



WWW.LARRYSELECTRICSITE.COM

618-282-2852

GM LS/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 213-1702).
- 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 ½ in from the bottom of the fuel tank to prevent vapor and static electricity build up.
- Retain the coil harness that attaches to all 8 coils.
- Be sure to install the harness in the correct position. All of our fuel injection harnesses are made to be installed starting from the rear of the engine working forward, not from the side or front.

In addition to standard mechanics tools you may need a 12 volt test light and or 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.

Starting at the rear of the intake, route both banks of the injector wires along the correct side of the intake manifold. Injector banks are as follows right side (passengers) light green/black and pink (#2), light blue/black and pink (#4), yellow/black and pink (#6), dark blue/white and pink (#8). The left side (drivers) black and pink (#1), pink/black and pink (#3), black/white and pink (#5), red/black and pink (#7).

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 assembly 25832864 or equivalent. UNLESS NOTED ON HARNESS.**

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 There will be a 5 pin connector (brow/white, pink/black, red, purple, and tan wires)

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, light green, pink wires (**Right side**) and purple/white, tan/white, gray, pink wires (**Left Side**). SEE PAGE 1 FOR PART NUMBERS.

Connect the MAP sensor located near front of the intake on LS series or midway on top of intake for Vortec (black connector with green, black and grey wires for Bosch style sensor or gray connector for Delco style sensor).

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. **Use care when making this connection.**

Connect the speed sensor wires (black connector with green/black and purple/white wires) 4 speed auto trans and manual trans only

Mount ECM/TCM, and fuse block assembly 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 closed held open brake switch. Same as brake light switch. Automatic transmission only

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 in an accessible area. (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 a single cooling fan (+) terminal. **DO NOT** connect to any fan that is rated at more than 30 amps. For larger fan setup or dual fan setup use this wire as a control "trigger" for other relays.

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.

This product is not intended for sale or use on any emissions controlled vehicle which will ever be operated on a public thoroughfare. For off road use only

*™ Larry's Electric, and Larryselectricsite.com
©2021*

REVISION 5 E38

Please see http://www.larryselectricsite.com/storefront/Product_Policy.php For warranty and return information.