

INFINITI Q50/Q60 & NISSAN Z SINGLE LSFP

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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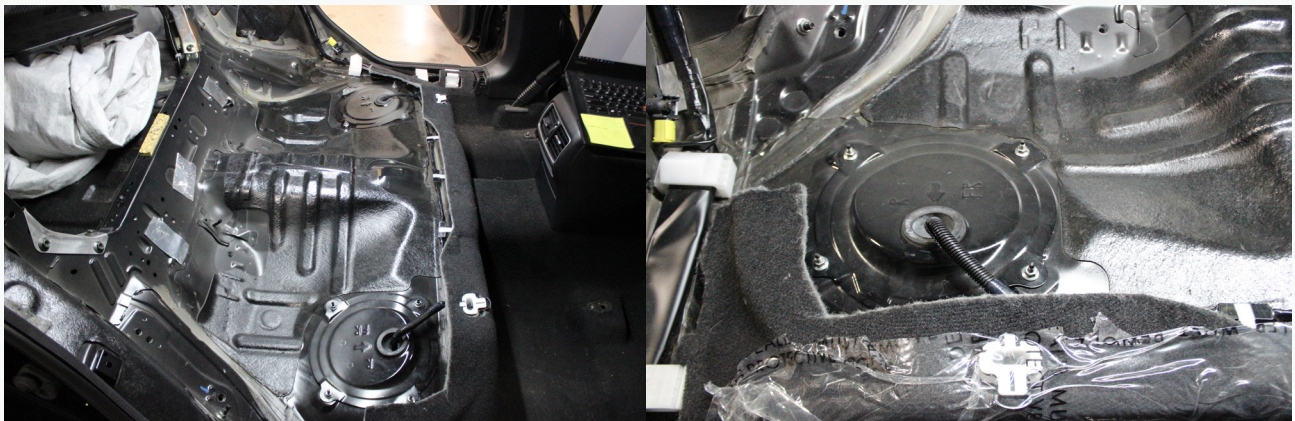
Tools needed:

- Basic mechanics tool set
- Oetiker (2 ear) clamp tool
- Heat gun
- Wire strippers
- Barrel crimper for insulated and non-insulated connectors.

DISASSEMBLY:

1. Recommended to have less than a ¼ tank of fuel before starting.
2. Remove the passenger side cowl cover and surround.
3. Disconnect the battery.
4. Remove rear seat bottom to gain access to the two rear fuel tank access panels.
5. Remove the passenger side interior sill plates and front kick panel.

Note: There are extra panels removed in the photos below, however this is not necessary.

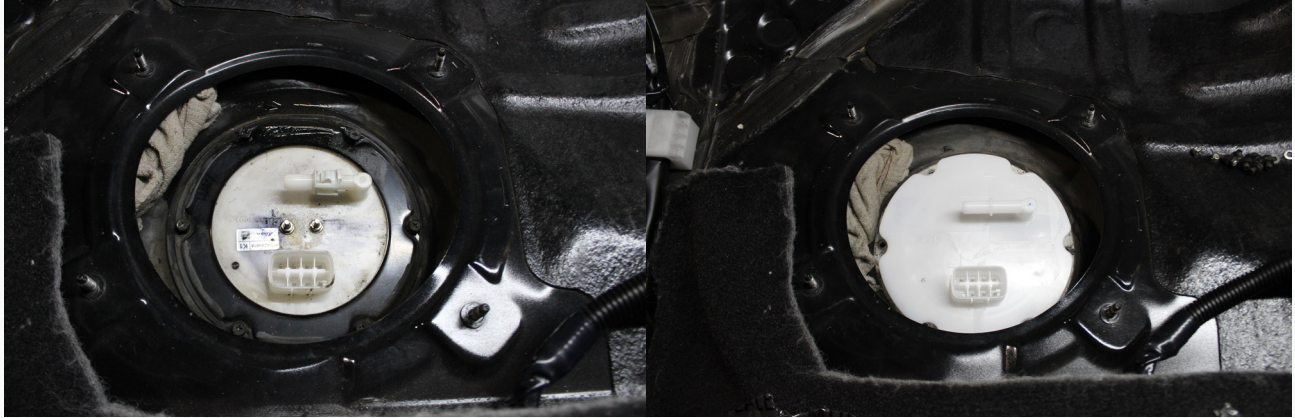


6. Remove the access panel and disconnect the fuel line quick disconnect and top hat electrical connector.

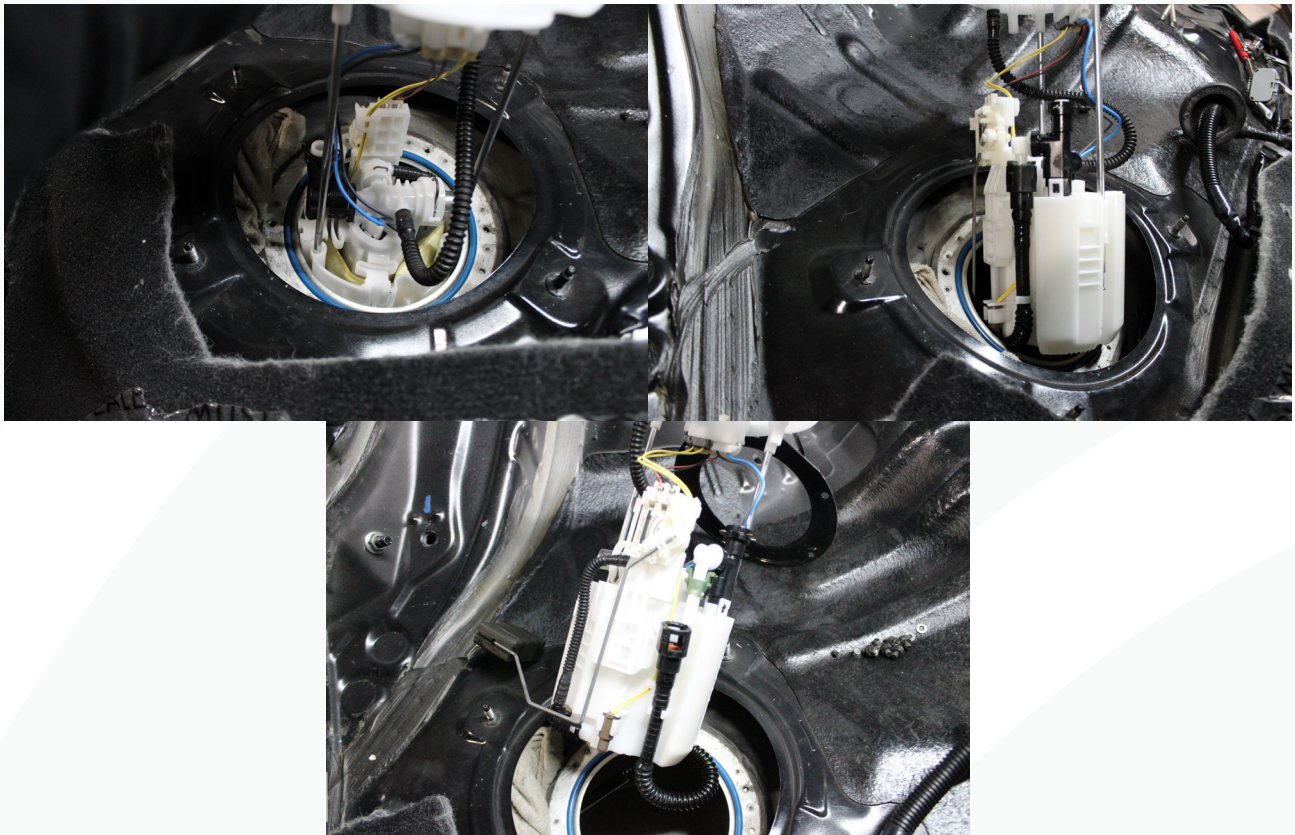


Note: This vehicle has another aftermarket system installed which you can see by the two extra eyelet connections on the top hat. This system will be removed during installation of the AMS Race X LSFP.

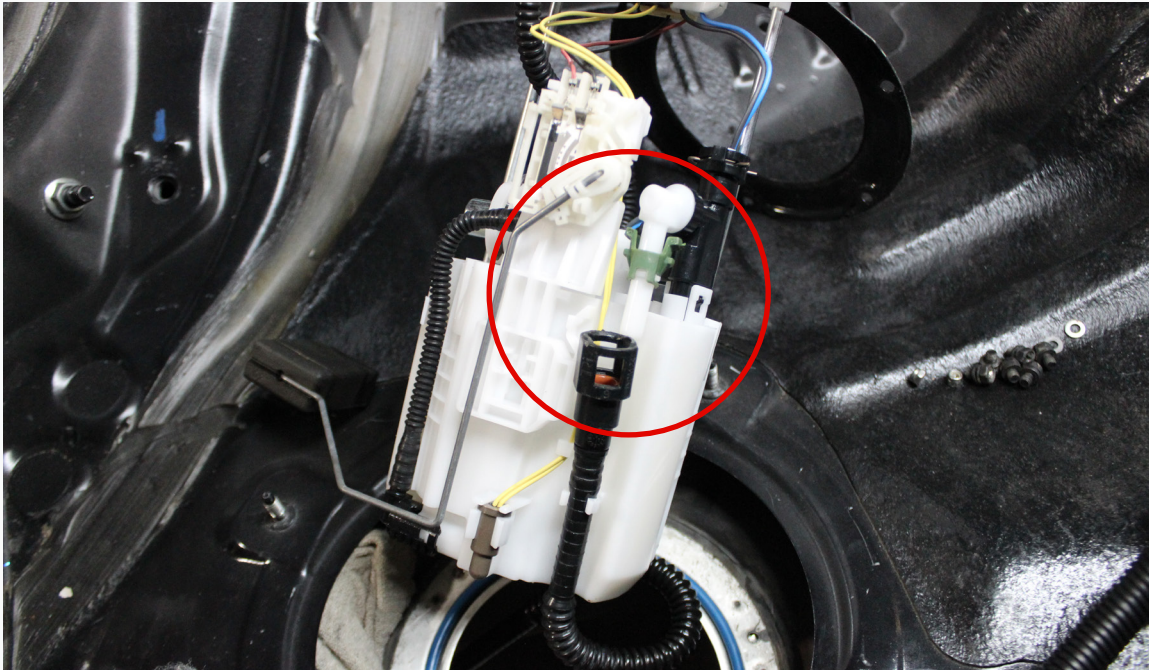
7. Stuff a shop rag between the fuel tank and body to keep the fuel line out of the way. Remove the (6) M5 top hat retaining ring bolts.



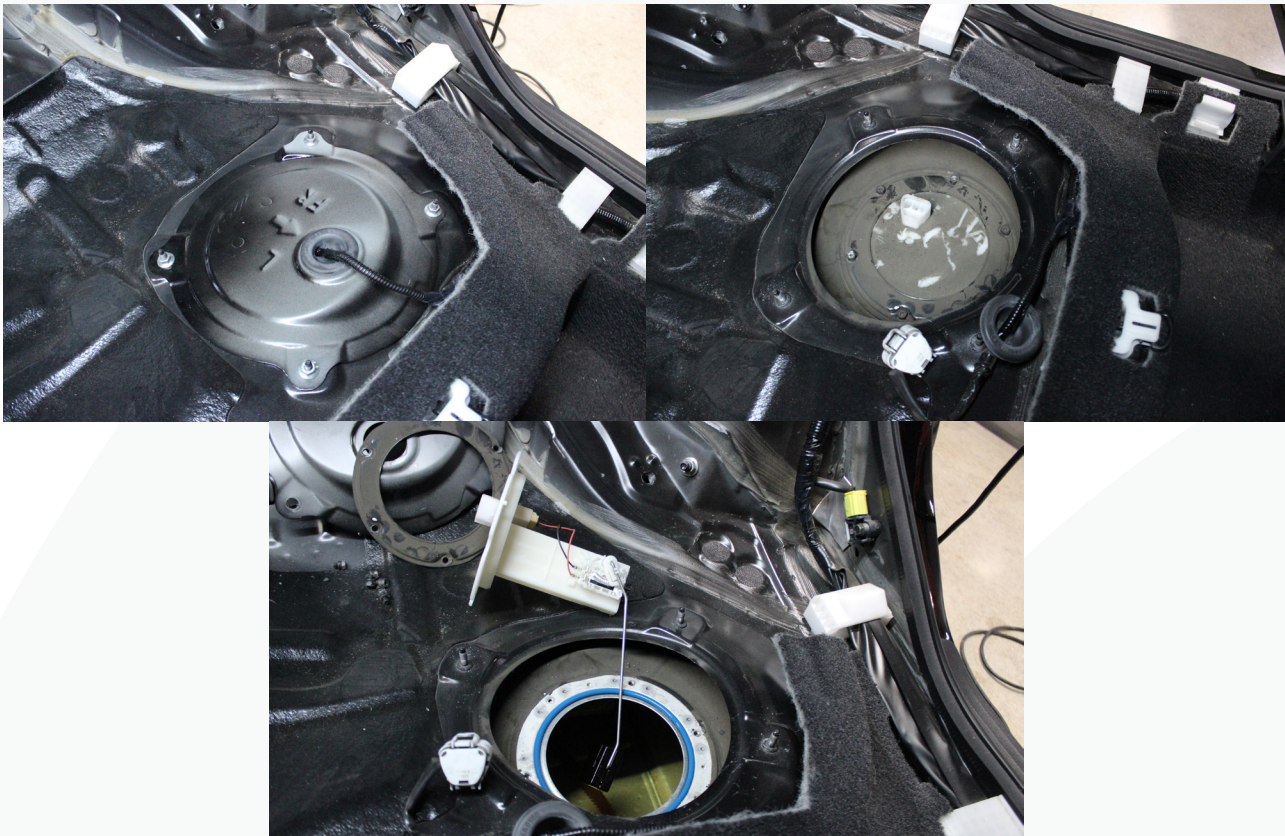
8. Carefully lift the fuel tank sending unit to not damage any of the corrugated tubing or wiring. Once you have it mostly out you will need to tip it back slightly to get past the level sender.



9. With the sending unit out, disconnect the quick disconnect connection on the side of the fuel basket. Set the fuel basket aside for a later step.

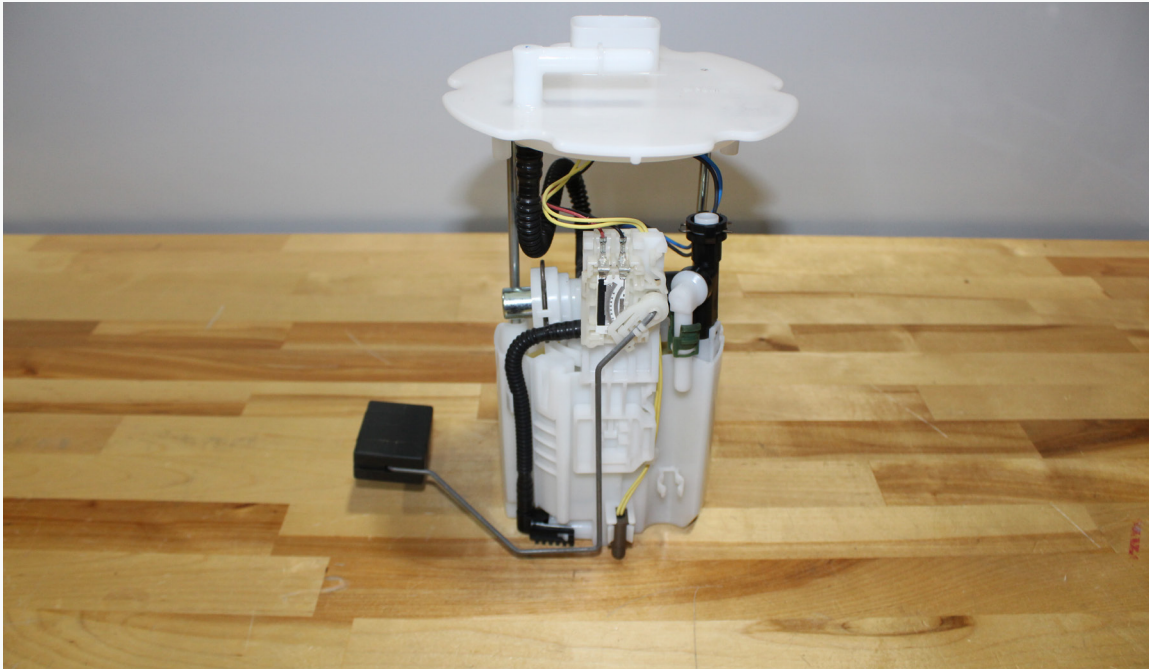


10. On the driver's side, remove the top hat/level sender assembly just like you did for the passenger side. Set it aside for now.



PREPARING THE SENDING UNIT

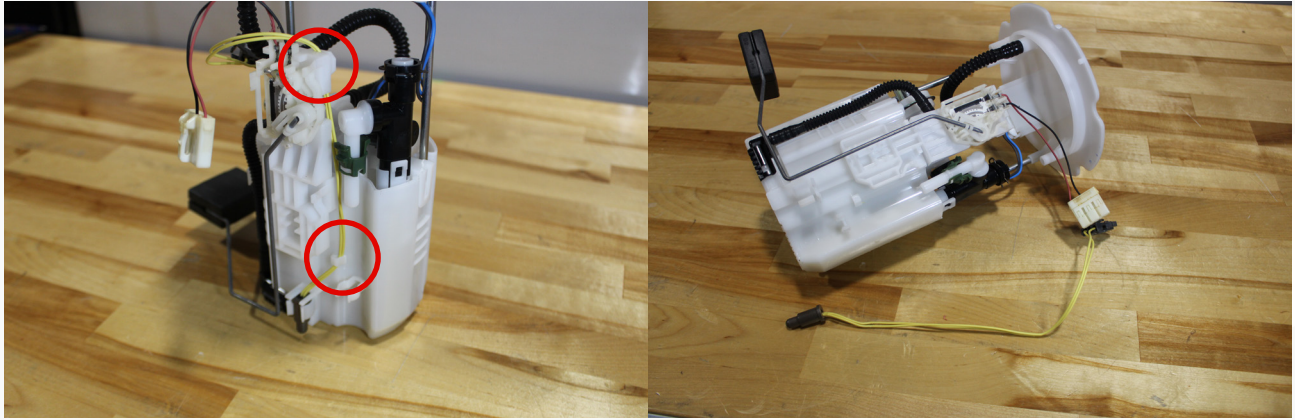
11. Grab the OEM fuel sending unit to remove the level sensor, temp sensor, quick connect clip, white quick connect clip and one way flapper door.



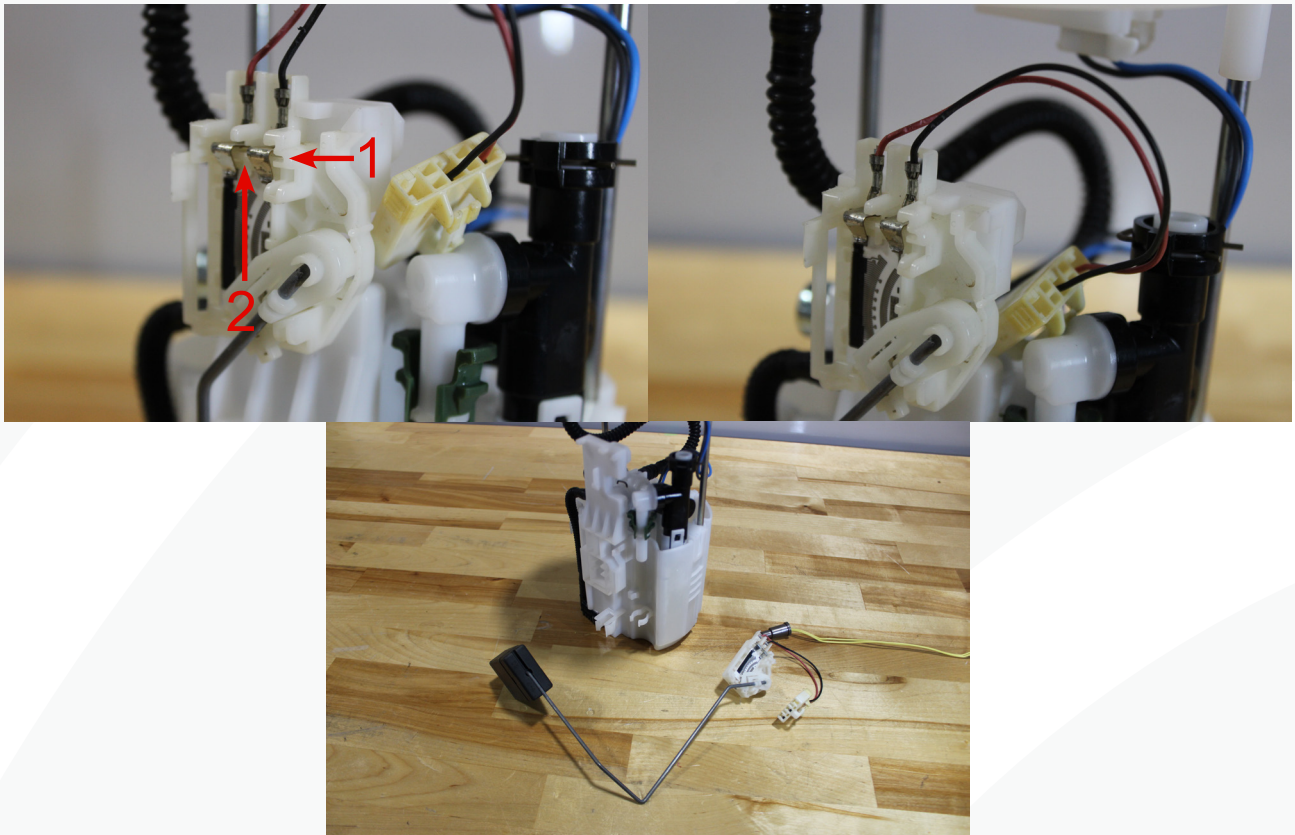
12. Disconnect the two electrical connectors.



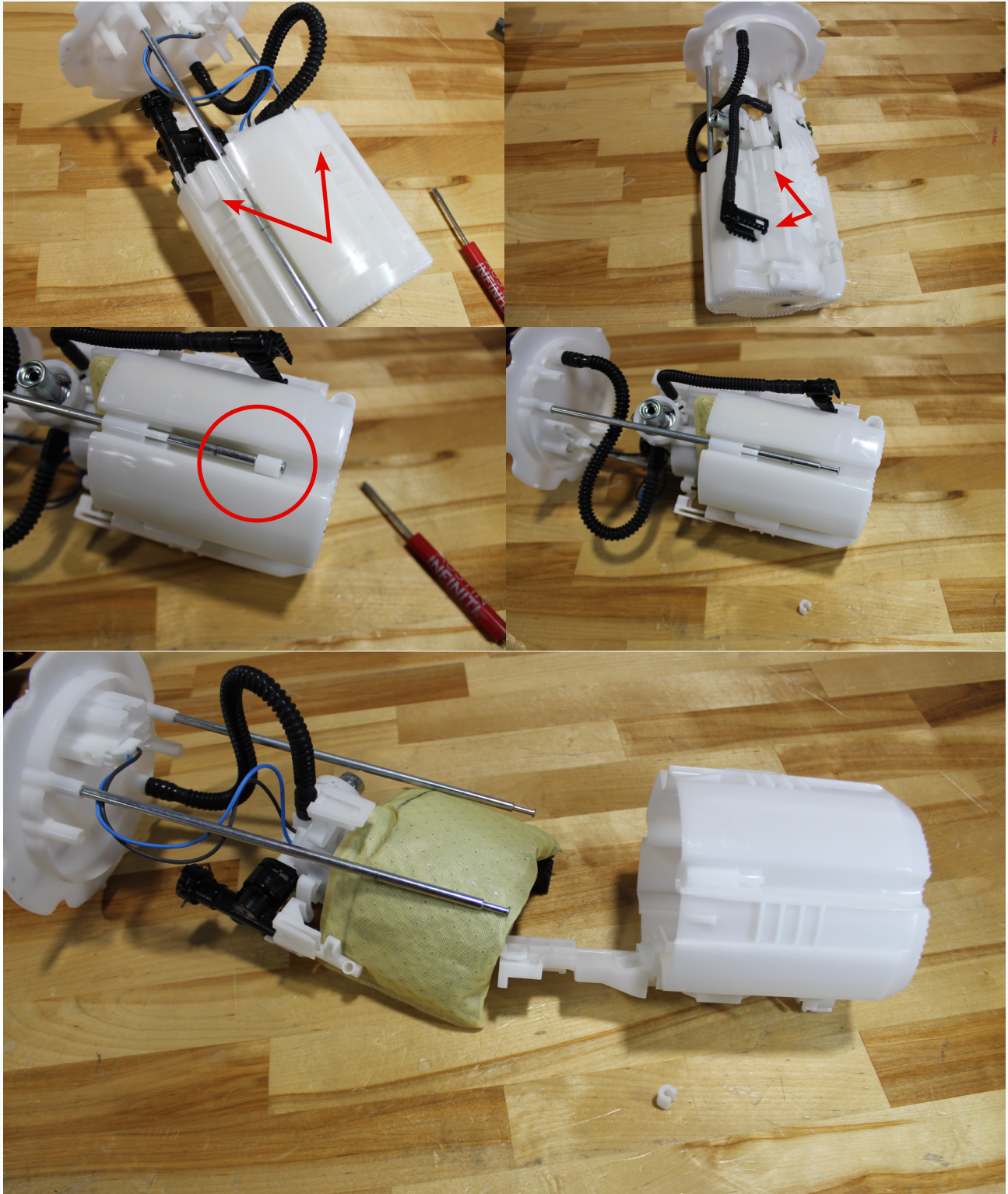
13. Unclip the fuel temp sensor harness and sensor.



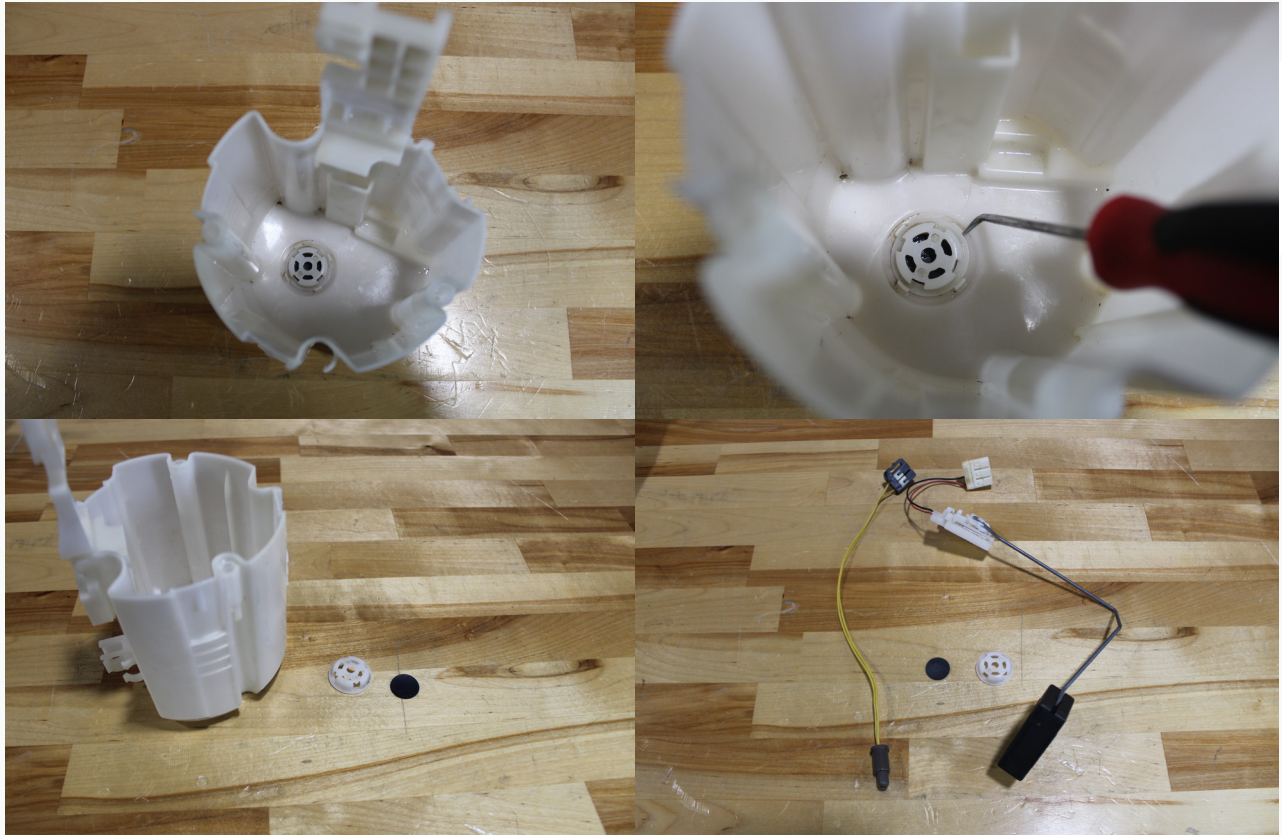
14. Push the level sensor retaining lock over and slide the sensor up and out.



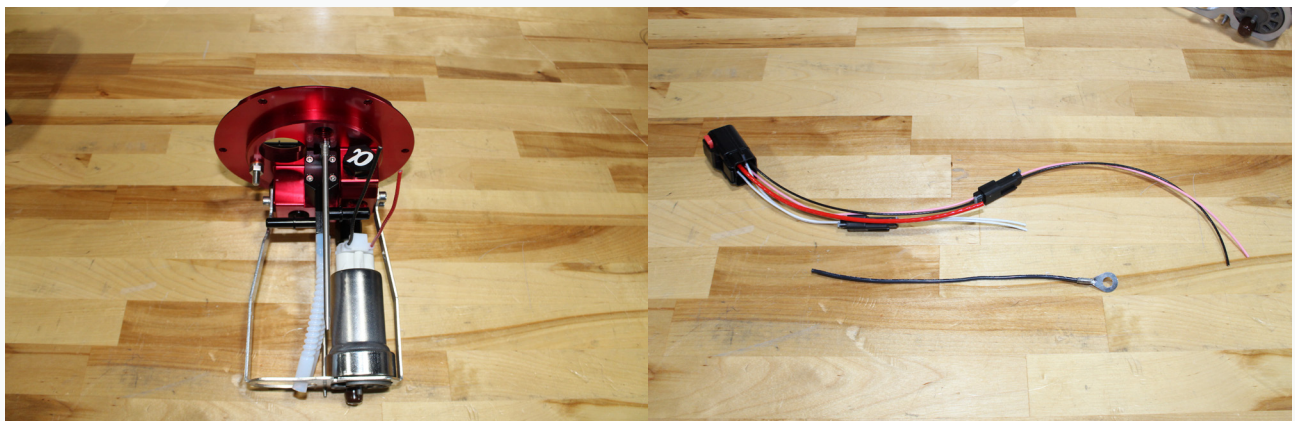
15. Unclip the three clips on the fuel sending unit, unclip the black hose, and remove plastic retaining clip to slide the sending unit out of the lower basket.



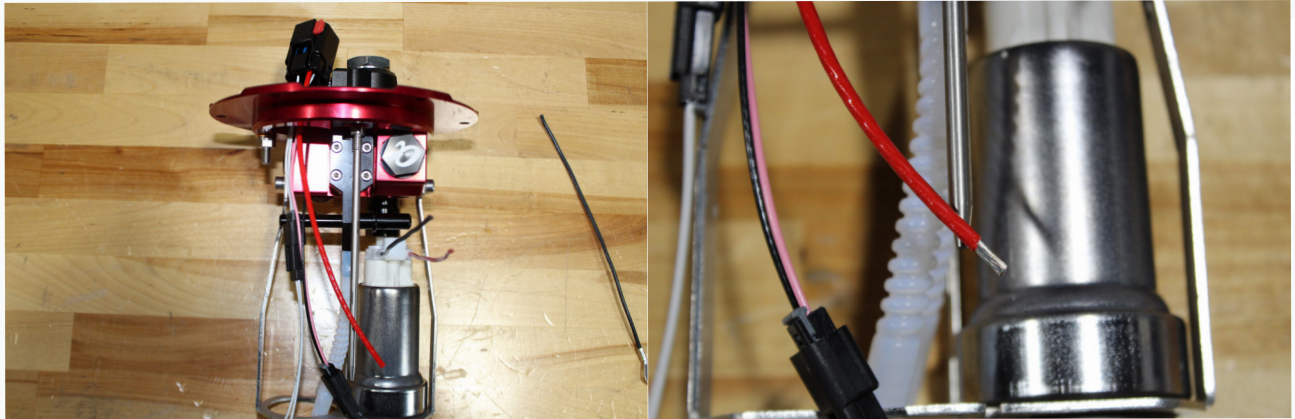
16. Using a small pick or similar, carefully remove the round flapper door retainer from the basket. Keep the rubber flapper door and retainer and set it with the level sensor and temp sensor, these will be transferred to the new assembly.



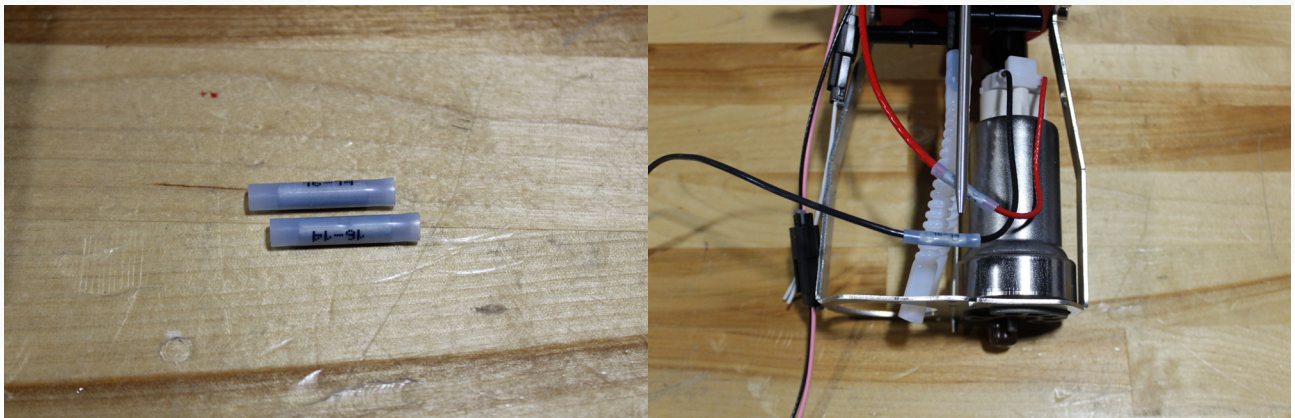
17. Working on the AMS sending unit assembly, locate the in-tank harness and short black wire with eyelet.



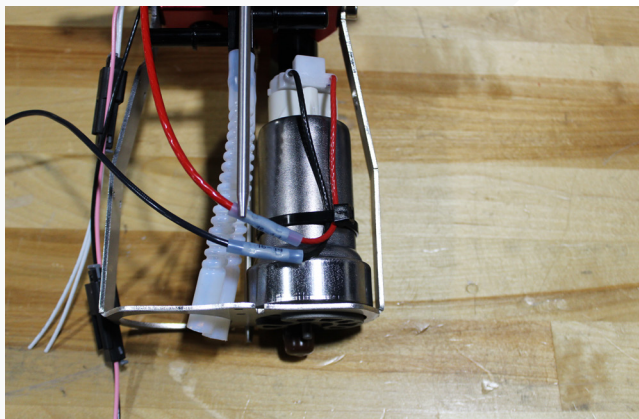
18. Place the large connector side of the harness through the opening in the top hat about an inch or so. Strip the end of the red wire of the harness about 3/8" from the end. Repeat on the fuel pump red and black wires along with the single black wire with eyelet.



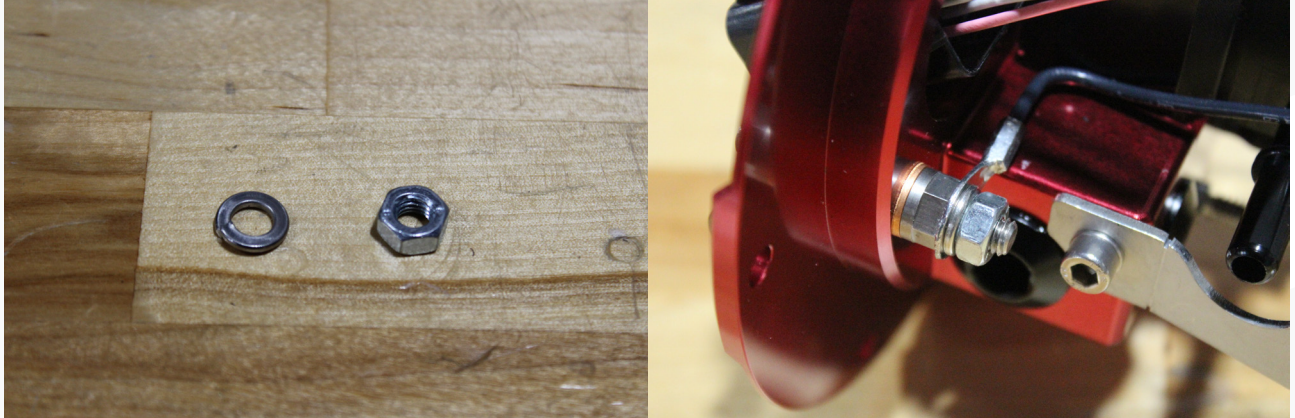
19. Using two blue butt connectors, match the colors red to red, black to black and crimp them using crimping pliers for insulated connectors.



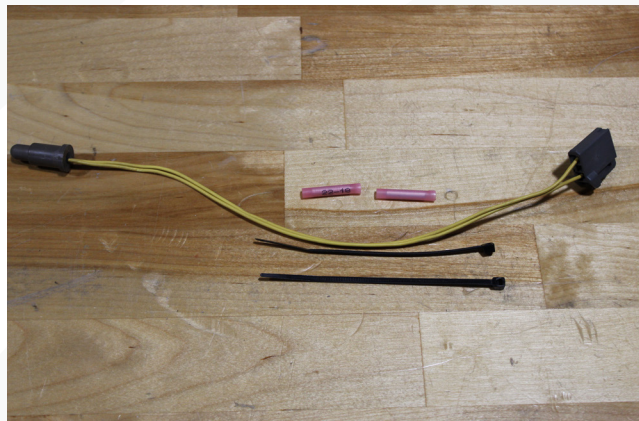
20. Grab one zip tie and secure the wire around the pump as shown below.



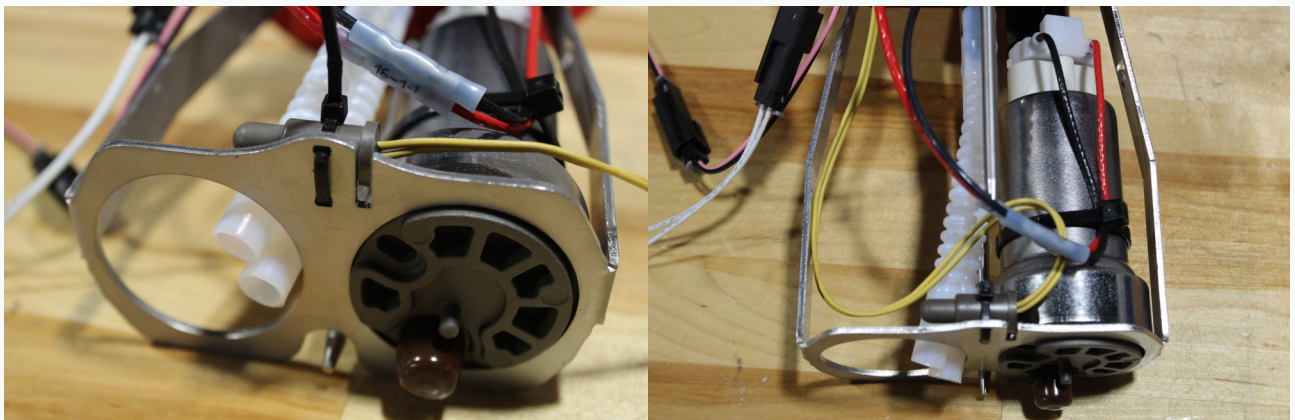
21. Secure the ground wire eyelet to the stud on the bottom of the top hat using the provided M6 nut and split washer in the orientation shown below.



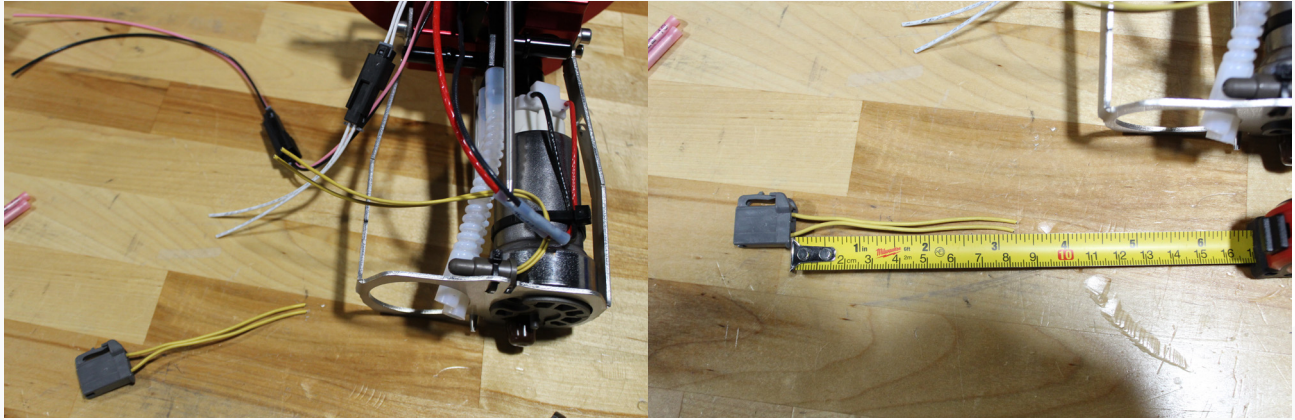
22. Using the temp sensor removed in an earlier step, grab two red butt connectors and two small zip ties.



23. Secure the temp sensor to the bottom of the fuel pump hanger making sure the sensor fits into the cut-out feature.

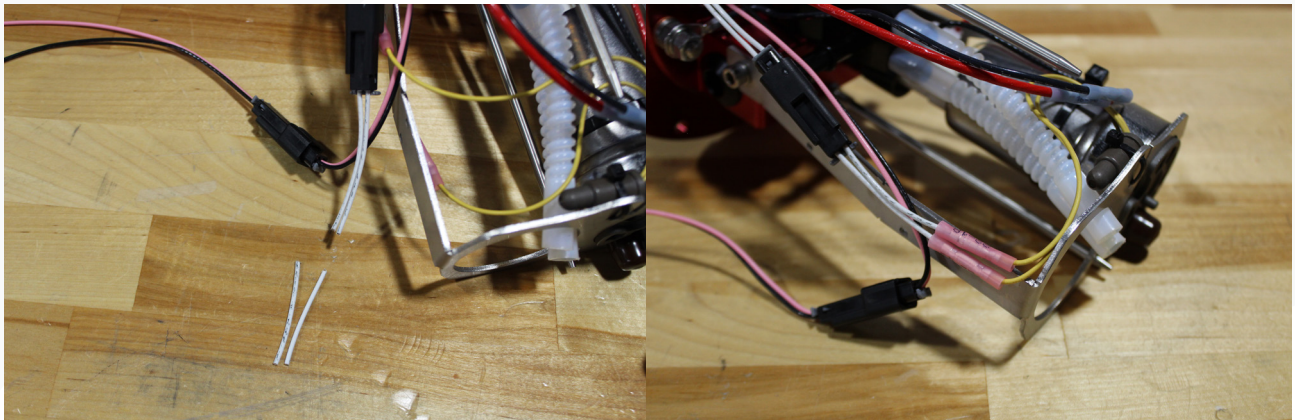


24. Cut off the connector about 3 ¼" from the connector.

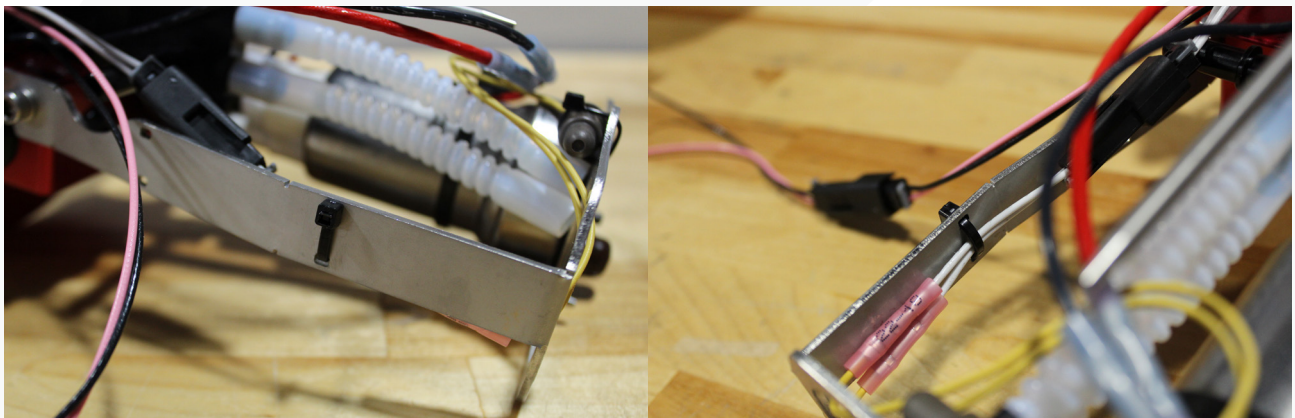


25. For the Q50/60, trim about an inch off the provided AMS harness. Using a wire stripper, prepare the wires to make two butt connections. Polarity does not matter in this step.

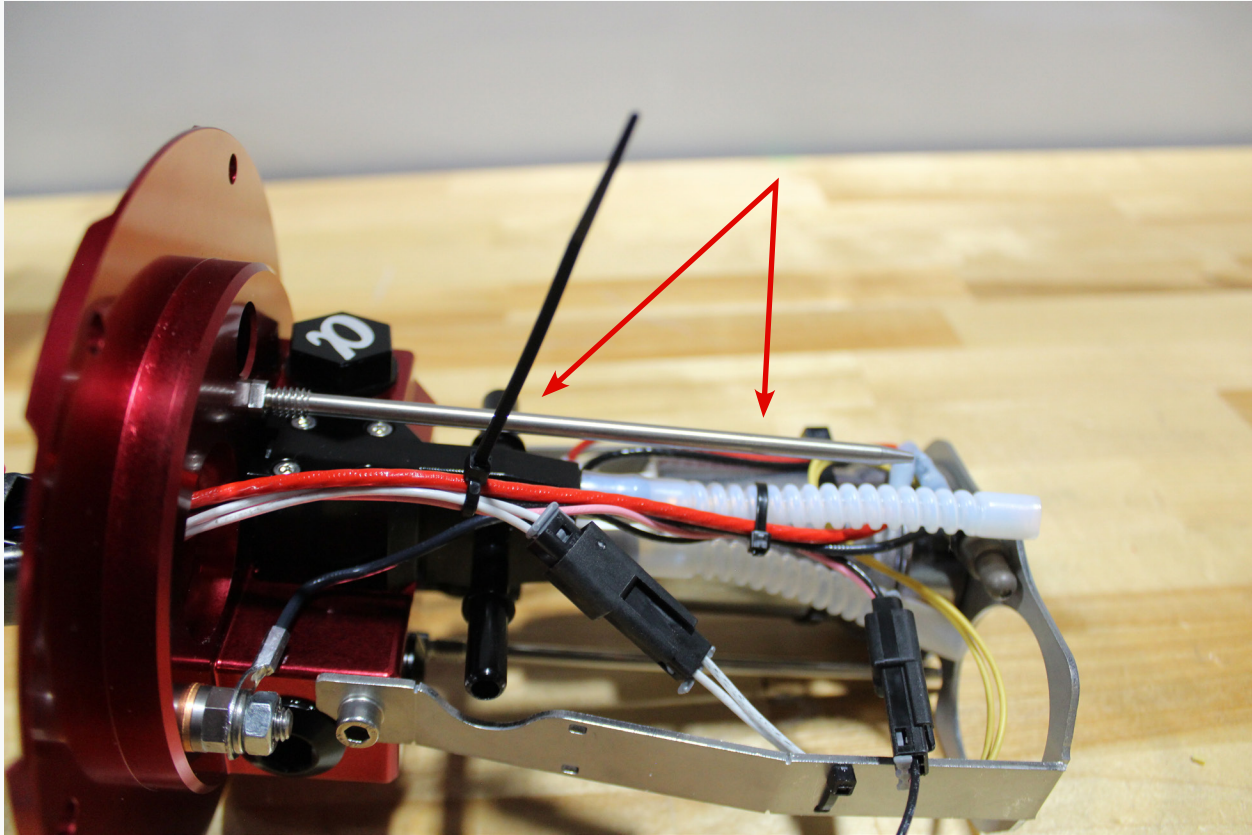
Note: The earlier versions were two white wires, but later versions are yellow to match.



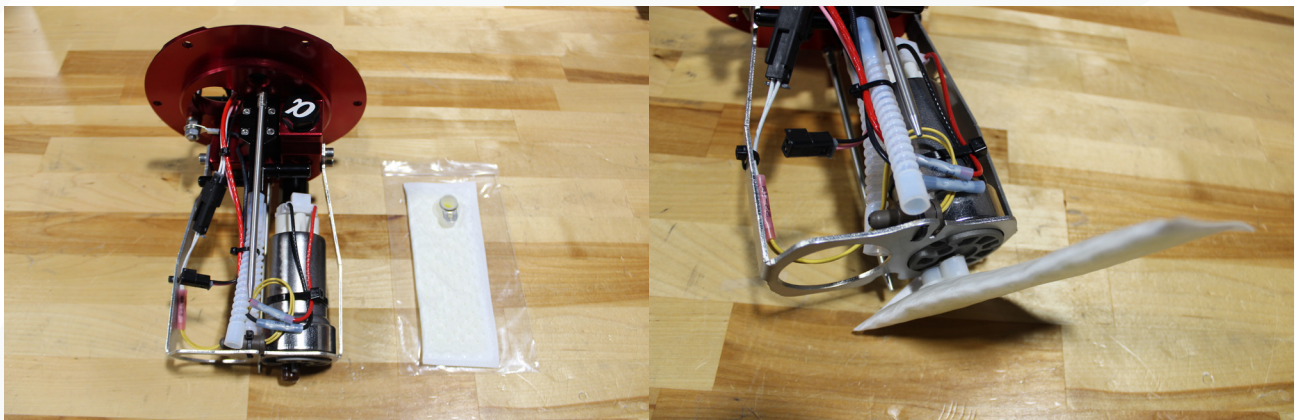
26. Using the second zip tie, secure the temp sensor to the bottom of the fuel pump hanger making sure the sensor fits into the cut-out feature.



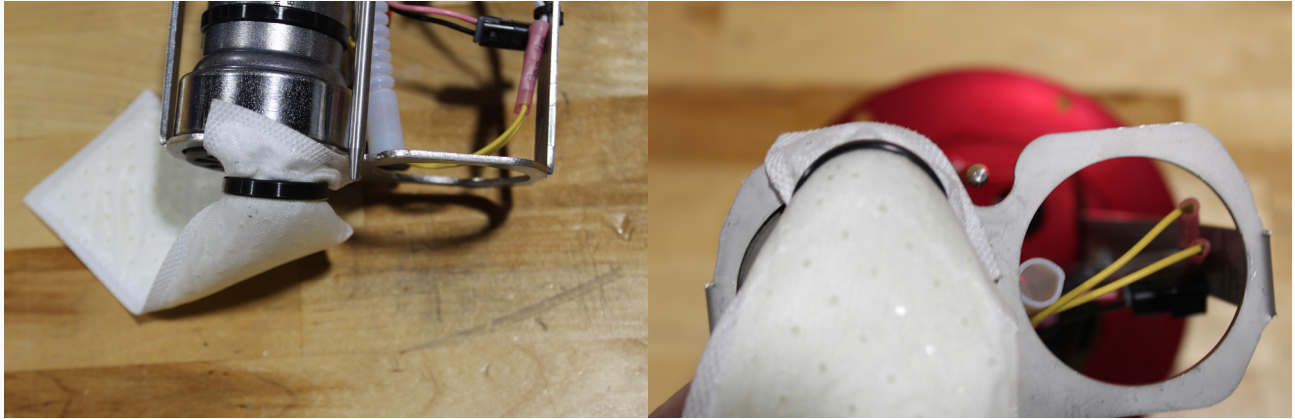
27. Grab two more zip ties and secure the other wiring as shown below.



28. Install the filter sock to the bottom of the fuel pump assembly. Be sure it is fully seated.

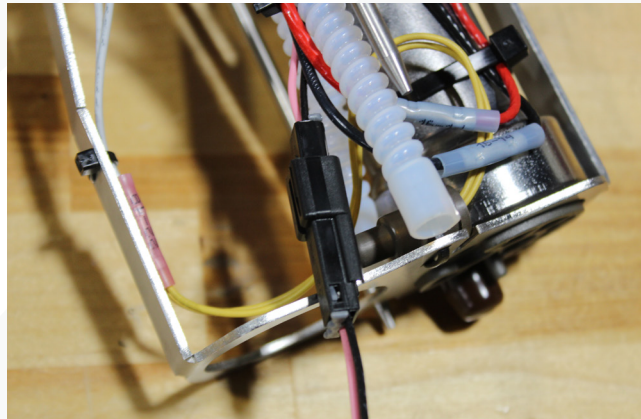


29. Install one zip tie to the filter sock to keep the filter sock away from the alignment pin.

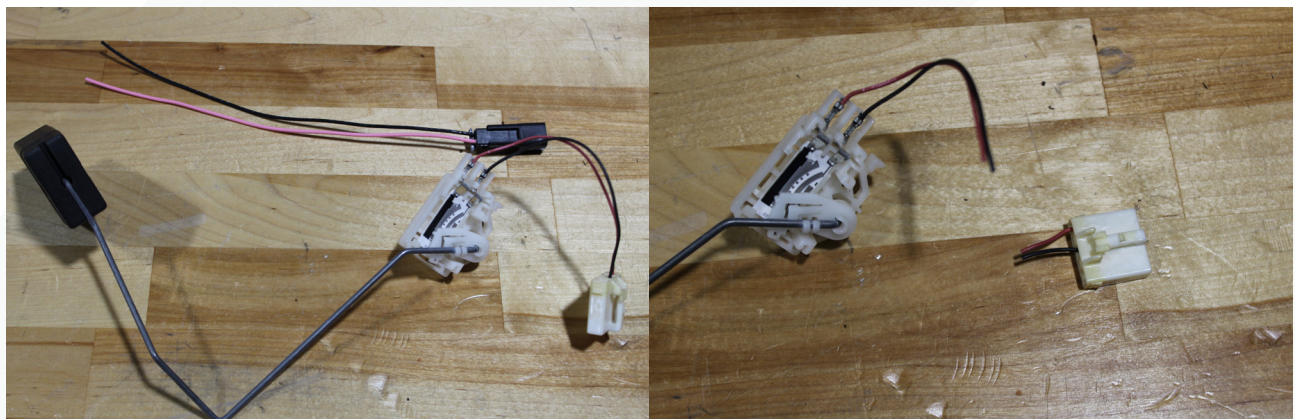


PREPARING THE BASKET

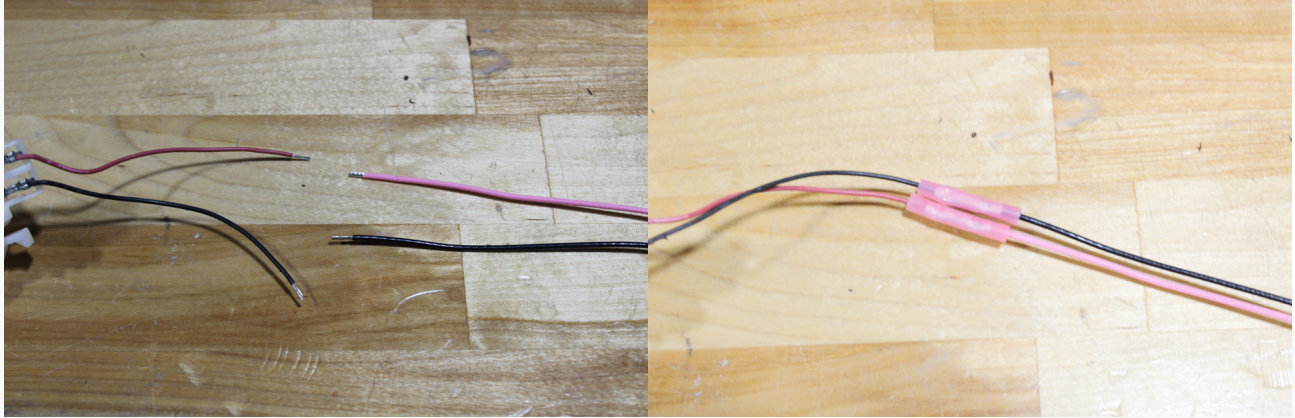
30. Disconnect the connector with the red and black leads on it.



31. Cut off the OEM level sensor connector about an inch away from the connector.



32. Using two butt connectors, strip the wires and make the connections by matching up the colors.



33. Carefully take apart the two basket halves by removing all six of the T15 screws.



34. On the bottom basket, place the rubber flapper door over the hole in the bottom basket. Align with the ribs as shown below.



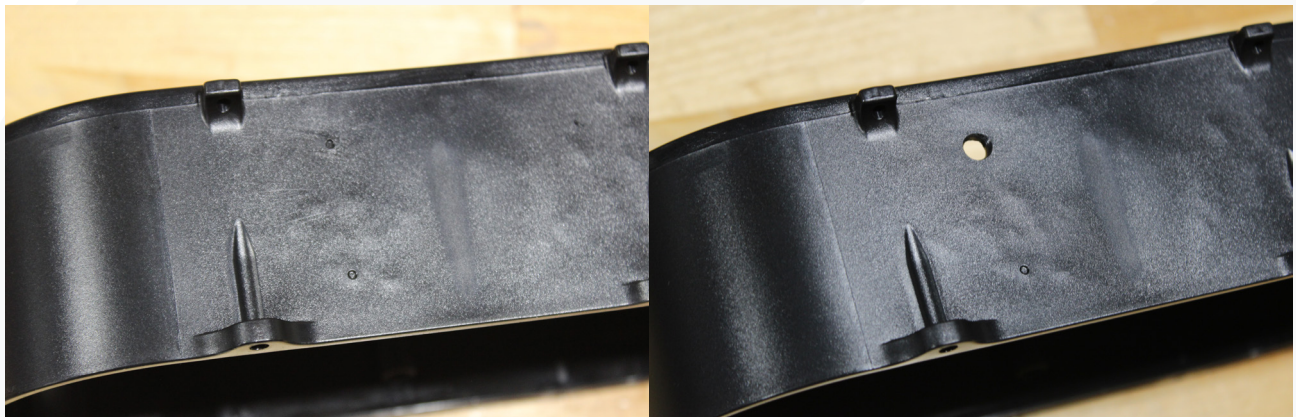
34. continued.



35. Carefully place the flapper door retainer over the flapper being careful not to damage it. Be sure the retainer is fully secured into the basket. Tip the basket over to be sure the flapper door can move freely.

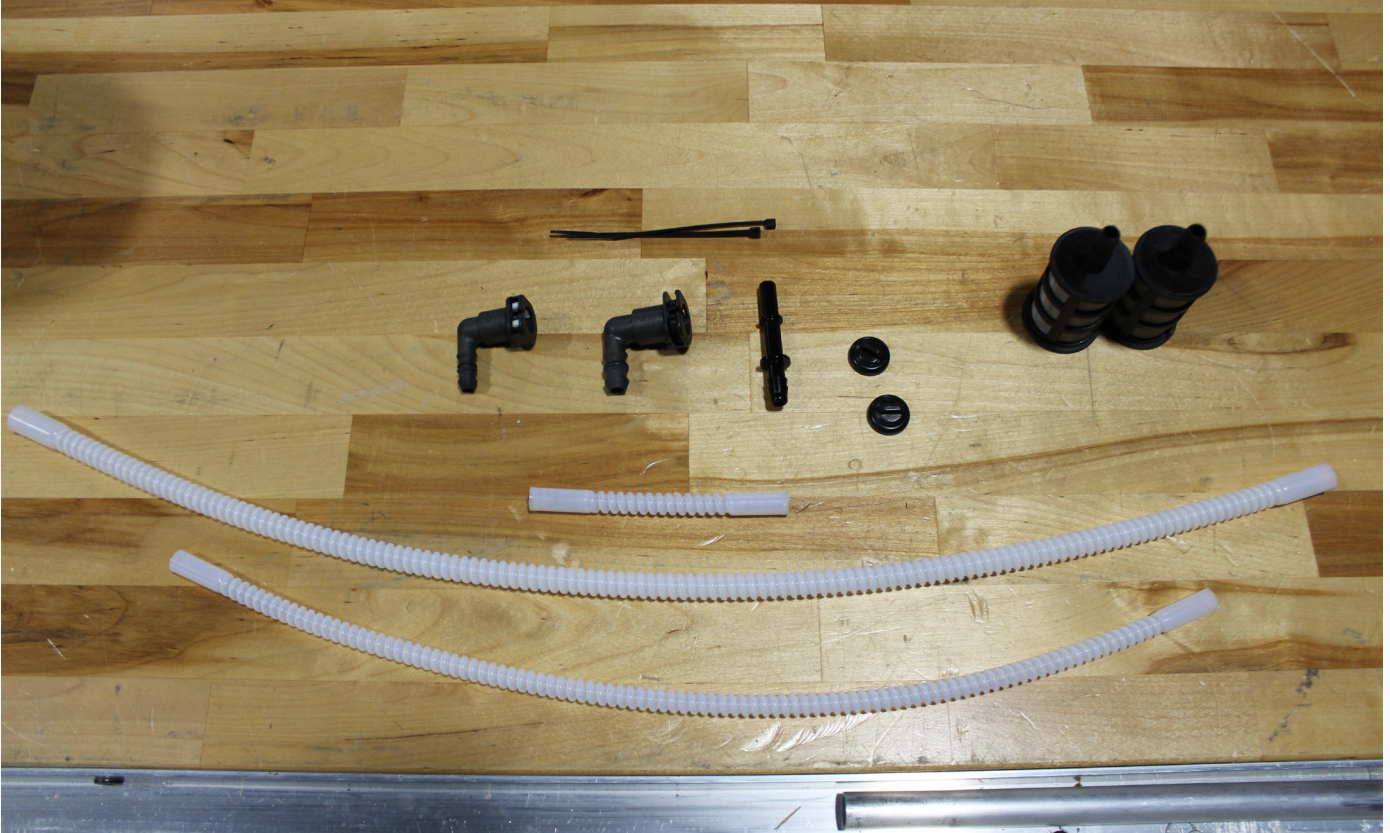


36. On the side of the basket there will be two dimple features. The Q50/60 you will need to drill the top hole with a 13/64 drill bit. On the Z the basket has three tiers, so you will need to drill both the holes on the middle tier only!

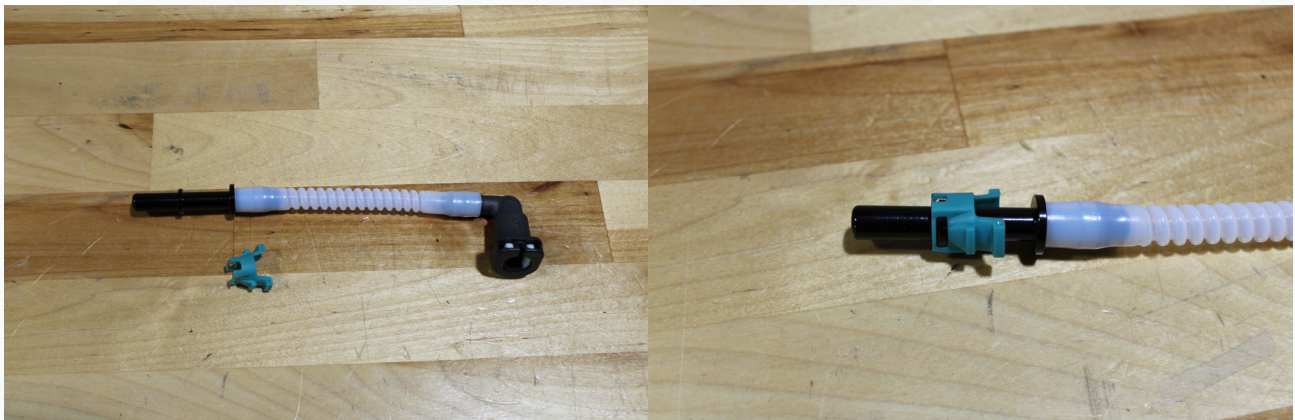


PREPARING THE SIPHON LINES

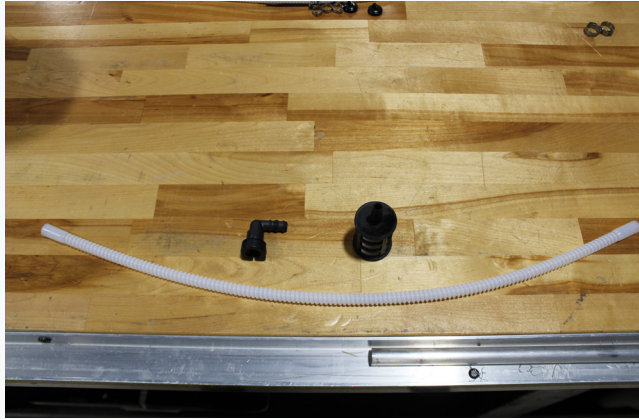
37. On the bench, lay out (3) siphon lines, (2) 90 degree quick connect fittings, quick connect to barb fitting, (2) magnets, (20) siphon strainers (2) zip ties and cinch clamp.



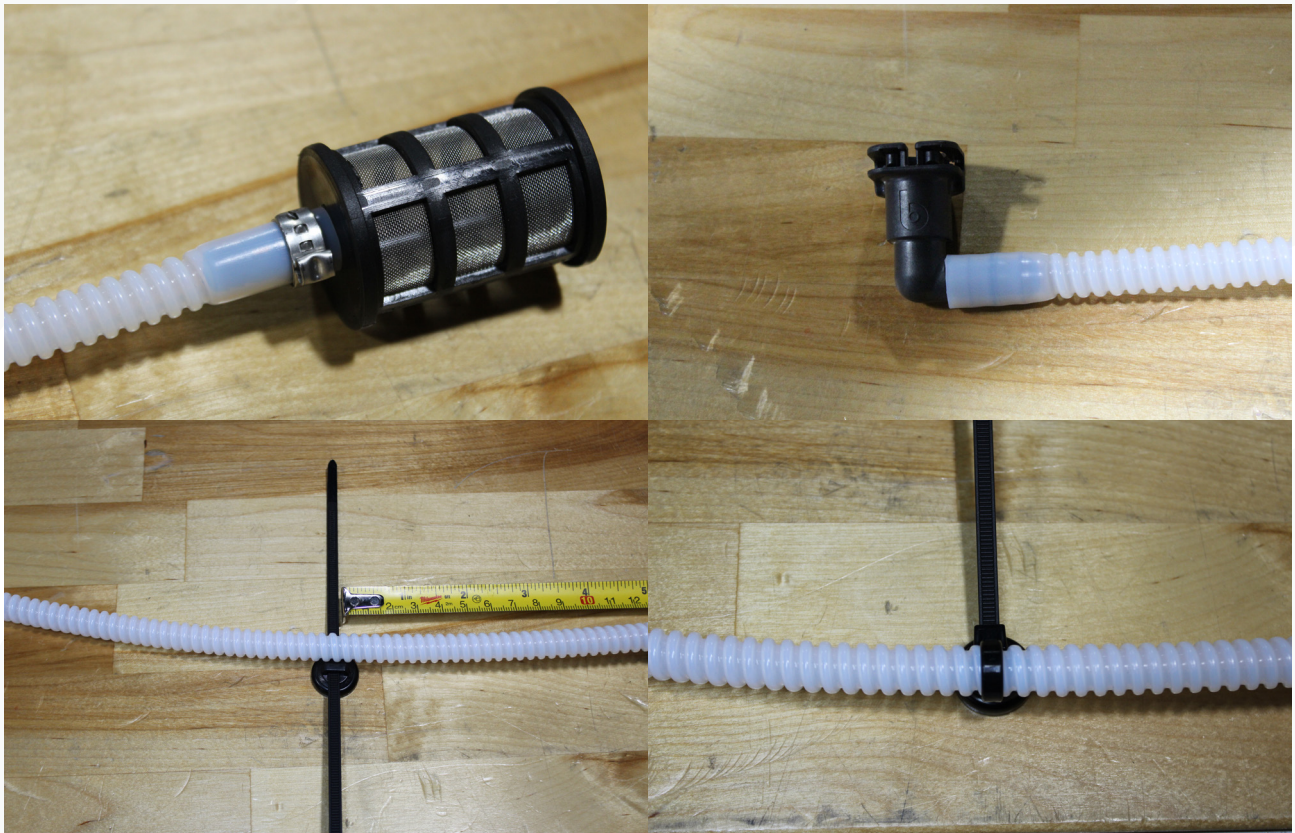
38. Assemble the small siphon adapter hose using the 5/16 90 degree quick connect fitting, siphon hose and adapter fitting. Carefully apply a little heat to the end of the hose using a heat gun to fully seat the siphon hose. Too much heat may permanently damage the hose. Install the [green quick connect](#) clip on the siphon adapter.



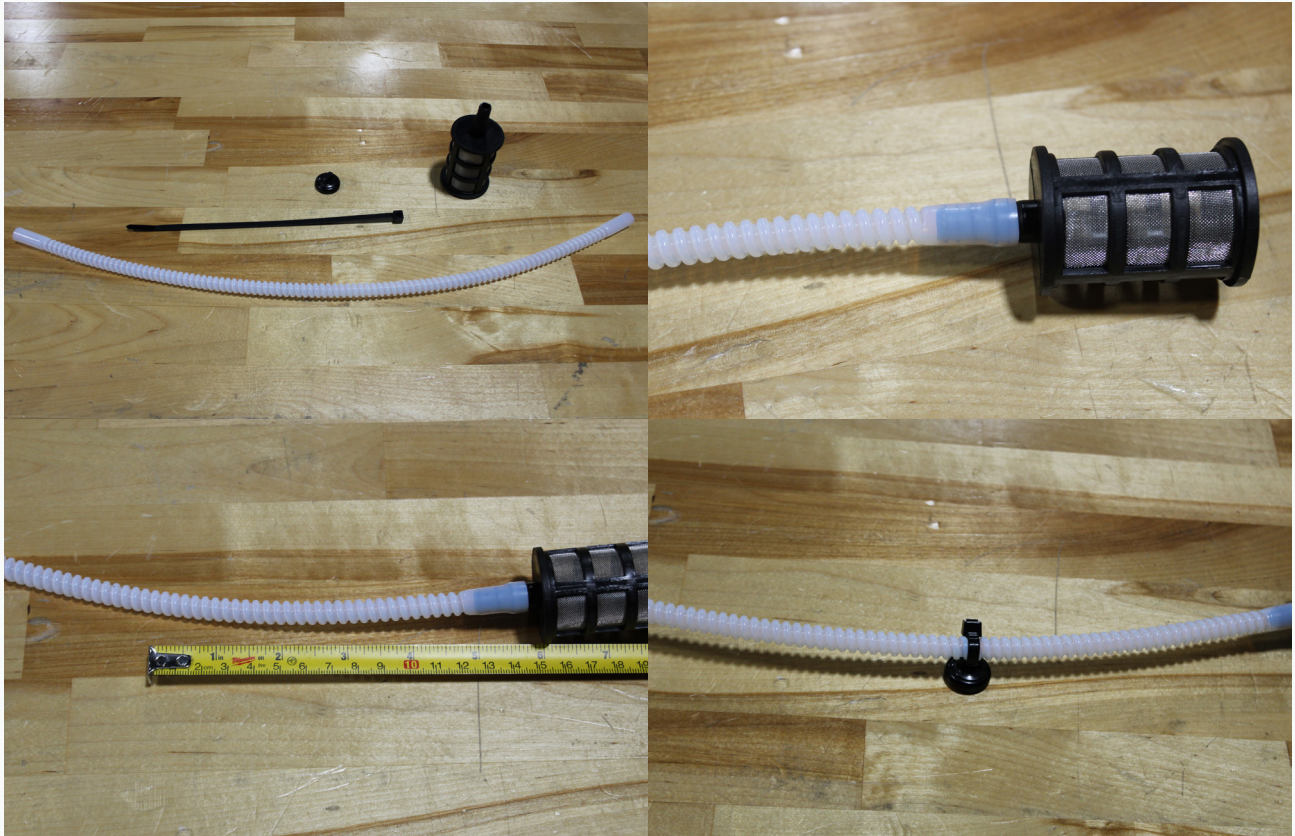
39. Gather the larger 3/8 siphon hose, 3/8 90 degree quick connect fitting, siphon strainer, magnet, zip tie and cinch clamp #14.5.



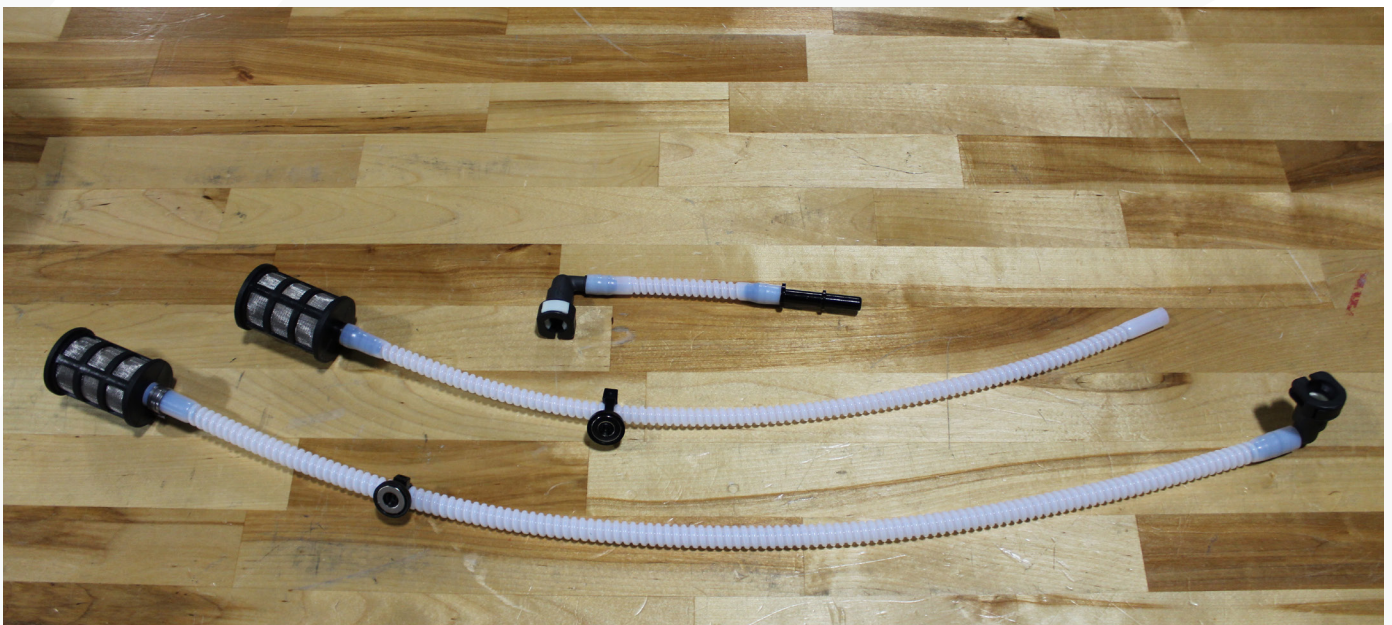
40. Assemble the hose as shown below, using the cinch clamp on the siphon strainer. Again, using a small amount of heat without damaging the hose, affix the 3/8 quick connect fitting to the other end of the siphon hose. Measure 6" from the strainer, fix the magnet to the hose with 1 zip tie.



41. Using the 5/16 siphon hose, fix the second siphon strainer to one end, using a small amount of heat to the end of the hose. Slide it up onto the larger set of barbs on the siphon strainer. Measure 6" from the strainer and fix the magnet to the siphon hose with a zip tie.



42. Now all three hoses should be assembled like shown below.

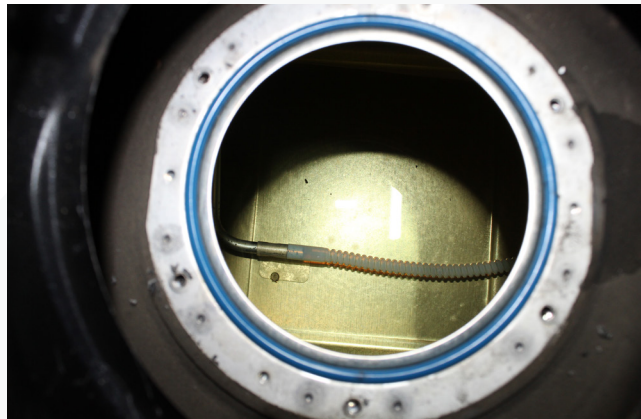


INSTALLATION

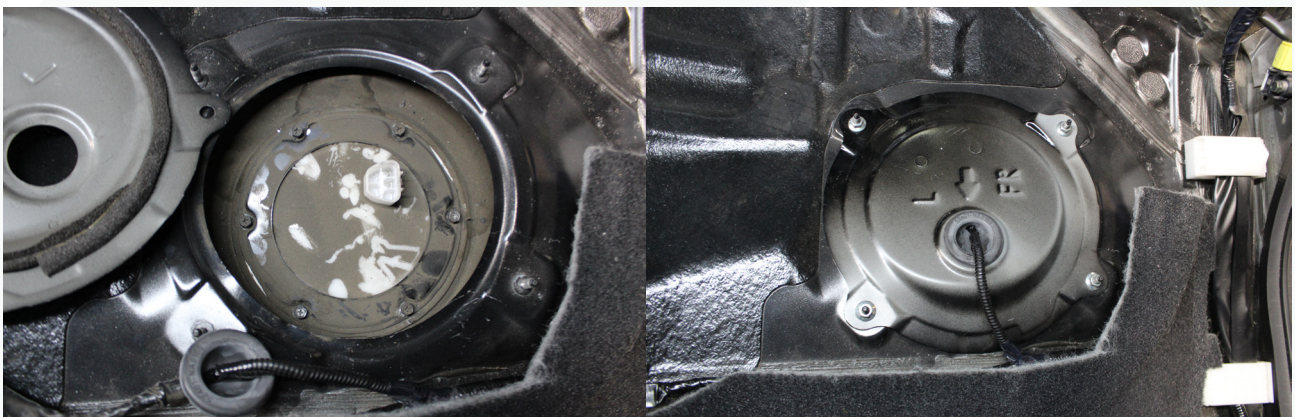
43. Take the medium length line and install it into the driver side of the tank. Carefully pull up the baffle in the tank and route the end with the siphon strainer towards the rear of the fuel tank. Make sure the magnet is facing down to hold it in place. Don't go too far as it will start to walk up the backside of the tank and therefore provide no benefit.



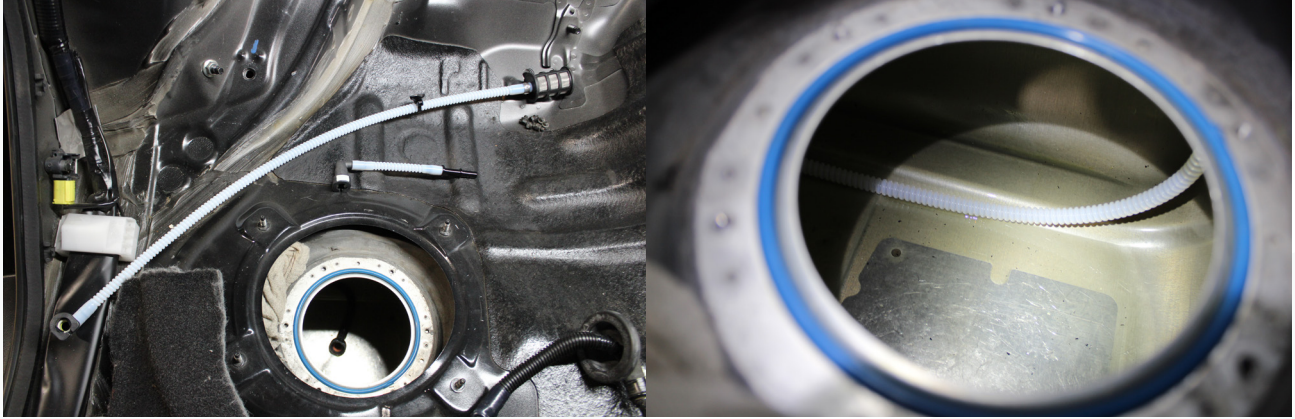
44. Push the open end of the hose onto the metal tube at the front of the tank.



45. Reinstall the driver's side top hat and replace the O-ring if necessary. Then reinstall the connector and cover panel.



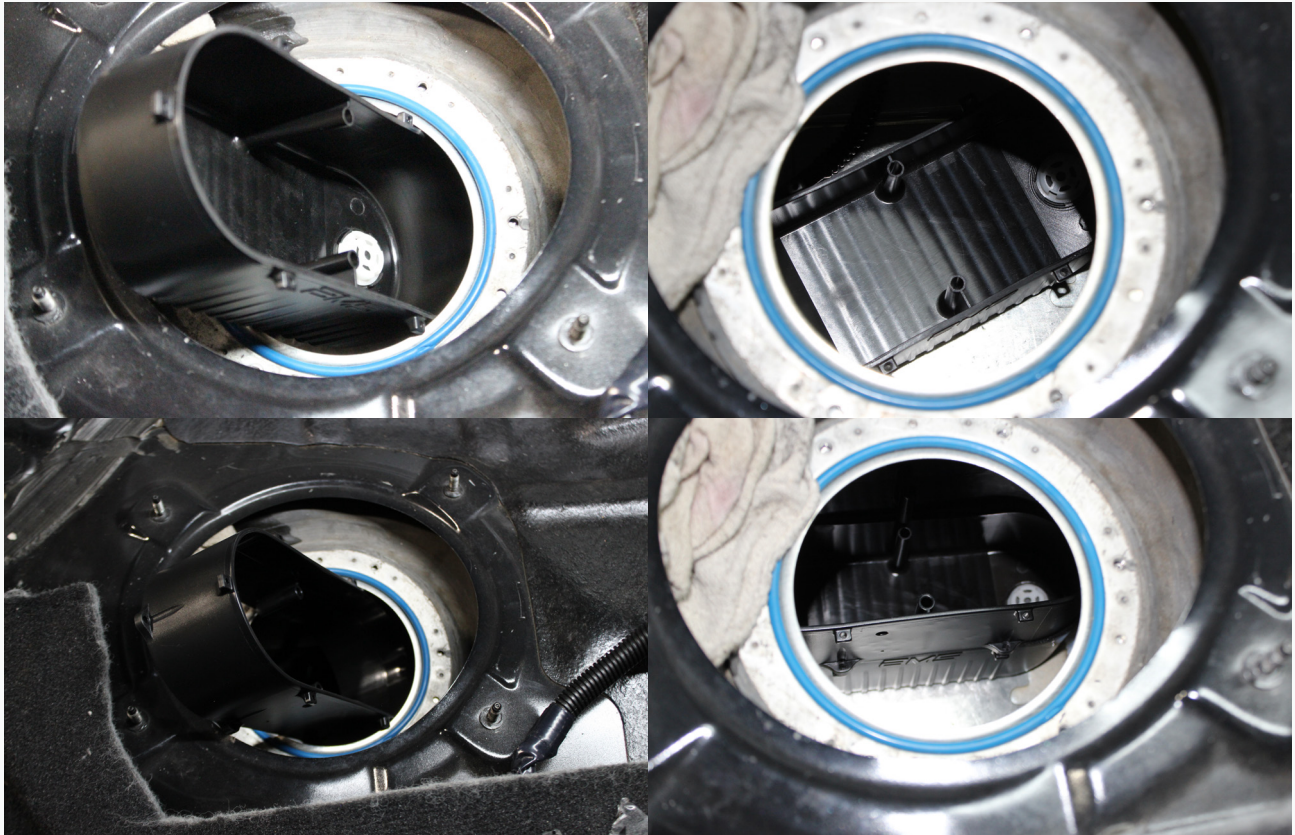
46. On the passenger side, start with the longest siphon hose and route the end with the siphon strainer under the baffle in the same fashion as the other side making sure the magnet is in place and the siphon strainer is at the bottom back of the tank.



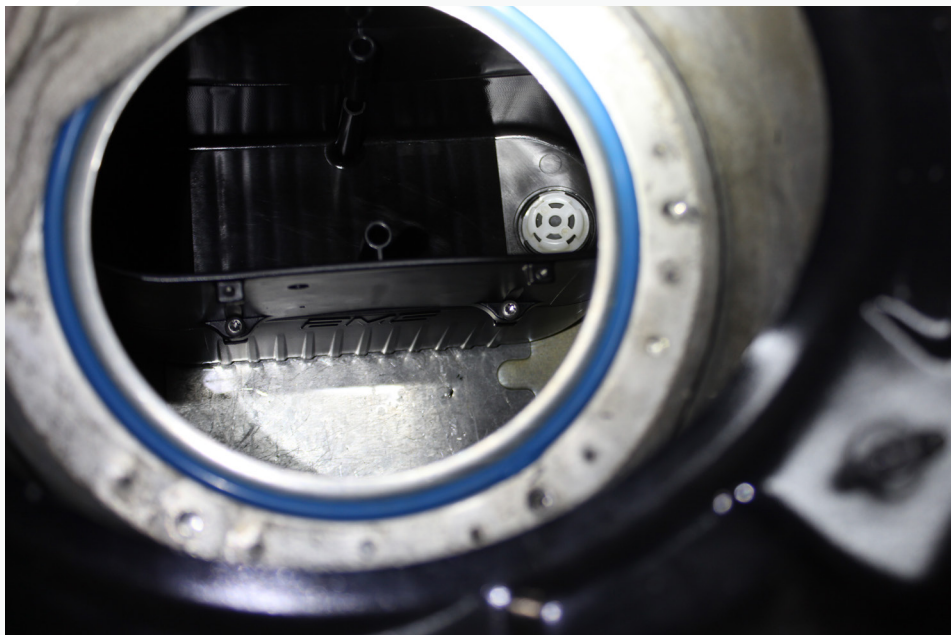
47. Install the short siphon hose into the black hose connection inside the tank.



48. Began placing the new bottom basket into the tank followed by the upper basket. It is not important which end the one way baffle is on when installing the upper basket.



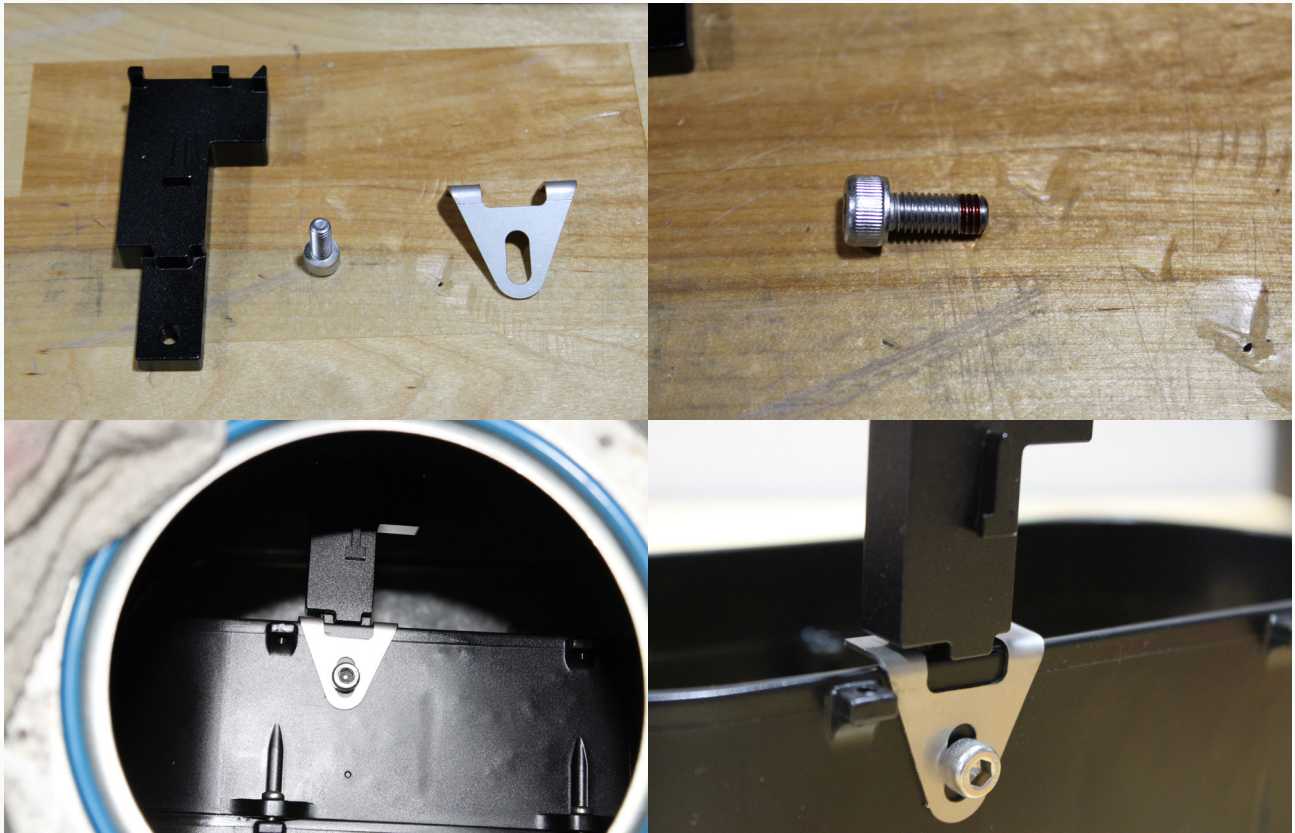
49. Loosely reinstall all the screws to hold the basket together. Then carefully snug them down until you feel resistance. **DO NOT OVERTIGHTEN** or you will strip the plastic.



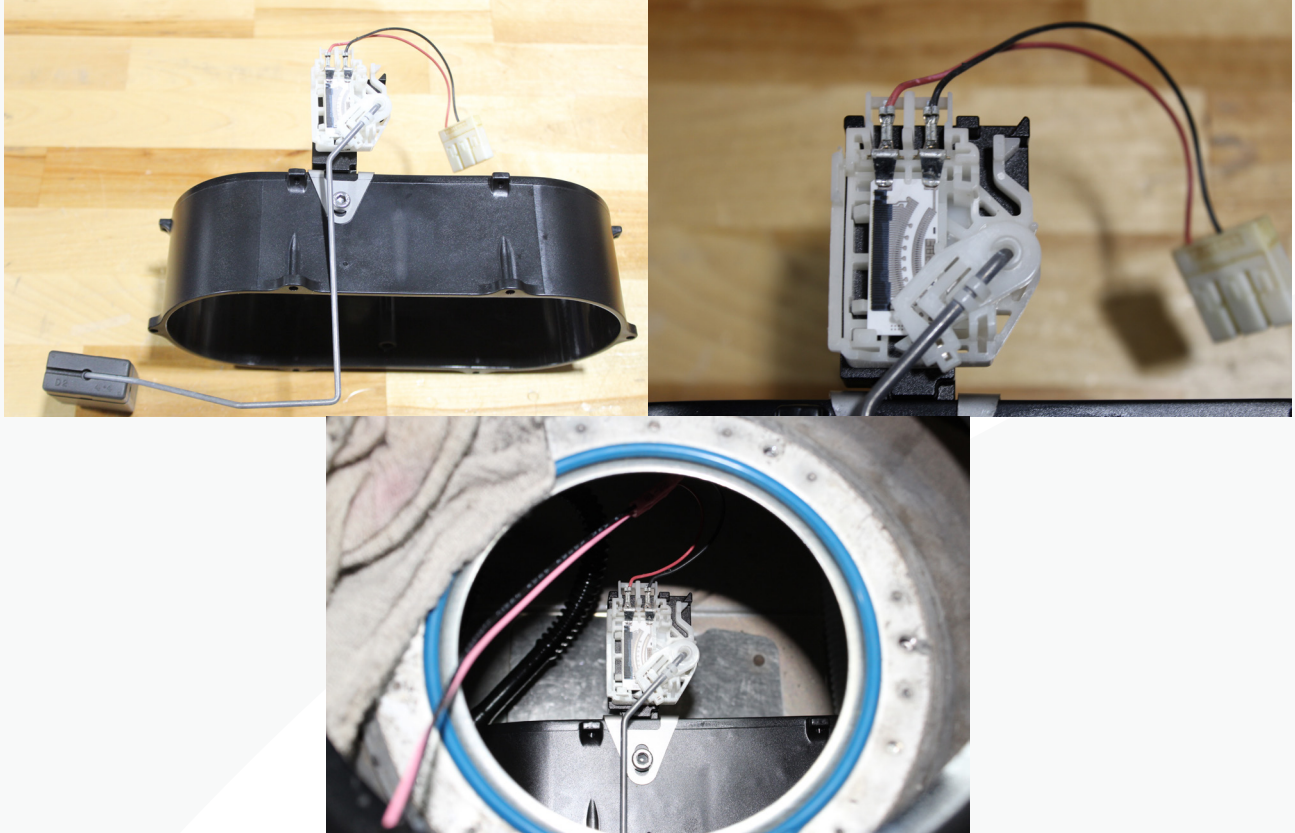
50. Lay the basket on its side so that the hole you drilled in the side is visible.



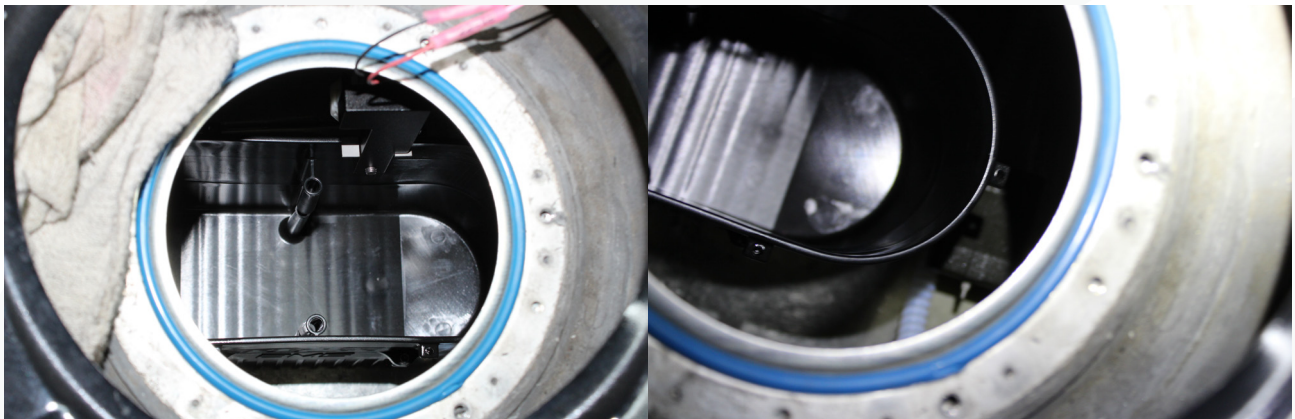
51. Lay out the level sensor mount, level sensor bracket, and M5 bolt. Apply a small amount of red Loctite to the bolt and install the level sensor mount to the basket as shown below.



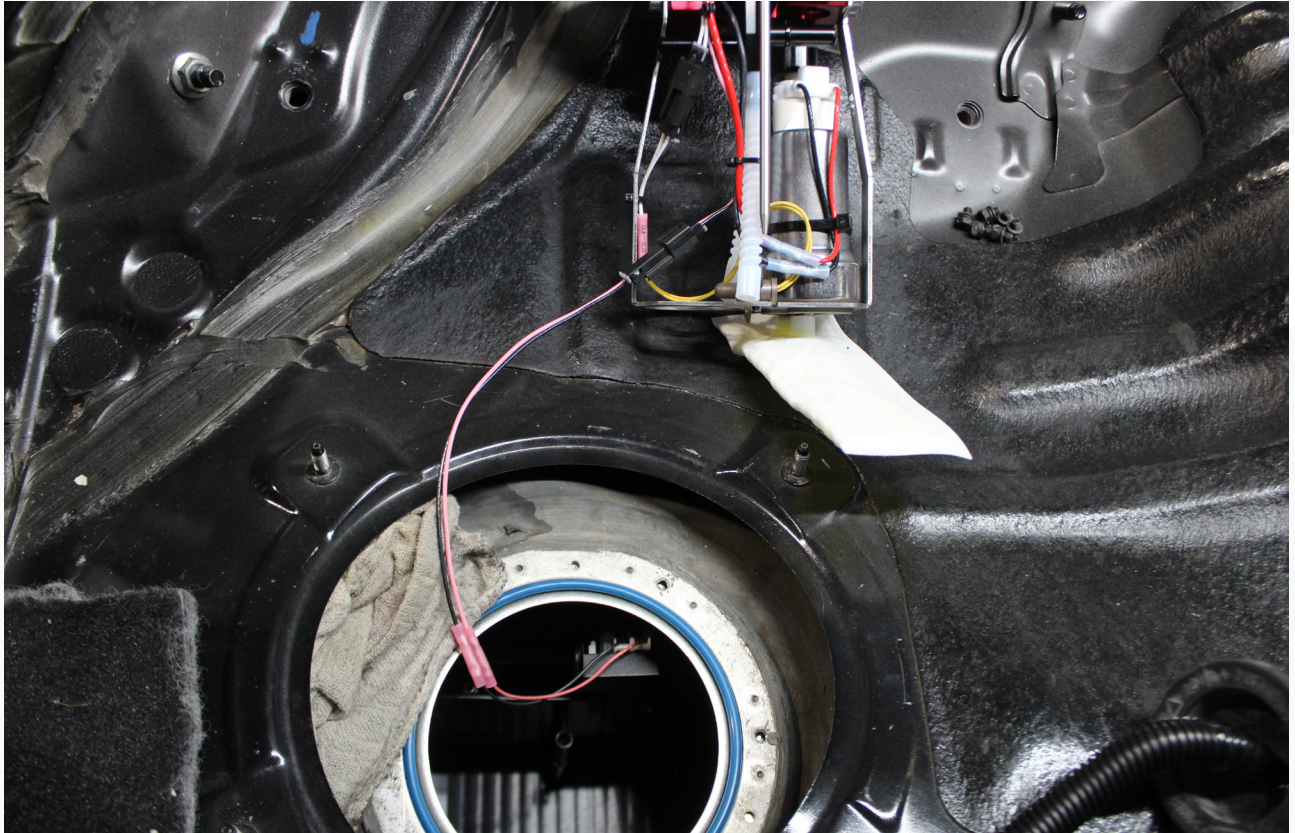
52. Install the level sensor to the level sensor mount and be sure it is properly secured. To demonstrate easier, some images are shown from outside the tank.



53. Position the basket so that the side with the level sensor is facing the back of the car. This should position the float just above the corrugated siphon line previously installed.



54. Set the basket near the opening in the fuel tank and connect the level sensor.

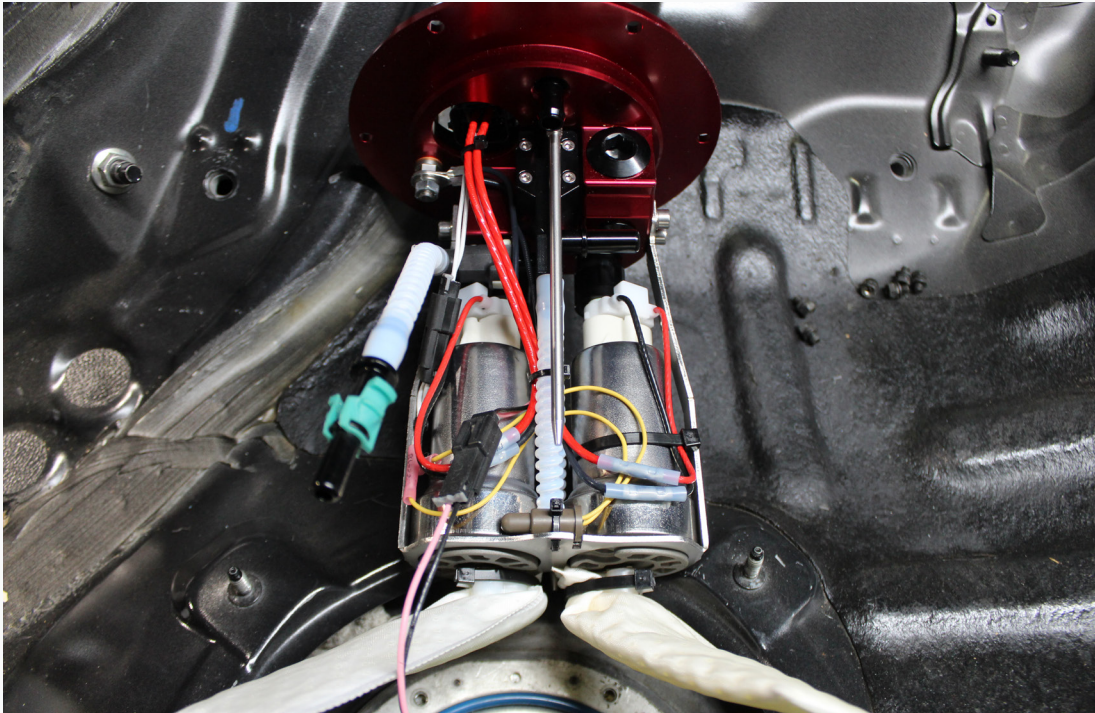


55. Before installing the fuel pump assembly, check that the corrugated hose routes just underneath the level sensor but does not contact it.



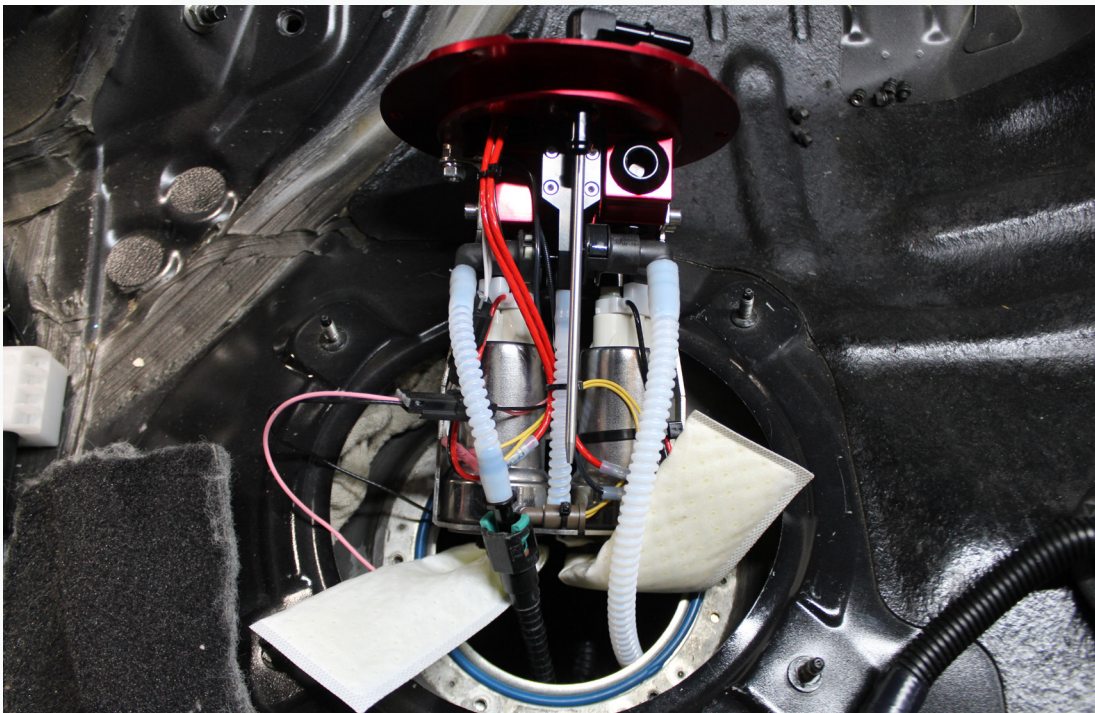
56. Connect the short hose created in step 36 to the siphon block on the fuel pump assembly.

Note: Dual pump system shown but single pump system is similar.

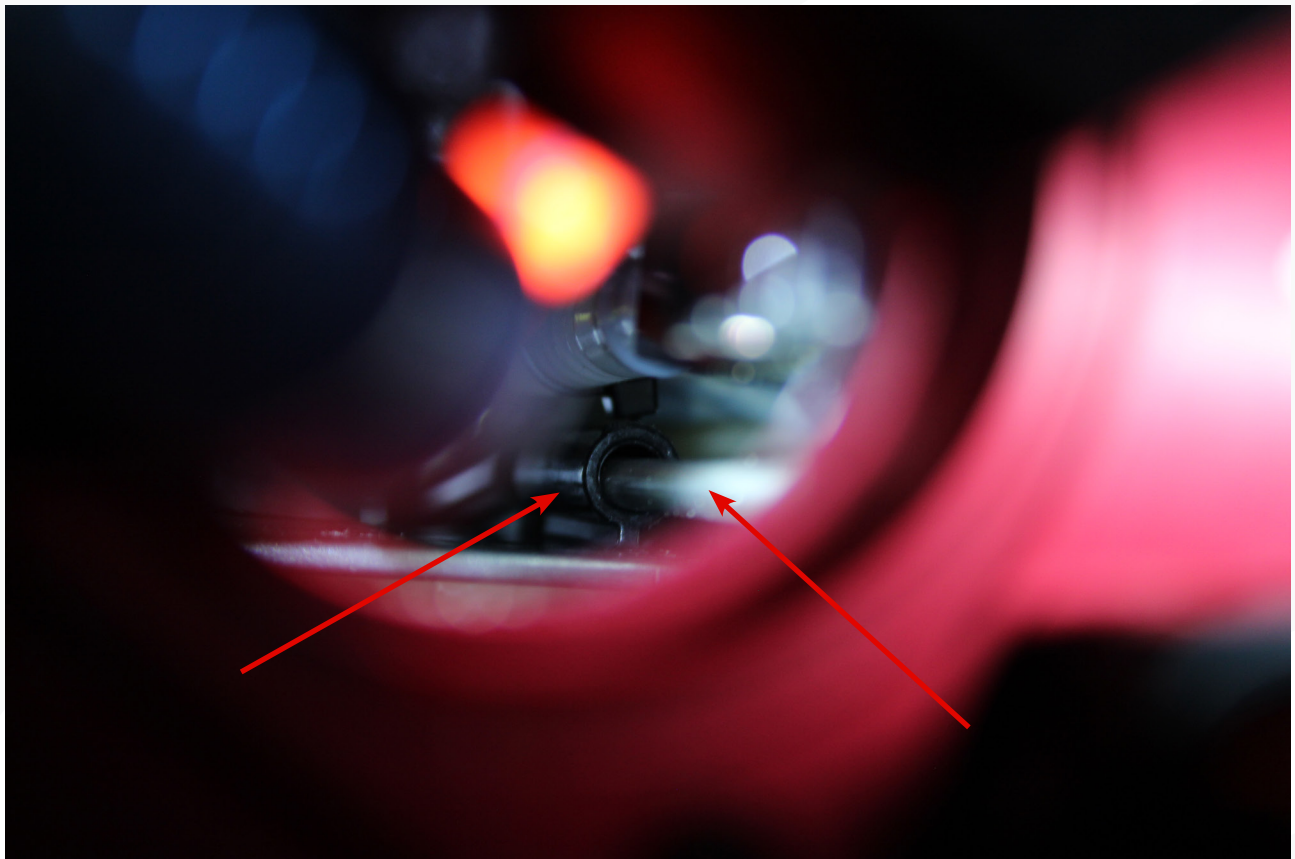


57. Connect the black hose to the hose installed in the previous step. Then connect the New siphon pickup hose to the fitting on the right side.

Note: Be careful not to pull on the magnet holding the siphon line in place.



58. Make sure the basket is positioned correctly like in step 51 & 52 and carefully lower the fuel sending unit into the tank making sure not to damage the hoses or wiring on the sharp edge of the tank. You will need to make sure the hoses stay routed properly as it installs. When it gets about halfway you will need to align the pins into the two holes of the basket. Use the opening in the top of the top hat to help. A long screwdriver may also help assist.



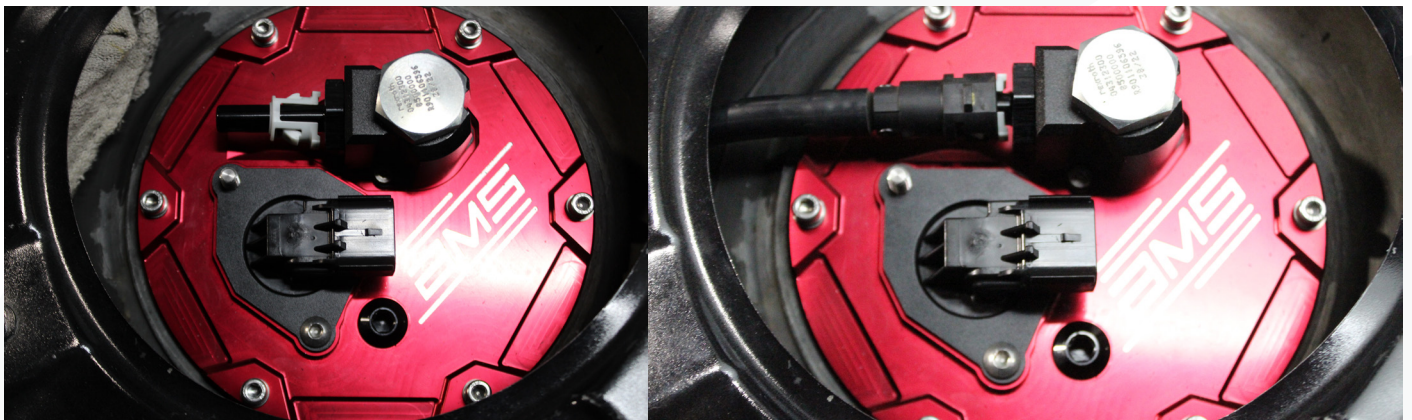
59. After you have confirmed the fuel sending unit is fully seated and lines are still routed properly. Locate the six m5 bolts, lock washers and flat washers. Secure the top hat.



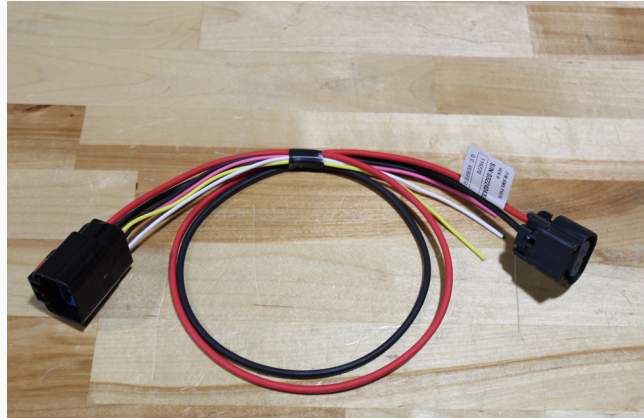
60. Locate the bulkhead connector, m6 button head bolt, O-ring and plate. Lubricate the O-ring and slide it onto the connector. Plug in the connector and install it into the top hat with the mounting plate and bolt. We will install the nut at another step.



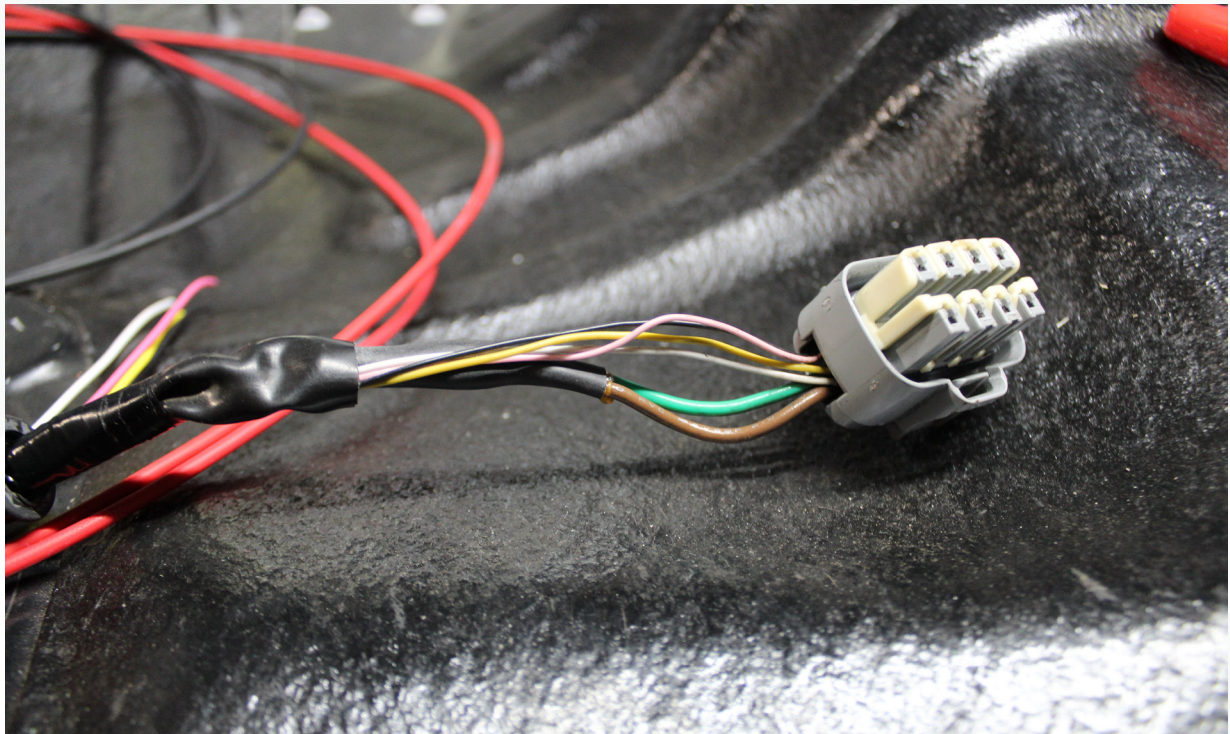
61. Install the white quick disconnect clip removed earlier onto the top hat fitting. Reconnect the factory fuel line.



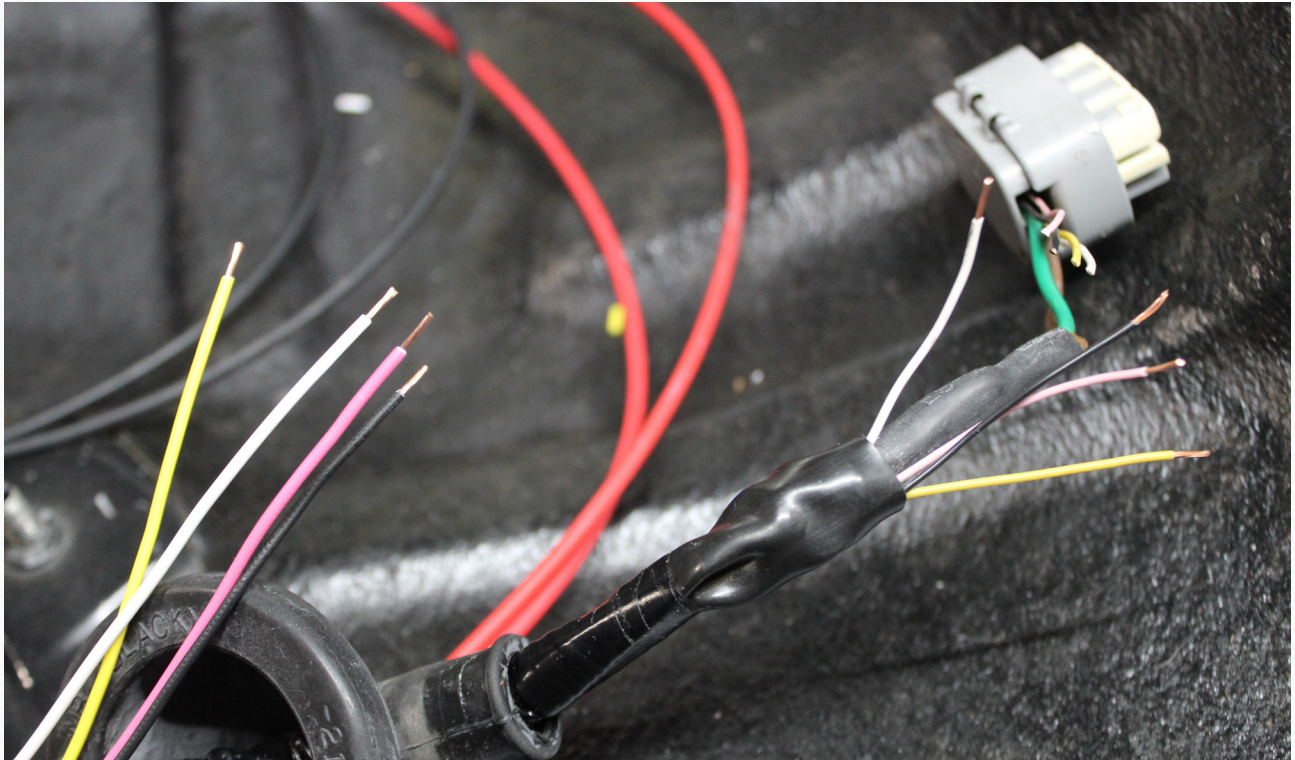
62. Locate the out of tank harness with a 6-pin connector on one end and 2-pin on the other and four unterminated wires.



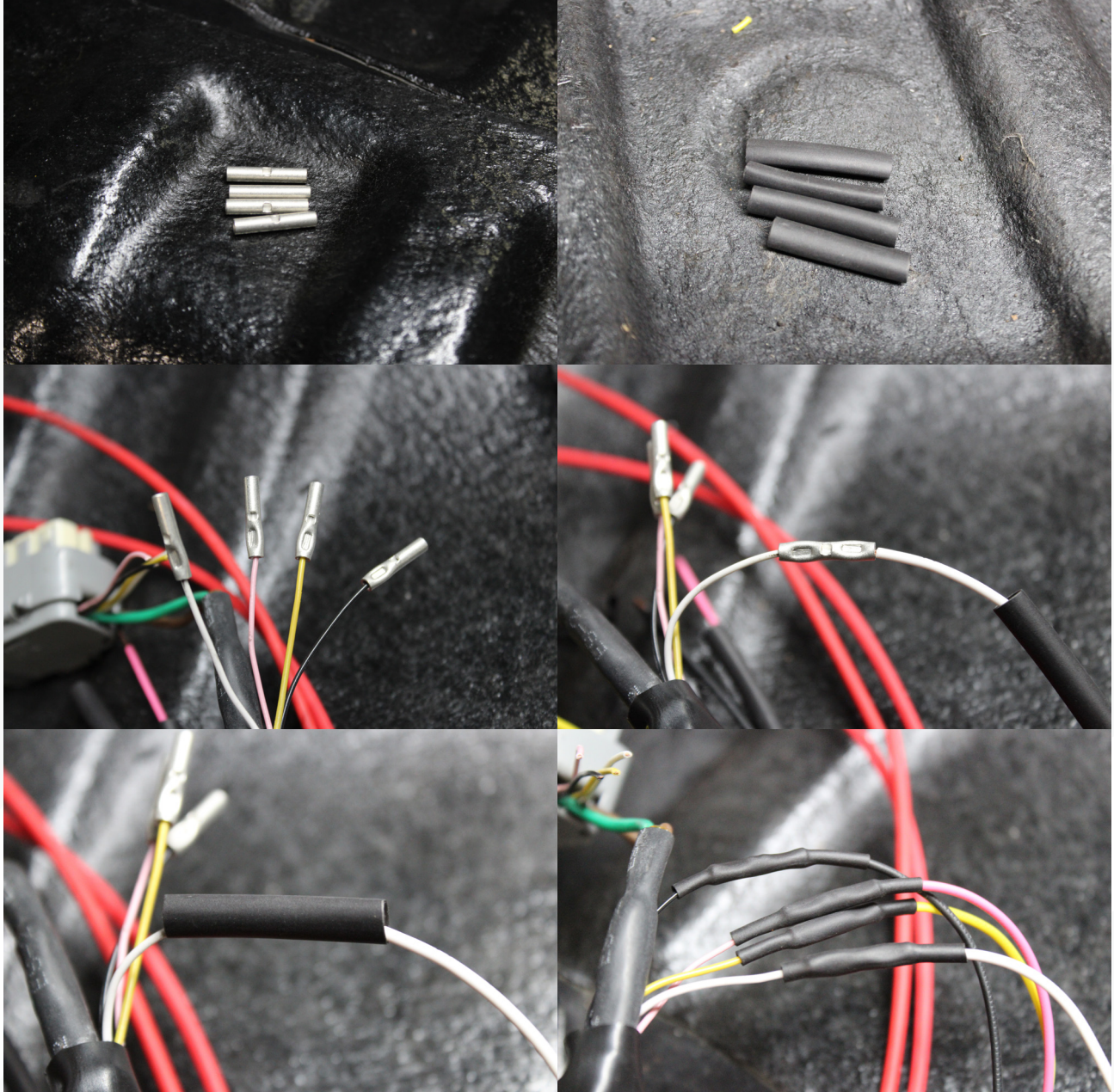
63. Cut back some of the wire loom on the factory top hat connector.



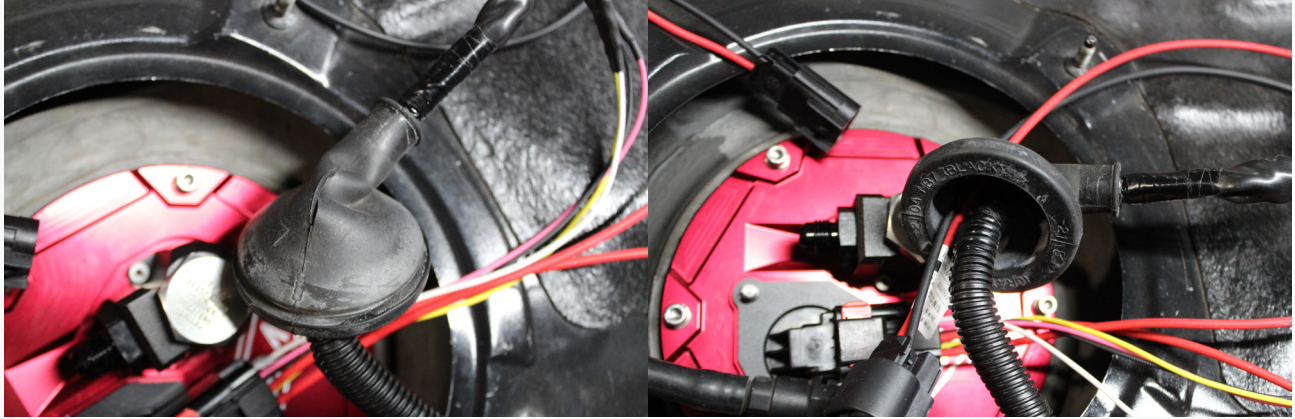
64. Cut the four smaller wires about an inch away from the connector. Strip the ends of the wires on the vehicle harness and the matching wires on the AMS harness.



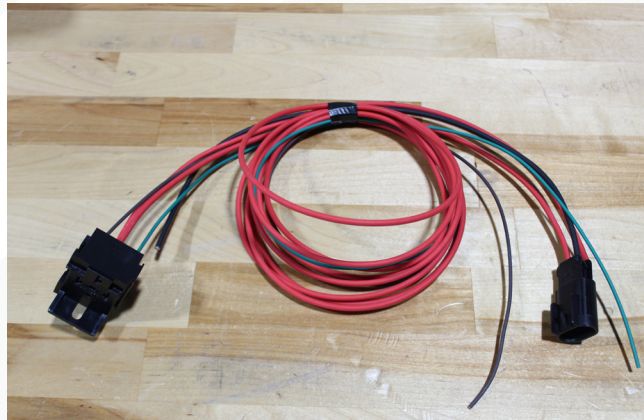
65. Cut four, two-inch-long sections of 1/8" heat shrink and grab four 18–22-gauge butt connectors. Crimp one side to the AMS harness, slide on the heat shrink, then crimp on the vehicle harness matching the colors. Use a heat gun to shrink the heat shrink.



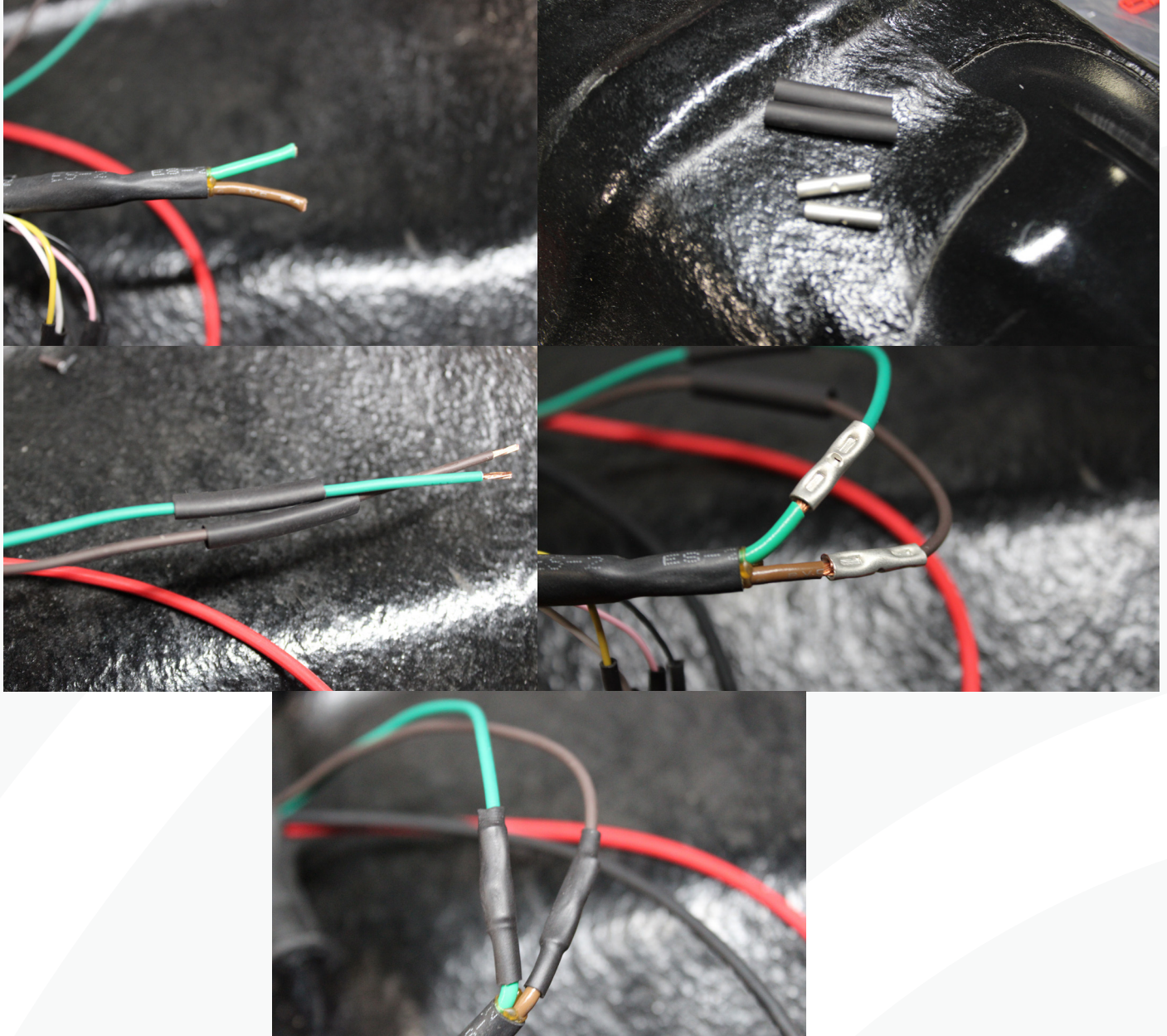
66. Cut a small slit in the vehicle grommet no more than inch long. Feed the two-pin connector through the grommet as shown.



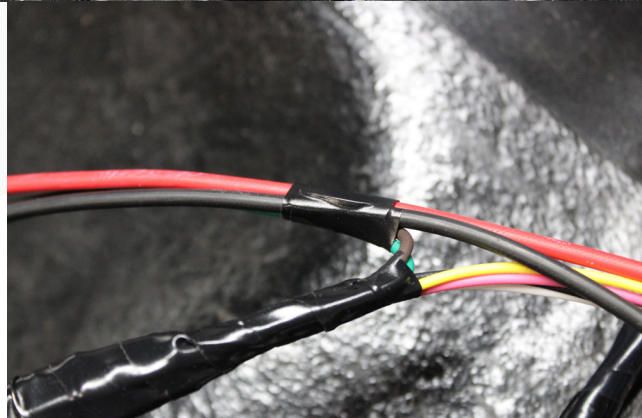
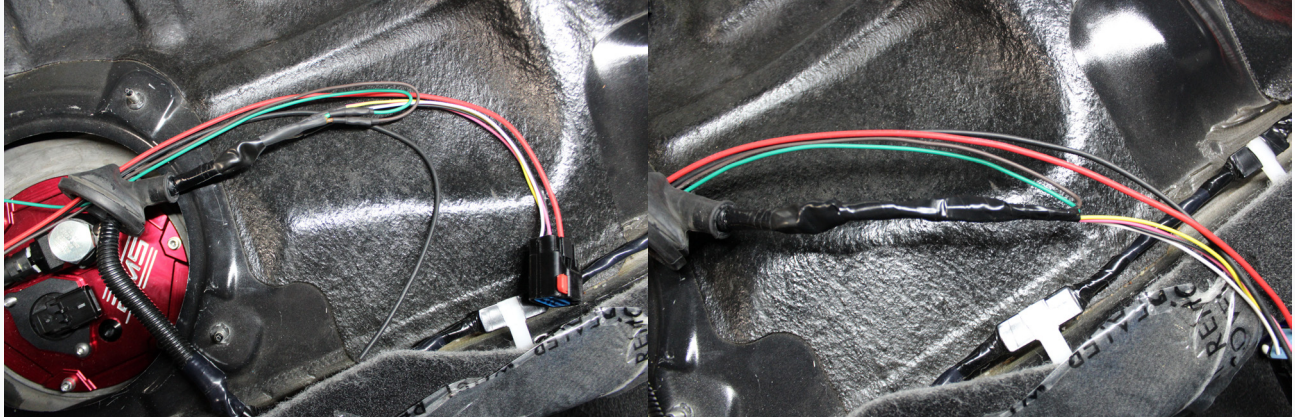
67. Locate the provided relay harness. Feed the brown and green wires through the vehicle grommet.



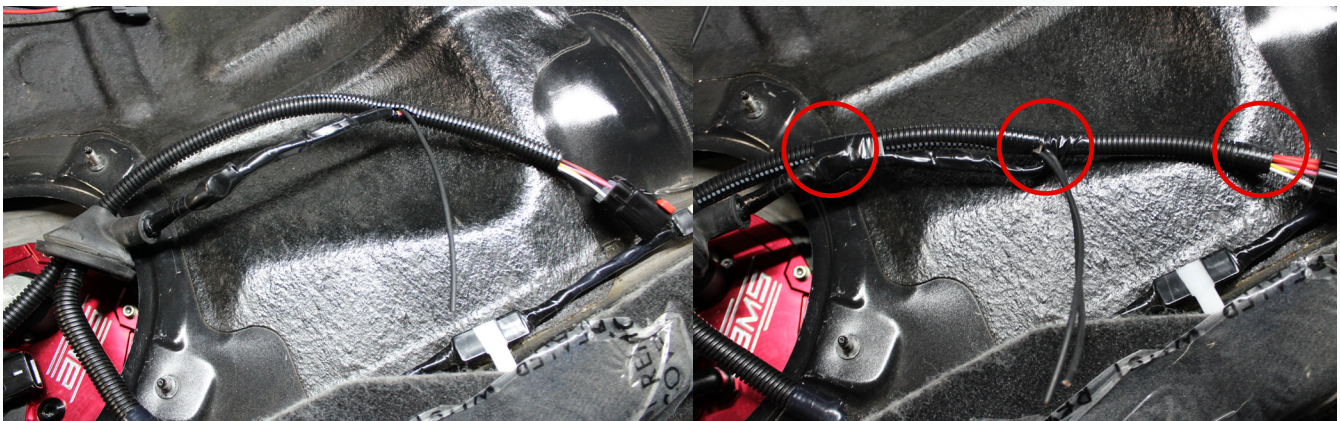
68. Cut the remaining brown and green wires from the OEM Fuel pump connector about an inch away from the connector. Strip the two green and two brown wires. Grab two 14-16 butt connectors and cut two-two-inch strips of 3/16" heat shrink. Crimp the wires together and use a heat gun to shrink the heat shrink.



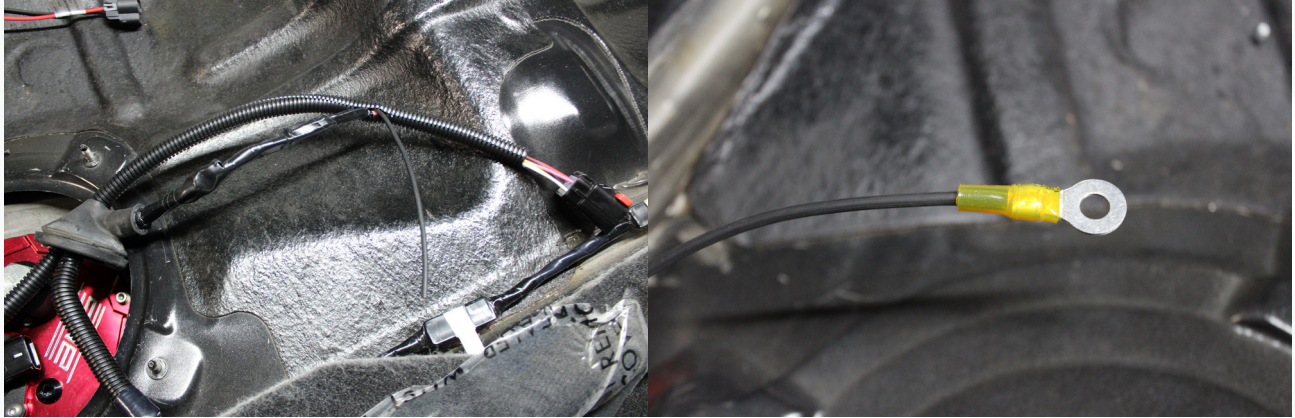
69. Put a soft 180-degree bend in the green and brown wires and then bundle the group of wires together. Starting from the OEM loom, wrap the wiring with electrical tape up to the T. Then place a section of electrical tape near the 180-degree bend to hold the other bundle in place.



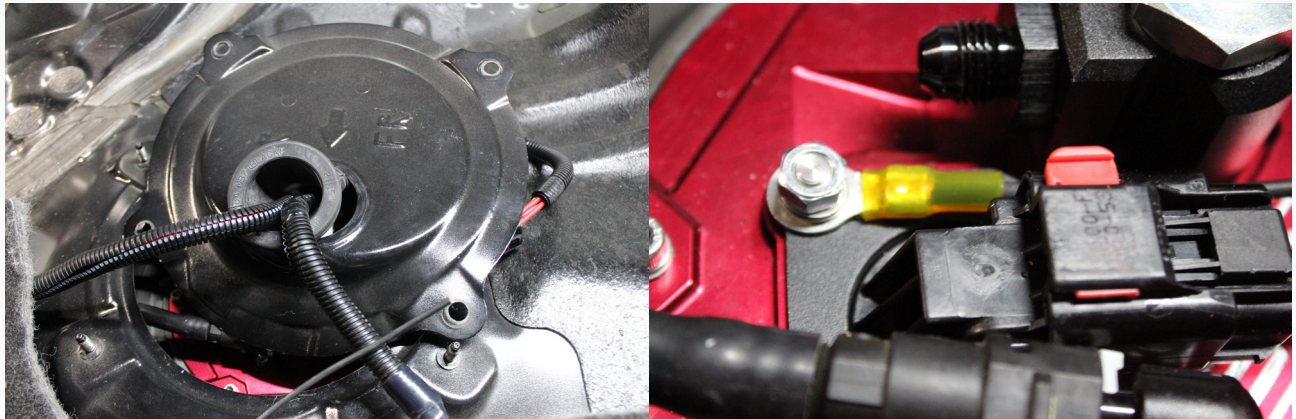
70. Cut a 21" section of wire loom. Feed it through the grommet covering all the loose wires up to the connector. The ground wire will exit the loom the T where we taped it. Tape the loom every 6" or so.



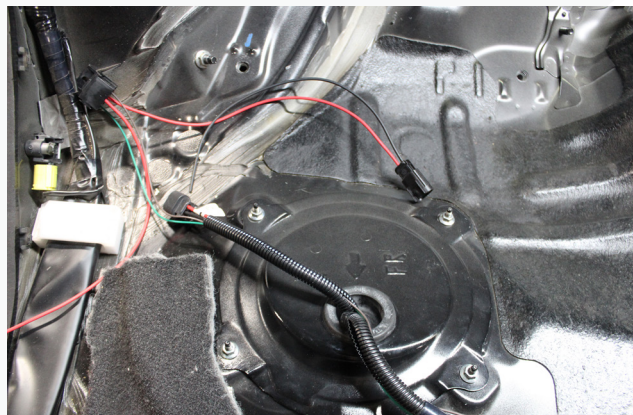
71. Strip the black unterminated wire and crimp on a heat shrink ring terminal. Use a heat gun on the heat shrink.



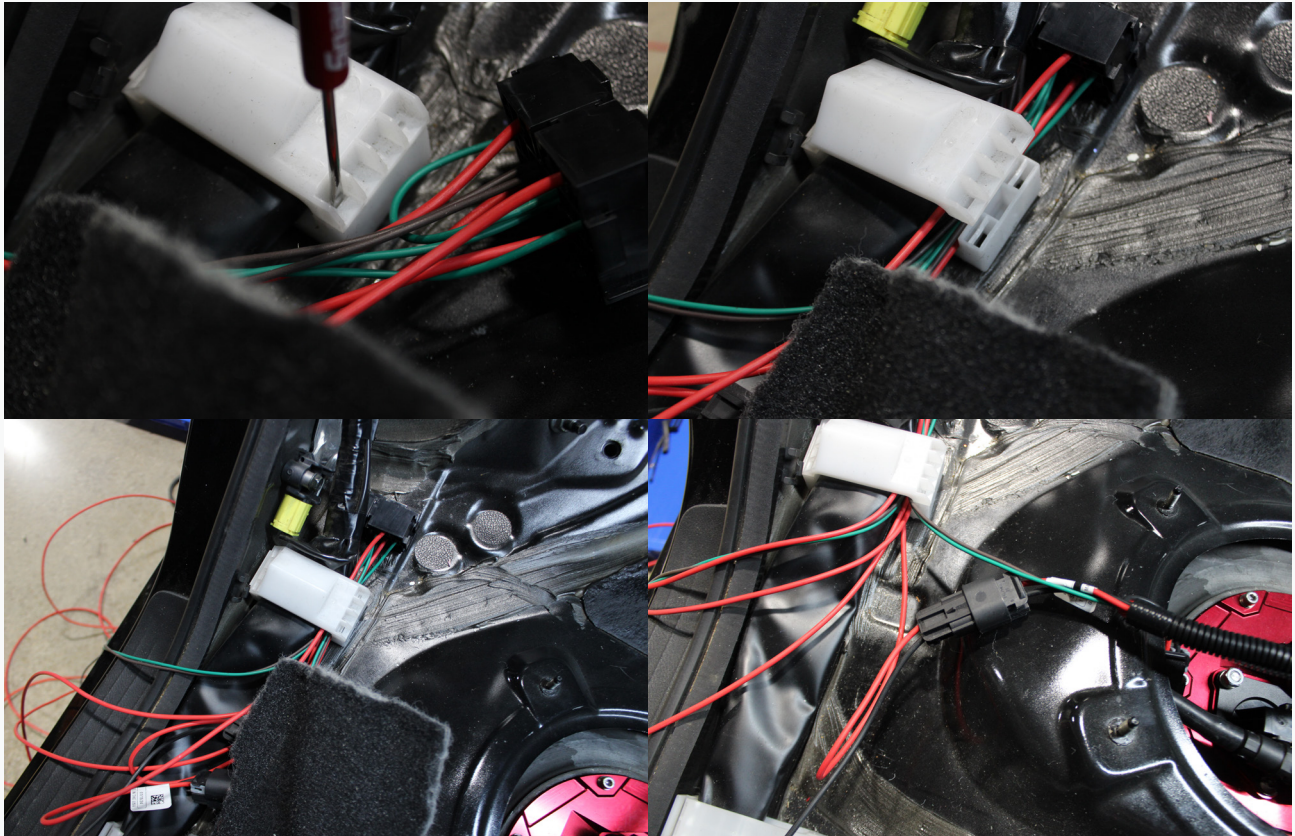
72. Route the harness through the access panel and secure the grommet in opening. Plug the connector into the top hat and use an m6 lock washer and nut to secure the ground on the open stud.



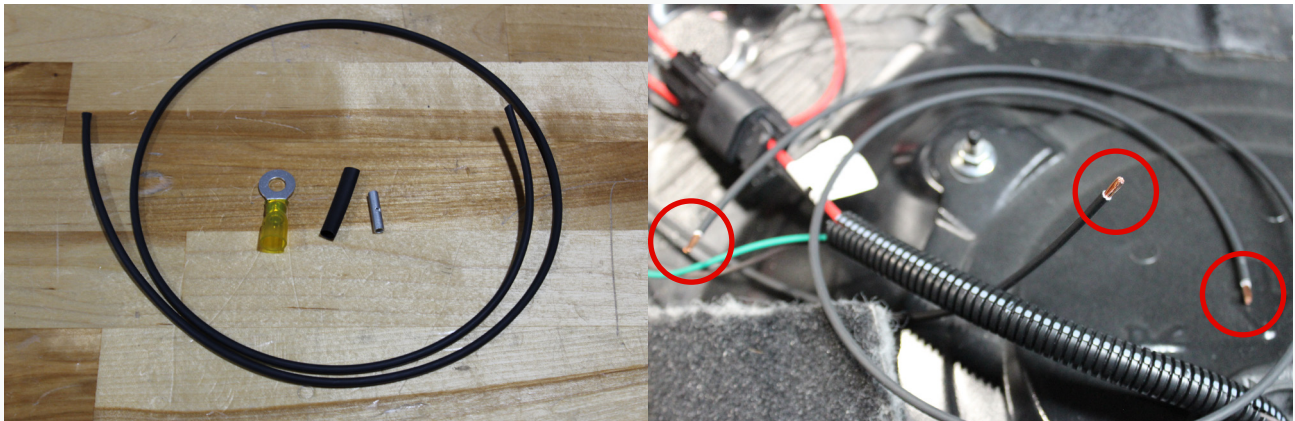
73. Loosely install the access panel. You will need access at the end to check for leaks.



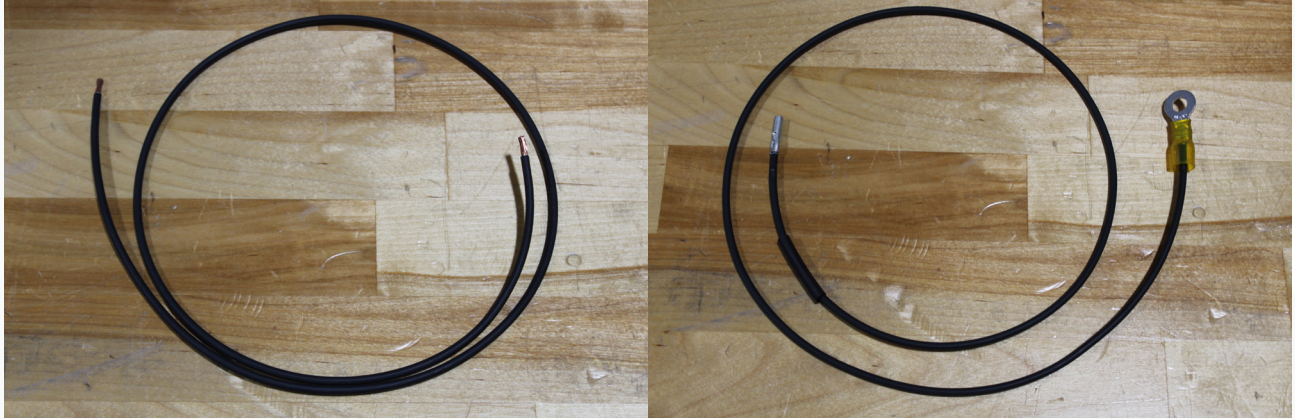
74. Unclip the two clips holding factory harness retainer with a small flat blade screwdriver. Place the relay harness through the retainer and latch it closed. Plug the 2-pin connector from the relay harness into the 2-pin connector from the top hat.



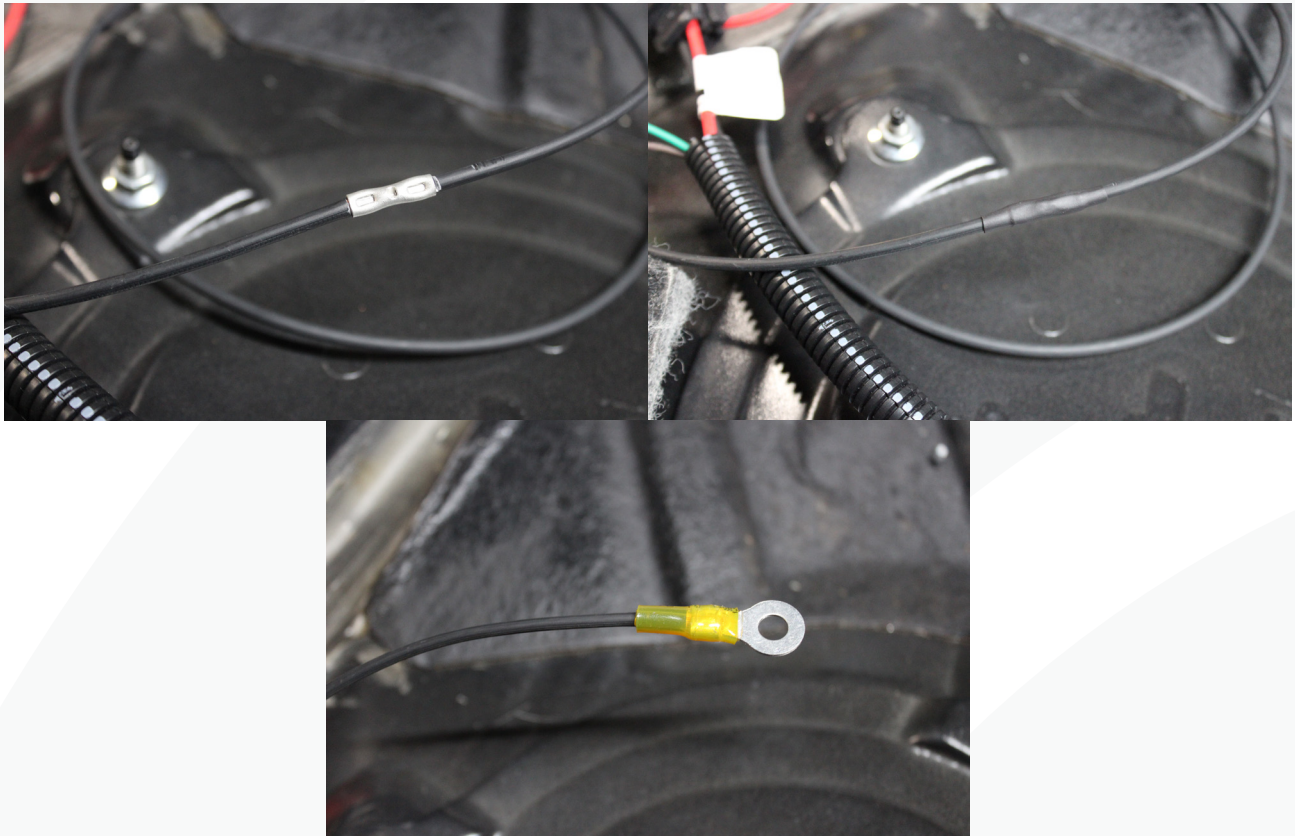
75. Locate the 32" unterminated black wire, ring terminal, butt connector, and a 1 1/4" piece of 3/16 heat shrink. Strip the end of the black wire on the end of the 2-pin connector and both ends of the unterminated black wire.



76. Crimp on a butt connector to one end of the wire, slide on the piece of heat shrink, then crimp on the ring terminal.



77. Crimp the wire from the previous step to the wire you stripped from the 2-pin connector. Slide over the heat shrink and use a heat gun to shrink the heat shrink over the butt connector and the ring terminal.



78. Feed the long red wire coming from the relay harness and the black wire with ring terminal through the harness retainers along the sill up to the b-pillar.



79. Locate the chassis ground on the b pillar above the seat belt retractor and install the ring terminal.



80. Stretch out the 3/8" split loom from the relay towards the front of the car and up into the dash area, mark it, then add 24" so it reaches into the battery compartment.



83. Locate the vehicle grommet near the battery. On the underside of the dash, release the plastic tabs under the insulation holding it in place.



84. Trim the grommet just before it enlarges. This spot will fit tight on the loom to help prevent leaks.

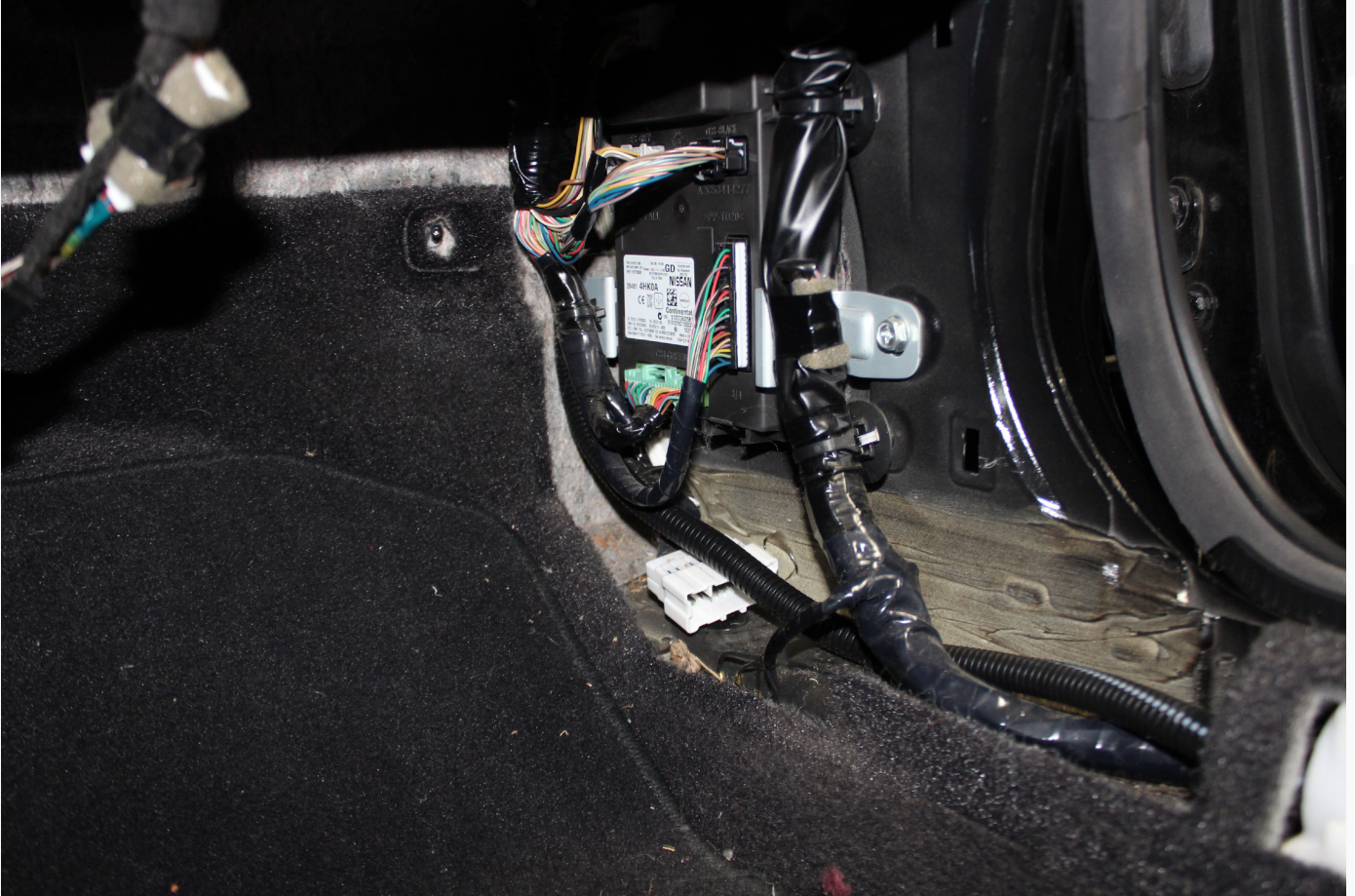


85. Feed the wires up through the hole into the battery compartment. Then while holding the grommet, feed the wires and loom through the grommet at click the grommet back in place.

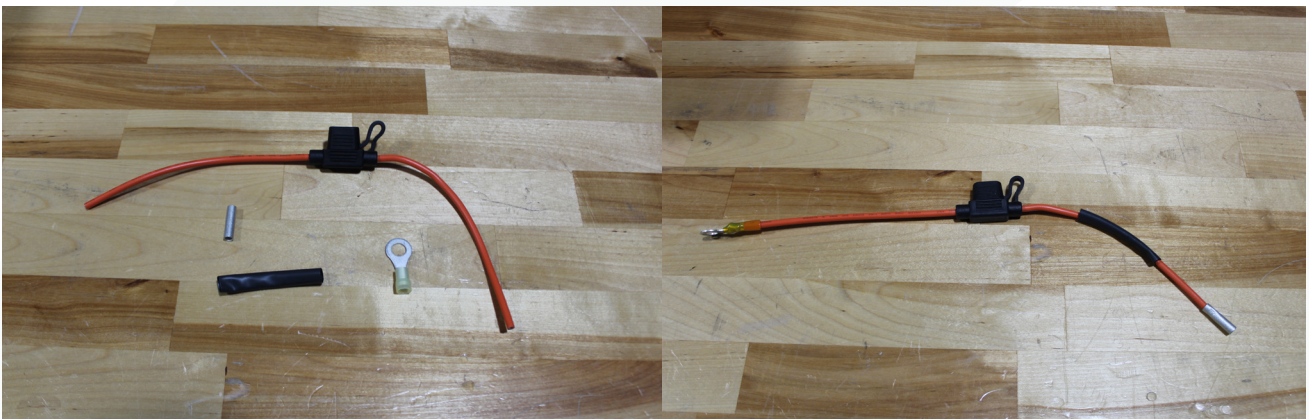
Note: The extra wires are for the dual pump upgrade. The single pump system will only have 1 red wire in the loom after the B pillar.



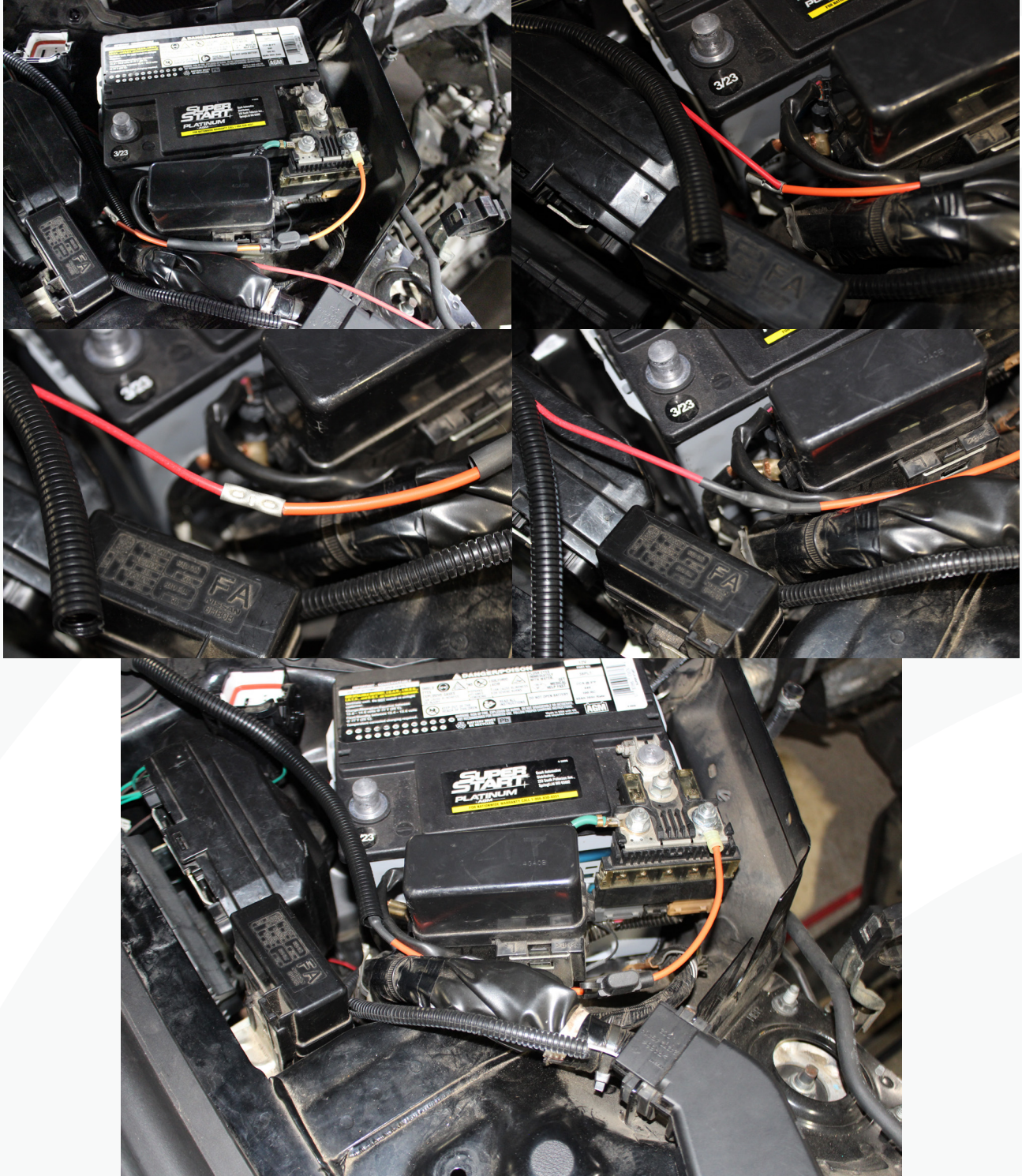
86. If necessary, pull back some slack of the loomed harness and secure it to a nearby harness in the passenger kick panel.



87. Locate the orange fuse holder, ring terminal, butt connector and large heat shrink. Strip the ends of the fuse holder and install a ring terminal at one end and butt connector at the other. Slide the heat shrink onto the butt connector.



88. With the fuse **NOT** installed, secure the ring terminal to the open battery post. Route the wire along the vehicle harness and trim the red wire as necessary. Strip the wire and crimp it to the butt connector. Slide the heat shrink over and shrink it with a heat gun.



89. This completes the installation of the AMS Single Pump LSFP. Check over your work and install the fuses. Make sure to check for leaks before reassembling the vehicle.

90. Enjoy!