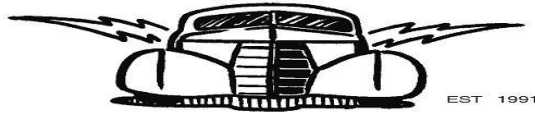


LARRY'S ELECTRIC



FULL SERVICE AUTO ELECTRICAL SHOP

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GM LSX/Vortec (E38) fuel Injection Harness installation instructions

Thank you for your purchase from Larry's Electric. To help aid in a successful installation, I have included these instructions. Please take the time to familiarize your self with all the components and instructions before installing. If these instructions are not followed very carefully it may result in severe damage or harm to your self and the vehicle. In addition to these instructions you must have at least a general idea of how fuel injection works and be familiar with all of its components.

Things that you need to start.

- GM LS or Vortec series engine and transmission, with all the correct sensors.
- GM ECM (E38) for the correct year engine/transmission you are working with.
- GM TCM (T42) For automatic 4L65E or 4L85E (6L80E and 6L90E TCM is internal to transmission)
- Your ECM/TCM reprogrammed or "Flashed" with at least the correct tire size, gear ratio, emissions removed and vats removed. Other changes are up to you.
- 2 Heated O2 sensors (oxygen sensor) mounted in the exhaust with in 18 inches of the exhaust port. Use (Delco 213-2934).
- Electric fuel pump capable of delivering 60 PSI under all driving conditions and a fuel filter designed for that amount of pressure preferably with a built in regulator.
- 3/8 or larger fuel supply line from the tank (Fuel injection line 90psi min only), and a 5/16 or larger return line to the tank. The return line must end at least 1/2 in from the bottom of the fuel tank to prevent vapor and static electricity build up.
- Injectors for your size engine. If you don't have them already
- Retain the coil harness that attaches to all 8 coils.

In addition to standard mechanics tools you need a 12 volt test light or meter and a digital non-loading meter.

INSTALLATION:

!!!IMPORTANT!!!

Do not force any connector into place. Take your time.

To begin, decide on a mounting place for your ecm and or tcm. It is normally mounted in the engine bay but can be mounted inside, but this requires cutting a large hole in the fire wall.

If you decide to install the ecm and or tcm inside the vehicle start by working from inside the vehicle, start feeding the harness through the fire wall into the engine compartment.

Route both banks of the injector wires along the correct side of the intake manifold.

Injector banks are as follows:

Right side will start with Light Green/black and a pink on #2 injector and the left bank will start with a black and a pink on injector #1. The rest of the injectors fall out in the proper order just plug in to the corresponding injector.

Connect the throttle body and pedal harness. Six wire throttle body connection, break out near injector #2.

Connect the six wire connection pedal (coiled up near ecm). **Must be used with GM pedal asmy 25832864 or equivalent.**

Connect the mass air sensor to the 5 pin connector with pink, black/white, yellow, tan, and black wires. **(Must use delco 213-4781 or equivalent UNLESS NOTED ON HARNESS)**

Connect the camshaft sensor wire to the sensor located at lower front of engine near front cover. (brown/white, pink/black, and red wires). If your set up uses a camshaft phaser connect the two wire connector located with the camshaft sensor, or to 5 wire adaptor.

Connect the coil harness to your existing coil wiring. If you have the injectors on the correct sides then the coil wiring will be correct also

Connect the coolant temp sensor plug toward the front of the engine cylinder head on the driver side or left side of engine. (yellow and black wires, black connector).

Connect the black wire to a clean solid bolt on the rear of the head (Ground). **DO NOT GROUND TO VALVE COVER.**

Install the Oxygen sensors and connect the o2 sensor wires to the correct side (purple, tan, black/white, pink wires (**Right side**) and purple/white, tan/white, black/white, pink wires (**Left Side**). SEE PAGE 1 FOR PART NUMBERS.

Connect the MAP sensor located near front of the intake (black connector, green, black and grey wires).

Connect Knock sensor wires. Lower side on both left and right. White connectors, Light blue and grey, (right), Dark blue and grey (left).

Connect the Crank sensor wires to the connector located behind the starter (blue/white, yellow/black, green wires)

Connect the large orange wire to the starter **battery hot** terminal. **Not** the “S” terminal.

4 speed transmissions connect the transmission wires to there correct location right side of transmission body, and the speed sensor located in the tail housing. 6 speed automatic transmissions, connect large round connector to transmission body, disregard TCM instructions as the TCM is internal to 6 speed automatics.
Mount ECM/TCM, and fuse block asmy in a cool dry place.

Connect the large gang-plugs to the ECM, making sure you do not force them into place and that they are correctly positioned.

Connect the 20 gauge pink wire at fuse block to an ignition switched on (**hot in start and run**).

Connect the 20 gauge light blue/white wire, at the fuse block, to a normally open brake switch

Connect 20 gauge brown wire at fuse block (Check engine light) to negative terminal of light fixture and a 12 volt Key on power source to the positive side of light. Use **Low Wattage** (1/4 or less) bulb. **Do not use LED**

Connect 20 gauge green/white wire at fuse block to your speedometer (optional check with your speedometer manufacturer.)

Connect 20 gauge white wire at fuse block to a tachometer (may require a pull up resistor, contact your gauge company for correct resistance)

The 16 Pin connector near fuse block is the ALDL connector. Mount it near fuse block. (16 way black connector with an orange, two black/white, tan tan/black wires)

Connect 14 gauge gray wire at fuse block with (fuel pump inscribed on it) to the fuel pump at the + terminal of the pump.

Connect the 14 gauge gray wire at fuse block to cooling fan (+) for 30 amp or less fans. For larger fans connect to relay.

Bleed the fuel lines by cycling the ignition on, wait for the pump to run and shut off, then turn the key off, and repeat several times.

If you have any questions/problems or require technical assistance, please call Larry's Electric @ 618-282-2852 Monday – Friday 8 – 4 pm CST.

If for any reason that you are not satisfied with this product with in 10 days of purchase please call us and we will refund or exchange it, as long as the product is not altered in any way shape or form and is returned it its original box with all pieces. Shipping is a non refundable service, we are not responsible for shipping cost or transit times.

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