1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

Stored fault codes may be erased from memory at any time by removing power from the ECM for at least 30 seconds. It may be necessary to clear stored codes during diagnosis to check for any recurrence during a test drive, but the stored codes must be written down when retrieved. The codes may still be required for subsequent troubleshooting. Whenever a repair is complete, the stored codes must be erased and the vehicle test driven to confirm correct operation and repair.

WARNING
The ignition switch must be OFF any time power is disconnected or restored to the ECM. Severe damage may result if this precaution is not observed.

Depending on the electrical distribution of the particular vehicle, power to the ECM may be disconnected by removing the ECM fuse in the fusebox, disconnecting the in-line fuse holder near the positive battery terminal or disconnecting the ECM power lead at the battery terminal. Disconnecting the negative battery cable to clear codes is not recommended as this will also clear other memory data in the vehicle such as radio presets.

The codes may also be cleared through a scan tool. Follow the scan tool manufacturer's instructions.

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

Diagnosis of a driveability and/or emissions problems requires attention to detail and following the diagnostic procedures in the correct order. Resist the temptation to perform any repairs before performing the preliminary diagnostic steps. In many cases this will shorten diagnostic time and often cure the problem without electronic testing.

The proper troubleshooting procedure for these vehicles is as follows:

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

The fault codes and the scan tool data will lead to diagnosis and checking of a particular circuit. It is important to note that the fault code indicates a fault or loss of signal in an ECM-controlled system, not necessarily in the specific component.

Refer to the appropriate Diagnostic Code chart to determine the codes meaning. The component may then be tested following the appropriate component test procedures found in this section. If the component is OK, check the wiring for shorts or opens. Further diagnoses should be left to an experienced driveability technician.

If a code indicates the ECM to be faulty and the ECM is replaced, but does not correct the problem, one of the following may be the reason:

- There is a problem with the ECM terminal connections: The terminals may have to be removed from the connector in order to check them properly.
- The ECM or PROM is not correct for the application: The incorrect ECM or PROM may cause a malfunction and may or may not set a code.
- The problem is intermittent: This means that the problem is not present at the time the system is being checked. In this case, make a careful physical inspection of all portions of the system involved.
- Shorted solenoid, relay coil or harness: Solenoids and relays are turned on and off by the ECM using internal electronic switches called drivers. Each driver is part of a group of four called Quad-Drivers. A shorted solenoid, relay coil or harness may cause an ECM to fail, and a replacement ECM to fail when it is installed. Use a short tester, J34696, BT 8405, or equivalent, as a fast, accurate means of checking for a short circuit.
- The Programmable Read Only Memory (PROM) or MEM-CAL may be faulty: Although the PROM rarely fails, it operates as part of the ECM. Therefore, it could be the cause of the problem. Substitute a known good PROM/MEM-CAL.
- The replacement ECM may be faulty: After the ECM is replaced, the system should be rechecked for proper operation. If the diagnostic code again indicates the ECM is the problem, substitute a known good ECM. Although this is a very rare condition, it could happen.

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

If a fault occurs intermittently, such as a loose connector pin breaking contact as the vehicle hits a bump, the ECM will note the fault as it occurs and energize the dash warning lamp. If the problem self-corrects, as with the terminal pin again making contact, the dash lamp will extinguish after 10 seconds but a code will remain stored in the computer control module's memory.

When an unexpected code appears during diagnostics, it may have been set during an intermittent failure that self-corrected; the codes are still useful in diagnosis and should not be discounted.

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

This is possibly the most critical step of diagnosis and should be performed immediately after retrieving any codes. A detailed examination of connectors, wiring and vacuum hoses can often lead to a repair without further diagnosis. Performance of this step relies on the skill of the technician performing it; a careful inspector will check the undersides of hoses as well as the integrity of hard-to-reach hoses blocked by the air cleaner or other component. Wiring should be checked carefully for any sign of strain, burning, crimping, or terminal pull-out from a connector. Checking connectors at components or in harnesses is required; usually, pushing them together will reveal a loose fit.

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

NOTE: The the following code list covers 1984–95 vehicles. The 1994–95 5.7L (VIN P) engine also utilizes some OBD-II codes.

Code 12 No engine RPM reference pulses - System Normal

Code 13 Oxygen Sensor (02S) circuit open - left side on 2 sensor system

Code 14 Engine Coolant Temperature (ECT) sensor -possible circuit high or shorted sensor

Code 15 Engine Coolant Temperature (ECT) sensor -circuit low or open circuit

Code 16 Direct ignition system (DIS), fault line circuit or Distributor ignition system (low resolution pulse) or Missing 2x reference circuit or OPTI-Spark ignition timing system (low resolution pulse) or System voltage out of range

Code 17 Camshaft Position Sensor (OPS) or spark reference circuit error

Code 18 Crank/Cam error

Code 19 Crankshaft Position Sensor (CPS) circuit

Code 21 Throttle Position (TP) sensor circuit - signal voltage out of range, probably high

Code 22 Throttle Position (TP) sensor circuit - signal voltage low

Code 23 Intake Air Temperature (IAT or MAT) sensor circuit temperature out of range, low or Open or grounded M/C solenoid Feedback Carburetor system

Code 24 Vehicle Speed Sensor (VSS) circuit

Code 25 Intake Air Temperature (IAT or MAT) sensor circuit temperature out of range, high

Code 26 Quad-Driver Module #1 circuit or Transaxle gear switch circuit

Code 27 Quad-Driver Module circuit or Transaxle gear switch, probably 2nd gear switch circuit

Code 28 Quad-Driver Module (QDM) #2 circuit or Transaxle gear switch, probably 3rd gear switch circuit

Code 29 Transaxle gear switch, probably 4th gear switch circuit

Code 31 Camshaft sensor circuit fault or Park/Neutral Position (PNP) switch circuit or Wastegate circuit signal

Code 32 Exhaust Gas Recirculation (EGR) circuit fault or Barometric Pressure Sensor circuit low Feedback Carburetor system

Code 33 Manifold Absolute Pressure (MAP) sensor - signal voltage out of range, high or Mass Air Flow (MAE) sensor - signal voltage out of range, probably high

Code 34 - Manifold Absolute Pressure (MAP) sensor - circuit out of range voltage, low or Mass Air Flow (MAF) sensor circuit (gm/sec low)

Code 35 - Idle Air Control (IAC) or idle speed error or Idle Speed Control (ISO) circuit throttle switch shorted Feedback Carburetor system

Code 36 Ignition system circuit error or Transaxle shift problem - 4T60E Transaxle

Code 38 Brake input circuit fault - Torque converter clutch signal

Code 39 Clutch input circuit fault - Torque converter clutch signal

Code 41 Cam sensor or cylinder select circuit fault ignition control (IC) reference pulse system fault or Electronic Spark Timing (EST) circuit open or shorted

Code 42 Electronic Spark Timing (EST) circuit grounded or Ignition Control (IC) circuit grounded or faulty bypass line

Code 43 Knock Sensor (KS) or Electronic Spark Control (ESC) circuit fault

Code 44 Oxygen Sensor (02S), left side on 2 sensor system lean exhaust indicated

Code 45 Oxygen Sensor (02S), left side on 2 sensor system rich exhaust indicated

Code 46 Personal Automotive Security System (PASSKey II) circuit or Power Steering Pressure Switch (PSPS) circuit

Code 47 PCM-BCM data circuit

Code 48 Misfire diagnosis

Code 51 Calibration error, faulty MEM-CAL, ECM or EEPROM failure

Code 52 Engine oil temperature sensor circuit, low temperature indicated or Fuel Calpac missing or Over voltage condition or EGR Circuit fault

Code 53 Battery voltage error or EGR problem or Personal Automotive Security System (PASS-Key) circuit

Code 54 EGR #2 problem or Fuel pump circuit (low voltage) or Shorted mixture control solenoid circuit Feedback Carburetor system

Code 55 A/D Converter error, PCM error or not grounded, EGR #3 problem, Fuel lean monitor, Grounded voltage reference, faulty oxygen sensor or fuel lean Feedback Carburetor system

Code 56 Quad-Driver Module (QDM) #2 circuit or Secondary air inlet valve actuator vacuum sensor circuit signal high 5.7L (VIN J)

Code 57 Boost control problem

Code 58 Vehicle Anti-theft System fuel enable circuit

Code 61 A/C system performance or Cruise vent solenoid circuit fault or Oxygen Sensor (02S) degraded signal or Secondary port throttle valve system fault 5.7L (VIN J) or Transaxle gear switch signal

Code 62 Cruise vacuum solenoid circuit fault or Engine oil temperature sensor, high temperature indicated or Transaxle gear switch signal circuit fault

Code 63 Oxygen Sensor (02S), right side circuit open or Cruise system problem (speed error) or Manifold Absolute Pressure (MAP) sensor circuit out of range

Code 64 Oxygen Sensor (02S), right side - lean exhaust indicated

Code 65 Oxygen Sensor (02S), right side - rich exhaust indicated or Cruise servo position circuit or Fuel injector circuit low current

Code 66 A/C pressure sensor circuit fault, probably low pressure or Engine power switch, voltage high or low or PCM fault 5.7L (VIN J)

Code 67 A/C pressure sensor circuit, sensor or A/C clutch circuit failure or Cruise switch circuit fault

Code 68 A/C compressor relay (shorted circuit) or Cruise system fault

Code 69 A/C clutch circuit or head pressure high

Code 70 A/C refrigerant pressure sensor circuit (high pressure)

Code 71 A/C evaporator temperature sensor circuit (low temperature)

Code 72 Gear selector switch circuit

Code 73 A/C evaporator temperature sensor circuit (high temperature)

Code 75 Digital EGR #1 solenoid error

Code 76 Digital EGR #2 solenoid error

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Code 77 Digital EGR #3 solenoid error

Code 79 Vehicle Speed Sensor (VSS) circuit signal high

Code 80 Vehicle Speed Sensor (VSS) circuit signal low

Code 81 Brake input circuit fault - Torque converter clutch signal

Code 82 Ignition Control (IC) 3X signal error

Code 85 PROM error

Code 86 Analog/Digital ECM error

Code 87 EEPROM error

Code 99 Power management

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

NOTE: The following code list covers all 1994–96 vehicles, except for the 1994 5.7L (VIN J) engine. Some 1994–95 vehicles also utilize some OBD-I codes.

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
P0110 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/Pedal Position Sensor/Switch "A" Circuit Malfunction
P0121 Throttle/Pedal Position Sensor/Switch "A" Circuit Range/Performance Problem
P0122 Throttle/Pedal Position Sensor/Switch "A" Circuit Low Input
P0123 Throttle/Pedal Position Sensor/Switch "A" Circuit High Input
P0124 Throttle/Pedal Position Sensor/Switch "A" Circuit Intermittent
P0125 Insufficient Coolant Temperature For Closed Loop Fuel Control
P0126 Insufficient Coolant Temperature For Stable Operation
P0130 O2 Circuit Malfunction (Bank no. 1 Sensor no. 1)
P0131 O2 Sensor Circuit Low Voltage (Bank no. 1 Sensor no. 1)
P0132 O2 Sensor Circuit High Voltage (Bank no. 1 Sensor no. 1)
P0133 O2 Sensor Circuit Slow Response (Bank no. 1 Sensor no. 1)
P0134 O2 Sensor Circuit No Activity Detected (Bank no. 1 Sensor no. 1)
P0135 O2 Sensor Heater Circuit Malfunction (Bank no. 1 Sensor no. 1)
P0136 O2 Sensor Circuit Malfunction (Bank no. 1 Sensor no. 2)
P0137 O2 Sensor Circuit Low Voltage (Bank no. 1 Sensor no. 2)
P0138 O2 Sensor Circuit High Voltage (Bank no. 1 Sensor no. 2)
P0139 O2 Sensor Circuit Slow Response (Bank no. 1 Sensor no. 2)
P0140 O2 Sensor Circuit No Activity Detected (Bank no. 1 Sensor no. 2)
P0141 O2 Sensor Heater Circuit Malfunction (Bank no. 1 Sensor no. 2)
P0142 O2 Sensor Circuit Malfunction (Bank no. 1 Sensor no. 3)
P0143 O2 Sensor Circuit Low Voltage (Bank no. 1 Sensor no. 3)
P0144 O2 Sensor Circuit High Voltage (Bank no. 1 Sensor no. 3)
P0145 O2 Sensor Circuit Slow Response (Bank no. 1 Sensor no. 3)
P0146 O2 Sensor Circuit No Activity Detected (Bank no. 1 Sensor no. 3)
P0147 O2 Sensor Heater Circuit Malfunction (Bank no. 1 Sensor no. 3)
P0150 O2 Sensor Circuit Malfunction (Bank no. 2 Sensor no. 1)
P0151 O2 Sensor Circuit Low Voltage (Bank no. 2 Sensor no. 1)
P0152 O2 Sensor Circuit High Voltage (Bank no. 2 Sensor no. 1)
P0153 O2 Sensor Circuit Slow Response (Bank no. 2 Sensor no. 1)
P0154 O2 Sensor Circuit No Activity Detected (Bank no. 2 Sensor no. 1)
P0155 O2 Sensor Heater Circuit Malfunction (Bank no. 2 Sensor no. 1)
P0156 O2 Sensor Circuit Malfunction (Bank no. 2 Sensor no. 2)
P0157 O2 Sensor Circuit Low Voltage (Bank no. 2 Sensor no. 2)
P0158 O2 Sensor Circuit High Voltage (Bank no. 2 Sensor no. 2)
P0159 O2 Sensor Circuit Slow Response (Bank no. 2 Sensor no. 2)
P0160 O2 Sensor Circuit No Activity Detected (Bank no. 2 Sensor no. 2)
P0161 O2 Sensor Heater Circuit Malfunction (Bank no. 2 Sensor no. 2)

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P0162 O2Sensor Circuit Malfunction (Bank no. 2 Sensor no. 3)
P0163 O2Sensor Circuit Low Voltage (Bank no. 2 Sensor no. 3)
P0164 O2Sensor Circuit High Voltage (Bank no. 2 Sensor no. 3)
P0165 O2Sensor Circuit Slow Response (Bank no. 2 Sensor no. 3)
P0166 O2Sensor Circuit No Activity Detected (Bank no. 2 Sensor no. 3)
P0167 O2Sensor Heater Circuit Malfunction (Bank no. 2 Sensor no. 3)
P0170 Fuel Trim Malfunction (Bank no. 1)
P0171 System Too Lean (Bank no. 1)
P0172 System Too Rich (Bank no. 1)
P0173 Fuel Trim Malfunction (Bank no. 2)
P0174 System Too Lean (Bank no. 2)
P0175 System Too Rich (Bank no. 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
P0300 Random/Multiple Cylinder Misfire Detected
P0323 Ignition/Distributor Engine Speed Input Circuit Intermittent
P0325 Knock Sensor no. 1 — Circuit Malfunction (Bank no. 1 or Single Sensor)
P0327 Knock Sensor no. 1 — Circuit Low Input (Bank no. 1 or Single Sensor)
P0332 Knock Sensor no. 2 — Circuit Low Input (Bank no. 2)
P0335 Crankshaft Position Sensor "A" Circuit Malfunction
P0336 Crankshaft Position Sensor "A" Circuit Range/Performance
P0337 Crankshaft Position Sensor "A" Circuit Low Input
P0400 Exhaust Gas Recirculation Flow Malfunction
P0403 Exhaust Gas Recirculation Circuit Malfunction
P0410 Secondary Air Injection System Malfunction
P0412 Secondary Air Injection System Switching Valve "A" Circuit Malfunction
P0420 Catalyst System Efficiency Below Threshold (Bank no. 1)
P0430 Catalyst System Efficiency Below Threshold (Bank no. 2)
P0441 Evaporative Emission Control System Incorrect Purge Flow
P0443 Evaporative Emission Control System Purge Control Valve Circuit Malfunction
P0500 Vehicle Speed Sensor Malfunction
P0506 Idle Control System RPM Lower Than Expected
P0507 Idle Control System RPM Higher Than Expected
P0530 A/C Refrigerant Pressure Sensor Circuit Malfunction
P0531 A/C Refrigerant Pressure Sensor Circuit Range/Performance
P0562 System Voltage Low
P0563 System Voltage High
P0601 PCM Memory
P0602 PCM not programmed
P1107 MAP Sensor Voltage Intermittently Low
P1111 IAT Sensor Circuit Intermittent High Voltage

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P1112 IAT Sensor Circuit Intermittent Low Voltage

P1114 ECT Sensor Circuit Intermittent Low Voltage

P1115 ECT Sensor Circuit Intermittent High Voltage

P1121 TP Sensor Voltage Intermittently High

P1122 TP Sensor Voltage Intermittently Low

P1133 HO2S Insufficient Switching Sensor

P1133 HO2S Insufficient Switching Bank #1, Sensor #1

P1134 HO2S #1 Transition Time Ratio

P1134 HO2S Transition Time Ratio Bank #1, Sensor #1

P1153 HO2S Insufficient Switching Sensor Bank #2, Sensor #1

P1154 HO2S Transition Time Ratio Bank #2, Sensor #1

P1345 Crankshaft/Camshaft (CKP/CMP) Correlation

P1350 Ignition Control (IC) Circuit Malfunction

P1351 Ignition Control (IC) Circuit High Voltage

P1361 Ignition Control (IC) Circuit Not Toggling

P1361 Ignition Control (IC) Circuit Low Voltage

P1380 Electronic Brake Control Module (EBCM) DTC Detected Rough Road Data Unusable

P1381 Misfire Detected, No EBCM/PCM/VCM Serial Data

P1406 EGR Pintle Position Circuit Fault

P1415 AIR System Bank #1

P1416 AIR System Bank #2

P1441 EVAP Control System Flow During Non-Purge

P1508 IAC System Low RPM

P1509 IAC System High RPM

P1520 PNP Circuit

P1530 Ignition Timing Adjustment Switch Circuit

P1600 PCM Battery Circuit Fault

P1635 5-Volt Reference "A" Circuit

P1639 5-Volt Reference "B" Circuit

P1641 MIL Control Circuit

P1651 Fan #1 Relay Control Circuit

P1652 Fan #2 Relay Control Circuit

P1654 A/C Relay Control

P1655 EVAP Purge Solenoid Control Circuit

P1672 Low Engine Oil Level Light Control Circuit

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

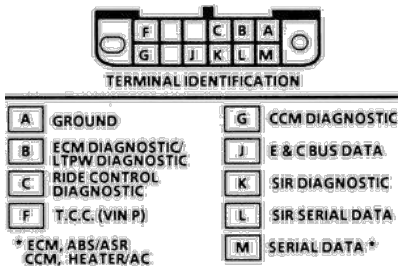
NOTE: The following procedures apply only to 1984–95 vehicles with the 12-pin diagnostic connector only. A scan tool, such as GM's Tech 1® must be used to retrieve diagnostic trouble codes from 1995–96 vehicles with the 16-pin diagnostic connector. When using a scan tool, make sure to carefully follow all instructions supplied by the manufacturer.

Listings of the trouble for the various engine control system covered in this manual are located in this section. Remember that a code only points to the faulty circuit NOT necessarily to a faulty component. Loose, damaged or corroded connections may contribute to a fault code on a circuit when the sensor or component is operating properly. Be sure that the components are faulty before replacing them, especially the expensive ones.

NOTE: The DLC is also referred to as the Assembly Line Communication Link (ALCL), or Assembly Line Diagnostic Link (ALDL) on earlier vehicles.

The Data Link Connector (DLC) may be located under the dash and sometimes covered with a plastic cover labeled DIAGNOSTIC CONNECTOR.

Fig. 1: The 12-pin Data Link Connector (DLC) is located under the dash



1. The diagnostic trouble codes can be read by grounding test terminal **B**. The terminal is most easily grounded by connecting it to terminal **A** (internal ECM ground). This is the terminal to the right of terminal **B** on the top row of the DLC connector.
2. Once the terminals have been connected, the ignition switch must be moved to the **ON** position with the engine not running.
3. The Service Engine Soon or Check Engine light should be flashing. If it isn't, turn the ignition **OFF** and remove the jumper wire. Turn the ignition **ON** and confirm that light is now on. If it is not, replace the bulb and try again. If the bulb still will not light, or if it does not flash with the test terminal grounded, the system should be diagnosed by an experienced driveability technician. If the light is OK, proceed as follows.
4. The code(s) stored in memory may be read through counting the flashes of the dashboard warning lamp. The dash warning lamp should begin to flash Code 12. The code will display as one flash, a pause and two flashes. Code 12 is not a fault code. It is used as a system acknowledgment or handshake code; its presence indicates that the ECM can communicate as requested. Code 12 is used to begin every diagnostic sequence. Some vehicles also use Code 12 after all diagnostic codes have been sent.
5. After Code 12 has been transmitted 3 times, the fault codes, if any, will each be transmitted 3 times. The codes are stored and transmitted in numeric order from lowest to highest.

   NOTE: The order of codes in the memory does not indicate the order of occurrence.
6. If there are no codes stored, but a driveability or emissions problem is evident, the system should be diagnosed by an experienced driveability technician.
7. If one or more codes are stored, record them. Refer to the applicable Diagnostic Code chart in this section.
8. Switch the ignition **OFF** when finished with code retrieval or scan tool readings.

   NOTE: After making repairs, clear the trouble codes and operate the vehicle to see if it will reset, indicating further problems.

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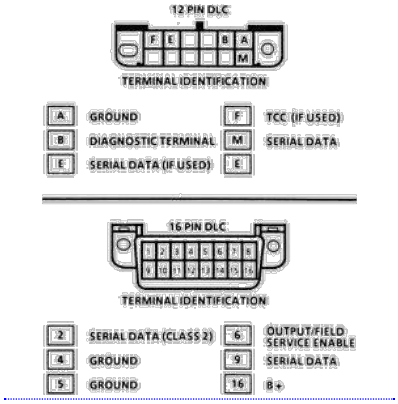
1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

On 1994–96 vehicles with a 16-pin diagnostic connector, an OBD-II compliant scan tool must be used to retrieve the trouble codes. Follow the scan tool manufacturer's instructions on how to connect the scan tool to the vehicle and how to retrieve the codes.

Fig. 1: The 1994–96 vehicles may use either a 12 or 16-pin DLC. If equipped with a 16-pin connector, you MUST use an OBD-II scan tool to retrieve



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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

Since the computer control module is programmed to recognize the presence and value of electrical inputs, it will also note the lack of a signal or a radical change in values. It will, for example, react to the loss of signal from the vehicle speed sensor or note that engine coolant temperature has risen beyond acceptable (programmed) limits. Once a fault is recognized, a numeric code is assigned and held in memory. The dashboard warning lamp: CHECK ENGINE or SERVICE ENGINE SOON (SES), will illuminate to advise the operator that the system has detected a fault. This lamp is also known as the Malfunction Indicator Lamp (MIL).

More than one code may be stored. Keep in mind not every engine uses every code. Additionally, the same code may carry different meanings relative to each engine or engine family.

In the event of an computer control module failure, the system will default to a pre-programmed set of values. These are compromise values which allow the engine to operate, although possibly at reduced efficiency. This is variously known as the default, limp-in or back-up mode. Driveability is almost always affected when the ECM enters this mode.

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1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

The most commonly required electrical diagnostic tool is the digital multimeter, allowing voltage, ohmage (resistance) and amperage to be read by one instrument. The multimeter must be a high-impedance unit, with 10 megohms of impedance in the voltmeter. This type of meter will not place an additional load on the circuit it is testing; this is extremely important in low voltage circuits. The multimeter must be of high quality in all respects. It should be handled carefully and protected from impact or damage. Replace batteries frequently in the unit.

A digital storage oscilloscope is become increasingly necessary to diagnose today's cars. Although they are expensive to purchase, you may be able to rent one from an auto parts store. The oscilloscope is capable of displaying an electrical pattern rather then just measuring its value. This enables you to catch intermittent problems which a digital multimeter will miss.

Other necessary tools include an unpowered test light, a quality tachometer with an inductive (clip-on) pick up, and the proper tools for releasing GM's Metri-Pack, Weather Pack and Micro-Pack terminals as necessary. The Micro-Pack connectors are used at the ECM electrical connector. A vacuum pump/gauge may also be required for checking sensors, solenoids and valves.

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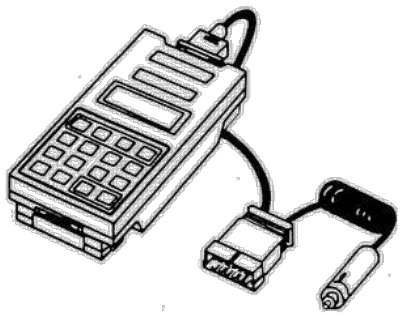
1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

On most models, the stored codes may be read with only the use of a small jumper wire, however the use of a hand-held scan tool such as GM's TECH-1® or equivalent is recommended. On 1994–96 vehicles with the 16-pin DLC, an OBD-II compliant scan tool must be used. There are many manufacturers of these tools; a purchaser must be certain that the tool is proper for the intended use. If you own a scan type tool, it probably came with comprehensive instructions on proper use. Be sure to follow the instructions that came with your unit if they differ from what is given here; this is a general guide with useful information included.

Fig. 1: A Tech 1® , or equivalent scan tool must be used to retrieve codes from 1994–96 models with the 16-pin DLC connector



The scan tool allows any stored codes to be read from the ECM or PCM memory. The tool also allows the operator to view the data being sent to the computer control module while the engine is running. This ability has obvious diagnostic advantages; the use of the scan tool is frequently required for component testing. The scan tool makes collecting information easier; the data must be correctly interpreted by an operator familiar with the system.

Fig. 2: Inexpensive scan tools, such as this Auto Xray® , are available to interface with your General Motors vehicle

An example of the usefulness of the scan tool may be seen in the case of a temperature sensor which has changed its electrical characteristics. The ECM is reacting to an apparently warmer engine (causing a driveability problem), but the sensor's voltage has not changed enough to set a fault code. Connecting the scan tool, the voltage signal being sent to the ECM may be viewed; comparison to normal values or a known good vehicle reveals the problem quickly.

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