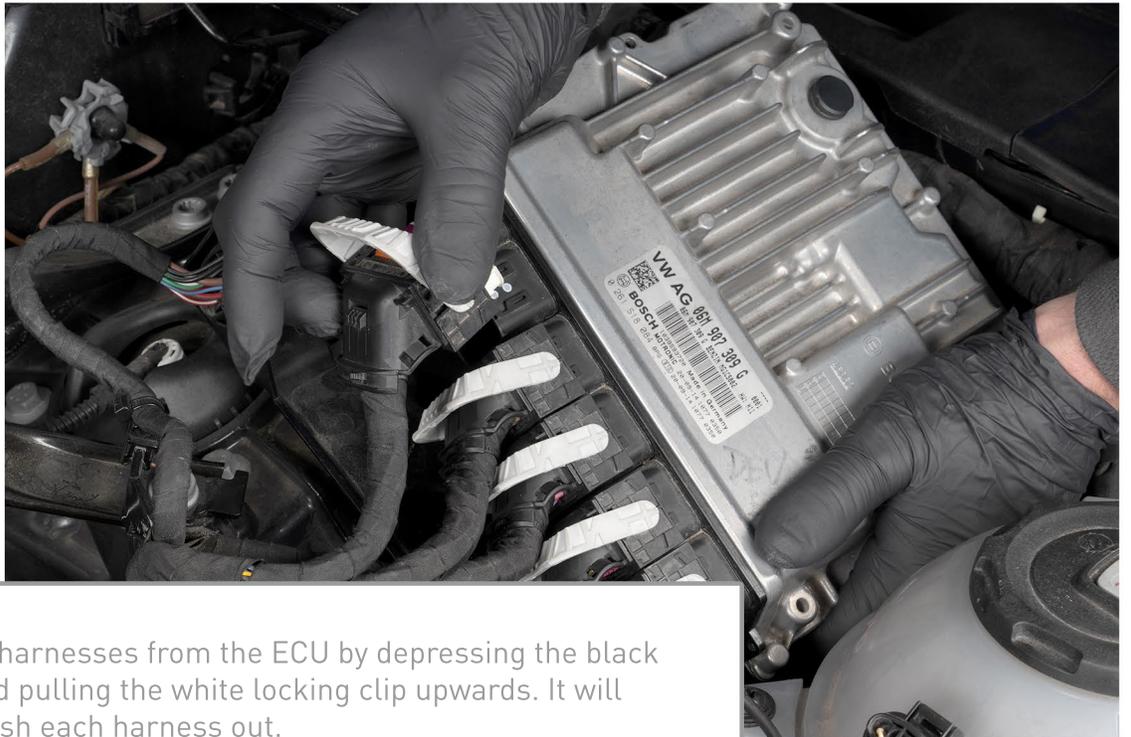


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36. Use a flathead screwdriver to depress the two tabs that hold the ECU in the cradle, Then pull straight up and towards you to remove the ECU from its cradle

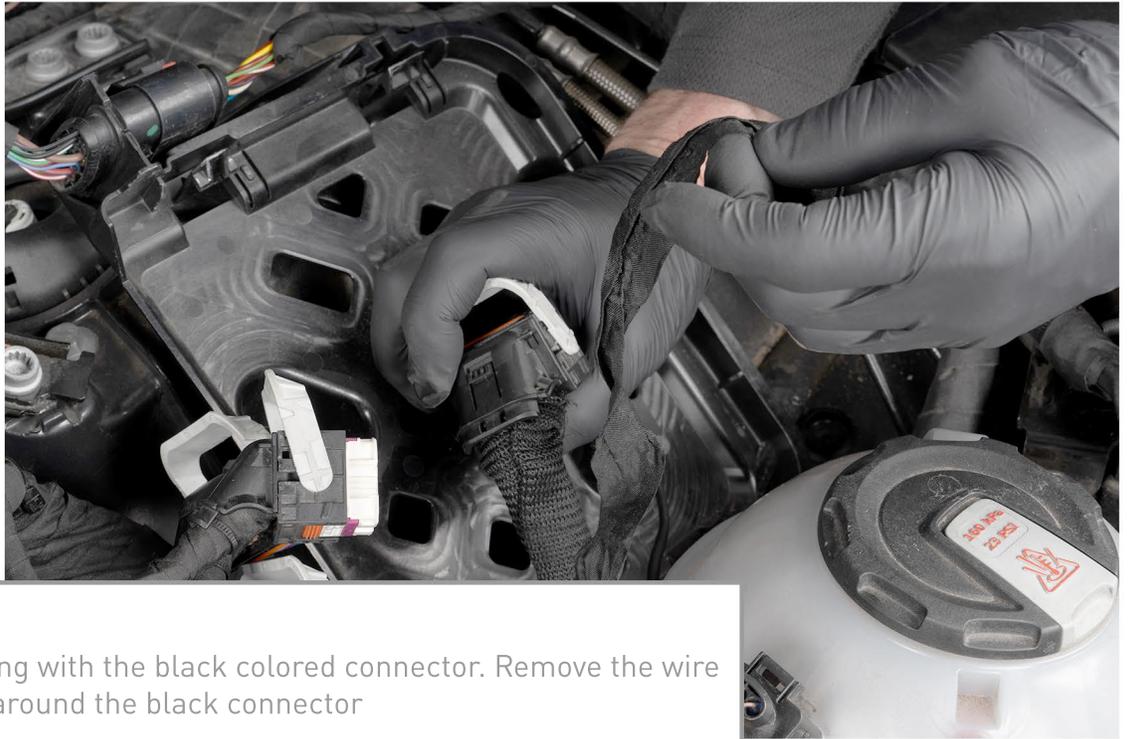
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Remove the five harnesses from the ECU by depressing the black retaining clip and pulling the white locking clip upwards. It will automatically push each harness out.

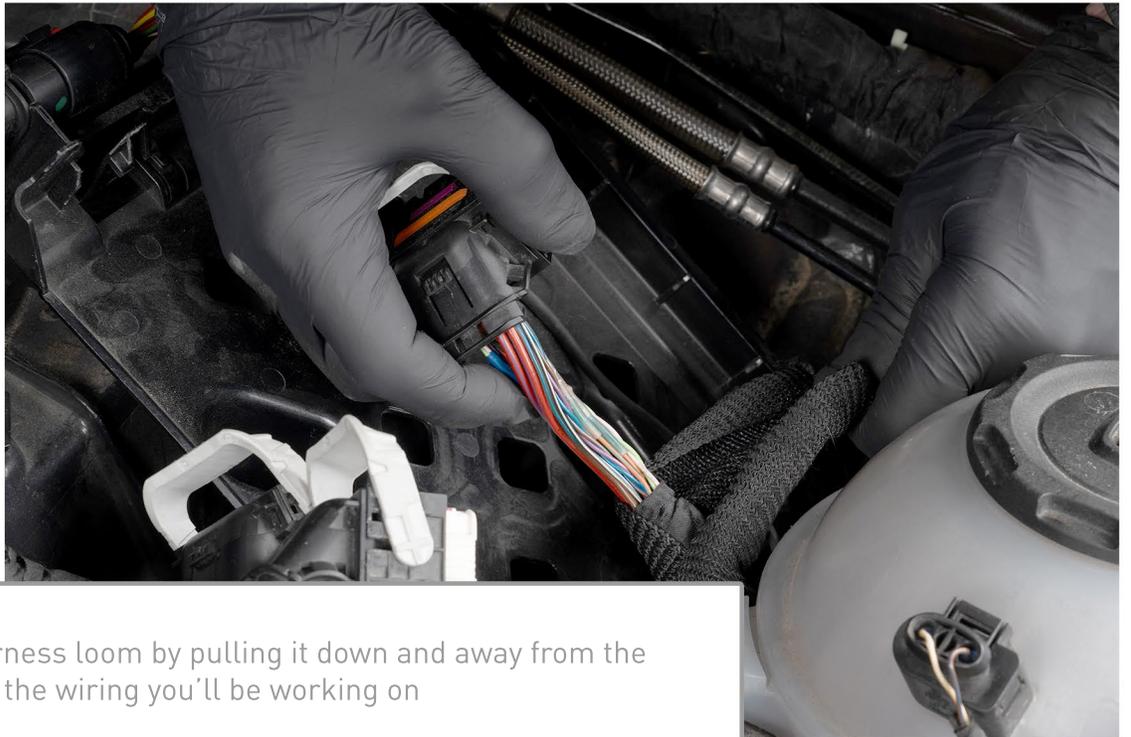


35



We will be working with the black colored connector. Remove the wire loom tape from around the black connector

36



Remove wire harness loom by pulling it down and away from the wiring to expose the wiring you'll be working on



37



On the B9.5 models, Locate the orange wire with the green stripe, you will splice the green wire to that. Then locate the orange wire with the brown stripe and splice the orange wire to that wire. On the B9's, are simply solid green and orange. Connect the matching wires respectively. Audi may change these wire colors at any time, so verify the correct wires by checkin that the green wire is spliced to the wire that leads to pin 17, and the orange leads to pin 18.

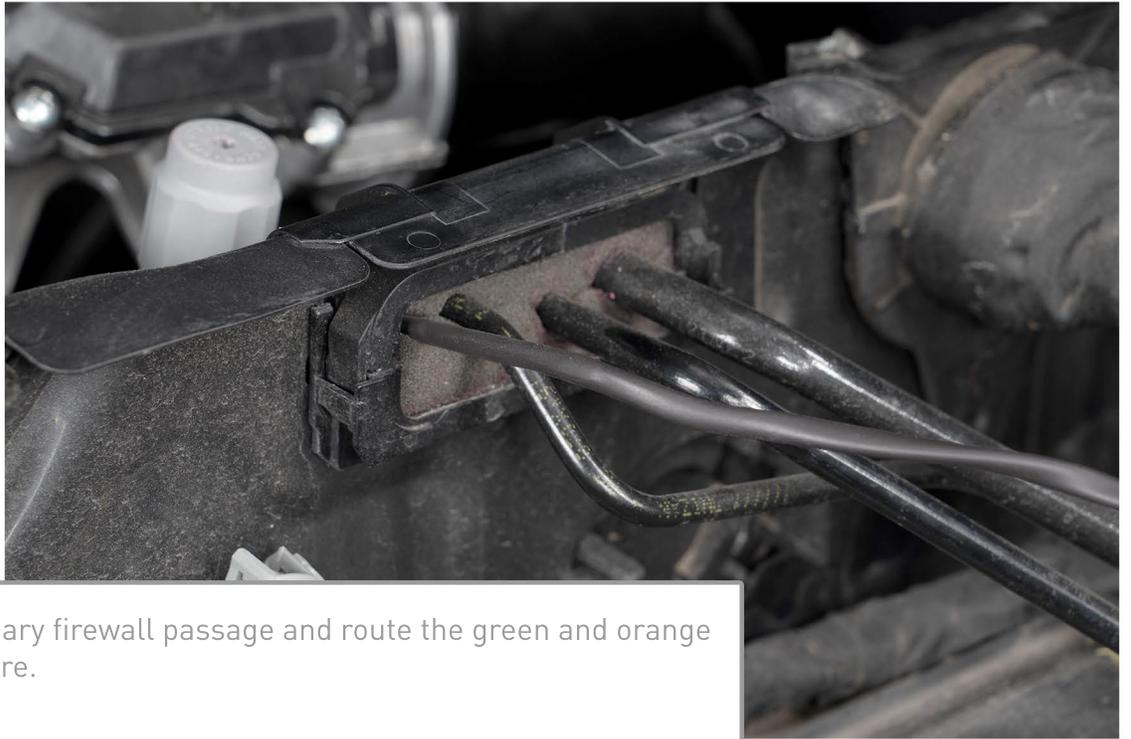
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When applying the heat shrink connectors to the green and orange wire, use a piece of cardboard to segregate them from the other wires in the harness this will ensure that you don't put any heat on the wires that don't require it.



39



Open the secondary firewall passage and route the green and orange wire through there.

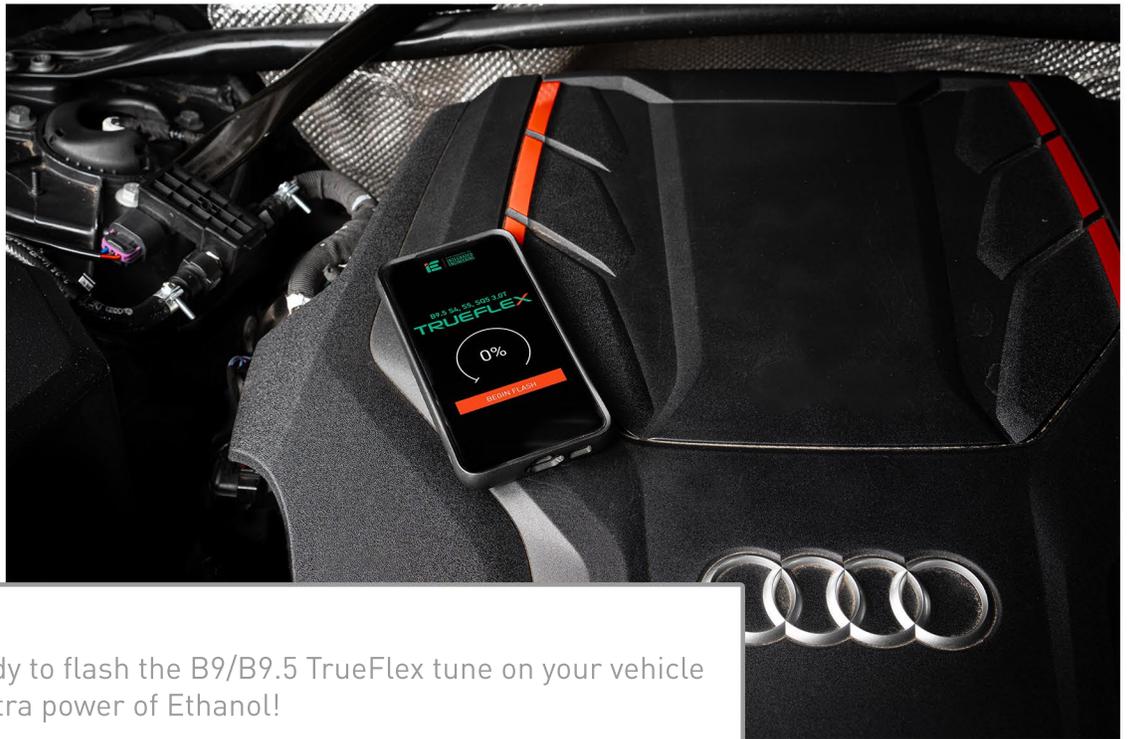
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Ensure all harnesses are plugged correctly into the controller underneath the dash, then pull the double sided tape and stick the controller to the firewall. Ensure no wires are touching the steering rack. If you are using a P3 gauge, you can now install that by routing the Blue and Brown wires to the gauge. If you are not installing a gauge, you can simply zip tie those wires out of the way. At this point you are ready to reassemble in reverse order.



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You are now ready to flash the B9/B9.5 TrueFlex tune on your vehicle and enjoy the extra power of Ethanol!

A quick note for TrueFlex: Just like when switching between non-flex ethanol and pump gas files, you should always drive the vehicle gently for approximately 10 miles and avoid high engine loads when changing blends. The ethanol sensor is in the low-pressure fuel line and will read and report the change to the ECU before the fuel actually makes its way into the high-pressure rail and through the injector. If there is 91 octane in the rail but the sensor is reading E80 all of a sudden there will be a short period of time where E80 ignition timing is used on a fuel that will not support that much ignition advance.

