

## LS1 Speed Scene Wiring Frequently Asked Questions

### FAQ

Where can I find help with my harness installation?

Speed Scene Wiring can normally assist you over the phone in the installation of your harness, also having knowledge dealing with the latest in Fuel Injection Technology. Periodically, information is also available on our web site at [www.speedscenewiring.com](http://www.speedscenewiring.com)

### FAQ

What happens if I have a short in the power supply?

The quick burn fuseable 30 amp link should protect the harness in the event of a short. You must confirm that is no short in your vehicle, before proceeding. Never jump or bypass around the fuseable link. This could damage your harness and computer program. Call us and we will send new fuseable link.

### FAQ

Where can I purchase the GM Service Manual?

You can order a service manual by calling Helm at 800-782-4356.

### FAQ

Do you have technical assistance available?

Yes, technical assistance is available. Call Speed Scene Wiring at 210-651-1895.

### FAQ

What should I do if I accidentally split or chafe a wire?

The GM 1998 Service Manual, Second Edition, Volume 3 of 3, provides detailed instructions on repairing damaged flat wires and HO2S wiring. You will find them in Sections 8-307 and 8-309.

### FAQ

If I break a plug or connector, what should I do?

Call Speed Scene Wiring and we will be happy to supply you with the appropriate pigtail.

### FAQ

How much Voltage do I need?

You should have 12-13Volts of direct current, coming from the power supply.

### FAQ

Do I need 12V even while cranking?

Yes; this is the most important essential to have. With a DIGITAL multi meter, make sure you have 12V even while cranking.

### FAQ

Where can I find the trouble code references?

SSW has placed them in the back of this packet.

### FAQ

Is it important to follow any particular order when installing the harness?

Yes. Starting at the engine's intake manifold, install the Injector connectors and Coil pack connectors. This helps keep the harness in place while completing your installation. The order of installation of non-engine connectors depends on your application.

## LS1 Harness Installation Manual

The following instructions are intended as an aid to assist in harness installation. Troubleshooting techniques and diagnosis are beyond the scope of these instructions. Diagnostic flow charts and troubleshooting advice are included in the GM service manual.

The general design of the harness allows enough length for computer mounting in the dash & kick panel or in the engine compartment area. Special harness lengths can be provided, by request.

All harness connections are clearly tagged. If for some reason a tag has been accidentally removed, consult the LS1 Harness layout. Be sure to identify all tags prior to installation.

The following information is an attempt to help you become familiar and confident, prior to installation.

1. Passenger Side Injectors - Lay the harness up over the intake, with the passenger side and driver side injector and coil connectors on each side of the engine. Connect the fuel injector plugs onto the fuel injectors. With the longest plug to the farthest point and so forth, this will help hold the harness in place.
2. Driver Side Injectors (4 plugs with 8 wires) - Repeat the steps outlined above and so on.
3. Passenger Coil (white connector with tan weatherproof seal) - Plug passenger side coil connector into coil pack harness.
4. Driver Coil (white connector with tan weatherproof seal) - Plug driver side coil connector into coil pack harness.
5. Mass Air Flow Connector (MAF) (black connector with white cap and purple waterproof rubber seal) The MAF is Located on the air duct, in the front of the Throttle Body. Take care when handling the MAF. Do not touch the sensing elements or allow anything to come in contact with them, this could disrupt the reading. The Power Train Control Module (PCM), converts the Mass Air Flow sensor input signal into grams per second, indicating the amount of airflow entering the engine.
6. The Manifold Absolute Pressure (MAP) (gray plug with white cap and purple waterproof rubber seal) measures the change in the intake manifold pressure from engine load and speed changes and sends optimal adjustments to the computer. Connect the MAP sensor connector on the harness, to the MAP sensor located at the rear of the intake manifold.
7. Crankshaft Sensor Connector (CKP) (black connector with white cap and purple waterproof rubber seal) -The crankshaft position sensor is located internally on the crank. For connector location reference, the sensor is by the starter.
8. Knock Sensor Connector (KS) (black connector with blue cap and gray waterproof rubber seal) - Two KS sensors are used as input signals, the knock sensors detect engine detonation. Allowing the PCM to retard Ignition Control (IC) spark timing, based upon the amplitude and frequency of the KS signal being received. If a knock is detected, the computer will automatically retard the timing. This plug tails out on the far left (driver side rear) of the block.

9. Exhaust Gas Recirculation (EGR) (white connector with blue waterproof rubber seal) - The EGR must be in use when running full emissions on 1975 & later models. The EGR lowers combustion chamber temperatures by eliminating Oxides of Nitrogen (NOx), one of the pollutants found in the engine exhaust. Only on 1997-00 LS1
10. Throttle Position Sensor (TPS) (black connector with purple waterproof rubber seal) - The TPS returns a proportional voltage to the computer that relates to the angular position of the throttle plates. At idle, the throttle position is between .45-.65V. A wide open throttle-shows high voltage around 4.0V.
11. Idle Air Control Valve (IACV) (black connector with blue waterproof rubber seal) - Computer controlled stepper motor, which adjusts the engine idle at different loads.
12. Intake Air Temp Sensor Plug (IAT) (grey connector with light blue waterproof rubber seal) - The IAT operates in the same fashion as the coolant temp sensor, except it relates to the air temp entering the plenum. The IAT hole is located between the Mass Air Flow Sensor and the Throttle Body.
13. Canister Purge Plug (CPP) (red connector with light blue waterproof seal) - The CPP is used on full Emissions vehicles. The Computer controls a solenoid that permits manifold vacuum to purge fuel vapors out of the canister.
14. Camshaft Sensor (CMP) (black connector with purple seal and white lock) - The Camshaft position sensor is located in the rear, at the center-most point of the Intake.
15. Oil Level Plug (black connector with blue cap and grey waterproof rubber seal) - For determining low oil levels in the oil pan. Connects into oil pan. Oil pressure for gauge function, must be operated by a standalone sending unit. The unit can be installed down in block-off plate by filter.
16. Anti-Theft - The Anti-Theft module simulates the Passkey signal.(optional)
17. Assembly Line Diagnostic Link (ALDL) - Connector is used in conjunction with the check engine light for testing and troubleshooting.
18. Fuel Pump Relay - Starts fuel pump with ignition on/run the relay is energized for 2 seconds, this is enough time to pre-load the injectors.
19. Brake Light Switch Wire (Purple) - Normally closed switch. This wire must have 12 volts all the time, except when you step on the brake. This will take the torque converter out of lock-up. Use GM switch #25524845.
20. Check Engine Light - For the use of a check engine light, any 12V automotive light will work. The wire is hot when the key is in start or run. If light is not used, ensure the brown wire is properly capped with heat shrink.
21. Tach Wire (if desired) (White) - Feeds a positive pulse to tachometer. If the Tach wire fails to operate the gauge, contact Speed Scene Wiring at 210-651-1895, for an alternate pulse signal simulator. **Note: When using an Autometer Tachometer. You need to cut the 4 cylinder wire (brown) and the 6 cylinder wire (orange), in order for the tach to work.**

22. Battery Wire (Orange) - The Battery wire connects to the main post on positive side of starter. This wire is protected with fuseable link (blue). This terminal is flat with blue spongy insulation. **Note: This wire will not be with the other group of wires tailed out by the computer.**
23. Park/Neutral Position Wire (PNP) (Orange/Black) - Switch indicates to the PCM when the transmission is in park, neutral, or drive. This information is used for the EGR and IAC valve operation. **(Automatic only)**
24. Electric Speedometer Wire (Dark green/white) - This wire will operate the speedometer. If problems arise contact Speed Scene Wiring.
25. Electric Fuel Pump Wire (Gray) - Provides 12V to the fuel pump. A fuel pump relay is provided with the harness and is energized/de-energized by the ECM. This wire connects to the positive symbol on the pump, and the other terminal (-) with the negative symbol, will be placed to the frame. By placing this to the frame you complete the ground circuit.
26. Alternator (Red)- You can use a 12 Volt dash bulb with the alternator wire on one side of the bulb. Then a ignition power wire on the other side of the bulb. Or these wires can be connect to a 500 OHM ¼ watt resistor . What this does is supply the adequate power to the rectifier bridge, allowing the alternator to start charging.
27. A/C Compressor (Dk Green)- Connect to the wire that originally powered the old compressor. This will engage the idle up feature, under load.
28. Ignition Power - The ignition wires must be connected to a 12V power supply, with the key in START (crank) and RUN position. **For optimal power distribution the following fuse should be used for each ignition power: Coil left bank 15 amp, Coil right bank 15 amp, Injector left bank 7.5 amp, Injector right bank 7.5 amp, Oxygen sensors 20 amp, Computer & sensors 20 amp.**
29. Engine Ground Lug (black/white wire) - The ground system is critical for proper operation. A good battery to motor and motor to harness ground is a must.
30. Vehicle Speed Sensor Plug (VSS) (black connector with blue waterproof rubber seal) - The VSS is a pulse counter type input that informs the PCM how fast the vehicle is being driven. The VSS system uses an inductive sensor mounted in the tail housing of the transmission and a 40-toothed reluctor wheel on the tail shaft. As the reluctor rotates, the teeth alternately interfere with the magnetic field of the sensor creating an induced voltage pulse in Alternating Current (AC).
31. Heated Oxygen Sensor (passenger side) - The wire position on the connector will be: A=Tan, B=Purple, C=Black, D=Pink (12V).
32. Heated Oxygen Sensor (driver side) - The wire position on the connector will be: A=Tan/White, B=Purple/White, C=Black, D=Pink (12V).
33. Driver Rear O2 Plug - Must be placed after the catalytic converter. If you're not running catalytic converters, contact Speed Scene Wiring for the proper simulators.  
**(This is if you are running four oxygen sensors, and have decided to use just two.)**

34. Passenger Rear O2 Plug - Must be placed after the catalytic converter. If you're not running catalytic converters, contact Speed Scene Wiring for the proper simulators.

**(This is if you are running four oxygen sensors, and have decided to use just two.)**

35. Coolant Temp Sensor Wire (ECT) - The coolant temp sensor returns a proportional voltage to the computer that relates to the coolant temperature. Cold is high voltage and hot is low voltage. The sensor is located on the lower left side of the engine.

**P0100 Mass or Volume Air Flow Circuit Malfunction**

**P0101 Mass or Volume Air Flow Circuit Range/Performance Problem**

**P0102 Mass or Volume Air Flow Circuit Low Input**

**P0103 Mass or Volume Air Flow Circuit High Input**

**P0104 Mass or Volume Air Flow Circuit Intermittent**

**P0105 Manifold Absolute Pressure/Barometric Pressure Circuit Malfunction**

**P0106 Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance Problem**

**P0107 Manifold Absolute Pressure/Barometric Pressure Circuit Low Input**

**P0108 Manifold Absolute Pressure/Barometric Pressure Circuit High Input**

**P0109 Manifold Absolute Pressure/Barometric Pressure Circuit Intermittent**

**P0109 Intake Air Temperature Circuit Malfunction**

**P0111 Intake Air Temperature Circuit Range/Performance Problem**

**P0112 Intake Air Temperature Circuit Low Input**

**P0113 Intake Air Temperature Circuit High Input**

**P0114 Intake Air Temperature Circuit Intermittent**

**P0115 Engine Coolant Temperature Circuit Malfunction**

**P0116 Engine Coolant Temperature Circuit Range/Performance Problem**

**P0117 Engine Coolant Temperature Circuit Low Input**

**P0118 Engine Coolant Temperature Circuit High Input**

**P0119 Engine Coolant Temperature Circuit Intermittent**

**P0120 Throttle/Petal Position Sensor/Switch A Circuit Malfunction**

**P0121 Throttle/Petal Position Sensor/Switch A Circuit Range/Performance Problem**

**P0122 Throttle/Petal Position Sensor/Switch A Circuit Low Input**

**P0123 Throttle/Petal Position Sensor/Switch A Circuit High Input**

**P0124 Throttle/Petal Position Sensor/Switch A Circuit Intermittent**

**P0125 Insufficient Coolant Temperature for Closed Loop Fuel Control**

**P0126 Insufficient Coolant Temperature for Stable Operation**

**P0130 O2 Sensor Circuit Malfunction (Bank 1 Sensor 1)**

**P0131 O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)**

**P0132 O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)**

**P0133 O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)**

**P0134 O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 1)**

**P0135 O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1)**

**P0136 O2 Sensor Circuit Malfunction (Bank 1 Sensor 2)**

**P0137 O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2)**

**P0138 O2 Sensor Circuit High Voltage (Bank 1 Sensor 2)**

**P0139 O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)**

**P0140 O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2)**

P0141 O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)  
P0142 O2 Sensor Circuit Malfunction (Bank 1 Sensor 3)  
P0143 O2 Sensor Circuit Low Voltage (Bank 1 Sensor 3)  
P0144 O2 Sensor Circuit High Voltage (Bank 1 Sensor 3)  
P0145 O2 Sensor Circuit Slow Response (Bank 1 Sensor 3)  
P0146 O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 3)  
P0147 O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 3)  
P0150 O2 Sensor Circuit Malfunction (Bank 2 Sensor 1)  
P0151 O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1)  
P0152 O2 Sensor Circuit High Voltage (Bank 2 Sensor 1)  
P0153 O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)  
P0154 O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1)  
P0155 O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 1)  
P0156 O2 Sensor Circuit Malfunction (Bank 2 Sensor 2)  
P0157 O2 Sensor Circuit Low Voltage (Bank 2 Sensor 2)  
P0158 O2 Sensor Circuit High Voltage (Bank 2 Sensor 2)  
P0159 O2 Sensor Circuit Slow Response (Bank 2 Sensor 2)  
P0160 O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 2)  
P0161 O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 2)  
P0162 O2 Sensor Circuit Malfunction (Bank 2 Sensor 3)  
P0163 O2 Sensor Circuit Low Voltage (Bank 2 Sensor 3)  
P0164 O2 Sensor Circuit High Voltage (Bank 2 Sensor 3)  
P0165 O2 Sensor Circuit Slow Response (Bank 2 Sensor 3)  
P0166 O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 3)  
P0167 O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 3)  
P0170 Fuel Trim Malfunction (Bank 1)  
P0171 System too Lean (Bank 1)  
P0172 System too Rich (Bank 1)  
P0173 Fuel Trim Malfunction (Bank 2)  
P0174 System too Lean (Bank 2)  
P0175 System too Rich (Bank 2)  
P0176 Fuel Composition Sensor Circuit Malfunction  
P0177 Fuel Composition Sensor Circuit Range/Performance  
P0178 Fuel Composition Sensor Circuit Low Input  
P0179 Fuel Composition Sensor Circuit High Input  
P0180 Fuel Temperature Sensor A Circuit Malfunction  
P0181 Fuel Temperature Sensor A Circuit Range/Performance  
P0182 Fuel Temperature Sensor A Circuit Low Input  
P0183 Fuel Temperature Sensor A Circuit High Input  
P0184 Fuel Temperature Sensor A Circuit Intermittent  
P0185 Fuel Temperature Sensor B Circuit Malfunction  
P0186 Fuel Temperature Sensor B Circuit Range/Performance  
P0187 Fuel Temperature Sensor B Circuit Low Input  
P0188 Fuel Temperature Sensor B Circuit High Input  
P0189 Fuel Temperature Sensor B Circuit Intermittent  
P0190 Fuel Rail Pressure Sensor Circuit Malfunction

**P0191 Fuel Rail Pressure Sensor Circuit Range/Performance**  
**P0192 Fuel Rail Pressure Sensor Circuit Low Input**  
**P0193 Fuel Rail Pressure Sensor Circuit High Input**  
**P0194 Fuel Rail Pressure Sensor Circuit Intermittent**  
**P0195 Engine Oil Temperature Sensor Malfunction**  
**P0196 Engine Oil Temperature Sensor Range/Performance**  
**P0197 Engine Oil Temperature Sensor Low**  
**P0198 Engine Oil Temperature Sensor High**  
**P0199 Engine Oil Temperature Sensor Intermittent**  
**P0200 Injector Circuit Malfunction**  
**P0201 Injector Circuit Malfunction - Cylinder 1**  
**P0202 Injector Circuit Malfunction - Cylinder 2**  
**P0203 Injector Circuit Malfunction - Cylinder 3**  
**P0204 Injector Circuit Malfunction - Cylinder 4**  
**P0205 Injector Circuit Malfunction - Cylinder 5**  
**P0206 Injector Circuit Malfunction - Cylinder 6**  
**P0207 Injector Circuit Malfunction - Cylinder 7**  
**P0208 Injector Circuit Malfunction - Cylinder 8**  
**P0209 Injector Circuit Malfunction - Cylinder 9**  
**P0210 Injector Circuit Malfunction - Cylinder 10**  
**P0211 Injector Circuit Malfunction - Cylinder 11**  
**P0212 Injector Circuit Malfunction - Cylinder 12**  
**P0213 Cold Start Injector 1 Malfunction**  
**P0214 Cold Start Injector 2 Malfunction**  
**P0215 Engine Shutoff Solenoid Malfunction**  
**P0216 Injection Timing Control Circuit Malfunction**  
**P0217 Engine Overtemp Condition**  
**P0218 Transmission Over Temperature Condition**  
**P0219 Engine Overspeed Condition**  
**P0220 Throttle/Petal Position Sensor/Switch B Circuit Malfunction**  
**P0221 Throttle/Petal Position Sensor/Switch B Circuit Range/Performance Problem**  
**P0222 Throttle/Petal Position Sensor/Switch B Circuit Low Input**  
**P0223 Throttle/Petal Position Sensor/Switch B Circuit High Input**  
**P0224 Throttle/Petal Position Sensor/Switch B Circuit Intermittent**  
**P0225 Throttle/Petal Position Sensor/Switch C Circuit Malfunction**  
**P0226 Throttle/Petal Position Sensor/Switch C Circuit Range/Performance Problem**  
**P0227 Throttle/Petal Position Sensor/Switch C Circuit Low Input**  
**P0228 Throttle/Petal Position Sensor/Switch C Circuit High Input**  
**P0229 Throttle/Petal Position Sensor/Switch C Circuit Intermittent**  
**P0230 Fuel Pump Primary Circuit Malfunction**  
**P0231 Fuel Pump Secondary Circuit Low**  
**P0232 Fuel Pump Secondary Circuit High**  
**P0233 Fuel Pump Secondary Circuit Intermittent**  
**P0234 Engine Overboost Condition**  
**P0235 Turbocharger Boost Sensor A Circuit Malfunction**  
**P0236 Turbocharger Boost Sensor A Circuit Range/Performance**

P0237 Turbocharger Boost Sensor A Circuit Low  
P0238 Turbocharger Boost Sensor A Circuit High  
P0239 Turbocharger Boost Sensor B Malfunction  
P0240 Turbocharger Boost Sensor B Circuit Range/Performance  
P0241 Turbocharger Boost Sensor B Circuit Low  
P0242 Turbocharger Boost Sensor B Circuit High  
P0243 Turbocharger Wastegate Solenoid A Malfunction  
P0244 Turbocharger Wastegate Solenoid A Range/Performance  
P0245 Turbocharger Wastegate Solenoid A Low  
P0246 Turbocharger Wastegate Solenoid A High  
P0247 Turbocharger Wastegate Solenoid B Malfunction  
P0248 Turbocharger Wastegate Solenoid B Range/Performance  
P0249 Turbocharger Wastegate Solenoid B Low  
P0250 Turbocharger Wastegate Solenoid B High  
P0251 Injection Pump Fuel Metering Control "A" Malfunction (Cam/Rotor/Injector)  
P0252 Injection Pump Fuel Metering Control "A" Range/Performance (Cam/Rotor/Injector)  
P0253 Injection Pump Fuel Metering Control "A" Low (Cam/Rotor/Injector)  
P0254 Injection Pump Fuel Metering Control "A" High (Cam/Rotor/Injector)  
P0255 Injection Pump Fuel Metering Control "A" Intermittent (Cam/Rotor/Injector)  
P0256 Injection Pump Fuel Metering Control "B" Malfunction (Cam/Rotor/Injector)  
P0257 Injection Pump Fuel Metering Control "B" Range/Performance (Cam/Rotor/Injector)  
P0258 Injection Pump Fuel Metering Control "B" Low (Cam/Rotor/Injector)  
P0259 Injection Pump Fuel Metering Control "B" High (Cam/Rotor/Injector)  
P0260 Injection Pump Fuel Metering Control "B" Intermittent (Cam/Rotor/Injector)  
P0261 Cylinder 1 Injector Circuit Low  
P0262 Cylinder 1 Injector Circuit High  
P0263 Cylinder 1 Contribution/Balance Fault  
P0264 Cylinder 2 Injector Circuit Low  
P0265 Cylinder 2 Injector Circuit High  
P0266 Cylinder 2 Contribution/Balance Fault  
P0267 Cylinder 3 Injector Circuit Low  
P0268 Cylinder 3 Injector Circuit High  
P0269 Cylinder 3 Contribution/Balance Fault  
P0270 Cylinder 4 Injector Circuit Low  
P0271 Cylinder 4 Injector Circuit High  
P0272 Cylinder 4 Contribution/Balance Fault  
P0273 Cylinder 5 Injector Circuit Low  
P0274 Cylinder 5 Injector Circuit High  
P0275 Cylinder 5 Contribution/Balance Fault  
P0276 Cylinder 6 Injector Circuit Low  
P0277 Cylinder 6 Injector Circuit High  
P0278 Cylinder 6 Contribution/Balance Fault  
P0279 Cylinder 7 Injector Circuit Low  
P0280 Cylinder 7 Injector Circuit High  
P0281 Cylinder 7 Contribution/Balance Fault  
P0282 Cylinder 8 Injector Circuit Low



**P0283 Cylinder 8 Injector Circuit High**  
**P0284 Cylinder 8 Contribution/Balance Fault**  
**P0285 Cylinder 9 Injector Circuit Low**  
**P0286 Cylinder 9 Injector Circuit High**  
**P0287 Cylinder 9 Contribution/Balance Fault**  
**P0288 Cylinder 10 Injector Circuit Low**  
**P0289 Cylinder 10 Injector Circuit High**  
**P0290 Cylinder 10 Contribution/Balance Fault**  
**P0291 Cylinder 11 Injector Circuit Low**  
**P0292 Cylinder 11 Injector Circuit High**  
**P0293 Cylinder 11 Contribution/Balance Fault**  
**P0294 Cylinder 12 Injector Circuit Low**  
**P0295 Cylinder 12 Injector Circuit High**  
**P0296 Cylinder 12 Contribution/Range Fault**  
**P0300 Random/Multiple Cylinder Misfire Detected**  
**P0301 Cylinder 1 Misfire Detected**  
**P0302 Cylinder 2 Misfire Detected**  
**P0303 Cylinder 3 Misfire Detected**  
**P0304 Cylinder 4 Misfire Detected**  
**P0305 Cylinder 5 Misfire Detected**  
**P0306 Cylinder 6 Misfire Detected**  
**P0307 Cylinder 7 Misfire Detected**  
**P0308 Cylinder 8 Misfire Detected**  
**P0309 Cylinder 9 Misfire Detected**  
**P0311 Cylinder 11 Misfire Detected**  
**P0312 Cylinder 12 Misfire Detected**  
**P0320 Ignition/Distributor Engine Speed Input Circuit Malfunction**  
**P0321 Ignition/Distributor Engine Speed Input Circuit Range/Performance**  
**P0322 Ignition/Distributor Engine Speed Input Circuit No Signal**  
**P0323 Ignition/Distributor Engine Speed Input Circuit Intermittent**  
**P0325 Knock Sensor 1 Circuit Malfunction (Bank 1 or Single Sensor)**  
**P0326 Knock Sensor 1 Circuit Range/Performance (Bank 1 or Single Sensor)**  
**P0327 Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)**  
**P0328 Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)**  
**P0329 Knock Sensor 1 Circuit Intermittent (Bank 1 or Single Sensor)**  
**P0330 Knock Sensor 2 Circuit Malfunction (Bank 2)**  
**P0331 Knock Sensor 2 Circuit Range/Performance (Bank 2)**  
**P0332 Knock Sensor 2 Circuit Low Input (Bank 2)**  
**P0333 Knock Sensor 2 Circuit High Input (Bank 2)**  
**P0334 Knock Sensor 2 Circuit Intermittent (Bank 2)**  
**P0335 Crankshaft Position Sensor A Circuit Malfunction**  
**P0336 Crankshaft Position Sensor A Circuit Range/Performance**  
**P0337 Crankshaft Position Sensor A Circuit Low Input**  
**P0338 Crankshaft Position Sensor A Circuit High Input**  
**P0339 Crankshaft Position Sensor A Circuit Intermittent**  
**P0340 Camshaft Position Sensor Circuit Malfunction**

**P0341 Camshaft Position Sensor Circuit Range/Performance**  
**P0342 Camshaft Position Sensor Circuit Low Input**  
**P0343 Camshaft Position Sensor Circuit High Input**  
**P0344 Camshaft Position Sensor Circuit Intermittent**  
**P0350 Ignition Coil Primary/Secondary Circuit Malfunction**  
**P0351 Ignition Coil A Primary/Secondary Circuit Malfunction**  
**P0352 Ignition Coil B Primary/Secondary Circuit Malfunction**  
**P0353 Ignition Coil C Primary/Secondary Circuit Malfunction**  
**P0354 Ignition Coil D Primary/Secondary Circuit Malfunction**  
**P0355 Ignition Coil E Primary/Secondary Circuit Malfunction**  
**P0356 Ignition Coil F Primary/Secondary Circuit Malfunction**  
**P0357 Ignition Coil G Primary/Secondary Circuit Malfunction**  
**P0358 Ignition Coil H Primary/Secondary Circuit Malfunction**  
**P0359 Ignition Coil I Primary/Secondary Circuit Malfunction**  
**P0360 Ignition Coil J Primary/Secondary Circuit Malfunction**  
**P0361 Ignition Coil K Primary/Secondary Circuit Malfunction**  
**P0362 Ignition Coil L Primary/Secondary Circuit Malfunction**  
**P0370 Timing Reference High Resolution Signal A Malfunction**  
**P0371 Timing Reference High Resolution Signal A Too Many Pulses**  
**P0372 Timing Reference High Resolution Signal A Too Few Pulses**  
**P0373 Timing Reference High Resolution Signal A Intermittent/Erratic Pulses**  
**P0374 Timing Reference High Resolution Signal A No Pulses**  
**P0375 Timing Reference High Resolution Signal B Malfunction**  
**P0376 Timing Reference High Resolution Signal B Too Many Pulses**  
**P0377 Timing Reference High Resolution Signal B Too Few Pulses**  
**P0378 Timing Reference High Resolution Signal B Intermittent/Erratic Pulses**  
**P0379 Timing Reference High Resolution Signal B No Pulses**  
**P0380 Glow Plug/Heater Circuit "A" Malfunction**  
**P0381 Glow Plug/Heater Indicator Circuit Malfunction**  
**P0382 Exhaust Gas Recirculation Flow Malfunction**  
**P0385 Crankshaft Position Sensor B Circuit Malfunction**  
**P0386 Crankshaft Position Sensor B Circuit Range/Performance**  
**P0387 Crankshaft Position Sensor B Circuit Low Input**  
**P0388 Crankshaft Position Sensor B Circuit High Input**  
**P0389 Crankshaft Position Sensor B Circuit Intermittent**  
**P0400 Exhaust Gas Recirculation Flow Malfunction**  
**P0401 Exhaust Gas Recirculation Flow Insufficient Detected**  
**P0402 Exhaust Gas Recirculation Flow Excessive Detected**  
**P0403 Exhaust Gas Recirculation Circuit Malfunction**  
**P0404 Exhaust Gas Recirculation Circuit Range/Performance**  
**P0405 Exhaust Gas Recirculation Sensor A Circuit Low**  
**P0406 Exhaust Gas Recirculation Sensor A Circuit High**  
**P0407 Exhaust Gas Recirculation Sensor B Circuit Low**  
**P0408 Exhaust Gas Recirculation Sensor B Circuit High**  
**P0410 Secondary Air Injection System Malfunction**  
**P0411 Secondary Air Injection System Incorrect Flow Detected**

P0412 Secondary Air Injection System Switching Valve A Circuit Malfunction  
P0413 Secondary Air Injection System Switching Valve A Circuit Open  
P0414 Secondary Air Injection System Switching Valve A Circuit Shorted  
P0415 Secondary Air Injection System Switching Valve B Circuit Malfunction  
P0416 Secondary Air Injection System Switching Valve B Circuit Open  
P0417 Secondary Air Injection System Switching Valve B Circuit Shorted  
P0418 Secondary Air Injection System Relay "A" Circuit Malfunction  
P0419 Secondary Air Injection System Relay "B" Circuit Malfunction  
P0420 Catalyst System Efficiency Below Threshold (Bank 1)  
P0421 Warm Up Catalyst Efficiency Below Threshold (Bank 1)  
P0422 Main Catalyst Efficiency Below Threshold (Bank 1)  
P0423 Heated Catalyst Efficiency Below Threshold (Bank 1)  
P0424 Heated Catalyst Temperature Below Threshold (Bank 1)  
P0430 Catalyst System Efficiency Below Threshold (Bank 2)  
P0431 Warm Up Catalyst Efficiency Below Threshold (Bank 2)  
P0432 Main Catalyst Efficiency Below Threshold (Bank 2)  
P0433 Heated Catalyst Efficiency Below Threshold (Bank 2)  
P0434 Heated Catalyst Temperature Below Threshold (Bank 2)  
P0440 Evaporative Emission Control System Malfunction  
P0441 Evaporative Emission Control System Incorrect Purge Flow  
P0442 Evaporative Emission Control System Leak Detected (small leak)  
P0443 Evaporative Emission Control System Purge Control Valve Circuit Malfunction  
P0444 Evaporative Emission Control System Purge Control Valve Circuit Open  
P0445 Evaporative Emission Control System Purge Control Valve Circuit Shorted  
P0446 Evaporative Emission Control System Vent Control Circuit Malfunction  
P0447 Evaporative Emission Control System Vent Control Circuit Open  
P0448 Evaporative Emission Control System Vent Control Circuit Shorted  
P0449 Evaporative Emission Control System Vent Valve/Solenoid Circuit Malfunction  
P0450 Evaporative Emission Control System Pressure Sensor Malfunction  
P0451 Evaporative Emission Control System Pressure Sensor Range/Performance  
P0452 Evaporative Emission Control System Pressure Sensor Low Input  
P0453 Evaporative Emission Control System Pressure Sensor High Input  
P0454 Evaporative Emission Control System Pressure Sensor Intermittent  
P0455 Evaporative Emission Control System Leak Detected (gross leak)  
P0460 Fuel Level Sensor Circuit Malfunction  
P0461 Fuel Level Sensor Circuit Range/Performance  
P0462 Fuel Level Sensor Circuit Low Input  
P0463 Fuel Level Sensor Circuit High Input  
P0464 Fuel Level Sensor Circuit Intermittent  
P0465 Purge Flow Sensor Circuit Malfunction  
P0466 Purge Flow Sensor Circuit Range/Performance  
P0467 Purge Flow Sensor Circuit Low Input  
P0468 Purge Flow Sensor Circuit High Input  
P0469 Purge Flow Sensor Circuit Intermittent  
P0470 Exhaust Pressure Sensor Malfunction  
P0471 Exhaust Pressure Sensor Range/Performance

**P0472 Exhaust Pressure Sensor Low**  
**P0473 Exhaust Pressure Sensor High**  
**P0474 Exhaust Pressure Sensor Intermittent**  
**P0475 Exhaust Pressure Control Valve Malfunction**  
**P0476 Exhaust Pressure Control Valve Range/Performance**  
**P0477 Exhaust Pressure Control Valve Low**  
**P0478 Exhaust Pressure Control Valve High**  
**P0479 Exhaust Pressure Control Valve Intermittent**  
**P0480 Cooling Fan 1 Control Circuit Malfunction**  
**P0481 Cooling Fan 2 Control Circuit Malfunction**  
**P0482 Cooling Fan 3 Control Circuit Malfunction**  
**P0483 Cooling Fan Rationality Check Malfunction**  
**P0484 Cooling Fan Circuit Over Current**  
**P0485 Cooling Fan Power/Ground Circuit Malfunction**  
**P0500 Vehicle Speed Sensor Malfunction**  
**P0501 Vehicle Speed Sensor Range/Performance**  
**P0502 Vehicle Speed Sensor Low Input**  
**P0503 Vehicle Speed Sensor Intermittent/Erratic/High**  
**P0505 Idle Control System Malfunction**  
**P0506 Idle Control System RPM Lower Than Expected**  
**P0507 Idle Control System RPM Higher Than Expected**  
**P0510 Closed Throttle Position Switch Malfunction**  
**P0520 Engine Oil Pressure Sensor/Switch Circuit Malfunction**  
**P0521 Engine Oil Pressure Sensor/Switch Circuit Range/Performance**  
**P0522 Engine Oil Pressure Sensor/Switch Circuit Low Voltage**  
**P0523 Engine Oil Pressure Sensor/Switch Circuit High Voltage**  
**P0530 A/C Refrigerant Pressure Sensor Circuit Malfunction**  
**P0531 A/C Refrigerant Pressure Sensor Circuit Range/Performance**  
**P0532 A/C Refrigerant Pressure Sensor Circuit Low Input**  
**P0533 A/C Refrigerant Pressure Sensor Circuit High Input**  
**P0534 Air Conditioner Refrigerant Charge Loss**  
**P0550 Power Steering Pressure Sensor Circuit Malfunction**  
**P0551 Power Steering Pressure Sensor Circuit Range/Performance**  
**P0552 Power Steering Pressure Sensor Circuit Low Input**  
**P0553 Power Steering Pressure Sensor Circuit High Input**  
**P0554 Power Steering Pressure Sensor Circuit Intermittent**  
**P0560 System Voltage Malfunction**  
**P0561 System Voltage Unstable**  
**P0562 System Voltage Low**  
**P0563 System Voltage High**  
**P0565 Cruise Control On Signal Malfunction**  
**P0566 Cruise Control Off Signal Malfunction**  
**P0567 Cruise Control Resume Signal Malfunction**  
**P0568 Cruise Control Set Signal Malfunction**  
**P0569 Cruise Control Coast Signal Malfunction**  
**P0570 Cruise Control Accel Signal Malfunction**

**P0571 Cruise Control/Brake Switch A Circuit Malfunction**  
**P0572 Cruise Control/Brake Switch A Circuit Low**  
**P0573 Cruise Control/Brake Switch A Circuit High**  
**P0574 Cruise Control Related Malfunction**  
**P0575 Cruise Control Related Malfunction**  
**P0576 Cruise Control Related Malfunction**  
**P0576 Cruise Control Related Malfunction**  
**P0578 Cruise Control Related Malfunction**  
**P0579 Cruise Control Related Malfunction**  
**P0580 Cruise Control Related Malfunction**  
**P0600 Serial Communication Link Malfunction**  
**P0601 Internal Control Module Memory Check Sum Error**  
**P0602 Control Module Programming Error**  
**P0603 Internal Control Module Keep Alive Memory (KAM) Error**  
**P0604 Internal Control Module Random Access Memory (RAM) Error**  
**P0605 Internal Control Module Read Only Memory (ROM) Error**  
**P0606 PCM Processor Fault**  
**P0608 Control Module VSS Output "A" Malfunction**  
**P0609 Control Module VSS Output "B" Malfunction**  
**P0620 Generator Control Circuit Malfunction**  
**P0621 Generator Lamp "L" Control Circuit Malfunction**  
**P0622 Generator Field "F" Control Circuit Malfunction**  
**P0650 Malfunction Indicator Lamp (MIL) Control Circuit Malfunction**  
**P0654 Engine RPM Output Circuit Malfunction**  
**P0655 Engine Hot Lamp Output Control Circuit Malfunction**  
**P0656 Fuel Level Output Circuit Malfunction**  
**P0700 Transmission Control System Malfunction**  
**P0701 Transmission Control System Range/Performance**  
**P0702 Transmission Control System Electrical**  
**P0703 Torque Converter/Brake Switch B Circuit Malfunction**  
**P0704 Clutch Switch Input Circuit Malfunction**  
**P0705 Transmission Range Sensor Circuit malfunction (PRNDL Input)**  
**P0706 Transmission Range Sensor Circuit Range/Performance**  
**P0707 Transmission Range Sensor Circuit Low Input**  
**P0708 Transmission Range Sensor Circuit High Input**  
**P0709 Transmission Range Sensor Circuit Intermittent**  
**P0710 Transmission Fluid Temperature Sensor Circuit Malfunction**  
**P0711 Transmission Fluid Temperature Sensor Circuit Range/Performance**  
**P0712 Transmission Fluid Temperature Sensor Circuit Low Input**  
**P0713 Transmission Fluid Temperature Sensor Circuit High Input**  
**P0714 Transmission Fluid Temperature Sensor Circuit Intermittent**  
**P0715 Input/Turbine Speed Sensor Circuit Malfunction**  
**P0716 Input/Turbine Speed Sensor Circuit Range/Performance**  
**P0717 Input/Turbine Speed Sensor Circuit No Signal**  
**P0718 Input/Turbine Speed Sensor Circuit Intermittent**  
**P0719 Torque Converter/Brake Switch B Circuit Low**

**P0720 Output Speed Sensor Circuit Malfunction**  
**P0721 Output Speed Sensor Range/Performance**  
**P0722 Output Speed Sensor No Signal**  
**P0723 Output Speed Sensor Intermittent**  
**P0724 Torque Converter/Brake Switch B Circuit High**  
**P0725 Engine Speed input Circuit Malfunction**  
**P0726 Engine Speed Input Circuit Range/Performance**  
**P0727 Engine Speed Input Circuit No Signal**  
**P0728 Engine Speed Input Circuit Intermittent**  
**P0730 Incorrect Gear Ratio**  
**P0731 Gear 1 Incorrect ratio**  
**P0732 Gear 2 Incorrect ratio**  
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**P0734 Gear 4 Incorrect ratio**  
**P0735 Gear 5 Incorrect ratio**  
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**P0740 Torque Converter Clutch Circuit Malfunction**  
**P0741 Torque Converter Clutch Circuit Performance or Stuck Off**  
**P0742 Torque Converter Clutch Circuit Stuck On**  
**P0743 Torque Converter Clutch Circuit Electrical**  
**P0744 Torque Converter Clutch Circuit Intermittent**  
**P0745 Pressure Control Solenoid Malfunction**  
**P0746 Pressure Control Solenoid Performance or Stuck Off**  
**P0747 Pressure Control Solenoid Stuck On**  
**P0748 Pressure Control Solenoid Electrical**  
**P0749 Pressure Control Solenoid Intermittent**  
**P0750 Shift Solenoid A Malfunction**  
**P0751 Shift Solenoid A Performance or Stuck Off**  
**P0752 Shift Solenoid A Stuck On**  
**P0753 Shift Solenoid A Electrical**  
**P0754 Shift Solenoid A Intermittent**  
**P0755 Shift Solenoid B Malfunction**  
**P0756 Shift Solenoid B Performance or Stuck Off**  
**P0757 Shift Solenoid B Stuck On**  
**P0758 Shift Solenoid B Electrical**  
**P0759 Shift Solenoid B Intermittent**  
**P0760 Shift Solenoid C Malfunction**  
**P0761 Shift Solenoid C Performance or Stuck Off**  
**P0762 Shift Solenoid C Stuck On**  
**P0763 Shift Solenoid C Electrical**  
**P0764 Shift Solenoid C Intermittent**  
**P0765 Shift Solenoid D Malfunction**  
**P0766 Shift Solenoid D Performance or Stuck Off**  
**P0767 Shift Solenoid D Stuck On**  
**P0768 Shift Solenoid D Electrical**  
**P0769 Shift Solenoid D Intermittent**

**P0770 Shift Solenoid E Malfunction**  
**P0771 Shift Solenoid E Performance or Stuck Off**  
**P0772 Shift Solenoid E Stuck On**  
**P0773 Shift Solenoid E Electrical**  
**P0774 Shift Solenoid E Intermittent**  
**P0780 Shift Malfunction**  
**P0781 1-2 Shift Malfunction**  
**P0782 2-3 Shift Malfunction**  
**P0783 3-4 Shift Malfunction**  
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**P0785 Shift/Timing Solenoid Malfunction**  
**P0786 Shift/Timing Solenoid Range/Performance**  
**P0787 Shift/Timing Solenoid Low**  
**P0788 Shift/Timing Solenoid High**  
**P0789 Shift/Timing Solenoid Intermittent**  
**P0790 Normal/Performance Switch Circuit Malfunction**  
**P0801 Reverse Inhibit Control Circuit Malfunction**  
**P0803 1-4 Upshift (Skip Shift) Solenoid Control Circuit Malfunction**  
**P0804 1-4 Upshift (Skip Shift) Lamp Control Circuit Malfunction**