



INSTALLATION MANUAL

1997-2004 LS1/LS6 5.7L WITH T56 STANDALONE WIRING HARNESS, DRIVE-BY-WIRE PFEWH1210

| Included Items | QTY |
|---------------------------------|-----|
| PFEWH1210 Engine Wiring Harness | 1 |

WARNING: PLEASE READ ALL INSTRUCTIONS BEFORE PROCEEDING. PROFLOW WILL NOT BE RESPONSIBLE FOR ANY DAMAGE AS A RESULT OF THE INCORRECT INSTALLATION OF THIS PRODUCT. IT IS RECOMMENDED THAT A QUALIFIED AUTOMOTIVE TECHNICIAN PERFORMS THIS INSTALLATION.

This harness is designed to be a complete wiring harness for fuel injection system on GM 1997 and newer engines with Drive by wire throttle body and T56 or non- electronic transmissions.

1. Never disconnect the battery or the PCM while the ignition is turned "ON".
2. Never short any wires in the wiring harness to ground (with the exception to the ground wires) this can cause damage to the PCM.
3. A Multi-meter with a minimum of 10-Mohm resistance is required for test circuits. Do not back probe wires, this can lead to permanent wire damage.

REQUIREMENTS

1. All Vortec engines require VATS to be removed from the PCM. If the system is not removed from the PCM the engine will NOT start.
2. Vortec harness utilize two sensors on each side of the engine, one before and after the catalytic converter. The rear O2 sensors (after the catalytic converter) are NOT used.
3. All Vortec engines utilize an EGR, Air Pump, and CCP features for emission control, this harness does not include provisions for, EGR, Air Pump, and CCP are not necessary for engine operation. PCM programming may be necessary to avoid storing a Diagnostic Trouble Codes (DTC) for the absence of emission equipment.
4. It is recommended that you use a VSS when using a T56 or nonelectric transmission (TH350, TH400, Powerglide, 700R4, etc.). Failure to use VSS can result in an unexpected stalling during hard braking or an inoperable throttle body. A two-position brake switch is also recommended when using drive by wire throttle bodies. The brake switch should be closed (not electronically connected) when brakes are not being applied and open (not electronically connected) when brakes are being applied. This is the opposite of a standard brake switch.

CAUTION: FAILURE TO WIRE BRAKE SWITCH CORRECTLY CAN RESULT WITH THE TORQUE CONVERTER BEING UNABLE TO UNLOCK.

| Sensor Part Numbers | |
|----------------------------------|--------------------------------|
| Main Computer (PCM) | GM# 9354896 or 12200411 |
| Manifold Absolute Pressure (MAP) | GM# 16212460 / DELCO# 12614970 |
| Idle Air Control (IAC) Sensor | GM# 17113391 |
| Engine Coolant Temp Sensor (ECT) | GM# 15326388 / DELCO# 213-953 |
| Oil Pressure Sensor | GM# 12616646 / GM# 12621234 |
| Ignition Coil | GM# 12558948 / |
| Oxygen Sensor (O2) | GM# 25161131 / DELCO# AFS123 |
| Throttle Position Sensor (TPS) | GM# 17123852 / DELCO# 213-912 |
| Mass Air Flow Sensor (MAF) | GM# 25168491 / DELCO# 213-364 |
| Cam Position Sensor | GM# 12561211 / DELCO# 213-363 |
| Crankshaft Position Sensor | GM# 12560228 / DELCO# 213-354 |
| Knock Sensor | GM# 10456603 |

TOOLS REQUIRED

Terminal Crimping Tool
 Wire Strippers
 Electric Drill
 2" Hole Saw (for rubber grommet for the firewall)

TYPICAL INSTALLATION

The wiring harness is designed to mount under the dash or in the kick panel on the right side of the vehicle.

Route the harness through and around open areas. Inside edges provide extra protection from hazards.

Allow enough slack in the harness at places where movement could possibly occur.

Proper grounding is crucial for the harness to operate (battery, chassis, and engine). This harness is equipped with ground wiring on the rear portion of the driver side cylinder head and adjacent the fuse block.

1. Connect the chassis ground strap or cable to the negative side of the battery
2. Connect the engine ground strap or cable to the chassis
3. Connect a ground strap from the engine to the body

Disconnect power from the vehicle by removing the negative battery cable from the battery.

1. Mark the position that the wiring harness will go through the firewall with a metal punch. Using a 2" hole saw, drill a hole into the firewall. Debur the hole to ensure no damage to the wires will occur.
2. From the inside of the vehicle, feed the engine section of the wiring through the 2" hole that was previously made.
3. Route the engine compartment harness to the corresponding sides (driver and passenger). The driver side section has the connectors for the alternator, MAF, and ECT.
4. Route the battery positive and crank sensor connectors behind the passenger head and under the exhaust manifold.
5. Route the fuse block/relay centre and PCM connectors to the preferred mounting positions. Keep the PCM away from moisture or damage may occur.
6. Locate the pair of wires in the driver side group that end in two ring terminals. These are battery side starter terminals.

Use the following to connect the wiring harness correctly

7. Route the transmission connector to the passenger side of the transmission and attach it.
8. Route the VSS and connect it to the sensor on the tail shaft of the transmission.
9. Using care to connect the two PCM connectors to not bend any of the pins. The connectors are colour coded.
10. All wires not being used should be taped and secured to avoid creating an unwanted short.
11. Permanently mount your PCM to desired location.
12. Once all connections have been made throughout the wiring harness, reconnect the battery.

CAUTION: BE SURE THE IGNITION IS OFF WHEN RECONNECTING THE BATTERY OR DAMAGE TO THE PCM WILL OCCUR.

Oil Pressure Sender Information

The oil pressure sensor is not required for normal engine operation as the PCM doesn't use the oil sender. If you wish to use an oil pressure gauge, you must purchase the oil pressure sensor separately GM 12616646 (2008 & older) or GM 12621234 (2009 & up). If using an aftermarket oil pressure gauge, you must use the sender that comes with that specific gauge.

| Accessory Wires | | |
|----------------------|--------------------------------|---------------------------------|
| Brown | MIL Lamp Ground | Through Automotive Light to 12V |
| Black | Speedometer | Speedometer Module |
| White | Tachometer | Electronic Tachometer |
| Dark Green | Fan 1 Ground | Ground Side of Fan Relay 1 |
| Dark Blue | Fan 2 Ground | Ground Side of Fan Relay 2 |
| Orange | Park Neutral Signal | To Ground (In Park & Neutral) |
| Purple | Brake Signal / TCC Ground | To 12V |
| Black Multiple Wires | Chassis Ground (Ring Terminal) | Chassis Ground |
| Red | Ignition Relay | 12V Ignition Source |
| Multiple | PCM Connectors | PCM |

