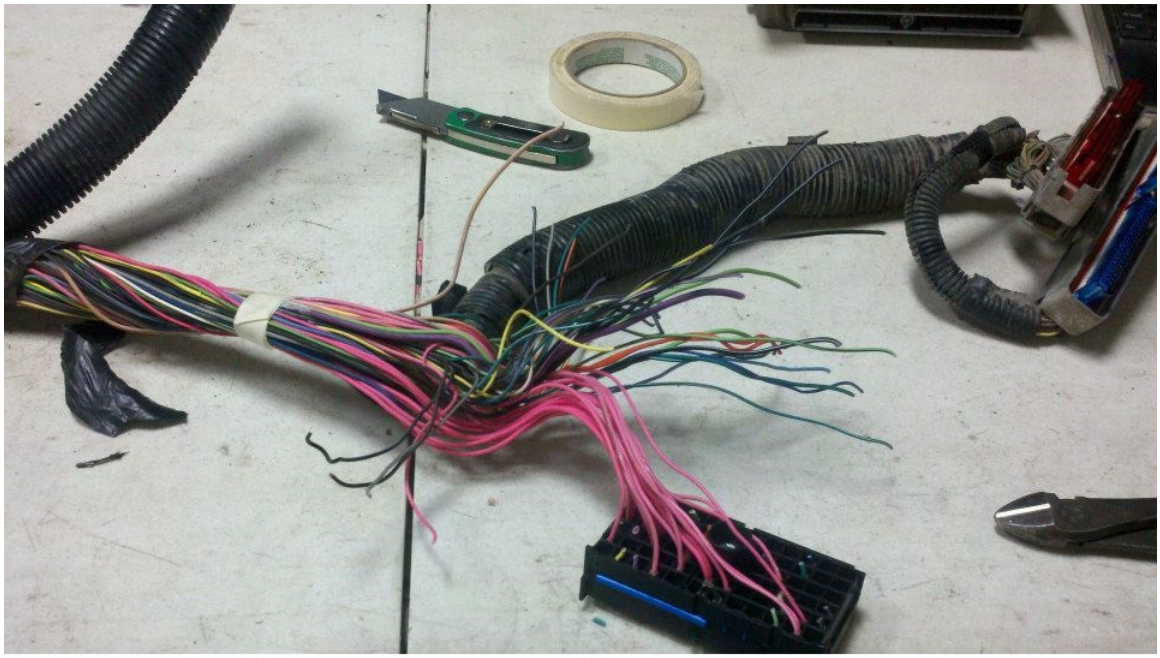
DIY GM Generation 3 Harness Modifications for Standalone

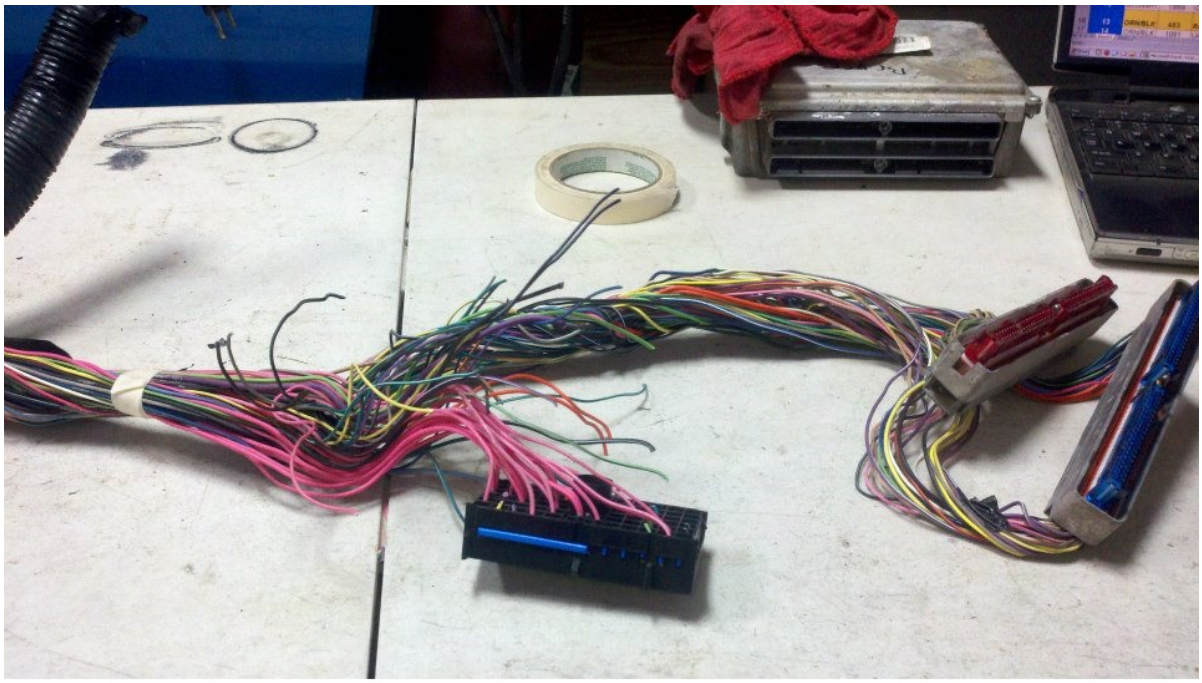
Credit to Brendan at http://lt1swap.com. These photos were pulled from his Facebook post and edited to add his text.

Here we have the C100, C152, C153, and C2 fuse block connectors. PCM connectors are in the upper right.

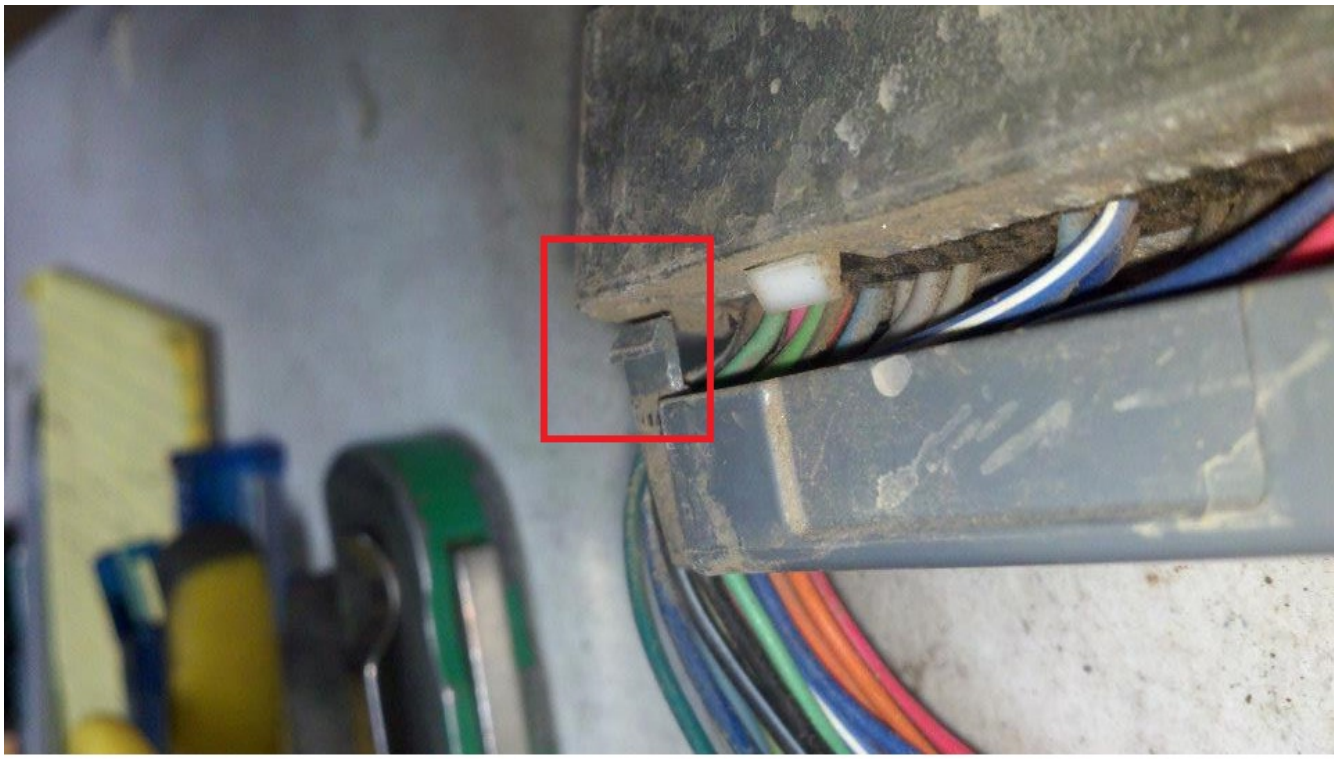
Cut off the C100, C152, and C153.



Remove all wires EXCEPT the PINK ones from the C2 fuse block connector.

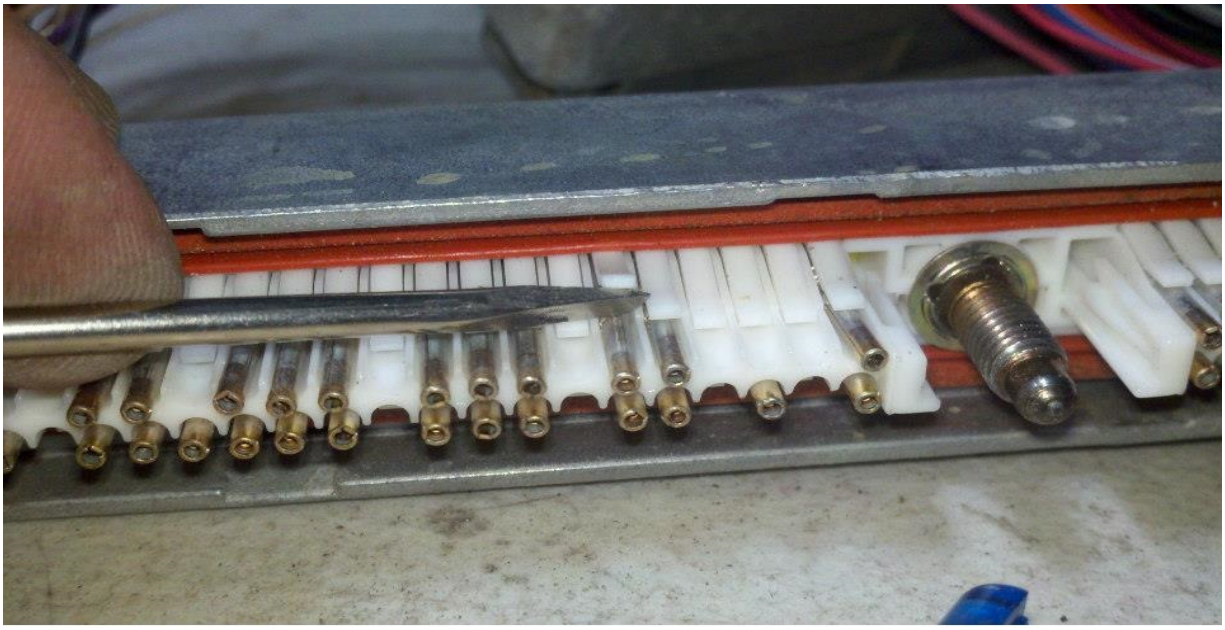


Remove the loom covering between the PCM and fuse block, and a few inches toward the rest of the harness.

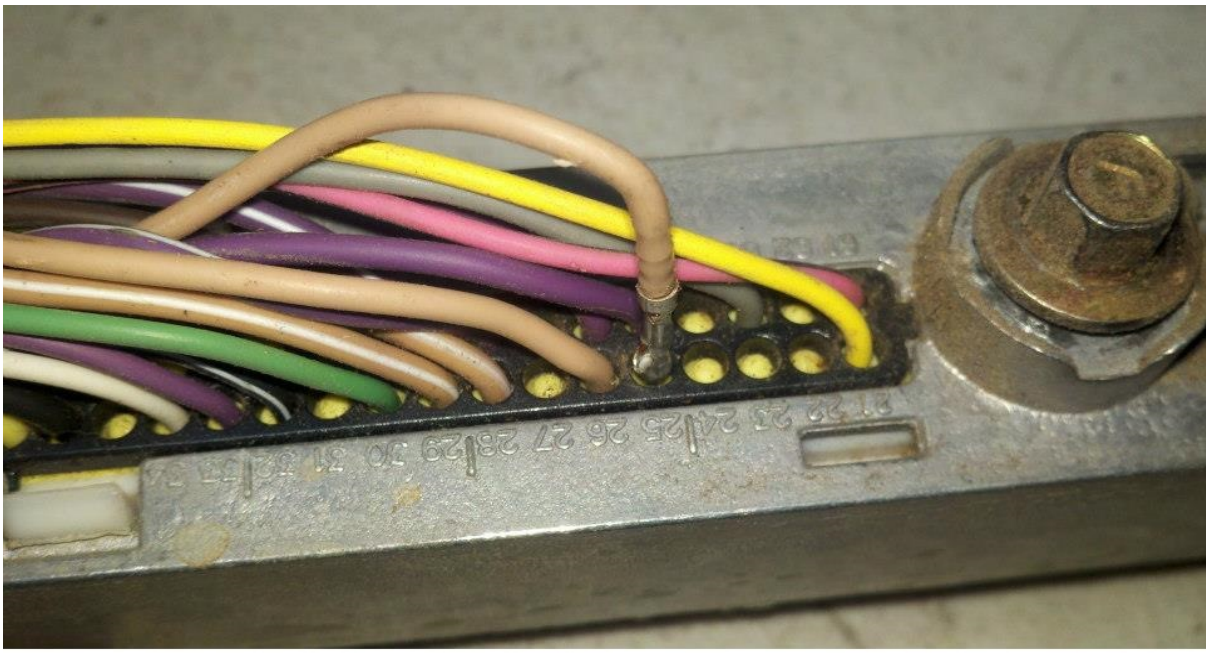


Carefully remove this so as to not break the small tabs.

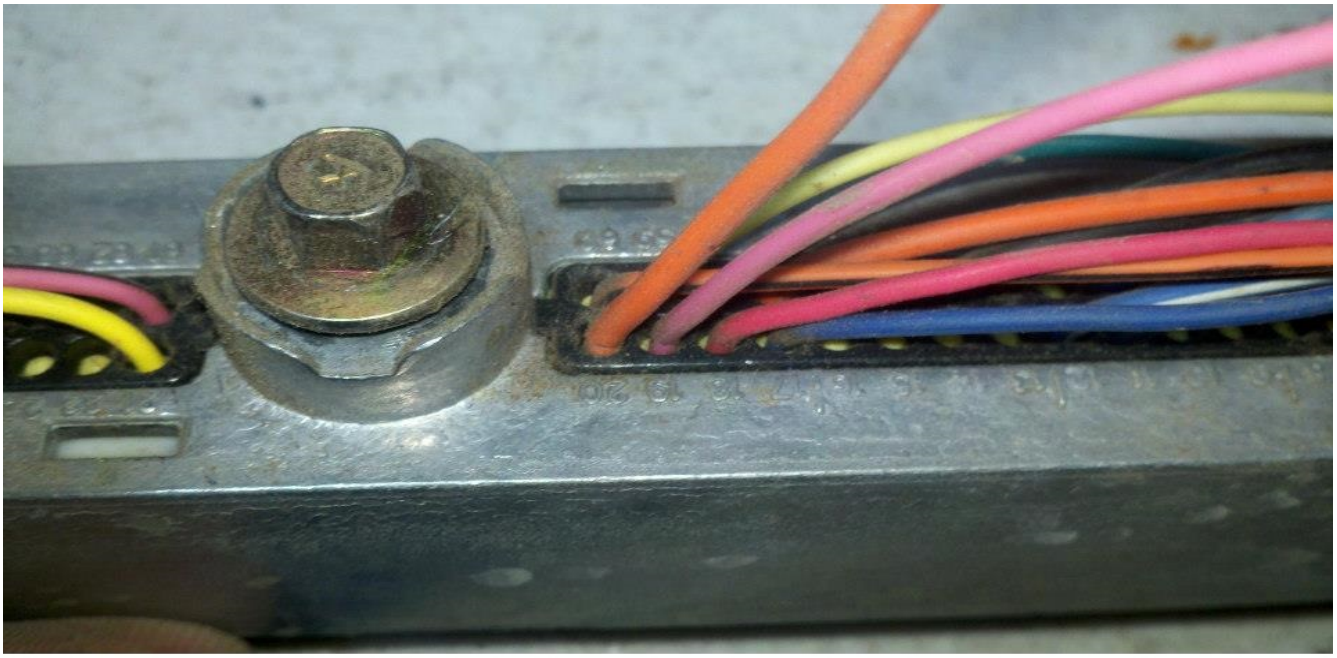
Depress the small white tab on each end and then pry up on them to remove the pin covers.



Pins to be removed are done by lifting the white tab over the pin, and then pushing the pin backward. Use the pinout chart from my website to know which pins to REMOVE (Highlighted in Yellow)
http://www.lt1swap.com/99-02_vortec_pcm.htm



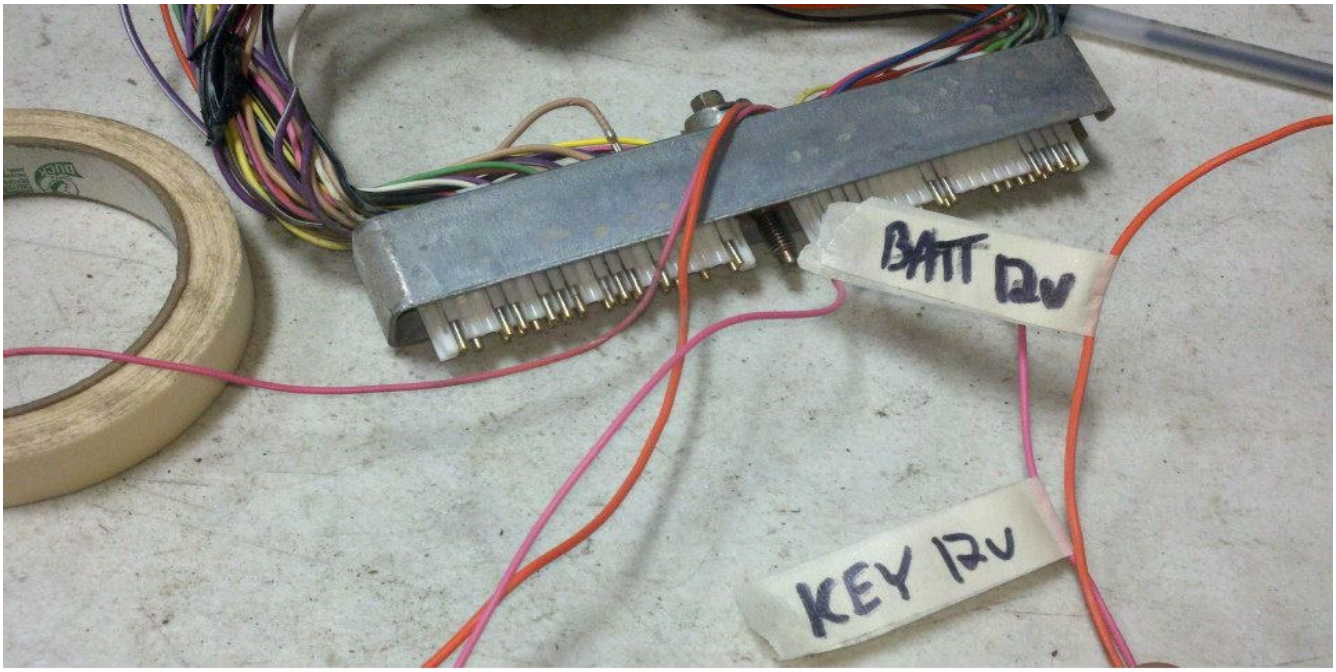
The pin removes out the back through the seal like this.



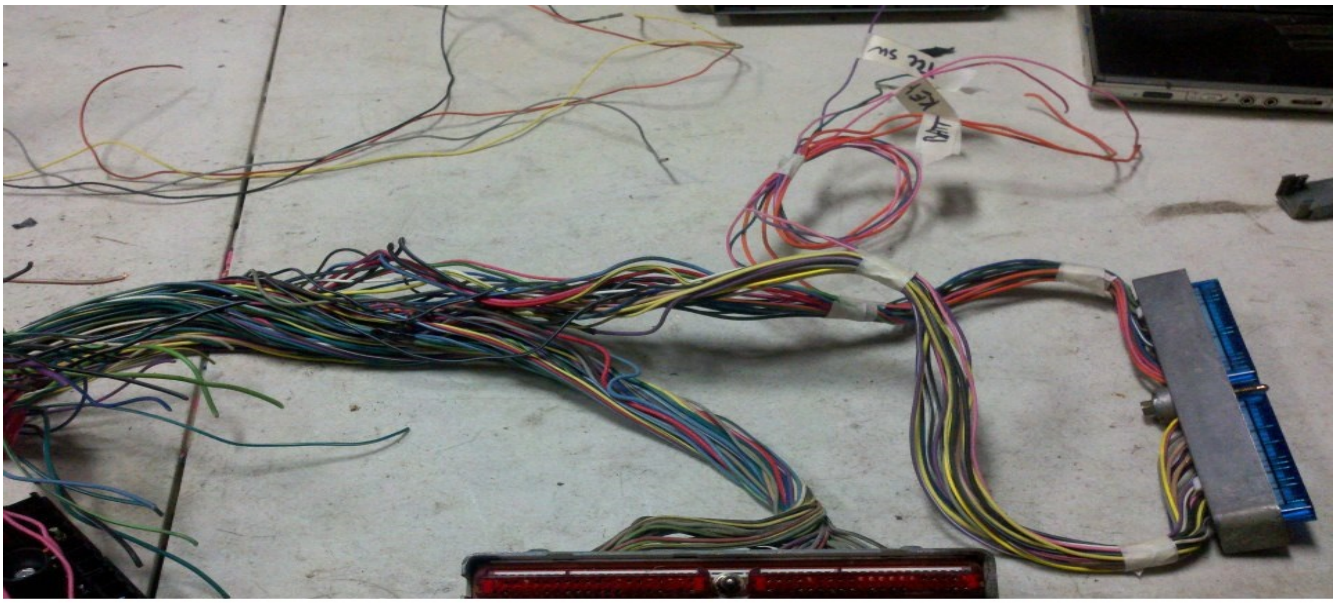
Using the pinout chart from a few pictures ago, LABEL the wires highlighted in BLUE. In this picture here are pins 19 and 20 of the C1 blue connector.

When you label pin 19 in the last picture, tug on it until you see which wire it was at the fuse block....

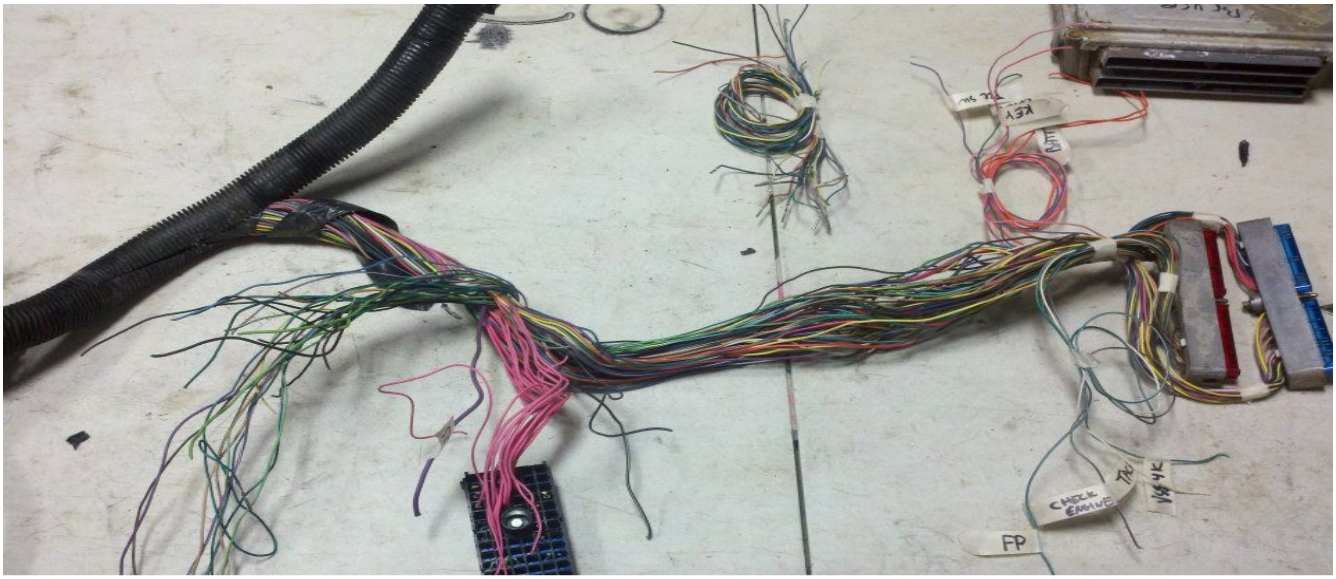
...then cut it free.



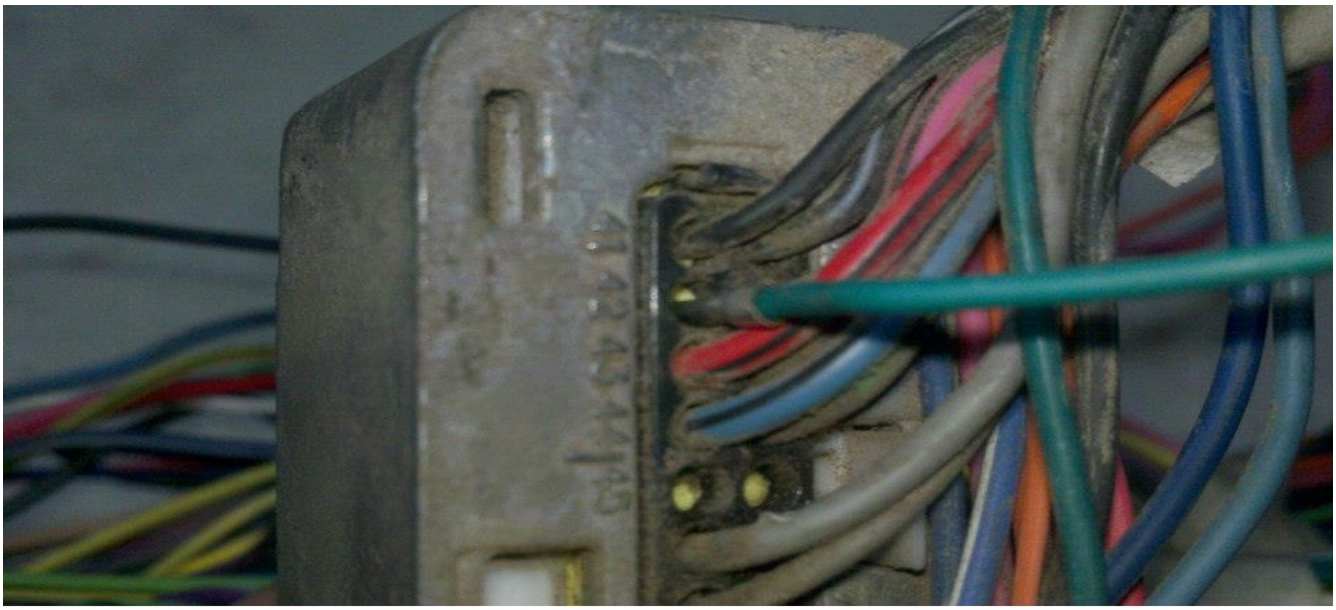
Here they are labeled.



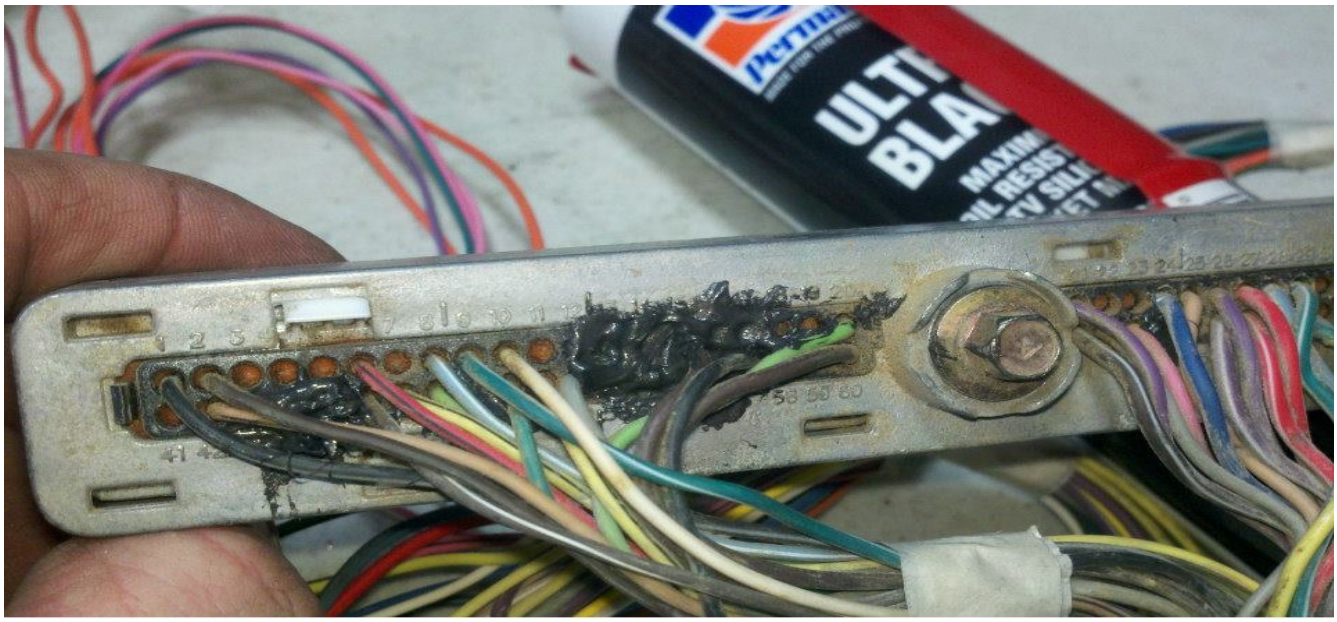
After you go through the C1 BLUE computer connector, it should look like this. Wires removed are top center in the picture, and those highlighted are coiled up and labeled.



Completed labeling and removing wires from C2 RED connector. Some wires removed from the computer will come out completely right away, as they just went from computer to one of the cut off C100, C152, or C153 connectors. Others go deeper in the harness. Those can be seen on LEFT side of this picture.

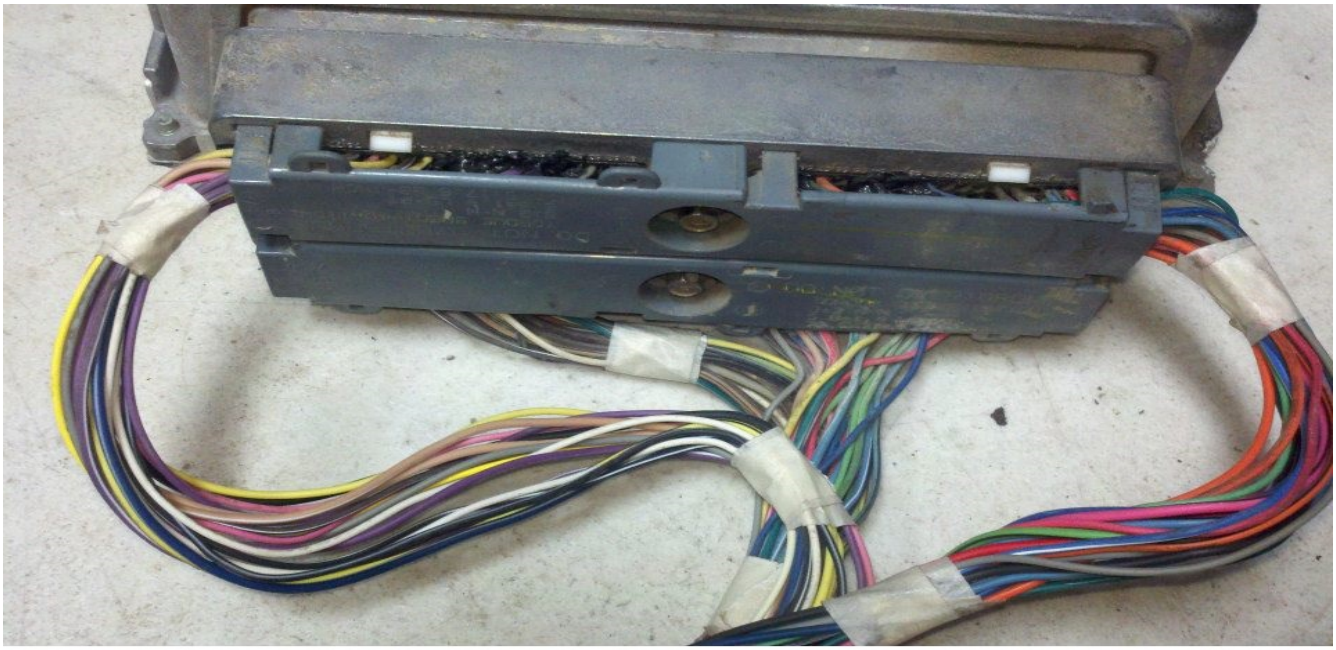


Adding a pin for Fan 1 Control - C1 BLUE connector pin 42. I will do same on C2 RED connector pin 33 for fan 2 control. The PCM will supply a GROUND trigger for fan relay controls.



After I'm done removing wires, I use silicone to seal the holes. This will prevent moisture from getting into connectors and causing intermittent problems later on.

I route the wires like they were from factory, and use masking tape to hold them in place for now. You could also use blue painter tape since it is easier to remove.



A closer look at the routing out of the computer connectors.

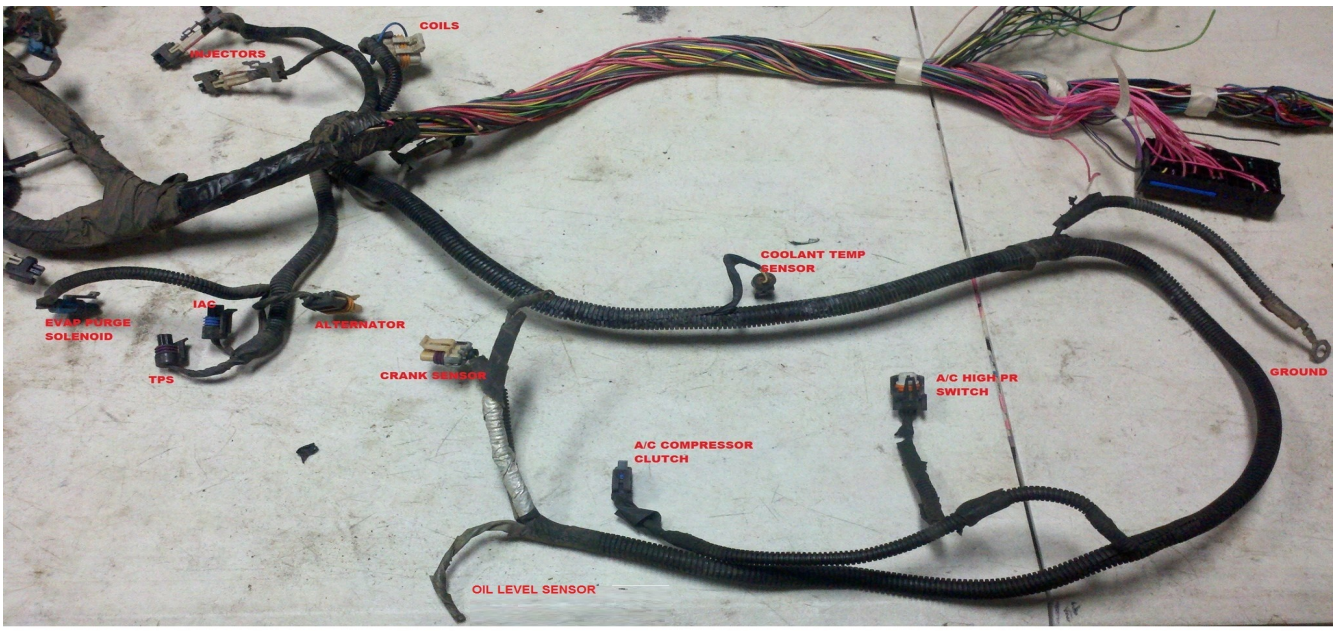
Your harness should look something like this now.

At this point you have a decision to make. You can continue to take the rest of the harness apart, and remove the wires on the LEFT of the picture. I do this to clean up, thin out, and remove un-used circuits. It is completely up to you if you want to do this work. You could just cut them off and cover them up. I won't do this if I am being paid to do one, but it is your choice.

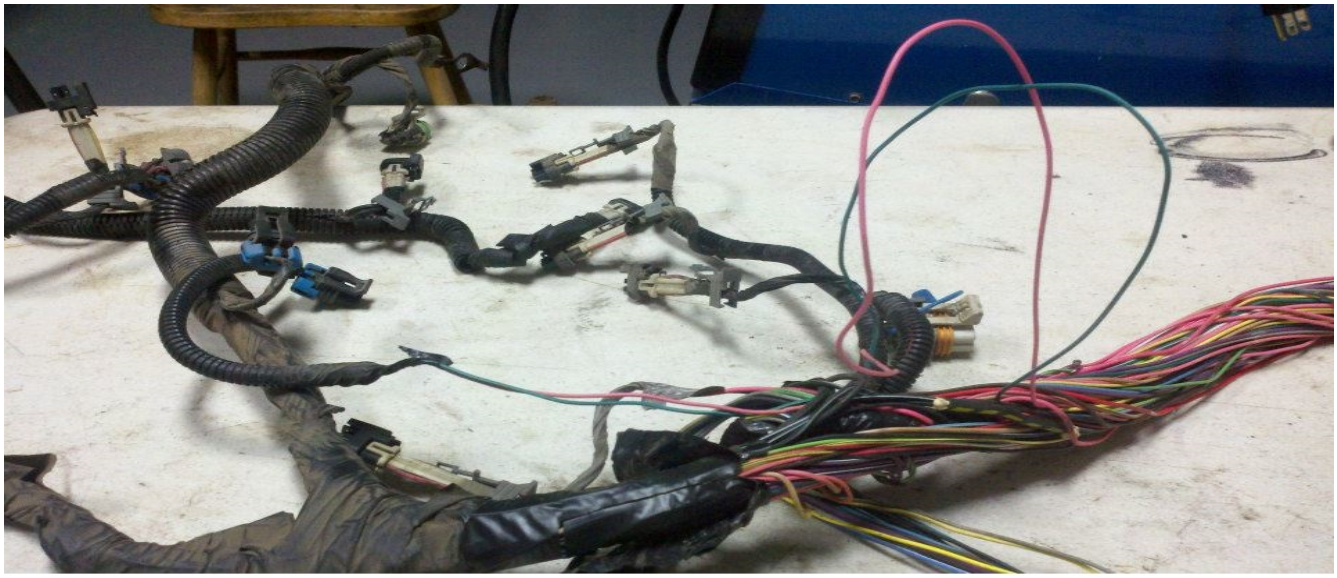
This is the first leg of the harness you will get to, contains connectors for: crank sensor, starter, oil level, A/C compressor, A/C high press cutout, GROUND, coolant temp sensor, also LEFT of picture, idle air controller, throttle position, and EVAP purge solenoid

The oil level plug was cut in this harness when I got it, its very bottom of picture, just left from center.

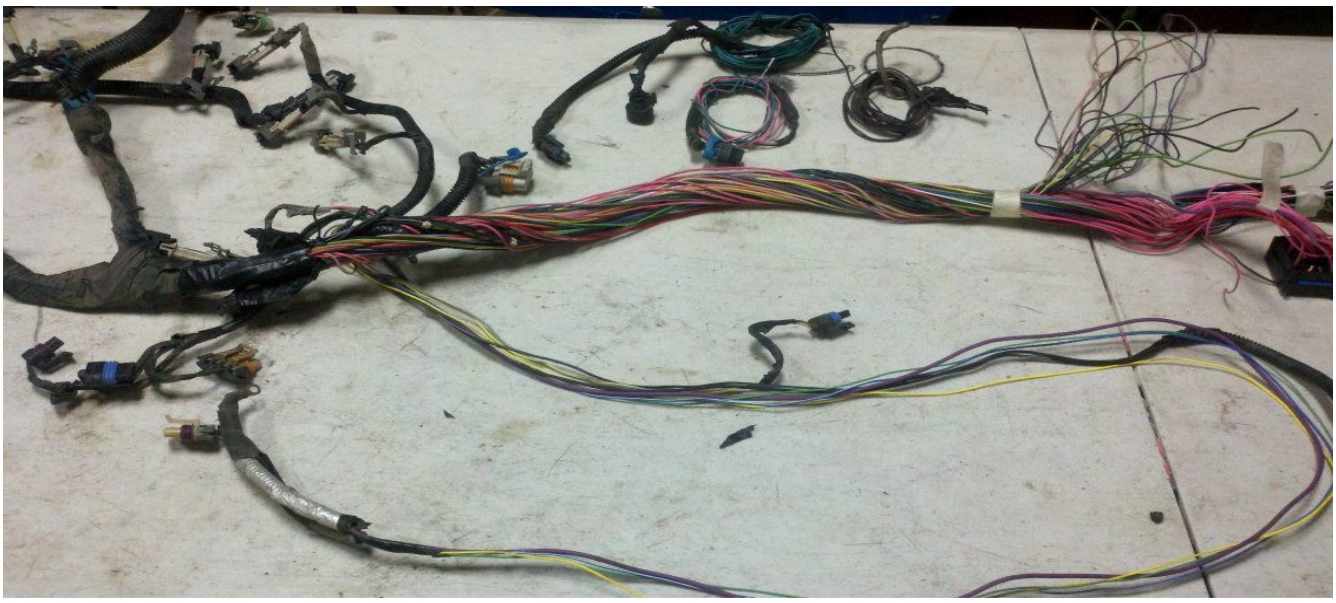
Very top left of picture are some injector wires and coil wiring, we won't do anything with these. Leave As-Is



Here are the connectors from the last picture with labels.

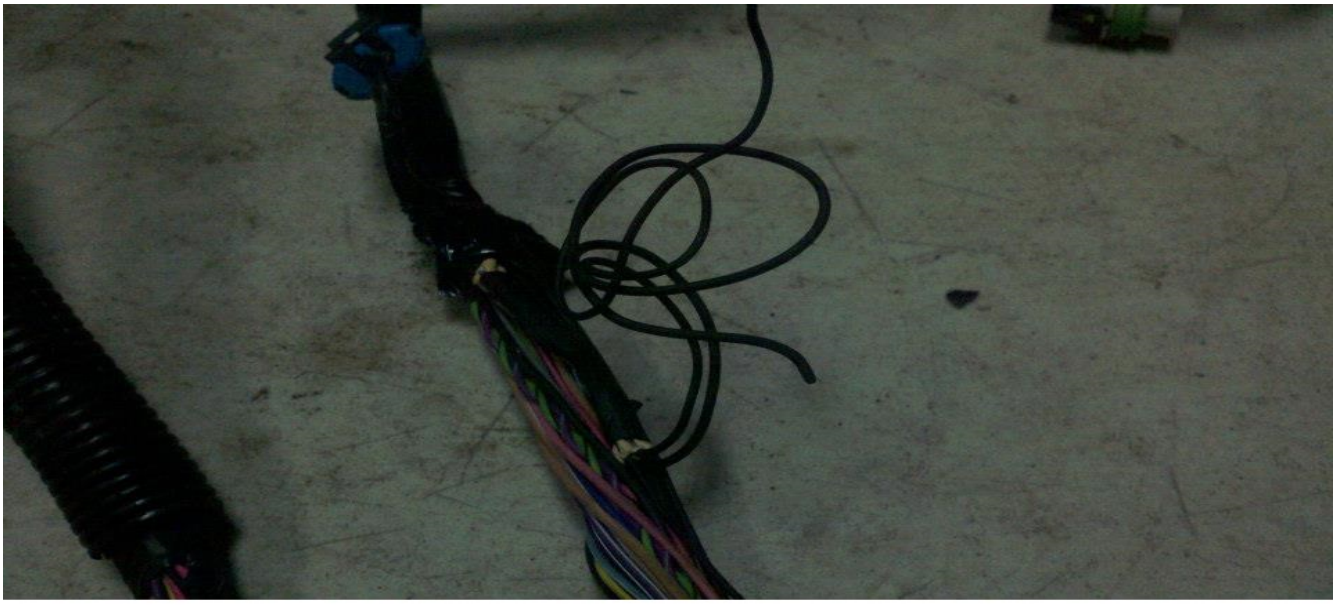


Removing the EVAP purge soleonid. The green wire will be one that was highlighted to remove, so that wire will pull out no problem. Pull on the pink wire until you can see where it went in the fuse block, then snip that pink wire from the fuse block.



Removed: Low Oil, A/C Related, Evap. I am MOVING the GROUND from this leg, to another position in the harness. This ground will be located on the leg of harness going back drivers side of top intake, to transmission.

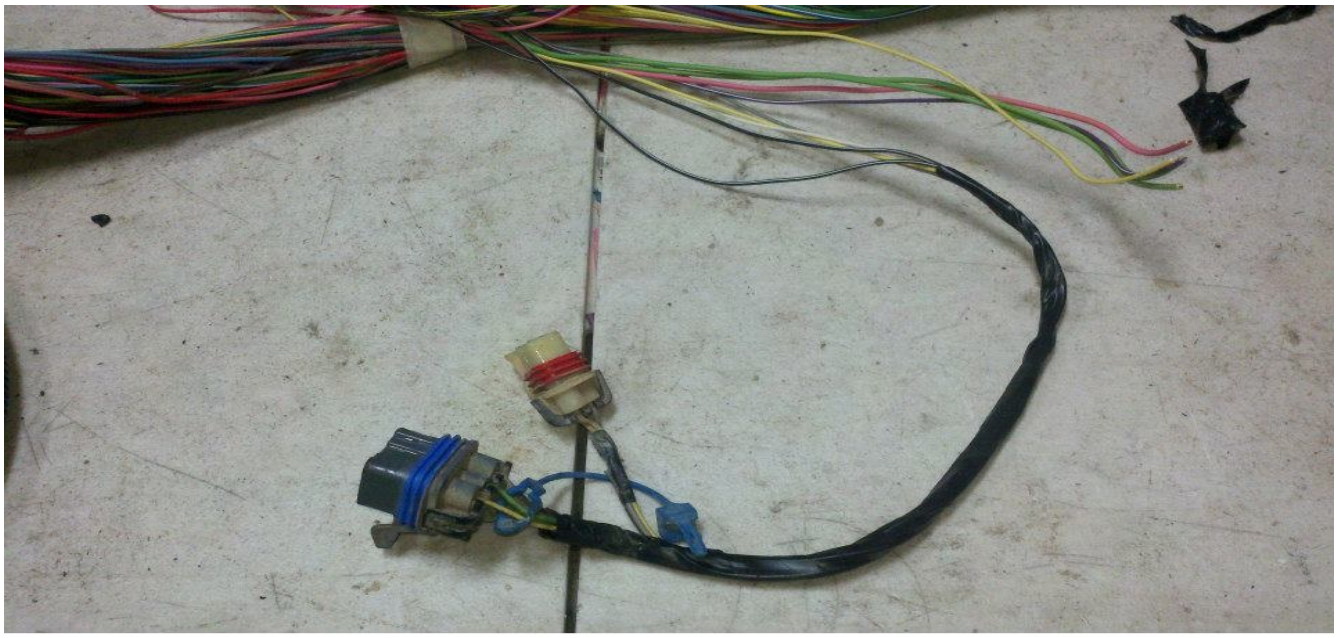
New covering installed.



Some of the connectors removed (Low Oil, A/C Compressor) had a ground going to them. I snipped them free and will remove rest of that wire later as I go deeper in the harness.

This is the leg of the harness on driver side. It goes down to CAM sensor, oil pressure sensor, a ground, range sensor, oxygen sensors, transmission, and vehicle speed sensor.

On the 2 RANGE sensor plugs, the ONLY wire you need to keep on the larger plug is the BLACK/WHITE wire, remove the rest, and keep all 4 wires on the smaller plug. 2004+ used the single connector range sensor. You keep the following pins on that single plug: Pins 4, 5, 6, 7, and 8. They will be same color as shown here. In 2004 the range sensor was a larger single plug.



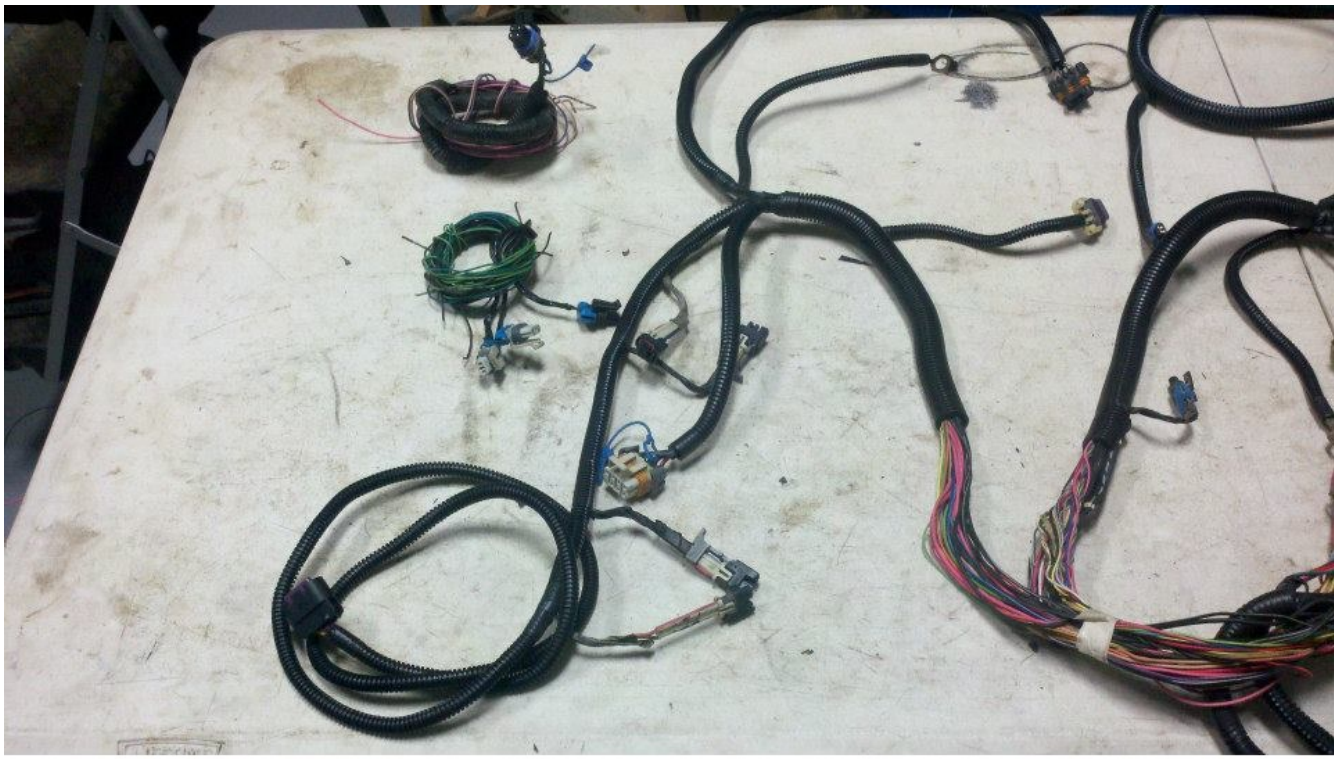
Wires taped back up, removed wires seen above.

This picture shows this leg covered back up, and the wiring we removed pictured top right. Removed rear oxygen sensor, oil pressure sensor wire, and all but 1 wire from the larger range sensor connector. ALSO pictured bottom center, are now TWO ground lugs. 1 was relocated from the first leg we went over.

!!!!NOTE!!!!

There are two splice packs in this leg of harness, that will have wires removed from it later on. Wait to recover this leg of the harness until the end.

This leg is the passenger side of intake going to MAP sensor, a ground, oxygen sensors, MAF sensor, coils & injectors. Also a few plugs for A/C and low coolant sensor.



New covering installed.

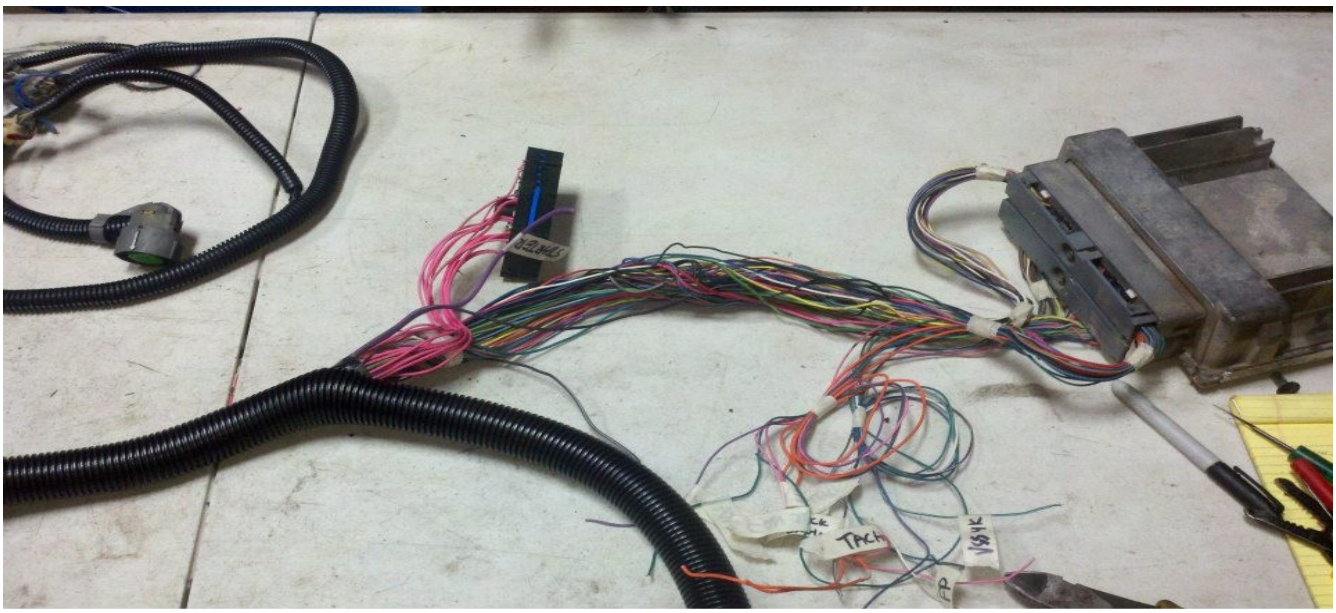
Note: I re-routed the MAF sensor with injectors wiring. The oxygen sensor wiring exits at the back of the intake now. The wiring will be extra long going to this O2 sensor now, you may want to shorten this...

Removed: Rear O2 sensor, and 3x 2 pin plugs. These were for A/C pressure switch, coolant level sensor, and another unused plug in the original trucks. Each of these had a black ground wire that had to be cut from a ground splice.

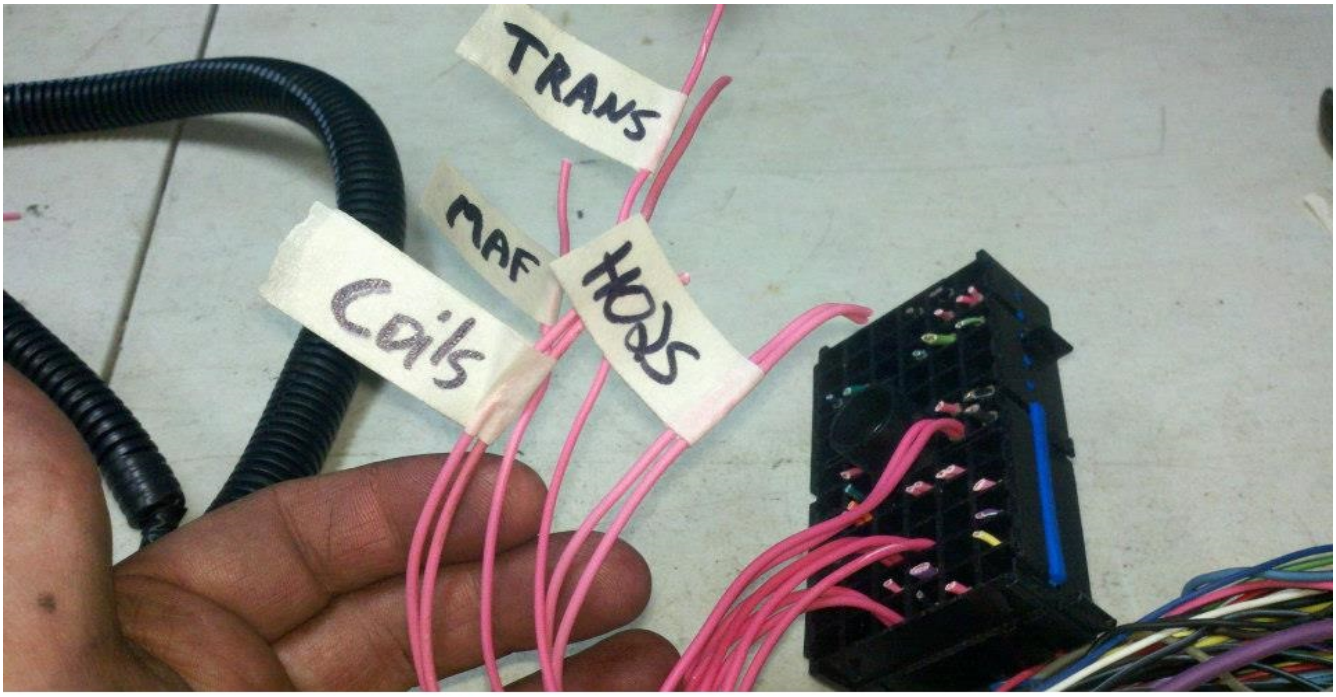
View of harness laying on top of intake.

View from back of intake, all 3 grounds are now in this location. I moved the one that was originally by the power steering pump to this location.

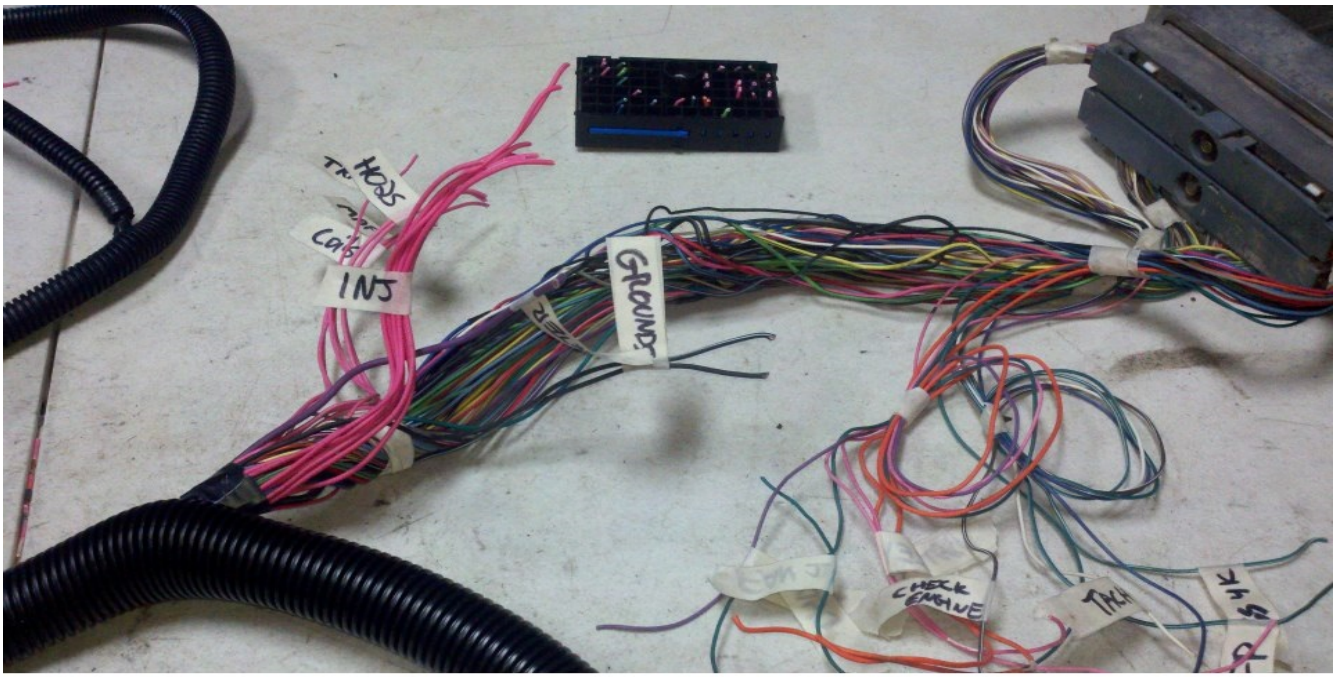
O2 sensors are the flat 4 pin plug in this picture, coiled up, to the left and right of the intake. Drivers side O2 sensor will have a purple wire with a white stripe, Passenger side will have a solid purple wire. Otherwise, the other 3 wires are the same color. Some 99-02 harnesses will have 4 pin square connectors that are White.



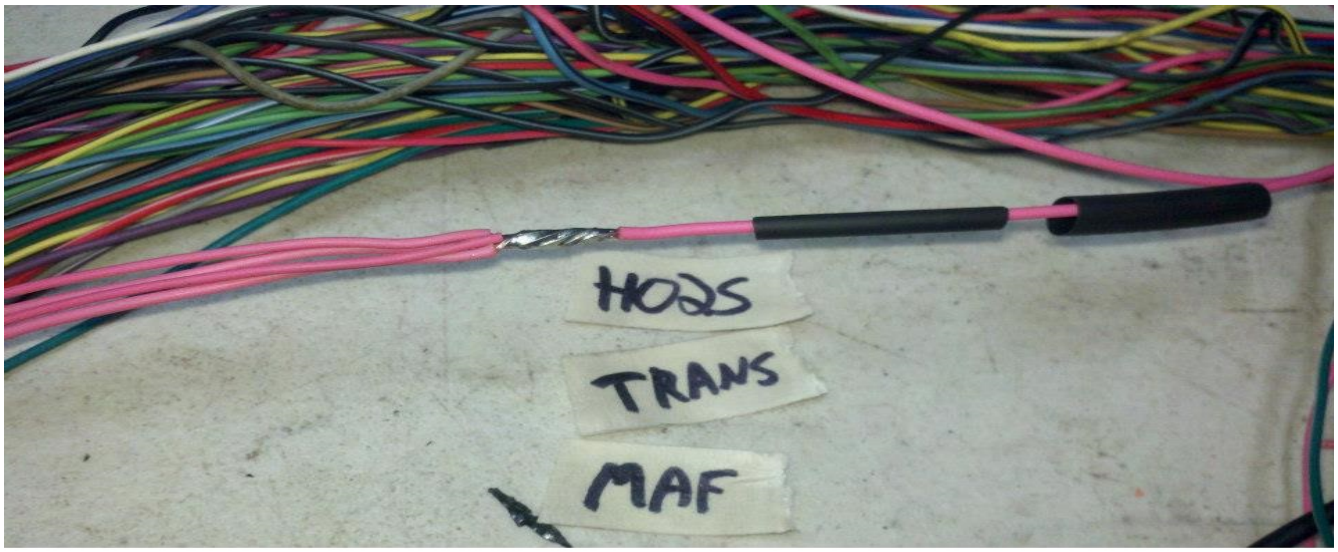
After removing all those connectors, you should not have any wires left to remove. You can see 2 ground wires that I have left to use for relays and a diagnostic port.



I identify the PINK wires using a digital volt ohm meter. I find the easy ones first, then when you have 8 left, those are the injectors.

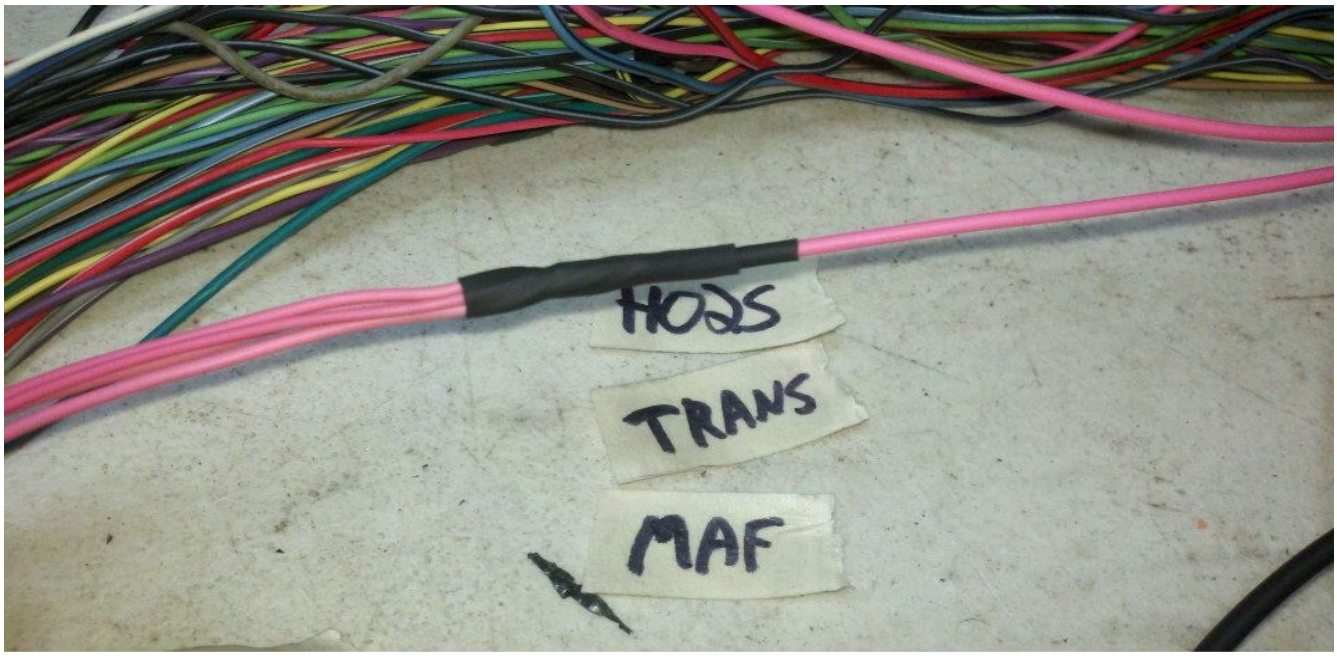


Now the C2 fuse block connector is CUT off.



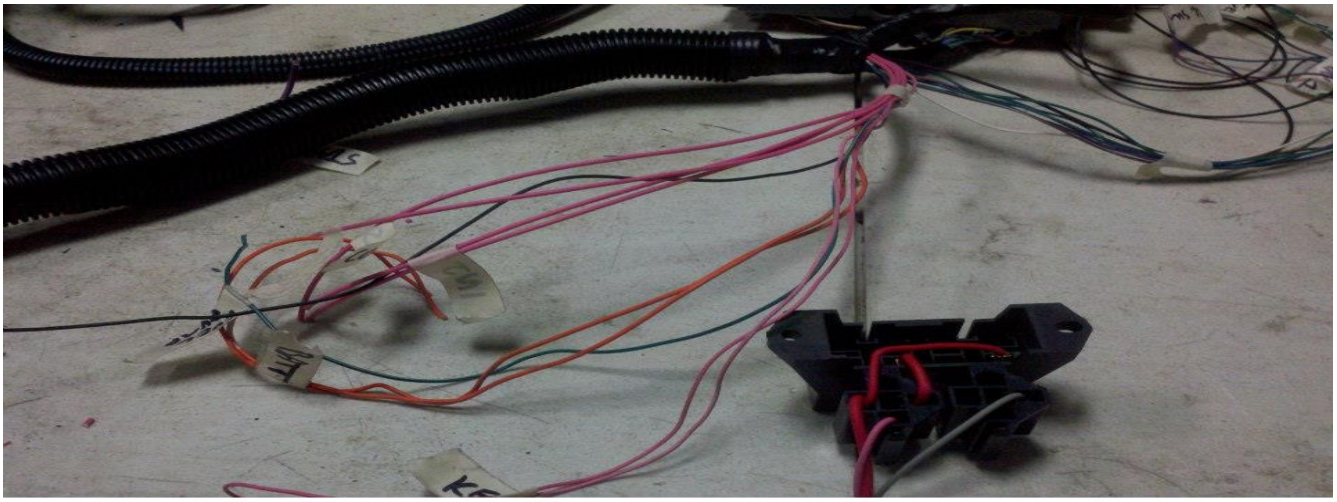
I'll combine the circuits into a single wire. I use 16 AWG TXL wiring, automotive grade. I solder them and use heat shrink. Add about 20 inches of wire is needed for these power circuits.

Wires going to transmission, MAF sensor, and heated oxygen sensors will combine into one wire to run to a fuse at the new fuse block.



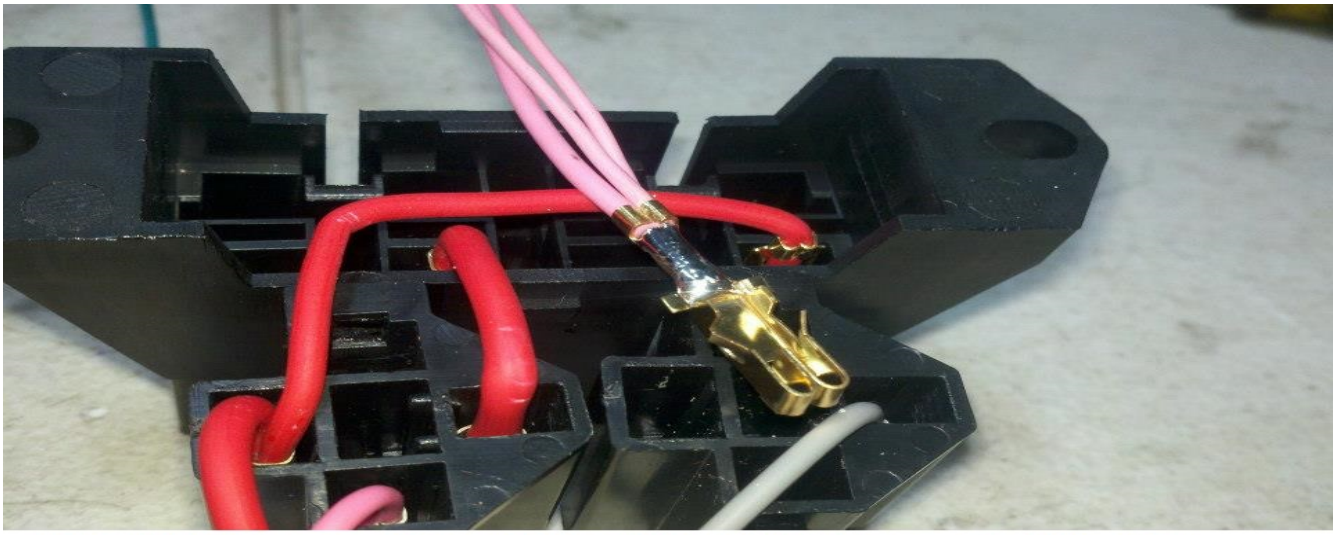
I use two layers of heat shrink for a tight seal. Use a heat shrink that has adhesive inside to make it water tight.

I've now combined the rest of them. 8 injector wires are reduced to two 16 AWG wires. The two coil wires are reduced to one 16 AWG wire.



I extend the two ground wires as well. One ground wire will go to the fuse block for the relays, the other will go to the OBD2 port.

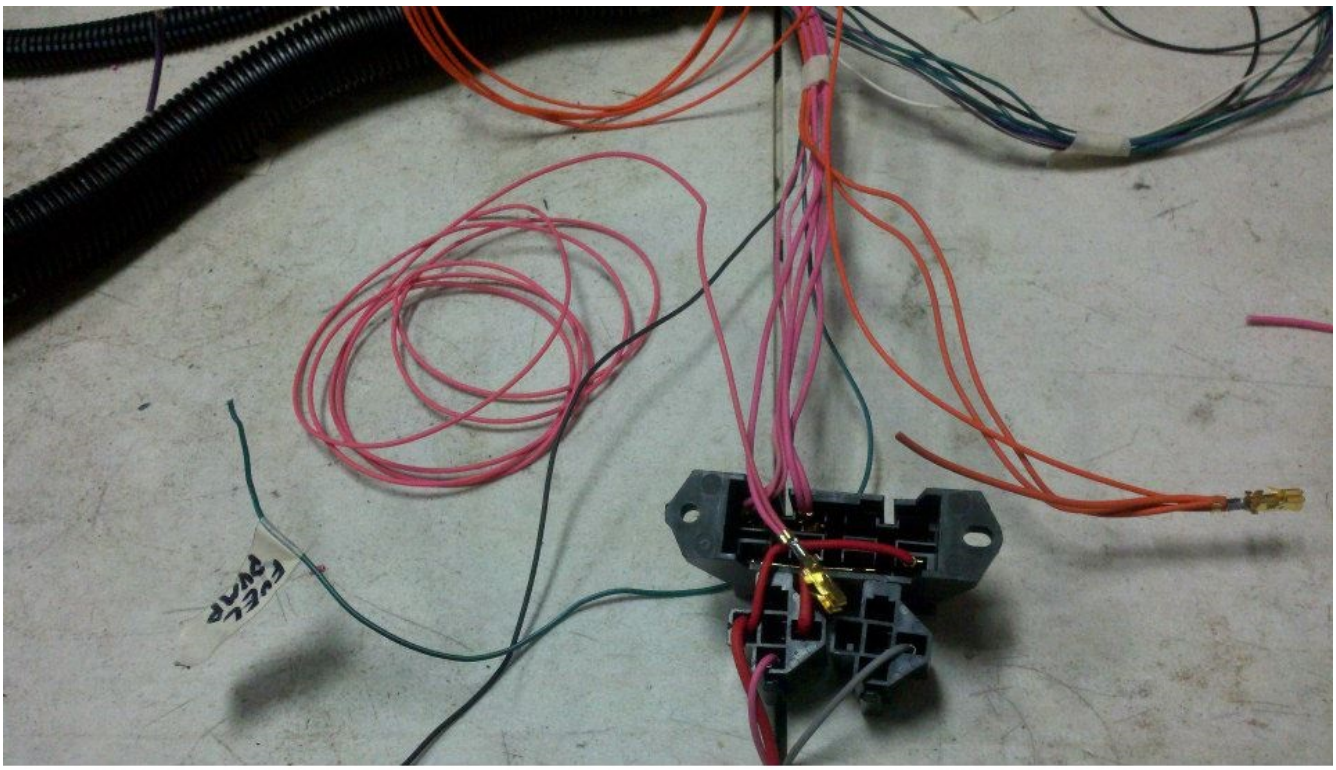
Start building the fuse block, and separate the wires going to fuse block from wires that will go through the firewall for check engine light, OBD2 port, and a few others.



FUSE 1: I've combined the COIL PINK wire, and the two PCM PINK wires to go to a single fuse.

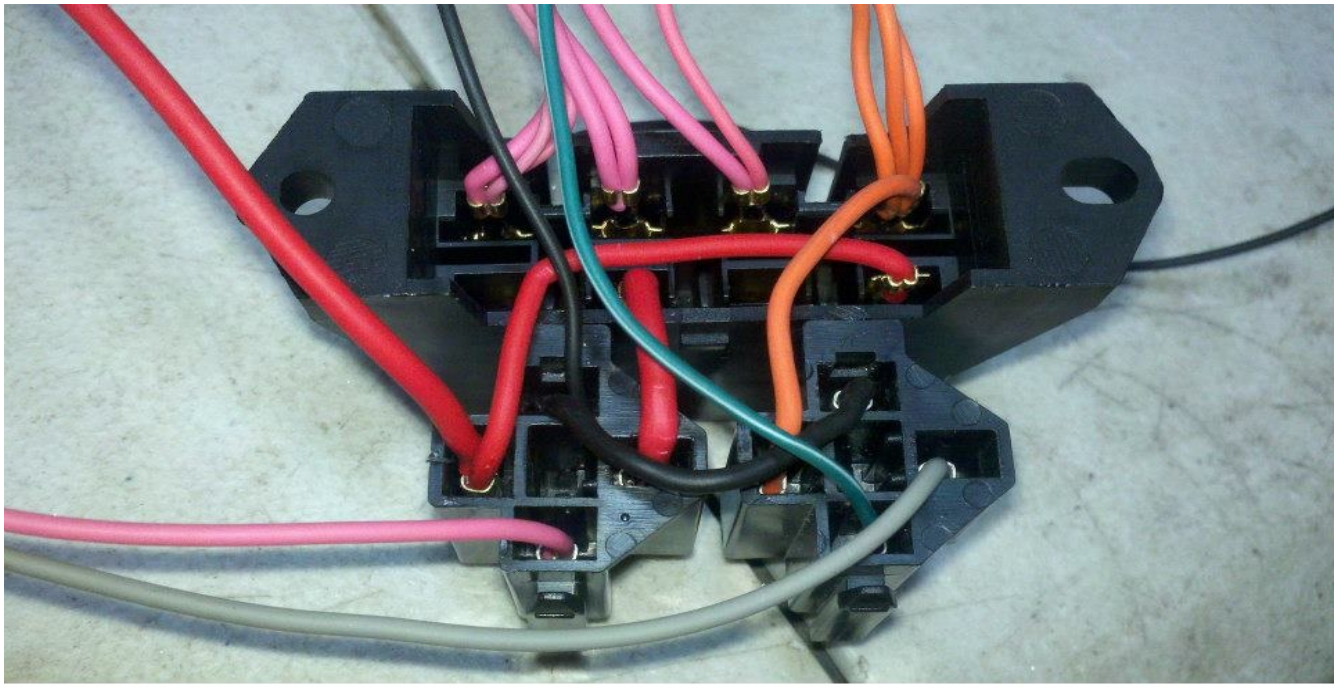
FUSE 2: The two 16 AWG wires for injectors will go to a single fuse.

FUSE 3: And finally, the PINK wire for TRANS, MAF, and HO2s will go to a 3rd fuse. I also add about a 5' pink wire for power to the check engine light to this 3rd fuse.



Added 5' pink wire shown. Also combining wires for the 4th BATTERY HOT fuse (orange).

The two PCM orange wires, a short orange jumper wire (16 AWG) will go to the fuel pump relay, and a 5' orange 20 AWG wire will go to OBD2 port.



Here it is all together.

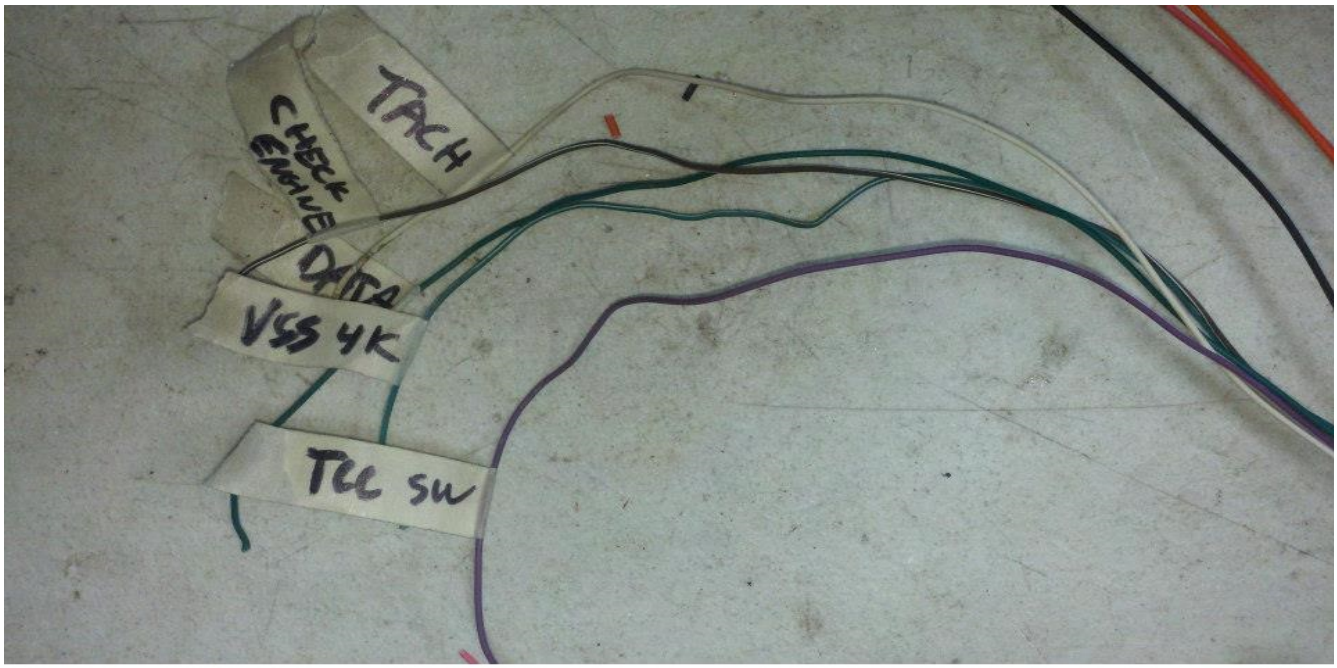
BLACK ground wire goes to both relays.
GREEN/WHITE is the FUEL PUMP RELAY control wire from the PCM. PCM switches on 12v+ to trip the fuel pump relay.

Fuel pump relay will flow power from the ORANGE wire to the GRAY wire.

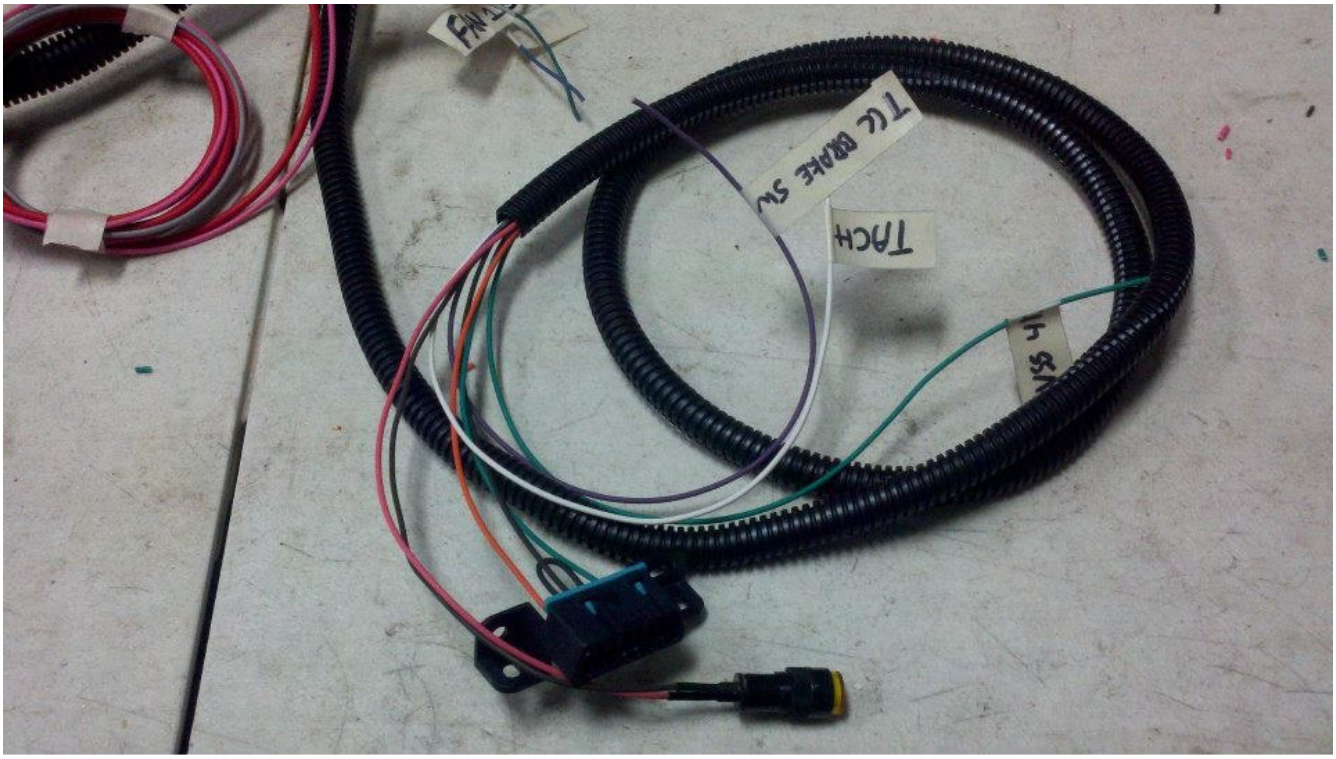
Fuses 1-3 are KEY HOT, switched on by the relay on the LEFT.
Fuse 4 is BATTERY HOT, powered by red feed wire sharing a terminal on the relay on the LEFT.

FUSE 1: Coils and PCM
FUSE 2 : Injectors
FUSE 3: MAF, TRANS, HO2, and check engine light
FUSE 4: Fuel pump, PCM, and OBD2

A little finish work and this will be done.



Here are the remaining wires, along with 5' Orange, 5' Pink, and a Ground wire barely pictured top right corner. Data, orange, and ground will go to the OBD port, 'Check Engine' and PINK will go to light bulb. Three left over wires: TCC brake switch, VSS 4K, and TACH.



OBD2 port, check engine light, tach, VSS, and TCC brake switch wires.