



BNR 1.4T Flex Fuel Kit

Kit Contents:

- 1- Flex fuel sensor
- 4- Bosch Fuel Injectors
- 1- Wire Harness
- 1- Fuel Connector
- 1- E85 Yellow Gas Cap
- 5- Zip Ties

Tools Requires:

1. Fuel Line Disconnect Tool 3/8"
2. 5/8 and 11/16 Wrenches
3. T30 Torx Bit
4. Phillips and Flat Head Screw Drivers (both big and small)
5. Petroleum Jelly
6. Needle Nose Pliers
7. Wire Strippers
8. Wire Crimpers
9. 10mm Socket

Installing the Injectors

- 1. Disconnect the negative terminal from the battery before completing any steps!**
2. Relieve the fuel pressure from the fuel rail. To do this, remove the black plastic cap and press the valve with a screw driver. There will be a little fuel that comes out. Once the fuel pressure is relieved, you can tighten the plastic cap back on.



3. Remove the Ecotec cover off of the engine. To do this, pull lightly on the sides until all 4 plastic clips release from the valve cover. This may take a little force, but be gentle as it is plastic.



4. Remove the fuel line from the rail. First remove the stock metal clip from the fuel line at the rail. With a little bit of pressure you can lift the back off and slip the front off. You will need a fuel line disconnect tool for this step. If you do not own one of these you can usually get them at your local auto parts store cheap. You will now insert the fuel line removal tool between the fuel line and the rail until fully inserted inside and pull the stock fuel line off.



5. Elevate the fuel line a little bit of fuel may leak from it.
6. Remove both T30 Torx bolts holding the fuel rail to the intake manifold.



7. You may need to lift the wire harness out of the way to get more room.



8. Remove all 4 fuel injector harness connectors from the stock injectors. You will see a metal clip facing the valve cover. You will need to use your finger or screw driver to press the metal clip in towards the injector. You can now pull up on the connector and it will release from the injector.



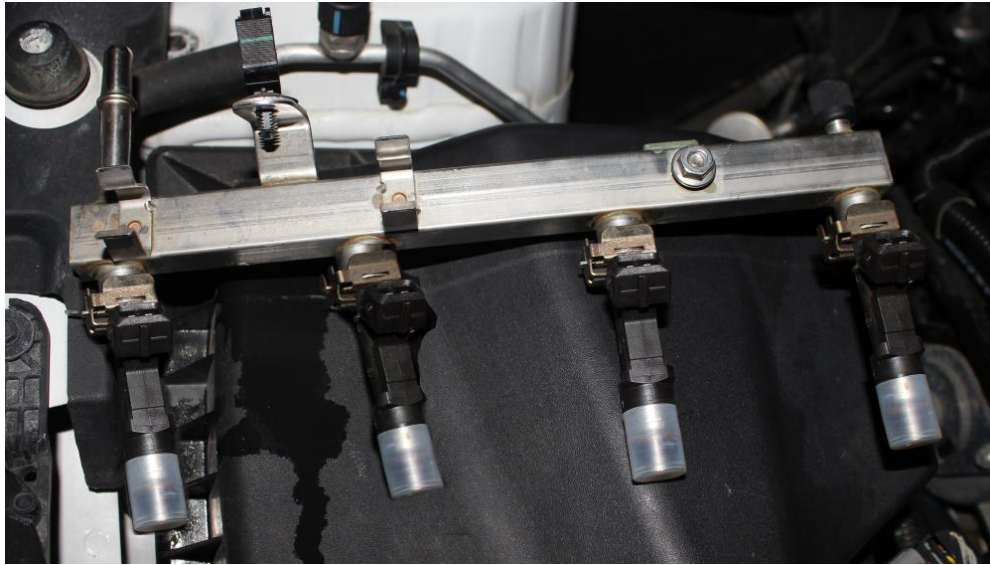
9. Remove the ground strap from the driver's side of the fuel rail. This is a 10mm nut.



10. Remove the PCV hose from the middle of the intake manifold. You will need a flat head screw driver to pull slightly on the metal clip. Once you do this you can lift the hose up and out of your way.



11. You should now have 2 bolts holding the fuel rail removed, 4 injector connectors disconnected, ground strap removed, and the PCV hose off. You can now remove the fuel rail and injectors from the intake manifold. Grab both sides of the fuel rail and lift with a little force and it should come right out. There will be a little fuel that comes out of the rail when you tip it.



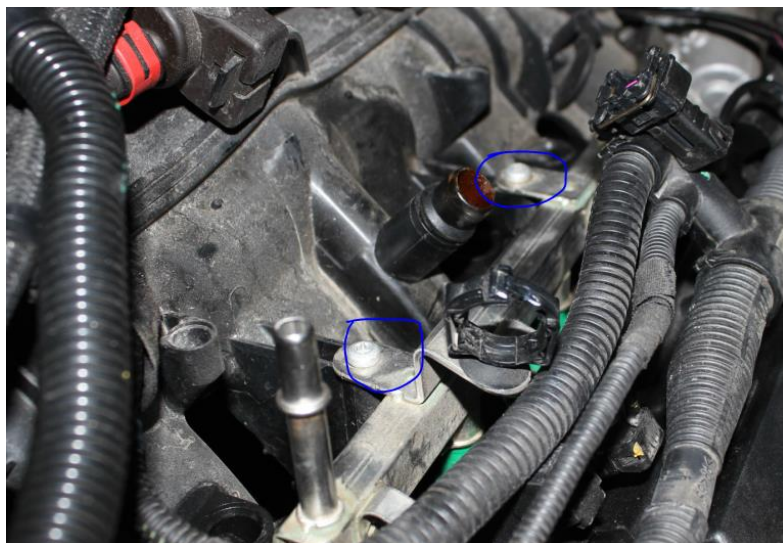
12. Remove the stock metal clips from the tops of the injectors. You can now pull the stock injectors out of the rail. You can put the injectors and clips in a bag as you will no longer be using them.
13. Use some petroleum jelly on all 8- O-rings on the injectors. This will help them slide into the fuel rail and intake manifold upon installation. You can now push the injectors into the fuel rail. **YOU WILL NOT USE THE INJECTOR CLIPS.** Make sure the injectors are all pointing the same direction as shown in the picture so you can connect the wire harness.



14. Re-insert the fuel rail back into the intake manifold with the new injectors. Make sure all the injectors line up in their holes before pushing down on the rail. Use smooth pressure to avoid breaking an injector. The rail will sit almost flat against the holes where the bolts go.



15. Align the fuel rail and re-insert the T30 torx bolts you removed in step 6. You will snug these as they are only nutserts in a plastic manifold.



16. Push the injector connectors back onto the injectors. You will hear or feel a small snap when they lock on.



17. Push the PCV hose back onto the intake manifold. The clip should still be out and you can wiggle it a little bit so it seats flat. The clip should push back in with ease and the hose should not want to come off when pulled on.



18. Slide the stock fuel line onto the sensor as shown. You will feel it clip when it is locked.



19. You are now ready to install the 90 degree quick disconnect plumbing. The 90 degree elbow is already tightened to the quick disconnects. You can check this before installing it though. You will need a 5/8 and 11/16 wrench.

20. Place the nut under the lip of the fuel rail barb. You can now slide the quick disconnect on top and tighten it with your fingers. You will use a 5/8 and 11/16 wrench again to snug this so it does not vibrate loose while driving. Snug it only, as this is a fine thread aluminum and you do not want to strip it.



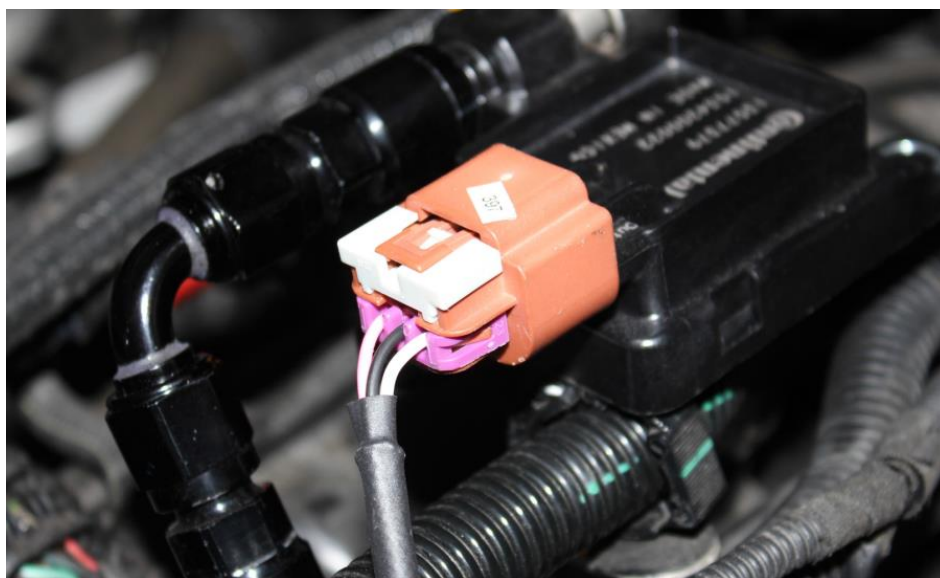
21. Repeat these steps to install the quick disconnect on the sensor as well.



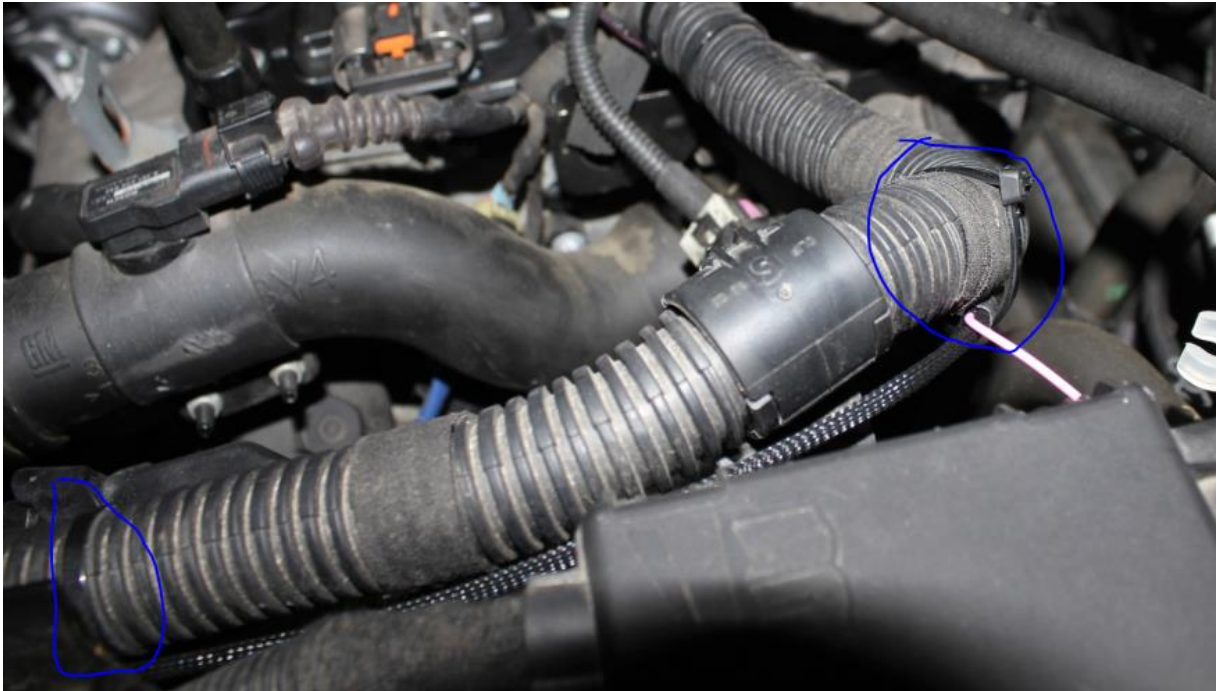
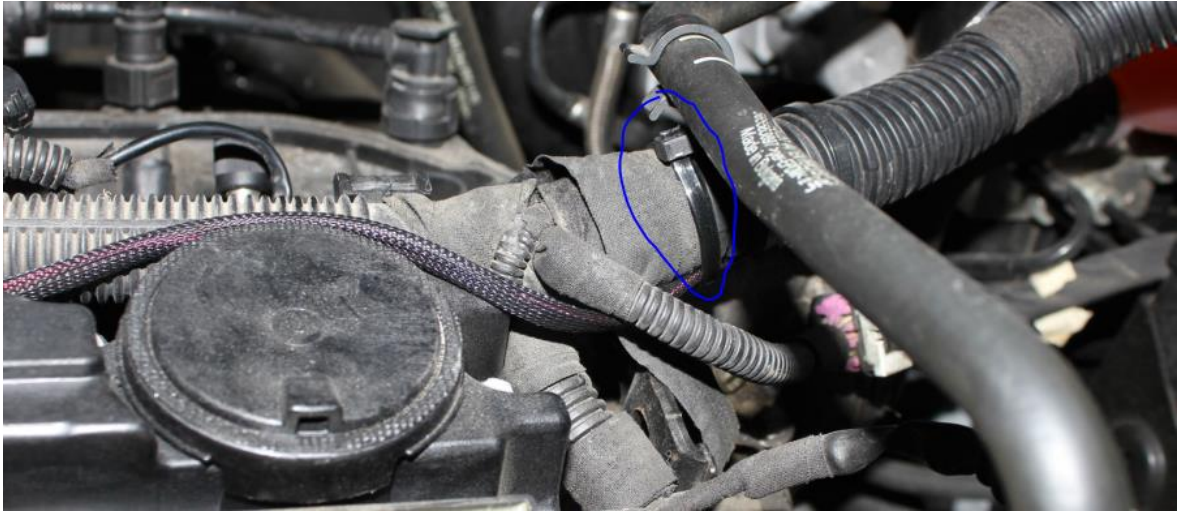
This should now complete your swap of the injectors and installation of the sensor.

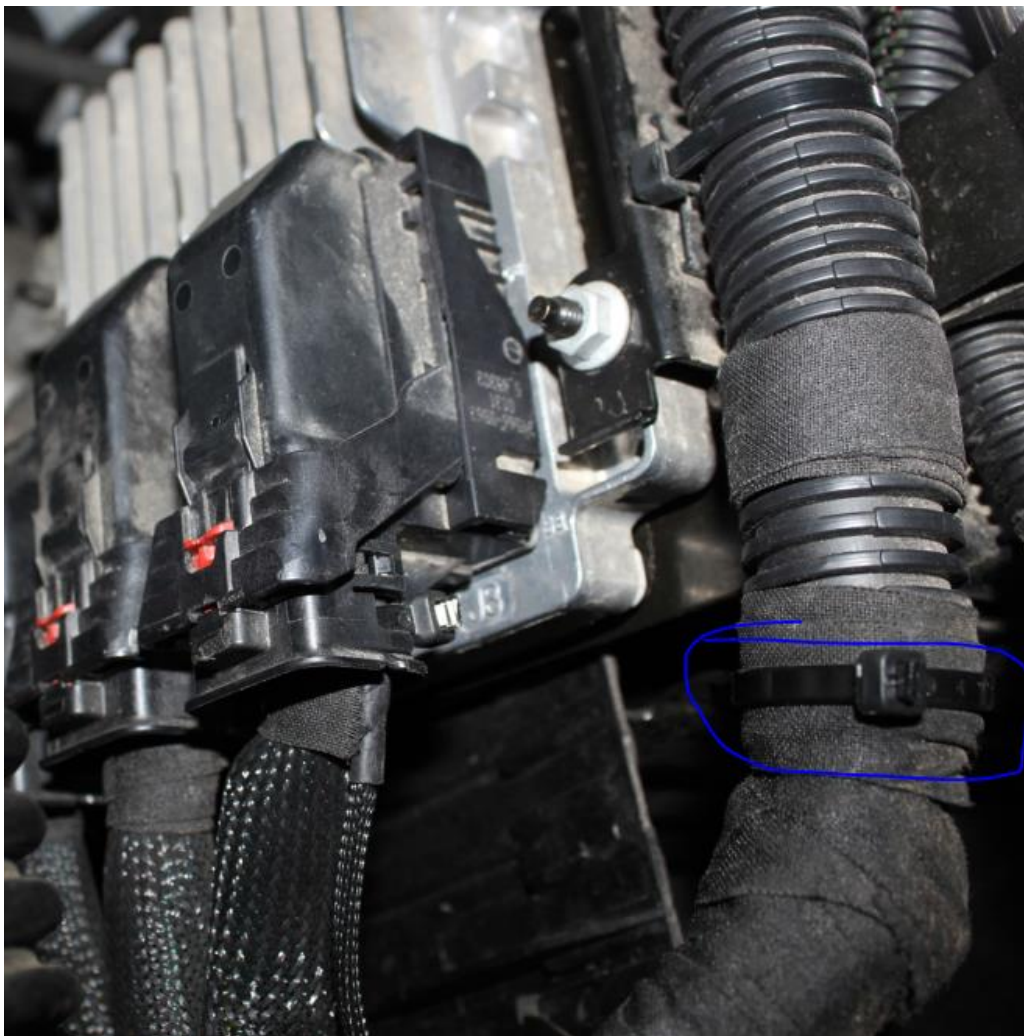
Installing the Wiring Harness

1. Your battery should still be disconnected for installing the wiring harness.
2. Plug the connector into the sensor. You can then push the grey connector in to lock the connector.

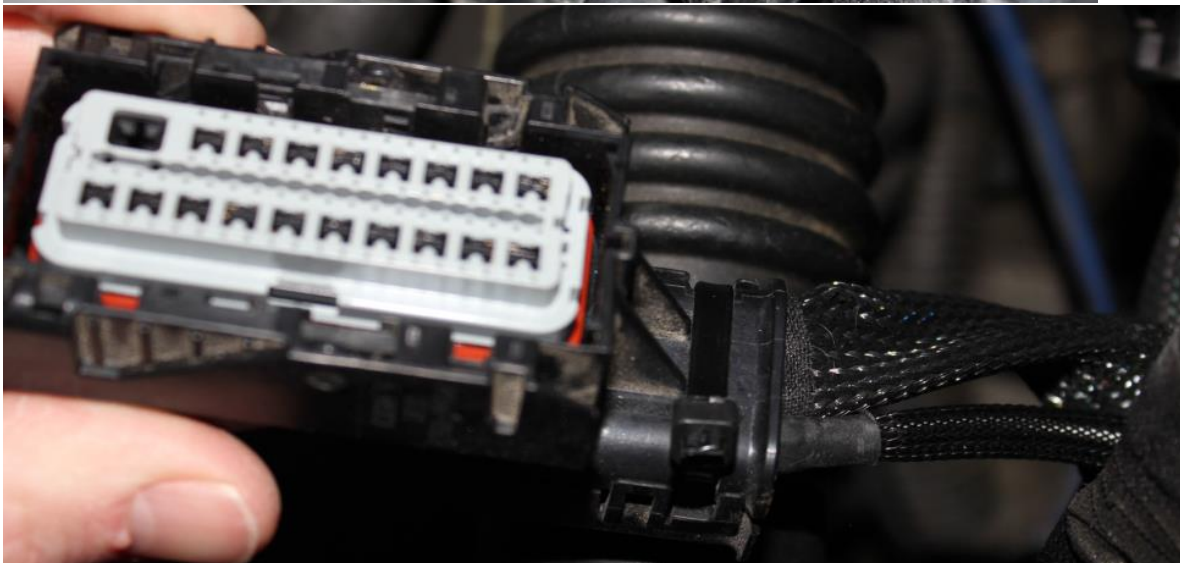


3. Route your wire harness (similar to the photos) and attach the zip ties as you go (zip ties are circled in blue).



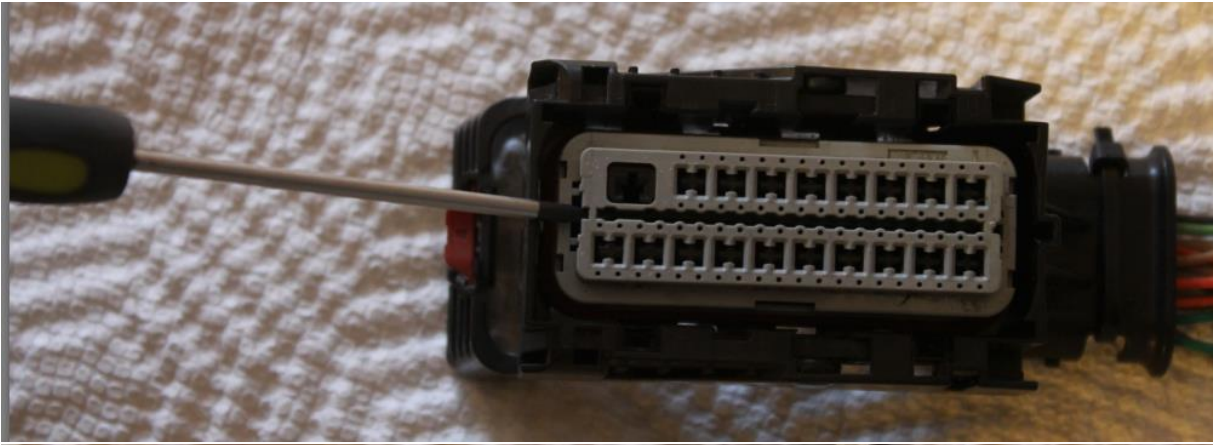


4. On the top connector for the PCM, push the red lock back to unlock it. Now press where the blue circle is and lift the lever back to release the connector from the PCM.

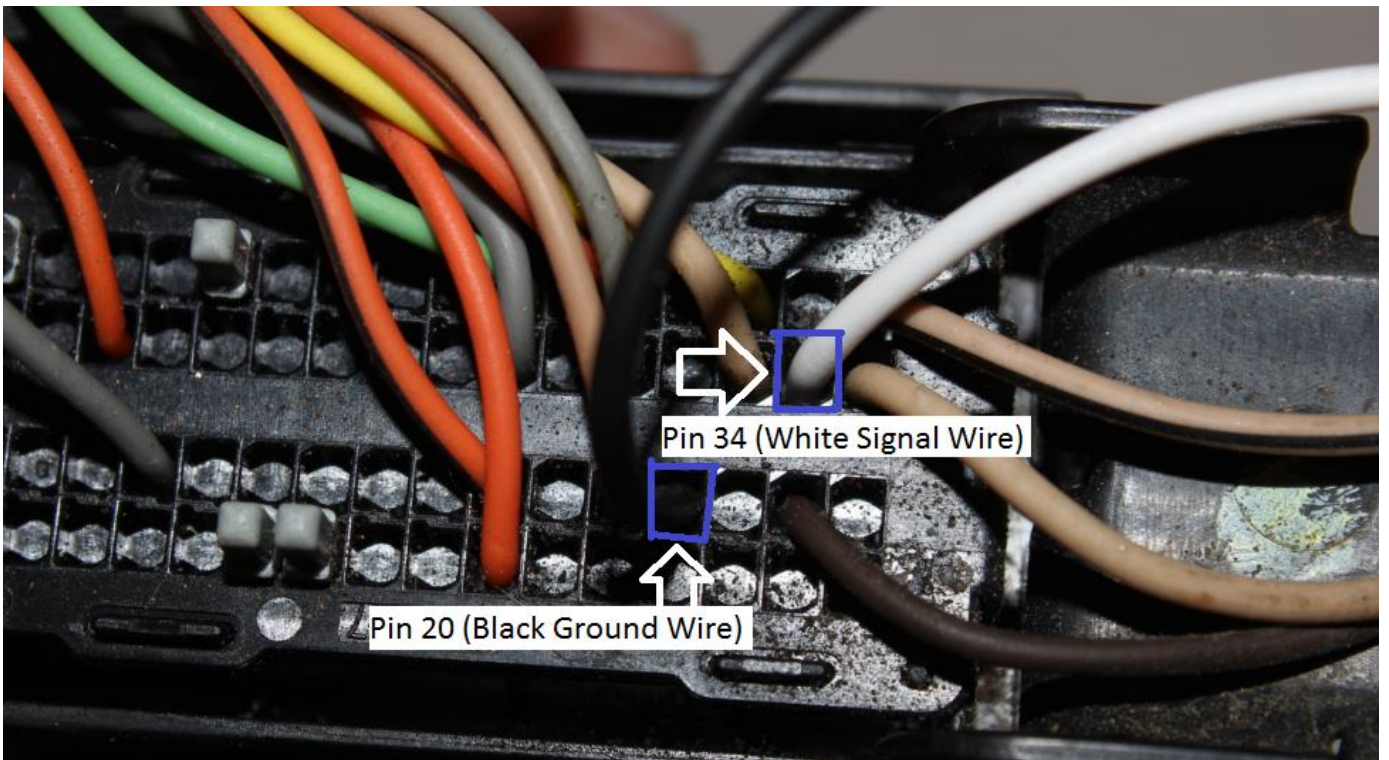
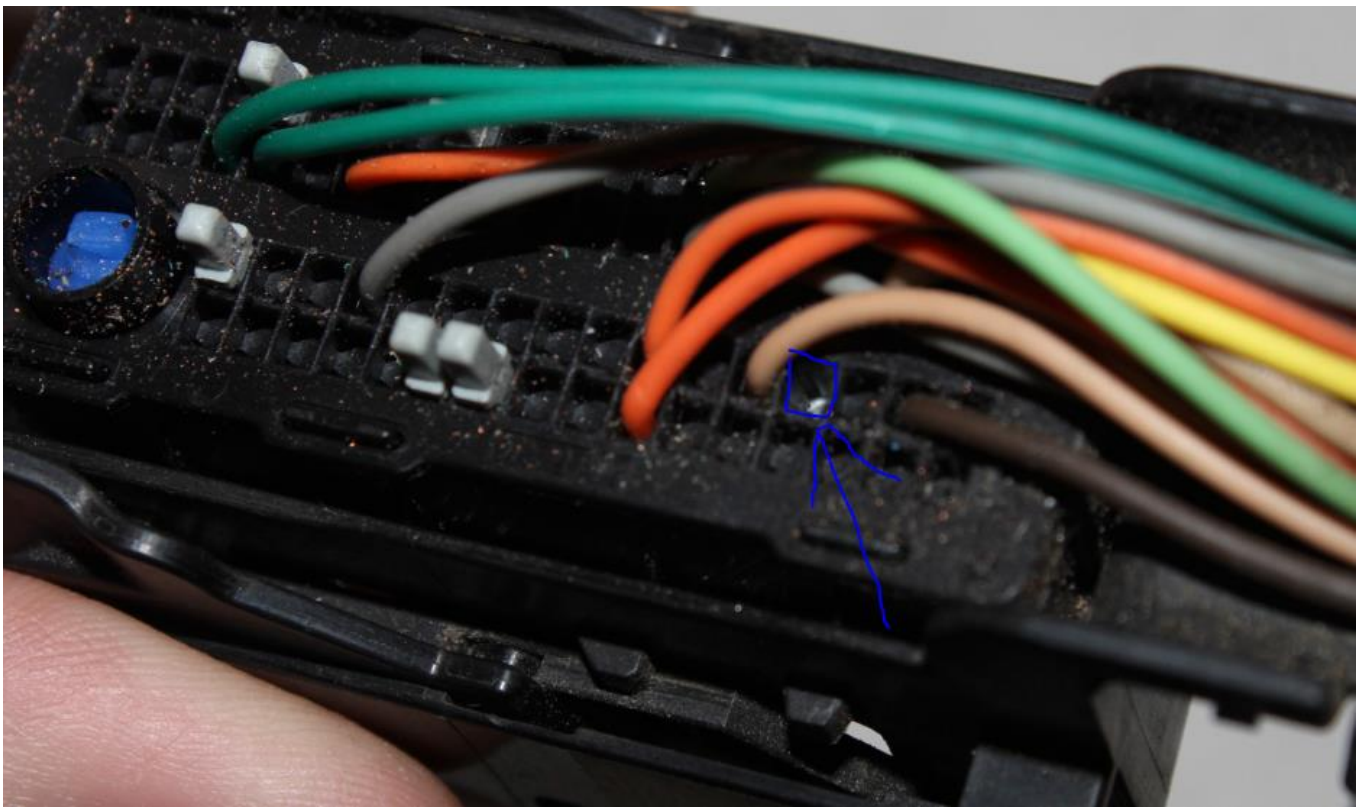


****For these next photos I am using a connector off the car to give you more detailed photos of the process****

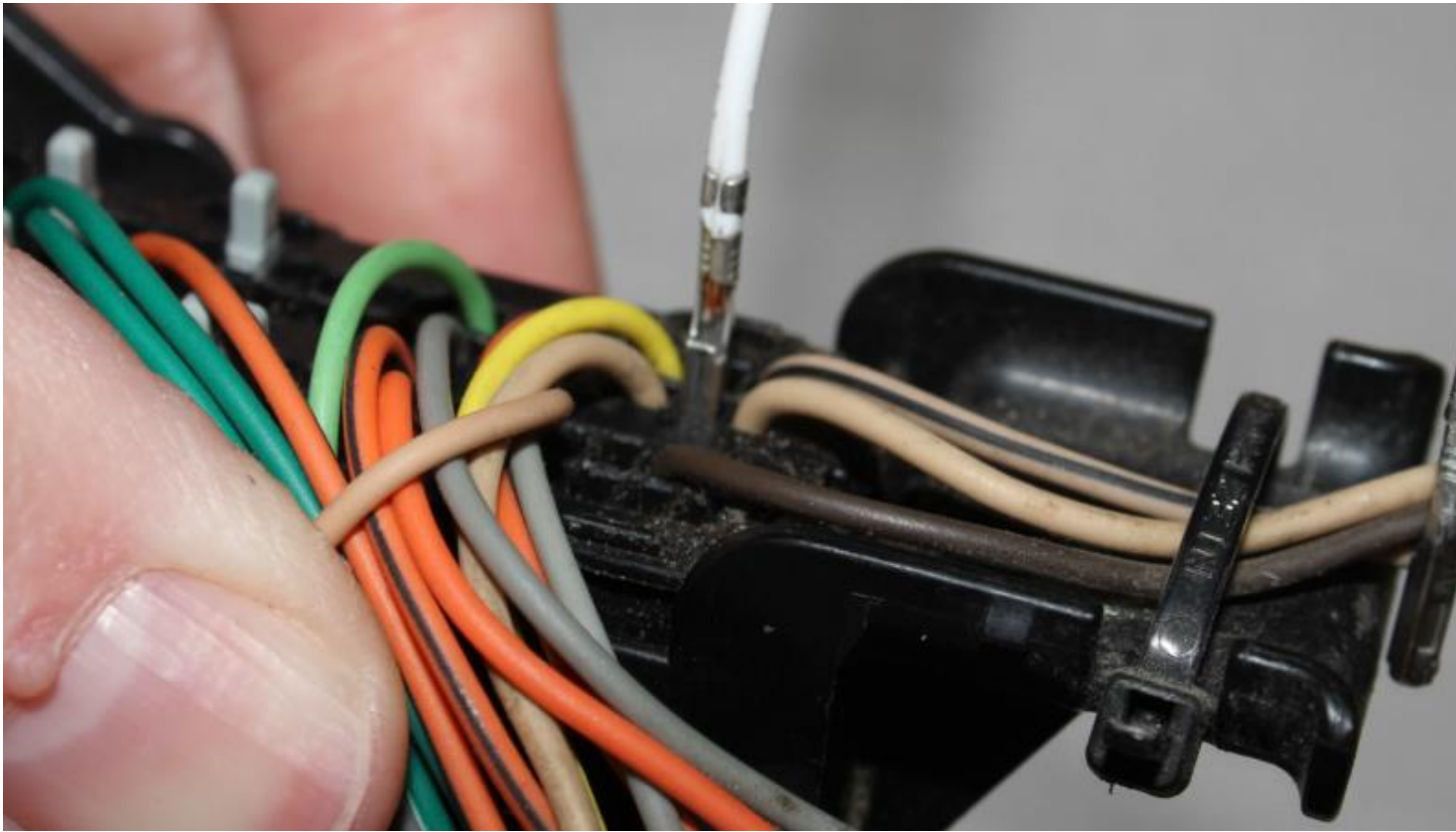
5. Use a small flat head screw driver to carefully pop the grey cover off. You will repeat this step on the left and right side of the connector until the grey cover comes off.



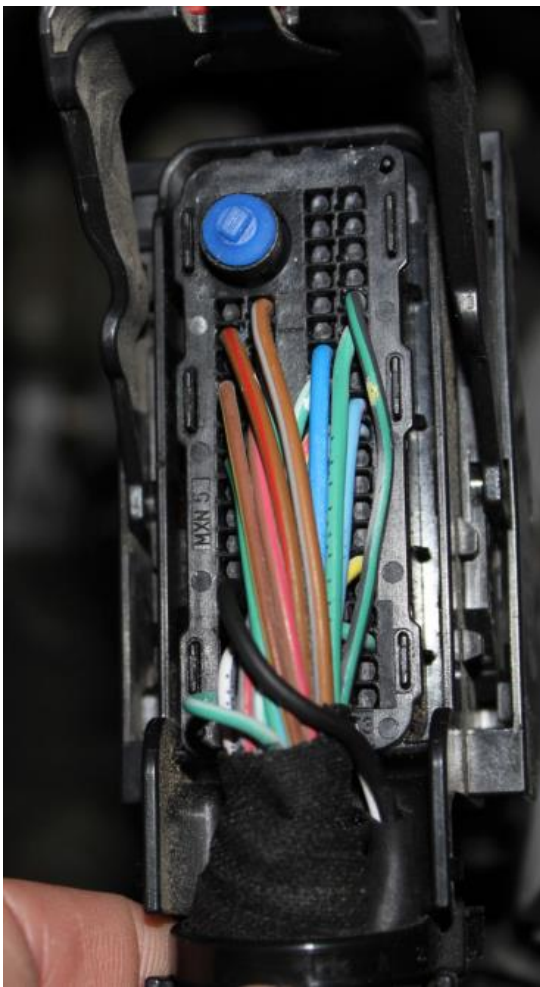
6. Remove the black top cover by prying lightly on the 2 tabs by the zip tie. This will expose all the wires for the next step.
7. You are going to need a small Philips screwdriver to push/ break out the plastic pieces located in cavities 20 (ground – Black Wire) and 34 (signal – White Wire) on the grey connector. You will feel these pieces break off and they should fall out the bottom of the connector. You should now cut the zip tie on the connector that's holding the wires. This will give you more room for the next step.



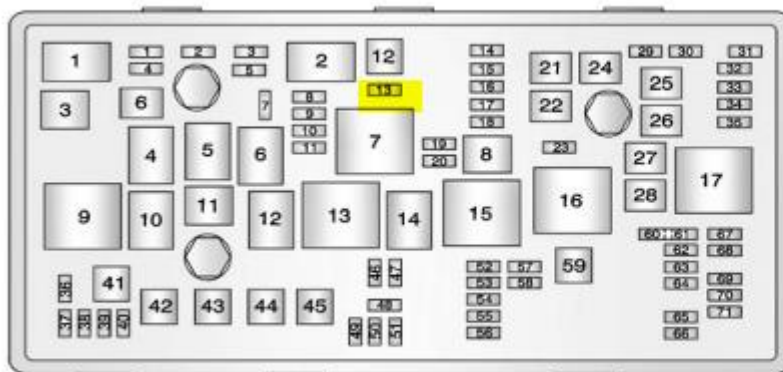
8. Once you have both plastic pieces broken out, you can begin to push both terminals in as shown in the above picture. The terminals only fit in 1 of 4 ways. See pictures for correct orientation. Make sure you see the connector lock from the back and see it seated all the way. If the connector is not sliding in smoothly, you may want to make sure all the plastic is out of the way, or use needle nose pliers to assist you pushing it in without kinking the wire.



9. Your connector should now look like the picture. You can now add the zip tie back to where you cut the original one.



10. You can now snap the grey cover over the terminal connections and put the black cover over the back side of the connector to hide the wires again.
11. You can now reverse the steps you used to take this connector off of PCM. Make sure you lock the connector once it is back in place.
12. We are now ready to hook up the pink wire to a switched 12v source. We are going to use an “add a circuit” off of the #13 circuit. The location we will be hooking it up is highlighted.

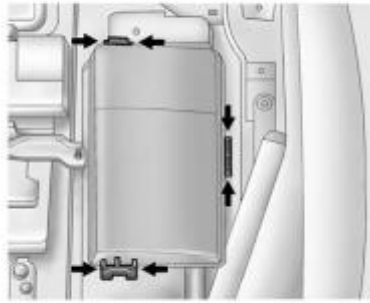


Engine Compartment Fuse Block

Mini Fuses	Usage
4	Canister Vent Solenoid
5	Ignition
7	Not Used
8	Fuel Injection
9	Fuel Injection/ Ignition System
10	Engine Control Module
11	Lambda Sensor
13	Canister Vent Solenoid
14	Not Used

13. You can start by removing the cover off of the fuse box in the engine bay.

Engine Compartment Fuse Block



To remove the fuse block cover, squeeze the clips and swing it up.

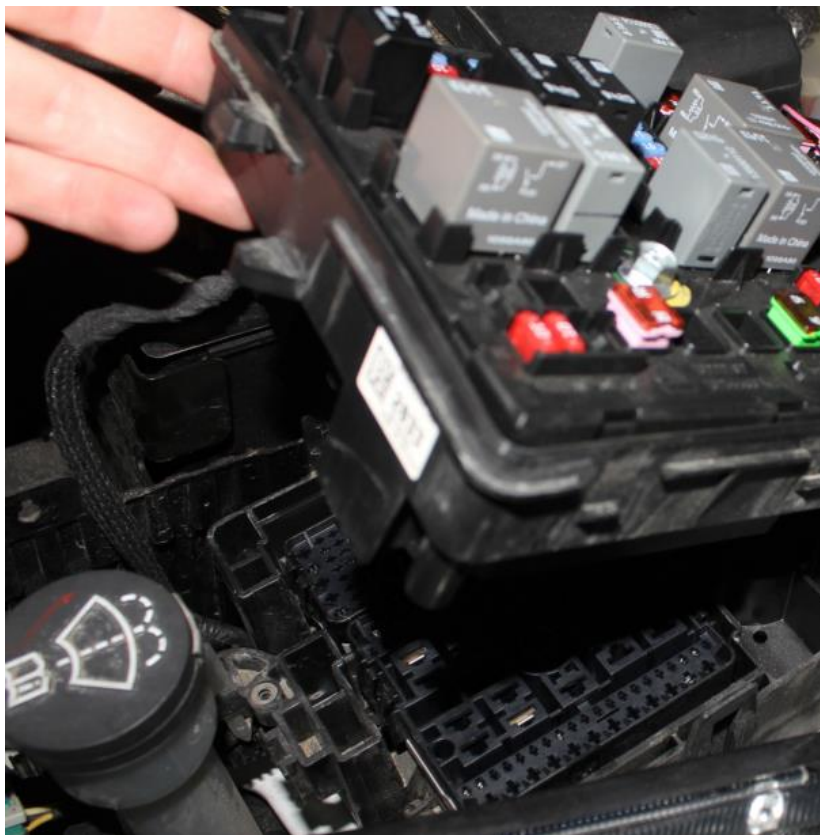
14. Loosen all 3- 10mm bolts. These are fine thread which will require a good 10-15 turns counter-clockwise.



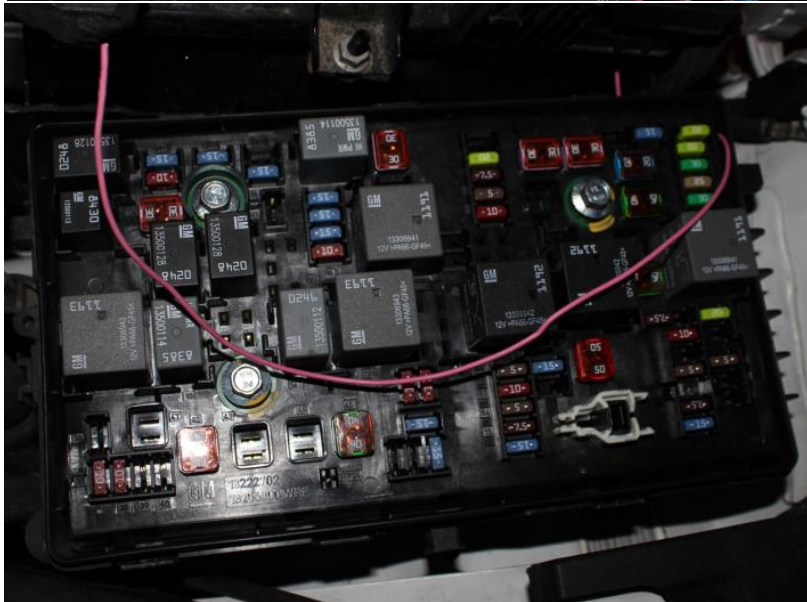
15. Now use a flat head screw driver to open the tabs on the sides of the fuse block and lift up from the front of it until it releases.



16. You can now lift up once all the clips are released when you put pressure on them. If it does not lift with ease like the picture, you need to loosen the bolts more. Or make sure the tabs released.



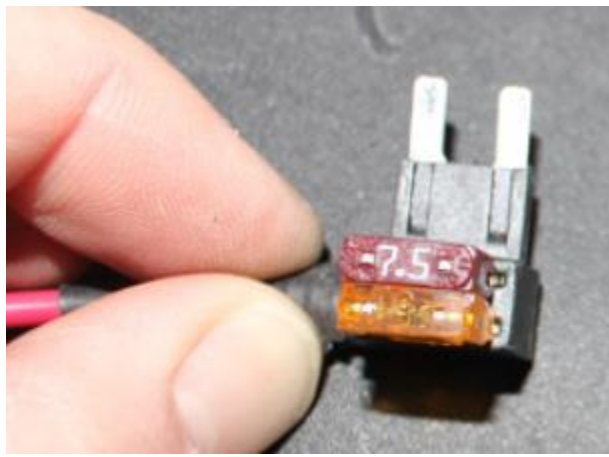
17. Toward the back corner there is a hole that you will feed the pink wire through. This will take a few attempts as the hole is small.



18. Tighten all 3- 10mm bolts now. It may take a few turns to feel them grab the connectors where they bolt to. They should only be snug. Try to line them back up with the yellow marks. **DO NOT OVER TIGHTEN.**
19. Remove fuse 13, which is a 7.5 amp fuse.



20. Place the 7.5amp fuse into the “add a circuit” as shown. A 5amp fuse is already in the other slot.



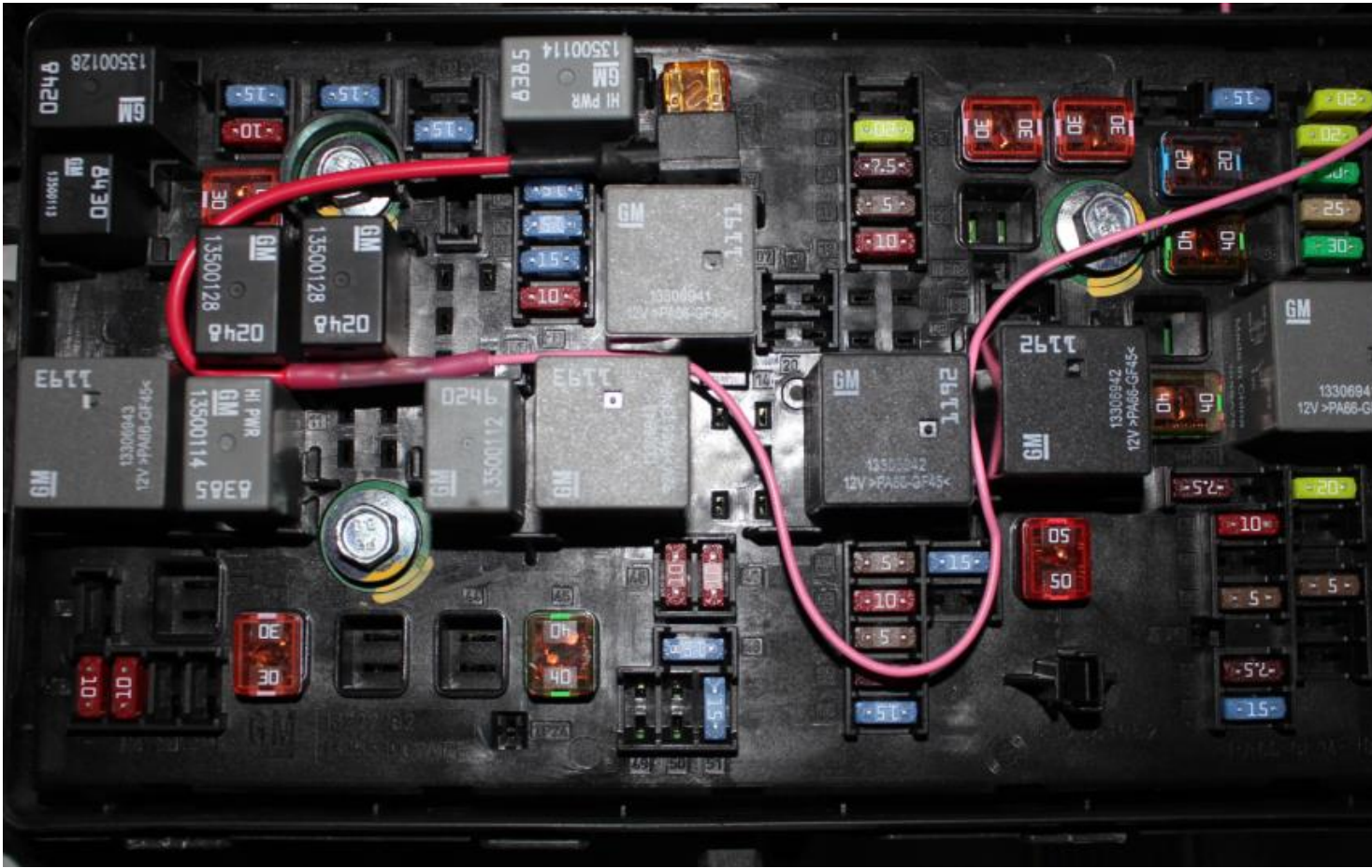
21. Strip the pink wire you fed into the fuse block and crimp it as shown. You can leave the pink wire as long as you would like. The harness has about a foot of extra wire so you can cut whatever you would like off as long as it is still able to connect to the “add a circuit” when installed.



22. Once you have a nice solid crimp, you can now heat seal the connector using a small flame (lighter) or a heat gun at medium heat.



23. You should now have a finished wire connection that looks like this picture.



24. Place the cover back onto the fuse block.

25. Re-attach the negative terminal on the battery.

You have now finished the install of everything required before flashing your tune. Your engine bay should look like the picture below.

