INFINITI RED ALPHA Q60 Q50 FLEX FUEL 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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FUEL PRESSURE RELIEF

Warning! Make sure the engine has cooled down. Disconnecting fuel lines on a hot engine can lead to fuel rushing out of fuel lines at random, caused by fuel boiling when opened to atmosphere. Fuel temperatures in the low side fuel line can be as high as 150 degrees Fahrenheit at the inlet of the HPFP and the high side can be significantly higher, especially at pressures of 200 bar. At a minimum, fuel in the high side rails and lines will follow engine bay temperature. Make sure to follow the OEM fuel pressure relieving procedure. (Without Consult Tool)

1) Pull the #52 (15A) Fuse listed as Fuel Pump in the IPDM. The IPDM (Intelligent Power Distribution Module) is the fuse box located next to the battery in the engine compartment.

Note: The battery may need to be removed in order to remove the IPDM cover.

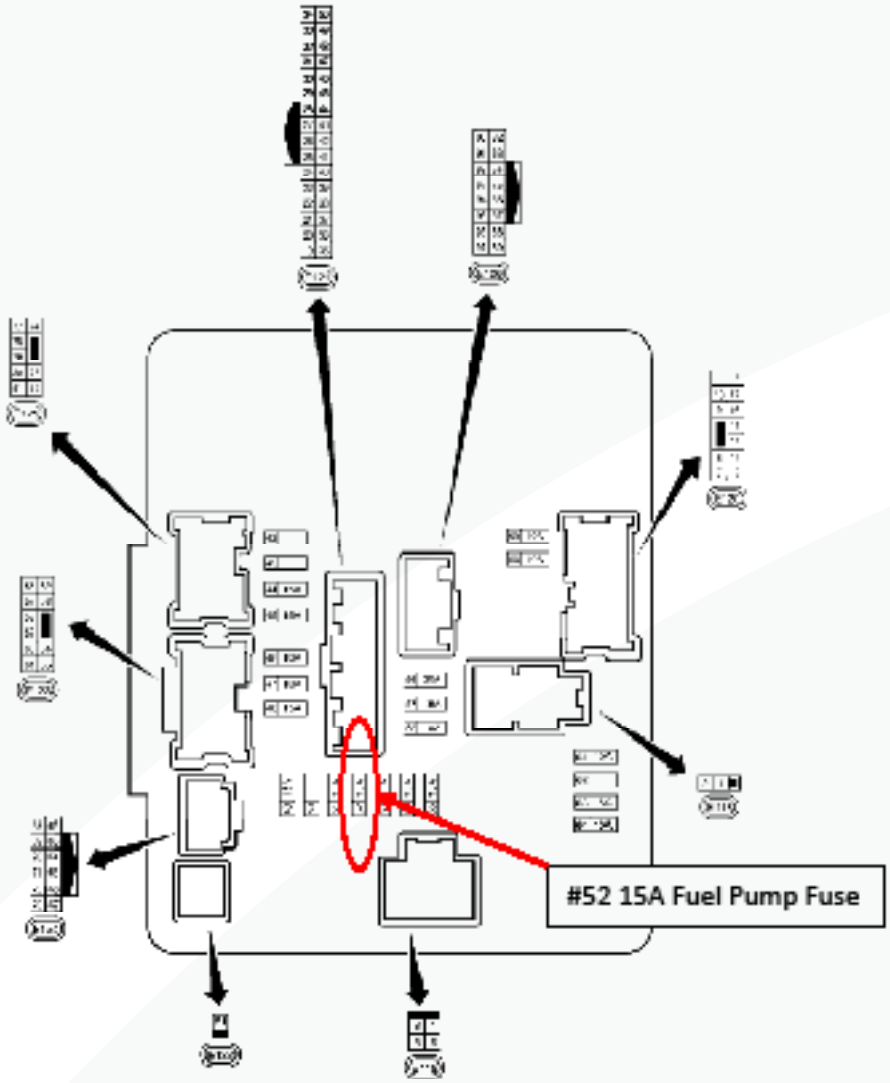
2) Start the engine

3) After the engine stalls, crank it for two or three times to release all the fuel pressure

4) Turn the ignition OFF

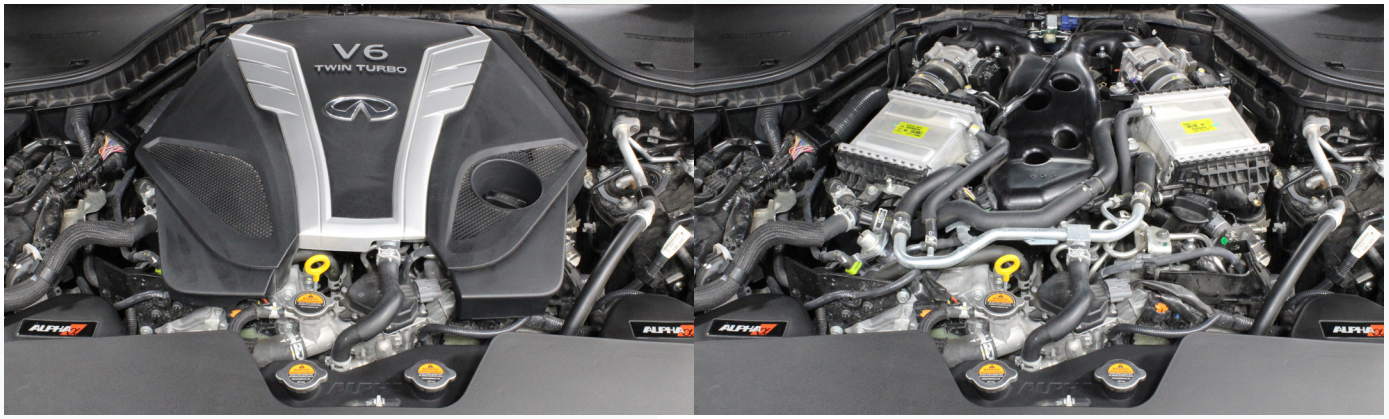
5) Disconnect the battery

6) Reinstall the fuel pump fuse after the flex fuel installation, see step #20



DISASSEMBLY

1) After the fuel pressure has been relieved, remove the engine cover to gain access to the fuel system.



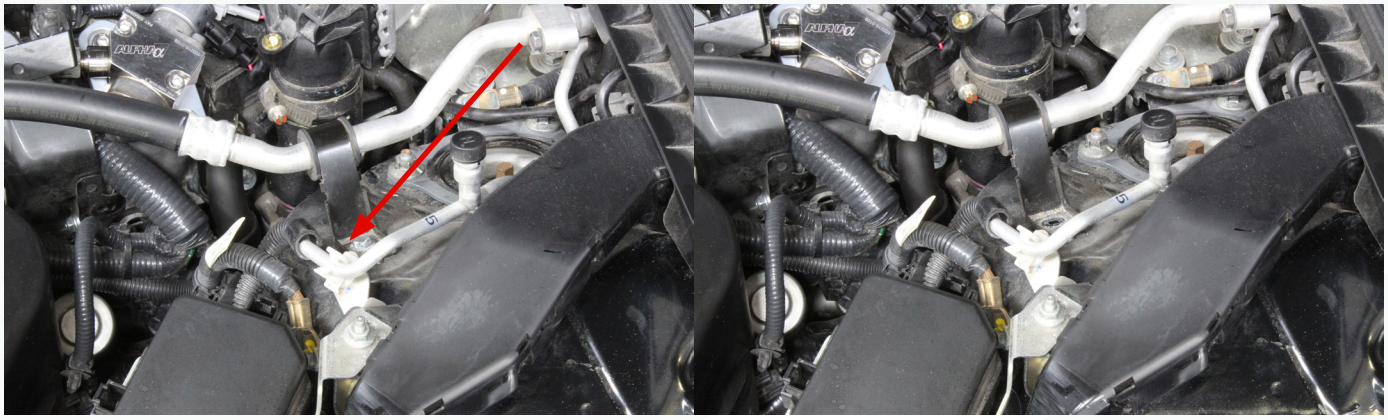
2) If a complete kit was purchased, locate the Ethanol Composition Sensor (Flex Fuel Sensor), or your own supplied sensor.

Note: The mounting bracket is only set up for the use of a mini Continental® Flex Fuel Sensor. The mounting bracket will not work with other styles.

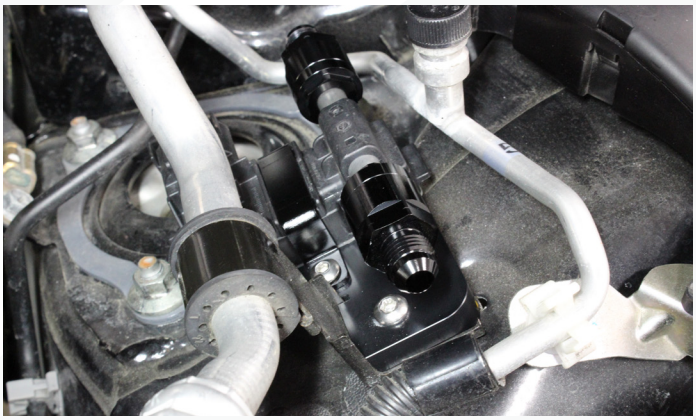
3) Locate the 3/8” to -6AN fuel line adapters. Install the adapters on the flex fuel sensor. Remove the rear locking nut of the adapter. Slide the locking nut over the retention step on the fuel sensor, there is a groove machined in the adapter. Install the adapter and screw the assembly together, locking the adapter to the fuel sensor. Make sure not to over tighten the locking nut on the rear of the adapter; it should just be snug.

4) Locate the flex fuel sensor mounting bracket and strap. Use the two supplied M5 button head bolts and attach the flex fuel sensor to the mount as shown.

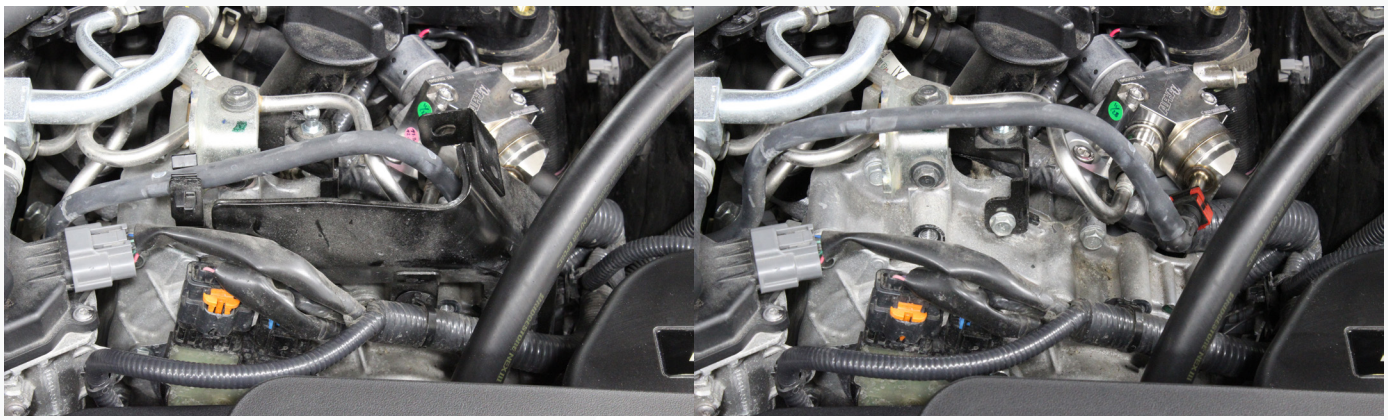
5) Remove the OEM bolt from the A/C hose bracket on the driver's side strut tower. The bolt will not be reused.



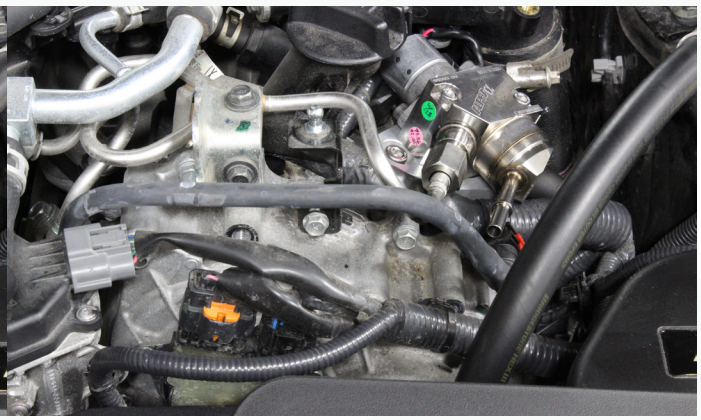
6) Use the supplied M6 x 22mm long button head bolt and install the flex fuel sensor and mount on top of the A/C bracket as shown.



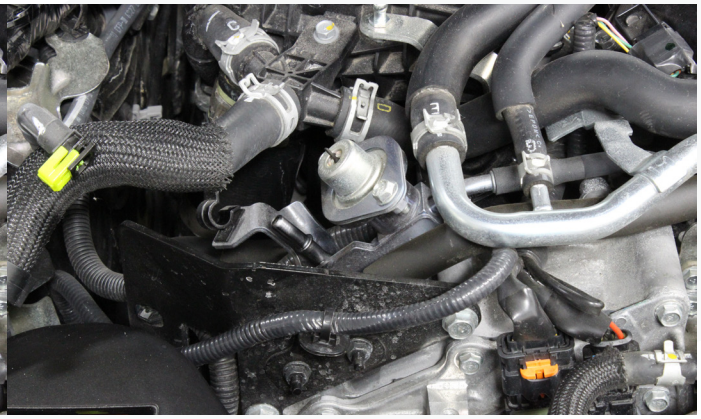
7) Remove the bracket in front of the HPFP. Unclip the harness and fuel line from the bracket. Unbolt the two 12mm bolts from the lower area of the bracket and remove. This bracket will not be reused.



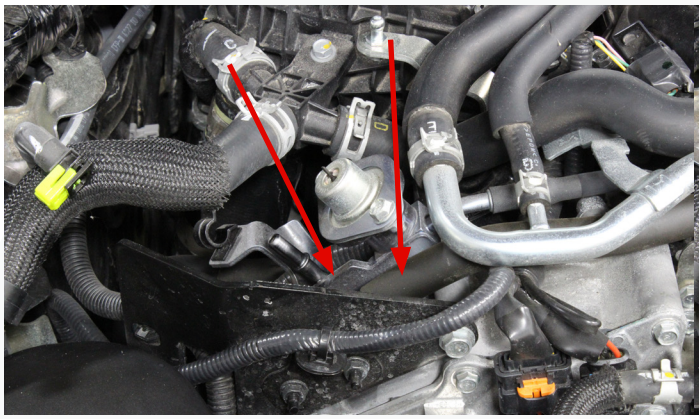
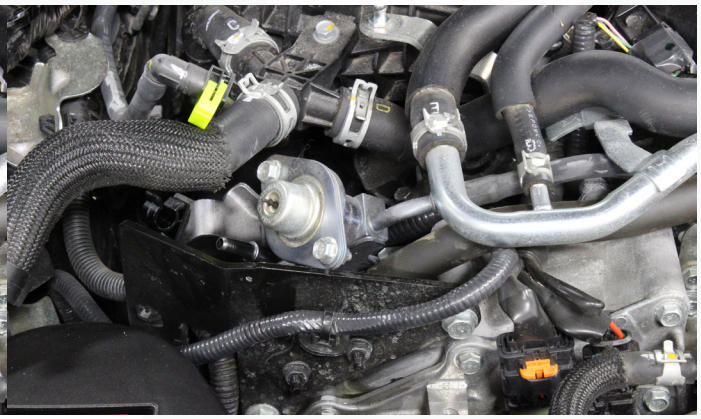
8) Make sure the fuel pressure has been relieved properly as noted in the first part of the instructions. Disconnect the low-pressure fuel supply hose from the HPFP.

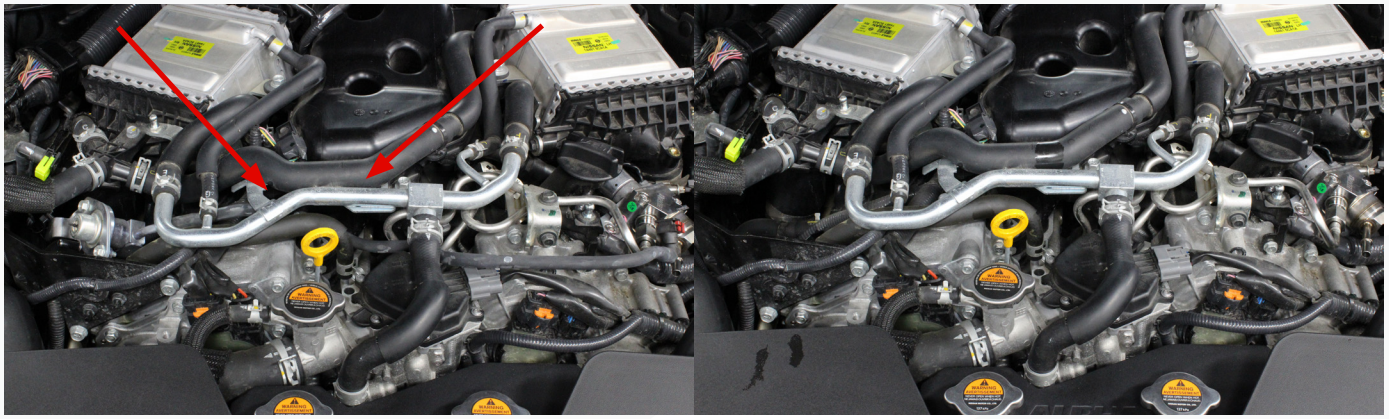
9) On the right side of the engine, disconnect the low-pressure fuel line from the bracket on the engine as shown.

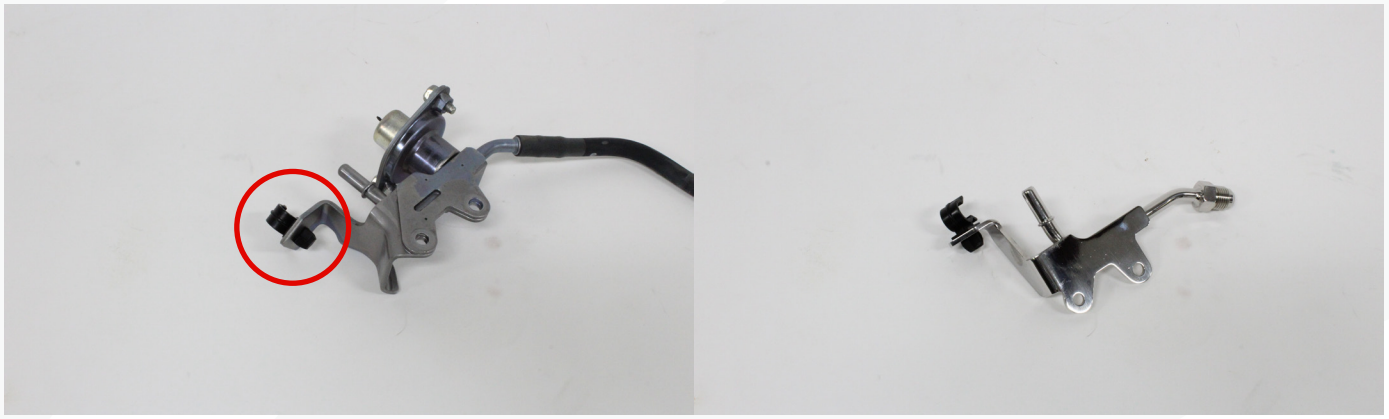
10) Unbolt the fuel line bracket from the engine. It is held in place by two M6 bolts located behind the black bracket shown.

11) Remove the two M6 bolts from the water pipe so it can be moved out of the way. The bolts are hidden under the rubber hose that crosses over from one intercooler to the other. Remove the entire low-pressure fuel line and bracket as shown.



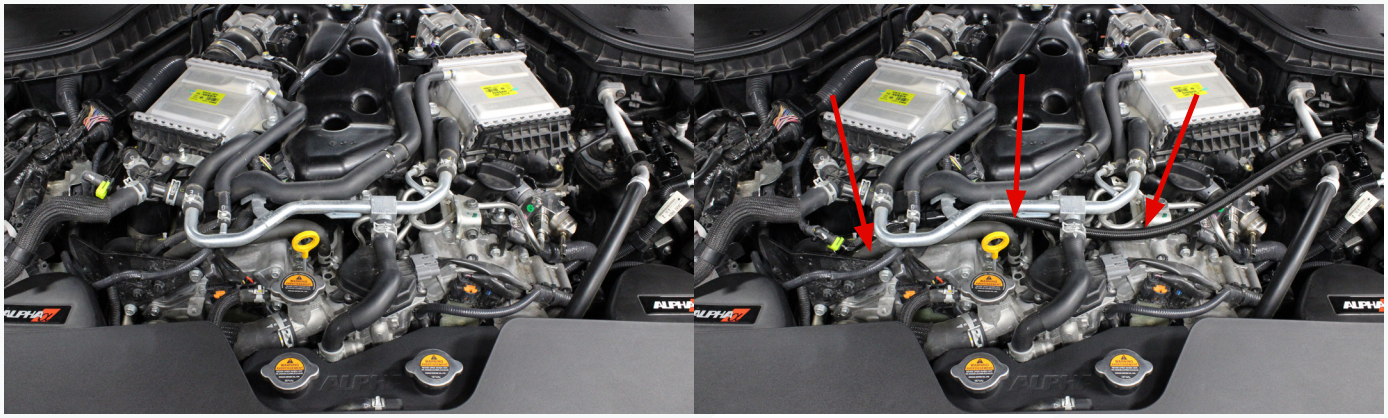
12) Locate the new low-pressure fuel line bracket. Swap the plastic fuel line clip from the OEM fuel line to the new bracket in the same orientation.



INSTALLATION

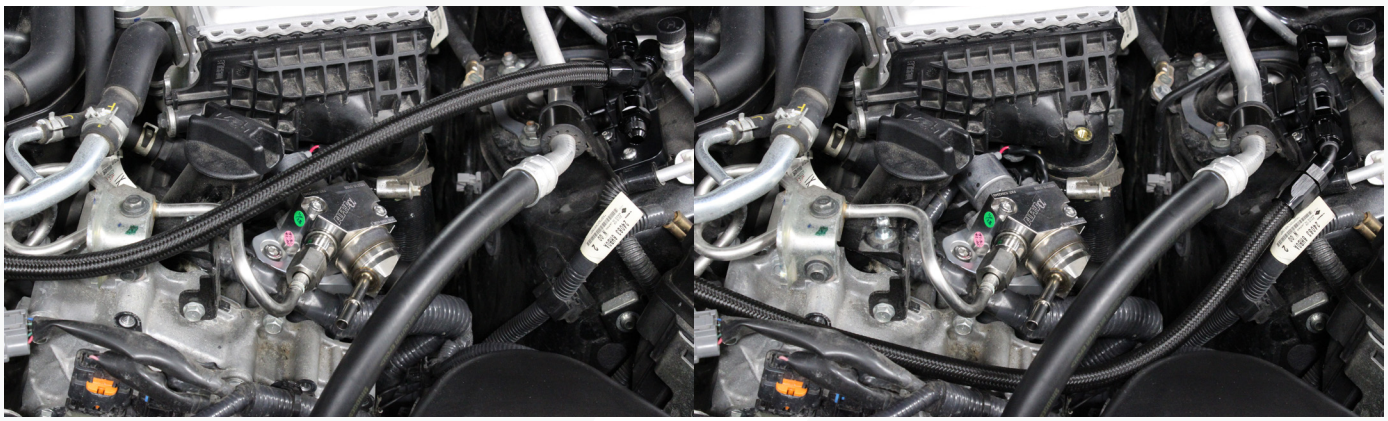
13) Locate the longer -6AN hose and install the straight hose end on the new fuel line bracket while on the bench. Tighten the straight fitting onto the new fuel line bracket.

14) Install the new fuel line and bracket as shown under the intercooler water pipe. Once in place, reinstall the two M6 bolts holding water pipe to the intercooler.

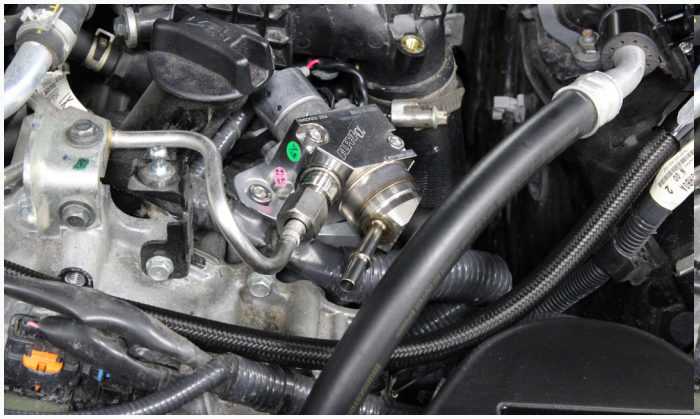


15) Reattach the fuel line to the new bracket as shown on the right side of the engine. Make sure the OEM fuel line is properly clipped into the plastic bracket.

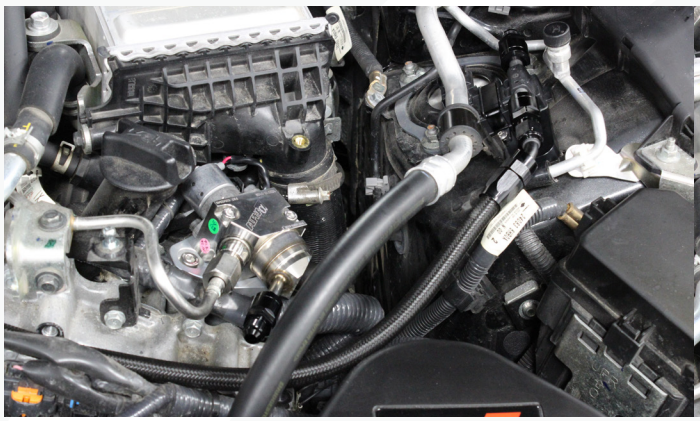
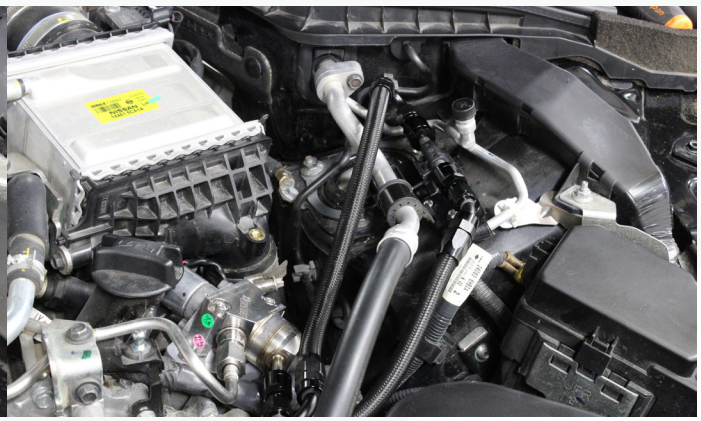
16) Route the hose as shown to the forward most fitting on the flex fuel sensor and tighten the fitting. The new fuel line will route under the A/C hose along the front of the engine.



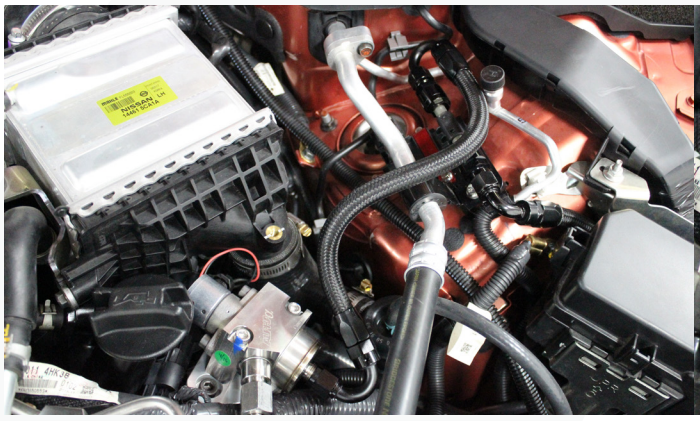
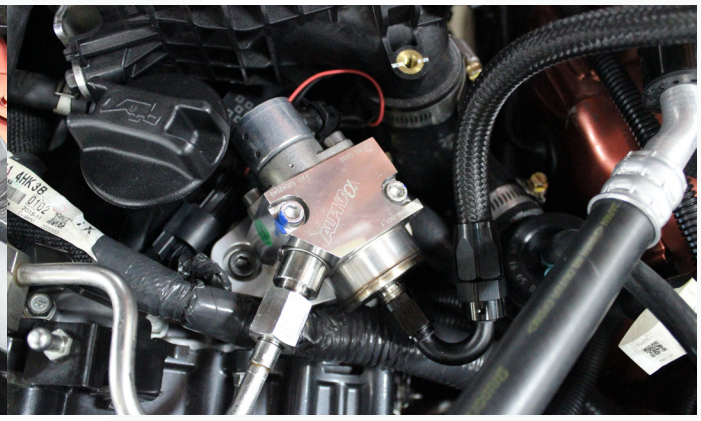
17) Locate the remaining 5/16” fuel line adapter fitting and install it on the HPFP. This fitting will work with the OEM HPFP and AMS HPFP. It does not get used on the AMS Big Bore HPFP.




18) Locate the remaining supplied fuel hose. This hose can be installed in both directions to offer options for different HPFPs. The hose shown is installed on an AMS HPFP, so the 180-degree fitting is attached to the HPFP and the 150-degree fitting is installed on the flex fuel sensor. The fuel hose can be routed over or under the A/C hose depending on the configuration.

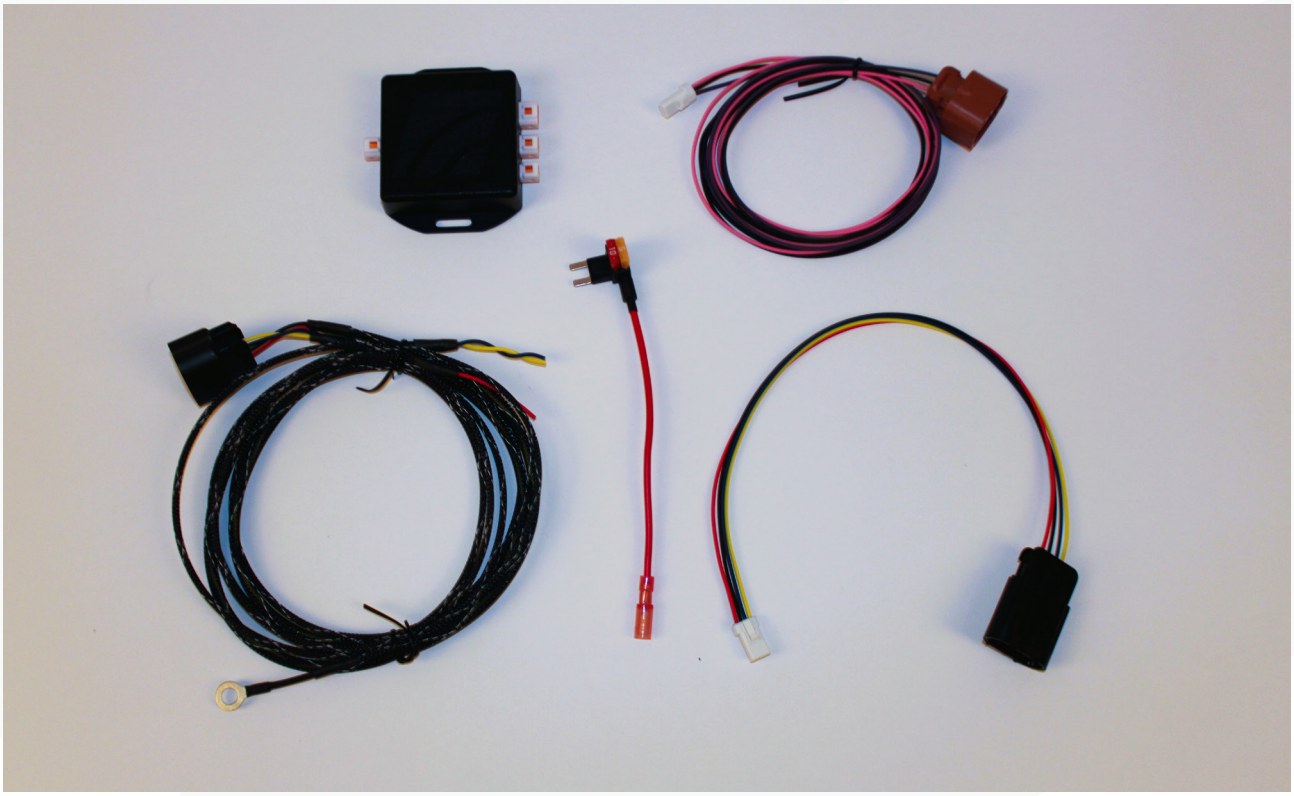
19) Alternately, if using the AMS Big Bore HPFP, the inlet fitting on the pump is a male -6AN. Attach the 180-degree fitting to the flex fuel sensor and the 150-degree fitting to the fuel pump.

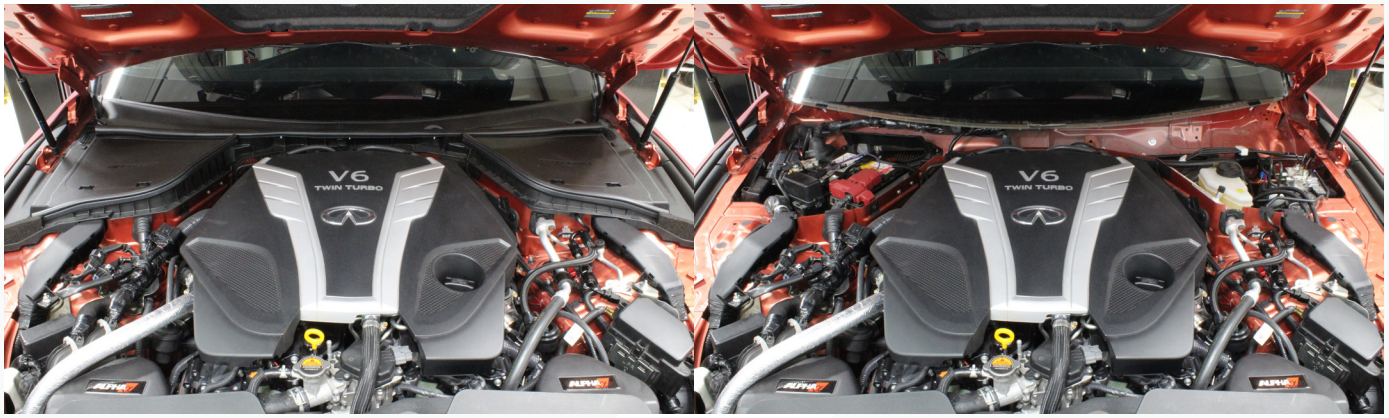
20) Double check all your connections. Reinstall the fuse removed during the first section of the instructions to relieve the fuel pressure. Key the car on a few times without starting it to prime the fuel system. Recheck all your connections for leaks.

CAN-Bus/ECUtek Integration

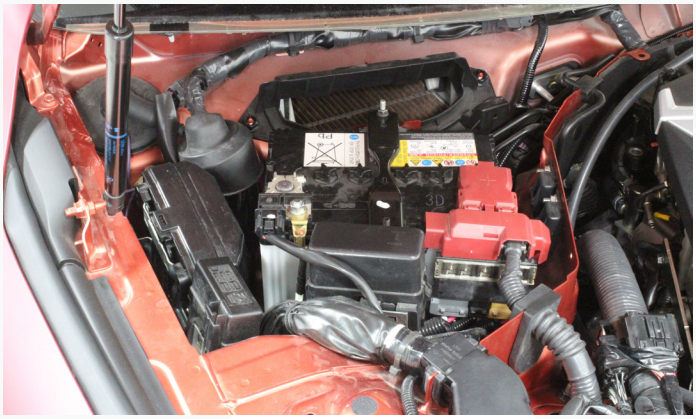
21) The CAN-Bus module was created so the flex fuel input signal could be sent over the vehicles CAN network to be seen by the ECU and with a tune using ECUtek can make on the fly adjustments based on ethanol content. Optionally, this module can also take up to three analog sensor inputs.



22) Remove the cowl, battery and brake master covers. Then remove the battery.

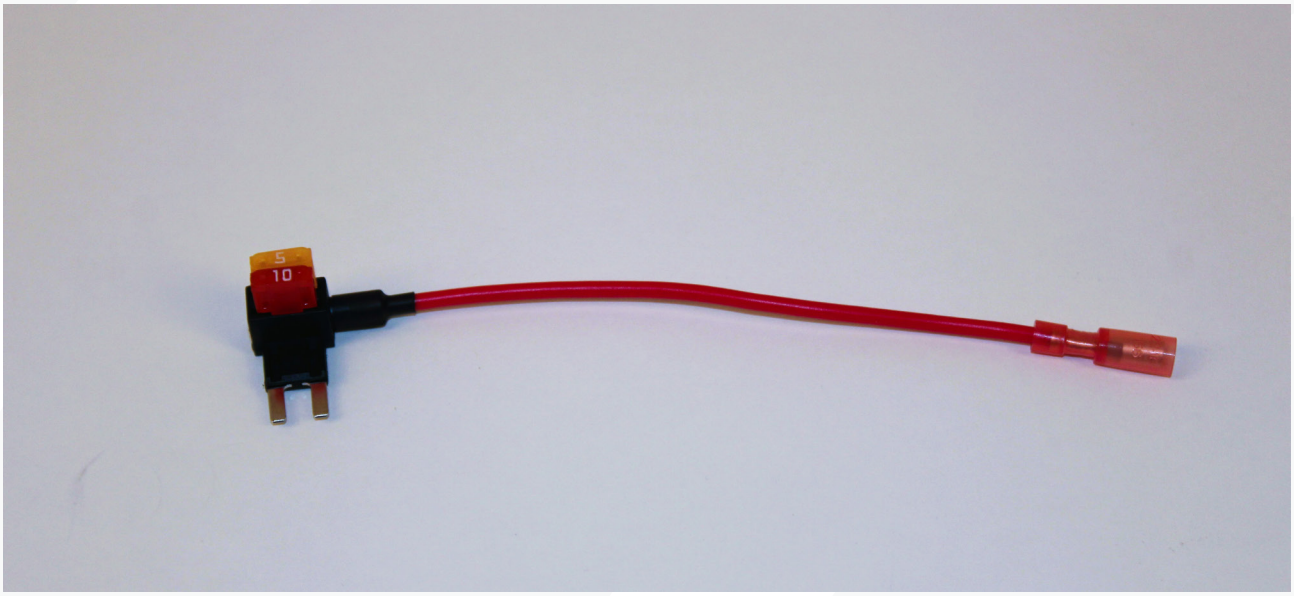


23) Unclip the IPDM from its mounting bracket by releasing the two tabs at the top, then slide the IPDM upwards to remove from the bracket. To remove the cover, release the two tabs at the bottom of the IPDM cover, pull the bottom of the cover away from the IPDM slightly, then remove by lifting it upwards.

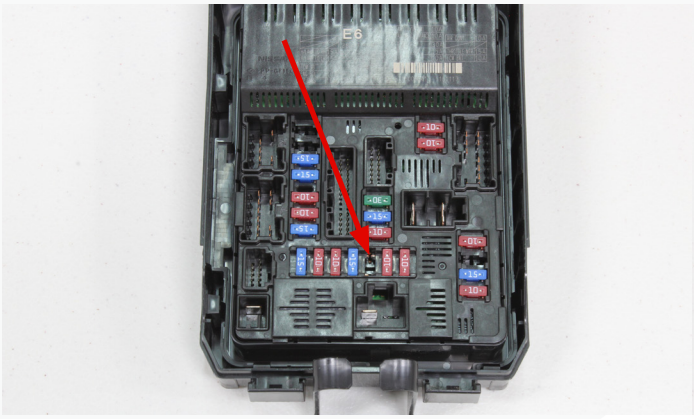


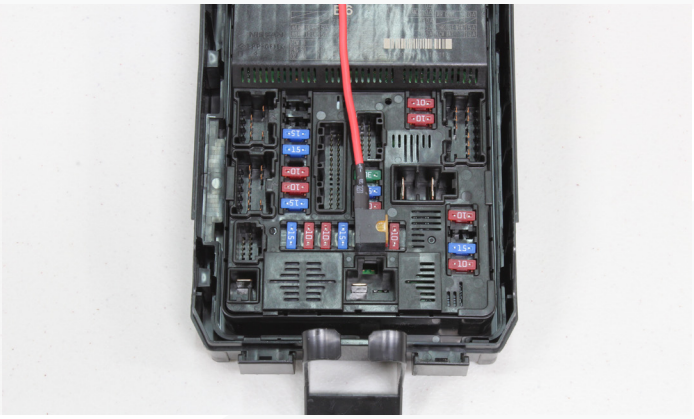
Note: To make the instructions a little clearer in these next few steps, we have removed the IPDM from the car. This step is not required, you can lay the IPDM in the empty battery tray for better access.

24) Locate the mini ATM fuse tap supplied in the kit and the supplied 10amp and 5 AMP mini fuses. Install the fuses as shown. It is important that the 10 AMP fuse is in the bottom and the 5 AMP be installed in the top. The bottom fuse location on the tap is for the fuse removed from the IPDM and protects the OEM circuit. The 5 AMP fuse specifically protects the circuit you are wiring, completely independent of the original fuse.

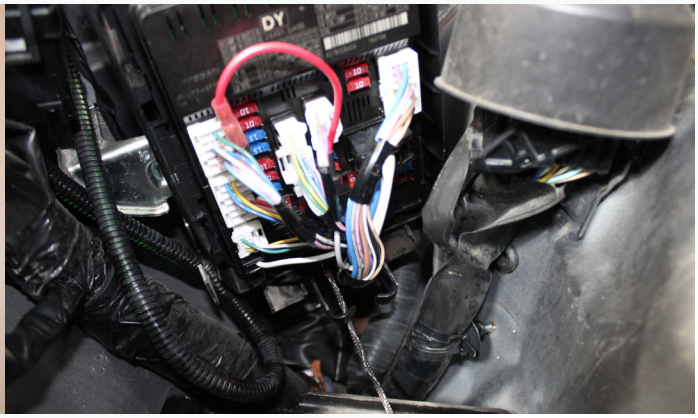


25) Tap into fuse #53 10 AMP Ignition. It is the 3rd fuse from the right on the bottom. Install the fuse tap as shown with the wire pointed upwards. The orientation is very important on these fuse taps and if it is installed in the opposite direction, there will not be proper circuit protection.



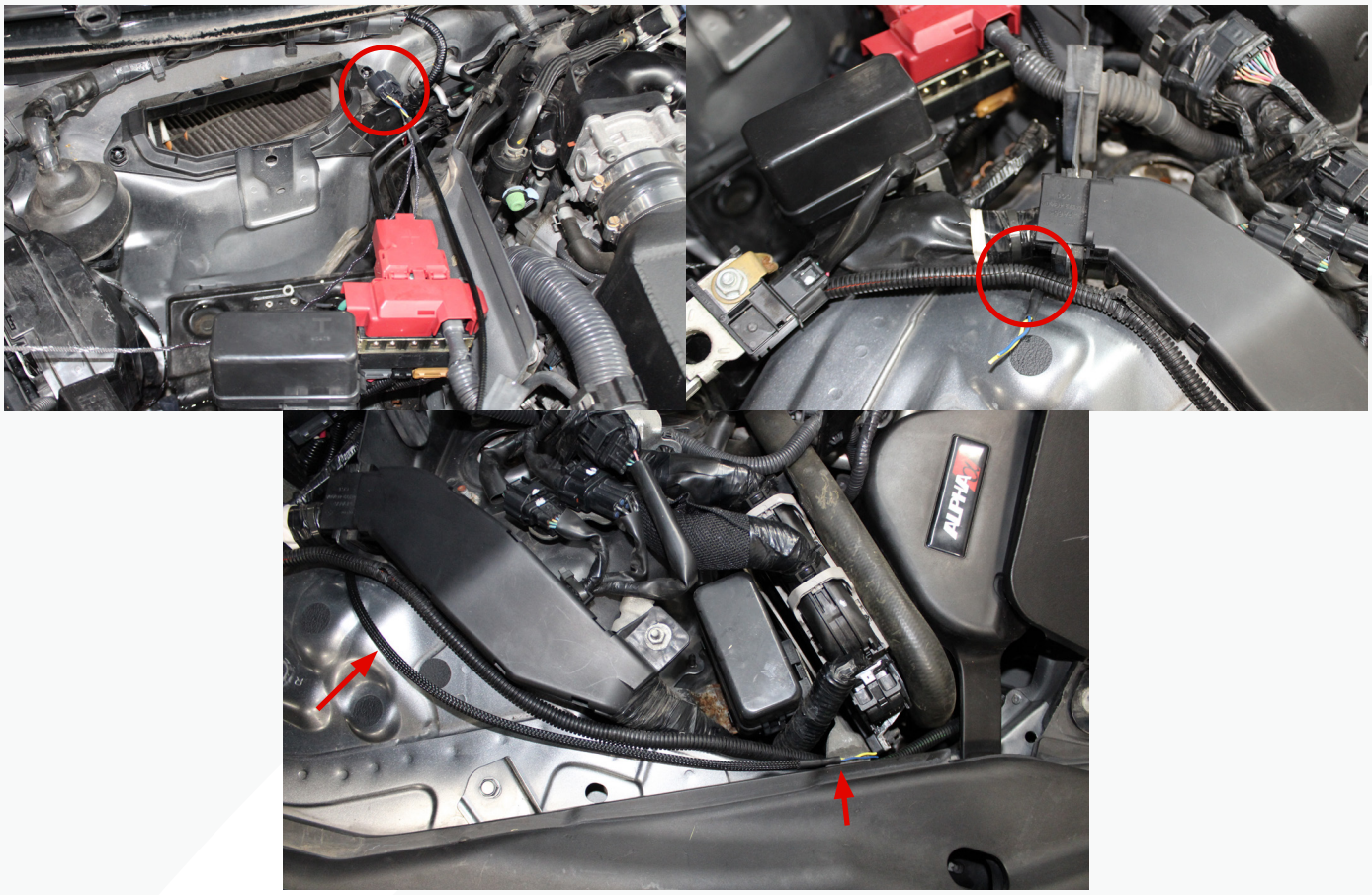


26) Route the harness around the battery area. Connect the red wire of the wire harness to the fuse tap and route the wire along the factory harness leading out of the bottom of the IPDM housing.

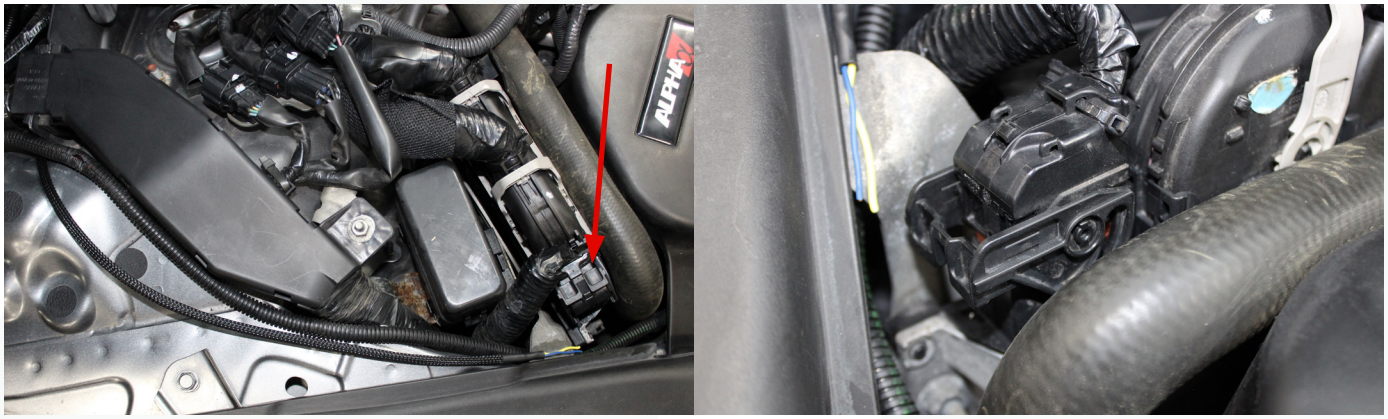


27) Reinstall the IPDM cover and clip it back into the bracket.

28) Route the two CAN wires (blue & yellow twisted pair) under the vehicle harnesses in the battery compartment and then along the vehicle harness towards the ECU.

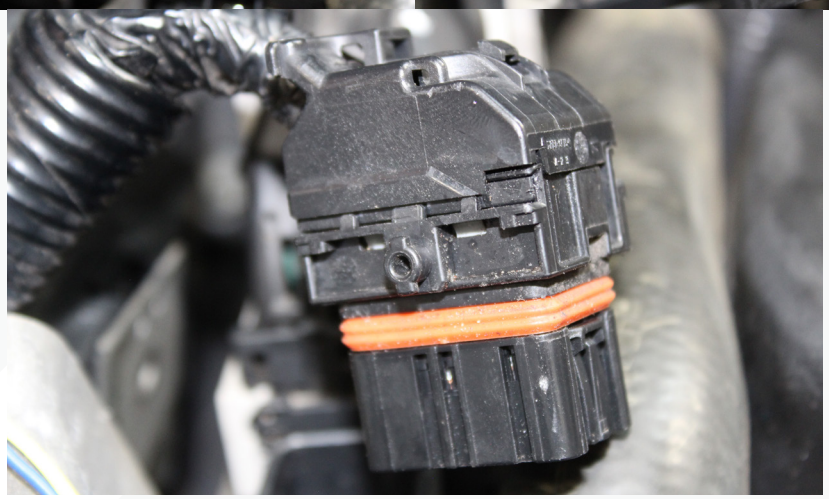


29) Disconnect the smaller black ECU connector by pushing the tab down and rotating the lock.

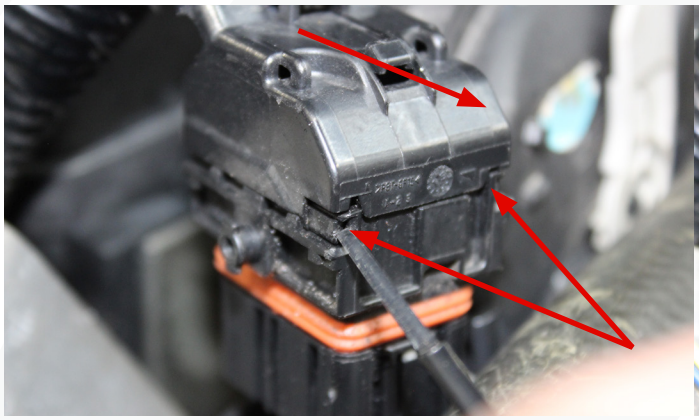
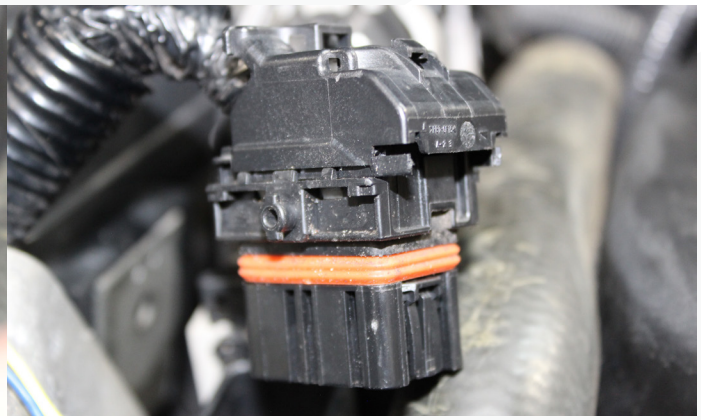


30) Turn the connector over and cut the zip tie, then rotate the lock to align the two side pins so the lock can be removed. Pull out and release one side at a time.



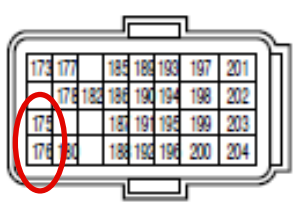


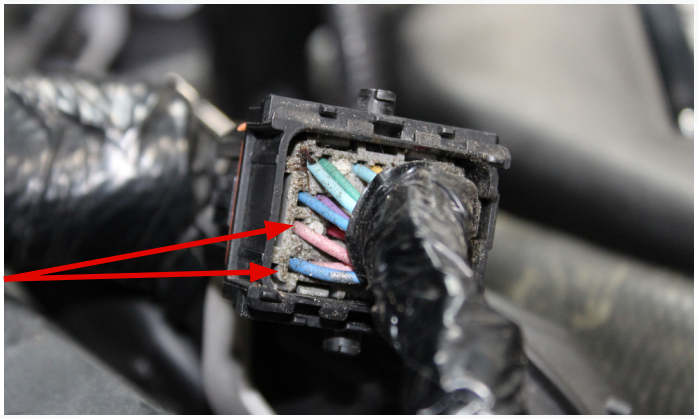
31) There are two small lock tabs at the front of the connector. With a small screwdriver, release the tabs one by one while pushing the connector cover forward.

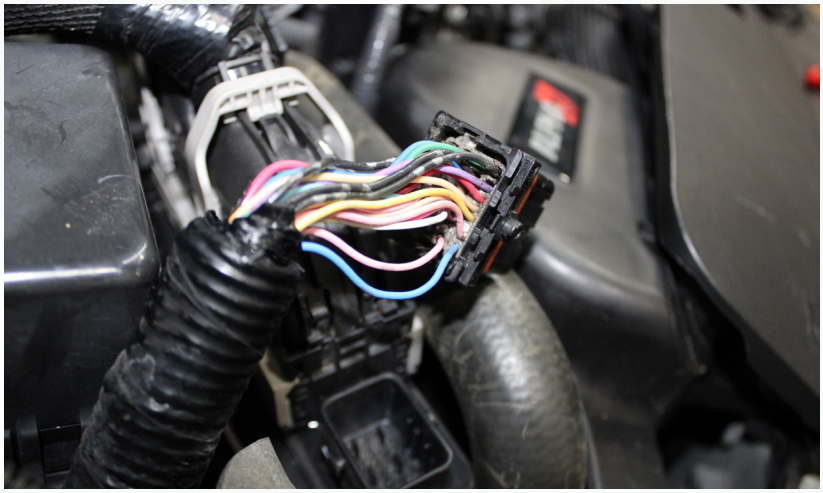
32) Locate Pins 175 (Pink CAN L) and 176 (Light blue CAN H)

Connector No.	E152
Connector Name	ECM
Connector Type	RH24FB-RZB-L-RH
Connector Color	Black

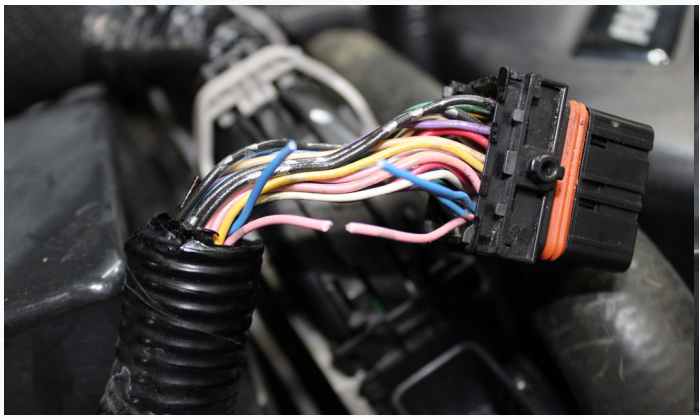


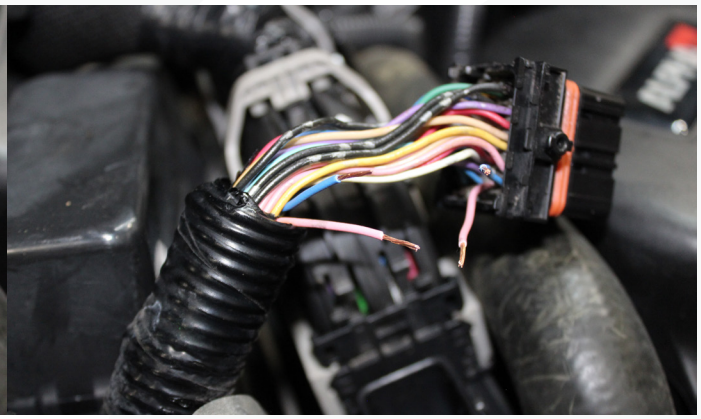


33) Carefully cut back some of the tape/loom to gain access to the wires in order to splice into them.

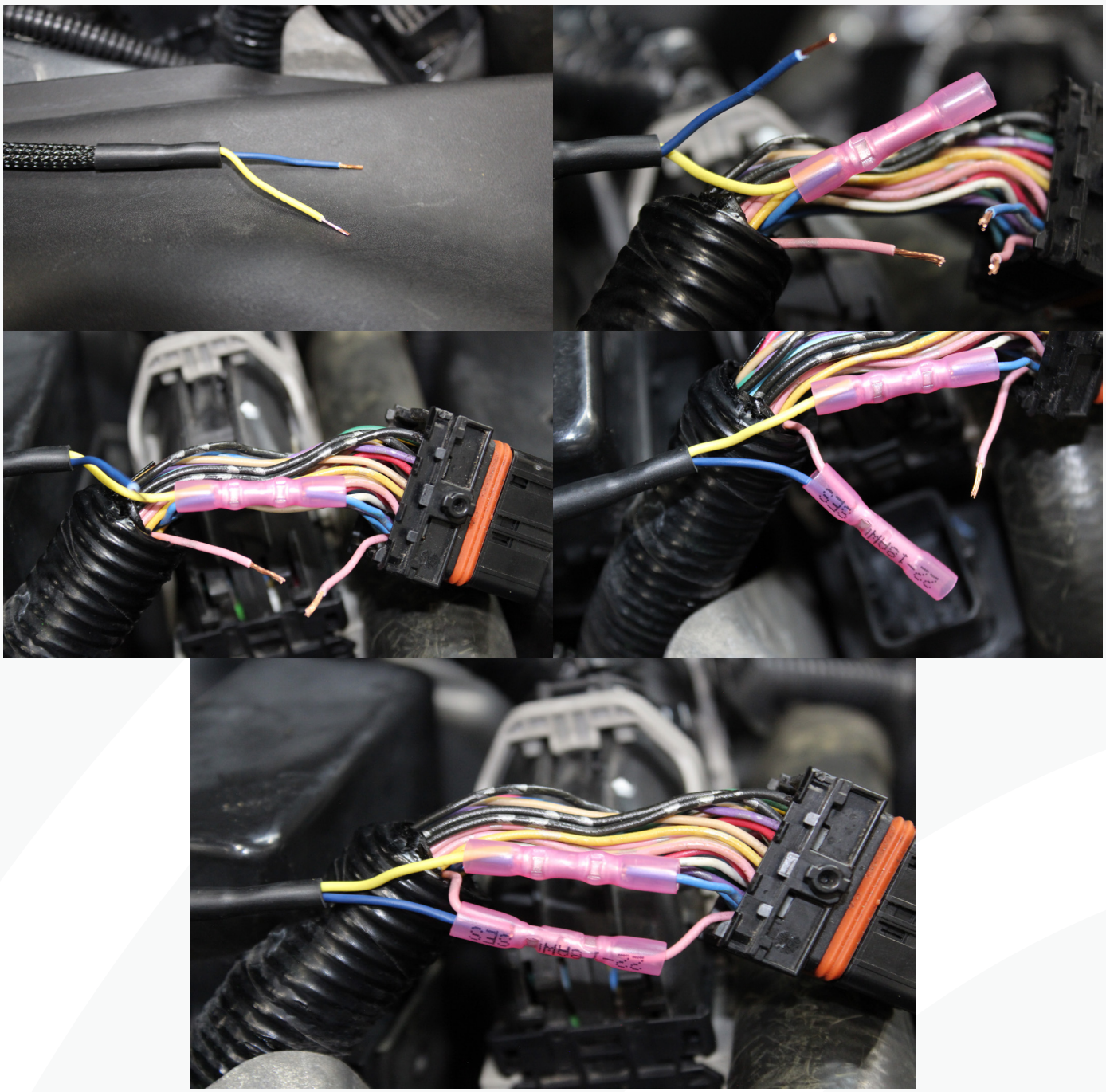


34) Cut the wire about 1.5” away from the connector. This is a good spot to allow the harness to flex slightly when its in its connected position. Strip both ends to prepare the crimp.



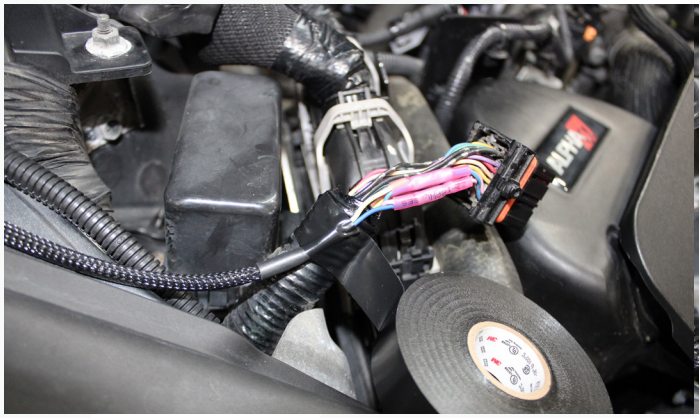


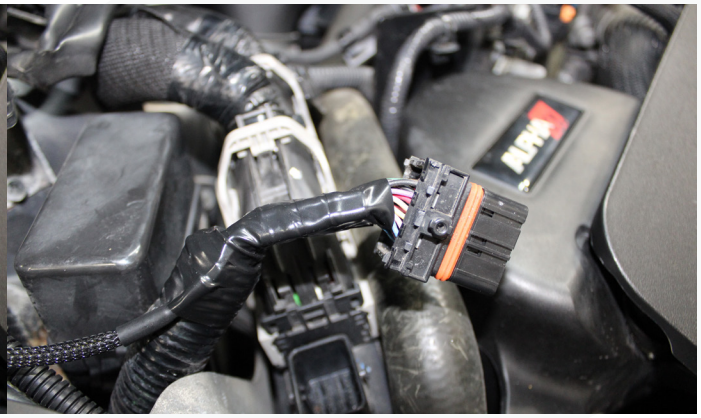
35) Strip the two CAN wires on the provided harness. Then using the provided heat shrink butt connectors, splice in the CAN-bus harness. Blue to Pink, Yellow to Blue.



36) Use a heat gun to heat shrink the butt connectors.

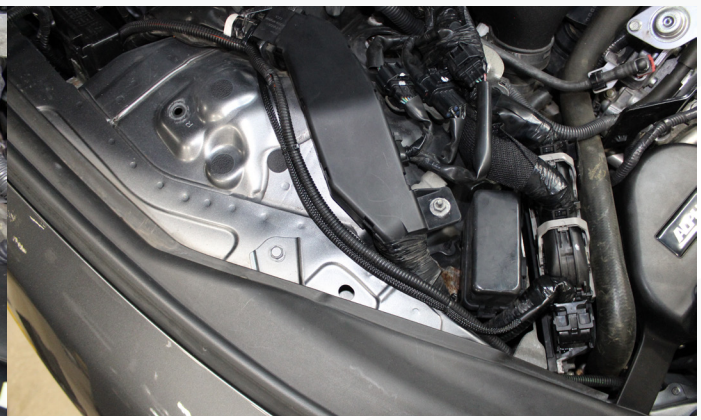
37) Using some electrical tape, start at the loom and rewrap the harness towards the connector.



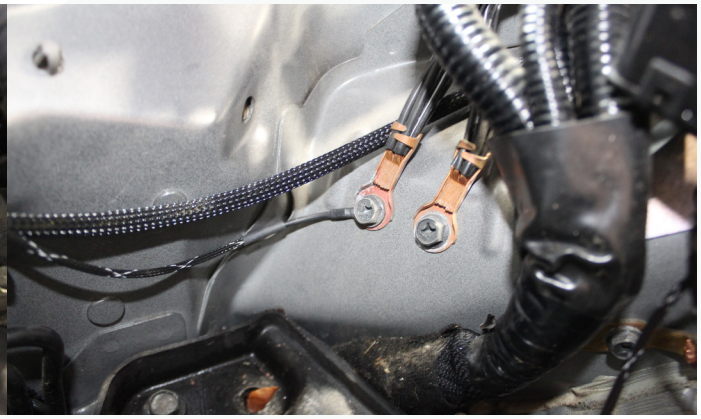


38) Reassemble the connector and re-secure the loom to the connector with a small zip tie.

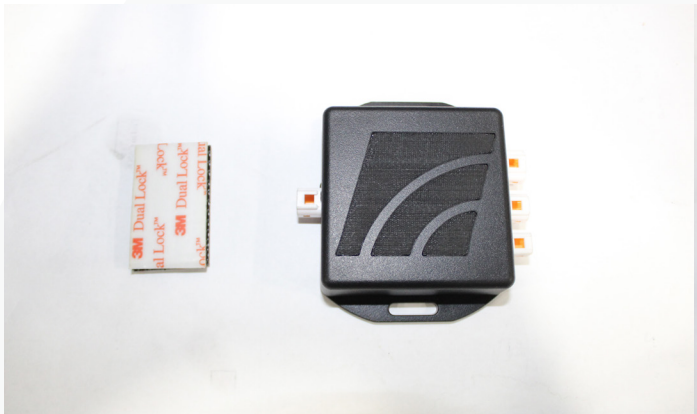
39) Reconnect the ECU connector and secure the loom along the vehicle harness with zip ties.

40) Find the ground eyelet terminal on the main harness and ground it to one of the chassis grounds near the battery.

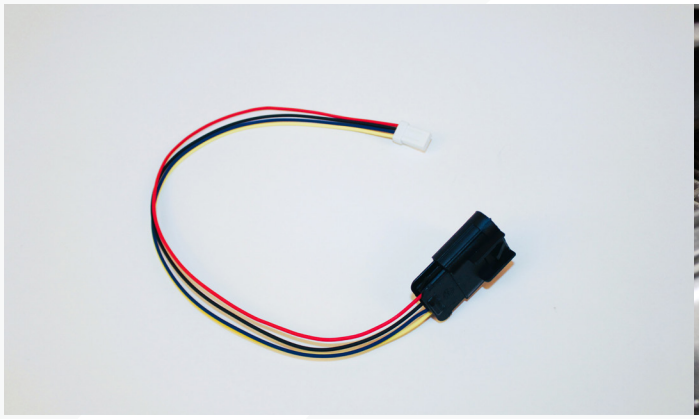
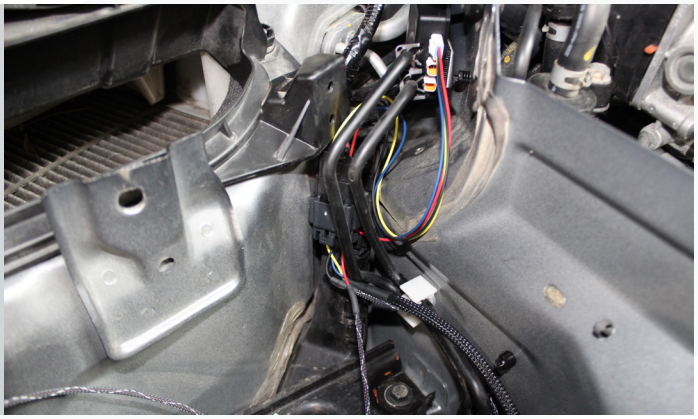



41) Locate the CAN-bus module and dual lock. Cut the dual lock into (2) 2” sections. Clean off the back of the module and mount one section on the lower half of the back.

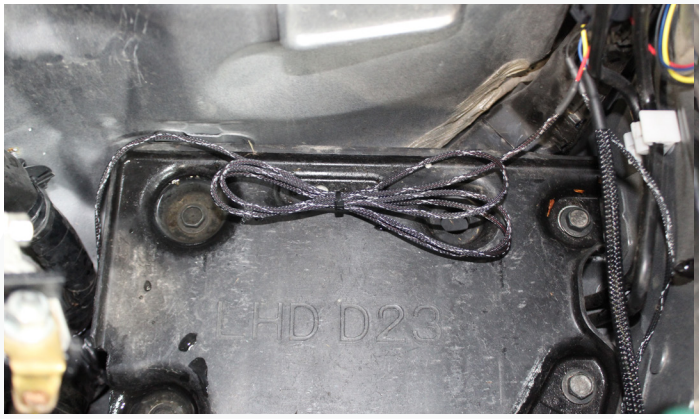



42) Clean off the body panel and mount the box in the location shown below.


43) Locate the short jumper harness and plug the white 4 pin connector into the box. Then plug in the black 4 pin connector into the main harness.

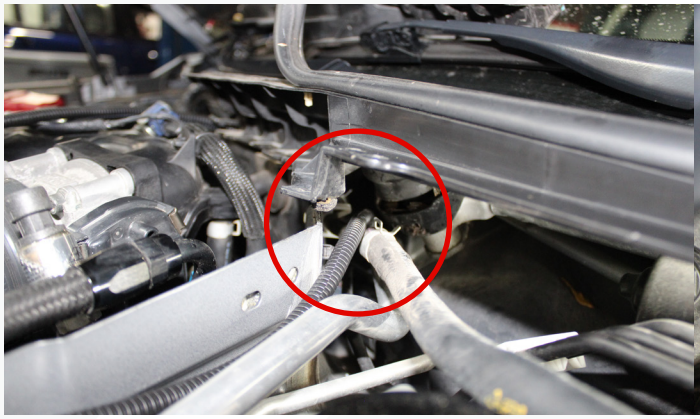



44) Neatly bundle up the slack in the power wire harness and secure it with a zip tie. Tuck the harness away under the battery tray.




45) Find the Flex fuel sensor harness with the brown connector. Add the 48” wire loom to the wire and plug it into the flex fuel sensor on the driver’s side strut tower. Then route the harness over the ac bulkhead grommet into the brake reservoir compartment.

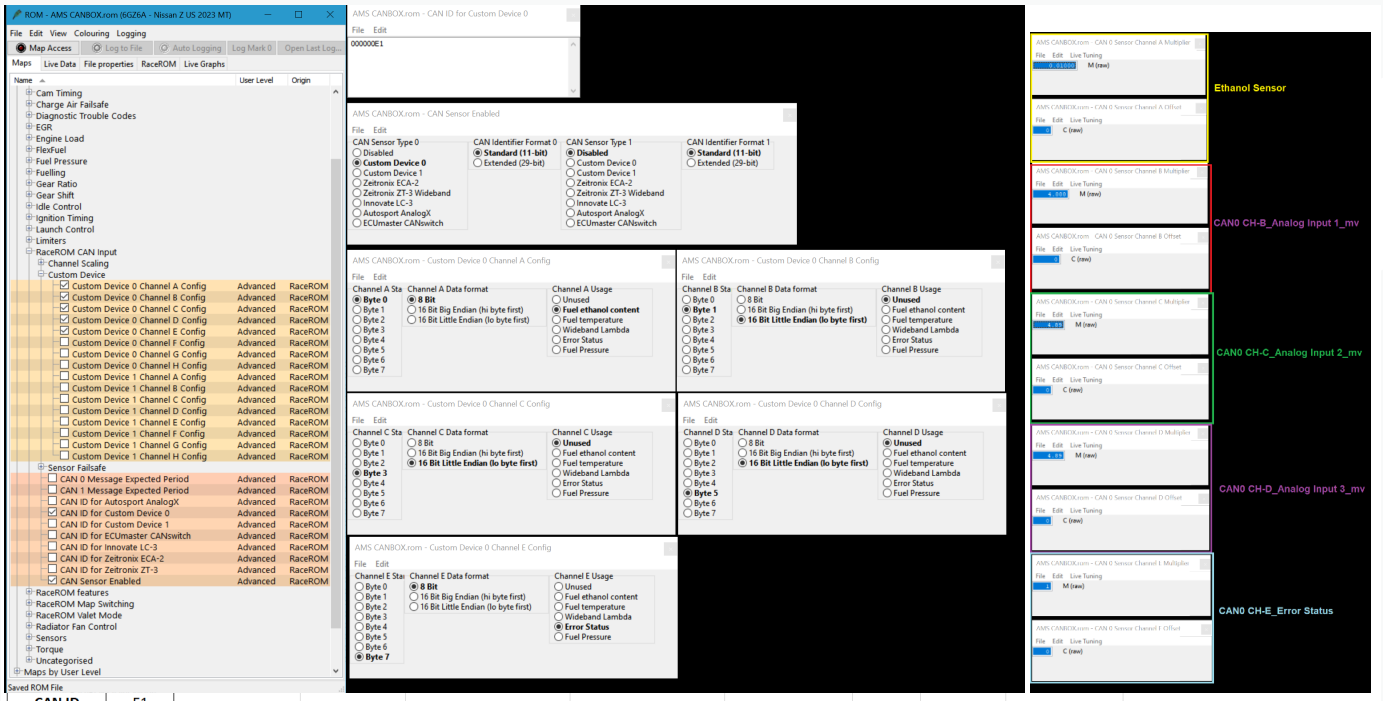

46) Carefully feed the harness over to the CAN module while staying clear of the wiper mechanism and plug it into the CAN module.




47) Pull slack from the harness to the brake reservoir and secure it to the ac line with a zip tie.


48) Reinstall all removed parts and consult your tuner to get the CAN module up and running as it will not automatically start working on its own. See the next page.
Thank you, Enjoy!

Note: In order to take full advantage of ECUtek Flex Fuel Support, you will need to check with your tuner to have the most recent software release loaded and the following criteria set.



CAN ID	E1
Format	STD-11bit

Byte	Bits	endian	Name	Incoming Hex	Incoming Decimal	Multiplier	Offset	Unit	Converted Range	Notes
0	8	n/a	Flex %	0-FF	0-255	0.01	0	%	0-255 %	Decimal = Flex % exactly 0-100%, but Ec
1-2	16	Little (lo byte First)	AV 01	0 - 03FF	0-1023	4.8876	0	mv	0-5000mv	
3-4	16	Little (lo byte First)	AV 02	0 - 03FF	0-1023	4.8876	0	mv	0-5000mv	
5-6	16	Little (lo byte First)	AV 03	0 - 03FF	0-1023	4.8876	0	mv	0-5000mv	
7	8	n/a	FlexError	0-1	0-1	1	0		0-1	0 - Sensor Ok _ 1 - S

Common sensor Configurations			
0-5v Sensor	Multi	Offset	Logged unit
AEM 100psi	0.12219	-12.5	psi (gauge)
AEM 150psi	0.183284	-18.75	psi (gauge)
AEM 1 bar	0.018328	-16.575	psi (gauge)
AEM 2 bar	0.036657	-18.75	psi (gauge)
AEM 3.5 bar	0.061095	-20.95	psi (gauge)
AEM 5 bar	0.091642	-24.075	psi (gauge)
Omni 4bar	0.058798	0	psi absolute
Stock Nissan	0.043443	-3.4075	psi absolute

<u>2016 - 2020 Q50/Q60 Models</u> will have this additional toggle that needs to be checked as well as the above parmeters setup.

For additional sensors, see our website for Plug'n'Play solutions or if you'd like to wire your own, the pinout is below.