

R8/HURACAN TRIPLE PUMP IN-TANK KIT

INSTALL INSTRUCTIONS

Introduction ///

The goal of AMS Performance is to provide the highest quality, best performing products available. By utilizing research and development, and rigorous testing programs AMS Performance will never compromise the quality or performance of our products. In addition, AMS Performance will only provide the finest customer service offering only parts and advice that are in the best interests of the customer. AMS Performance was built on a foundation of integrity. This is who we are. This is what you can count on.

A vehicle modified by the use of performance parts and tuning may not meet the legal requirements for use on public roads. AMS Performance makes no claims of compliance unless otherwise stated on a per-product basis. Use or installation of performance parts and tuning may adversely affect the drivability and reliability of your vehicle, and may also affect or eliminate your insurance coverage, factory warranty and new OEM part warranty. There is no stated or implied guarantee by AMS of continued OEM vehicle warranty, insurance coverage, or emissions compliance, due to the stress placed on your vehicle by performance parts and our inability to monitor its use, tuning or modification.

These instructions are not intended to be a comprehensive guide for installation as there are many variables that may affect your particular vehicle, including but not limited to model year differences, sub-model/trim/optional equipment differences, the presence of non-OEM parts, or other modifications that may have previously been completed. A basic understanding of automotive parts and systems and novice mechanical skills should be all that is necessary for installation, but certain circumstances may necessitate professional installation.

AMS Performance is committed to providing quality support for our products. If you are in need of technical support, installation help, or a replacement component, our Customer Service Team is available directly via telephone at 847-709-0530, or digitally via the contact form linked here: amsperformance.com/support

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Note – Fuel system tuning will be required following installation of the Alpha Fuel System.

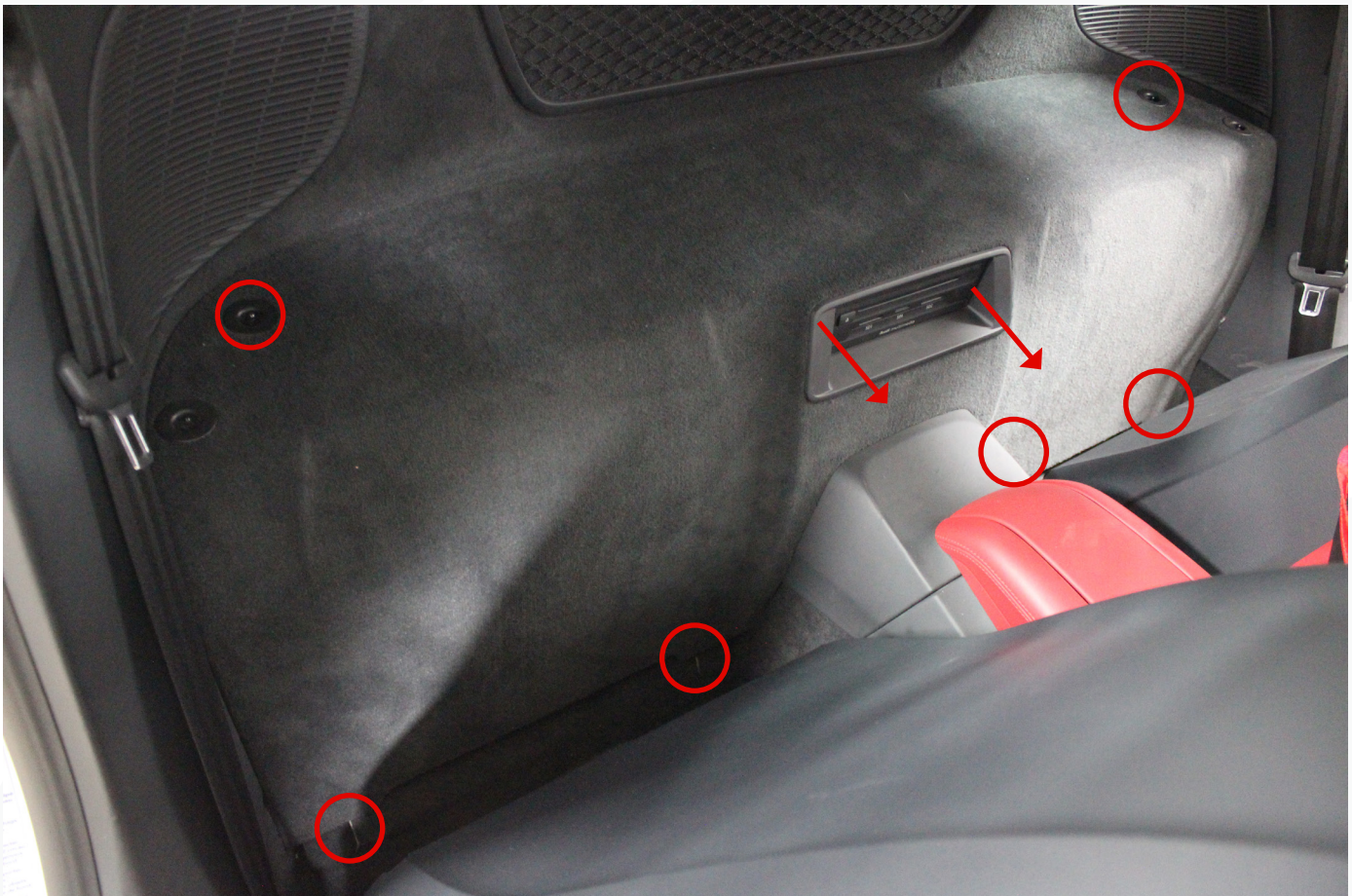
Specialty tools

Fuel sending unit locking ring removal/installation tool – recommended but not required. See step 17.

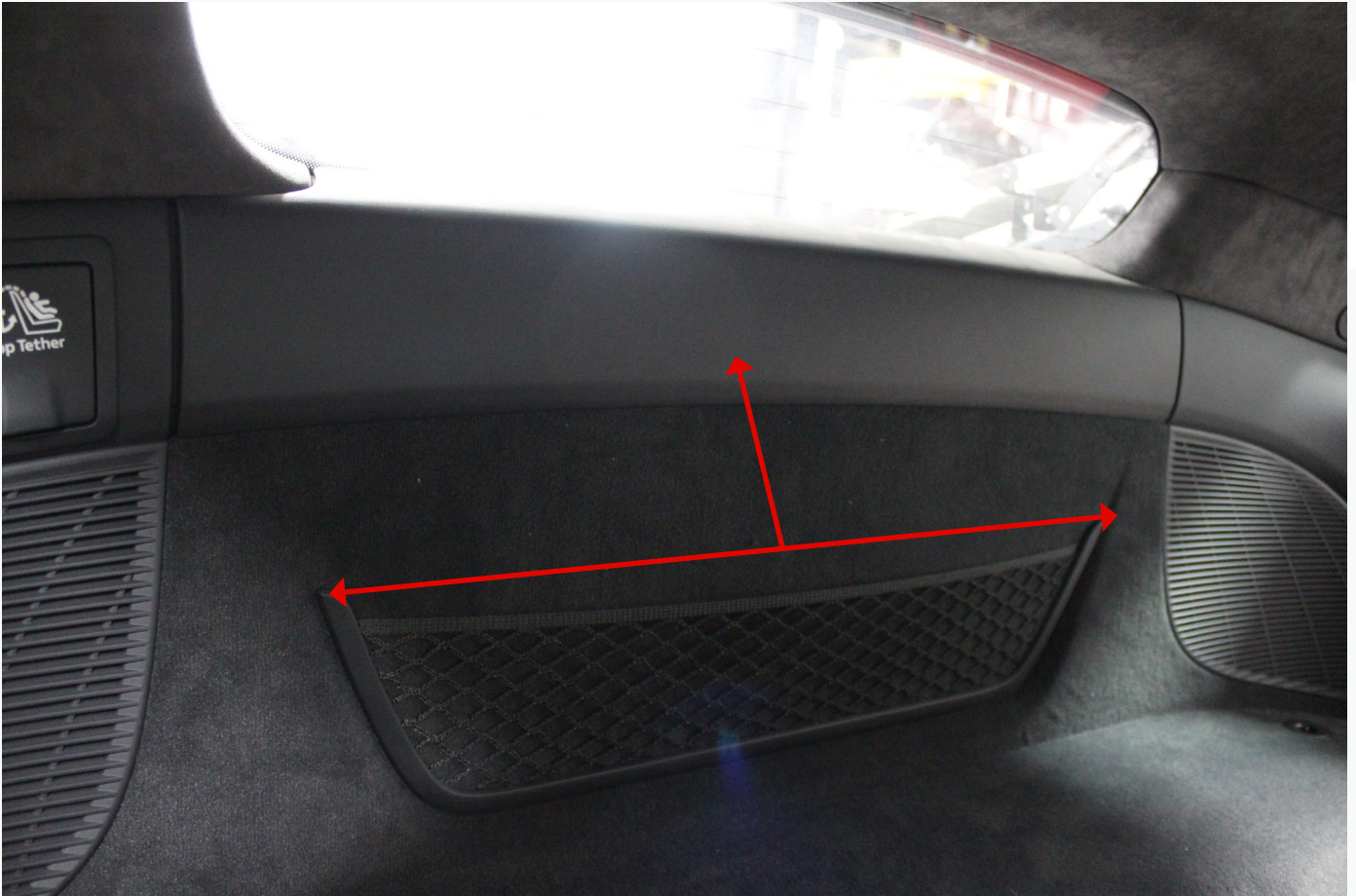
DISASSEMBLY:

R8 follow steps 1-6, Huracan skip to step 7.

1. Move the seats all the way forward and pull the tether to fold the seat-back forward to gain access behind the seats.
2. Disconnect the battery.
3. Remove two 9mm hex bolts, four T30 bolts and radio bezel.



4. With a plastic trim tool, remove both speaker grills and upper trim panel, they are held in very tight with plastic clips.



5. Remove the plastic screw under the speaker grille on each side.



6. Remove the four nuts along the top of the rear trim panel.

Tech Note: I recommend using hand tools on the fasteners in these steps and future steps as the studs are attached using epoxy and can easily pop off. Then continue to step 11.



Steps 7-10 for Huracan Only

7. Remove the large cover. It is only held on by rubber grommets, pull up slightly to release the six grommets and then out around the audio unit.



8. Remove the panel between the headliner and window trim.



9. Remove the plastic cover to reveal the bolt holding the child seat hook. Then remove the window trim plastic.



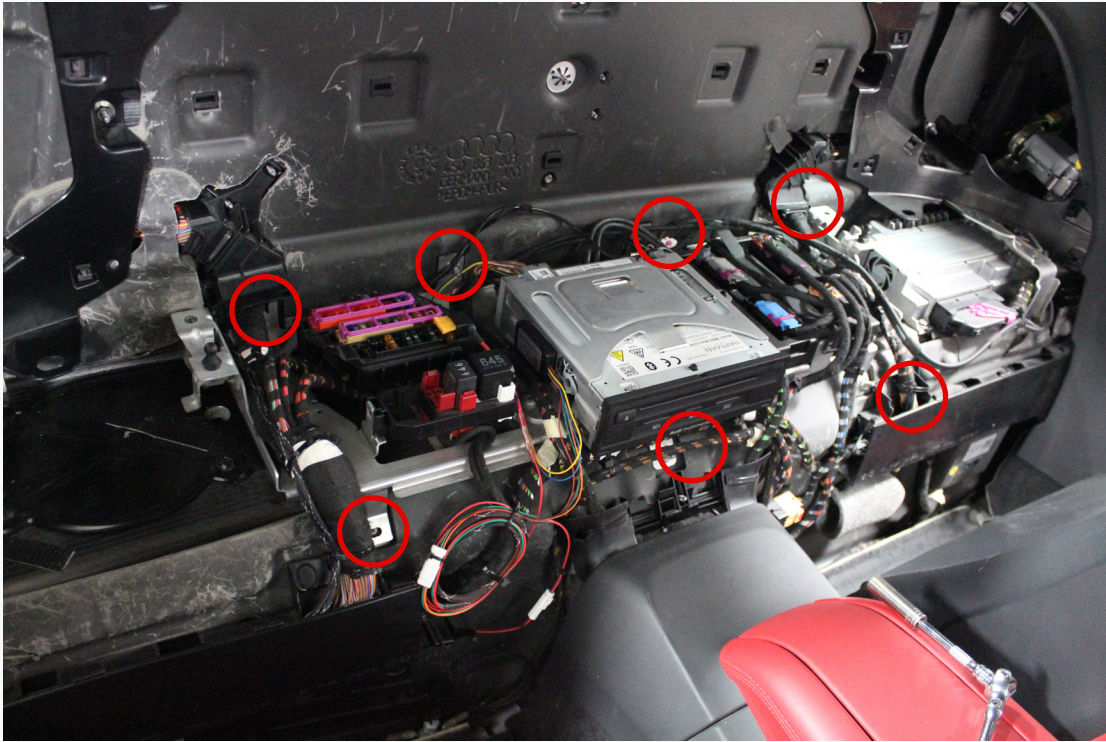
10. Remove the four nuts holding the lower panel and remove the panel.

Tech Note: I recommend using hand tools on the fasteners in these steps and future steps as the studs are attached using epoxy and can easily pop off Continue with step 11.

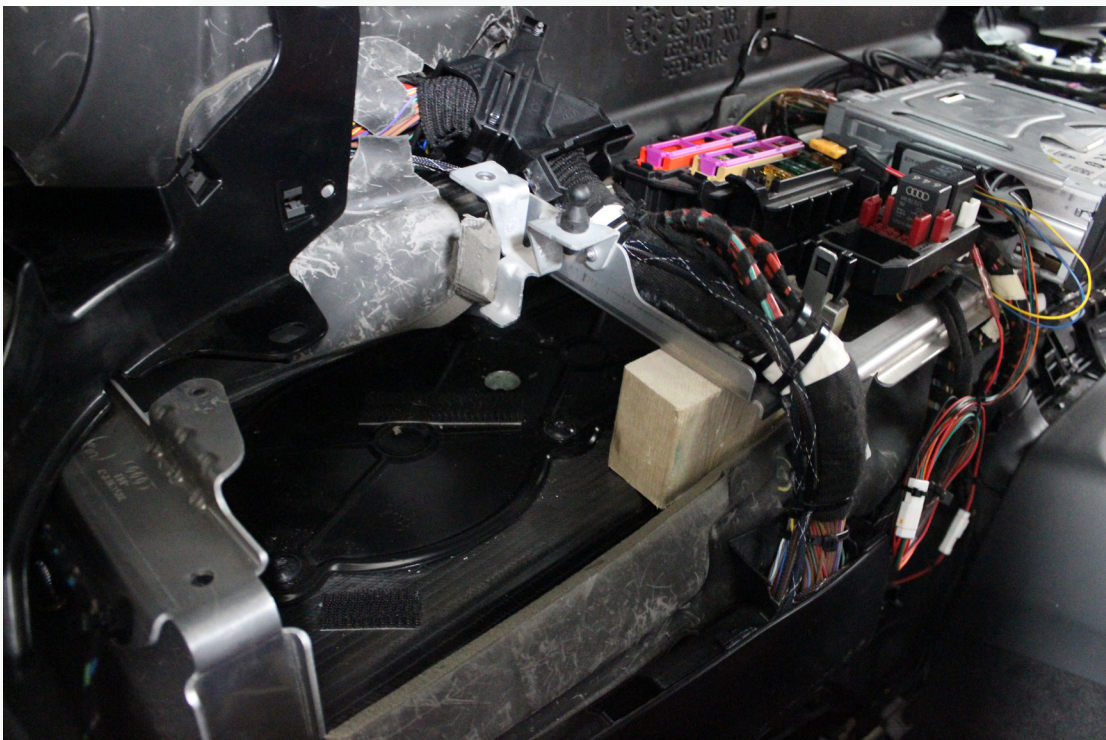


11. Remove the seven nuts from the control unit bracket assembly to gain access to the fuel tank access panel bolts.

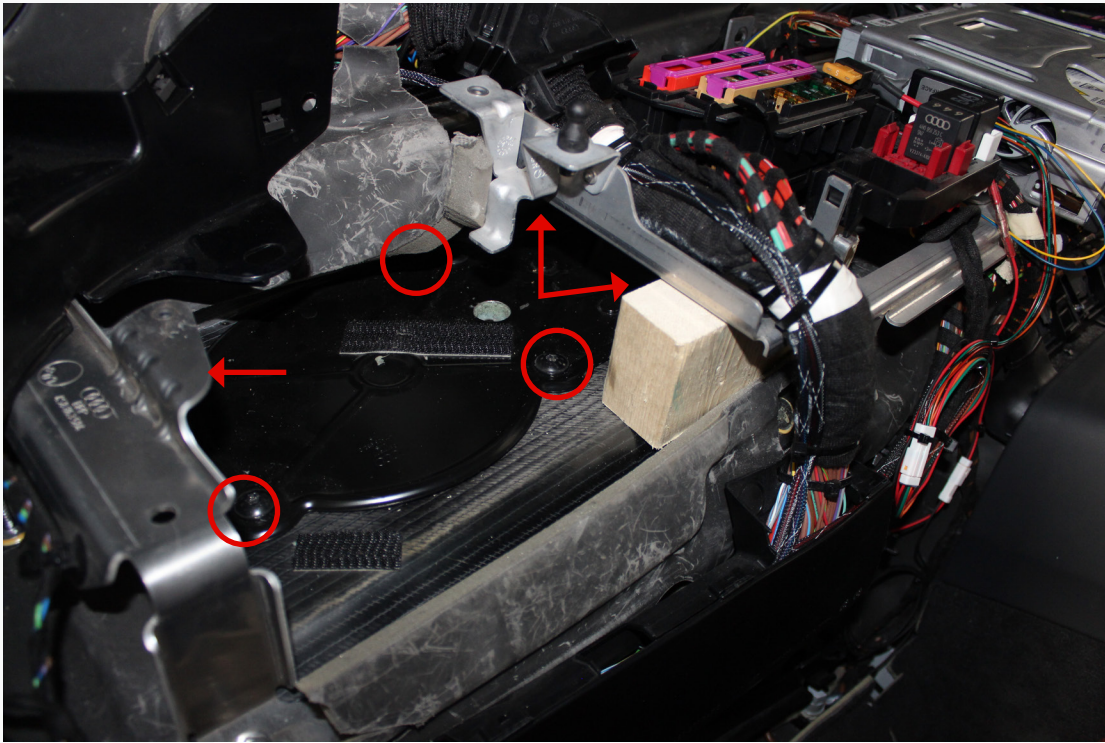
Note: We removed a few additional components for photo purposes. This is optional.



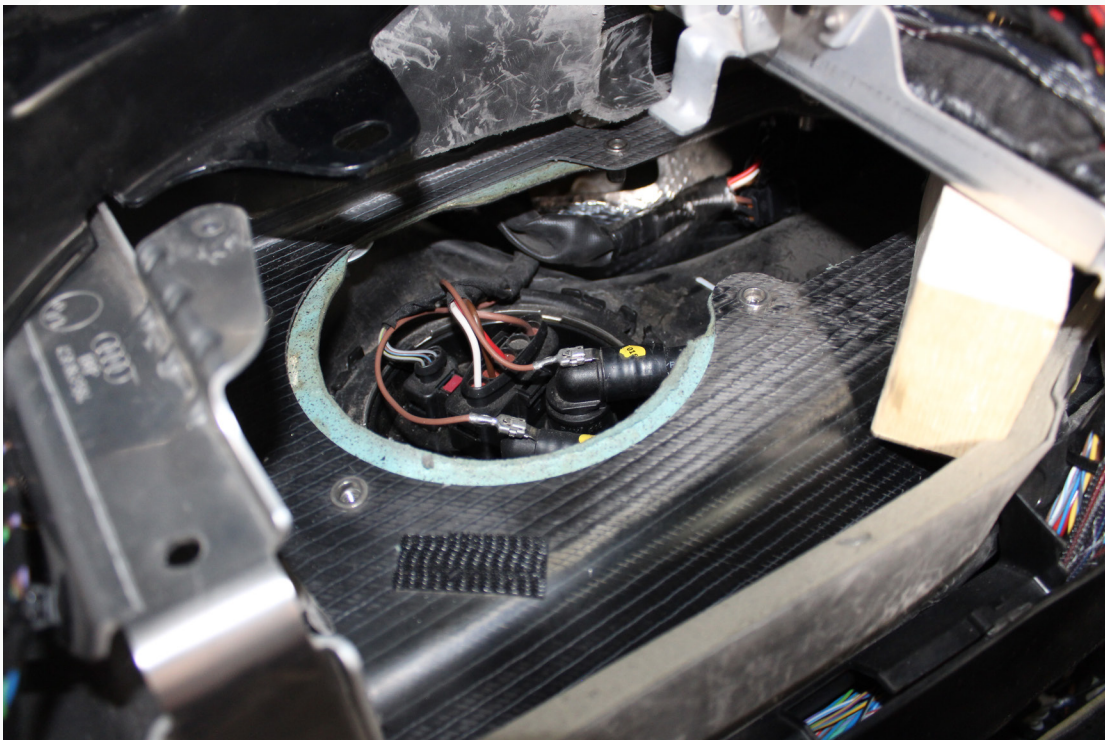
12. Pull the bracket assembly towards the front of the car to release it off the studs. I found propping it up with a block of wood to be helpful to remove the access panel.



13. Remove the six bolts from the access panel.

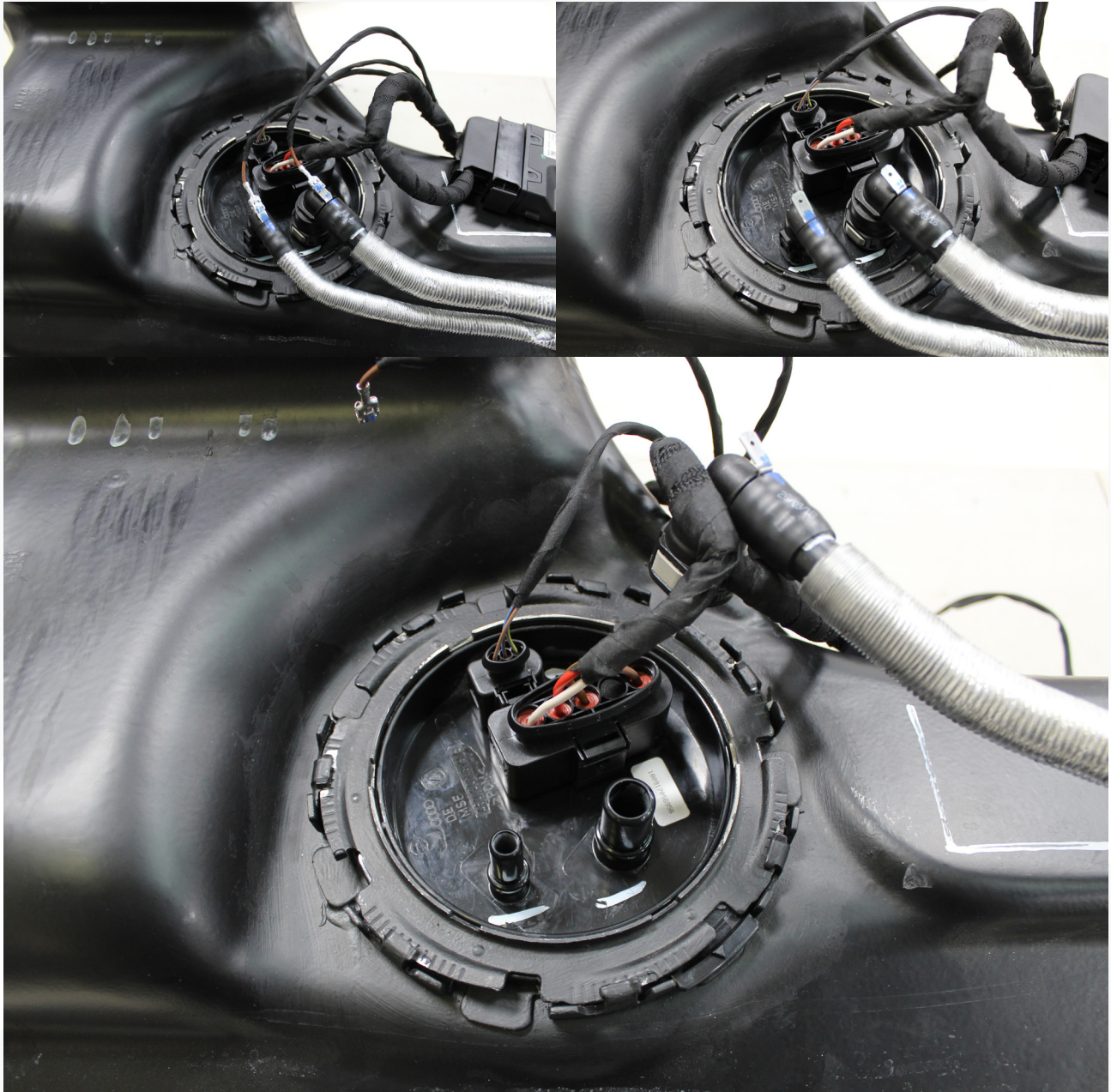


14. Carefully lift the access panel, disconnect the fuel pump controller then fully remove the access panel.

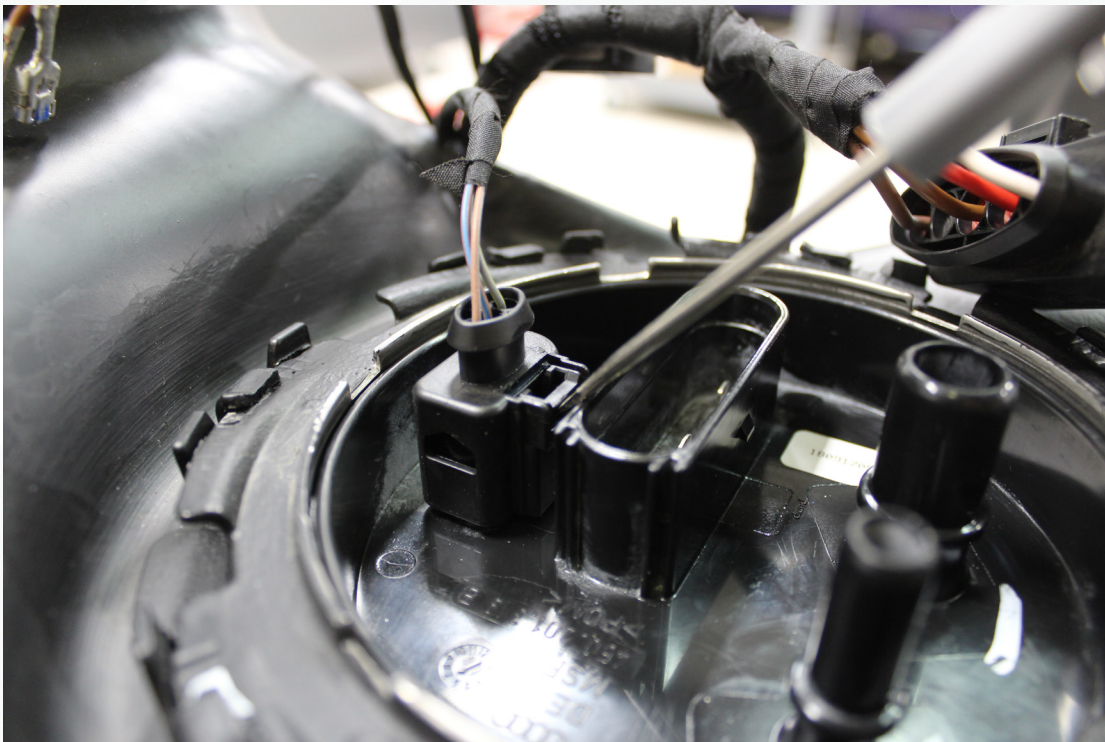
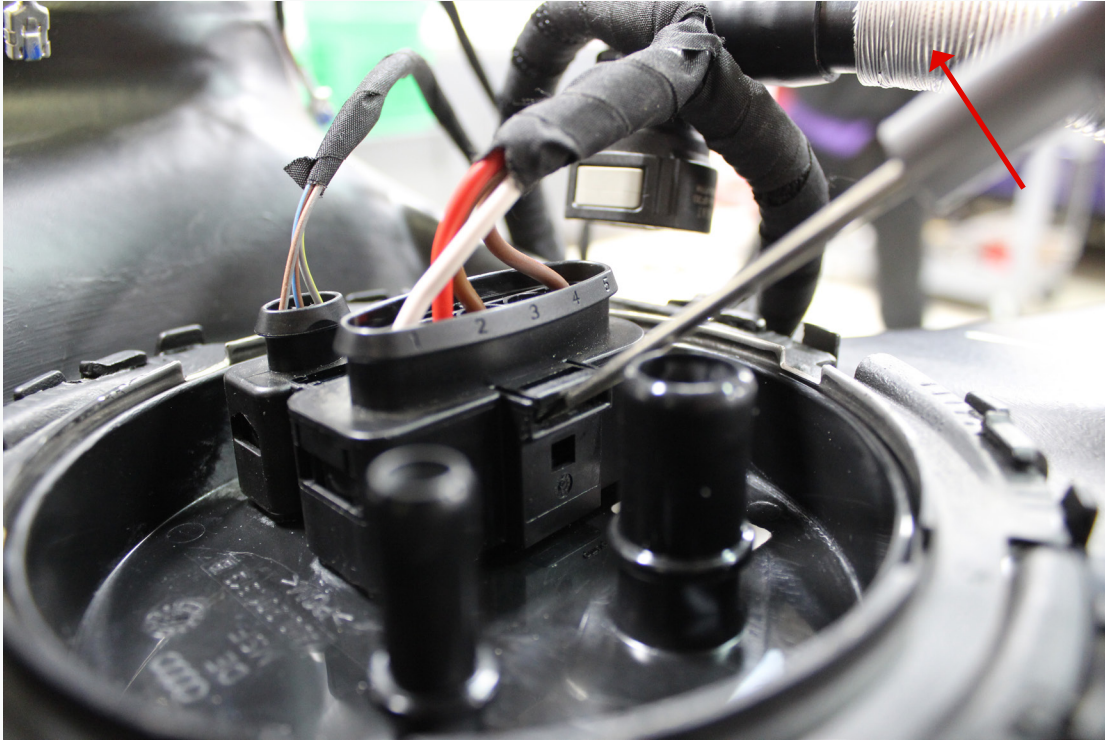


Note: The next few steps are shown with the fuel tank out of the car. This is for illustration purposes only. You do not need to remove the fuel tank.

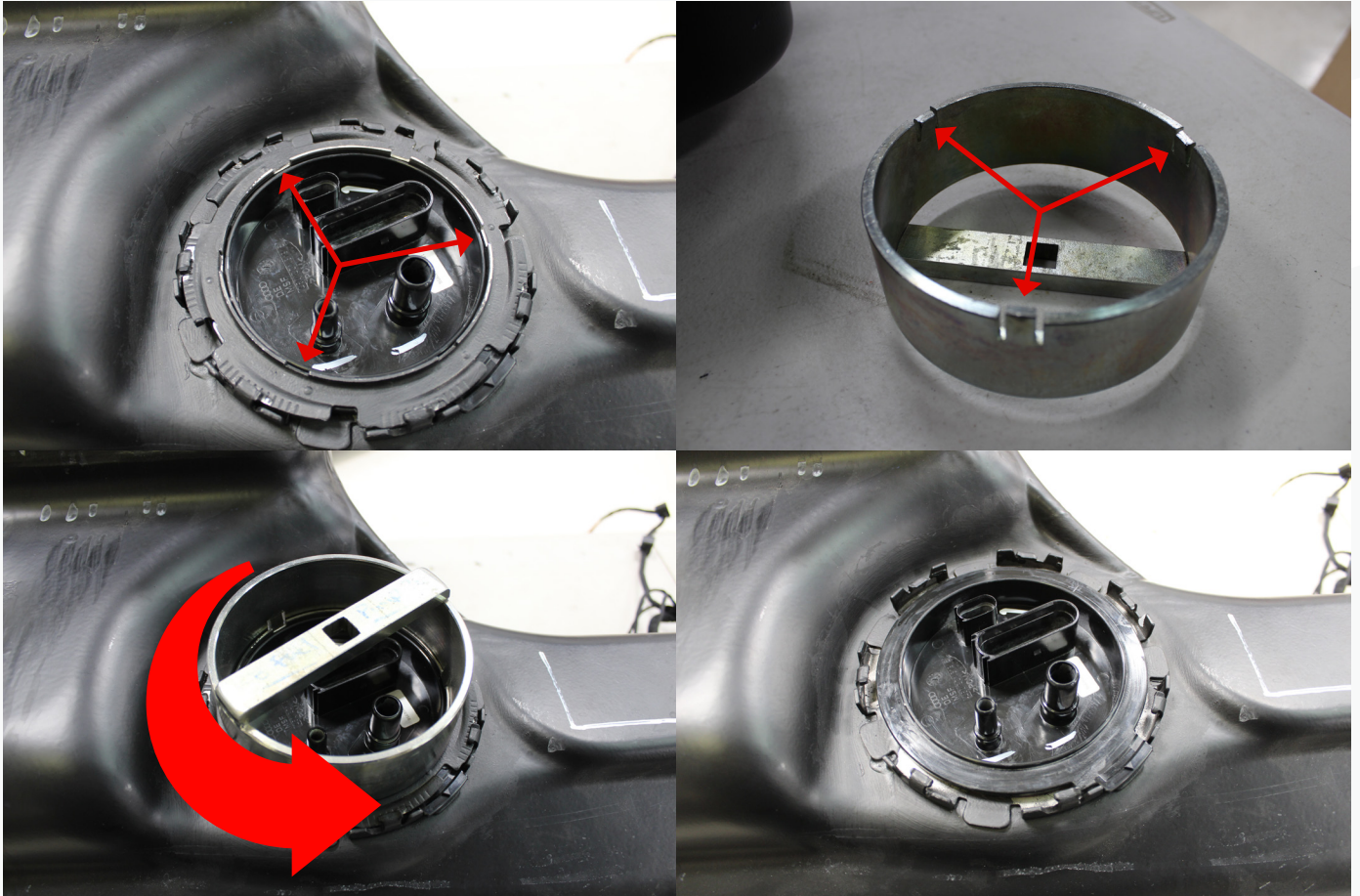
15. Disconnect the two brown static ground wires. Then disconnect fuel line quick connect fittings.



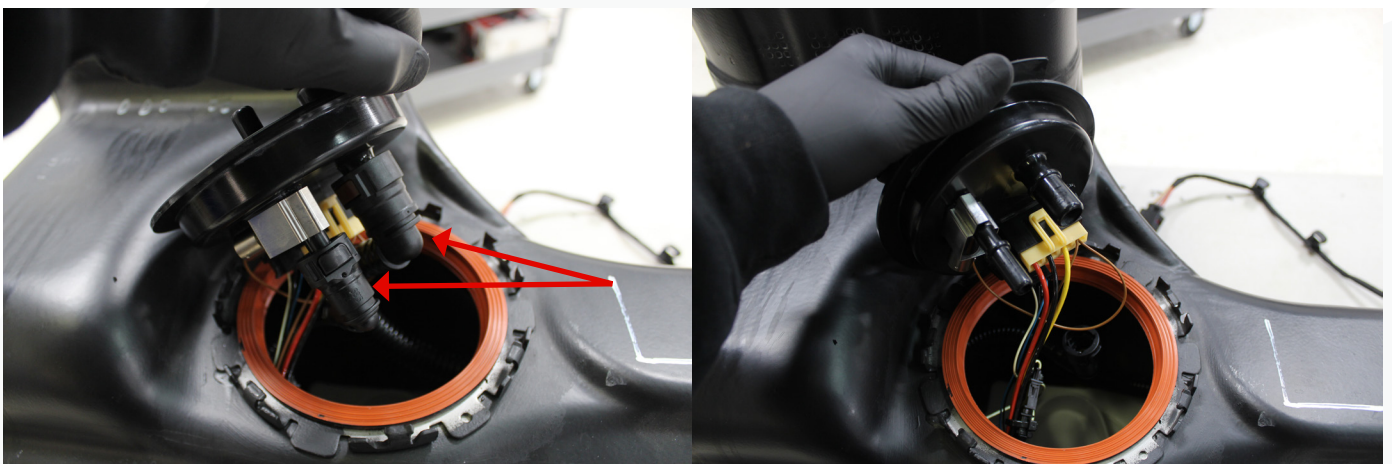
16. Disconnect the two electrical connectors using a small screwdriver to release the lock as shown. Insert the screwdriver into the connector and pry slightly upward.



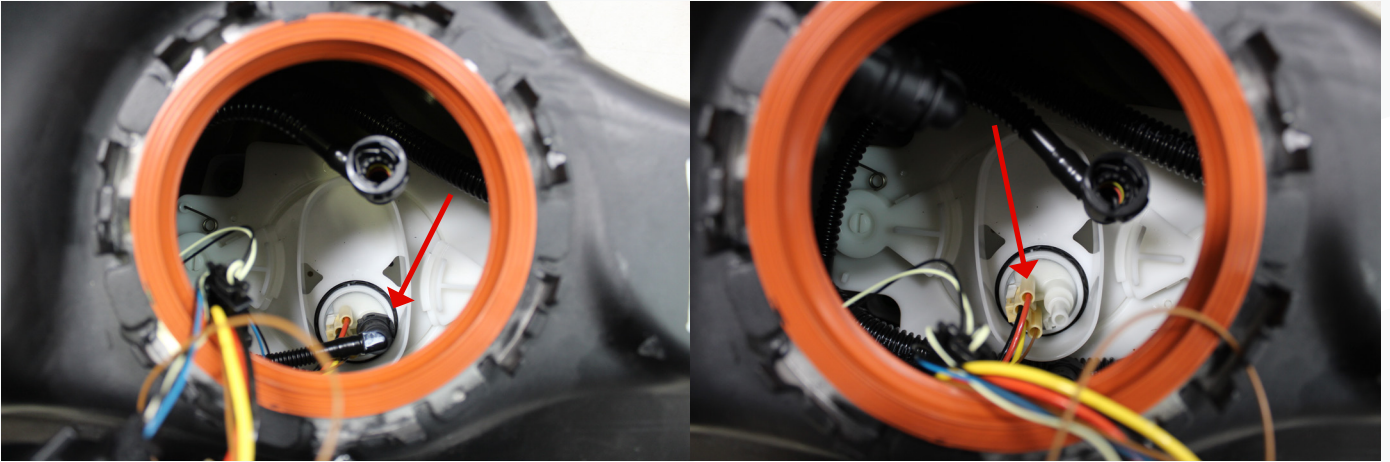
17. Using the locking ring removal tool and a ½” ratchet wrench, align the notches in the lock ring with the notches on the tool. Remove the lock ring and pull the top.



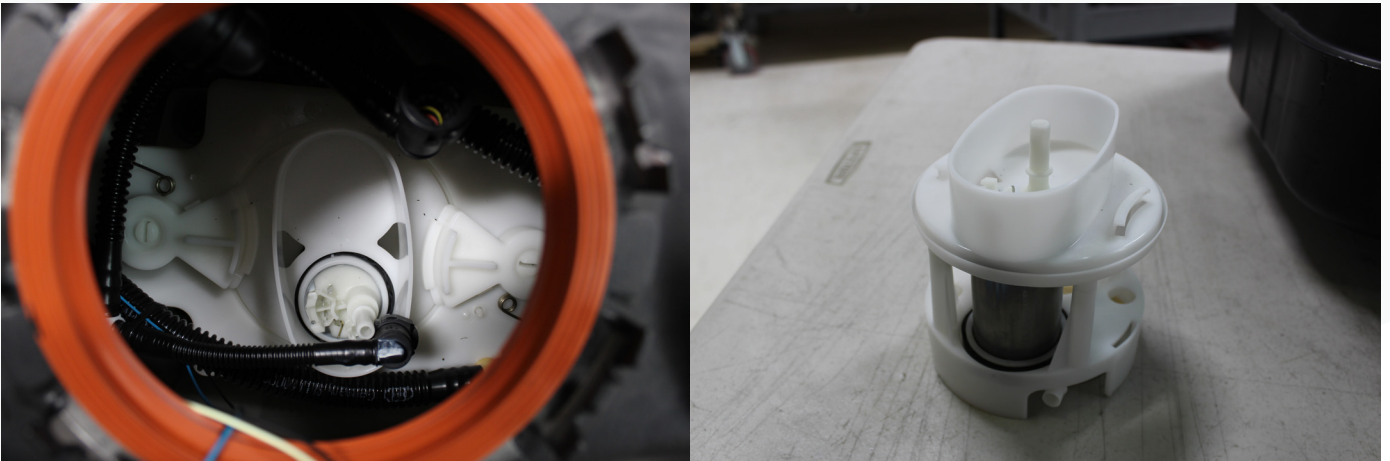
18. Pull the top hat up and disconnect the connectors and quick connect fittings on the backside.



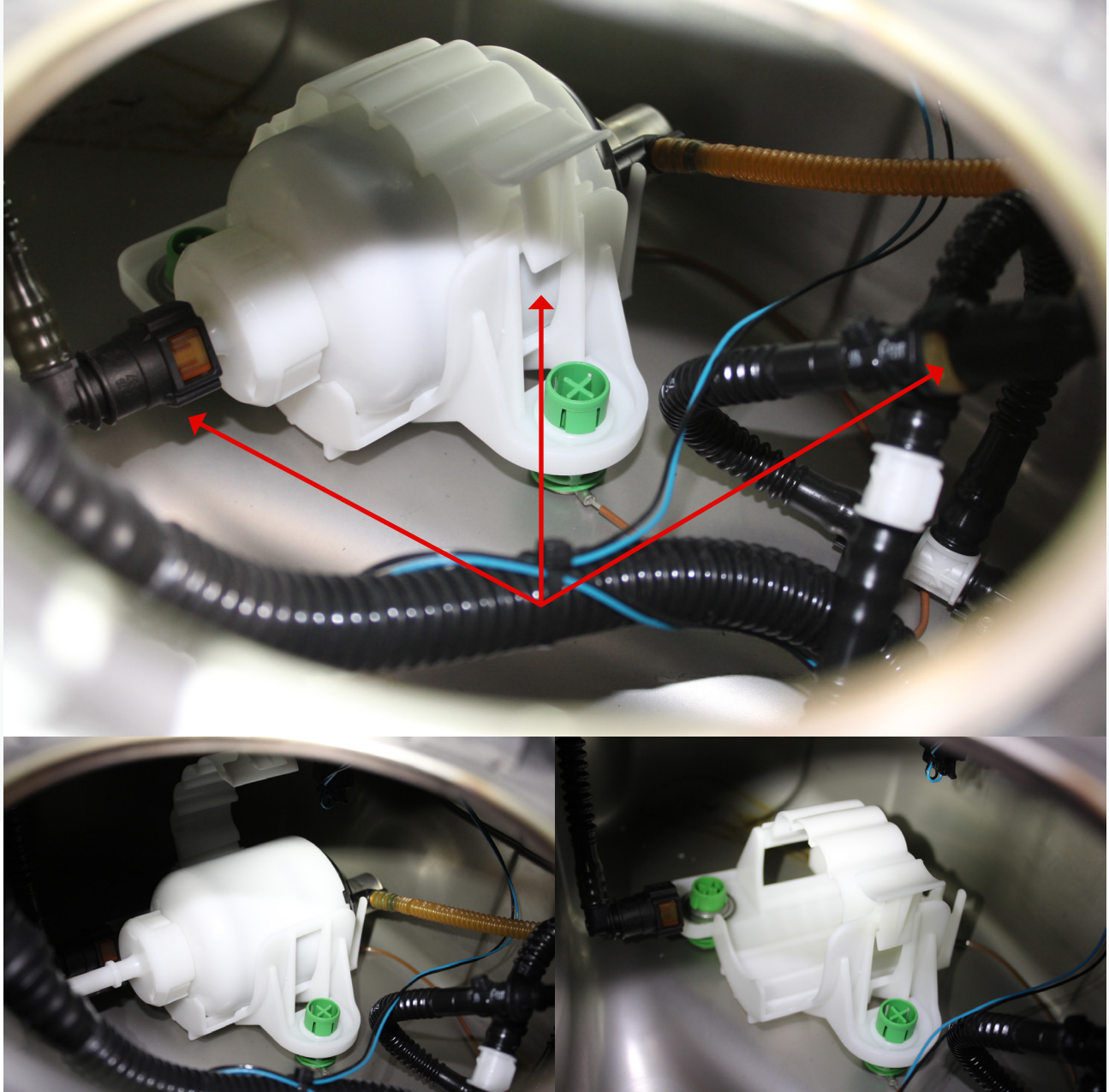
19. In the tank, disconnect the fuel line off the pump and the electrical connector.



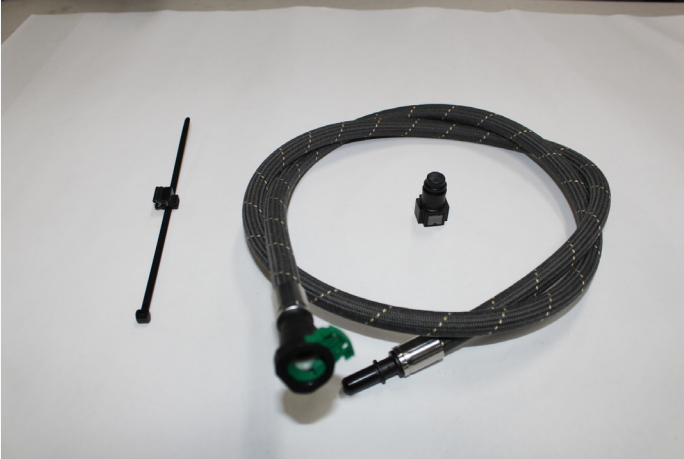
20. Flip the two levers shown and remove the fuel sending unit. None of the parts from the sending unit will be reused.



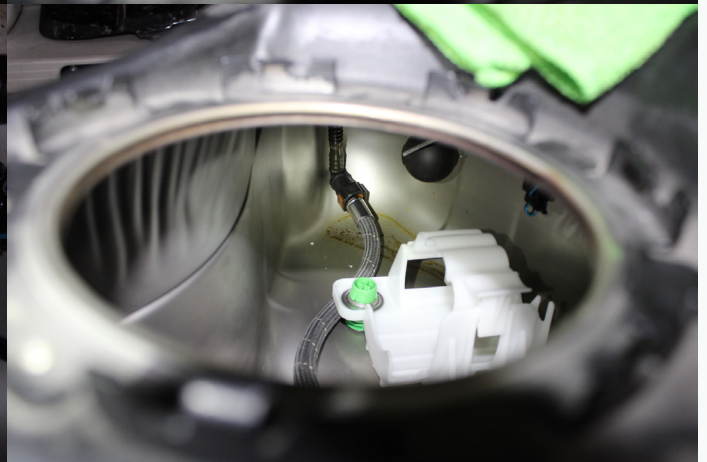
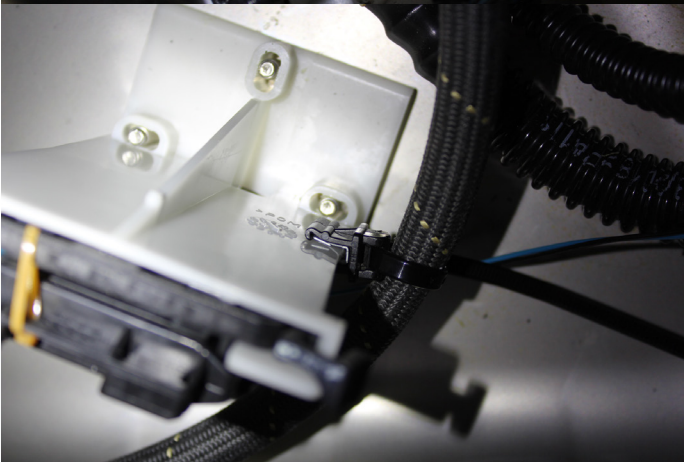
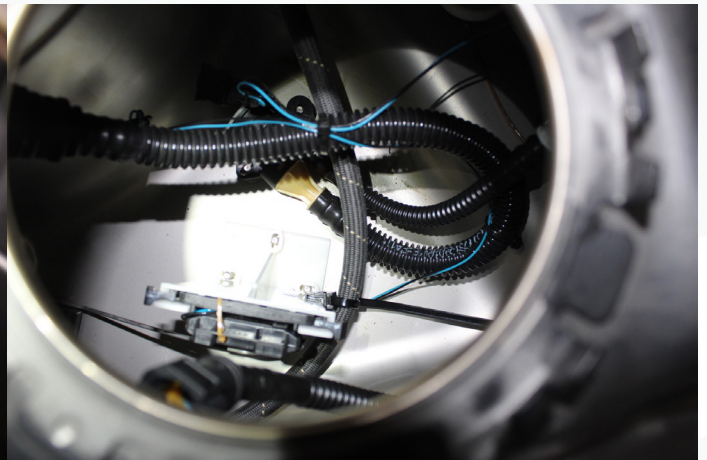
21. We need to make a few changes to the driver's side tank for the Fuel System. Remove the access panel and fuel tank retaining nut as you did before. Locate the fuel filter/fuel pressure regulator assembly near the back of the tank. Release the quick connect fitting and the strap holding the assembly. Then remove the assembly.



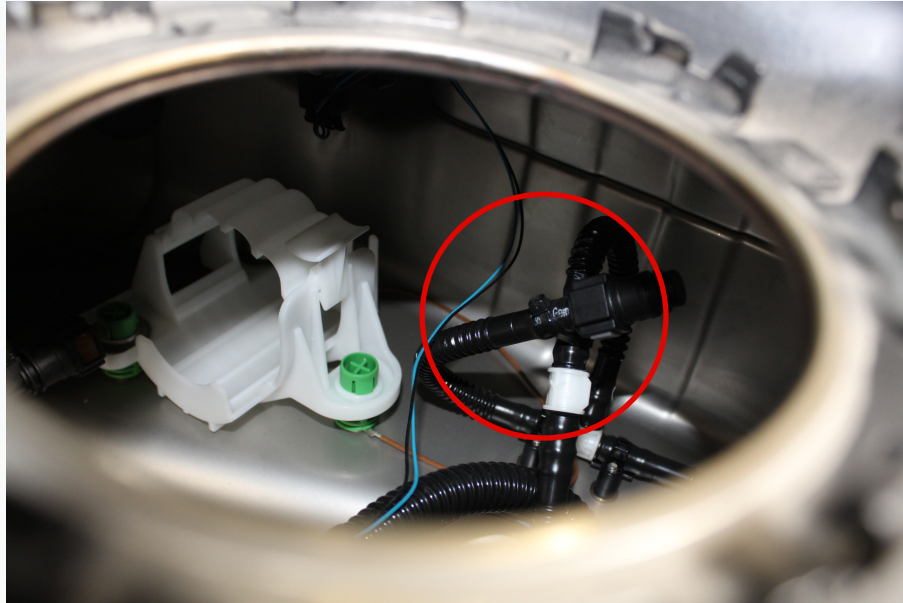
22. Locate the fuel line, fuel line cap and zip tie w/mounting clip. The fuel line needs to run from tank to tank. I found it was easier to feed the male fitting from the passenger tank through the crossover tube to the driver side tank. See photos below.



23. On the driver side tank, route the line away from the level sensor by leaving a little slack in the line and wrapping around the backside of the sensor with the zip tie mount. Then make the connection as shown in the last photo below.



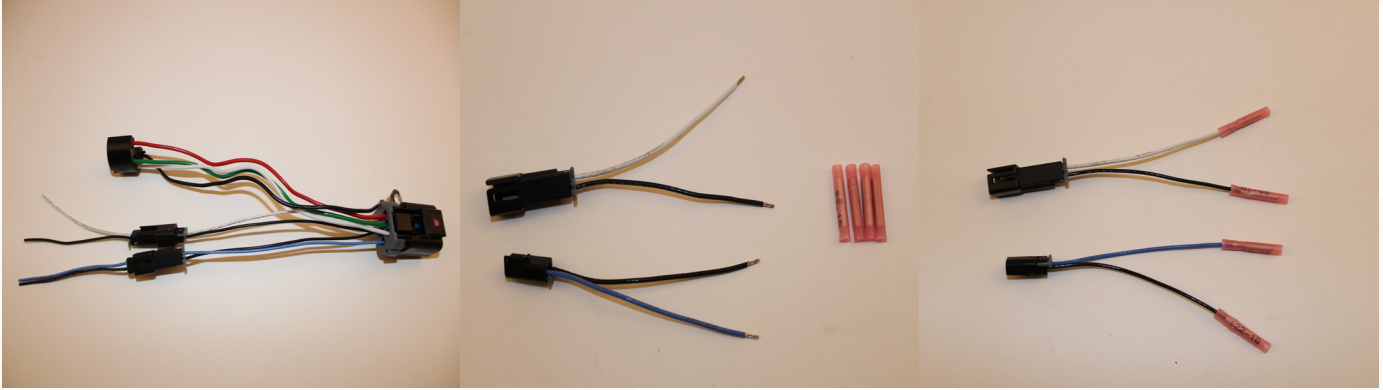
24. Install the cap to the remaining open fitting.



25. Gather the red top hat and fittings shown below. Lubricate the O-rings on the three fittings. Leave the middle fitting out until a later step. Also, apply red loctite to the threads of the AN fitting and install them in the locations shown below. Set it aside for now.



26. Locate the harness with the (4) unterminated leads on it, 2 black, 1 white and one blue. Disconnect the (2) 2-pin connectors from the harness. Using (4) standard red/pink butt connectors (provided), strip the 4 unterminated ends and crimp the butt connector.



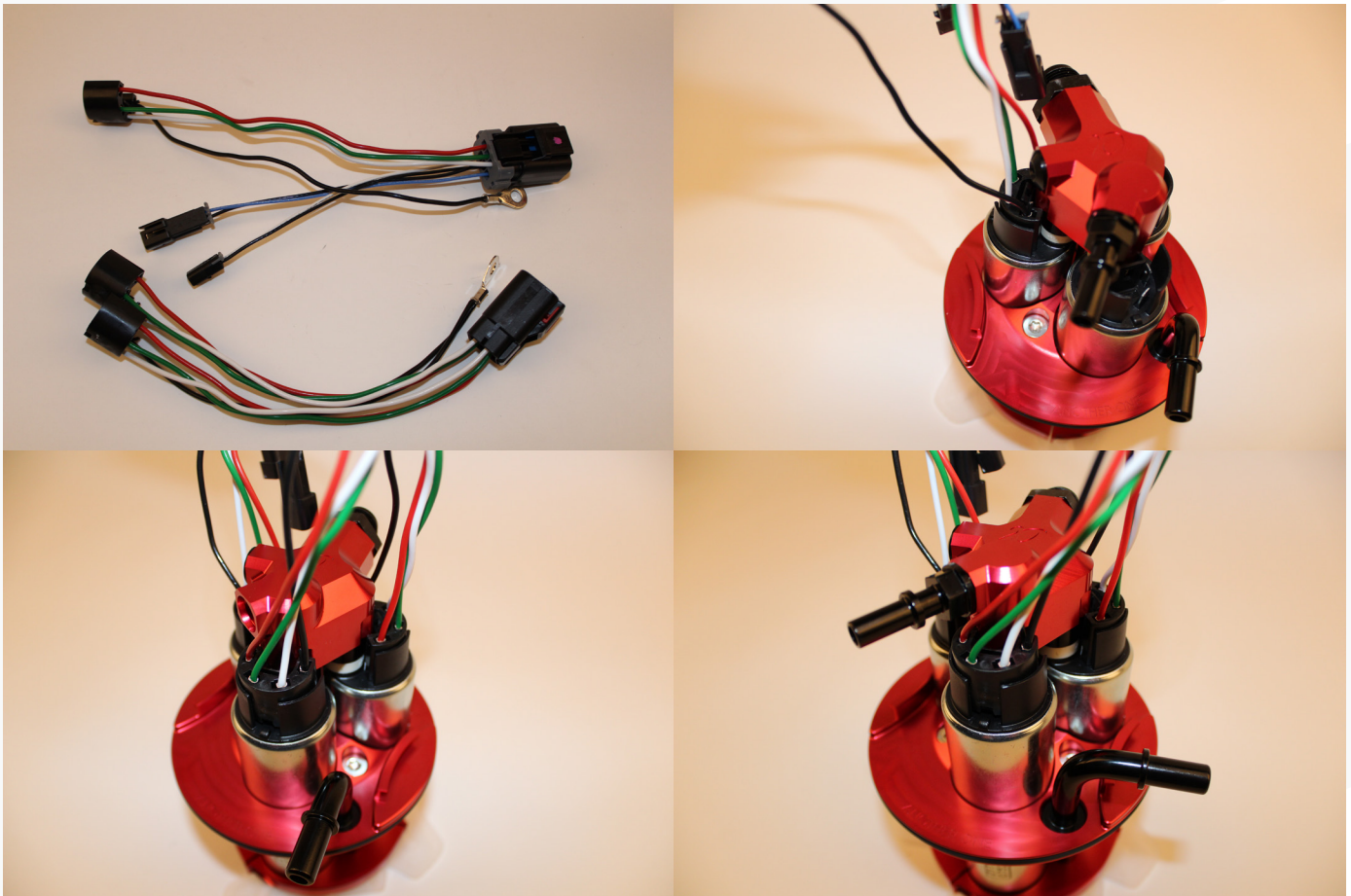
27. Using the factory in tank level sensor disconnected from a previous step. Cut the blue wire and the associated black wire. Strip the wires back and match them with the prepared blue and black wire jumper harness. Make the crimp connection. Repeat with the white and black wires.



28. The AMS Triple Pump sending unit is semi-assembled. Install the (3) pickup screens onto the pumps. Notice which pump is sitting higher than the other two (circled), install that screen first. Position all 3 so they overlap each other, and the sending unit sits as low as possible.



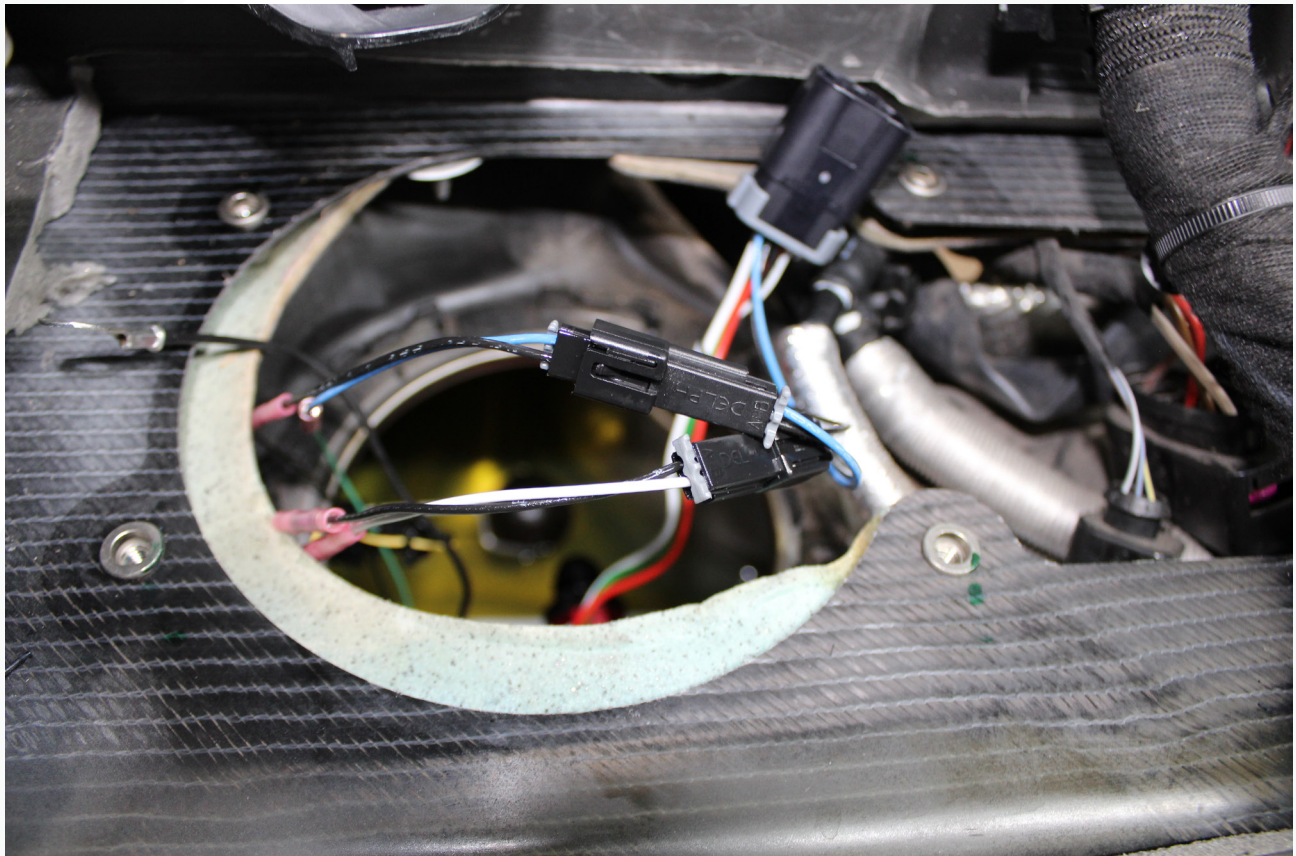
29. Locate the harness with (2) horseshoe connections and the main pump harness (1 horseshoe connection) from step 26. Plug in the harness with the single horseshoe connection on the left side of the assembly near the ORB plug. Plug the other (2) pumps in with the harness with (2) horseshoe connections. You may need to remove the quick connect fitting to plug in the pump.



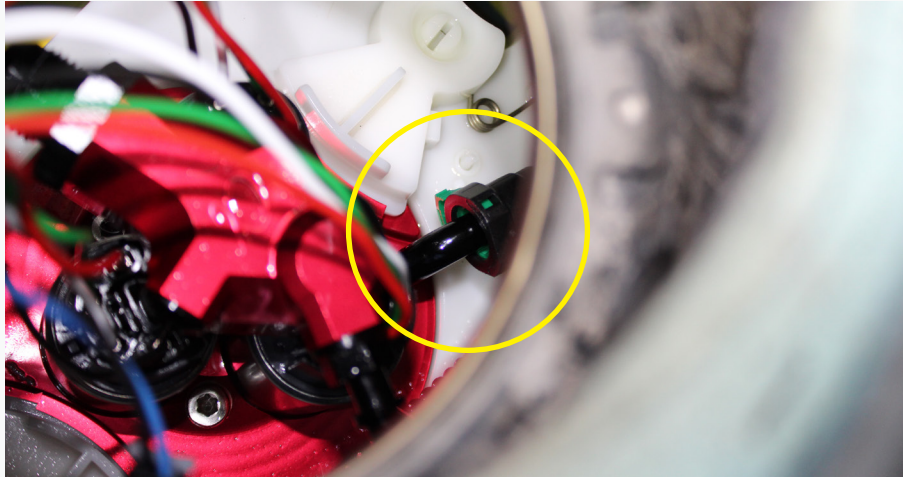
30. Place the assembled fuel pump assembly into the tank, the 8 AN fitting should be pointing towards the back of the vehicle. The pickup filters may need some slight adjusting to get the assembly to sit flat and allow the two locking tabs to lock the assembly in place.



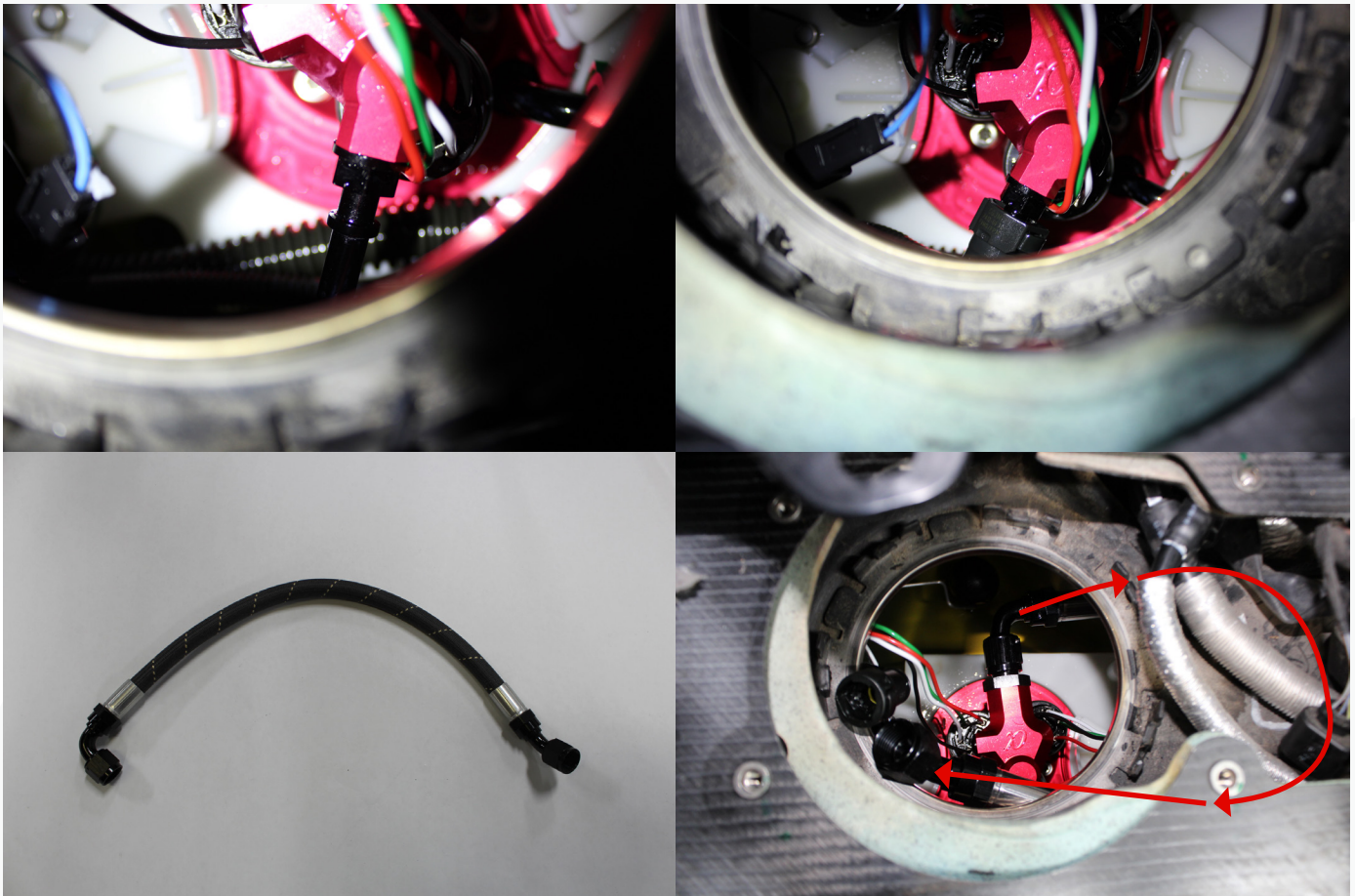
31. Connect the new level sensor connectors to the appropriate fuel pump harness connections.



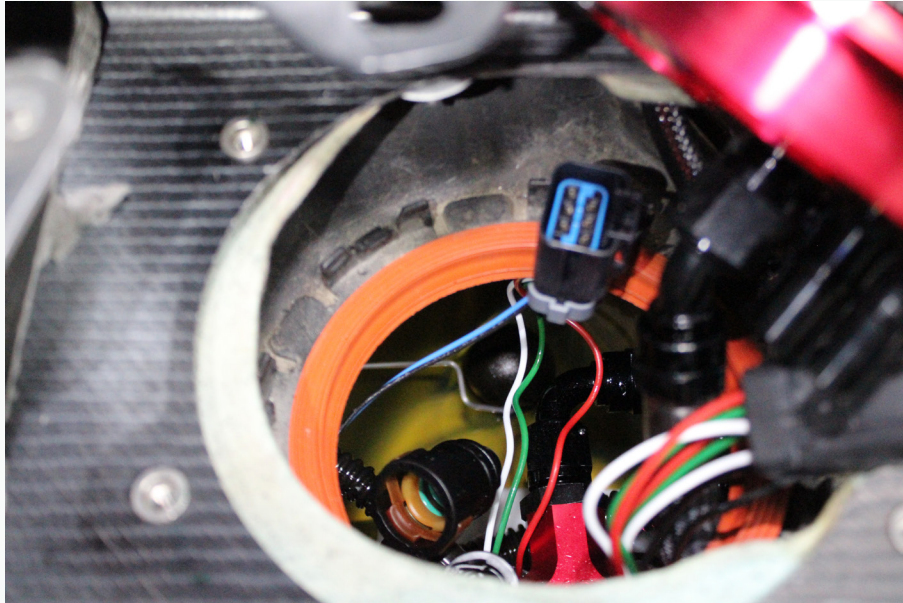
32. Connect the fuel line that was ran in step 22 to the fitting that was added to the basket as shown below.



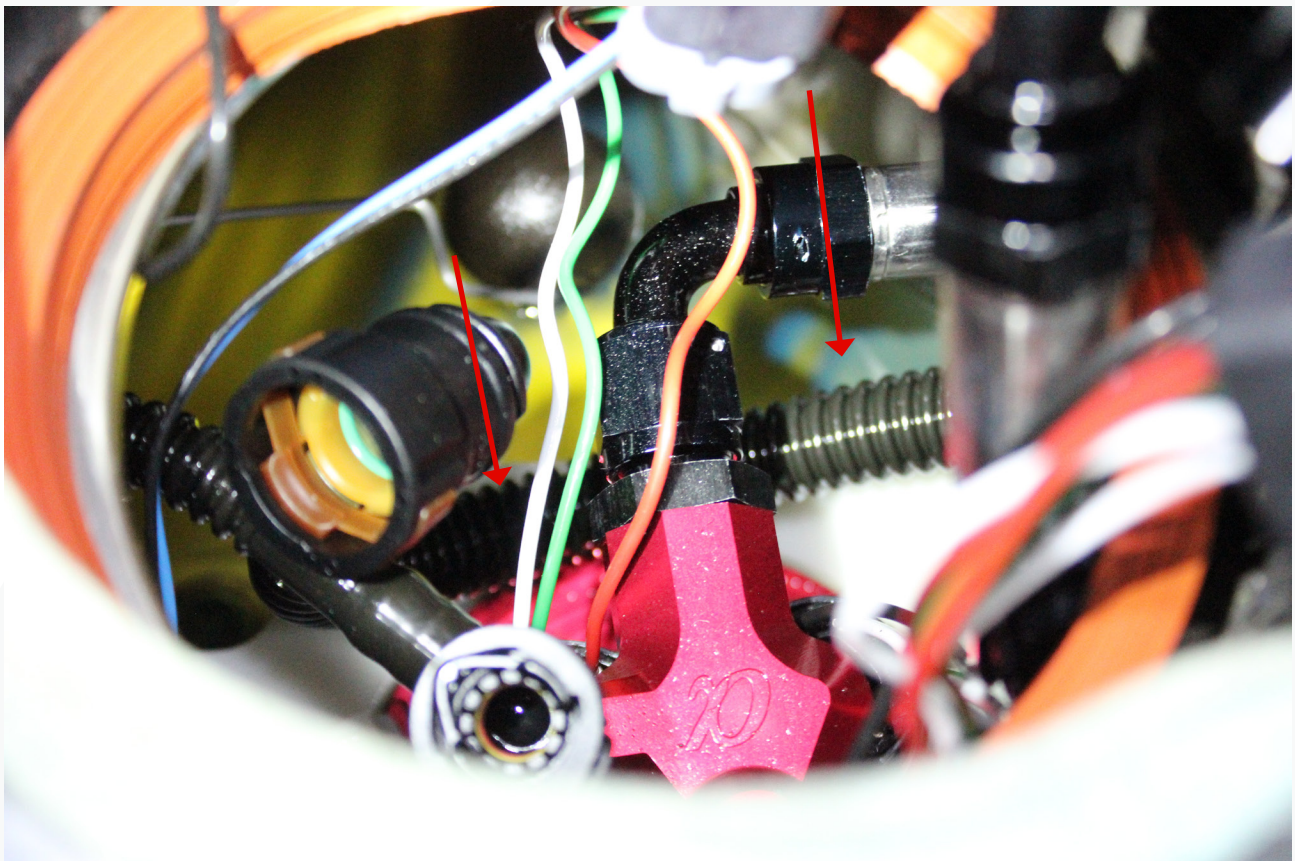
33. Connect the OEM quick connect fitting from the factory pump in step 19 to the quick connect on the fuel pump manifold. Locate the provided -8AN fuel pump outlet line and connect it to the fuel manifold. Route the line to the right and loop it back towards the fuel tank opening.



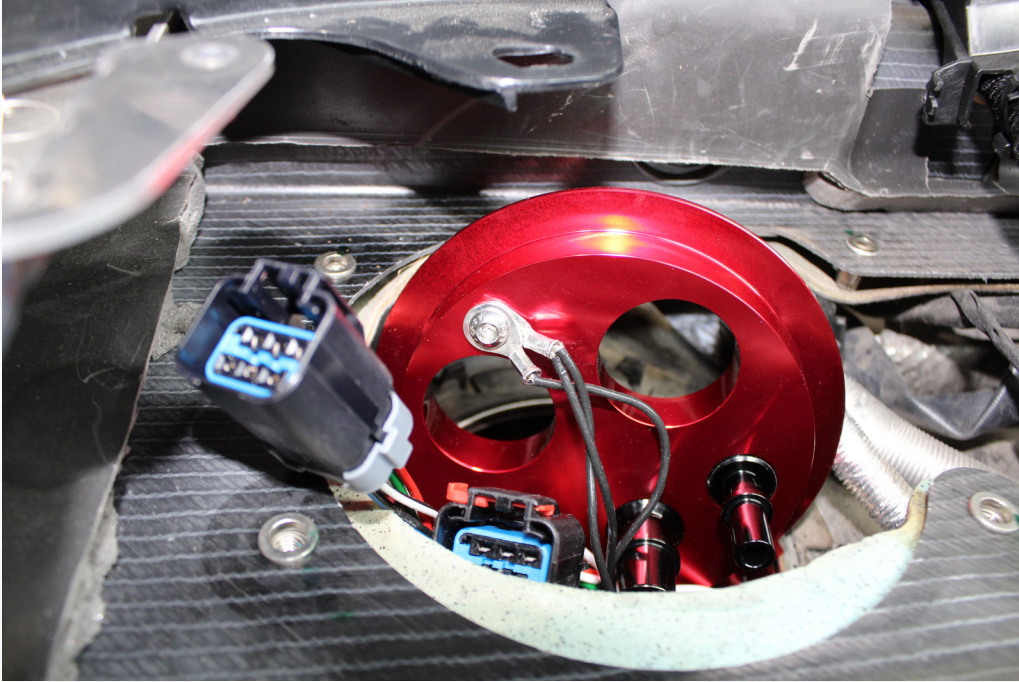
34. Install a new fuel tank seal.



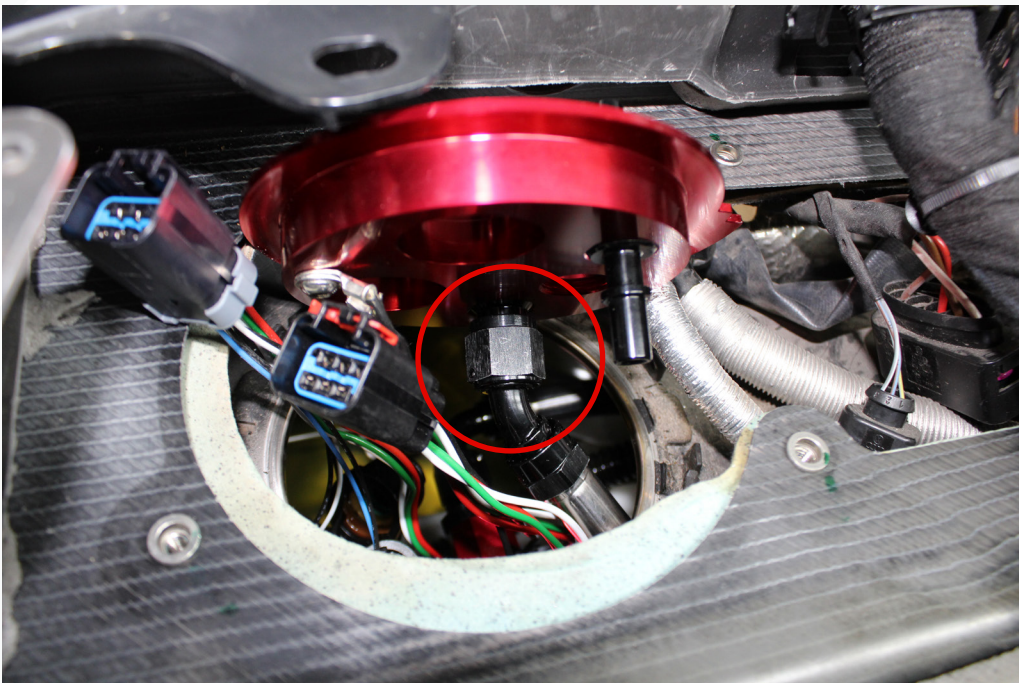
35. Before installing the top hat, we need to make sure the large quick connect line in the tank runs below the fuel pump manifold and up towards the top hat. This step is very important for proper fitment. See photo below.



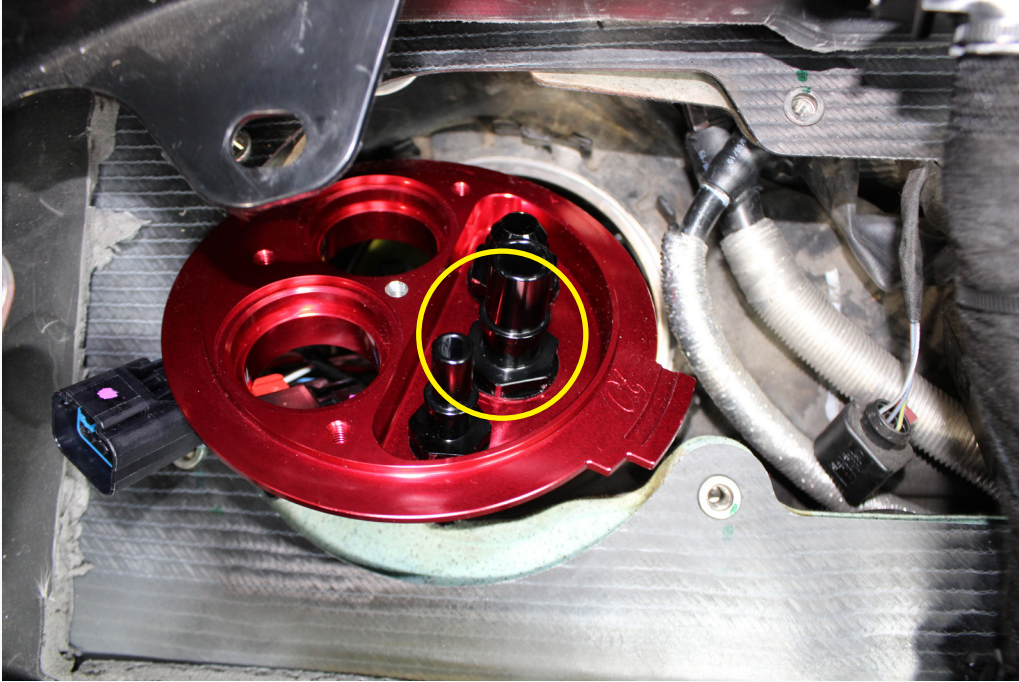
36. Install the two in-tank ground wires to the top hat using an M6 button head bolt. Position the eyelets so that they won't interfere with two connector holes.



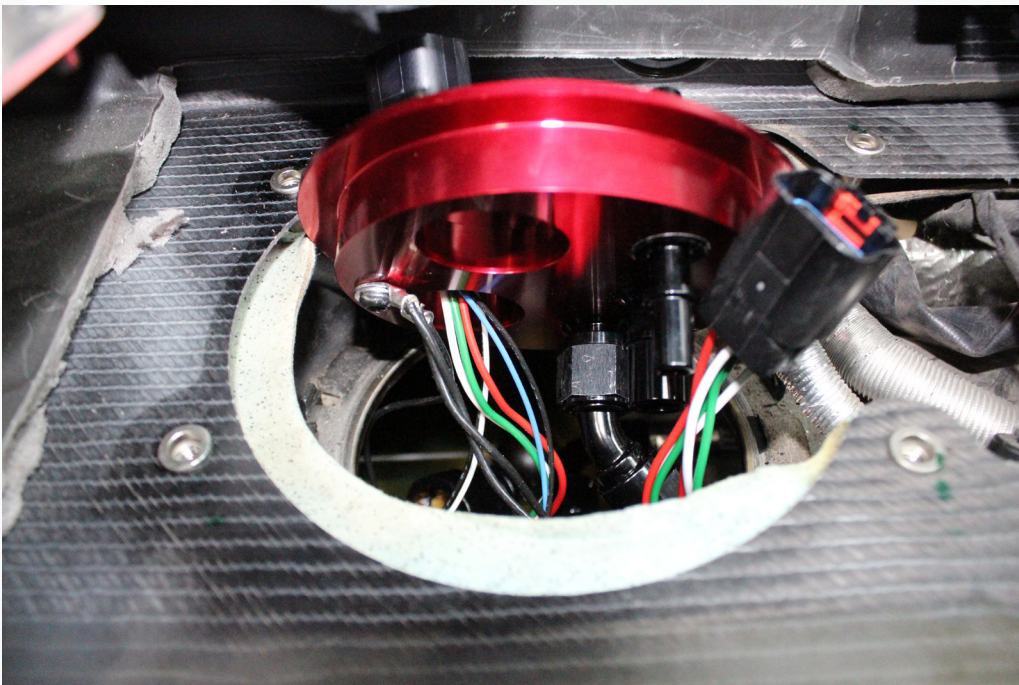
37. Install the -8 AN fuel line to the top hat. You may need to hold the other side with a wrench while tightening to prevent it from backing out.



38. With the line now tight, install the middle/large quick connect fitting into the top hat.

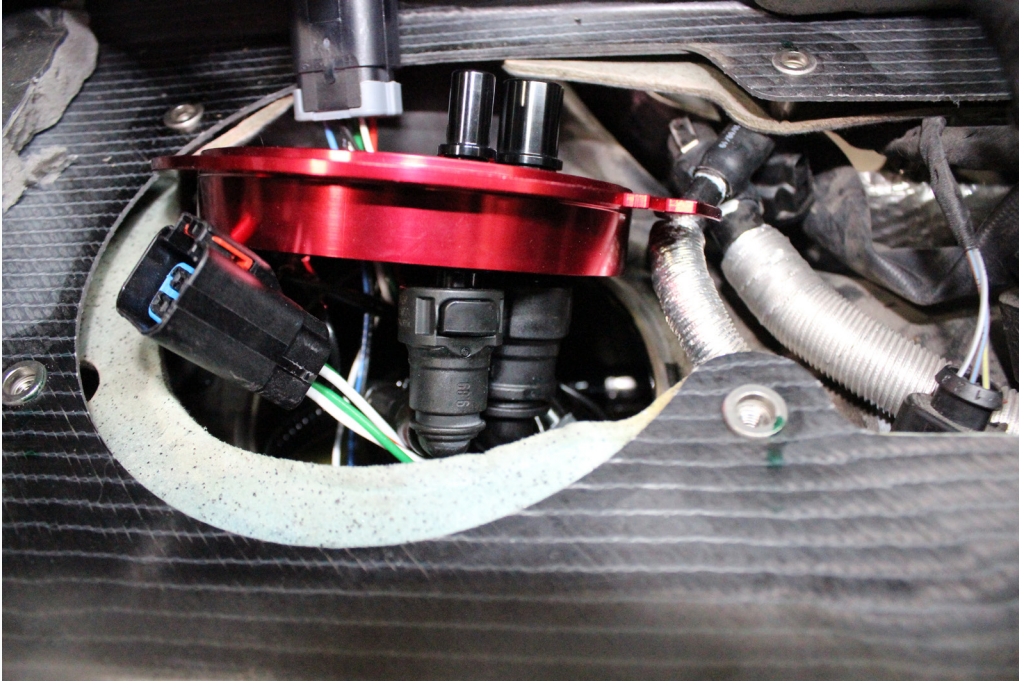


39. Feed the fuel pump harness with the (2) level sensors connector through the rear opening of the top hat.

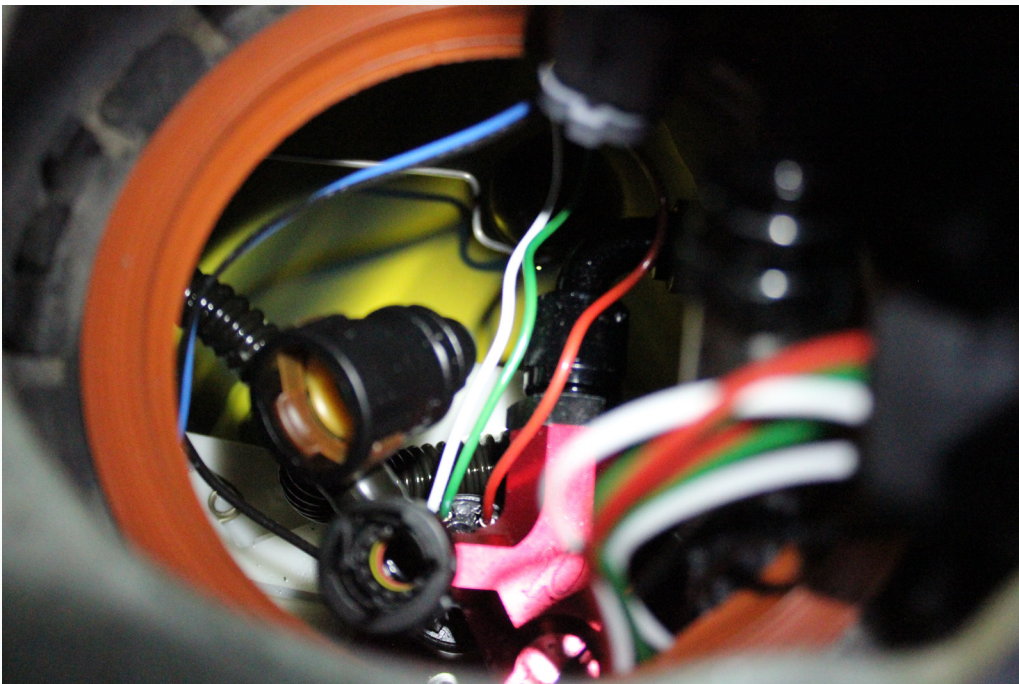


40. Install the (2) factory quick connect fittings into the top hat.

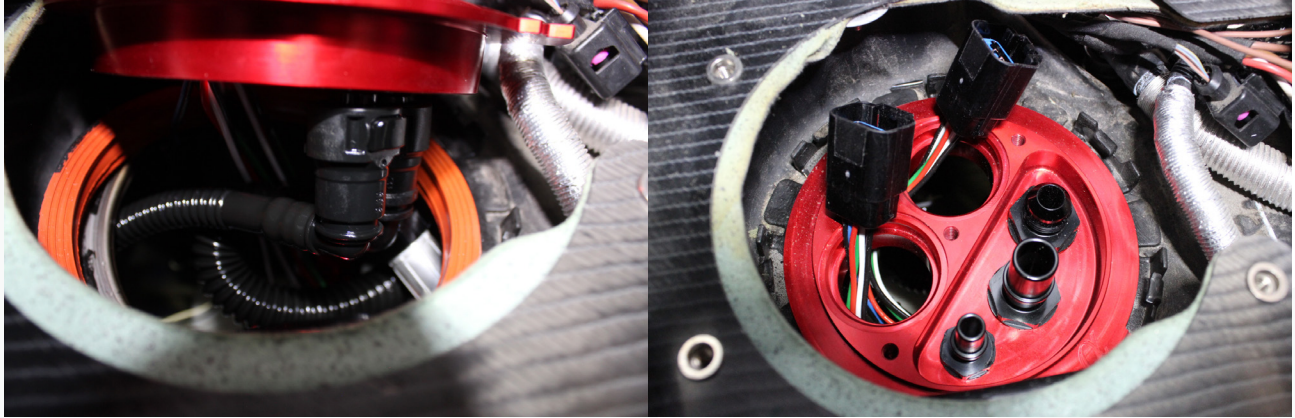
Tech Note: Be sure the quick connect fittings are properly seated and cannot be removed with a simple tug.



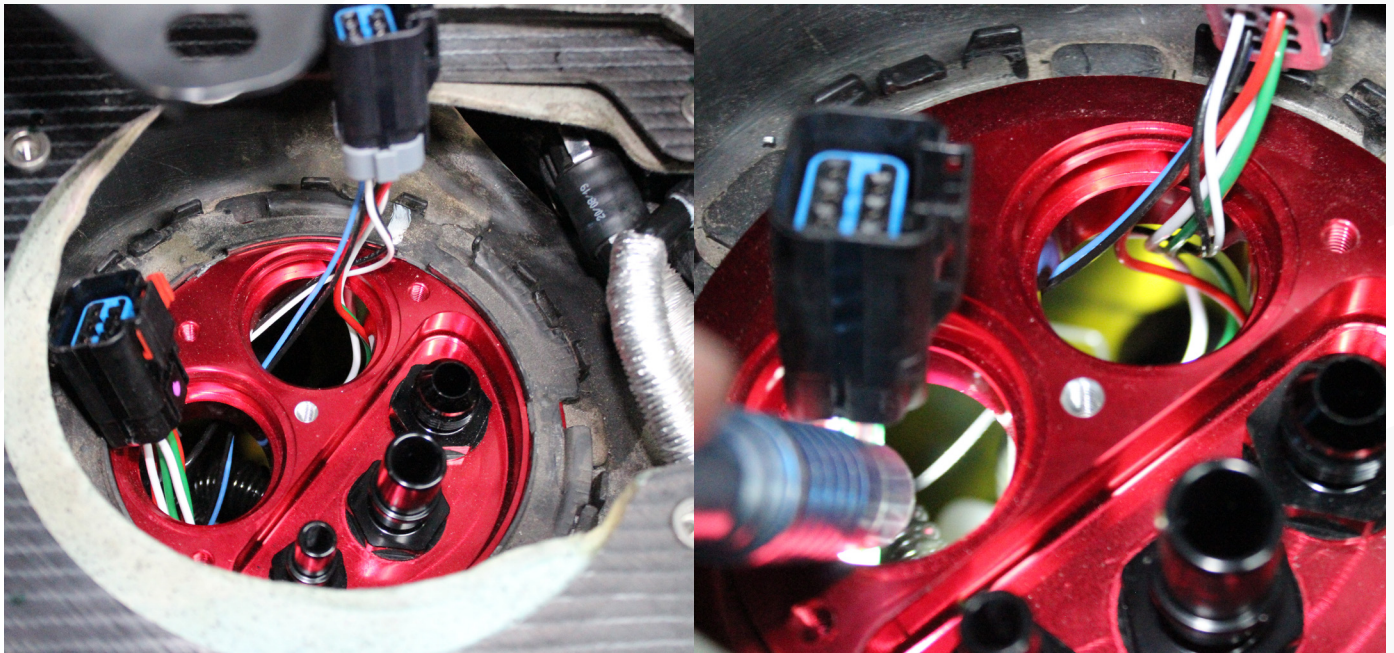
41. At this point, look around the inside of the tank and make sure the area around the level sensors is clear and that when you install the top hat nothing will get in the way.



42. Pass the remaining fuel pump harness through the opening, then install the top hat onto the tank



43. Before installing the retaining ring, use the connector holes to verify all internal lines and wires are not kinked or obstructing level sensor operation. Once verified, install the top hat retaining ring with the special tool.

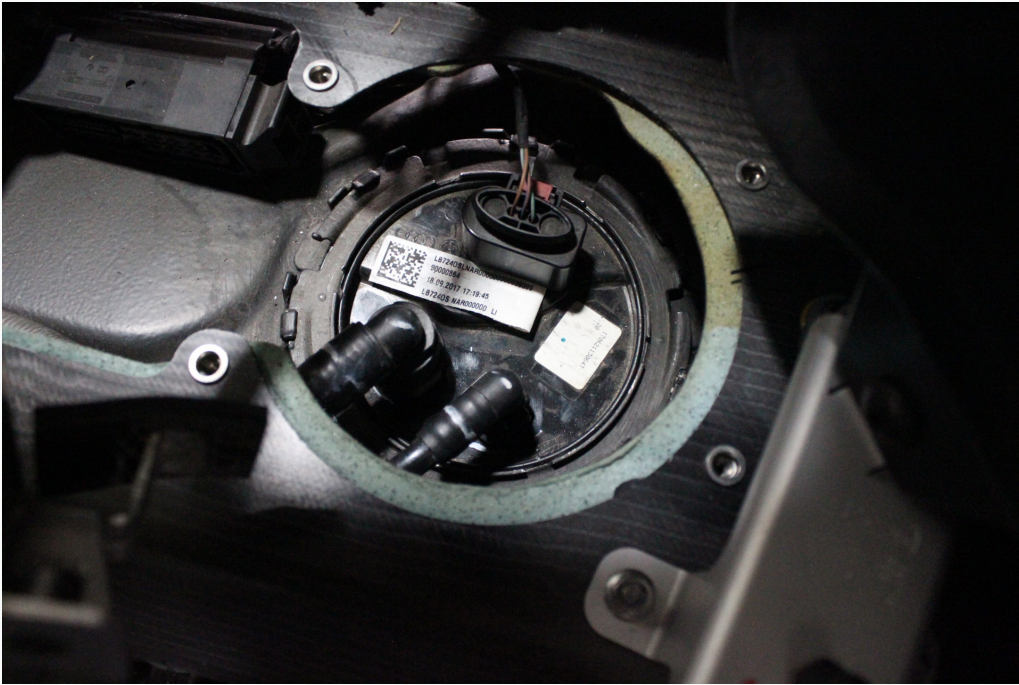


44. Gather the following parts – bulkhead connectors, O-rings, connector plate and button head hardware. Lubricate the O-rings and then install them onto each connector. Connect the bulkhead connectors to the pump harnesses. Place the connector plate onto the connectors and walk it into place. Press firmly on each connector to seat them in the top hat. Fasten the top with (4) M6 button head bolts, leave the middle one loose for now.



45. Install a new seal (provided) to driver's side tank. Then reinstall the factory top hat, top hat nut and connections.

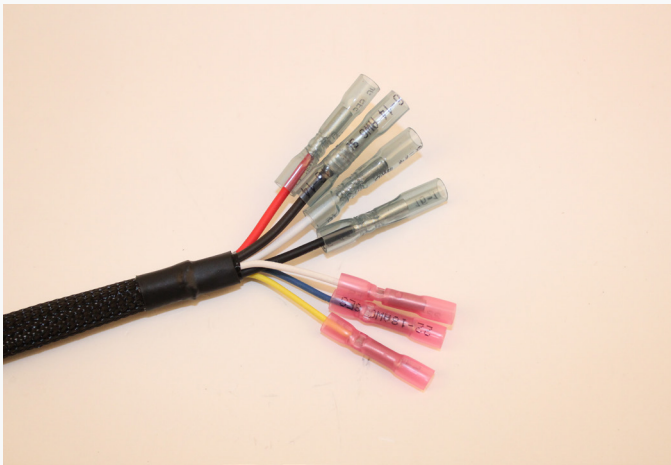
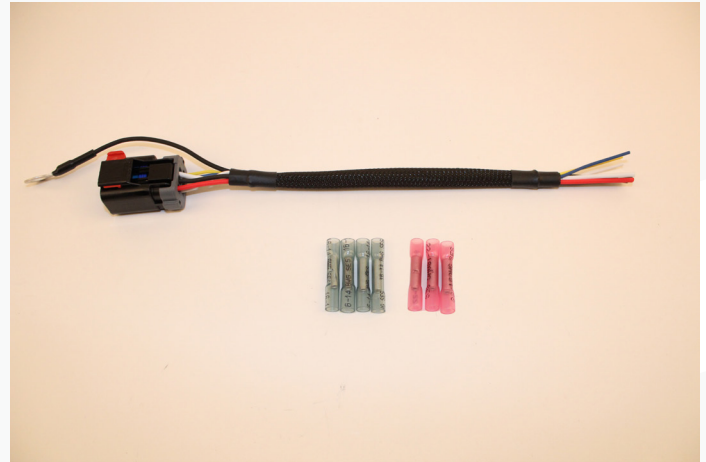
Tech Note: Be sure the quick connect fittings are properly seated and cannot be removed with a simple tug.



46. Install your fuel feed line of choice. If you purchased the Alpha Engine Bay Fuel Line Kit, then it will be the long heat wrapped line. Route the line through to the engine bay near the coolant reservoir while staying behind the heat paneling on the fuel tank to protect it from the exhaust manifolds. More detailed photos of the engine bay routing will be in the next chapter. If you haven't already, reconnect the (2) factory top hat lines.

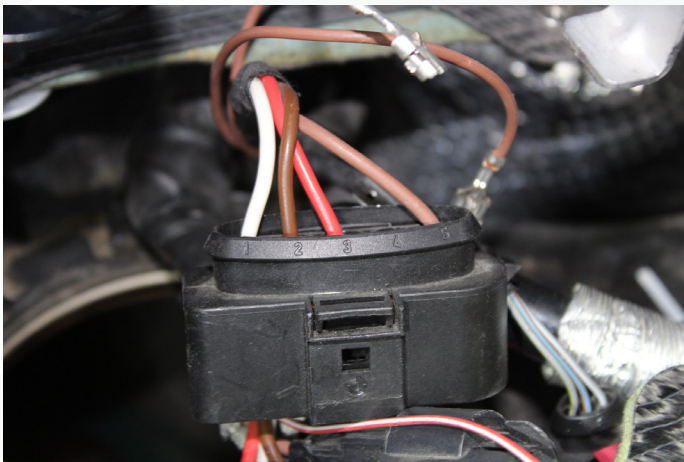


47. Locate the top hat harness with the unterminated ends, (4) blue and (3) red heat shrink butt connectors. The brown and black wire are very similar in color, the black wire will have the ring terminal at its opposite end. If need be, use a multimeter to ohm the wire to be sure which is which.

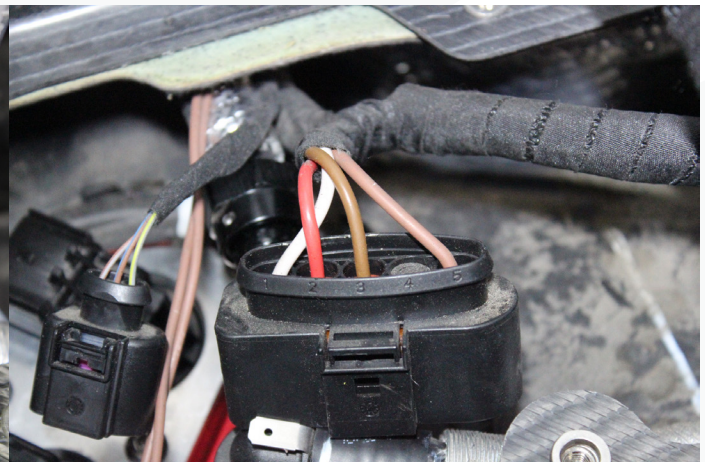


48. Strip all the wires and crimp on the appropriately sized butt connector.

49. The next step is very important. Depending on your vehicle the brown and red wire are switched. Match your vehicle to the photo and proceed to the appropriate step.

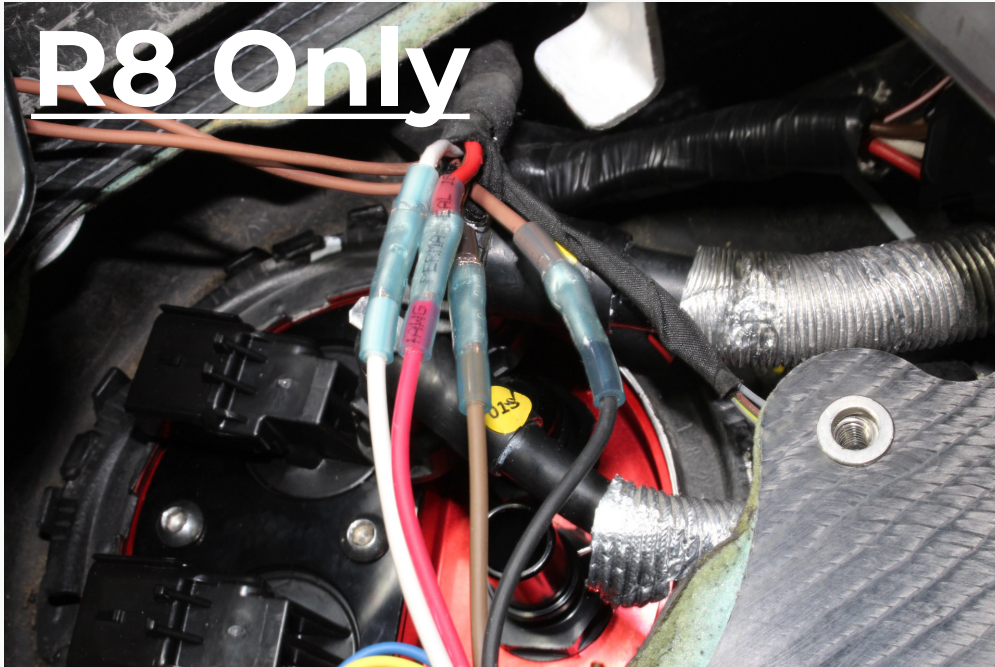


Typically found on Audi R8,
Continue to step 50.

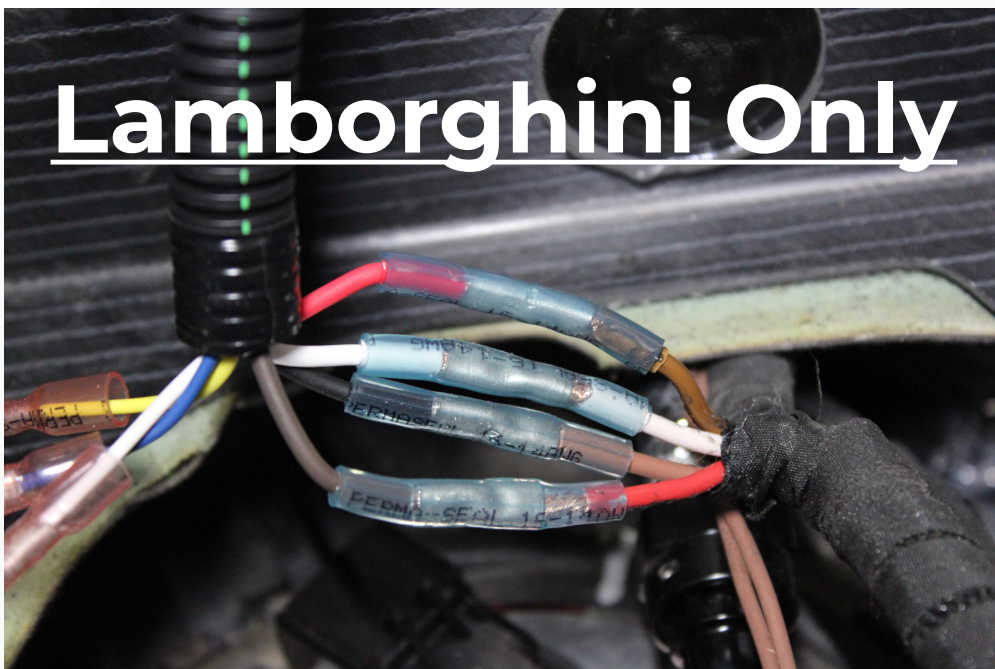


Typically found on Lamborghini,
skip to step 51.

50. **Audi R8 Only:** Peel back some of the wire wrap, then cut the lonely light brown wire from location 5 and crimp it to the black wire with the ring terminal from step 48. Then match the rest of the wire colors to the blue heat shrink butt connectors. **Continue to step 52.**

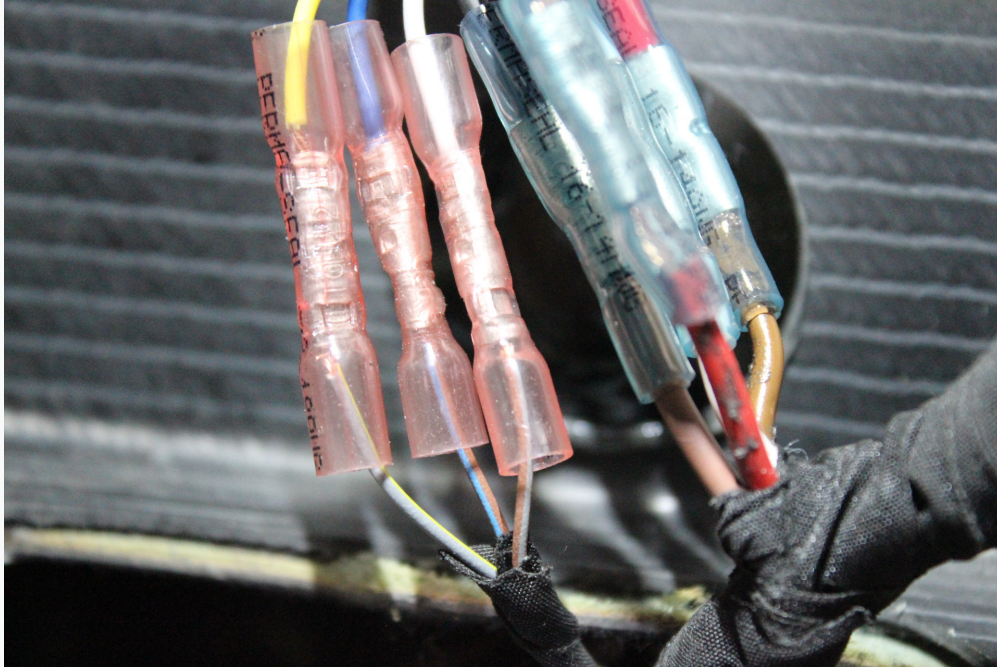


51. **Lamborghini only:** Peel back the wire wrap, then cut the lonely light brown wire from location 5 and crimp it to the black wire of the harness prepared in step 48. Next cut the other brown wire from location 3 of the factory connector and connect it to the red wire of the AMS harness. Now continue with factory red wire and connect it to the dark brown of the AMS harness. Last connect the white wire to white wire of the AMS harness. See photo below.



52. **All models continue from here:** Locate the level sensor connector. Match the three wire colors from the AMS harness to the tracer wire of the factory harness.

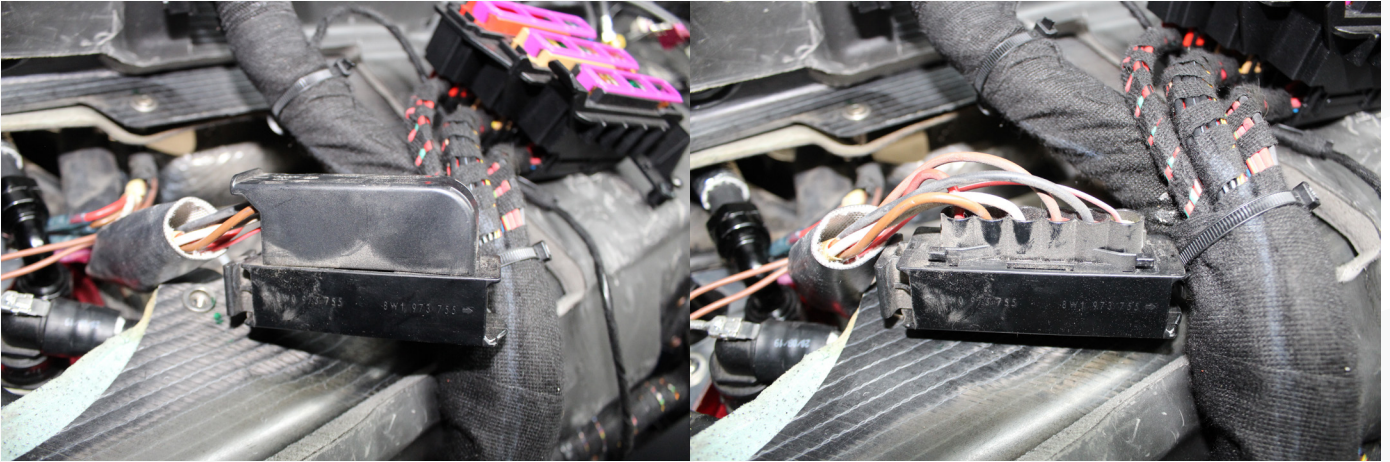
Yellow wire to gray wire with yellow tracer, blue wire to brown wire with blue tracer and white wire to brown wire with gray tracer.



53. Heat shrink the connectors and connect the harness to the rear connector (the one wired to the level sensors and one pump). Connect the ring terminal to the middle top hat bolt and tighten.



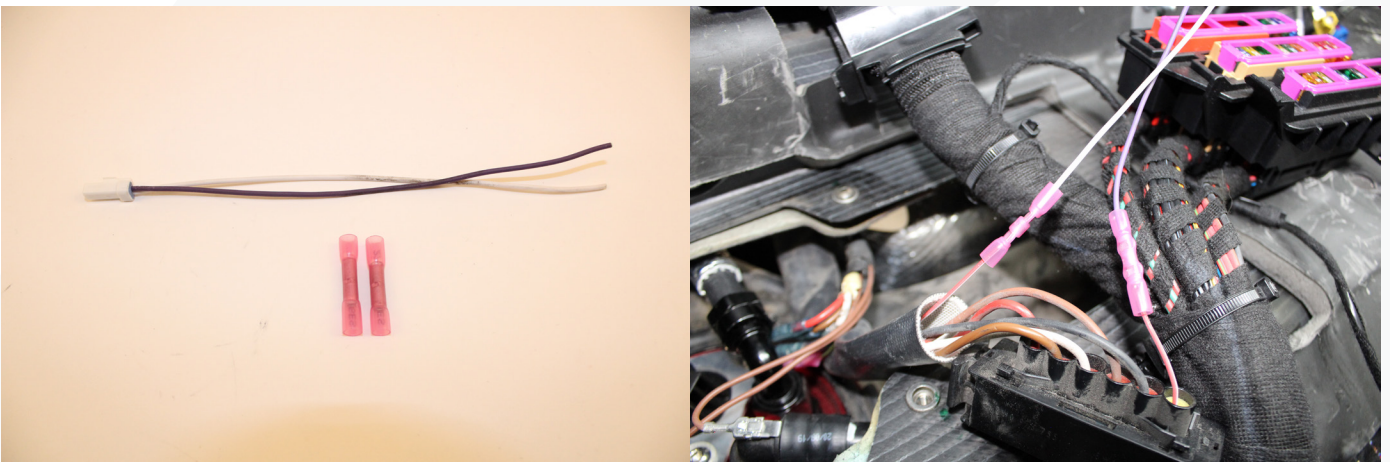
54. Take the cover off the back of the OEM fuel pump controller connector.



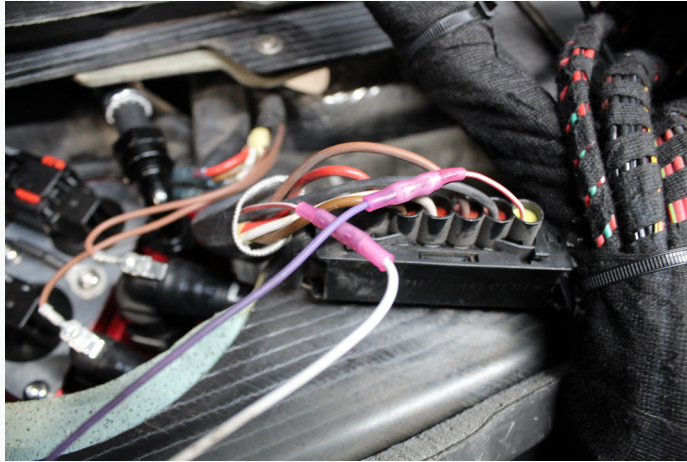
55. Cut the small red wire about and 1 ½ inches away from the connector.



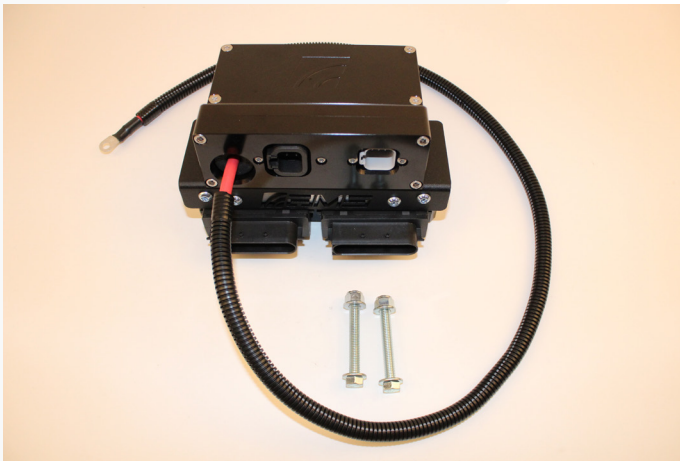
56. Using the small unterminated pigtail from the PDM harness, splice in the wires using (2) pink heat shrink butt connectors. Connect the purple wire to the end going to the fuel pump controller connector.



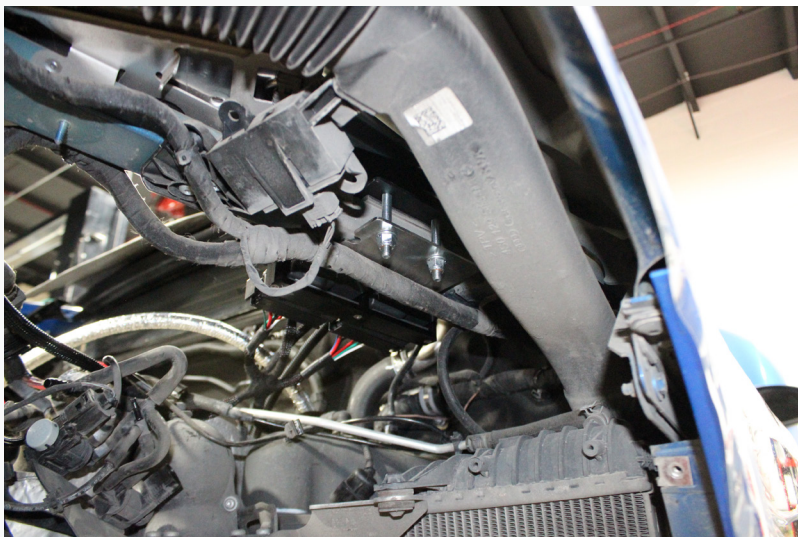
57. Using a heat gun, shrink the butt connectors to seal the wire.



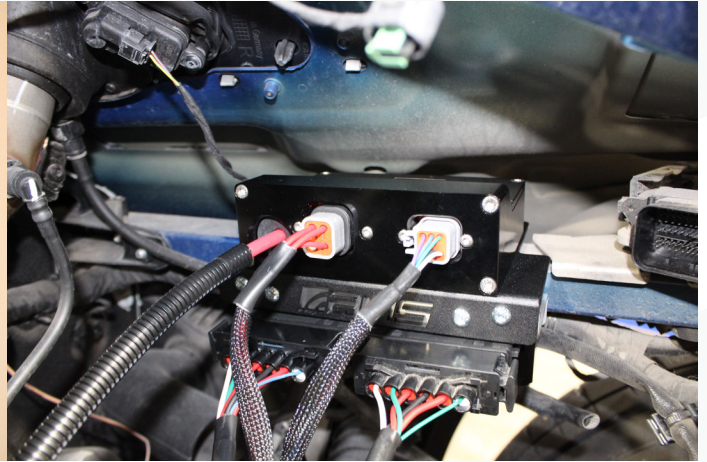
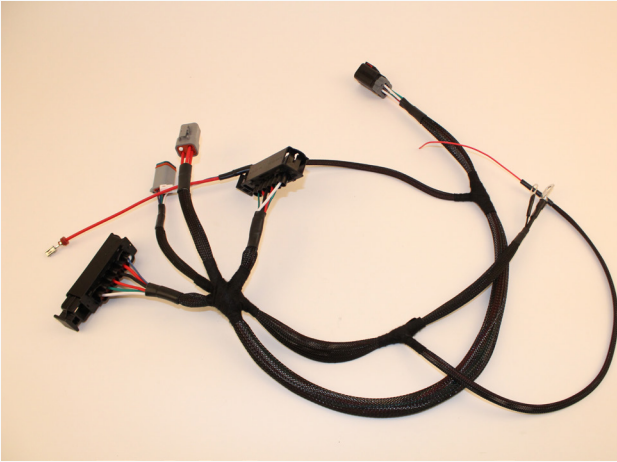
58. Locate the PDM/Bracket assembly and the (2) M8 bolts with locking nuts. Mount the unit on the frame rail next to the passenger side ECU.



59. Install the M8 bolts with locking nuts to secure it to the frame. Do not overtighten, it just needs to be snug and the housing should feel firmly installed.



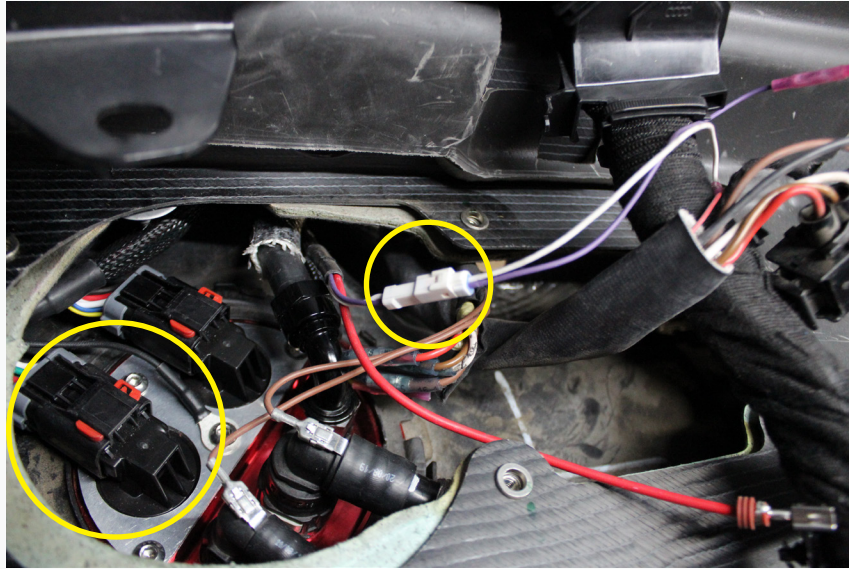
60. Locate the PDM wire harness. Plug in the (2) Fuel pump controllers, 4 pin and 6



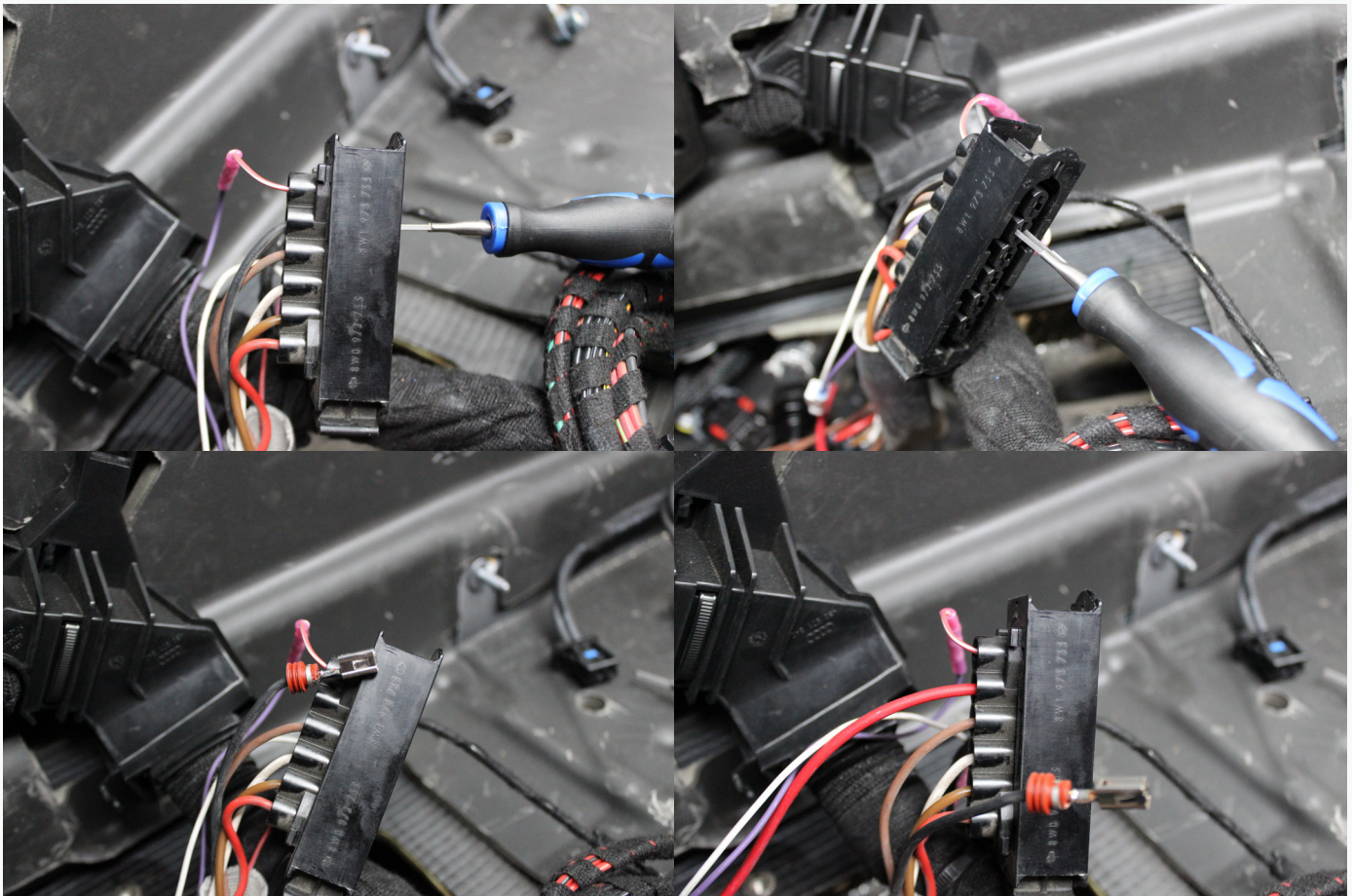
61. Route the fuel pump top hat connector, white 2 pin connector and pinned red wire against the firewall towards the top hat.



62. Plug in the fuel pump top hat connector and the white 2 pin connector of the PDM harness to the connector from step 56.



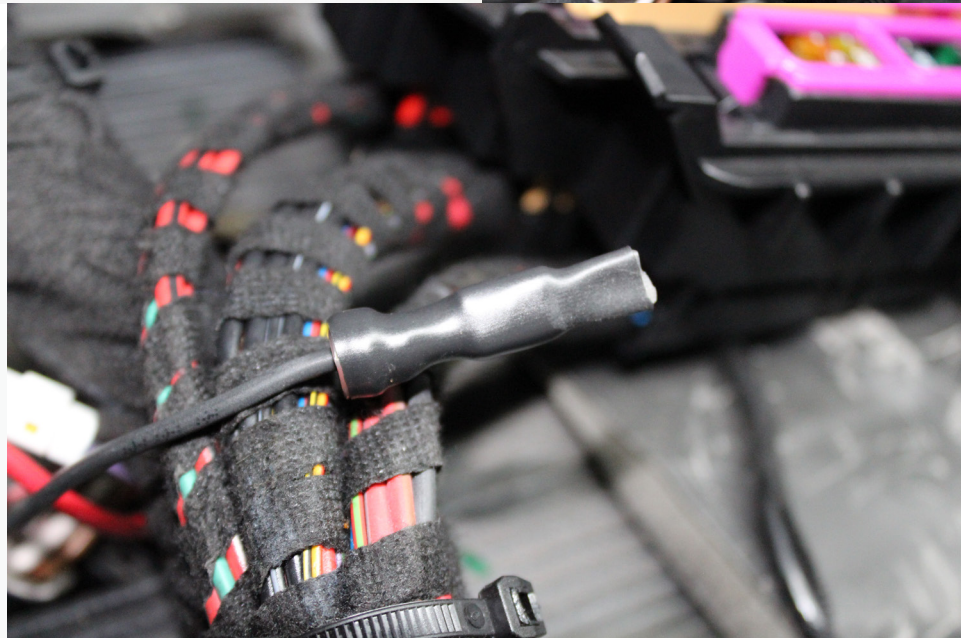
63. Using a de-pinning tool, remove the black wire from the OEM Fuel pump controller connector and install the red wire in its place.



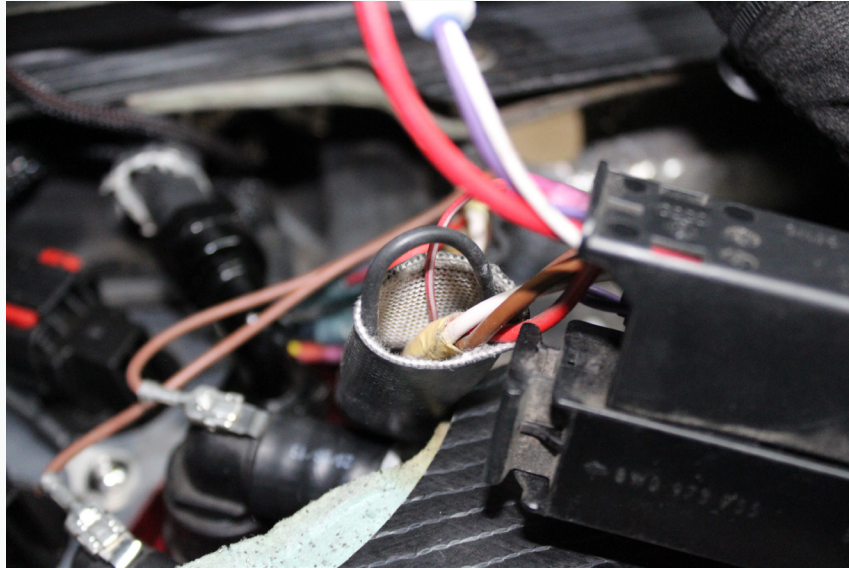
64. Reinstall the connector wire cover.



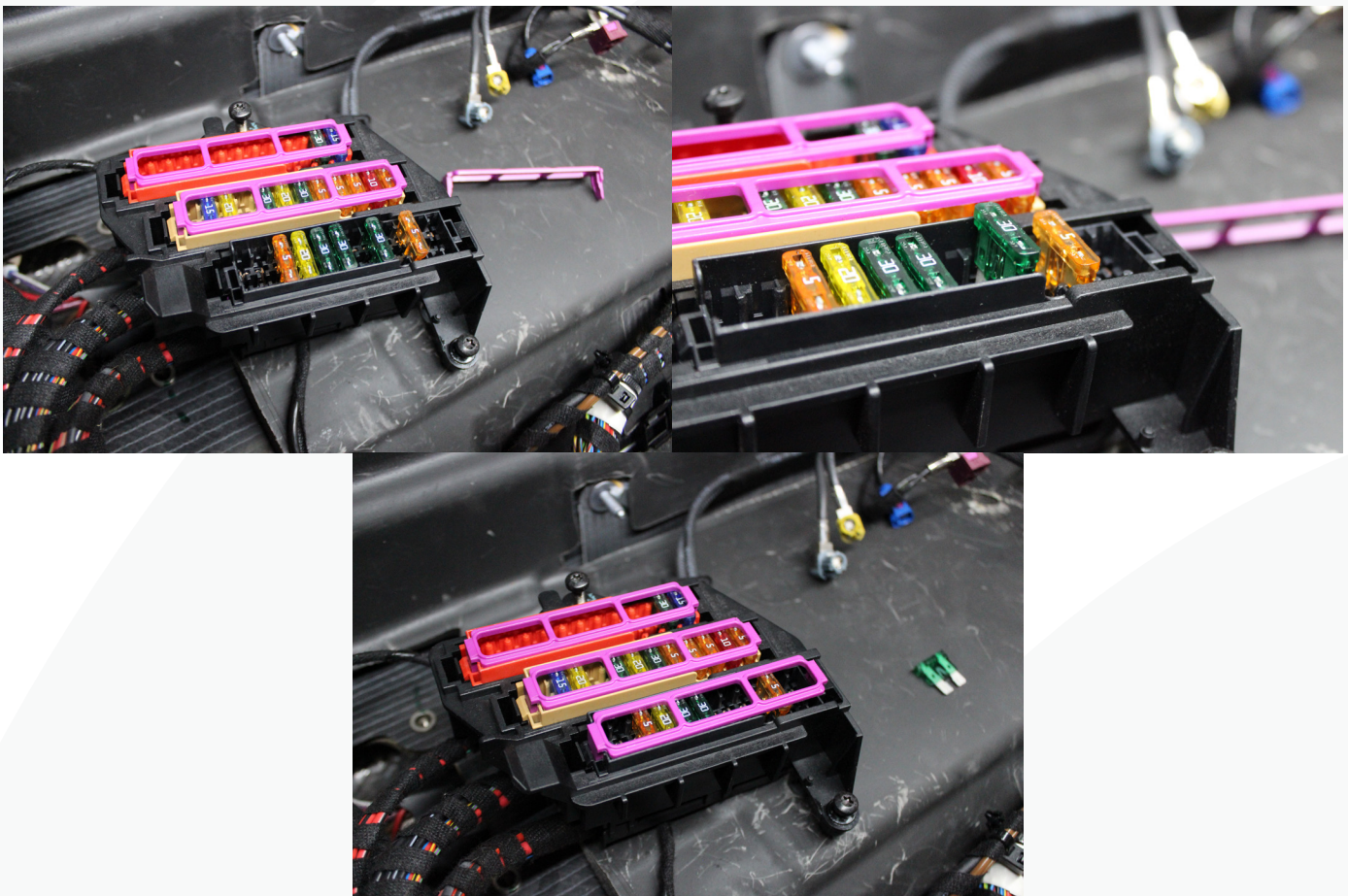
65. The black wire needs to be isolated. Use the provided 1.5" long heat shrink and slide it over the wire seal. Use a heat gun to shrink the heat shrink and pinch the pin end to completely seal it off.



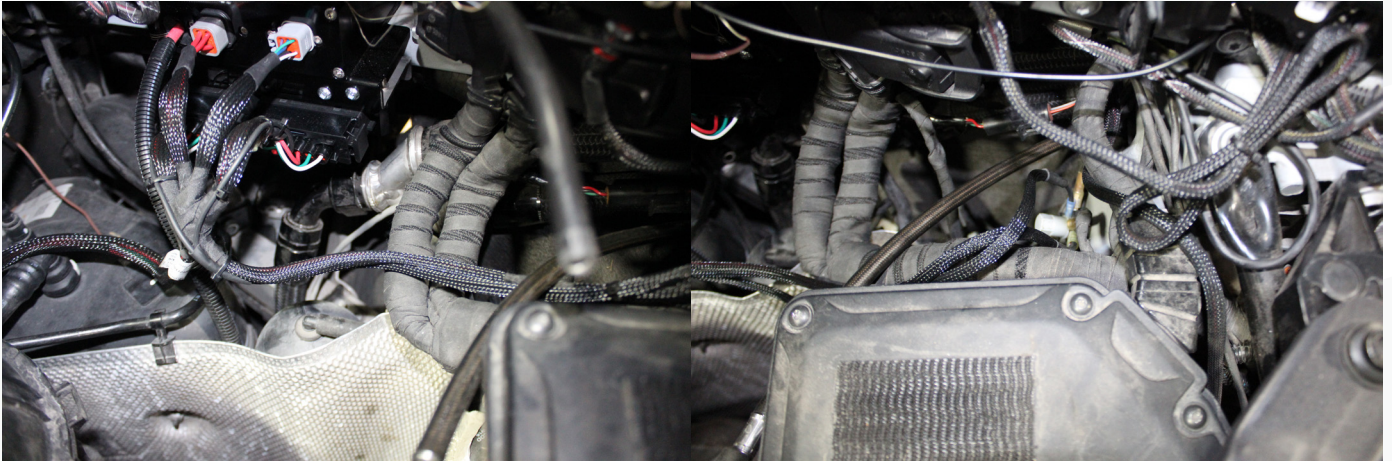
66. Loop the wire end back into the loom to keep it out of the way.



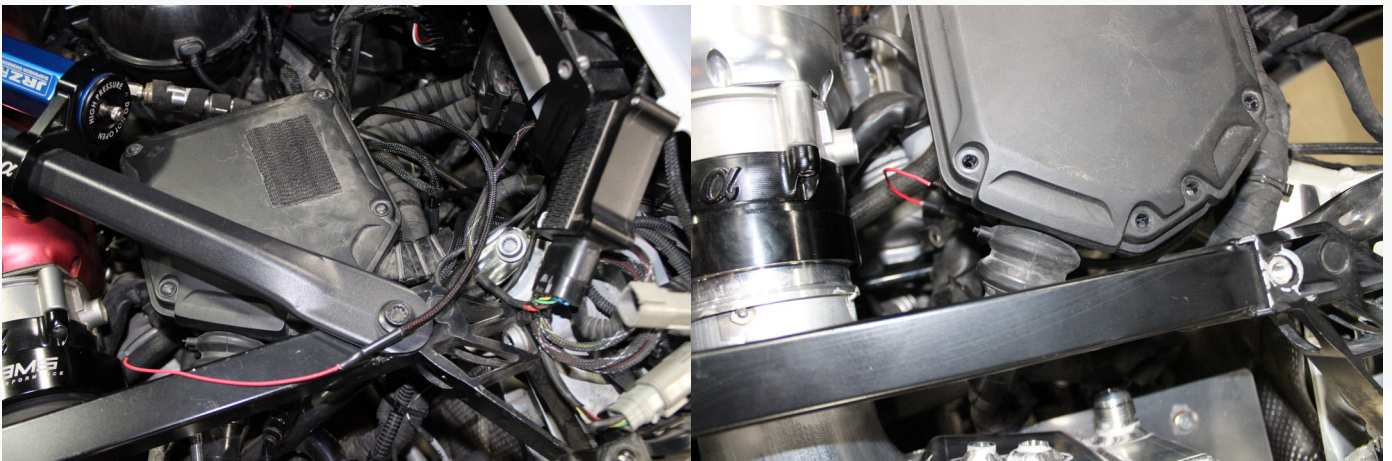
67. Pop the fuse cover off the fuse rail closest to you. Remove the right most 30A fuse in the photo below. Reinstall the fuse rail cover.



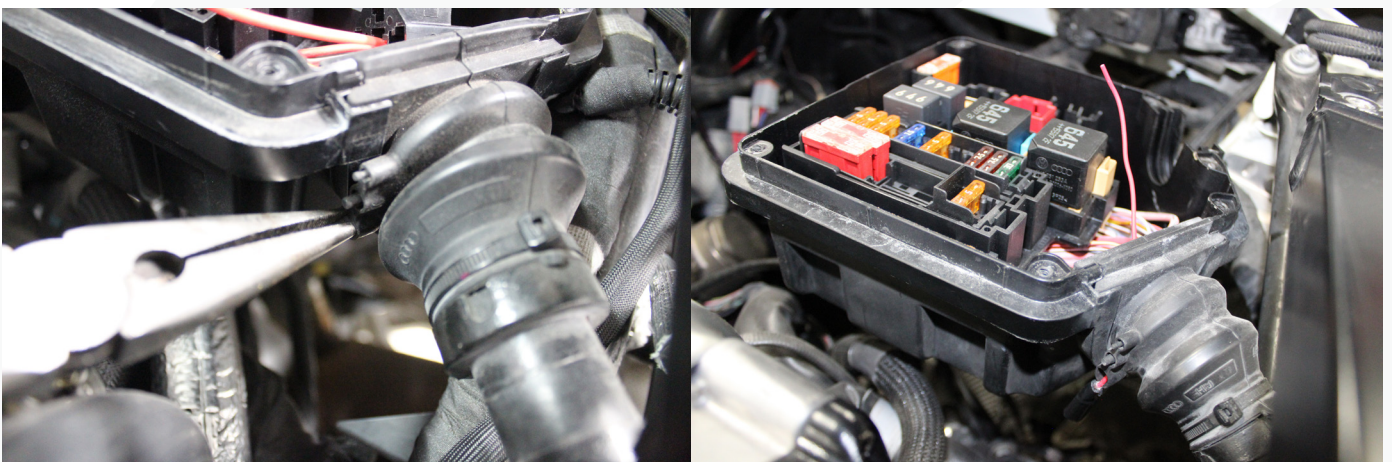
68. Route the two ground eyelets along the vehicle harness to the chassis ground on the frame near the passenger fuse box.



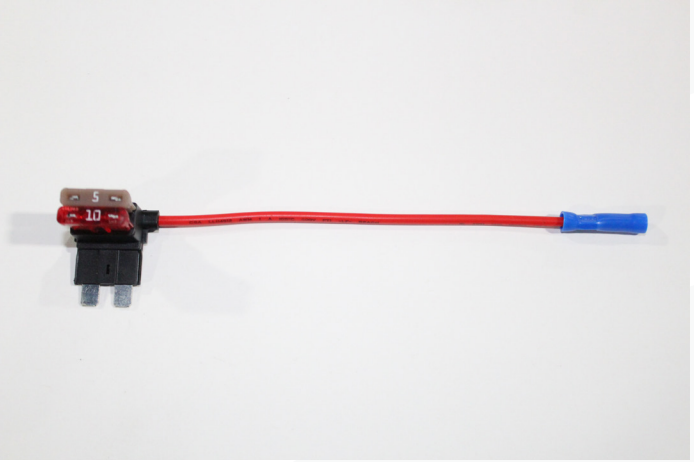
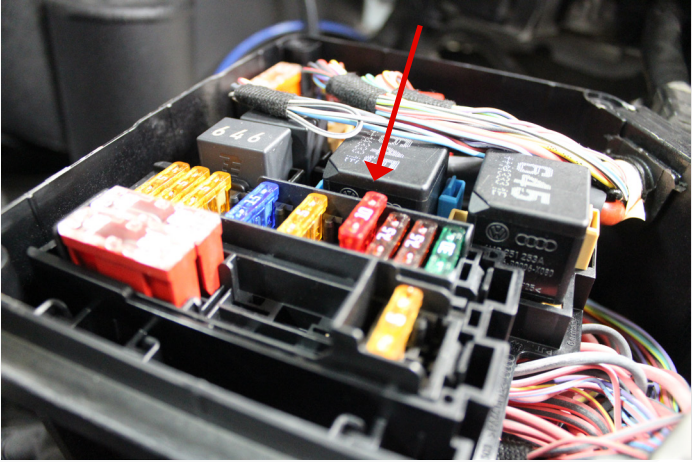
69. Route the small single red wire over to the passenger side fuse box.



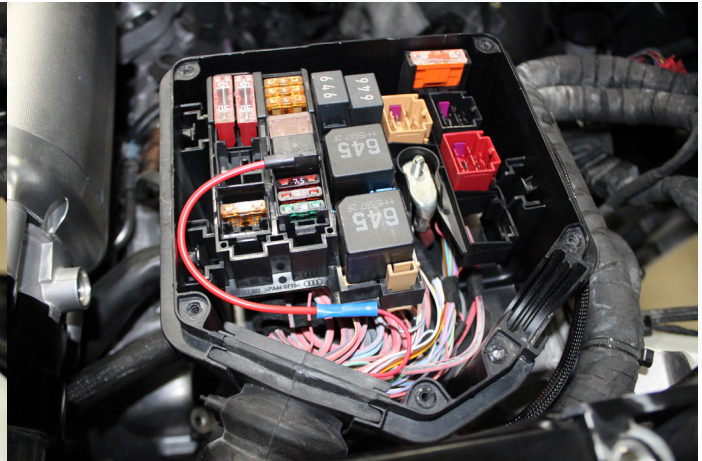
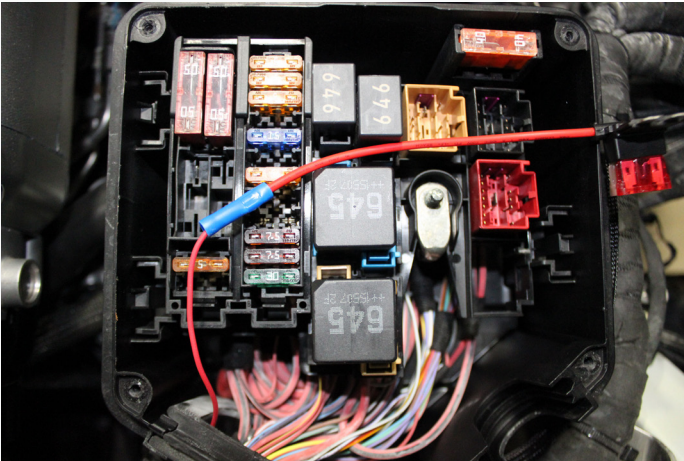
70. Remove the passenger side engine bay fuse box cover. Locate the three small plugs in the factory wire grommet boot at the fuse box. Using need nose pliers, remove the lower plug. Then feed the red wire into the fuse box.



71. Remove the 10A fuse located in the fourth position from the rear of the vehicle. Put the fuse into the empty slot in the fuse tap.



72. Strip the single red wire and crimp it to the fuse tap. Then re-install the fuse tap back in the same cavity.



73. Reinstall the fuse box cover.

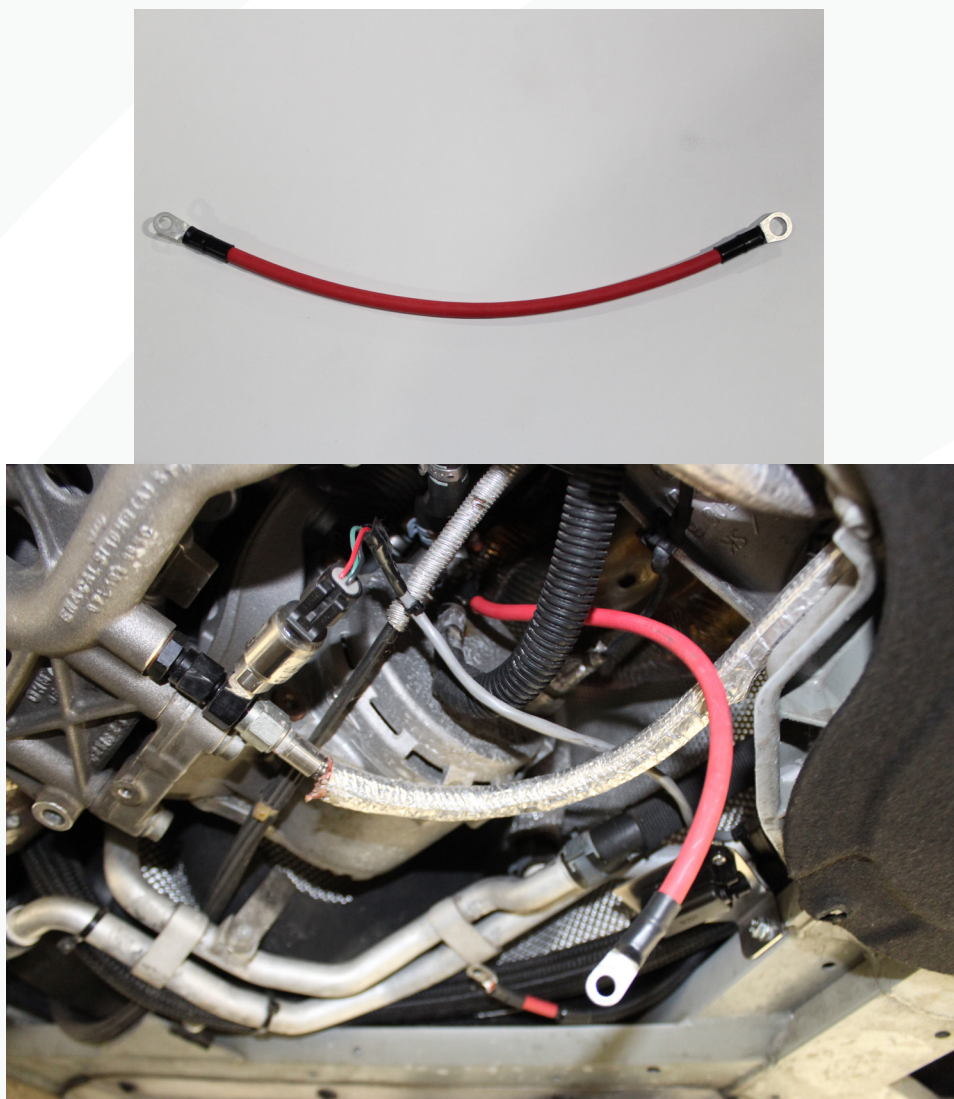
74. Run the main power wire down in between the heat shield and gas tank towards the alternator.



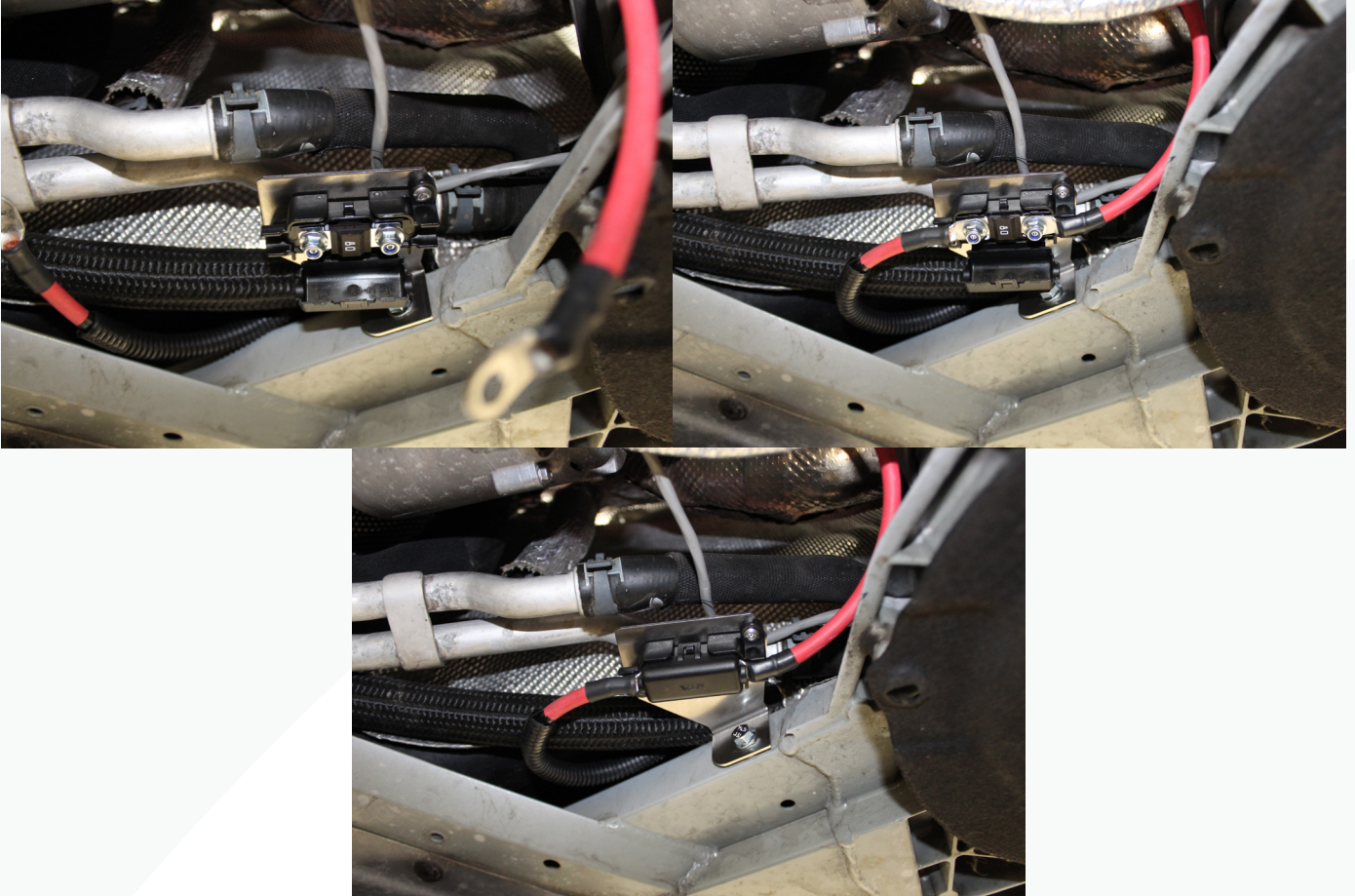
75. Remove the bolt securing the water pipe bracket. Using the provided M6 bolt, mount the fuse holder assembly to the frame.



76. Be sure the battery is still disconnected, then take the short power cable and hook the large eyelet end to the alternator.



77. Open the fuse holder, there is a 80A fuse pre-installed. Hook up the two ends of the power cable from the previous steps.



78. This completes the installation of the in-tank portion of the fuel system. We recommend double checking your work before hooking up the battery and reinstalling all removed parts. Enjoy!