Smog Check OBD Reference
Purpose

This guide provides both a summary of pass/fail standards for the On Board Diagnostic (OBD) test portion of a Smog Check inspection and instructions for inspecting vehicles with known OBD test difficulties. This guide replaces the “Smog Check OBDII Reference (Testability Issues)” document that was formerly known as Appendix J. While this guide intends to capture issues related to Smog Check inspections, additional vehicle OBD issues may be found on the National OBD Clearinghouse website.

Vehicle owners may contact the California Air Resources Board with questions about emissions warranties or recalls by email helpline@arb.ca.gov or calling (800) 242-4450 or by using http://www.arb.ca.gov/knowzone/faq/faq.htm.

State run Referee Smog Check stations have the expertise and equipment necessary to resolve unique situations, helping motorists obtain their Smog Check certificates. This document instructs inspectors to send certain vehicles with a specific issue to the Referee while BAR is investigating the cause and remedy for that issue. Referee Centers are centrally located within certain community colleges throughout California. To find a Referee Center near you or to schedule an appointment, visit asktheref.org or call (800) 622-7733.

Note: The correct vehicle identifying information (e.g., VIN, make, model, certification type) must be entered into the BAR-97 or the OIS in order to receive a special test configuration. This guide includes vehicles where the OIS or BAR-97 inspection has been modified to accommodate certain vehicle design anomalies via modified pass/fail standards, disabled test modules, or OBD data collection.
<table>
<thead>
<tr>
<th>Revision Number</th>
<th>Revision Description</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Original; BMW; Lexus RX400; Toyota Highlander; VW Passat</td>
<td>9/1/2015</td>
</tr>
<tr>
<td>1.1</td>
<td>Added: BMW; Lexus RX400; Toyota Highlander; VW Passat</td>
<td>9/25/2015</td>
</tr>
<tr>
<td>1.2</td>
<td>Added: Chevrolet and GMC box trucks; Freightliner M Line; Mitsubishi Fuso</td>
<td>11/13/2015</td>
</tr>
<tr>
<td>2.0</td>
<td>Added: Table 5 with BAR-97 vehicles; Audi A4, A6 bulletin; , Ford E350; VW Passat bulletin</td>
<td>1/22/2016</td>
</tr>
<tr>
<td>2.1</td>
<td>Added: BMW 323i; Chevrolet Cavalier CNG; Chrysler PT Cruiser; Infinity I30; Kia Borrego; Nissan Maxima; Nissan UD1200; Silverado 1500; Silverado 2500 diesel; links to bulletins; ARB’s number.</td>
<td>3/11/2016</td>
</tr>
</tbody>
</table>
Pass/Fail Standards for the OBD Test Portion of a Smog Check Inspection

Table 1 below shows the typical number of incomplete OBD readiness monitors that are allowed to pass the OBD test portion of a Smog Check inspection. See the OIS Vehicles of Interest, Table 4, or EIS Vehicles of Interest, Table 5, for vehicles that have modified standards.

Readiness monitors are self-tests performed by the vehicle’s OBD system to verify emission control functionality. While most vehicles complete the various self-tests during normal driving, achieving monitor readiness in a few types of vehicles is more difficult due to the vehicle design requiring unusual operating conditions or due to the fact that the owner never drives the car in the necessary operating mode. On occasion, the vehicle owners manual contains driving procedures to complete the monitors, but usually this drive cycle information is only available to the OEM or found in repair industry service literature. Since drive cycles require the vehicle experience specific operating conditions: speed, temperature, pressure, engine load, etc., performing certain drive cycles may not be possible in traffic, yet could be performed using dynamometer equipment. Monitor completion is also dependent on properly functioning components, so a vehicle may never complete a monitor until a thorough diagnosis and repair of components enabling the monitor to run is performed. Readiness monitors must be rerun after a repair activity like disconnecting a vehicle’s battery or replacing a defective emissions component.

### Table 1: OBD Test Monitor Readiness Standards
(Implemented May 4, 2015)

<table>
<thead>
<tr>
<th>Model Years</th>
<th>Fuel Type</th>
<th>Number of Incomplete Monitors Allowed to Pass OBD Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996-1999</td>
<td>Gas(^1)</td>
<td>Any one</td>
</tr>
<tr>
<td>2000 and newer</td>
<td>Gas(^1)</td>
<td>Evaporative system</td>
</tr>
<tr>
<td>1998-2006</td>
<td>Diesel</td>
<td>Zero</td>
</tr>
<tr>
<td>2007 and newer</td>
<td>Diesel</td>
<td>Any two</td>
</tr>
</tbody>
</table>

\(^1\) “Gas” includes gasoline, propane, natural gas (CNG, LNG, LPG)
Pass/Fail Standards for OBD Test Portion of Smog Check Inspection (continued)

Table 2 below shows the current Malfunction Indicator Lamp (aka: “Check Engine” light or MIL) related failure criteria for the OBD test portion of a BAR-97 or OIS inspection.

<table>
<thead>
<tr>
<th>Vehicles</th>
<th>Pass / Fail</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>All with OBDII</td>
<td>Pass</td>
<td>MIL illuminates when key on engine off (KOEO)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MIL turns off when engine running (KOER)</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>MIL does not illuminate when key on engine off (KOEO)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MIL illuminates when engine running (KOER)</td>
</tr>
</tbody>
</table>
Pass/Fail Standards for OBD Test Portion of Smog Check Inspection (continued)

Table 3 below shows the BAR-97 or OIS to vehicle communication standards. Vehicles fail for no communication for a variety of reasons. Common reasons include but are not limited to: damaged OBD connector or wiring, aftermarket stereo, transmission computer response instead of engine computer response, and invalid data from the vehicle.

<table>
<thead>
<tr>
<th>Model Years</th>
<th>BAR-97 or OIS</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>All with OBDII</td>
<td>BAR-97</td>
<td>Vehicle communicates with BAR-97</td>
</tr>
</tbody>
</table>
| All with OBDII      | OIS           | Vehicle communicates with OIS and transmits Required Data

1 Required Data typically means data from OBD addresses: Mode $01 PID $00, Mode $01 PID $01. Mode $01 PID $00 returns what data is supported on the vehicle. Mode $01 PID $01 returns MIL status, diagnostic trouble codes (DTCs), and monitor status.
### OIS Vehicles of Interest

Table 4 below includes 2000 and newer model-year gasoline and flex-fuel vehicles (and 1998 and newer diesel vehicles) that have an issue with the OBD test portion of an OIS inspection. Issues include but are not limited to: no communication with vehicle, incomplete readiness monitors, OBD test incompatibility, and false MIL illumination. In most cases, the OIS inspection may be tuned to accommodate vehicles with a design anomaly or the vehicle may require repair.

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audi</td>
<td>2000-2004</td>
<td>A4 &amp; A6</td>
<td>Fail for no OBD communication.</td>
<td>Broken ground bond wire in ABS module causes diagnostic communication issues with the ABS module, ECM, and TCM.</td>
<td>Likely Broken Vehicle Repair and Retest</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No response or Only Transmission Control Module responds to DADs requests.</td>
<td>Diagnose and repair per Audi TSB #A45-15-10.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ABS and/or brake lamp illuminated in instrument panel cluster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMW</td>
<td>2000</td>
<td></td>
<td>Fail for readiness</td>
<td>Software error in ECM.</td>
<td>Vehicle requires reflash</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vehicle may not set oxygen sensor readiness monitor.</td>
<td>Reflash ECM per Recall #00E-A01. See BMW bulletin #S1 B 12 15 99, dated November 2000.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>built 3/98 - 7/99</td>
<td>323i, 323iA, 328i, 328iA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>built 2/99 - 7/99</td>
<td>328iC, 328iCA, 323iC, 323iCA 528i, 528iA, 528iT, 528iAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>built 9/98 - 7/99</td>
<td>Z3 roadster 2.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>built 4/99 - 7/99</td>
<td>Z3 roadster coupe/roadster 2.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model Engine(L) Fuel Type</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
<td>Instruction to Inspector</td>
</tr>
<tr>
<td>-----------</td>
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<td>----------------------------------------------------------------------</td>
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<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>BMW</td>
<td>2001-2003</td>
<td>Z3 M Roadster / coupe with S54 engine</td>
<td>Fail for no communication when ignition switched off/on.</td>
<td>Voluntary Emissions Recall Campaign to reprogram the engine control units (DME) on all affected vehicles. Bulletin #SI B12 11 06 dated October 2007.</td>
<td>Follow OIS prompts - connect / disconnect DAD when key off</td>
</tr>
<tr>
<td></td>
<td>2000-2003</td>
<td>Z8 &amp; M5 with S62 engine</td>
<td>OBD communication always possible with BMW DIS or GT1 tester.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>From series intro. up to 8/27/2004</td>
<td>M3 with S54 engine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chevrolet</td>
<td>1998-2005</td>
<td>DIESEL C/K2500 &amp; C/K3500 (including Silverado and Suburban), G30, G3500 (including Sport Van, Express Cut-Away &amp; Cargo), P30</td>
<td>Federal diesel vehicle over 8,500 GVWR is not OBD-II certified.</td>
<td>Federal diesel vehicles over 8,500 GVWR were not built to comply with OBD-II or Fed OBD standards.</td>
<td>Test normally. BAR-OIS will ignore incomplete continuous monitors. If the vehicle fails to communicate, use the result of the bulb check for the overall result of the OBD Test if the analyzer offers this option.</td>
</tr>
<tr>
<td>Chevrolet</td>
<td>1999-2005</td>
<td>3500 W35042 (box truck) [GVWR 10,001 - 14,000] (diesel) [Federal certified]</td>
<td>Vehicle is not equipped with OBD II</td>
<td>OBD not installed in federals during these years</td>
<td>OIS programmed to skip the OBD functional test</td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model Engine(L) Fuel Type</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
<td>Instruction to Inspector</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>YGMXT02.2121 YGMXT02.2122 1GMXT02.2122 2GMXT02.2122 YGMXT02.2121</td>
<td>System monitors disabled for operation &gt; E10 blends: Evaporative leak check.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>YGMXT02.2122 (VIN 8th digit: 5)</td>
<td>Desensitized O2 Sensor monitor implemented; only reports faults during operation &lt; E15 blends.</td>
<td></td>
</tr>
<tr>
<td>Chevrolet</td>
<td>2000-2005</td>
<td>Suburban, Silverado, Express, Avalanche (gasoline) [Federal certified]</td>
<td>Message appears during OIS OBD II test stating, “Unable to confirm this Vehicle’s OBD II requirements. Does this vehicle have OBD II?”</td>
<td>Federally certified vehicle may not be certified to OBD II standards.</td>
<td>Check under-hood emission label to determine OBD certification status. Enter correct result into OIS and follow OIS prompts. OIS may state a BAR-97 test is required on vehicles without OBDII.</td>
</tr>
<tr>
<td>Chevrolet</td>
<td>2001</td>
<td>Silverado / Tahoe C/K 1500</td>
<td>Failure to set secondary air system monitor</td>
<td>Possible air injection issue (check valve, vacuum line, pump)</td>
<td>Likely broken vehicle; Repair and Retest</td>
</tr>
<tr>
<td>Chevrolet</td>
<td>2002</td>
<td>Silverado C/K 2500HD (diesel)</td>
<td>Failure to set EGR monitor</td>
<td>Investigating. Possible difficult drive cycle, check thermostat</td>
<td>Send to Referee if only EGR monitor not running, and no DTCs present</td>
</tr>
</tbody>
</table>
## Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model Engine(L) Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chevrolet</td>
<td>2001-2002</td>
<td>Cavalier CNG First VIN digit &quot;3&quot; (built in Mexico)</td>
<td>Failure to set CAT monitor</td>
<td>Vehicle design anomaly</td>
<td>OIS reprogrammed 02/11/2015 to allow any one monitor to be incomplete</td>
</tr>
<tr>
<td>Chrysler</td>
<td>2000</td>
<td>Town and Country 3.3L V-6 (E-85)</td>
<td>Readiness monitors will not set on certain flex fuel models, VINs listed below. WCRXT03.32BP (VIN 8th digit: G)</td>
<td>All monitors disabled for operation &gt;E30 and ethanol fuel content learning.</td>
<td>OIS ignores all 11 readiness monitors</td>
</tr>
<tr>
<td>Chrysler</td>
<td>2003</td>
<td>PT Cruiser 2.4 liter turbocharged</td>
<td>Failure to set catalyst monitor</td>
<td>Investigating. ARB working with Chrysler.</td>
<td>OIS reprogrammed 02/26/2016 to allow any one monitor to be incomplete</td>
</tr>
<tr>
<td>Chrysler</td>
<td>2010 built prior to 2/20/2010</td>
<td>300, Charger, Challenger 3.5L (5 speed automatic transmission)</td>
<td>Fail for monitor readiness Or MIL illumination: P0456, P0452, P1115</td>
<td>Reflash available. See Chrysler TSB #18-008-10</td>
<td>Vehicle requires reflash</td>
</tr>
<tr>
<td>DCX Sprinter</td>
<td>2003-2004</td>
<td>25004X2 and 35004X2 (diesel) [2003 Federal certified] [2004 Federal certified]</td>
<td>Federal diesel vehicle over 8,500 GVWR is not OBD-II certified.</td>
<td>Federal diesel vehicles over 8,500 GVWR were not built to comply with OBD-II or Fed OBD standards.</td>
<td>Test normally. BAR-OIS will ignore incomplete continuous monitors. If the vehicle fails to communicate, use the result of the bulb check for the overall result of the OBD Test if the analyzer offers this option.</td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
<td>Instruction to Inspector</td>
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</tr>
<tr>
<td>Dodge</td>
<td>1998-2006</td>
<td>Ram 2500, Ram 3500 (diesel) [Federal certified]</td>
<td>Federal diesel vehicle over 8,500 GVWR is not OBD-II certified.</td>
<td>Federal diesel vehicles over 8,500 GVWR were not built to comply with OBD-II or Fed OBD standards.</td>
<td>Test normally. BAR-OIS will ignore incomplete continuous monitors. If the vehicle fails to communicate, use the result of the bulb check for the overall result of the OBD Test if the analyzer offers this option.</td>
</tr>
<tr>
<td>Dodge</td>
<td>2000</td>
<td>Caravan 3.3L V-6 (E-85)</td>
<td>Readiness monitors will not set on certain flex fuel models, VINs listed below. WCRXT03.32BP (VIN 8th digit: G)</td>
<td>All monitors disabled for operation &gt;E30 and ethanol fuel content learning.</td>
<td>Test normally OIS ignores all 11 readiness monitors</td>
</tr>
<tr>
<td>Dodge</td>
<td>2003</td>
<td>Dakota, Durango and Ram Trucks with 4.7L engine [California or 50 state certified]</td>
<td>Catalyst monitor readiness status shows as not supported</td>
<td>Broken vehicle, repair per TSB#18-032-10 with lifetime warranty</td>
<td>Test normally OIS ignores unsupported monitors</td>
</tr>
<tr>
<td>Dodge</td>
<td>2003</td>
<td>Ram Truck 5.9L (Cummins diesel) [California and Federal certified]</td>
<td>MIL light is commanded on but check engine light is not illuminated and no DTCs are stored.</td>
<td>Vehicle design anomaly Recall campaign #K01 for ECM reflash applies to California certified vehicles only.</td>
<td>Test normally OIS ignores MIL Command if no DTCs are present on this vehicle Advise motorist of Recall Campaign #K01 if the vehicle is California certified.</td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model</td>
<td>Engine(L)</td>
<td>Fuel Type</td>
<td>Issue</td>
</tr>
<tr>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dodge</td>
<td>2004-2005 built after 12/7/2003</td>
<td>Ram Truck 5.9L (Cummins diesel) [California certified]</td>
<td>5.9L</td>
<td>[California certified]</td>
<td>Comprehensive component monitor will not complete.</td>
</tr>
<tr>
<td>Dodge</td>
<td>2005</td>
<td>Ram Truck 5.9L (Cummins diesel) [Federal certified]</td>
<td>5.9L</td>
<td>[Federal certified]</td>
<td>Misfire and Comprehensive Components monitors will not complete.</td>
</tr>
<tr>
<td>Dodge</td>
<td>2006-2007</td>
<td>Ram Truck 5.9L, 6.7L (Cummins diesel) [California certified]</td>
<td>5.9L, 6.7L</td>
<td>[California certified]</td>
<td>Fuel System and Comprehensive Components monitors will not complete.</td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model Engine(L) Fuel Type</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
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<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Dodge    | 2006-2007          | Ram Truck with 5.9L (ETC or ETH) built after 1/1/06, [Federal Certified], Cab Chassis with 6.7L (ETJ) built before 1/11/07 (Cummins diesel) [Federal certified] | Fuel System and Comprehensive Components monitors will not complete. | TSB #18-017-10 for ECM reflash applies to Federal certified vehicles only. | Test normally  
OIS ignores fuel and comprehensive component monitor readiness.  
Advise motorist of TSB #18-017-10 if the vehicle is Federal certified. |
| Dodge    | 2010 built before 2/20/10 | 300, Charger, Challenger 3.5L (5 speed automatic transmission)                | Evaporative monitor will not set                                      | Evaporative leak detection monitor may not set to ready.         | Test normally  
Inform consumer of TSB #18-008-10 Revision A. |
| Ford     | 1998-2003          | Truck 7.3L (diesel)                                                         | Engine could shut off when requesting Mode $09 data with aftermarket scan tool. | Vehicle design anomaly                                           | Test normally  
OIS programmed to skip Mode $09 data request on these vehicles |
### Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model Engine(L) Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ford</td>
<td>1998-2004</td>
<td>F250, F350, E350, E450, E Super Duty, Econo Comm S-Duty, Econo RV S-Duty (diesel) [Federal certified]</td>
<td>Federal diesel vehicle over 8,500 GVWR is not OBD-II certified.</td>
<td>Federal diesel vehicles over 8,500 GVWR were not built to comply with OBD-II or Fed OBD standards.</td>
<td>Test normally. BAR-OIS will ignore incomplete continuous monitors. If the vehicle fails to communicate, use the result of the bulb check for the overall result of the OBD Test if the analyzer offers this option.</td>
</tr>
<tr>
<td>Ford</td>
<td>2000-2004</td>
<td>F250, F350, E350, Excursion (gasoline) [Federal certified]</td>
<td>Message appears during OBD II test stating, “Unable to confirm this Vehicle’s OBD II requirements. Does this vehicle have OBD II?”</td>
<td>Federally certified vehicle may not be certified to OBD II standards.</td>
<td>Check under-hood emission label to determine OBD certification status. Enter correct type into OIS and follow OIS prompts. OIS may state a BAR-97 test is required on vehicles without OBDII.</td>
</tr>
<tr>
<td>Ford</td>
<td>2002</td>
<td>Ranger (2WD) 3.0L V-6 (E-85)</td>
<td>Readiness monitors will not set on certain flex fuel models.</td>
<td>Monitors disabled for operation &gt;E10 blends: Catalyst. Desensitized evaporative leak/purge check monitor to detect gross leak for operation &gt;E75 blends (monitor fully compliant up to E75 blends).</td>
<td>OIS ignores all 11 readiness monitors</td>
</tr>
<tr>
<td>Ford</td>
<td>2003</td>
<td>Focus</td>
<td>Fail for readiness</td>
<td>Monitors may be difficult to complete.</td>
<td>Broken Vehicle. Reflash PCM per TSB 06-7-5. Then test normally.</td>
</tr>
</tbody>
</table>
## Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model Engine(L) Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freightliner</td>
<td>1998-2004</td>
<td>M Line Walk In Van [GVWR 6,001-14,000] (diesel) [Federal certified]</td>
<td>Vehicle is not equipped with OBD II</td>
<td>OBD not required in federally certified vehicles in this GVWR range during these years</td>
<td>OIS programmed to skip the OBD functional test</td>
</tr>
<tr>
<td>Freightliner</td>
<td>2002</td>
<td>Sprinter (diesel) [Federal certified]</td>
<td>Federal diesel vehicle over 8,500 GVWR is not OBD-II certified.</td>
<td>Federal diesel vehicles over 8,500 GVWR were not built to comply with OBD-II or Fed OBD standards.</td>
<td>Test normally. BAR-OIS will ignore incomplete continuous monitors. If the vehicle fails to communicate, use the result of the bulb check for the overall result of the OBD Test if the analyzer offers this option.</td>
</tr>
<tr>
<td>GM</td>
<td>2015-2017</td>
<td>All gasoline powered</td>
<td>Fail for readiness.</td>
<td>Post catalyst oxygen sensor monitor will not run until after 1,000 mile catalyst break in. See Bulletin #15-NA-010</td>
<td>Inspect vehicle after 1,000 miles or send to Referee.</td>
</tr>
</tbody>
</table>
Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model Engine(L) Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMC</td>
<td>1998-2005</td>
<td>DIESEL C/K2500 &amp; C/K 3500 (including Suburban and Sierra), Savana G3500 , Workhorse P30 Forward Cntl</td>
<td>Federal diesel vehicle over 8,500 GVWR is not OBD-II certified.</td>
<td>Federal diesel vehicles over 8,500 GVWR were not built to comply with OBD-II or Fed OBD standards.</td>
<td>Test normally. BAR-OIS will ignore incomplete continuous monitors. If the vehicle fails to communicate, use the result of the bulb check for the overall result of the OBD Test if the analyzer offers this option.</td>
</tr>
<tr>
<td>GMC</td>
<td>1999-2005</td>
<td>W3500 W35042 (box truck) [GVWR 10,001 - 14,000] (diesel) [Federal certified]</td>
<td>Vehicle is not equipped with OBD II</td>
<td>OBD not required in federally certified vehicles in this GVWR range during these years</td>
<td>OIS programmed to skip the OBD functional test</td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model Engine(L) Fuel Type</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
<td>Instruction to Inspector</td>
</tr>
<tr>
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</tr>
<tr>
<td>GMC</td>
<td>2000-2005</td>
<td>Sierra, Yukon, Savana (gasoline) [Federal certified]</td>
<td>Message appears during OIS OBD II test stating, “Unable to confirm this Vehicle’s OBD II requirements. Does this vehicle have OBD II?”</td>
<td>Federally certified vehicle may not be certified to OBD II standards.</td>
<td>Check under-hood emission label to determine OBD certification status. Enter correct type into OIS and follow OIS prompts. OIS may state a BAR-97 test is required on vehicles without OBDII.</td>
</tr>
<tr>
<td>GM</td>
<td>2000 - 2008</td>
<td>Various models, and Silverado 1500</td>
<td>OIS prompts for no vehicle voltage</td>
<td>No power on vehicle’s OBDII connector (DLC pin 16). Possible blown fuse.</td>
<td>Use auxiliary DAD cables / power supply per DAD manufacturer’s instructions</td>
</tr>
<tr>
<td>Hyundai</td>
<td>2002</td>
<td>Sonata</td>
<td>Fail for readiness</td>
<td>Monitors are difficult to complete; perform drive cycle two times.</td>
<td>Run drive cycle. See TSB #02-36-030</td>
</tr>
<tr>
<td>Hyundai</td>
<td>2003</td>
<td>Tiburon</td>
<td>Will not communicate with generic OBD test equipment.</td>
<td>Pin 5 not grounded. Ground pin 5 by jumping to pin 4 in DLC per TSB.</td>
<td>Test normally on OIS If using generic OBD test equipment, perform recall campaign #057 and Hyundai TSB #03-01-003-01.</td>
</tr>
<tr>
<td>Infiniti</td>
<td>2000 -2001</td>
<td>I30</td>
<td>Failure to set catalyst monitor</td>
<td>Only OEM scan tool shows OBD catalyst code.</td>
<td>Test catalyst and replace if defective</td>
</tr>
<tr>
<td>Infiniti</td>
<td>2000 -2001</td>
<td>I30</td>
<td>Fail for readiness</td>
<td>Vehicle has difficulty completing all monitors during normal driving.</td>
<td>Run drive cycle</td>
</tr>
</tbody>
</table>
### Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>YGMXT02.2121 YGMXT02.2122 1GMXT02.2122 2GMXT02.2122 YGMXT02.2121 YGMXT02.2122 (VIN 8th digit: 5)</td>
<td>System monitors disabled for operation &gt; E10 blends: Evaporative leak check.</td>
<td></td>
</tr>
<tr>
<td>Isuzu</td>
<td>1998 - 2005</td>
<td>NPR [GVWR 10,001 - 14,000] (diesel) [Federal certified]</td>
<td>Vehicle is not equipped with OBD II</td>
<td>OBD not required in federally certified vehicles in this GVWR range during these years</td>
<td>OIS programmed to skip the OBD functional test</td>
</tr>
<tr>
<td>Jeep</td>
<td>2005-2006</td>
<td>Wrangler</td>
<td>(O_2) sensor, (O_2) heater, and catalyst readiness monitors may indicate not ready.</td>
<td>Vehicle design anomaly. TSB #25-005-13 Rev. A contains wiring modification to make vehicle ready.</td>
<td>OIS allows incomplete (O_2) heater monitor</td>
</tr>
<tr>
<td>Jeep</td>
<td>2010-2011 built pre-9/02/10</td>
<td>Wrangler 3.8</td>
<td>Fail for monitor readiness. Downstream oxygen sensor monitor may not set to ready.</td>
<td>Reflash per TSB #18-027-10</td>
<td>Repair Vehicle</td>
</tr>
</tbody>
</table>
## Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Engine (L)</th>
<th>Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kia</td>
<td>2009</td>
<td>Borrego LX/EX</td>
<td>Fail for readiness. Vehicle may not set EGR monitor</td>
<td>Vehicle has difficulty completing EGR monitor</td>
<td>Run drive cycle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lexus</td>
<td>2000-2006</td>
<td>All models</td>
<td>Fail for monitor readiness</td>
<td>Monitors can be difficult to complete.</td>
<td>Follow drive cycles. See Toyota service information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lexus</td>
<td>2007</td>
<td>RX400 Hybrid</td>
<td>Fail for oxygen sensor (air/fuel) monitor readiness</td>
<td>Air Fuel monitor issue.</td>
<td>If fails for incomplete oxygen sensor monitor, advise motorist recall may be required.</td>
<td>Recall status: use <a href="http://www.toyota.com/recall">http://www.toyota.com/recall</a></td>
<td></td>
</tr>
<tr>
<td>Mazda</td>
<td>2002-2003</td>
<td>B3000 (2WD)</td>
<td>Readiness monitors will not set on certain flex fuel models.</td>
<td>Monitors disabled for operation &gt;E10 blends: Catalyst. Desensitized evaporative leak/purge check monitor to detect gross leak for operation &gt;E75 blends (monitor fully compliant up to E75 blends).</td>
<td>OIS ignores all 11 readiness monitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model Engine(L) Fuel Type</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
<td>Instruction to Inspector</td>
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</tr>
<tr>
<td>Mazda</td>
<td>2003-2004</td>
<td>Mazda 6</td>
<td>Some vehicles may have a false MIL illumination during inspection with multiple U-code DTCs during OBDII test. The following OBD Codes may be set. (U1900-ABS, U2516-ABS, U1900-FF-IC, U2516-FF-IC, U0073-FF-PCM, U0073-FF-TCM, U0100-FF-TCM)</td>
<td>PCM sensitive to OBD tool connect or disconnect to DLC with ignition in the &quot;On&quot; position, or when the engine is running. See Mazda Service Bulletin #01-002/05 Dated 01/13/2005. Erase trouble codes, disconnect tool when ignition switch off. Reset monitors.</td>
<td>Follow OIS prompts - connect/disconnect DAD to vehicle only when key off.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mazda</td>
<td>2005</td>
<td>Mazda 6 (with 2.3 only)</td>
<td>Some vehicles may have a false MIL illumination during inspection. This will cause the vehicle to fail the test, although the vehicle itself has no problem.</td>
<td>PCM sensitive to OBD tool connect or disconnect to DLC with ignition in the &quot;On&quot; position, or when the engine is running. See TSB #01-024/05. If vehicle within VIN range reprogram PCM and TCM. or Earlier Emission Recall TSB #1303F to Reprogram PCM applicable to certain VINs.</td>
<td>Follow OIS prompts - connect/disconnect DAD when key off.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mazda</td>
<td>2003-2005</td>
<td>Mazda 6 - 2.3 engine non PZEV (built May 20, 2002 - July 2, 2005) Mazda 6 - 3.0 engine (built May 16, 2002 - August 23, 2004)</td>
<td>Some vehicles may have a false MIL illumination during inspection. This will cause the vehicle to fail the test, although the vehicle itself has no problem.</td>
<td>PCM sensitive to OBD tool connect or disconnect to DLC with ignition in the &quot;On&quot; position, or when the engine is running. See TSB #01-024/05. If vehicle within VIN range reprogram PCM and TCM. or Earlier Emission Recall TSB #1303F to Reprogram PCM applicable to certain VINs.</td>
<td>Follow OIS prompts - connect/disconnect DAD when key off.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model Engine(L) Fuel Type</th>
<th>Issue</th>
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<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitsubishi Fuso</td>
<td>1998-2004</td>
<td>FE639/FG639 [GVWR 10,001 – 14,000] (diesel) [Federal certified]</td>
<td>Vehicle is not equipped with OBDII</td>
<td>OBD not required in federally certified vehicles in this GVWR range during these years</td>
<td><strong>OIS programmed to skip the OBD functional test</strong></td>
</tr>
<tr>
<td>Sample pic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>2000-2001</td>
<td>Montero, Montero Sport, Diamante, 3000GT Mirage, Galant, Expo/Expo LRV, and Eclipse models (except 2.0L non—turbo 420A engine models)</td>
<td>Fail for monitor readiness</td>
<td>Some monitors are difficult to complete.</td>
<td><strong>Follow recommended drive cycles. See Mitsubishi service manual.</strong></td>
</tr>
<tr>
<td>Nissan</td>
<td>1999-2006</td>
<td>UD1200, [GVWR 10,001-14,000] (Diesel) [Federal certified]</td>
<td>Vehicle is not equipped with OBDII</td>
<td>OBD not required in federally certified vehicles in this GVWR range during these years</td>
<td><strong>OIS programmed 2/26/2016 to skip the OBD functional test</strong></td>
</tr>
</tbody>
</table>
# Table 4: OIS Vehicles of Interest (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nissan</td>
<td>2000-2001</td>
<td>Maxima</td>
<td>Failure to set catalyst monitor</td>
<td>Only OEM scan tool shows OBD catalyst code.</td>
<td>Test catalyst and replace if defective</td>
</tr>
<tr>
<td>Nissan</td>
<td>2000-2006</td>
<td>All models</td>
<td>Fail for monitor readiness</td>
<td>Incomplete monitors during normal driving.</td>
<td>Follow drive cycle. See owner’s manual.</td>
</tr>
<tr>
<td>Plymouth</td>
<td>2000</td>
<td>Voyager</td>
<td>Readiness monitors will not set on certain flex fuel models, VINs listed below.</td>
<td>All monitors disabled for operation &gt;E30 and ethanol fuel content learning.</td>
<td>OIS ignores all 11 readiness monitors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.3L V-6 (E-85)</td>
<td>WCRXT03.32BP (VIN 8th digit: G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suzuki</td>
<td>2001</td>
<td>Aerio</td>
<td>Fail for monitor readiness</td>
<td>Monitors can be difficult to complete.</td>
<td>Follow drive cycle. See OBD Clearinghouse or Suzuki service information.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Engine(L) Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suzuki</td>
<td>2004</td>
<td>Forenza</td>
<td></td>
<td>Fail for monitor readiness</td>
<td>Monitors can be difficult to complete.</td>
<td>Follow drive cycle. See OBD Clearinghouse or Suzuki service information.</td>
</tr>
<tr>
<td>Toyota</td>
<td>2000-2006</td>
<td>All models</td>
<td></td>
<td>Fail for monitor readiness</td>
<td>Monitors can be difficult to complete.</td>
<td>Follow drive cycle. See Toyota service information.</td>
</tr>
<tr>
<td>Toyota</td>
<td>2003-2004</td>
<td>4 Runner</td>
<td></td>
<td>Vehicle Stability Control (VSC) light may illuminate if CAN protocol attempted with aftermarket scan tool.</td>
<td>Vehicle loses stability control calibration when CAN protocol attempted. Follow service procedure to reset zero point calibration.</td>
<td>OIS will not attempt to communicate via CAN protocol on these vehicles.</td>
</tr>
<tr>
<td>Toyota</td>
<td>2007</td>
<td>Highlander Hybrid</td>
<td></td>
<td>Fail for oxygen sensor (air/fuel) monitor readiness</td>
<td>Air Fuel monitor issue.</td>
<td>If fails for incomplete oxygen sensor monitor, advise motorist recall may be required. Recall status: use <a href="http://www.toyota.com/recall">http://www.toyota.com/recall</a></td>
</tr>
<tr>
<td>Make</td>
<td>Year</td>
<td>Model</td>
<td>Engine(L)</td>
<td>Issue</td>
<td>Cause and Possible Remedy</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2005-2007</td>
<td>XC90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VW</td>
<td>2000-2005</td>
<td>Passat</td>
<td>May fail for no OBD communication. No response or Only Transmission Control Module responds to DADs requests.</td>
<td>Broken ground bond wire in ABS module causes diagnostic communication issues with the ABS module, ECM, and TCM.</td>
<td>Likely Broken Vehicle Repair and retest</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ABS and/or brake lamp illuminated in instrument panel cluster</td>
<td>Diagnose and repair per VW TSB #45 15 01, dated September 21, 2015.</td>
<td></td>
</tr>
</tbody>
</table>
EIS Vehicles of Interest (OBD)

Table 5 below includes 1996-1999 model-year vehicles that have a monitor readiness issue with the OBD test portion of a BAR-97 EIS inspection. In most cases, the BAR-97 EIS is tuned to accommodate vehicles with a design anomaly.

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model Engine(L) Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMW</td>
<td>1996</td>
<td>7-Series, 8-Series 5.0L, 5.4L</td>
<td>Monitors difficult to complete.</td>
<td>EIS ignores readiness status.</td>
<td></td>
</tr>
</tbody>
</table>
| Chrysler     | 1996 | Cirrus, Concord, LHS Sebring Convertible | All monitors reset to incomplete upon every ignition key-off. | Recall campaign #678 applies to California certified vehicles originally sold in California.  
TSB #18-005-01 (with lifetime warranty) applies to federal certified and California certified originally sold in northeast states. | Comply with recall, then test as normal.     |
| Chrysler     | 1996 | Concord, LHS, New Yorker, Sebring, Town & Country 2.0L, 2.4L, 2.5L, 3.3L, 3.5L | Monitors difficult to complete.            |                                                                                         |                                               |
| Chrysler     | 1998-1999 | Town & Country 3.3L Flex Fuel | Monitors may not function when ethanol is detected by the vehicle. |                                                                                         | Test as normal                                |
### Table 5: EIS Vehicles of Interest (OBD) (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Engine(L)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Dodge</td>
<td>1996</td>
<td>Stratus, Intrepid, Neon</td>
<td>All monitors reset to incomplete upon every ignition key-off</td>
<td>Recall campaign #678 applies to California certified vehicles originally sold in California. TSB #18-005-01 (with lifetime warranty) applies to federal certified and California certified originally sold in northeast states.</td>
<td>Comply with recall, then test as normal.</td>
<td></td>
</tr>
<tr>
<td>Dodge</td>
<td>1996</td>
<td>Avenger, Stratus 2.0L manual</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
<td></td>
</tr>
<tr>
<td>Dodge</td>
<td>1996</td>
<td>Stealth 3.0L</td>
<td>All monitors reset to incomplete upon every ignition key-off</td>
<td>These vehicles are not refusable.</td>
<td>EIS ignores readiness status.</td>
<td></td>
</tr>
<tr>
<td>Dodge</td>
<td>1998-1999</td>
<td>Caravan 3.3L Flex Fuel</td>
<td>Monitors may not function when ethanol is detected by the vehicle.</td>
<td></td>
<td>Test as normal</td>
<td></td>
</tr>
<tr>
<td>Eagle</td>
<td>1996</td>
<td>Vision</td>
<td>All monitors reset to incomplete upon every ignition key-off</td>
<td>Recall campaign #678 applies to California certified vehicles originally sold in California. TSB #18-005-01 (with lifetime warranty) applies to federal certified and California certified originally sold in northeast states.</td>
<td>Comply with TSB, then test as normal.</td>
<td></td>
</tr>
<tr>
<td>Eagle</td>
<td>1996-1997</td>
<td>Talon 2.0L</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 5: EIS Vehicles of Interest (OBD) (continued)

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<tr>
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<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyundai</td>
<td>1996</td>
<td>Accent 1.5L</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elantra 1.8L</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Sonata 2.0L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyundai</td>
<td>1997-1998</td>
<td>Sonata 2.0L, 3.0L</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
</tr>
<tr>
<td>Infiniti</td>
<td>1996</td>
<td>All models</td>
<td>Catalyst and evaporative system monitors are difficult to complete</td>
<td>Follow drive cycle for specific vehicle model per TSB #ITB98-011F, June 7, 2013.</td>
<td>Test as normal.</td>
</tr>
<tr>
<td>Kia</td>
<td>1996</td>
<td>Sephia Sportage</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
</tr>
<tr>
<td>Lexus</td>
<td>1996-1999</td>
<td>All models</td>
<td>Monitors can be difficult to complete.</td>
<td>Follow drive cycles in Lexus service information.</td>
<td>Test as normal.</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>1996-1997</td>
<td>All Models</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>1998</td>
<td>Eclipse (all), Galant 2.4L, Mirage, Montero Sport 2.4L</td>
<td>Monitors difficult to complete.</td>
<td></td>
<td>EIS ignores readiness status.</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>1998</td>
<td>3000GT, Diamante, Galant 2.3L, Montero, Montero Sport 3.0L</td>
<td>Some monitors are difficult to complete.</td>
<td>Follow recommended drive cycles in Mitsubishi service manual.</td>
<td>Test as normal.</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>1999</td>
<td>All models</td>
<td>Some monitors are difficult to complete.</td>
<td>Follow recommended drive cycles in Mitsubishi service manual.</td>
<td>Test as normal.</td>
</tr>
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<td>Make</td>
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<td>Model Engine(L) Fuel Type</td>
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</tr>
<tr>
<td>Nissan</td>
<td>1996</td>
<td>Sentra 1.6L and 2.0L manual, 200SX 1.6L, 240SX 2.4L, Maxima 3.0L, Pickup 2.4L</td>
<td>Monitors difficult to complete.</td>
<td>EIS ignores readiness status.</td>
<td></td>
</tr>
<tr>
<td>Nissan</td>
<td>1996-1997</td>
<td>All models</td>
<td>Catalyst and evaporative system monitors are difficult to complete</td>
<td>Follow recommended drive cycle for specific model per Nissan TSB #NTB98-018G, June 7, 2013.</td>
<td>Comply with TSB, then test as normal.</td>
</tr>
<tr>
<td>Nissan</td>
<td>1999</td>
<td>All models</td>
<td>Monitors can be difficult to complete</td>
<td>Follow owner’s manual drive cycle to achieve readiness.</td>
<td>Test as normal.</td>
</tr>
<tr>
<td>Plymouth</td>
<td>1996</td>
<td>Breeze, Neon</td>
<td>All monitors reset to incomplete upon every ignition key-off</td>
<td>Recall campaign #678 applies to California certified vehicles originally sold in California. TSB #18-005-01 (with lifetime warranty) applies to federal certified and California certified originally sold in northeast states.</td>
<td>Comply with recall, then test as normal.</td>
</tr>
<tr>
<td>Plymouth</td>
<td>1998-1999</td>
<td>Voyager 3.3L Flex Fuel</td>
<td>Monitors may not function when ethanol is detected by the vehicle.</td>
<td>Test as normal.</td>
<td></td>
</tr>
<tr>
<td>Saab</td>
<td>1996-1998</td>
<td>900 2.3L (B234 with Motronic 4.1)</td>
<td>Monitors difficult to complete.</td>
<td>EIS ignores readiness status.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 5: EIS Vehicles of Interest (OBD) (continued)

<table>
<thead>
<tr>
<th>Make</th>
<th>Year</th>
<th>Model</th>
<th>Engine(L)</th>
<th>Fuel Type</th>
<th>Issue</th>
<th>Cause and Possible Remedy</th>
<th>Instruction to Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saab</td>
<td>1996-1998</td>
<td>All models</td>
<td>Catalyst and evaporative system monitors are difficult to complete</td>
<td>Saab Service Instruction No. 248-9037 describes the correct drive cycle for completion of the monitors.</td>
<td>Comply with TSB, then test as normal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subaru</td>
<td>1996</td>
<td>All models</td>
<td>Readiness cleared at key-off</td>
<td>EIS ignores readiness status.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toyota</td>
<td>1996-1999</td>
<td>All models</td>
<td>Monitors can be difficult to complete</td>
<td>Follow drive cycles in Toyota service information.</td>
<td>Test as normal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toyota</td>
<td>1996-1997</td>
<td>Tercel, Paseo</td>
<td>Evaporative system monitor will never complete or is unsupported</td>
<td>The EIS allows any one monitor to be incomplete. Test as normal.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VW</td>
<td>1997-1999</td>
<td>Passat</td>
<td>May fail for no OBD communication. No response or Only Transmission Control Module responds to DADs requests. ABS and/or brake lamp illuminated in instrument panel cluster</td>
<td>Broken ground bond wire in ABS module causes diagnostic communication issues with the ABS module, ECM, and TCM. Diagnose and repair per VW TSB #45 15 01, dated September 21, 2015.</td>
<td>Likely Broken Vehicle. Repair and retest.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Vehicle Information

Condition

Vehicle Will Not Communicate With Scan Tool

Vehicle will not communicate with diagnostic scan tool or emissions test equipment.

^Customers may have issue with vehicle passing state IM emission test programs because the scan tool cannot communicate with the vehicle.

^ABS and/or brake lamp(s) will be illuminated in IP cluster.

Technical Background

Broken ground bond wire within the ABS module (ABS 5.3 system) causes diagnostic communication issues with the ABS module, ECM and TCM.

NOTE:

Brake system and ABS system functionality are not affected by the broken ground circuit.

NOTE:

This Technical Bulletin only addresses the communication issue (broken ground circuit) between the vehicle and the diagnostic scan tool described above. This bulletin does not address any subsequent vehicle diagnostic system issues that may exist:
OBD system works normal, emission or diagnostic critical malfunctions will be indicated by MIL illumination.

ABS system is not functionally affected by the broken ground circuit.

Production Solution
Information only.

Service
Procedure:
Diagnose Open Ground Circuit
Disable ABS module in one of the following ways:
- Remove ABS module connector or:
- Pull ABS module fuse.
- Test for scan tool communication.

If communication is restored, replace ABS module.
If communication is not restored, further diagnosis is required following normal GFF protocol.

NOTE:
Once this communication issue has been repaired, and normal diagnostic communication with the vehicle has been restored, it will be necessary to diagnose further vehicle issues, including possible OBD or ABS items that may be still indicated by:

- MIL lamp illuminated
- ABS lamp illuminated
- Brake lamp illuminated

If any of these conditions still exist, follow correct diagnostic procedures in GFF.
Warranty
Information only.

Required Parts and Tools
Information only.

Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.
1. Background

Enhanced Inspection/Maintenance (I/M) programs have been implemented in many major US metropolitan areas. This information is provided to you because several I/M programs will perform OBD inspections.

OBD inspections include checking the Malfunction Indicator Lamp (MIL), perform scans for Diagnostic Trouble Codes (DTCs) and OBD II Readiness Codes.

This bulletin addresses characteristics of the 1996-98 Volvo model 850/S/V/C 70 and 1996-1998 Volvo model 960/S/V 90. For these vehicles, INCOMPLETE Readiness Codes will not inhibit the OBD II system from monitoring, detecting, and subsequently storing a corresponding DTC in system memory. It can also be expected that one of these vehicles exhibiting INCOMPLETE Readiness Codes, but no DTCs, will meet I/M emissions standards.

2. Customer Interview after State I/M OBDII Test Rejection

It is important to clearly understand the exact nature of the rejection via an effective interview between the service writer and the customer.

If a customer arrives at the retailer with a State I/M OBDII test rejection, please follow the following questions to best decide how to address the test rejection:

1. Has car been recently serviced, requiring erasing a DTC and the MIL to be turned off?
2. Has the battery been replaced or disconnected?
3. Has the car needed to be jump started recently?

The Engine Management System is designed to drop the Readiness Codes if the battery is disconnected or DTCs are erased. Some of these characteristics resulting in INCOMPLETE readiness, are completely normal.

"Fixed Right — First Time"
3. Retailer Actions

A) MIL illuminated or other emission related component fault present.

• If car is under the 8-year / 80,000-mile Emission Warranty, explain to customer that the car will have be diagnosed, repaired, and readiness reset, possibly under the emission warranty. Refer to components covered under the emission 8 year emission warranty. Readiness reset is covered but the repair may not be.

If car is outside of the 8-year / 80,000-mile emission warranty, or failure is not covered by the emission warranty, explain to customer that the car will need to be diagnosed and repaired at their cost. Consideration should be given to the customer for the readiness reset, one time for the balance of the life of the vehicle. This is not, however, covered under warranty.

B) MIL not illuminated.

• Follow instructions as described in steps 4 and 5 below.

4. Readiness Code Reset with Key-Off /Key-On Cycle MY 1996 Volvo 850 Emissions Code 0, 1, 2 and 5 (position 8 in VIN number)

When interrogated using a generic OBD II scan tool, the MY 1996 Volvo 850, equipped with Bosch Motronic 4.3 Engine Management System, may experience all of the Readiness Codes changing from COMPLETE to INCOMPLETE when the ignition key is cycled.

Customer complaints regarding the MIL and DTCs should continue to be addressed using established procedures. Customer complaints regarding Readiness Codes ONLY, for these 1996 850’s ONLY, should be addressed as follows:

• Explain to the customer that this behavior applies to all 1996 850's, and cannot be corrected. This behavior will not inhibit the OBD II system from monitoring, detecting, and subsequently storing a corresponding diagnostic trouble code in system memory and, if appropriate, the MIL will illuminate to alert the customer to any need for a service check.
• Suggest to the customer that they do NOT turn the engine off until after the Enhanced Inspection/Maintenance OBD II check has been completed.
5. **Readiness Code Reset with Modified TRIP**
   MY 1996 Volvo 850 Emissions Code 4 (position number 8 in the VIN number)
   MY 1997 and 1998 Volvo 850/S/V/C 70
   MY 1996-98 Volvo 960/S/V 90

Customer complaints regarding the MIL and DTCs should continue to be addressed using established procedures. Customer complaints regarding Readiness Codes ONLY should be addressed using the following information.

The MY 1996-98 Volvos require an extended driving period in order to set the readiness codes. Two complete TRIPS are required to reset the codes. The TRIP identified in the current Engine Management System Service Manuals may not allow all of the diagnostic monitors to run.

A Modified TRIP has been developed that can be used to exercise all of the diagnostic monitors on these models. The Readiness Codes will be set after completion of two consecutive trips driven according to the instructions provided in Service Bulletin 2-23-0056. This can be claimed under the 8-year / 80,000-mile emissions warranty, if applicable. SB 2 23-0056 supersedes the information in the following service manuals:

TP 2301202 Motronic 4.3, Section EBU instructions for MY 1996 Volvo 850

TP 2308202 Motronic 4.4 Section KKKK instructions for the MY 1996-97 Volvo 850 and 1998 Volvo S/V/C 70.

TP 2321201 Motronic 4.4 Section VVV instructions for the MY 1996-1998 model 960/S/V 90.

**WARRANTY STATEMENT**
Claims may be submitted under the Federal 8 year 80,000 mile Emission Warranty when there is a documented customer complaint. Only one claim per vehicle will be accepted. Documentation of State I/M OBDII test rejection must be retained with the repair order.

<table>
<thead>
<tr>
<th>Claim Type</th>
<th>Labor Operation</th>
<th>Description</th>
<th>Time Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>01235</td>
<td>Reset Readiness Codes</td>
<td>1.5 HRS</td>
</tr>
</tbody>
</table>

Return to Pg. 28
O2 Sensor Readiness Monitor Does Not Complete

Service Category  Engine/Hybrid System
Section  Emission Control
Market  USA

Applicability

<table>
<thead>
<tr>
<th>YEAR(S)</th>
<th>MODEL(S)</th>
<th>ADDITIONAL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>Highlander HV</td>
<td></td>
</tr>
</tbody>
</table>

Introduction

Some 2007 model year Highlander HV vehicles may exhibit a condition of oxygen sensor readiness monitors incomplete during state emissions testing. The Hybrid Vehicle (HV) ECU logic has been updated to address this condition.

Production Change Information

This bulletin applies to vehicles produced BEFORE the Production Change Effective VINs shown below.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DRIVETRAIN</th>
<th>PRODUCTION CHANGE EFFECTIVE VIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlander HV</td>
<td>2WD</td>
<td>JTEDW21A#70021475</td>
</tr>
<tr>
<td></td>
<td>4WD</td>
<td>JTEGW21A#70021470</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JTEEW21A#70044425</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JTEHW21A#70044439</td>
</tr>
</tbody>
</table>

Warranty Information

<table>
<thead>
<tr>
<th>OP CODE</th>
<th>DESCRIPTION</th>
<th>TIME</th>
<th>OFP</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>EG1503</td>
<td>Reprogram HV ECU and ECM (PCM)</td>
<td>0.8</td>
<td>89981–#####</td>
<td>99</td>
<td>74</td>
</tr>
</tbody>
</table>

APPLICABLE WARRANTY

- This repair is covered under the Toyota Federal Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle’s in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.
# O2 Sensor Readiness Monitor Does Not Complete

## Parts Information

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>DRIVETRAIN</th>
<th>OIL COOLER</th>
<th>PART NUMBER</th>
<th>PART NAME</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>2WD</td>
<td>With</td>
<td>89981-48260</td>
<td>89981-48262</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89981-48261</td>
<td>89981-48263</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Without</td>
<td>89981-48270</td>
<td>89981-48272</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89981-48271</td>
<td>89981-48273</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4WD</td>
<td>With</td>
<td>89981-48280</td>
<td>89981-48282</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89981-48281</td>
<td>89981-48283</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Without</td>
<td>89981-48290</td>
<td>89981-48292</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89981-48291</td>
<td>89981-48293</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>All</td>
<td>All</td>
<td>00451-00001-LBL</td>
<td>Authorized Modification Labels</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTE**
- The HV ECU should NOT be replaced as part of this Repair Procedure.
- Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through Dealer Daily – Dealer Support Materials Orders.

## Required Tools & Equipment

<table>
<thead>
<tr>
<th>REQUIRED EQUIPMENT</th>
<th>SUPPLIER</th>
<th>PART NUMBER</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Techstream 2.0*</td>
<td>ADE</td>
<td>TS2UNIT</td>
<td>1</td>
</tr>
<tr>
<td>Techstream Lite</td>
<td></td>
<td>TSLITEPDLR01</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**
- Only ONE of the Techstream units listed above is required.
- Software version 10.10.018 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- The Diagnostic Tester is NOT recommended for flash reprogramming. Please use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit technfo.toyota.com for more information regarding J2534 reprogramming.
O2 Sensor Readiness Monitor Does Not Complete

Required Tools & Equipment (Continued)

<table>
<thead>
<tr>
<th>SPECIAL SERVICE TOOLS (SST)</th>
<th>PART NUMBER</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR8 Battery Diagnostic Station*</td>
<td>00002-MCGR8</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTE**
Additional SSTs may be ordered by calling 1-800-933-8335.

* Essential SST.

Calibration ID Information

**NOTE**
There are different calibration files for vehicles with and without transaxle oil coolers. In order to determine the configuration of your vehicle, shine a flashlight into the left front bumper cover vent. If the vehicle is equipped with a cooler, it will be easily visible.

*Figure 1. Location of Transaxle Oil Cooler (on Equipped Vehicles)*
O2 Sensor Readiness Monitor Does Not Complete

Calibration Information

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>DRIVETRAIN</th>
<th>OIL COOLER</th>
<th>ECM/ECU</th>
<th>CALIBRATION ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>PREVIOUS</td>
<td>NEW</td>
</tr>
<tr>
<td>2007</td>
<td>2WD</td>
<td>With</td>
<td>348A0000</td>
<td>348A0100/899834820100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sub</td>
<td>899834820000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Without</td>
<td>348A0000</td>
<td>348A0100/899834821100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sub</td>
<td>899834821000</td>
</tr>
<tr>
<td>4WD</td>
<td>With</td>
<td>Main</td>
<td>348A0000</td>
<td>348A0100/899834822100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub</td>
<td>899834822000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Without</td>
<td>Main</td>
<td>348A0000</td>
<td>348A0100/899834823100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub</td>
<td>899834823000</td>
<td></td>
</tr>
</tbody>
</table>

Repair Procedure

1. Prepare the vehicle for reflash.

   **NOTE**
   This procedure will pressurize the brake actuator and prevent the ABS pump from running during the reflash procedure.

A. Prior to vehicle shut down perform the following steps:
   - Place the vehicle in the ready on position.
   - Place the transaxle in the P range.
   - Engage parking brake.
B. Depress the brake pedal fully 2 times within 2 seconds.
C. Release brake pedal.
D. Wait 10 seconds.
E. Turn off the vehicle.
O2 Sensor Readiness Monitor Does Not Complete

Repair Procedure (Continued)

2. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 2. Confirm if the HV ECU and ECM (PCM) calibrations have been updated. If the calibration IDs are NOT the latest calibrations — go to step 2.

Figure 2. Location of Authorized Modifications Label on 2007 Highlander HV

| 1 | Replacement ECM (PCM) Part Number (i.e., 89981-48262) |
| 2 | New Calibration ID(s) (i.e., 899834820100) |
| 3 | Dealer Code |
| 4 | Date Completed |
| 5 | This SB Number |

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Repair Procedure (Continued)

3. Flash Reprogram the HV ECU and the ECM (PCM).

**NOTE**
- The GR8 Battery Diagnostic Station MUST be used in Power Supply Mode to maintain battery voltage at 13.5 volts while flash reprogramming the vehicle.
- For details on how to use the GR8 Battery Diagnostic Station, refer to the GR8 Instruction Manual located on the Technical Information System (TIS), Diagnostics – Tools & Equipment – Battery Diagnostics.

Follow the procedures outlined in Service Bulletin No. T-SB-0012-13, “Techstream ECU Flash Reprogramming Procedure,” and flash the ECM (PCM) with the NEW calibration file update.

**NOTE**
- Anytime the HV ECU is reprogrammed, the engine ECM (PCM) MUST also be reprogrammed, even if the engine ECM (PCM) has the “New Calibration ID.”
- If ONLY the engine ECM (PCM) Calibration ID matches the “Current Calibration ID” shown in the Calibration Information section in this bulletin, proceed with flash reprogramming.
- If BOTH the engine ECM (PCM) and HV ECU Calibration IDs match the “New” calibration IDs shown in the Calibration Information section, this vehicle has already been reprogrammed. Refer to TIS for diagnostic procedures applicable to any stored DTCs.

4. Start the engine and warm it up to normal operating temperature before test driving.
5. Test drive the vehicle to confirm proper vehicle operation (and proper laser cruise control operation, if equipped).
6. Confirm that the O2 sensor monitor reads “complete”.
7. Install the Authorized Modifications Label.

A. Using a permanent marker, enter the following information on the label:
   - ECM part number [Refer to the Parts Information section for the NEW PART NUMBER]
   - Calibration ID(s) [Refer to the Calibration Information section for the NEW CALIBRATION ID]
   - Dealer Code
   - Repair Date
   - Change Authority [This bulletin number]

B. Affix the Authorized Modifications Label to the vehicle at the location shown in Figure 2. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
O2 Sensor Readiness Monitor Does Not Complete

Repair Procedure (Continued)

8. Calibration update is complete.

NOTE
The effect of the NEW calibration may become more apparent after several days of driving as the ECM (PCM) “learned values” are re-established from the customer’s driving.

Return to Pg. 22
OBD 2 readiness codes not set

Cars concerned
Saab 900 B234i with Motronic 4.1 OBDII M96-98

Background
Some states, as part of their mandatory State Emission Testing program, will include checks for OBD readiness codes. Some M96-98 naturally-aspirated 2.3L 900's may fail these checks, especially if the battery has lost power or if DTC's have been reset using Tech2.

The following information will allow a technician, using a Tech2 to perform a specific driving cycle that will allow the Motronic M4.1 system to set the required readiness codes.

Symptom description
Failed checks for OBD readiness codes

Actions
Preparation before driving:
Before driving, make sure that there are no DTCs stored in the ECU of Motronic 4.1. If codes are stored, repair the affected system and clear the fault codes. M96 models with Secondary Air Injection (SAI) must begin each driving cycle with engine temperature below 40°C (104°F), so car must cool down between driving cycles. All other models may begin with engine at normal running temperature. Connect Tech2 and read out the following values under Motronic M4.1 - OBD II - Read Values - Activate and scroll down to Diagnostic Status. The following functions are important:

- Evap
- Catalytic Converter
- Oxygen Sensor
- Preheating
- Secondary Air (only M-96)
- Trip OBD II
Further down in the same menu you can read out rpm and engine load in "ms". The load and rpm must be kept between 1.3 - 4.3 ms / 1120 - 2500 rpm for automatic cars and 1.3 - 3.8 ms / 1320 - 2700 rpm for manual cars to fulfill the requirements and set the readiness flags.

While you are driving it is OK to stop, slow down or speed up. Once you have met the requirements of a particular segment for load and rpm, a time counter will start and accumulate elapsed time. If you stop, the counter will resume accumulating time when you are back at the correct load and rpm again. One "Trip" takes 20 minutes of driving at the correct load and rpm. To set all of the readiness flags, it takes two "Trips" (2 x 20 minutes). It is OK to drive with the A/C on, however the cycling of the compressor will make it a little more difficult to keep a steady load.

Due to different final drive ratios/tire sizes, speeds listed may not match the given RPM reading. In these cases, the RPM range should be followed.

**How to drive: Automatic cars**

Before driving, make sure to read and understand the steps of the procedure.

**Note**

For 1996 models only, because of the Secondary Air Injection (SAI) it is necessary to start with a cold engine (below 40°C/104°F) to set the SAI readiness codes.

1. Start the car and check the time. Drive 0 - 70 mph for 3 - 5 minutes. Check using Tech2 that preheating 1 & 2 and oxygen sensor 1 & 2 are "Ready". If not, drive until they are "Ready".

2. Drive at 35 - 40 mph in Drive position (D) for 5 minutes. Drive with as steady load as possible. Load and rpm should be within 1.35 - 2.3 ms and 1120 - 1500 rpm.

3. Increase the speed to 40 - 50 mph for 5 minutes. Load and rpm should be within 1.3 - 2.3 ms and 1520 - 2000 rpm.

4. Increase the speed again to 55 - 60 mph in Drive position and drive for 5 minutes with a steady load. Load and rpm should be within 2.3 - 4.3 ms and 2000 - 2500 rpm.

5. Park the car and shut off the A/C and let the engine idle for up to 10 minutes. Check the values in Tech2. Trip OBD II must say "Ready".

**Note**

We have seen that catalytic converter does not set "Ready". This is a fault in Tech2.

6. When you have got "Ready" for Trip OBD II, shut the engine off for one minute and start it again. Repeat steps 1 - 5.

**Note**

Note: M96 models with SAI must cool down between trips.

7. Read out if readiness is OK with Tech2. Go to GST (Generic Scan Tool), then to Powertrain Control Module (PCM) and Read Values to see if readiness is OK.

Following functions should be set "Ready":
- Catalyst
- Heated Catalyst
- EVAP
- Secondary Air Injection (Only model year 1996)
- O2-sensor
- HO2-sensor

If you fail (no flags are set to "Ready") repeat the procedure above again.

Focus on driving with as steady load as possible. The whole procedure takes about 60 minutes.

**Note**

If the PCM loses its power by, for example, disconnecting the battery, removing fuses which feeds the PCM, disconnecting the PCM or if DTCs are deleted, you will lose the readiness OK's and you are back to zero again and must repeat the complete driving cycles.

**How to drive: Manual cars**

Before driving, make sure to read and understand the steps of the procedure.

**Note**

For 1996 model only, because of the Secondary Air Injection, it is necessary to start with a cold (40°C/104°F) engine to set the SAI readiness code.

1. Start the car and check the time. Drive 0 - 70 mph for 3 - 5 minutes. Check using Tech2 that preheating 1 & 2 and oxygen sensor 1 & 2 are ready. If not, drive until they are "Ready".

2. Drive at 35 - 40 mph in 4th gear for 5 minutes. Drive with as steady load as possible. Load and rpm should be within 1.35 - 1.95 ms and 1320 - 2000 rpm.

3. Increase the speed to 40 - 50 mph. Use 4th gear for 5 minutes. Load and rpm should be within 1.3 - 1.95 ms and 2000 - 2700 rpm.
4 Increase the speed again to 55 - 60 mph with 5th gear and drive for 5 minutes with a steady load. Load and rpm should be within 1.95 - 3.7 ms and 2000 - 2700 rpm.

5 Park the car and shut off the A/C and let it idle for up to 10 minutes. Check the values in Tech 2. Trip OBD II must say "Ready".

Note
We have seen that catalytic converter does not set "ready". This is a fault in Tech2.

6 When you have "Ready" for Trip OBD II, shut the engine off for one minute and start it again. Repeat steps 1 - 5.

Note
M96 models with SAI must be allowed to cool down between trips.

7 Read out if readiness is OK with Tech2. Go to GST (Generic Scan Tool). Then go to Powertrain Control Module (PCM) and Read Values to check if readiness is OK.

Following functions should be set "Ready":
- Catalyst
- Heated Catalyst
- EVAP
- Secondary Air Injection (Only valid for M96, all other models will automatically show "Ready")
- O₂-sensor
- NO₂-sensor

If you fail (no flags are set to "Ready") repeat the procedure above again. Focus on driving with as steady load as possible. The whole procedure should take about 60 minutes.

Note
If the PCM looses power by, for example, disconnecting the battery, removing fuses which feed the PCM, disconnecting the PCM or if DTCs are deleted you will loose the readiness OKs and you are back to zero again and must repeat the complete driving cycles.

Time/Warranty information
To resolve a customer complaint for a vehicle under warranty, submit a claim using the following information:

Failed object: 24810
Fault/Reason code: 62
Location: 09 (US=9)
Warranty Type (US): 01/09
Repair/Action code: 08
Labor Operation (US): 2481015
Time: 1.4 hours
SYSTEM READINESS TEST (SRT) DRIVE PATTERNS

This bulletin has been amended. Additional changes were made on page 9. Please discard all previous versions of this bulletin.

APPLIED VEHICLES: 1996 and newer Model Years as required by State Emissions Inspections Regulations.

SERVICE INFORMATION

As part of an enhanced emissions test for Inspection & Maintenance (I/M), some States may require the System Readiness Test (SRT) status be checked.

- The SRT is used to indicate whether the engine control module (ECM) has completed self diagnosis of major emissions systems and components.
- In these instances the State may require completion of the SRT before permitting the emissions inspection to proceed.

The State Emissions Inspection Station may advise a Nissan customer to return to the dealership for service due to one or more SRT items coming up “INCOMPLETE.” Use the information in this Bulletin to help you “COMPLETE” the SRT.

- In most cases the ECM will automatically complete its self diagnosis cycle during normal vehicle usage, and the SRT status will indicate “COMPLETE” for each applicable system.
- Once indicating “COMPLETE,” the SRT status remains “COMPLETE” until the Self Diagnosis memory is erased.
- Occasionally, certain portions of the self diagnostic test may not be completed as a result of the customer’s normal driving pattern. In these cases the SRT will indicate “INCOMPLETE” for these items.

NOTE: The SRT will also indicate “INCOMPLETE” if:

- The self diagnosis memory is erased for any reason, or
- The ECM memory power supply is interrupted for several hours.

Nissan Bulletins are intended for use by qualified technicians, not ‘do-it-yourselfers’. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Nissan dealer to determine if this applies to your vehicle.
This bulletin contains information to help you perform a comprehensive road test (Drive Pattern) that enables the ECM to complete the SRT.

- A separate Drive Pattern sheet for each 1996 and 1997 vehicle variation is included with this Bulletin.

- For 1998 and newer vehicles, refer to the EC section of the appropriate Service Manual for the required Drive Pattern. They are listed under On Board Diagnostic > System Readiness Test.

**NOTE:** You must select the Drive Pattern that correctly corresponds with all variables for the vehicle being serviced (i.e. model, model year, engine, emissions certification, transmission, powertrain, and for 1996/1997 models, ECM part number.

**NOTE:** To ensure all ECM Self Test requirements are met, it is important to drive the entire Drive Pattern even if only one SRT item indicates “INCOMPLETE.”

**CLAIMS INFORMATION:**

Refer to the current Warranty Flat Rate Manual for claims information.
SERVICE PROCEDURE
SRT WORKFLOW

Vehicle Referred by IM Inspector

Start

Step 1: Check DTCs
**Do Not Erase**

Step 2: Check SRT Status

Step 3: ID the Vehicle

Step 4: Obtain ECM P/N
(1996 & 1997 only)

Step 5: Perform Road Test
(Drive Pattern)

Step 6: Recheck DTCs
**Do Not Erase**

Step 7: Confirm all SRTs
"COMPLETE"

All SRTs "COMPLETE"

Use ASIST to diagnosis and repair DTCs

Use ASIST to diagnosis and repair DTCs

END
Step 1: Check for DTC

1. Use a CONSULT tool to check for any stored DTCs.
   - If any DTCs are stored they must be repaired at this time.
   - Refer to ASIST for diagnostic and repair information.

   **NOTE:** Normal warranty coverage will apply for DTC repairs.

2. If no DTCs are stored, go to the next step.

   **NOTE:** DO NOT touch “Erase” or you will lose previously completed SRTs.

Step 2: Check SRT Status

Check the SRT Status (Complete or Incomplete).

- Use the appropriate CONSULT tool.
- For older vehicles, a Generic Scan Tool may be needed to check SRT status.

**NOTE:** In some cases, the normal driving that occurs between the time the vehicle was referred by the State Emissions Inspection Station and it is brought into the dealership for SRT evaluation may allow the ECM to complete the SRTs. If this occurs, no further action is necessary.

*Always check SRT status before performing the SRT Drive Pattern.*
Step 3: Identify the Vehicle

You must select the Drive Pattern that correctly corresponds with all variables for the vehicle being serviced:

Model__________________
Model Year______________
Engine__________________
Emissions certification____________________

• Some models have different drive patterns depending on the emissions certification (i.e. California, Federal, 50 State).
• Check the under hood emissions label to determine the emissions certification for the vehicle being inspected.

Transmission____________________________
Powertrain (2WD or 4WD)____________________

For 1996/1997 models, ECM part number)____________________________

Step 4: Obtain ECM Part Number (1996 and 1997 models only)

1. Use a CONSULT tool to obtain the ECM part number.

2. Write the ECM part number in the space provided above.

3. Compare the vehicles ECM part number with the list of ECM part numbers provided in the Nissan SRT System Chart (page 10) to determine the Drive Pattern for the vehicle being inspected.

NOTE: For 1996 and 1997 models; if the vehicles ECM part number does not match a part number listed on the SRT System Chart for that vehicle, either 1) the vehicle was identified incorrectly or 2) the vehicle has the wrong ECM installed. The SRT cannot be completed with the incorrect ECM.
Step 5: SRT Road Test (perform Drive Pattern)

To properly obtain SRT readings of “COMPLETE,” it is necessary to drive the vehicle under the exact conditions required by the vehicle’s ECM.

Be sure to select the correct Drive Pattern. The SRTs will not complete if the wrong drive pattern for that vehicle is used.

1. Select the Drive Pattern based on the Vehicle Identification (see Step 3).
   - For 1996 and 1997 vehicles:
     - This bulletin contains a specific Driving Pattern for every 1996 and 1997 Nissan vehicle.
     - Use the “Bookmark” on the left side of the ASIST screen to choose the correct model and year.
     - Verify that the vehicle ECM P/N matches EXACTLY an ECM P/N listed on the Drive Pattern sheet you chose.
     - Print the Drive Pattern to take with you.
   - For 1998 and newer vehicles, refer to the EC section in the appropriate Service Manual for the required Drive Pattern. It is listed under On-Board Diagnostics > System Readiness Test.
     - Print the Drive Pattern to take with you.

2. Prior to driving the vehicle, review the Drive Pattern and prepare to complete it from start to finish:
   - Review the Pre-Check items listed on the drive pattern and ensure all conditions are met.
   - Determine the vehicle speeds required by the drive pattern.
   - Plan your route to minimize traffic and traffic signals that might interrupt the Drive Pattern tasks.
   - Review the Drive Pattern section(s) that must be restarted if you are interrupted.
   - Do not use the ASCD (cruise control) during any section of the Drive Pattern that contains the “No ASCD” symbol.
   - Some EVAP-equipped vehicles will require that fuel be added to the tank between the first and second trip. Be prepared to purchase fuel or plan your route to accommodate this step.
   - For these EVAP-equipped vehicles, begin the road test with less than ½ tank of fuel. If the fuel level is greater than ½, more time may be required to complete the EVAP sections of the Drive Pattern and you may not be able to add fuel as required.
Step 5: SRT Road Test (continued)

3. Review the Drive Pattern for any input signals that need to be monitored during the drive.
   - If needed, Connect a CONSULT tool to the vehicle to monitor required signals.

   NOTE:
   - Monitor the Fuel Temperature if the EVAP SRT is “INCOMPLETE.” One part of the EVAP SRT diagnostic logic requires a 3°C increase in fuel temperature from the time the ignition key is turned to “ON” as part of the test criteria. Fluctuations in the fuel temperature reading can extend the time required for the EVAP SRT to indicate “COMPLETE.” If the fuel temperature change is not sufficient after completing the SRT Drive pattern, idle the vehicle until a fuel temperature increase of at least 3°C is noted or until the EVAP SRT indicates “COMPLETE.”
   - If the fuel temperature increases 3°C or more but the SRT still indicates “INCOMPLETE,” the SRT Drive Pattern may need to be repeated.

4. Note the following items before starting the Drive Pattern:

   - IMPORTANT: Nissan requires using a driver and an assistant to conduct SRT driving patterns. The assistant should read the Drive Pattern, CONSULT data, and drive time and convey driving instruction to the driver. It is the driver’s responsibility to observe and react to traffic conditions. Always drive the vehicle in a safe manner and obey all traffic laws.

   - To ensure all ECM Self Test requirements are met, drive the ENTIRE pattern whenever any SRT items indicate “INCOMPLETE.”

   - Some vehicles require that sections of the Drive Pattern be driven two times to satisfy the “self diagnosis two trip logic”. For vehicles that require two trips, the pre-check engine coolant temperature must be met before beginning Section 1 of the second trip.
5. Perform the Drive Pattern:
   a. Make sure all Pre-Check conditions are met.
   b. Drive the vehicle and carefully follow the specific instructions and time requirements listed in each section of the Drive Pattern.

**NOTE:** If you monitor the (B/FUEL SCHDL):
- The Base Fuel Schedule (B/FUEL SCHDL) is an indication of engine load.
- It will be easier to match high B/FUEL SCHDL values when driving up slight hills in the recommended gear range.
- It will be easier to match low B/FUEL SCHDL values when driving down slight hills in the recommended gear range.
- Turning the A/C compressor ON will increase the B/FUEL SCHDL value, while turning it OFF will decrease the B/FUEL SCHDL value.

**Step 6: Recheck for DTC**

Upon completion of the Drive Pattern, determine if any DTCs have been stored. Only in rare cases will this occur.

- If a DTC has been stored after completing the Drive Pattern, it must be repaired. Refer to ASIST for diagnostic and repair information.
  **NOTE:** Normal warranty coverage will apply for DTC repairs.

- Once the DTC is repaired, erase the stored DTC. Turn the ignition OFF for 10 seconds, and then repeat the entire Drive Pattern (**Step 5**) to “COMPLETE” the SRTs.

- If no DTCs have been stored, **DO NOT touch “Erase” or all SRT items will reset to “INCOMPLETE.”**
Step 7: Confirm All SRTs “COMPLETE”

If all SRT items indicate “COMPLETE,” the inspection is complete.

- If Catalyst and/or O2 Sensor Monitors show “INCOMPLETE” perform step A or B below.

A. Check Self Learning Value (Long Term Fuel Trim (LTFT)) and A/F ALPHA (Short Term Fuel Trim (STFT)). If either value is +10% or more above target of 100%, clear Self Learning Value.

- Perform DTC diagnosis for P0171 or P0174 and check for the following possible causes:
  - Intake air leaks
  - Front heated oxygen sensors
  - Injectors
  - Exhaust gas leaks
  - Incorrect fuel pressure
  - Lack of fuel
  - Mass air flow sensor

B. Check Self Learning Value (Long Term Fuel Trim (LTFT)) and A/F ALPHA (Short Term Fuel Trim (STFT)). If either value is -10% or more below target of 100%, clear Self Learning Value.

- Perform DTC diagnosis for P0172 or P0175 and check for the following possible causes:
  - Intake air leaks
  - Front heated oxygen sensors
  - Injectors
  - Exhaust gas leaks
  - Incorrect fuel pressure
  - Lack of fuel
  - Mass air flow sensor

- After repairs have been made, run the prescribed drive pattern and check that A/F ALPHA is within ±10% of the target of 100% during the steady state portions of the drive cycle. If it is not, then continue repairs. If it is, return to STEP 5.
## Nissan SRT System Chart (page 1)

<table>
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<th>Model</th>
<th>Model Year</th>
<th>T/M</th>
<th>ECM Part No</th>
<th>Drive Pattern</th>
<th>EGR</th>
<th>O₂ Heater</th>
<th>O₂ Sensor</th>
<th>Catalyst</th>
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<td>M/T</td>
<td>54P60, 54P61</td>
<td>41</td>
<td>1 trip</td>
<td>1 trip</td>
<td>1 trip</td>
<td>1 trip</td>
<td>N/A</td>
</tr>
<tr>
<td>turbo)</td>
<td></td>
<td>A/T</td>
<td>54P74, 54P62</td>
<td>42</td>
<td>2 trip</td>
<td>2 trip</td>
<td>2 trip</td>
<td>2 trip</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A/T</td>
<td>54P65, 54P66</td>
<td>43</td>
<td>1 trip</td>
<td>1 trip</td>
<td>1 trip</td>
<td>1 trip</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A/T</td>
<td>54P75, 54P67</td>
<td>44</td>
<td>2 trip</td>
<td>2 trip</td>
<td>2 trip</td>
<td>2 trip</td>
<td>N/A</td>
</tr>
<tr>
<td>300ZX (Turbo)</td>
<td>'96</td>
<td>M/T</td>
<td>54P00, 54P01, 54P02, 54P03, 54P70, 54P04</td>
<td>45</td>
<td>1 trip</td>
<td>1 trip</td>
<td>1 trip</td>
<td>1 trip</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A/T</td>
<td>54P05, 54P06, 54P07, 54P08, 54P71, 54P09</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: SRT Items highlighted in gray indicate the drive pattern section for that item must be repeated if the trip is interrupted by releasing the throttle when not directed to do so.

No gray highlight indicates the drive pattern for that SRT item will resume at point of interruption if the drive pattern for that SRT item is interrupted by releasing the throttle when not directed to do so.
SRT DRIVE PATTERN LAYOUT

SRT Drive Pattern Layout

Drive Pattern Number (referenced on system chart)

SRT Address ('96 only)
Enter this number into CONSULT “Address Setting” mode.

ECM Part Number
Always check vehicle ECM part number with CONSULT and match to this list.

TRIP...
Drive Pattern sections required for each trip.

Drive Time Requirements
Drive vehicle and meet conditions listed for the time period indicated. If interrupted, increase drive time or repeat section as directed.

Increase & decrease speed, as indicated by drive pattern lines. Select level roads for best results.

Use CONSULT Data Monitor to ensure Pre-check conditions are met prior to starting section 1.

Use CONSULT in Data Monitor to display values. Match specifications while driving vehicle.

NOTE: Select level roads whenever possible.

Read and follow all notes...

SRT system tested

Drive pattern section number refer to notes when shading is dark.

Do not use ASCD (cruise control)

Tips to help ensure required vehicle conditions are met.

'96 Maxima A/T

Vehicle Identification
Always match vehicle and ECM part number to correct drive pattern sheet.

Gear position necessary to obtain RPM range and B/FUEL SCHDL.

Add fuel when directed

NOTE: Select level roads whenever possible.

NOTE: It is better to perform this driving test when fuel level is less than 1/2 more time may be required to complete EVAP sections of the drive pattern. If you are unable to add fuel as required, this section number indicates this drive pattern section must be repeated, without turning the ignition off. If it is interrupted by releasing the accelerator when not directed to do so, the third section number indicates this drive pattern section must be repeated, without turning the ignition off. If it is interrupted by releasing

Do not ASCD (cruise control)

Tips to help ensure required vehicle conditions are met.

Vehicle Identification
Always match vehicle and ECM part number to correct drive pattern sheet.

Gear position necessary to obtain RPM range and B/FUEL SCHDL.

Add fuel when directed

NOTE: Select level roads whenever possible.

NOTE: It is better to perform this driving test when fuel level is less than 1/2 more time may be required to complete EVAP sections of the drive pattern. If you are unable to add fuel as required, this section number indicates this drive pattern section must be repeated, without turning the ignition off. If it is interrupted by releasing

Do not use ASCD (cruise control)

Tip to help ensure required vehicle conditions are met.

Vehicle Identification
Always match vehicle and ECM part number to correct drive pattern sheet.

Gear position necessary to obtain RPM range and B/FUEL SCHDL.

Add fuel when directed

NOTE: Select level roads whenever possible.

NOTE: It is better to perform this driving test when fuel level is less than 1/2 more time may be required to complete EVAP sections of the drive pattern. If you are unable to add fuel as required, this section number indicates this drive pattern section must be repeated, without turning the ignition off. If it is interrupted by releasing

Do not use ASCD (cruise control)

Tips to help ensure required vehicle conditions are met.

Vehicle Identification
Always match vehicle and ECM part number to correct drive pattern sheet.

Gear position necessary to obtain RPM range and B/FUEL SCHDL.

Add fuel when directed

NOTE: Select level roads whenever possible.

NOTE: It is better to perform this driving test when fuel level is less than 1/2 more time may be required to complete EVAP sections of the drive pattern. If you are unable to add fuel as required, this section number indicates this drive pattern section must be repeated, without turning the ignition off. If it is interrupted by releasing

Do not use ASCD (cruise control)

Tips to help ensure required vehicle conditions are met.

Vehicle Identification
Always match vehicle and ECM part number to correct drive pattern sheet.

Gear position necessary to obtain RPM range and B/FUEL SCHDL.

Add fuel when directed

NOTE: Select level roads whenever possible.

NOTE: It is better to perform this driving test when fuel level is less than 1/2 more time may be required to complete EVAP sections of the drive pattern. If you are unable to add fuel as required, this section number indicates this drive pattern section must be repeated, without turning the ignition off. If it is interrupted by releasing
Engine coolant temperature must be below 70°C (158°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.

B/F SCHDL: 1.5 - 1.7 msec
Selector lever: "4th"
ENG. RPM: 1,600 - 2,000
A/C switch: ON

Drive 1.5 minutes.

Allow engine to idle for at least 10 minutes.

Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

Drive 3 minutes.

Cruise at 50 - 60 MPH
Selector lever: "4th"
Keep engine speed above 3,000 RPM
Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Cruise at 55 - 75 MPH
Selector lever: "5th"
B/F SCHDL: 2.5 - 4.2 msec
ENG. RPM: 1,800 - 3,000

Steady state cruise at: 53 - 58 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "5th"
B/F SCHDL: More than 1.5 msec
ENG. RPM: 2,100 - 2,300
A/C switch: ON

Downshift then completely release accelerator more than 5 seconds without braking, then idle 1 minute in neutral or park.

End
System Readiness Test Drive Pattern #2

ECM Part Numbers: 23710-5E410, -5E411, -5E412, -5E413, -5E414

One Trip Logic for all sections.
Drive all sections one time.

<table>
<thead>
<tr>
<th>Engine Compartment Warm-up</th>
<th>Catalyst</th>
<th>O2 Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive at 95 - 95 MPH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selector lever: &quot;D&quot; (OD ON)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B/F SCHDL: 2.0 - 2.2 msec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG. RPM: 1,200 - 1,400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A/C switch: ON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive for at least 10 minutes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'S96 Altima (FED) A/T
Pre-check
- Start engine and idle at least 1.5 minutes.

1
- Idle 1.5 minutes

2
- Drive 3 minutes

3
- Drive 1.5 minutes

4
- Allow engine to idle for at least 1.5 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

5
- Drive 3 minutes

6
- Drive 3 minutes

7
- Downshift then idle 1 minute

Engine coolant temperature must be below 32°C (95°F) before starting engine.

1* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

ECM Part Numbers: 23710-5E500

One Trip Logic for all sections. Drive all sections one time.
**System Readiness Test Drive Pattern #4**

**ECM Part Numbers:** 23710-5E501, -5E502, -5E503, -5E504

**Two Trip Logic (all sections)**

1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158°F.

2nd Trip: Drive sections 1 through 6 again.

**Pre-check**

- **O2 Sensor Heater:**
  - 1: Idle 1.5 minutes
  - 2: Drive 3 minutes
  - 3: Drive 1.5 minutes
  - 4: Drive 3 minutes

- **EGR:**
  - Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
  - B/F SCHDL: 1.5 - 4.7 msec
  - ENG. RPM: 1,600 - 2,000
  - AC switch: ON

- **KEY "OFF"**
  - IGN switch "OFF" 10 seconds (Not more than 5 minutes)

- **CATALYST**
  - Drive at 55 - 75 MPH
  - Selector lever: "5th"
  - ENG. RPM: 1,800 - 2,800

- **O2 SENSOR**
  - Cruise at 50 - 60 MPH
  - Selector lever: "4th"
  - ENG. RPM: 1,600 - 2,000
  - AC switch: ON

- **Engine coolant temperature must be below 70°C (158°F) before starting engine.**

**1st Trip:** Key off then repeat 1 to 6

**2nd Trip:** End

Steady state cruise at: 53 - 58 MPH

Use ASCD or hold accelerator to keep road speed as steady as possible.

Selector lever: "3rd"

B/F SCHDL: More than 1.5 msec

ENG. RPM: 2,100 - 2,200

AC switch: ON

**'96 Altima (CAL) M/T**
System Readiness Test Drive Pattern #5

ECM Part Numbers: 23710-5E510

One Trip Logic for all sections.

Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>1*</th>
<th>2*</th>
<th>3*</th>
<th>4</th>
<th>5*</th>
<th>6*</th>
<th>7*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle 1.5 minutes</td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td>Downshift then decel. Idle 1 minute</td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 32 °C (95 °F) before starting engine.

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Altima (CAL) A/T
Pattern #6; '96 Altima (CAL) A/T

ECM Part Numbers: 23710-5E511, -5E512, -5E513, -5E514

Two Trip Logic (all sections)
1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158°F.
2nd Trip: Drive sections 1 through 6 again.

Engine coolant temperature must be below 70°C (158°F) before starting engine.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Id e 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>IGN switch &quot;OFF&quot; 10 seconds (Not more than 5 minutes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cruise at 55 - 75 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: 2.0 - 2.2 msec
ENG. RPM: 1,200 - 1,400
AC switch: ON

Steady state cruise at: 53 - 55 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 1.8 msec
ENG. RPM: 1,800 - 2,000
AC switch: ON

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 2.0 - 2.2 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,200 - 1,400
AC switch: ON

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Steady state cruise at: 53 - 55 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 1.8 msec
ENG. RPM: 1,800 - 2,000
AC switch: ON

Drive at 55 - 75 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: 2.0 - 2.2 msec
ENG. RPM: 1,200 - 1,400
AC switch: ON

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM.
Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

ASC
ECM Part Numbers: 23710-5E700, -5E701, -5E702, -5E703, -5E704, -5E705, -5E720, -5E721, -5E722, -5E723, -5E724, -5E725

Two Trip Logic (all sections)
1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158° F.
2nd Trip: Drive sections 1 through 6 again.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>EGR</th>
<th>Key &quot;OFF&quot;</th>
<th>Catalyst</th>
<th>O2 Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 1.5 minutes</td>
<td></td>
<td>IGN switch &quot;OFF&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
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<td></td>
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<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 1.5 - 1.7 msec
Selector lever: "4th"
ENG. RPM: 1,600 - 2,000
AC switch: ON

Drive at 95 - 75 MPH
Selector lever: "5th"
B/F SCHDL: 2.5 - 4.2 msec
ENG. RPM: 1,800 - 2,000

Cruise at 90 - 65 MPH
Selector lever: "4th"
Keep engine speed above 3,000 RPM.
Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at: 93 - 98 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "4th"
B/F SCHDL: More than 4.0 msec
ENG. RPM: 2,000 - 2,500
AC switch: ON
System Readiness Test Drive Pattern #8

ECM Part Numbers: 23710-5E710, -5E711, -5E712, -5E713, -5E714, -5E715, -5E760, -5E761, -5E762, -5E763, -5E764, -5E765

Two Trip Logic (all sections)

1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158˚F.

2nd Trip: Drive sections 1 through 6 again.

Pre-check

<table>
<thead>
<tr>
<th></th>
<th>Pre-check</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idle 1.5 minutes</td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 2 | Hold recommended B/F SCHDL range. Allow road speed to vary as necessary. B/F SCHDL: 2.0 - 2.2 msec 
Selector lever: "D" (OD ON) 
ENG. RPM: 1,200 - 1,400 
A/C switch: ON | | | |
| 3 | Drive at 55 - 75 MPH 
Selector lever: "D" (OD ON) 
B/F SCHDL: 2.5 - 4.0 msec 
ENG. RPM: 1,500 - 2,000 | | | |
| 4 | IGN switch "OFF" 10 seconds (Not more than 5 minutes) | | | |
| 5 | Drive at 50 - 60 MPH 
Selector lever: "D" (OD OFF) 
Keep engine speed above 3,000 RPM 
Allow road speed to vary if necessary. 
Do not decelerate for more than 3 consecutive seconds. | | | |
| 6 | Cruise at 55 - 75 MPH 
Selector lever: "D" (OD OFF) 
Keep engine speed above 3,000 RPM 
Allow road speed to vary if necessary. 
Do not decelerate for more than 3 consecutive seconds. | | | |

Engine coolant temperature must be below 70˚C (158˚F) before starting engine.

Start engine and idle at least 1.5 minutes.

Steady state cruise at: 55 - 75 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.

Selector lever: "D" (OD OFF)
B/F SCHDL: More than 1.8 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

'97 Altima A/T
System Readiness Test Drive Pattern #9


Two Trip Logic (all sections)
1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158°F.
2nd Trip: Drive sections 1 through 6 again.

Pre-check

<table>
<thead>
<tr>
<th></th>
<th>O2 Sensor Heaters</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Idle 1.5 minutes</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>IGN switch &quot;OFF&quot; 10 seconds (Not more than 5 minutes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive 3 minutes</td>
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<tr>
<td>6</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 1.5 - 1.7 msec
Selector lever: "4th"
ENG. RPM: 1,800 - 2,000
A/C switch: ON

Cruise at 50 - 60 MPH
Selector lever: "4th"
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at 65 - 85 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "5th"
B/F SCHDL: More than 1.5 msec
ENG. RPM: 2,100 - 2,300
A/C switch: ON
System Readiness Test Drive Pattern #10

ECM Part Numbers: 23710-5E805,-5E806,-5E807,-5E808,-5E809,-5E815,-5E816,-5E817,-5E818,-5E819,5E865,-5E875

Two Trip Logic (all sections)
1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158˚F.
2nd Trip: Drive sections 1 through 6 again.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>IGN switch “OFF” 10 seconds (Not more than 5 minutes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70˚C (158˚F) before starting engine.
Start engine and idle at least 1.5 minutes.
Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 2.0 - 2.2 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,200 - 1,400
A/C switch: ON

Drive at 65 - 75 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: 2.5 - 4.2 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM
Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.
Steady state cruise at: 55 - 65 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 1.8 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

'97.5 Altima A/T
### System Readiness Test Drive Pattern #11

**ECM Part Numbers:** 23710-54000, -54001, -54002, -54003, -54004, -54005, -54006, -56060, -56061, -56062, -56063, -56064, -56066

**Two Trip Logic:**
- **First Trip:** Drive all sections 1 through 9.
- **Second Trip:** Turn ign. off. Add 4 gallons fuel. Start engine and drive sections 4, 5, 6, 7, 8, 9.

#### Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>Engine Compartment Warm-Up</th>
<th>CATALYST</th>
<th>O2 Sensor</th>
<th>EVAP System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td>Idle 1.5 minutes</td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Engine Coolant Temperature must be below 70°C (158°F) before starting engine for either the first or second trip.**

- **1st Trip:** Engine idle for 10 minutes then cycle ignition key off for 10 seconds. Restart engine and immediately begin next drive pattern section.
- **2nd Trip:** Turn ign. key off, add 4 gallons of fuel. Start engine and drive sections 4, 5, 6, 7, 8, 9.

**NOTE:** It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

---

'96 Maxima M/T
NOTE: It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
NOTE: It is better to perform this driving test when the fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
It is better to perform this driving test when fuel level is less than 1/2. If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #15

ECM Part Numbers: 23710-0W000, -0W005, -0W060, -0W061, -0W063

One Trip Logic for all sections.
Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>1*</th>
<th>2*</th>
<th>3*</th>
<th>4</th>
<th>5*</th>
<th>6*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle 1.5 minutes</td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 32°C (90°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 2.5 - 3.0 msec
Selector lever: "5th"
ENG. RPM: 1,600 - 2,000
AC switch: ON

Drive at 41 - 59 MPH
Selector lever: "5th"
B/F SCHDL: 2.5 - 4.5 msec
ENG. RPM: 1,800 - 2,600

Cruise at 50 - 60 MPH
Selector lever: "5th"
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary. Do not decelerate for more than 3 consecutive seconds.

Steady-state cruise at: 53 - 58 MPH
Selector lever: "5th"
B/F SCHDL: More than 2.3 msec
ENG. RPM: 2,000 - 2,500
AC switch: ON

End

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Pathfinder M/T
System Readiness Test Drive Pattern #16

ECM Part Numbers: 23710-0W010, -0W015, -0W065, -0W067, -0W069

One Trip Logic for all sections.
Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
<td></td>
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<td></td>
</tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 32°C (90°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary. B/F SCHDL: 2.8 - 3.5 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,500 - 1,800
A/C switch: ON

Drive at 44 - 63 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: 2.5 - 4.5 msec
ENG. RPM: 1,600 - 2,400

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at: 80 - 86 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 2.8 msec
ENG. RPM: 1,800 - 2,200
A/C switch: ON

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Pathfinder A/T
System Readiness Test Drive Pattern #17

ECM Part Numbers: 23710-1W200, -1W201, -1W202, -1W203, -1W204, -1W260, -1W262

All Items: Two Trip Logic. Drive all sections two times.

First Trip: Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C, (158°F).

Second Trip: Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>O2 Sensor</th>
<th>EGR</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Drive at:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cruise at 60-60 MPH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Drive 2 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Drive 2 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'97 Pathfinder M/T
**System Readiness Test Drive Pattern #18**

**ECM Part Numbers:** 23710-1W205, 1W206, 1W207, 1W208, 1W209, 1W265, 1W266, 1W268

All Items: Two Trip Logic. Drive all sections two times.

**First Trip:** Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

**Second Trip:** Start engine, drive sections 1,2,3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5,6,7,8.

**Pre-check**

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**KEY "OFF"**

**CATALYST**

<table>
<thead>
<tr>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**EVAP SYSTEM**

<table>
<thead>
<tr>
<th>7*</th>
<th>8*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive 2 minutes</td>
<td>Drive 2 minutes</td>
</tr>
<tr>
<td>Idle 1 minute</td>
<td>Idle 1 minute</td>
</tr>
</tbody>
</table>

**NOTE:** It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #19

ECM Part Numbers: 23710-1B000, -1B001, -1B002

One Trip Logic for all sections.
Drive all sections one time.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>Engine Compartment Warm-Up</th>
<th>Catalyst</th>
<th>O2 Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>O2 Sensor Heater</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td>EGR</td>
<td>Drive 3 minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
</tr>
<tr>
<td>5*</td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
</tr>
<tr>
<td>6*</td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 32°C (90°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 3.2 - 3.8 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,600 - 1,800
A/C switch: ON

Drive at 85 - 75 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: 2.5 - 4.0 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM.
Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at: 80 - 86 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 2.0 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Quest A/T
System Readiness Test Drive Pattern #20

ECM Part Numbers: 23710-1B010, -1B011, -1B012, -1B013, -1B014

Two Trip Logic (all sections)
1st Trip: Drive 1 through 6, then turn ign. off and allow engine to cool to 158°F.
2nd Trip: Drive sections 1 through 6 again.

<table>
<thead>
<tr>
<th>Engine coolant temperature must be below 70°C (158°F) before starting engine.</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Start engine and idle at least 1.5 minutes.
Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 3.2 - 4.5 msec
Selector lever: "D" (OD OFF)
ENG. RPM: 1,800 - 2,000
A/C switch: OFF

Drive at 85 - 75 MPH
Selector lever: "D" (OD OFF)
B/F SCHDL: More than 2.0 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

Steady state cruise at: 80 - 85 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD OFF)
B/F SCHDL: More than 2.0 msec
ENG. RPM: 1,800 - 2,000
A/C switch: OFF

\[ \begin{align*}
\text{Cruise at 55 - 75 MPH} \\
\text{Selector lever: "D" (OD OFF)} \\
\text{Keep engine speed above 3,000 RPM.} \\
\text{Allow road speed to vary if necessary.} \\
\text{Do not decelerate for more than 3 consecutive seconds.}
\end{align*} \]

\[ \begin{align*}
\text{Idle 1.5 minutes} \\
\text{Drive 1.5 minutes} \\
\text{Drive 3 minutes} \\
\text{Drive 3 minutes} \\
\text{Drive 3 minutes} \\
\text{Drive 3 minutes} \\
\text{Drive 3 minutes} \\
\text{Key off then repeat 1 to 6} \\
\text{2nd Trip: End}
\end{align*} \]

'97 Quest A/T
System Readiness Test Drive Pattern #21

ECM Part Numbers: 23710-0M220, -0M221, -0M224, -0M262, -0M263, -0M270, -0M271, -0M272, -0M273, -0M274, -1M214, -1M217, 1M222, -1M566, -1M566

One Trip Logic for all sections.
Drive all sections one time.

Pre-check
- C2 Sensor Heater
- EGR

Engine compartment warm-up

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Pre-check
Start engine and idle at least 1.5 minutes.

Catalyst

C2 Sensor

**Note:** Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #22

ECM Part Numbers: 23710-0M260, 0M261, -0M264, -0M279, -0M282, -0M283, -1M204, -1M216, -1M221, -1M230, -1M521

One Trip Logic for all sections.

Drive all sections one time.

**Pre-check**

<table>
<thead>
<tr>
<th>Section</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Idle 1.5 minutes</td>
</tr>
<tr>
<td>2*</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>3*</td>
<td>Drive 1.5 minutes</td>
</tr>
</tbody>
</table>

**ENGINE COMPARTMENT WARMUP**

<table>
<thead>
<tr>
<th>Section</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
</tr>
</tbody>
</table>

**CATALYST**

<table>
<thead>
<tr>
<th>Section</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5*</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>6*</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>7*</td>
<td>Downshift then idle 1 minute</td>
</tr>
</tbody>
</table>

**O2 SENSOR**

<table>
<thead>
<tr>
<th>Selector lever: 4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG. RPM: 2,500 - 2,700</td>
</tr>
<tr>
<td>A/C switch: ON</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selector lever: 5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/F SCHDL: More than 1.8 msec</td>
</tr>
<tr>
<td>ENG. RPM: 2,100 - 2,300</td>
</tr>
<tr>
<td>A/C switch: ON</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selector lever: 5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruise at 50 - 60 MPH</td>
</tr>
<tr>
<td>Selector lever: &quot;8th&quot;</td>
</tr>
<tr>
<td>B/F SCHDL: 2.5 - 3.7 msec</td>
</tr>
<tr>
<td>ENG. RPM: 1,900 - 3,000</td>
</tr>
<tr>
<td>A/C switch: ON</td>
</tr>
</tbody>
</table>

**Engine coolant temperature must be below 70°C (158°F) before starting engine.**

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Sentra/200SX (GA16DE) M/T
System Readiness Test Drive Pattern #23

ECM Part Numbers: 23710-0M222,-0M223,-0M265,-0M266,-0M267,-0M268,-0M275,-0M276,-0M277,-0M278,-0M280,-0M284,-1M219,-1M223,-1M275,-1M575,-1M576,-1M580,-1M581

One Trip Logic for all sections.
Drive all sections one time.

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4

Allow engine to idle for at least 10 minutes.
Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

5*

Drive 3 minutes

6*

Drive 3-6 minutes

7*

Downshift then decel.

End

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Sentra/200SX (GA16DE) A/T
It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
Pattern #26: '96-'97 200SX (SR20DE) M/T

ECM Part Numbers: 22710-1M860, 1M861, 1M870, 1M871, 1M872

One Trip Logic for all sections.
Drive all sections one time.

**Pre-check**

<table>
<thead>
<tr>
<th>1*</th>
<th>2*</th>
<th>3*</th>
<th>4</th>
<th>5*</th>
<th>6*</th>
<th>7*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle 1.5 minutes</td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td>Allow engine to idle for at least 10 minutes.</td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td>Downshift then decel.</td>
</tr>
</tbody>
</table>

**Engine Compartment Warm-up**

- Start engine and idle at least 1.5 minutes.
- Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
- B/F SCHDL: 1.5 - 1.7 ms
- Selector lever: "5th"
- ENG. RPM: 1,600 - 2,200
- A/C switch: ON

- Drive at 60 - 69 MPH
- B/F SCHDL: 2.6 - 3.0 ms
- ENG. RPM: 2,000 - 3,000

Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

**Catalyst**

- Cruise at 50 - 59 MPH
- Selector lever: "5th"
- Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
- Do not decelerate for more than 3 consecutive seconds.
- Cruise at 50 - 59 MPH
- Selector lever: "5th"
- B/F SCHDL: More than 1.5 ms
- ENG. RPM: 2,000 - 2,700
- A/C switch: ON

**O2 Sensor**

- Steady state cruise at: 55 - 58 MPH
- Use ASCD or hold accelerator to keep road speed as steady as possible.
- Selector lever: "5th"
- B/F SCHDL: More than 1.5 ms
- ENG. RPM: 2,000 - 2,700
- A/C switch: ON

Engine coolant temperature must be below 70 °C (158 °F) before starting engine.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
One Trip Logic for all sections.

Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
<td>Start engine and idle at least 1.5 minutes.</td>
</tr>
<tr>
<td>2+</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>3+</td>
<td>Drive 1.5 minutes</td>
</tr>
</tbody>
</table>
| 4       | Allow engine to idle for at least 10 minutes.  
Hold recommended B/F SCHDL range.  
Keep road speed above 3,000 RPM.  
Do not decelerate for more than 3 consecutive seconds. |
| 5+      | Drive 3 minutes |
| 6+      | Drive 3 minutes |
| 7*      | Downshift then decel.  
Selector lever: “D” (OD OFF)  
Cruise at 50 - 60 MPH  
Keep accelerator held above 3,000 RPM. |

System Readiness Test Drive Pattern #27

ECM Part Numbers: 23710-1M865, -1M866, -1M875, -1M876, -1M877

Engine coolant temperature must be below 70 °C (158 °F) before starting engine.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96-'97 200SX (SR20DE) A/T
### System Readiness Test Drive Pattern #28

**ECM Part Numbers:** 23710-15700, 15701, 15702, 15703

**One Trip Logic for all sections.**

**Engine coolant temperature must be below 70°C (158°F) before starting engine.**

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

**NOTE:** It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern.

#### Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>O2 Sensor</th>
<th>EGR SYSTEM</th>
<th>ENGINE COMPARTMENT</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Engine 1 minute</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td>Do not decelerate for more than 3 consecutive seconds.</td>
</tr>
<tr>
<td>2*</td>
<td>Engine 1 minute</td>
<td>Drive 1.5 minutes</td>
<td>Drive at 55 - 65 MPH</td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td>Cruise at 60 - 60 MPH Selector lever: &quot;4th&quot;</td>
</tr>
<tr>
<td>3*</td>
<td>Hold recommended B/F SCHDL range. Allow road speed to vary as necessary. B/F SCHDL: 1.5 - 2.0 msec Selector lever: &quot;4th&quot; ENG. RPM: 1,800 - 2,400 A/C switch: ON</td>
<td>Drive at 55 - 65 MPH B/F SCHDL: 2.0 - 3.2 msec Selector lever: &quot;5th&quot; ENG. RPM: 1,800 - 3,000</td>
<td>Allow engine to idle for at least 10 minutes then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td>Steady state cruise at 50 - 55 MPH Use ASCD or hold accelerator to keep road speed as steady as possible. B/F SCHDL: More than 1.6 msec Selector lever: &quot;5th&quot; ENG. RPM: 2,300 - 2,500 A/C switch: ON</td>
<td>Steady state cruise at 53 - 58 MPH Use ASCD or hold accelerator to keep road speed as steady as possible. Selector lever: &quot;3rd&quot; ENG RPM: Approx. 3,000 RPM</td>
<td>Steady state cruise at 50 - 55 MPH Use ASCD or hold accelerator to keep road speed as steady as possible. B/F SCHDL: Less than 1.0 msec Selector lever: &quot;4th&quot; ENG. RPM: 3,300 - 3,500 A/C switch: OFF</td>
</tr>
</tbody>
</table>

**NOTE:**
Pattern #29; '96 Truck (2WD) M/T

**Pre-check**

<table>
<thead>
<tr>
<th>Check Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7*</th>
<th>8*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key: &quot;OFF&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine coolant</td>
<td>Idle 1.5 minutes</td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td>Test Trip:</td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td>Downshift, then</td>
<td>Drive 2 minutes</td>
</tr>
<tr>
<td>temperature must be</td>
<td></td>
<td></td>
<td></td>
<td>IGN switch &quot;OFF&quot;</td>
<td></td>
<td></td>
<td>decel. Idle 1 min</td>
<td>Idle 1 minute</td>
</tr>
<tr>
<td>below 70°C (158°F)</td>
<td></td>
<td></td>
<td></td>
<td>10 seconds (Not more than 5 minutes)</td>
<td></td>
<td></td>
<td></td>
<td>Drive 2 minutes</td>
</tr>
<tr>
<td>Pre-check</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ECM Part Numbers:**

- 23710-1S300, 23710-1S301, 23710-1S306, 23710-1S307, 23710-1S309, 23710-1S317, 23710-1S318, 23710-1S320, 23710-1S321, 23710-1S322, 23710-1S323, 23710-1S324

**NOTE:**

- It is better to perform this driving test when fuel level is less than 1/2.
- If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

**All Items:** Two Trip Logic. Drive all sections two times.

**First Trip:**

- Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

**Second Trip:**

- Start engine, drive sections 1, 2, 3. Turn ign. off, add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.
System Readiness Test Drive Pattern #30

ECM Part Numbers: 23710-1S710, -1S712

One Trip Logic for all sections.
Drive all section one time.

Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>Engine Coolant Temperature</th>
<th>B/F SCHDL</th>
<th>Selector Lever</th>
<th>ENG RPM</th>
<th>A/C Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Start engine, idle at least 1.5 minutes</td>
<td>Idle 1.5 minutes</td>
<td>&quot;D&quot; (OD ON)</td>
<td>1,200 - 1,600</td>
<td>ON</td>
</tr>
<tr>
<td>2*</td>
<td>Hold recommended B/F SCHDL range</td>
<td>Drive 3 minutes</td>
<td>&quot;D&quot; (OD ON)</td>
<td>55 - 75 MPH</td>
<td>ON</td>
</tr>
<tr>
<td>3*</td>
<td>Cruise at 50 - 60 MPH</td>
<td>Drive 1.5 minutes</td>
<td>&quot;D&quot; (OD ON)</td>
<td>53 - 58 MPH</td>
<td>OFF</td>
</tr>
<tr>
<td>4</td>
<td>Steady state cruise at 31 - 44 MPH</td>
<td>Allow engine to idle for at least 10 minutes</td>
<td>&quot;D&quot; (OD OFF)</td>
<td>3000 RPM</td>
<td>OFF</td>
</tr>
<tr>
<td>5*</td>
<td>Cruise at 55 - 75 MPH</td>
<td>Drive 3 minutes</td>
<td>&quot;D&quot; (OD OFF)</td>
<td>2,000 - 2,200</td>
<td>OFF</td>
</tr>
<tr>
<td>6*</td>
<td>Accelerate to 38 MPH</td>
<td>Drive 3 minutes</td>
<td>&quot;D&quot; (OD OFF)</td>
<td>2,000 - 2,400</td>
<td>OFF</td>
</tr>
<tr>
<td>7*</td>
<td>Steady state cruise at 31 - 44 MPH</td>
<td>Drive 2 minutes</td>
<td>&quot;D&quot; (OD OFF)</td>
<td>3,000 RPM</td>
<td>OFF</td>
</tr>
<tr>
<td>8*</td>
<td>Cruise at 55 - 75 MPH</td>
<td>Idle 1 minute</td>
<td>&quot;D&quot; (OD OFF)</td>
<td>1 minute in park or neutral</td>
<td>OFF</td>
</tr>
</tbody>
</table>

NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
NOTE: It is better to perform this driving test when fuel level is less than 1/2

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #33

ECM Part Numbers: 23710-1S302, -1S303, -1S304, -1S710, -1S712, -1S713, -1S714, -1S716, -1S768, -1S770, -1S771, -1S772, -1S781, -1S782

All Items: Two Trip Logic. Drive all sections two times.

First Trip: Drive all sections 1 through 8 then turn ignition off and allow engine to cool below 70°C. (158°F).
Second Trip: Start engine, drive sections 1,2,3. Turn ignition off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

Pre-check

<table>
<thead>
<tr>
<th></th>
<th>C2 Sensor Heater</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Drive 2 minutes</td>
<td></td>
<td></td>
<td>Idle 1 minute</td>
<td>Idle 1 minute</td>
<td>Drive 2 minutes</td>
</tr>
<tr>
<td>8</td>
<td>Drive 2 minutes</td>
<td></td>
<td></td>
<td>Idle 1 minute</td>
<td>Idle 1 minute</td>
<td>Drive 2 minutes</td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

Start engine, idle at least 1.5 minutes. Hold recommended B/F SCHDL range. Allow road speed to vary as necessary. B/F SCHDL: 3.5 - 4.2 msec
Selector lever: "D" (OD ON) ENG. RPM: 1,200 - 1,600 A/C switch: ON

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
Pre-check

1. Idle 1.5 minutes

2. Drive 3 minutes

3. Drive 1.5 minutes

4. Allow engine to idle for at least 10 minutes then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

Catalyst

5. Drive 3 minutes

6. Drive 3 minutes

7. Drive 2 minutes

8. Drive 2 minutes

Catalyst

- Steady state cruise at 53 - 55 MPH
- Use ASCD or hold accelerator to keep road speed as steady as possible.
- Selector lever: "3rd"
- ENG RPM: Approx. 3,000 RPM
- Idle 1 minute

EGR System

- Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
- BF SCHDL: 1.5 - 2.0 msec
- Selector lever: "3rd"
- ENG RPM: 1,600 - 2,200
- AC switch: ON

O2 Sensor

- Steady state cruise at 31 - 44 MPH
- Do not decelerate for more than 3 consecutive seconds.
- Selector lever: "4th"
- ENG RPM: 2,200 - 3,000
- A/C switch: OFF

Engine Compartment Warm-Up

- Drive at 50 - 60 MPH
- Selector lever: "5th"
- ENG RPM: 2,400 - 2,600
- A/C switch: ON
- ASCD may be used

O2 Sensor Heater

- Start engine, idle at least 1.5 minutes.

ECM Part Numbers: 23710-1S760, -1S761, -1S762, -1S763

Engine coolant temperature must be below 70 °C (158 °F) before starting engine.

NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
Pattern #35: '96 Truck (4WD) M/T

ECM Part Numbers: 23710-1S304, 1S305, 1S309, 1S310, 1S764, 1S766, 1S769, 1S774, 1S775, 1S776, 1S777, 1S778, 1S780, 1S783, 1S784

All Items: Two Trip Logic. Drive all sections two times.

First Trip: Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

Second Trip: Start engine, drive sections 1,2,3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idl 1.5 minutes</td>
<td>Drive 3 minutes</td>
<td>Drive 1.5 minutes</td>
<td>5</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>2</td>
<td>Start engine, idle at least 1.5 minutes</td>
<td>Hold recommended B/F SCHDL range, allow road speed to vary as necessary</td>
<td>B/F SCHDL 1.5 - 2.0 msec</td>
<td>Selector lever: &quot;3rd&quot;</td>
<td>ENG RPM 1,800 - 2,300</td>
</tr>
<tr>
<td>3</td>
<td>Drive at: 55 - 65 MPH</td>
<td>B/F SCHDL 2.0 - 3.2 msec</td>
<td>Selector lever: &quot;5th&quot;</td>
<td>ENG RPM 2,200 - 3,000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1st Trip: IGN switch &quot;OFF&quot; 10 seconds (Not more than 5 minutes)</td>
<td>Cruise at 50 - 60 MPH</td>
<td>Selector lever: &quot;5th&quot;</td>
<td>Keep engine speed above 3,000 RPM, allow road speed to vary if necessary</td>
<td>Do not decelerate for more than 3 consecutive seconds</td>
</tr>
<tr>
<td>5</td>
<td>Drive 3 minutes</td>
<td>Drive 3 minutes</td>
<td>Downshift then shift</td>
<td>Idle 1 minute</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Select lever: &quot;3rd&quot;</td>
<td>ENG RPM Approx 3,000 RPM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Drive 2 minutes</td>
<td>Idle 1 minute in Park or Neutral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Drive 2 minutes</td>
<td>End</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

NOTE: If fuel level is less than 1/2, it is better to perform this driving test when fuel level is less than 1/2. If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
## System Readiness Test Drive Pattern #36

**ECM Part Numbers:** 23710-1S304, 1S305, 1S306, 1S310, 1S315, 1S664, 1S665, 1S666, 1S667, 1S668, 1S669, 1S670, 1S671, 1S672, 1S673, 1S674, 1S675, 1S676, 1S677, 1S678, 1S679, 1S680, 1S681, 1S682, 1S683, 1S684

**All items:** Two Trip Logic. Drive all sections two times.

**First Trip:** Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

**Second Trip:** Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

### Pre-check

<table>
<thead>
<tr>
<th>C2 Sensor Heaters</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="pattern36_precheck.png" alt="Image" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

---

1. **ECM Parts:**

   - **First Trip:** Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

   - **Second Trip:** Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

---

# Pattern #36: '97 Truck (4WD) M/T
System Readiness Test Drive Pattern #37

ECM Part Numbers: 23710-73F00, -73F01, -73F02, -72F03, -72F04, -72F05

Two Trip Logic:
First Trips: Drive all sections 1 through 9.
Second Trips: Turn ign. off. Add 4 gallons fuel. Start engine and drive sections 4, 6, 7, 8, 9.

Engine coolant temperature must be below 70 °C (158 °F) before starting engine for either the first or second trip.

Pre-check

ECM P

<table>
<thead>
<tr>
<th>C2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>C2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1*</td>
<td>2*</td>
<td>3*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5*</td>
<td>6*</td>
<td>7*</td>
<td>8*</td>
<td>9*</td>
</tr>
</tbody>
</table>

1st Trip:
- Hold recommended B/F SHDL range. Allow road speed to vary as necessary.
- Start engine, idle at least 1.5 minutes.
- Idle 1.5 minutes
- Drive at 55 - 65 MPH
- B/F SHDL: 3.5 - 4.0 msec
- Selector lever: "4th"
- ENR, RPM: 2,000 - 2,200
- A/C switch: ON
- Drive 3 minutes

2nd Trip:
- Start engine, idle at least 1.5 minutes.
- Idle 1 minute
- Drive 2 minutes

Catalyst
- Steady state cruise at 50 - 60 MPH
- B/F SHDL: Less than 1.5 msec
- Selector lever: "3rd"
- ENR, RPM: 2,100 - 2,300
- A/C switch: OFF
- Drive 3 minutes

2nd Trip:
- Idle 1 minute
- Drive 2 minutes
- End.

Catalyst
- Steady state cruise at 31 - 44 MPH
- B/F SHDL: Less than 2.0 msec
- Selector lever: "4th"
- ENR, RPM: 2,100 - 2,300
- A/C switch: OFF
- Drive 3 minutes

NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #38

ECM Part Numbers: 23710-72F10, -72F11, -72F12, -72F13, -72F14, -72F15

Two Trip Logic
First Trip: Drive all sections 1 through 9.
Second Trip: Turn ign. off. Add 4 gallons fuel. Start engine and drive sections 4, 5, 6, 7, 8, 9.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td></td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>2*</td>
<td></td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>3*</td>
<td></td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
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<tr>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drive 3 minutes</td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

1st Trip: Allow engine to idle for 1.5 minutes then cycle ignition key off for 10 seconds. Restart engine and immediately begin next drive pattern section.

2nd Trip: Turn ignition key off, add 4 gallons of fuel. Start engine and allow to idle 10 minutes. Then cycle ignition key off for 10 seconds. Restart engine and immediately begin next drive pattern section.

NOTE: It is better to perform this driving test when fuel level is less than 1/2.
If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 240SX A/T
**System Readiness Test Drive Pattern #39**

**ECM Part Numbers:** 23710-81F00, -81F01, -81F02, -81F03

**All Items:** Two Trip Logic. Drive all sections two times.

**First Trip:**
- Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

**Second Trip:**
- Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

---

**NOTE:** It is better to perform this driving test when fuel level is less than 1/2.

- If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #40

**ECM Part Numbers:** 23710-81F10, -81F11, -81F12, -81F13

**All Items:** Two Trip Logic. Drive all sections two times.

- **First Trip:** Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C. (158°F).
- **Second Trip:** Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

**Pre-check**

<table>
<thead>
<tr>
<th></th>
<th>Pre-check</th>
<th></th>
<th>C2 Sensor Heater</th>
<th></th>
<th>EGR</th>
<th></th>
<th>KEY &quot;OFF&quot;</th>
<th></th>
<th>CATALYST</th>
<th></th>
<th>O2 SENSOR</th>
<th></th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Idle 1.5 minutes</td>
<td>2</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 1.5 minutes</td>
<td>3</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.**

- **Start engine,** idle at least 1.5 minutes.
- Hold recommended B/F SCHDL range. Allow road speed to vary as necessary. B/F SCHDL: 1.6 - 2.2 msec
-Selector lever: "D" (OD On)
-ENG. RPM: 1,400 - 1,600
-A/C switch: ON

- **Drive at:**
  - SS - 70 MPH
  - B/F SCHDL: 2.8 - 4.6 msec
  - Selector lever: "D" (OD On)
  - ENG. RPM: 2,000 - 2,200

- **2nd Trip:**
  - Turn ign. off. Add 4 gallons of fuel.
  - Cruise at 50 - 60 MPH
  - Selector lever: "D" (OD OFF)
  - Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
  - Do not decelerate for more than 3 consecutive seconds.

**NOTE:**

- It is better to perform this driving test when fuel level is less than 1/2.
- If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

- 1st trip: key off then repeat 1 - 8.

- 2nd trip: End.
**Pre-check**

<table>
<thead>
<tr>
<th>Section</th>
<th>O2 Sensor Heater</th>
<th>EGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Idle 1.5 minutes</td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td>Drive 1.5 minutes</td>
<td></td>
</tr>
</tbody>
</table>

**ENGINE COMPARTMENT WARM-UP**

1. Allow engine to idle for at least 10 minutes.
2. Then cycle ignition switch OFF for 10 seconds.
3. Restart engine and immediately begin next drive pattern section.

**CATALYST**

- Drive 3 minutes

**ENGINE COOLANT TEMPERATURE MUST BE BELOW 32°C (90°F) BEFORE STARTING ENGINE.**

**System Readiness Test Drive Pattern #41**

ECM Part Numbers: 23710-54P60, 54P61

One Trip Logic for all sections. Drive all sections one time.

---

**'96 300ZX (Non-turbo) M/T**
### System Readiness Test Drive Pattern #42

**ECM Part Numbers:** 23710-54P62, -54P74

**All Items:** Two Trip Logic.

- **First Trip:** Drive all sections 1 through 5, then turn ign. off and allow engine to cool to 158°F to meet Pre-check condition for second trip.
- **Second Trip:** Drive all sections 1 through 5 again.

#### Engine Coolant Temperature

Engine coolant temperature must be below 70°C (158°F) before starting engine.

#### Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>Drive Time</th>
<th>Engine Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.5 minutes</td>
<td>Idle 1.5 minutes</td>
</tr>
<tr>
<td>2</td>
<td>Drive 1.5 minutes</td>
<td>Drive at 55-65 MPH</td>
</tr>
</tbody>
</table>

- EGR Desired: 1.8 - 3.0 msec
- ENG. RPM: 2,000 - 2,800

#### Engine Warm-up

- Allow engine to idle for at least 10 minutes.
- Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

#### Engine Compartment

- Cruise at 50-60 MPH
- Selector lever: "5th"
- BF SCHDL: More than 1.3 msec
- ENG. RPM: 2,300 - 2,400
- A/C switch: ON

#### Catalyst

- Steady state cruise at: 55 - 58 MPH
- Use ASCD or hold accelerator to keep road speed as steady as possible.
- Selector lever: "5th"
- BF SCHDL: More than 1.3 msec
- ENG. RPM: 2,300 - 2,400
- AC switch: ON

#### Note

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

---

'96 300ZX (Non-turbo) M/T
System Readiness Test Drive Pattern #43

ECM Part Numbers: 23710-54R65, 54R66

One Trip Logic for all sections. Drive all sections once.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Idle 1.5 minutes</td>
<td></td>
</tr>
</tbody>
</table>

ENGINE COMPARTMENT WARM-UP

| 2*               | 3               |
| Drive 1.5 minutes | Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section. |

| 4*               | 5*               |
| Drive 3 minutes  | Drive 3 minutes  |

ENGINE COOLANT TEMPERATURE must be below 32°C (90°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Steady-state cruise at: 55 - 58 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F S/CMDL: More than 1.4 msec
ENG. RPM: 2,100 - 2,300
Down AC switch: ON

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 300ZX (Non-turbo) A/T
System Readiness Test Drive Pattern #44

ECM Part Numbers: 23710-54P67, -54P75

All items: Two Trip Logic.
First Trip: Drive all sections 1 through 5, then turn ign. off and allow engine to cool to 158°F. to meet Pre-check condition for second trip.
Second Trip: Drive all sections 1 through 5 again.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>C2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>C2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Idle 1.5 minutes</td>
<td></td>
<td>Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drive at 50 - 75 MPH</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Select lever: &quot;D&quot; (OD OFF)</td>
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</tr>
<tr>
<td></td>
<td>B/F SCHDL: 1.9 - 3.0 msec</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>ENG. RPM: 1,600 - 2,800</td>
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<tr>
<td>4</td>
<td>Cruise at 50 - 55 MPH</td>
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<td></td>
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<tr>
<td></td>
<td>Select lever: &quot;D&quot; (OD OFF)</td>
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<td></td>
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<tr>
<td></td>
<td>B/F SCHDL: More than 1.4 msec</td>
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<tr>
<td></td>
<td>ENG. RPM: 1,400 - 2,300</td>
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<tr>
<td></td>
<td>A/C switch: ON</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 300ZX (Non-turbo) A/T
### System Readiness Test Drive Pattern #45

**ECM Part Numbers:** 23710-54P00, 23710-54P01, 23710-54P02, 23710-54P03, 23710-54P04, 23710-54P70

One Trip Logic for all sections.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ENGINE COMPARTMENT WARM-UP**

- Allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

<table>
<thead>
<tr>
<th><strong>4</strong></th>
<th>Drive 3 minutes</th>
<th></th>
<th>Drive 3 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CATALYST**

- Cruise at 55 - 65 MPH
- Selector lever: "4th"
- B/F SCHDL: More than 1.0 msec
- ENG. RPM: 1,600 - 2,400

**O2 SENSOR**

- Cruise at 50 - 60 MPH
- Selector lever: "3rd"
- B/F SCHDL: More than 1.0 msec
- ENG. RPM: 1,600 - 2,400

**Engine coolant temperature must be below 32˚C (95˚F) before starting engine.**

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

---

*Pattern #45: '96 300ZX (Turbo) M/T*
System Readiness Test Drive Pattern #46

ECM Part Numbers: 23710-54P05, -54P06, -54P07, -54P08, -54P09, -54P71

One Trip Logic for all sections.
Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Idle 1.5 minutes</td>
</tr>
<tr>
<td>2*</td>
<td>Drive 1.5 minutes</td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 32°C (90°F) before starting engine.

Start engine and idle at least 1.5 minutes.

2* Drive at 55 - 75 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: 1.4 - 2.5 msec
ENG. RPM: 1,600 - 2,600

3 Allow engine to idle for at least 1.5 minutes.
Then cycle ignition switch OFF for 10 seconds.
Restart engine and immediately begin next drive pattern section.

4* Drive 3 minutes

5* Drive 3 minutes

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM.
Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at: 55 - 55 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 1.0 msec
ENG. RPM: 1,000 - 2,000
DownA/C switch: ON

End

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

System Readiness Test Drive Pattern #46

'96 300ZX (Turbo) A/T

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2003 Mazda 6 L4-2.3L

ATTACHMENT II

A. VEHICLE INSPECTION PROCEDURE

1. Verify that the vehicle is within the following range:

   VIN Range:

   Mazda6
   2003 Model Year - 1YVFP****35 M00348 - M30373
   2003 Model Year - 1YVHP****35 M00394 - M30133

   - If the vehicle is within the above range, proceed to step 2.
   - If the vehicle is not within the above range, return the vehicle to the customer.

2. Perform a Warranty Vehicle Inquiry using your eMDCS System and inspect vehicle for an Authorized Modification Label RECALL 1303F attached to the vehicle's bulkhead. Refer to illustration.

   NOTE: Be sure to verify RECALL number as the vehicle may have multiple RECALL labels.

   - If eMDCS displays RECALL 1303F OPEN and an Authorized Modification Label is not present, the RECALL has not been performed. Proceed to "B. CORRECTION PROCEDURE".
If eMDCS displays RECALL 1303F OPEN and an Authorized Modification Label is present, contact the Warranty Department. They will update the vehicle warranty.

If eMDCS displays RECALL 1303F CLOSED and an Authorized Modification Label is not present, proceed to "C. AUTHORIZED MODIFICATION LABEL INSTALLATION".

If eMDCS displays RECALL 1303F CLOSED and an Authorized Modification Label is present, the RECALL has already been completed. Return the vehicle to the customer.

If eMDCS does not display RECALL 1303F OPEN or RECALL 1303F CLOSED, this RECALL does not apply to the vehicle. Return vehicle to the customer.

B. CORRECTION PROCEDURE

1. Using WDS (Version B24.2 or later), reprogram the PCM to the latest calibration. Use the "Calibration Table" to confirm the correct calibration:

   **NOTE:**

   ^ It is not necessary to remove any fuses or relays during PCM reprogramming when the WDS screen prompts you to do so. You may accidentally stop power to one of the PCM terminals and cause the PCM to be blanked, or you may receive error messages during the WDS reprogramming procedure.

   ^ WDS shows the calibration part numbers after programming the PCM.

   ^ Please be aware that PCM calibration part numbers and file names listed may change due to future releases of WDS software and additional revisions made to those calibrations for service related concerns. When reprogramming a PCM, WDS will always display the "latest" calibration part number available for that vehicle. If any calibration has been revised/updated to contain new information for a new service concern/issue, it will also contain all previously released calibrations.

   ^ When performing this procedure, if the WDS PTU is not docked and connected to 115V-120V, we recommend that a battery charger be installed on the vehicle battery and turned ON to a maximum charge of no more than 20 AMPS to keep the vehicle battery up to capacity. If you exceed 20 AMPS, it will damage the WDS PTU.
NOTE:

^The files above are already on the B25.0 CD and are no longer available on the ESI WDS calibration web site.

^You will need to update the PTU first, then install the needed calibration file that WDS shows during PCM reprogramming. Go to "WDS Calibration" on ESI and download the "update" file. If the PTU is not updated to the latest level, the calibration file will not install into the PTU.

2. Install revised PCM calibration sticker (9999-95-AMDC-97) above the tear tag label (driver's side A-pillar door jamb) with the calibration P/N provided in the table above.

3. Road test the vehicle to relearn the "Keep Alive Memory" (KAM) strategy.


C. AUTHORIZED MODIFICATION LABEL INSTALLATION

Complete an "Authorized Modification Label" with the RECALL number written on the sticker and affix it to the vehicle's bulkhead. Refer back to the illustration under "A. VEHICLE INSPECTION PROCEDURE."

Return to Pg. 19
Service Bulletin
Mazda North American Operations
Irvine, CA 92618-2922

Subject: MAZDA SPECIAL PROGRAM (MSP10) - CAN COMMUNICATION

Bulletin No: 01-024/05
Last Issued: 09/21/2005

APPLICABLE MODEL(S)/VINS
2003 - 2004 Mazda6 3.0L vehicles built from May 16, 2002 through August 23, 2004
2003 - 2005 Mazda6, 2.3L - Non-PZEV (Non-Partial Zero Emission Vehicle) vehicles built from May 20, 2002 through July 2, 2005

VIN Range:
- 2.3L Engines
  - 1YV FP**C* 35 M00003 - M56997
  - 1YV HP**C* 35 M00030 - M54604
  - 1YV FP**C* 45 N00001 - N99310
  - 1YV HP**C* 45 N00004 - N99307
  - 1YV FP**C* 55 M00014 - M76942
  - 1YV HP**C* 55 M00024 - M77535
- 3.0L Engines
  - 1YV FP**D* 35 M00227 - M57077
  - 1YV HP**D* 35 M00005 - M55980
  - 1YV FP**D* 45 N04304 - N99312
  - 1YV HP**D* 45 N00002 - N99286

DESCRIPTION
The MIL (Malfunction Indicator Light) may illuminate during OBD II check at I/M (Inspection/Maintenance) station. This will cause the vehicle to fail the I/M test, although the vehicle itself has no problem.

Customers having this concern should have their vehicle repaired using the following repair procedure.

NOTE:
- UNDER THE MAZDA SPECIAL PROGRAM (MSP10), ALL CURRENT DEALER INVENTORY AND RETAILED VEHICLES FOUND TO BE WITHIN THE ABOVE VIN AND PRODUCTION RANGES, MUST BE INSPECTED AND REPAIRED ACCORDING TO THE INSTRUCTIONS CONTAINED IN THIS SERVICE BULLETIN.
- BEFORE PERFORMING ANY REPAIR, VALIDATE THAT THE VEHICLE IS APPLICABLE TO THIS PROGRAM BY PERFORMING AN "EMDCS WARRANTY VEHICLE INQUIRY" AND VERIFYING THE VEHICLE DISPLAYS CAMPAIGN "MSP10". SEE "VEHICLE INSPECTION PROCEDURE" BELOW.

CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical—including photocopying and recording and the use of any kind of information storage and retrieval system—without permission in writing.
DEALER INVENTORY:
Inspect and repair all current dealer inventory according to the procedures contained in this service bulletin.

RETAIL VEHICLES:
When a retail vehicle is brought into the dealer for any type of repair or scheduled maintenance, inspect and repair the vehicle according to the procedures contained in this service bulletin.

VEHICLE INSPECTION PROCEDURE
1. Verify the vehicle is within one of the following VIN and production ranges:
   2003 - 2004 Mazda6 3.0L vehicles built from May 16, 2002 through August 23, 2004
   2003 - 2005 Mazda6, 2.3L - Non-PZEV (Non-Partial Zero Emission Vehicle) vehicles built from May 20, 2002 through July 2, 2005
   VIN Range:
   • 2.3L Engines
     - 1YV FP**C* 35 M00003 – M56997
     - 1YV HP**C* 35 M00030 – M54604
     - 1YV FP**C* 45 N00001 – N99310
     - 1YV HP**C* 45 N00004 – N99307
     - 1YV FP**C* 55 M00014 – M76942
     - 1YV HP**C* 55 M00024 – M77535
   • 3.0L Engines
     - 1YV FP**D* 35 M00227 – M57077
     - 1YV HP**D* 35 M00005 – M55980
     - 1YV FP**D* 45 N04304 – N99312
     - 1YV HP**D* 45 N00002 – N99286
   • If the vehicle is within one of the above VIN and production ranges, proceed to Step 2.
   • If the vehicle is not within one of the above VIN and production ranges, return the vehicle to the customer or inventory.

2. Perform a Warranty Vehicle Inquiry using your eMDCS System and inspect the vehicle for a Campaign Label MSP10 attached to the vehicle's bulkhead. Refer to eMDCS System - Warranty Vehicle Inquiry Results table below.
   **NOTE:** Verify the campaign number as the vehicle may have multiple labels.
# eMDCS System - Warranty Vehicle Inquiry Results

<table>
<thead>
<tr>
<th>If eMDCS displays:</th>
<th>Campaign Label is:</th>
<th>Action Required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Campaign: MSP10 Open&quot;</td>
<td>Present</td>
<td>Contact the Mazda Corporate Dealer Assistance Group at (877) 727-6628 to update vehicle history</td>
</tr>
<tr>
<td></td>
<td>Not present</td>
<td>Proceed to &quot;REPAIR PROCEDURE&quot;</td>
</tr>
<tr>
<td>&quot;Campaign: MSP10 Closed&quot;</td>
<td>Present</td>
<td>Return vehicle to inventory or customer</td>
</tr>
<tr>
<td></td>
<td>Not present</td>
<td>Complete a label and apply it to vehicle's bulkhead</td>
</tr>
<tr>
<td>&quot;Campaign: MSP10 Open&quot; or &quot;Closed&quot; is not displayed</td>
<td>Does not apply</td>
<td>Campaign does not apply to this vehicle. Return the vehicle to inventory or customer</td>
</tr>
</tbody>
</table>

## REPAIR PROCEDURE

### PCM / TCM CALIBRATION LEVEL INSPECTION PROCEDURE

Using WDS version B39.3 or later software, proceed to "Module Reprogramming" and check the PCM and TCM calibration levels.

- If WDS indicates the PCM and TCM are already at the latest calibration level (refer to "Calibration Information" table), proceed to Step 5 under "PCM/TCM PROGRAMMING" and complete an "Authorized Modifications" label. This label will inform technicians of the PCM/TCM calibration change if future repairs are necessary.
- If WDS indicates that a later calibration is available in either PCM or TCM, proceed to "PCM/TCM PROGRAMMING" below.

### PCM / TCM REPROGRAMMING

1. Reboot the WDS PTU to clear memory before reprogramming.
2. Using WDS B39.3 or later software, reprogram the PCM to the latest calibration (refer to "Calibration Information" table) by following the "Module Reprogramming" procedure.

**NOTE:**

- Always update the WDS PTU first, then install the needed calibration file that WDS shows during PCM reprogramming. Go to "WDS Calibration" on ESI and download the "update" file. If the PTU is not updated to the latest WDS calibration level, the calibration file will not install into the PTU.
- It is not necessary to remove any fuses or relays during PCM reprogramming when the WDS screen prompts you to do so. You may accidentally stop power to one of the PCM terminals and cause the PCM to be blanked, or you may receive error messages during the WDS reprogramming procedure.
- WDS shows the calibration part numbers after programming the PCM.
- Please be aware that PCM calibration part numbers and file names listed in any Service Bulletin may change due to future releases of WDS software, and additional revisions made to those calibrations for service related concerns.
- When reprogramming a PCM, WDS will always display the "latest" calibration P/N available for that vehicle. If any calibration has been revised/updated to contain new information for a new service concern/issue, it will also contain all previously released calibrations.
- When performing this procedure, if the WDS PTU is not docked and connected to 115V-120V, we recommend that a battery charger be installed on the vehicle battery and turned...
ON to a maximum charge of no more than 20 AMPS to keep the vehicle battery up to capacity. If you exceed 20 AMPS, it will damage the WDS PTU. Also the external battery power supply cable should be connected to the vehicle battery and the PTU.

3. After performing the PCM reprogramming procedure, verify the repair by starting the engine and making sure there are no MIL illumination or abnormal warning lights present.

NOTE:
- If any DTCs should remain after performing DTC erase, diagnose the DTCs according to the appropriate Troubleshooting section of the Workshop Manual.
- After PCM reprogramming, it is no longer necessary to road test the vehicle to "relearn" KAM (Keep Alive Memory).

4. Perform the TCM reprogramming procedure and reprogram the TCM to the latest available calibration (refer to the "Calibration Information" table). Verify the repair by starting the engine and making sure there are no MIL illumination or abnormal warning lights present.

5. Fill out an "Authorized Modifications" label (P/N 9999-95-AMDC-97) with the new PCM/TCM calibration information, your dealer code, and today's date (example below).

![Authorized Modifications Label](image)

6. Place the "Authorized Modifications" label on the "A" pillar below the tear tag in the driver door jamb.
7. Fill out a blue "Campaign Label" (9999-95-065A-05) with Campaign No: "MSP10", your dealer code, today’s date (example below), and affix it to the vehicle’s bulkhead.

![Campaign Label Example](image)

8. Return the vehicle to the customer.

**CALIBRATION INFORMATION**

### 2.3L PCM

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Trans.</th>
<th>Spec.</th>
<th>New PCM Calibration Part Number</th>
<th>File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>M/T</td>
<td>All</td>
<td>L334-18-881S</td>
<td>SW-L334ES070</td>
</tr>
<tr>
<td>2003</td>
<td>A/T</td>
<td>All</td>
<td>L335-18-881S</td>
<td>SW-L335ES070</td>
</tr>
<tr>
<td>2004</td>
<td>A/T</td>
<td>Calif.</td>
<td>L393-18-881E</td>
<td>SW-L393EE030</td>
</tr>
</tbody>
</table>

### 2.3L TCM

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Trans.</th>
<th>Spec.</th>
<th>New TCM Calibration Part Number</th>
<th>File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003 &amp; 2004</td>
<td>A/T</td>
<td>All</td>
<td>L322 K</td>
<td>SW-L322TK000</td>
</tr>
<tr>
<td>2003 &amp; 2004</td>
<td>A/T</td>
<td>All</td>
<td>L3YW</td>
<td>SW-L3YWT0000</td>
</tr>
<tr>
<td>2005</td>
<td>A/T</td>
<td>All</td>
<td>L3F2 E</td>
<td>SW-L3F2TE000</td>
</tr>
<tr>
<td>2005</td>
<td>A/T</td>
<td>All</td>
<td>L3ZD</td>
<td>SW-L3ZDT0000</td>
</tr>
</tbody>
</table>
### 3.0L PCM

<table>
<thead>
<tr>
<th>Model Year / Model</th>
<th>Trans.</th>
<th>Spec.</th>
<th>New PCM Calibration Part Number</th>
<th>File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04 4-Dr. SDN</td>
<td>M/T</td>
<td>All</td>
<td>AJ57-18-881T</td>
<td>SW-AJ57ET0B0</td>
</tr>
<tr>
<td>2003-04 4-Dr. SDN</td>
<td>A/T</td>
<td>All</td>
<td>AJ58-18-881T</td>
<td>SW-AJ58ET0B0</td>
</tr>
<tr>
<td>2004 5-Dr. / WGN</td>
<td>M/T</td>
<td>Calif.</td>
<td>AJ57-18-881T</td>
<td>SW-AJ57ET0B0</td>
</tr>
<tr>
<td>2004 5-Dr. / WGN</td>
<td>A/T</td>
<td>Calif.</td>
<td>AJ58-18-881T</td>
<td>SW-AJ58ET0B0</td>
</tr>
<tr>
<td>2004 5-Dr. / WGN</td>
<td>M/T</td>
<td>Fed.</td>
<td>AJ82-18-881E</td>
<td>SW-AJ82EE040</td>
</tr>
<tr>
<td>2004 5-Dr. / WGN</td>
<td>A/T</td>
<td>Fed.</td>
<td>AJ83-18-881E</td>
<td>SW-AJ83EE040</td>
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</tbody>
</table>

### 3.0L TCM

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Trans.</th>
<th>Spec.</th>
<th>New TCM Calibration Part Number</th>
<th>File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003 &amp; 2004</td>
<td>A/T</td>
<td>All</td>
<td>AJ58 H</td>
<td>SW-AJ58TH000</td>
</tr>
</tbody>
</table>

**NOTE:** The PCM and TCM Calibration Part Numbers listed above are provided for PCM and TCM reprogramming purposes only. These are not necessarily the same Mazda part numbers used to order an actual PCM or TCM through the Mazda Parts System. It is not necessary to order a PCM or TCM as part of this repair procedure.

### WARRANTY INFORMATION

**NOTE:**
- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair. Refer to the Warranty Wizard for warranty term information.
- Additional diagnostic time cannot be claimed for this repair.

<table>
<thead>
<tr>
<th>Warranty Type</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Code</td>
<td>99</td>
</tr>
<tr>
<td>Damage Code</td>
<td>99</td>
</tr>
<tr>
<td>Process Number</td>
<td>A0524A</td>
</tr>
<tr>
<td>Part Number Main Cause</td>
<td>5555-05-022A</td>
</tr>
<tr>
<td>Quantity</td>
<td>0</td>
</tr>
<tr>
<td>Operation Number / Labor Hours</td>
<td>XXB095R1 / 0.3 Hrs. (PCM reprogramming - M/T or A/T) XXB095R2 / 0.2 Hrs. (TCM reprogramming - A/T)</td>
</tr>
</tbody>
</table>

Return to Pg. 19
Subject:  FALSE MIL ILLUMINATION WITH MULTIPLE U-CODE DTCS

APPLICABLE MODEL(S)/VINS
All 2003 - 2004 Mazda6
2005 Mazda6 2.3L only

DESCRIPTION
Some customer vehicles may have a false MIL illumination with multiple U-code DTCs. This condition may be caused if the WDS DLC cable is connected or disconnected while the ignition switch is in the ON position, or when the engine is idling.

IMPORTANT: When connecting or disconnecting the WDS DLC cable (or any scan tool equipment) to the DLC-2 connector (under dash), the ignition switch must be in the OFF position, otherwise, the MIL light may come ON and false CAN communication DTC codes may be set in the different CAN bus modules.

The following DTCs may be stored if this condition occurs:
U1900-ABS
U2516-ABS
U1900-FF-IC
U2516-FF-IC
U0073-FF-PCM
U0073-FF-TCM
U0100-FF-TCM

NOTE: It has been reported that some customer vehicles have failed the state emission OBD II test. This may be caused by the inspection station connecting or disconnecting the DLC cable when the ignition switch in the ON position, or when the engine is idling.

Customers having this concern should have their vehicle repaired using the following repair procedure.

REPAIR PROCEDURE
1. Verify customer concern.
2. Erase all DTCs.
3. Turn OFF MIL.
4. Turn ignition switch to OFF position.
5. Disconnect WDS DLC or scan tool cable.

NOTE: Do not return vehicle to customer with MIL illuminated.
O2 Sensor Readiness Monitor Does Not Complete

Service Category: Engine/Hybrid System
Section: Emission Control
Market: USA

Applicability

<table>
<thead>
<tr>
<th>YEAR(S)</th>
<th>MODEL(S)</th>
<th>ADDITIONAL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>RX400H</td>
<td></td>
</tr>
</tbody>
</table>

Introduction

Some 2007 model year RX 400h vehicles may exhibit a condition of oxygen sensor readiness monitors incomplete during state emissions testing. The Hybrid Vehicle (HV) ECU logic has been updated to address this condition.

Production Change Information

This bulletin applies to vehicles produced BEFORE the Production Change Effective VINs shown below.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DRIVETRAIN</th>
<th>PRODUCTION CHANGE EFFECTIVE VIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX 400h</td>
<td>2WD</td>
<td>JTJGW31U#72003519</td>
</tr>
<tr>
<td></td>
<td>4WD</td>
<td>JTJHW31U#72020196</td>
</tr>
</tbody>
</table>

Warranty Information

<table>
<thead>
<tr>
<th>OP CODE</th>
<th>DESCRIPTION</th>
<th>TIME</th>
<th>OFP</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>EG1502</td>
<td>Reprogram HV ECU and ECM (PCM)</td>
<td>0.8</td>
<td>89981–####</td>
<td>99</td>
<td>74</td>
</tr>
</tbody>
</table>

APPLICABLE WARRANTY

- This repair is covered under the Lexus Federal Emission Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle’s in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.
O2 Sensor Readiness Monitor Does Not Complete

Parts Information

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>DRIVETRAIN</th>
<th>OIL COOLER</th>
<th>PART NUMBER</th>
<th>PART NAME</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>2WD</td>
<td>With</td>
<td>89981-48160</td>
<td>89981-48162</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89981-48161</td>
<td>89981-48163</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Without</td>
<td>89981-48180</td>
<td>89981-48182</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89981-48181</td>
<td>89981-48183</td>
<td></td>
</tr>
<tr>
<td>4WD</td>
<td>With</td>
<td>89981-48190</td>
<td>89981-48192</td>
<td>Computer, Hybrid Vehicle Control</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>89981-48191</td>
<td>89981-48193</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Without</td>
<td>89981-48200</td>
<td>89981-48202</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>89981-48201</td>
<td>89981-48203</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>All</td>
<td>All</td>
<td>00451-00001-LBL</td>
<td>Authorized Modification Labels</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE

- The HV ECU should NOT be replaced as part of this Repair Procedure.
- Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through Dealer Daily – Dealer Support Materials Orders.

Required Tools & Equipment

<table>
<thead>
<tr>
<th>REQUIRED EQUIPMENT</th>
<th>SUPPLIER</th>
<th>PART NUMBER</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Techstream 2.0*</td>
<td>ADE</td>
<td>TS2UNIT</td>
<td>1</td>
</tr>
<tr>
<td>Techstream Lite</td>
<td>ADE</td>
<td>TSLITEPDLR01</td>
<td></td>
</tr>
</tbody>
</table>

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 10.10.018 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- The Diagnostic Tester is NOT recommended for flash reprogramming. Please use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit techinfo.toyota.com for more information regarding J2534 reprogramming.
**O2 Sensor Readiness Monitor Does Not Complete**

**Required Tools & Equipment (Continued)**

<table>
<thead>
<tr>
<th>SPECIAL SERVICE TOOLS (SST)</th>
<th>PART NUMBER</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR8 Battery Diagnostic Station*</td>
<td>00002-MCGR8</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTE**
Additional SSTs may be ordered by calling 1-800-933-8335.

* Essential SST.

**Calibration ID Information**

**NOTE**
There are different calibration files for vehicles with and without transaxle oil coolers. In order to determine the configuration of your vehicle, shine a flashlight into the left front bumper cover vent. If the vehicle is equipped with a cooler, it will be easily visible.

*Figure 1. Location of Transaxle Oil Cooler (on Equipped Vehicles)*

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O2 Sensor Readiness Monitor Does Not Complete

Calibration Information

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>DRIVETRAIN</th>
<th>OIL COOLER</th>
<th>ECM (CPU)/ECU</th>
<th>CALIBRATION ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>2WD</td>
<td>With</td>
<td>Main 348A0000</td>
<td>348A0100/899834813100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub 899834813000</td>
<td></td>
<td>348A0000/899834814000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Without</td>
<td>Main 348A0000</td>
<td>348A0100/899834814100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sub 899834814000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4WD</td>
<td>With</td>
<td>Main 348A0000</td>
<td>348A0100/899834815100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub 899834815000</td>
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<tr>
<td></td>
<td></td>
<td>Without</td>
<td>Main 348A0000</td>
<td>348A0100/899834816100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sub 899834816000</td>
<td></td>
</tr>
</tbody>
</table>

Repair Procedure

1. Prepare the vehicle for reflash.

**NOTE**
This procedure will pressurize the brake actuator and prevent the ABS pump from running during the reflash procedure.

A. Prior to vehicle shut down perform the following steps:
   - Place the vehicle in the ready on position.
   - Place the transaxle in the P range.
   - Engage parking brake .
B. Depress the brake pedal fully 2 times within 2 seconds.
C. Release brake pedal.
D. Wait 10 seconds.
E. Turn off the vehicle.
Repair Procedure (Continued)

2. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 2. Confirm if the HV ECU and ECM (PCM) calibrations have been updated. If the calibration IDs are NOT the new calibrations — go to step 2.

Figure 2. Location of Authorized Modifications Label on 2007 RX 400h
O2 Sensor Readiness Monitor Does Not Complete

Repair Procedure (Continued)

3. Flash Reprogram the HV ECU and the ECM (PCM).

NOTE
- The GR8 Battery Diagnostic Station MUST be used in Power Supply Mode to maintain battery voltage at 13.5 volts while flash reprogramming the vehicle.
- For details on how to use the GR8 Battery Diagnostic Station, refer to the GR8 Instruction Manual located on the Technical Information System (TIS), Diagnostics – Tools & Equipment – Battery Diagnostics.

Follow the procedures outlined in Service Bulletin No. L-SB-0021-14, “Techstream ECU Flash Reprogramming Procedure,” and flash the ECM (PCM) with the NEW calibration file update.

NOTE
- Anytime the HV ECU is reprogrammed, the engine ECM (PCM) MUST also be reprogrammed, even if the engine ECM (PCM) has the “New Calibration ID.”
- If ONLY the engine ECM (PCM) Calibration ID matches the “Current Calibration ID” shown in the Calibration Information section in this bulletin, proceed with flash reprogramming.
- If BOTH the engine ECM (PCM) and HV ECU Calibration IDs match the “New” calibration IDs shown in the Calibration Information section, this vehicle has already been reprogrammed. Refer to TIS for diagnostic procedures applicable to any stored DTCs.

4. Start the engine and warm it up to normal operating temperature before test driving.

5. Test drive the vehicle to confirm proper vehicle operation (and proper laser cruise control operation, if equipped).

6. Confirm that the O2 Sensor monitor reads complete.

7. Install the Authorized Modifications Label.

A. Using a permanent marker, enter the following information on the label:

   - ECM part number [Refer to the Parts Information section for the NEW PART NUMBER]
   - Calibration ID(s) [Refer to the Calibration Information section for the NEW CALIBRATION ID]
   - Dealer Code
   - Repair Date
   - Change Authority [This bulletin number]

B. Affix the Authorized Modifications Label to the vehicle at the location shown in Figure 2. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
O2 Sensor Readiness Monitor Does Not Complete

Repair Procedure (Continued)

8. Calibration update is complete.

**NOTE**
The effect of the NEW calibration may become more apparent after several days of driving as the ECM (PCM) “learned values” are re-established from the customer’s driving.

Return to Pg. 18
2005 Jeep Truck Wrangler L4-2.4L VIN 1
Vehicle » Technical Service Bulletins » All Technical Service Bulletins » Emissions - I/M Test Indicates OBD System is Not Ready to Test

NUMBER: 25-005-13 REV. A

GROUP: Emissions Control

DATE: September 14, 2013

THIS BULLETIN SUPERSEDES SERVICE BULLETIN 25-005-13, DATED SEPTEMBER 12, 2013, WHICH SHOULD BE REMOVED FROM YOUR FILES. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISKS** AND INCLUDE THE ADDITION OF THE WARRANTY BULLETIN INFORMATION FOR PUERTO RICO/VIRGIN ISLANDS.

SUBJECT:
I/M Readiness Check Continues To Indicate OBD System Is Not Ready For I/M Testing (X51 Lifetime Warranty Extension)

OVERVIEW:
This bulletin involves modifying wiring in the Power Distribution Center (PDC).

MODELS:
2005 - 2006 (TJ) Wrangler

NOTE: This Extended Warranty Bulletin applies to vehicles equipped with a 2.4L or 4.0L engine (sales code ED1 or ERH respectively).

SYMPTOM/CONDITION:
The Catalyst Monitor, Oxygen Sensor Monitor, and Oxygen Sensor Heater Monitors may indicate "Not Ready" even if the monitor is operating correctly and determining pass/fail results. Two or more monitors indicating "Not Ready" will result in vehicle rejection during an I/M test. In addition, the vehicle On Board Diagnostics (OBD) system may not indicate readiness for I/M emissions testing during the key-on test. (See Emissions Inspection and Maintenance Programs in section 7 of the Wrangler owners manual to determine if vehicle is ready for I/M testing).

DIAGNOSIS:
After turning ignition key to the ON position without cranking the engine, the Malfunction Indicator Lamp (MIL) should remain illuminated solid. If the MIL flashes for 10 seconds approximately 15 seconds after turning the key to the ON position (without cranking the engine) and then returns to solid illumination, the vehicle is not ready for I/M testing. Perform the Repair Procedure.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Part No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR</td>
<td>NPN</td>
<td>Solder, Rosin Core</td>
</tr>
<tr>
<td>2</td>
<td>05018395AA</td>
<td>Kit, Splice</td>
</tr>
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PARTS REQUIRED:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>05019912AA</td>
<td>MOPAR Crimping Tool</td>
</tr>
<tr>
<td>NPN</td>
<td>Soldering Iron</td>
</tr>
<tr>
<td>NPN</td>
<td>Heat Gun</td>
</tr>
</tbody>
</table>

SPECIAL TOOLS/EQUIPMENT REQUIRED:

REPAIR PROCEDURE:

1. Remove and isolate the positive and negative battery cables from the battery.

2. Remove the Power Distribution Center (PDC) cover from the PDC.

3. Locate the ASD (Auto Shut Down) and the Fuel Pump relays in the PDC.

4. Remove the two nuts used to secure the positive battery cable to the PDC. Remove the positive battery cable from the PDC.

5. Remove the PDC from its bracket and remove the cover from the bottom of the PDC to expose the underside wiring.

Fig. 1 TWO 20 GA. PK WT WIRES IN CAVITY A13

1 - TWO 20 GA. PK/WT WIRES - AT PDC CAVITY A13 (FOR ASD RELAY PIN 85)
6. Locate the terminal end in PDC cavity A13 that connects to the ASD relay pin 85. Two 20 gauge wires, each of PK/WT color, are crimped to this terminal end (Fig. 1).

7. At PDC cavity A13 (ASD), locate the one PK/WT wire that connects to the fuel pump relay terminal.

8. Cut the PK/WT wire, that connects to the fuel pump relay, as close to the PDC cavity A13 terminal as possible (Fig. 2).

9. At the same PDC cavity A13, cut the other PK/WT wire approximately 2 inches from the terminal.

10. There are now three (3) PK/WT wires. Strip approximately 0.25 inches of the insulation from the ends of all three PK/WT wires.

11. Splice the one PK/WT wire leading from fuel pump relay to the one PK/WT wire leading from wire harness bundle with convoluted (Fig. 4). Be sure to slide shrink tube over wire before crimping. Splice the wires with kit p/n 05018395AA.

**NOTE**: The remaining ASD relay wire in PDC cavity A13 (2 inch lead) should not be connected to anything at this point.

12. Locate the RD/YL 18 gauge wire connected to the terminal end in PDC cavity A15. This wire connects the ASD relay pin 30 to fuse # 9 (ASD power) in the PDC.

![Fig. 3 CUT ASD 18 GA. RD YL WIRE IN CAVITY A15](image)

**Fig. 3 CUT ASD 18 GA. RD YL WIRE IN CAVITY A15**

1 - CUT PDC CAVITY A15 18 GA. RD/YL WIRE THAT GOES TO ASD RELAY PIN 30 TWO INCHES FROM TERMINAL

13. Cut this wire approximately 2 inches from the PDC cavity A15 terminal (ASD relay pin 30) (Fig. 3).
14. Strip approximately 0.25 inches of insulation from both ends of the RD/YL wire cut in Step # 13.

15. Splice the two RD/YL wires to the one remaining PK/WT wire (2 inch lead at A13) together (Fig. 4). Be sure to slide shrink tube over wire before crimping. Splice the wires with kit p/n 05018395AA.

16. After both splices are complete, solder crimp splices with non-acid core solder.

17. Slide shrink tube over soldered splices and shrink with a heat gun until sealant is visible on both ends of the splice (Fig. 4).

18. Install the cover on the bottom of the PDC.

19. Install the PDC to its bracket.

20. Install the positive battery cable to the PDC. Tighten both attaching nuts to 11.3 Nm (100 in. lbs.).

21. Install the positive and negative battery cables from the battery.

22. Set the clock to the correct time.

23. After the Repair Procedure is completed, the vehicle will need to be driven to update the OBD system. It may require several days of normal drive cycles to update all of the required OBD monitors.
a. The vehicle is ready for I/M emissions testing when the Malfunction Indicator Lamp (MIL) remains illuminated continuously after turning the ignition key to the ON position without cranking the engine.

b. The vehicle is NOT ready for I/M emissions testing, when the MIL flashes for 10 seconds approximately 15 seconds after turning the key to the ON position (without cranking the engine) and then returns to continuous illumination. The vehicle will require further drive cycles. If this condition persists after several days of further drive cycles, then additional diagnosis may be required.

POLICY:
Reimbursable within the provisions of the warranty.

NOTE: Vehicles included in this Service Bulletin have a lifetime coverage warranty for this repair. See Warranty Bulletins; U.S. D-13-38, Canada SAB-2013-29, **Puerto Rico / Virgin Islands: ID-13-13** or International ID-13-12 for details associated with the extended warranty.

<table>
<thead>
<tr>
<th>Labor Operation No:</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-90-65-90</td>
<td>MIL continues to indicate OBD system is not ready for testing - Repair (B)</td>
<td>0.8 Hrs.</td>
</tr>
</tbody>
</table>

TIME ALLOWANCE:

| ZZ          | Service Action |

FAILURE CODE:

Disclaimer: This bulletin is supplied as technical information only and is not an authorization for repair.

Return to Pg. 17
2010 Jeep Truck Wrangler 2WD V6-3.8L
Vehicle » Technical Service Bulletins » All Technical Service Bulletins » Engine Controls ECM Update For O2 Sensor Response

NUMBER: 18-027-10

GROUP: Vehicle Performance

DATE: October 20, 2010

THIS SERVICE BULLETIN IS ALSO BEING RELEASED AS RAPID RESPONSE TRANSMITTAL 10-066. ALL APPLICABLE SOLD AND UN-SOLD VIN's HAVE BEEN LOADED. TO VERIFY THAT THIS SERVICE ACTION IS APPLICABLE TO THE VEHICLE, USE VIP OR PERFORM A VIN SEARCH IN TECHCONNECT. ALL REPAIRS ARE REIMBURSABLE WITHIN THE PROVISIONS OF WARRANTY.

HELP USING THE wiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING "HELP" THEN "HELP CONTENTS" AT THE TOP OF THE wiTECH DIAGNOSTIC APPLICATION WINDOW.

THE wiTECH SOFTWARE LEVEL MUST BE AT RELEASE 11.01 OR HIGHER TO PERFORM THIS PROCEDURE.

SUBJECT:
Flash: PCM For OBD Readiness For Downstream 02 Slow Response Monitor

OVERVIEW:
This bulletin involves selectively erasing and reprogramming the Powertrain Control Module (PCM) with new software.

MODELS:
2010–2011       (JK)            Wrangler

NOTE :This bulletin applies to vehicles equipped with a 3.8L engine and 50 State emissions (sales code EGT and NAS).

SYMPTOM/CONDITION:
The customer may have 02 Monitor Not Ready (generic scan tool shows 02S RDY No), as indicated by a State I/M Test failure or as indicated by the Readiness self test described in the Owner's Manual.

DIAGNOSIS:
Using a Scan Tool (wiTECH) with the appropriate Diagnostic Procedures available in TechCONNECT, verify all engine systems are functioning as designed. If DTC's are present record them on the repair order and repair as necessary before proceeding further with this bulletin.
PARTS REQUIRED:

REPAIR PROCEDURE:

NOTE: If this flash process is interrupted/aborted, the flash should be restarted.

1. Reprogram the PCM with the latest software. Follow the detailed service procedures available in DealerCONNECT/TechCONNECT, Refer To Group 8 - Electrical > Electronic Control Modules - Service Information > Module - Powertrain Control > Standard Procedures > PCM/ECM Programming - Gas.

After PCM reprogramming, the following must be performed:

a. Clear any DTC's that may have been set in other modules due to reprogramming. The wiTECH application will automatically present all DTCs after the flash and allow the tech to clear them.

2. Type the necessary information on the "Authorized Modification Label" and attach it near the VECI label.

POLICY:
Reimbursable within the provisions of the warranty.

<table>
<thead>
<tr>
<th>Labor Operation No.</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
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<td>18-19-06-H5</td>
<td>Module, Powertrain Control (PCM) - Reprogram (B)</td>
<td>0.2 Hrs.</td>
</tr>
</tbody>
</table>

TIME ALLOWANCE:

| FM | Flash Module |

FAILURE CODE:

Disclaimer: This bulletin is supplied as technical information only and is not an authorization for repair.

Return to Pg. 17
SYSTEM READINESS TEST (SRT) DRIVE PATTERNS

This bulletin has been amended. Additional changes were made on page 9.
Please discard all previous versions of this bulletin.

APPLIED VEHICLES: 1996 and newer Model Years as required by State Emissions Inspections Regulations.

SERVICE INFORMATION

As part of an enhanced emissions test for Inspection & Maintenance (I/M), some States may require the System Readiness Test (SRT) status be checked.

- The SRT is used to indicate whether the engine control module (ECM) has completed self diagnosis of major emissions systems and components.
- In these instances the State may require completion of the SRT before permitting the emissions inspection to proceed.

The State Emissions Inspection Station may advise an Infiniti customer to return to the dealership for service due to one or more SRT items coming up “INCOMPLETE.” Use the information in this Bulletin to help you “COMPLETE” the SRT.

- In most cases the ECM will automatically complete its self diagnosis cycle during normal vehicle usage, and the SRT status will indicate “COMPLETE” for each applicable system.
- Once indicating “COMPLETE,” the SRT status remains “COMPLETE” until the Self Diagnosis memory is erased.
- Occasionally, certain portions of the self diagnostic test may not be completed as a result of the customer’s normal driving pattern. In these cases the SRT will indicate “INCOMPLETE” for these items.

NOTE: The SRT will also indicate “INCOMPLETE” if:

- The self diagnosis memory is erased for any reason, or
- The ECM memory power supply is interrupted for several hours.

Infiniti Bulletins are intended for use by qualified technicians, not ‘do-it-yourselfers’. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Infiniti dealer to determine if this applies to your vehicle.
This bulletin contains information to help you perform a comprehensive road test (Drive Pattern) that enables the ECM to complete the SRT.

- A separate Drive Pattern sheet for each 1996 and 1997 vehicle variation is included with this Bulletin.
- For 1998 and newer vehicles, refer to the EC section of the appropriate Service Manual for the required Drive Pattern. They are listed under On Board Diagnostic > System Readiness Test.

**NOTE:** You must select the Drive Pattern that correctly corresponds with all variables for the vehicle being serviced (i.e. model, model year, engine, emissions certification, transmission, powertrain, and for 1996/1997 models, ECM part number.

**NOTE:** To ensure all ECM Self Test requirements are met, it is important to drive the entire Drive Pattern even if only one SRT item indicates “INCOMPLETE.”

**CLAIMS INFORMATION:**

Refer to the current Warranty Flat Rate Manual for claims information.
Vehicle Referred by IM Inspector

Start

Step 1: Check DTCs
**Do Not Erase**

Step 2: Check SRT Status

Step 3: ID the Vehicle

Step 4: Obtain ECM P/N
(1996 & 1997 only)

Step 5: Perform Road Test
(Drive Pattern)

Step 6: Recheck DTCs
**Do Not Erase**

Step 7: Confirm all SRTs
“COMPLETE”

All SRTs “COMPLETE”

END

Use ASIST to diagnosis and repair DTCs
Step 1: Check for DTC

1. Use a CONSULT tool to check for any stored DTCs.
   - If any DTCs are stored they must be repaired at this time.
   - Refer to ASIST for diagnostic and repair information.

   **NOTE:** Normal warranty coverage will apply for DTC repairs.

2. If no DTCs are stored, go to the next step.

   **NOTE:** DO NOT touch “Erase” or you will lose previously completed SRTs.

Step 2: Check SRT Status

Check the SRT Status (Complete or Incomplete).

   - Use the appropriate CONSULT tool.
   - For older vehicles, a Generic Scan Tool may be needed to check SRT status.

**NOTE:** In some cases, the normal driving that occurs between the time the vehicle was referred by the State Emissions Inspection Station and it is brought into the dealership for SRT evaluation may allow the ECM to complete the SRTs. If this occurs, no further action is necessary.

*Always check SRT status before performing the SRT Drive Pattern.*
Step 3: Identify the Vehicle

You must select the Drive Pattern that correctly corresponds with all variables for the vehicle being serviced:

Model_________________

Model Year______________

Engine_________________

Emissions certification__________________________

- Some models have different drive patterns depending on the emissions certification (i.e. California, Federal, 50 State).
- Check the under hood emissions label to determine the emissions certification for the vehicle being inspected.

Transmission__________________________

Powertrain (2WD or 4WD) ____________________

For 1996/1997 models, ECM part number)______________________________

Step 4: Obtain ECM Part Number (1996 and 1997 models only)

1. Use a CONSULT tool to obtain the ECM part number.

2. Write the ECM part number in the space provided above.

3. Compare the vehicles ECM part number with the list of ECM part numbers provided in the Infiniti SRT System Chart (page 10) to determine the Drive Pattern for the vehicle being inspected.

NOTE: For 1996 and 1997 models; if the vehicles ECM part number does not match a part number listed on the SRT System Chart for that vehicle, either 1) the vehicle was identified incorrectly or 2) the vehicle has the wrong ECM installed. The SRT cannot be completed with the incorrect ECM.
Step 5: SRT Road Test (perform Drive Pattern)

To properly obtain SRT readings of “COMPLETE,” it is necessary to drive the vehicle under the exact conditions required by the vehicle’s ECM.

**Be sure to select the correct Drive Pattern.** The SRTs will not complete if the wrong drive pattern for that vehicle is used.

1. Select the Drive Pattern based on the Vehicle Identification (see Step 3).
   - For 1996 and 1997 vehicles:
     - This bulletin contains a specific Driving Pattern for every 1996 and 1997 Infiniti vehicle.
     - Use the “Bookmark” on the left side of the ASIST screen to choose the correct model and year.
     - Verify that the vehicle ECM P/N matches EXACTLY an ECM P/N listed on the Drive Pattern sheet you chose.
     - Print the Drive Pattern to take with you.
   - For 1998 and newer vehicles, refer to the EC section in the appropriate Service Manual for the required Drive Pattern. It is listed under On-Board Diagnostics > System Readiness Test.
     - Print the Drive Pattern to take with you.

2. Prior to driving the vehicle, review the Drive Pattern and prepare to complete it from start to finish:
   - Review the Pre-Check items listed on the drive pattern and ensure all conditions are met.
   - Determine the vehicle speeds required by the drive pattern.
   - Plan your route to minimize traffic and traffic signals that might interrupt the Drive Pattern tasks.
   - Review the Drive Pattern section(s) that must be restarted if you are interrupted.
   - Do not use the ASCD (cruise control) during any section of the Drive Pattern that contains the “No ASCD” symbol.
   - Some EVAP-equipped vehicles will require that fuel be added to the tank between the first and second trip. Be prepared to purchase fuel or plan your route to accommodate this step.
   - For these EVAP-equipped vehicles, begin the road test with less than ½ tank of fuel. If the fuel level is greater than ½, more time may be required to complete the EVAP sections of the Drive Pattern and you may not be able to add fuel as required.
Step 5: SRT Road Test (continued)

3. Review the Drive Pattern for any input signals that need to be monitored during the drive.
   
   • If needed, Connect a CONSULT tool to the vehicle to monitor required signals.

**NOTE:**

• Monitor the Fuel Temperature if the EVAP SRT is “**INCOMPLETE**.” One part of the EVAP SRT diagnostic logic requires a 3°C increase in fuel temperature from the time the ignition key is turned to “ON” as part of the test criteria. Fluctuations in the fuel temperature reading can extend the time required for the EVAP SRT to indicate “**COMPLETE**.” If the fuel temperature change is not sufficient after completing the SRT Drive pattern, idle the vehicle until a fuel temperature increase of at least 3°C is noted or until the EVAP SRT indicates “**COMPLETE**.”

• If the fuel temperature increases 3°C or more but the SRT still indicates “**INCOMPLETE**,” the SRT Drive Pattern may need to be repeated.

4. Note the following items before starting the Drive Pattern:

   • **IMPORTANT:** Nissan requires using a driver and an assistant to conduct SRT driving patterns. The assistant should read the Drive Pattern, CONSULT data, and drive time and convey driving instruction to the driver. It is the driver’s responsibility to observe and react to traffic conditions. **Always drive the vehicle in a safe manner and obey all traffic laws.**

   • To ensure all ECM Self Test requirements are met, **drive the ENTIRE pattern** whenever any SRT items indicate “**INCOMPLETE**.”

   • Some vehicles require that sections of the Drive Pattern be driven **two times** to satisfy the “self diagnosis two trip logic”. For vehicles that require two trips, the pre-check engine coolant temperature must be met before beginning Section 1 of the second trip.
5. Perform the Drive Pattern:
   a. Make sure all Pre-Check conditions are met.
   b. Drive the vehicle and carefully follow the specific instructions and time requirements listed in each section of the Drive Pattern.

**NOTE:** If you monitor the (B/FUEL SCHDL):
- The Base Fuel Schedule (B/FUEL SCHDL) is an indication of engine load.
- It will be easier to match high B/FUEL SCHDL values when driving up slight hills in the recommended gear range.
- It will be easier to match low B/FUEL SCHDL values when driving down slight hills in the recommended gear range.
- Turning the A/C compressor ON will increase the B/FUEL SCHDL value, while turning it OFF will decrease the B/FUEL SCHDL value.

**Step 6: Recheck for DTC**

Upon completion of the Drive Pattern, determine if any DTCs have been stored. Only in rare cases will this occur.

- If a DTC has been stored after completing the Drive Pattern, it must be repaired. Refer to ASIST for diagnostic and repair information.
  **NOTE:** Normal warranty coverage will apply for DTC repairs.
- Once the DTC is repaired, erase the stored DTC. Turn the ignition OFF for 10 seconds, and then repeat the entire Drive Pattern (**Step 5**) to “COMPLETE” the SRTs.
- If no DTCs have been stored, **DO NOT touch “Erase” or all SRT items will reset to “INCOMPLETE.”**
Step 7: Confirm All SRTs “COMPLETE”

If all SRT items indicate “COMPLETE,” the inspection is complete.

- If Catalyst and/or O2 Sensor Monitors show “INCOMPLETE” perform step A or B below.

A. Check Self Learning Value (Long Term Fuel Trim (LTFT)) and A/F ALPHA (Short Term Fuel Trim (STFT)). If either value is +10% or more above target of 100%, clear Self Learning Value.
   - Perform DTC diagnosis for P0171 or P0174 and check for the following possible causes:
     - Intake air leaks
     - Front heated oxygen sensors
     - Injectors
     - Exhaust gas leaks
     - Incorrect fuel pressure
     - Lack of fuel
     - Mass air flow sensor

B. Check Self Learning Value (Long Term Fuel Trim (LTFT)) and A/F ALPHA (Short Term Fuel Trim (STFT)). If either value is -10% or more below target of 100%, clear Self Learning Value.
   - Perform DTC diagnosis for P0172 or P0175 and check for the following possible causes:
     - Intake air leaks
     - Front heated oxygen sensors
     - Injectors
     - Exhaust gas leaks
     - Incorrect fuel pressure
     - Lack of fuel
     - Mass air flow sensor

- After repairs have been made, run the prescribed drive pattern and check that A/F ALPHA is within ±10% of the target of 100% during the steady state portions of the drive cycle. If it is not, then continue repairs. If it is, return to STEP 5.
### Infiniti SRT System Chart

<table>
<thead>
<tr>
<th>Model</th>
<th>Model Year</th>
<th>ECM Part No. 23710-XXXXX</th>
<th>Drive Pattern</th>
<th>EGR</th>
<th>O₂ Heater</th>
<th>O₂ Sensor</th>
<th>Catalyst</th>
<th>EVAP</th>
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<tbody>
<tr>
<td>G20</td>
<td>'96</td>
<td>0J600, 0J601, 0J602</td>
<td>1 trip</td>
<td>1 trip</td>
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<td>(Fed)</td>
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<td>16</td>
<td>2 trip</td>
<td>2 trip</td>
<td>2 trip</td>
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<td></td>
</tr>
</tbody>
</table>

**Note:**

- SRT Items highlighted in gray indicate the drive pattern section for that item must be repeated if the trip is interrupted by releasing the throttle when not directed to do so.
- No gray highlight indicates the drive pattern for that SRT item will resume at point of interruption if the drive pattern for that SRT item is interrupted by releasing the throttle when not directed to do so.
It is better to perform this driving test when fuel level is less than 1/2.

**ECM Part Numbers:**

**First Trip:**
- Drive all sections 1 through 9.

**Second Trip Logic**

**Second Trip:**
- Turn ignition off.
- Add 4 gallons fuel.
- Start engine and drive sections 4, 5, 6, 7, 8, 9.

---

**Pre-check**

**ENGINE COMPARTMENT WARM-UP**

- Start engine, idle at least 1.5 minutes.
- Drive at 50 - 65 MPH.

**2nd Trip**

1st Trip:
- Allow engine to idle for 10 minutes then cycle ignition key off for 10 seconds.
- Restart engine and immediately begin next drive pattern section.

2nd Trip:
- Turn ignition off, add 4 gallons of fuel.
- Start engine and allow to idle 10 min. then cycle ignition key off for 10 seconds.
- Restart engine and immediately begin next drive pattern section.

**Hold recommended B/F SCHDL range.**
- Allow road speed to vary as necessary.

**B/F SCHDL:**
- More than 1.8 msec
- Less than 2.0 msec
- Between 2.5 - 4.0 msec

**Selector lever:**
- "D" (OD ON)
- "D" (OD OFF)

**Engine RPM:**
- 1,400 - 1,600
- 1,800 - 2,100
- 1,600 - 2,200
- Approx. 3,000 RPM

**Cruise at 50 - 60 MPH**
- Selector lever: "D"
- Keep engine speed over 3,000 RPM.

**Downshift then completely release accelerator more than 5 seconds without braking, then idle 1 minute.**

**Steady state cruise at 31 - 44 MPH**
- Selector lever: "2"
- B/F SCHDL: Less than 2.0 msec

**B/F SCHDL:**
- 2.5 - 2.7 msec
- 2.5 - 4.0 msec
- 2.0 - 4.0 msec

**Selector lever:**
- "D" (OD ON)
- "D" (OD OFF)

**A/C switch:**
- ON
- OFF

**Do not use ASCD (cruise control).**

**Vehicle Identification**

- Always match vehicle and ECM part number to correct drive pattern sheet.

---

**'96 Infiniti I30 (CAL) A/T**

---

**NOTE:**
- Select level roads whenever possible.
- Do not use ASCD (cruise control).
- Use CONSULT Data Monitor to ensure Pre-check conditions are met prior to starting section 1.
- Increase & decrease road speed as indicated by drive pattern lines. Select level roads for best results.
- Use CONSULT Data Monitor to display values while driving vehicle.
- Read and follow all notes...

---

**SRT Drive Pattern Layout**

---

**System Readiness Test Drive Pattern #8**

---

**CAL**

---

**Vehicle Identification**

Always match vehicle ECM part number with CONSULT and match to this list.

---

**Drive Pattern Section Number refer to notes when shading is dark.**

---

**Vehicle Identification**

Always check vehicle ECM part number with CONSULT and match to this list.

---

**NOTE:**
- Select level roads whenever possible.
- Do not use ASCD (cruise control).
- Use CONSULT Data Monitor to ensure Pre-check conditions are met prior to starting section 1.
- Increase & decrease road speed as indicated by drive pattern lines. Select level roads for best results.
- Use CONSULT Data Monitor to display values while driving vehicle.
- Read and follow all notes.
System Readiness Test Drive Pattern #1

ECM Part Numbers: 23710-0J600

One Trip Logic for all sections.
Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>Section</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Idle 1.5 minutes</td>
</tr>
<tr>
<td>2*</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>3*</td>
<td>Drive 1.5 minutes</td>
</tr>
<tr>
<td>4</td>
<td>Cruise at 50 - 63 MPH&lt;br&gt;Selector lever: &quot;5th&quot;&lt;br&gt;ENG. RPM: 1,800 - 2,200&lt;br&gt;A/C switch: ON</td>
</tr>
</tbody>
</table>

Engine compartment warm-up

<table>
<thead>
<tr>
<th>Section</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5*</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>6*</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>7*</td>
<td>Downshift then decel.&lt;br&gt;Selector lever: &quot;4th&quot;&lt;br&gt;Idle 1 minute</td>
</tr>
</tbody>
</table>

End

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Infiniti G20 M/T
System Readiness Test Drive Pattern #2

ECM Part Numbers: 23710-0J601, -0J602

One Trip Logic for all sections.
Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Idle 1.5 minutes</td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 1.5 - 1.7 msec
Selector lever: "5th"
ENG. RPM: 1,800 - 2,200
A/C switch: ON

Engine compartment warm-up

<table>
<thead>
<tr>
<th>ENGINE</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong> Drive 1.5 minutes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Allow engine to idle for at least 10 minutes.
Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

Catalyst

<table>
<thead>
<tr>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5</strong> Drive 3 minutes</td>
<td></td>
</tr>
</tbody>
</table>

Cruise at 50 - 60 MPH
Selector lever: "4th"
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

End

Cruise at 53 - 58 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "5th"
B/F SCHDL: More than 1.5 msec
ENG. RPM: 2,300 - 2,500
A/C switch: ON

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Infiniti 0 /T
### System Readiness Test Drive Pattern #3

**ECM Part Numbers:** 23710-0J610

**One Trip Logic for all sections. Drive all sections one time.**

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Allow engine to idle for at least 10 minutes, then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td>Drive at 50 - 70 MPH</td>
<td>Selector lever: &quot;D&quot; (OD ON)</td>
<td>B/F SCHDL: 2.3 - 2.5 msec</td>
<td>ENG. RPM: 1,300 - 1,500</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7</strong></td>
<td>Downshift then idle 1 minute</td>
<td>Selector lever: &quot;O&quot; (OD OFF)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**System Readiness Test Drive Pattern #3 '96 Infiniti G20 A/T**

- Engine coolant temperature must be below 70°C (158°F) before starting engine.
- Engine must warm to at least 1.5 minutes before starting.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #4

ECM Part Numbers: 23710-J611, J612

One Trip Logic for all sections. Drive all sections one time.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td></td>
<td>Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B/F SCHDL: 2.1 - 2.5 msec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selector lever: &quot;D&quot; (OD OFF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ENG. RPM: 1,300 - 1,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A/C switch: ON</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td></td>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td></td>
<td>Drive at 50 - 70 MPH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selector lever: &quot;D&quot; (OD OFF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B/F SCHDL: 2.0 - 3.0 msec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ENG. RPM: 2,000 - 2,800</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allow engine to idle for at least 10 minutes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td></td>
<td>Drive 3 minutes</td>
<td></td>
<td>Idle 1 minute</td>
</tr>
<tr>
<td><strong>7</strong></td>
<td></td>
<td>Downshift then idle 1 minute</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 70˚C (158˚F) before starting engine.

Start engine and idle at least 1.5 minutes.

Steady state cruise at: 53 - 58 MPH
Selector lever: "D" (OD ON)
A/C switch: ON

'96 Infiniti 20 A/T
System Readiness Test Drive Pattern #5

ECM Part Numbers: 23710-53U00, -53U01, -53U02, -53U03, -53U04, -53U06

One Trip Logic for all sections.
Drive all sections one time.

Pre-check

- **O2 Sensor Heater**
  - Idle 1.5 minutes

- **EGR**
  - Drive 3 minutes

- **ENGINE COMPARTMENT WARM-UP**
  - Drive 1.5 minutes

- **CATALYST**
  - Drive 3 minutes

- **O2 SENSOR**
  - Drive 3 minutes

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary

B/F SCHDL: 1.8 - 3.0 msec
Selector lever: "5th"
ENG. RPM: 1,000 - 1,400
A/C switch: ON

Drive at 50 - 65 MPH
Selector lever: "5th"
B/F SCHDL: 2.3 - 3.7 msec
ENG. RPM: 1,800 - 2,400

Allow engine to idle for at least 10 minutes.
Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

Cruise at 50 - 60 MPH
Selector lever: "4th"
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.

Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at: 53 - 58 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "4th"
B/F SCHDL: More than 1.5 msec
ENG. RPM: 2,100 - 2,300
A/C switch: ON

End

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Infiniti I30 (ED) MT
System Readiness Test Drive Pattern #6


One Trip Logic for all sections.  Drive all sections one time.

---

**Pre-check**
- **Pre-check (O2 Sensor Heater)**
  - 1*: Idle 1.5 minutes
  - 2*: Drive 3 minutes
  - 3*: Drive 1.5 minutes

**Engine Compartment Warm-up**
- **Engine Compartment Warm-up (EGR)**
  - Drive at 50 - 65 MPH
  - Selector lever: "D" (OD ON)
  - B/F SCHDL: 2.5 - 4.0 msec
  - ENG. RPM: 1,600 - 2,200
  - A/C switch: ON

**Catalyst**
- **Catalyst**
  - Drive 3 minutes

**O2 Sensor**
- **O2 Sensor**
  - Downshift then completely release accelerator more than 5 seconds without braking, then idle 1 minute in neutral or park.

---

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

---

'96 Infiniti I30 (FED) A/T
System Readiness Test Drive Pattern #7

ECM Part Numbers: 23710-54U00, -54U01, -54U02, -54U03, -54U04, -54U05, -54U06, -6GU60, -56U61, -56U62, -56U64, -56U66

Two Trip Logic
First Trip: Drive all sections 1 through 9.
Second Trip: Turn ign. off. Add 4 gallons fuel. Start engine and drive sections 4, 5, 6, 7, 8, 9.

NOTE: If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Infiniti I30 (CAL) □/T
System Readiness Test Drive Pattern #8

ECM Part Numbers: 23710-54U10, -54U11, -54U12, -54U13, -54U14, -54U15, -54U16, -56U70, -56U71, -56U72, -56U73, -56U74, -56U75, -56U76

Two Trip Logic

First Trip: Drive all sections 1 through 9.
Second Trip: Turn ign. off. Add 4 gallons fuel. Start engine and drive sections 4, 5, 6, 7, 8, 9.

NOTE: It is better to perform this driving test when fuel level is less than 1/2.

ECM Part Numbers:

First Trip:
- Drive all sections 1 through 9.

Second Trip:
- Turn ign. off.
- Add 4 gallons fuel.
- Start engine and drive sections 4, 5, 6, 7, 8, 9.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor</th>
<th>Heater</th>
<th>EGR</th>
<th>ENGINE COMPARTMENT WARM-UP</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idle 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 3 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive 1.5 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Trip: Allow engine to idle for 10 minutes then cycle ignition key off for 10 seconds. Restart engine and immediately begin next drive pattern section.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive at 50 - 60 MPH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGR SUCHL: 2.5 - 4.0 msc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selector lever: &quot;D&quot; (OD ON)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG RPM: 1,400 - 1,600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A/C switch: ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 5*        |        |     |                            |          |           |             |
| Drive 3 minutes |
| 6*        |        |     |                            |          |           |             |
| Drive 3 minutes |
| 7*        |        |     |                            |          |           |             |
| Downshift then decell. |
| Idle 1 minute |
| 8*        |        |     |                            |          |           |             |
| Drive 2 minutes |
| 9*        |        |     |                            |          |           |             |
| Drive 2 minutes |

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

Keep recommended B/F SCHDL range. Allow road speed to vary as necessary.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'96 Infiniti I30 (CAL) A/T
**System Readiness Test Drive Pattern #9**

**ECM Part Numbers:** 23710-0L700, -0L701, -0L702, -0L707, -0L708, -0L709, -0L760, -0L761, -0L762, -0L763, -0L767, -0L768, -0L769

**All Items:** Two Trip Logic. Drive all sections two times.

**First Trip:** Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

**Second Trip:** Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

**NOTE:** It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

---

**Pattern #9: '97 I30 M/T**
System Readiness Test Drive Pattern #10

ECM Part Numbers: 23710-0L710, -0L711, -0L712, -0L717, -0L718, -0L719, -0L770, -0L771, -0L772, -0L773, -0L777, -0L778, -0L779

All Items: Two Trip Logic. Drive all sections twice.

First Trip: Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70˚C (158˚F).

Second Trip: Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

NOTE: It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #11

Pre-check

**1**
- Idle 1.5 minutes

**2**
- Drive 1.5 minutes

**3**
- Drive 3 minutes

After driving, allow engine to idle for at least 10 minutes. Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

**4**
- Drive 3 minutes

**5**
- Drive 3 minutes

End

- Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

Engine coolant temperature must be below 32°C (89°F) before starting engine.

ECM Part Numbers: 23710-18Y00, -18Y01

One Trip Logic for all sections.
Drive all sections one time.
System Readiness Test Drive Pattern #12

ECM Part Numbers: 23710-18Y61, -18Y62

All Items: Two Trip Logic.

First Trip: Drive all sections 1 through 5, then turn ign. off and allow engine to cool to 158°F to meet Pre-check condition for second trip.

Second Trip: Drive all sections 1 through 5 again.

Pre-check:
- O2 Sensor Heater
- EGR

ENGINE COMPARTMENT WARM-UP:
- Allow engine to idle for at least 10 minutes.
- Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

CATALYST:
- Drive 3 minutes

O2 SENSOR:
- Drive 3 minutes

System Readiness Test Drive Pattern #12

'96 Infiniti J 30 A/T

First Trip: Cycle ign. switch OFF then repeat sections 1 - 5

Second Trip: End

† Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #13

ECM Part Numbers: 23710-18Y10, -18Y11, -18Y12, -18Y13, -18Y14

All Items: Two Trip Logic.

**First Trip:** Drive all sections 1 through 5, then turn ign. off and allow engine to cool to 158°F. to meet Pre-check condition for second trip.

**Second Trip:** Drive all sections 1 through 5 again.

### Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Engine coolant temperature must be below 32°C (95°F) before starting engine.

- Start engine and idle at least 1.5 minutes.

- Drive at 55 - 75 MPH
  - Selector lever: "D" (OD ON)
  - B/F SCHED: 1.9 - 3.0 msec
  - ENG. RPM: 1,800 - 2,400

- Idle 1.5 minutes

- Drive 1.5 minutes

- Drive 3 minutes

- Drive 3 minutes

- Cruise at 50 - 60 MPH
  - Selector lever: "D" (OD OFF)
  - Keep engine speed above 1,000 RPM. Allow road speed to vary if necessary.
  - Do not decelerate for more than 3 consecutive seconds.

- Steady state cruise at: 53 - 58 MPH
  - Use ASCD or hold accelerator to keep road speed as steady as possible.
  - Selector lever: "D" (OD ON)
  - B/F SCHED: More than 1.4 msec
  - ENG. RPM: 2,100 - 2,200
  - A/C switch: ON

- Engine coolant temperature must be below 32°C (95°F) before starting engine.

---

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #14

ECM Part Numbers: 23710-1W205, -1W206, -1W207, -1W208, -1W209, -1W265, -1W266, -1W260, -1W203, -1W201, -1W200

All Items: Two Trip Logic. Drive all sections two times.

First Trip: Drive all sections 1 through 8 then turn ign. off and allow engine to cool below 70°C (158°F).

Second Trip: Start engine, drive sections 1, 2, 3. Turn ign. off and add 4 gallons of fuel in section 4, then start engine and drive sections 5, 6, 7, 8.

Pre-check

<table>
<thead>
<tr>
<th>02 Sensor</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
<th>EVAP SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

Start engine, idle at least 1.5 minutes.

Hold recommended B/F SCHRDL range. Allow road speed to vary as necessary.

B/F SCHRDL: 2.8 - 3.5 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,500 - 1,800
A/C switch: ON

Drive 3 minutes

Engine coolant temperature must be below 70°C (158°F) before starting engine for either the first or second trip.

Start engine, idle at least 1.5 minutes.

Hold recommended B/F SCHRDL range. Allow road speed to vary as necessary.

B/F SCHRDL: 2.8 - 3.5 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,500 - 1,800
A/C switch: ON

Drive 3 minutes

Key "OFF" 10 seconds (Not more than 5 minutes)

1st Trip:

IGN switch "OFF" 10 seconds (Not more than 5 minutes)

2nd Trip:

IGN switch "OFF"

Add 4 gallons of fuel

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)

Engage at 53 - 58 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.

B/F SCHRDL: Less than 2.0 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,600 - 2,400
A/C switch: ON

Steady state cruise at 31 - 44 MPH
Selector lever: "D" (OD OFF)

A/C switch: OFF

Steady state cruise at 31 - 44 MPH
Selector lever: "D" (OD OFF)

A/C switch: OFF

Hold the accelerator pedal as steady as possible. Allow speed to change if necessary.

NOTE: It is better to perform this driving test when fuel level is less than 1/2.

If fuel level is greater than 1/2 more time may be required to complete EVAP sections of the drive pattern. Also you may be unable to add fuel as required.

* Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.

'97 Infiniti A/T
One Trip Logic for all sections.
Drive all sections one time.

<table>
<thead>
<tr>
<th>Pre-check</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Idle 1.5 minutes</td>
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<td>Drive 3 minutes</td>
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<td>Drive 3 minutes</td>
</tr>
<tr>
<td>2*</td>
<td></td>
<td>Drive 1.5 minutes</td>
<td></td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>3*</td>
<td></td>
<td>Drive 1.5 minutes</td>
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<td>Drive 3 minutes</td>
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<tr>
<td>4</td>
<td></td>
<td>Drive at 55 - 65 MPH</td>
<td>Cruise at 50 - 60 MPH</td>
<td>Drive 3 minutes</td>
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<tr>
<td>5*</td>
<td></td>
<td>Cruise at 50 - 60 MPH</td>
<td>Steady state cruise at: 53 - 58 MPH</td>
<td>Drive 3 minutes</td>
</tr>
<tr>
<td>6*</td>
<td></td>
<td>Steady state cruise at: 53 - 58 MPH</td>
<td>Use ASCD or hold accelerator to keep road speed as steady as possible</td>
<td>Drive 3 minutes</td>
</tr>
</tbody>
</table>

Engine coolant temperature must be below 32°C (85°F) before starting engine.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 1.0 - 1.2 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,200 - 1,500
A/C switch: ON

Start engine and idle at least 1.5 minutes.

Allow engine to idle for at least 10 minutes.
Then cycle ignition switch OFF for 10 seconds. Restart engine and immediately begin next drive pattern section.

Engine coolant temperature must be below 32°C (95°F) before starting engine.

Cruise at 50 - 60 MPH
Selector lever: "D" (OD ON)
B/F SCHDL: More than 0.5 msec
ENG. RPM: 1,700 - 1,900
A/C switch: ON

Dark shading behind section number indicates this drive pattern section must be repeated, without turning the ignition off, if it is interrupted by releasing the accelerator when not directed to do so.
System Readiness Test Drive Pattern #16

ECM Part Numbers: 23710-6P100, -6P101, -6P102, -6P103, -6P104, -6P107, -6P106, -6P600, -6P601, -6P602, -6P603, -6P604, -6P606, -6P607

Two Trip Logic (all sections)
1st Trip: Drive 1 through 6, then turn ignition off and allow engine to cool to 158˚F.
2nd Trip: Drive sections 1 through 6 again.

Pre-check

<table>
<thead>
<tr>
<th>O2 Sensor Heater</th>
<th>EGR</th>
<th>KEY &quot;OFF&quot;</th>
<th>CATALYST</th>
<th>O2 SENSOR</th>
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<td>1</td>
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<tr>
<td>6</td>
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</tr>
</tbody>
</table>

Engine coolant temperature must be below 70˚C (158˚F) before starting engine.

Start engine and idle at least 1.5 minutes.

Hold recommended B/F SCHDL range. Allow road speed to vary as necessary.
B/F SCHDL: 2.0 - 3.2 msec
Selector lever: "D" (OD ON)
ENG. RPM: 1,200 - 1,400
A/C switch: ON

Drive 3 minutes

Drive 1.5 minutes

Drive 3 minutes

Drive 1.5 minutes

Drive 3 minutes

Drive 3 minutes

IGN switch "OFF" 10 seconds (Not more than 5 minutes)

Cruise at 50 - 60 MPH
Selector lever: "D" (OD ON)
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Cruise at 50 - 60 MPH
Selector lever: "D" (OD OFF)
Keep engine speed above 3,000 RPM. Allow road speed to vary if necessary.
Do not decelerate for more than 3 consecutive seconds.

Steady state cruise at: 53 - 58 MPH
Use ASCD or hold accelerator to keep road speed as steady as possible.
Selector lever: "D" (OD ON)
B/F SCHDL: More than 1.0 msec
ENG. RPM: 1,800 - 2,000
A/C switch: ON

1st Trip: Key off then repeat 1 to 6
2nd Trip: End
On some 2003 MY Tiburon vehicles, engine control system diagnosis may not be possible when using a generic scan tool (GST) because the OBD connector does not contain the ground circuit necessary for a GST to communicate with the engine control module. Engine control system diagnosis can be performed using the Hi-Scan Pro due to differences between the Hi-Scan Pro and GST.

This bulletin describes the procedure for installing a wire kit to ground the No. 5 OBD connector wire to allow communication with a GST.

VEHICLES AFFECTED:
^ Model: 2003 TIBURON
^ Affected vehicle production date range:
PARTS REQUIRED

<table>
<thead>
<tr>
<th>PART NAME</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>PHOTO</th>
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<tbody>
<tr>
<td>Wire kit assembly</td>
<td>91100-2CA00</td>
<td>1</td>
<td>Wire Terminal</td>
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</table>

**PARTS REQUIRED**

<table>
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<tr>
<th>OP CODE</th>
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<th>OP TIME</th>
<th>NATURE CODE</th>
<th>CAUSE CODE</th>
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<tr>
<td>21B058R1</td>
<td>Grounding OBD Connector Wire</td>
<td>0.3 M/H</td>
<td>*N66</td>
<td>**C61</td>
</tr>
</tbody>
</table>

**NOTE**
Submit claims using the campaign claim screen.
*N66: Electrical malfunction
**C61: Incorrect part

WARRANTY INFORMATION

Return to Pg. 16
OBD-II READINESS TEST DRIVE CYCLE
FOR 1996-1998 SONATA

DESCRIPTION:
This TSB describes Drive Cycles which may assist the vehicle’s OBD-II system to complete the necessary emissions systems tests and set the OBD-II Readiness Monitors to display READY (or COMPLETED -- described simply as “READY” in this TSB).

This TSB specifically covers the 1996-1998 Sonata.

The drive cycles described below are specifically designed to set the following items:

- CATALYST
- EVAP. PURGE
- O2 SENSOR
- O2 SENSOR HEATER
- EGR

READINESS MONITORS:
The readiness monitors indicate if all the necessary emissions systems tests have been completed by the ECM.

This feature is a part of the OBD-II system.

It ensures that vehicles have had sufficient time to conduct all necessary emissions related diagnostics:

- after a repair which resulted in the power to the ECM being interrupted
- or resulted in clearing of Diagnostic Trouble Codes (DTCs) using a scan tool.
REPAIR PROCEDURE:
Depending on the model year of the vehicle, follow the correct Drive Cycle pattern.

IMPORTANT: In order to set the Readiness Monitors to READY, the vehicle must successfully complete the appropriate Drive Cycle TWO TIMES.

DEFINITION OF TWO CONSECUTIVE DRIVE CYCLES:
That is, the vehicle must:

1. Complete the Drive Cycle.
2. The ignition key must be turned to the OFF position and stay off for at least 30 seconds.
3. Complete the Drive Cycle a second time.

IMPORTANT: The two Drive Cycles MUST be completed on two CONSECUTIVE drives.

CONSECUTIVE means that the two successful OBD-II Readiness Drive Cycles cannot be interrupted by any other kind of driving between them.
WARNING:

PRE-EXISTING CONDITIONS ON THE VEHICLE:

The vehicle will not set the Readiness Monitors even if the Drive Cycles are performed correctly, if the vehicle has certain pre-existing conditions.

Such as:

- **Stuck Open Thermostat:** If the thermostat is stuck open, the Engine Coolant Temperature (ECT) reading may drop below 176 degrees F. If the ECT reading drops below 176 F (especially during the steady state highway driving where the airflow across the radiator will cool the coolant quickly), the Drive Cycle will NOT be effective. In order for the Drive Cycle to “count,” the ECT reading must be above 176 F.

- **Radiator Fans Stuck ON:** If the radiator fans are stuck ON, the ECT reading may drop below 176 F during the Drive Cycle. As with the stuck open thermostat, this condition will negate the Drive Cycle.

ROAD CONDITIONS:

The type of road that the Drive Cycle is performed on is important.

The **BEST** type of road for performing the Drive Cycle is one that is as **Level (Flat)** as possible.

If the Drive Cycle is performed in an area with **hilly terrain**, it will be more difficult to successfully perform the Drive Cycle. In this case, it may require that the Drive Cycle be performed **more than two times** to ensure success.
1996 & 1997 DRIVE CYCLE:

IMPORTANT: In the case of the 1996 & 1997 Sonata, in order to set the CATALYST, EVAP, PURGE, O2 SENSOR, O2 SENSOR HEATER and EGR monitors to READY, **ALL FIVE of these diagnostic tests must be completed on the same drive.** If only four of the five monitors’ diagnostics are completed on a test drive, NONE of the Readiness Monitors will indicate READY. Thus, the drive cycle must be repeated.

The drive cycle described below covers the conditions required to run ALL five diagnostic tests.

DISCUSSION OF DRIVE CYCLES AND MODES:

The chart below shows the required driving necessary to complete a Drive Cycle.

![Drive Cycle Chart](chart.png)

To complete a Drive Cycle for the 1996 or 1997 Sonata, MODE 1 and four (4) MODE 2 must be completed.
ONE DRIVE CYCLE = MODE 1 + MODE 2 + MODE 2 + MODE 2 + MODE 2

IMPORTANT: The Drive Cycle consists of five parts; one MODE 1 and four MODE 2 parts. The engine must not be turned off at any time during the Drive Cycle. Do NOT turn the engine off between completing different Modes. Only after ALL parts of the Drive Cycle is completed, should the ignition key be turned off.

MODE 1:
The following information describes, step-by-step, the procedure for completing MODE 1 driving.

STEP 1: (Starting Procedure)
- Check to make sure that there are no DTCs stored in the ECM (using the Hi-Scan Pro) and that the Check Engine Light is OFF. If there is a DTC, repair the vehicle first.

1. Check the Readiness Status. The items indicating NOT READY should be CATALYST, EVAP. PURGE, O2 SENSOR, O2 SENSOR HEATER and EGR.
   - If the MISFIRE, FUEL SYSTEM or COMPONENT monitors are not ready, then repair any conditions related to these items first.
   - Start the engine.
   - Warm up the engine (coolant temperature at least 176 degrees F).
   - Turn OFF the A/C.

STEP 2: (Transient to Steady State Driving)
- Connect the Hi-Scan Pro and go to the Current Data Menu. The three items to look at during the drive cycle are the Engine RPM, Vehicle Speed and Engine Coolant Temperature (ECT). Using the “fix” feature of the Hi-Scan, fix these three values in the Current Data Menu.

2. IMPORTANT: Two people should conduct the drive cycle, one person to drive and the other person to monitor the Hi-Scan Pro readings and keep track of the driving time.
   - Drive the vehicle to a light traffic road where the required Steady State Driving condition can be duplicated.
   - Any kind of driving is OK before the Steady State Driving is conducted.
STEP 3: (Steady State Driving - This is the MAIN part of MODE 1. The Steady State Driving should be done on a level road (avoid hills whenever possible).

- Drive the vehicle at a steady state where the engine speed is between 1,700 and 2,500 RPM in high gear (5th speed in a manual transmission equipped vehicle and “D” position in an automatic). The vehicle speed should be between 50 and 65 MPH.

- Drive in the Steady State Mode CONTINUOUSLY for a minimum of 10 minutes.

IMPORTANT: While driving in the Steady State Mode, carefully monitor the ECT reading. It should always stay above 176 F. If it drops below 176 F, diagnose the thermostat & ECT & repair. Then restart the Drive Cycle.

VEHICLE SPEED BELOW 50 MPH: The vehicle must be driven within the vehicle speed range CONTINUOUSLY. DO NOT ALLOW THE VEHICLE SPEED TO DROP BELOW 50 MPH, IF SAFELY POSSIBLE. If the vehicle speed falls below 50 MPH, the time counter for the steady state driving must be restarted.

EXAMPLE: After 5 minutes and 30 seconds of CONTINUOUS driving between 50 and 65 MPH, the vehicle speed falls below 50 MPH due to slow traffic. Because the vehicle speed fell below 50 MPH, the steady state driving must be started over. Thus, the 5 minutes and 30 seconds of driving previously accomplished DOES NOT COUNT TOWARDS THE 10 MINUTE REQUIREMENT. A full 10 minutes of CONTINUOUS driving within the specified vehicle speeds must be achieved to successfully complete the steady state driving part of Mode 1.

VEHICLE SPEED ABOVE 65 MPH: If the vehicle speed goes ABOVE 65 MPH during the Steady State Driving part of Mode 1, the continuous time counting must be stopped, but the Steady State Driving does NOT have to be restarted. When the vehicle speed falls below 65 MPH, simply restart the time counter from where it was stopped when the vehicle exceeded 65 MPH.

EXAMPLE: After 5 minutes of CONTINUOUS driving between 50 and 65 MPH, the vehicle speed goes above 65 MPH due to the flow of traffic. Because the vehicle speed is above 65 MPH, the time counter stops at 5 minutes. After a short time, it’s possible to bring the vehicle speed below 65 MPH and above 50 MPH. Now, the time counter can be restarted at 5 minutes and continue. Thus, it is not necessary to start the time counting over from zero in this case.
STEP 4: (EGR Monitoring)

1. After accumulating at least 10 minutes of Steady State Driving, find a safe place to COAST down to a low speed (below 20 MPH) from the steady state driving speed (50 ~ 65 MPH). Leave the transmission in “D” -- ATM or 5th gear -- MTM.

2. When at the location where the vehicle can be coasted down to a speed below 20 MPH, release the throttle and allow the vehicle to COAST down. DO NOT APPLY the BRAKE, if safely possible, until the vehicle speed has reached 20 MPH or less. Once the vehicle reaches 20 MPH or less, the brakes may then be applied.

**COASTING:** Coasting is defined as slowing down without depressing the throttle or the brake.

3. If an attempt to coast to 20 MPH or less was not successful due to traffic (that is, the brake had to be applied prematurely), then bring the vehicle speed back up to above 50 MPH and try again when safely possible to do so.

4. After successfully coasting to below 20 MPH, bring the vehicle to a stop at a location where the vehicle may idle.

STEP 5: (Idle-State - This is the last phase of MODE 1)

5. After coming to a stop, allow the vehicle to idle for at least 50 seconds (the transmission should be placed in Neutral and the A/C should still be OFF).

STEP 6: (Engine Stop)

6. After 50 seconds of idling, the Idle-State phase of MODE 1 is complete.

- **DO NOT TURN OFF THE ENGINE.**

- Continue the Drive Cycle by driving MODE 2 as outlined starting with page 9.
1996 & 1997 Sonata -- MODE 1

Steady State Driving

Total Continuous Time > 10 min.
Engine RPM: 1,700 ~ 2,500
Vehicle Speed: 50 ~ 65 MPH

1

Start Drive Cycle
(Engine Warm)

2

3

4

5

6

Idle

Minimum of 50 seconds
(Trans. in "N," A/C Off)

Note:

Any Driving Mode is OK

EGR Monitoring
Throttle Closed (NO Braking)
ATM in "D" or MTM in 5th

Page 8 of 13
MODE 2:
The following information describes, step-by-step, the procedure for completing MODE 2 driving.

STEP 1: (Start of MODE 2)

1. After completing MODE 1, find a light traffic road where the vehicle may be driven at different “street speeds” of approximately 50 to 15 MPH for about two minutes.

STEP 2: (Transient to Street Driving)

2. From a stop, accelerate slowly up to a speed of 45 to 65 MPH.
3. The transmission should be in “D” for ATM equipped vehicles and 5th gear for manual transmission equipped vehicles.

STEP 3: (Street Driving -- Part 1)

3. Drive the vehicle at a steady speed of 45 to 65 MPH for at least 30 seconds.
4. The engine speed should be between 1,700 and 2,500 RPMs during this phase.
5. After 30 seconds, slow the vehicle down to the next STEP.

STEP 4: (Street Driving -- Part 2)

4. Slow the vehicle down to a steady speed of 35 to 45 MPH. The brakes may be applied in the process of slowing down.
5. Drive at this speed for at least 40 seconds.
6. The engine speed should be between 1,300 and 1,800 RPMs during this phase.
7. After 40 seconds, slow the vehicle down to the next STEP.

STEP 5: (Street Driving -- Part 3)

5. Slow the vehicle down to a steady speed of 15 to 25 MPH. The brakes may be applied in the process of slowing down.
6. Drive at this speed for at least 10 seconds.
7. The engine speed should be between 1,000 and 1,200 RPMs during this phase.
8. After 10 seconds, find a safe location where the vehicle can come to a stop and idle.
STEP 6: (Idle Phase)

- Put the transmission into Neutral and make sure that the A/C is off.
- Allow the vehicle to idle at least 5 seconds but not more than 35 seconds.

6) 7: (End of MODE 2)

- If this was the first, second or third time of driving MODE 2 successfully, then repeat MODE 2 (go back to STEP 1 of MODE 2 on page 7). If not, go to the next step.

7) If this was the end of the fourth time of driving MODE 2 successfully, then the Drive Cycle is complete.

- Turn the key to the OFF position. Wait 30 seconds before restarting the engine (or turning the key to the ON position).

- IF ONLY ONE DRIVE CYCLE HAS BEEN COMPLETED, CONDUCT ONE MORE DRIVE CYCLE. (Two consecutive, successfully completed Drive Cycles are required to set the Readiness Codes.)

- After the conclusion of the second drive cycle, turn the engine off (Key in the OFF position) and wait 30 seconds before turning the key to the ON position. Using the Hi-Scan Pro, check to see if the Readiness Monitors for CATALYST, EVAP. PURGE, O2 SENSOR, O2 SENSOR HEATER and EGR indicate READY.

- If not, then check to see if there are any DTC codes or if the Check Engine Light is ON. If yes, then repair the vehicle. After repair is completed, conduct the Drive Cycle two times.

- If, after the conclusion of the second Drive Cycle, the Readiness Monitors for CATALYST, EVAP. PURGE, O2 SENSOR, O2 SENSOR HEATER and EGR still indicate NOT READY, then conduct the Drive Cycle one more time and check the Readiness Codes again (the previous attempts at the Drive Cycle may not have been successfully completed).
1996 & 1997 Sonata -- MODE 2
(Catalyst, O2 Sensor & O2 Heater Monitoring)

Note:

- - - - : Accelerate Slowly Up to Speed

== == == : Slow the Vehicle Down to a Lower Speed (Brakes May be Applied)
1998 SONATA -- STEP-BY-STEP:

IMPORTANT: In the case of the 1998 Sonata, in order to set the monitors to READY, only the diagnosis for each of the monitors need to be “run” on any drive (It is still necessary to run the diagnosis on at least two consecutive, successful Drive Cycles.). That is, the monitors are NOT linked together. They can be run independently and will display as READY or NOT READY independently (unlike the 1996 & 1997 Model Year Sonata).

EVAP. PURGE and EGR (MODE 1):

- In order to set the Evap. Purge and EGR monitors to READY, drive MODE 1 (as described previously in this TSB).

NOTE: It is NOT necessary to drive MODE 2 in order to run the Evap. Purge and EGR monitors.

- After the first successful duplication of MODE 1, turn the ignition key to the OFF position and wait 30 seconds before driving MODE 1 a second time (second Drive Cycle).

- After successfully completing two Drive Cycles, the Readiness Monitor should indicate READY.

- After the conclusion of the second Drive Cycle, turn the engine off (Key in the OFF position) and wait 30 seconds before turning the key to the ON position. Using the Hi-Scan Pro, check to see if the Readiness Monitors for EVAP. PURGE and EGR indicate READY.

- If not, then check to see if there are any DTC codes or if the Check Engine Light is ON. If yes, then repair the vehicle. After repair is completed, conduct the Drive Cycle two times.

- If, after the conclusion of the second Drive Cycle, the Readiness Monitors for EVAP. PURGE and EGR still indicate NOT READY, then conduct the Drive Cycle again and check the Readiness Codes again (the previous attempts at the Drive Cycle may not have been successfully completed).
CATALYST, O2 SENSOR and O2 SENSOR HEATER (MODE 2):

- In order to set the Catalyst, O2 Sensor and O2 Sensor Heater monitors to READY, drive MODE 2 (as described previously in this TSB) at least four (4) times.

**NOTE:** It is NOT necessary to drive MODE 1 in order to run the Catalyst, O2 Sensor and O2 Sensor Heater monitors.

- After the first successful duplication of MODE 2 at least four times, turn the ignition key to the OFF position and wait 30 seconds before driving MODE 2 at least four times again (second Drive Cycle).

- After successfully completing two Drive Cycles, the Readiness Monitor should indicate READY.

- After the conclusion of the second Drive Cycle, turn the engine off (Key in the OFF position) and wait 30 seconds before turning the key to the ON position. Using the Hi-Scan Pro, check to see if the Readiness Monitors for Catalyst, O2 Sensor and O2 Sensor Heater indicate READY.

- If not, then check to see if there are any DTC codes or if the Check Engine Light is ON. If yes, then repair the vehicle. After repair is completed, conduct the Drive Cycle two times.

- If, after the conclusion of the second Drive Cycle, the Readiness Monitors for Catalyst, O2 Sensor and O2 Sensor Heater still indicate NOT READY, then conduct the Drive Cycle again and check the Readiness Codes again (the previous attempts at the Drive Cycle may not have been successfully completed).

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INFORMATION

Subject: Information for New Vehicles with Less Than 1,000 Miles That May Not Pass California Smog Inspection or Smog Inspection in Other States

Attention: Depending on the State, this Vehicle Testing is Identified as Emissions Inspection, Smog Check, Smog Inspection or Smog Testing

<table>
<thead>
<tr>
<th>Brand:</th>
<th>Model:</th>
<th>Model Year: from</th>
<th>to</th>
<th>VIN: from</th>
<th>to</th>
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<th>Transmission:</th>
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<tr>
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<td>2017</td>
<td>—</td>
<td>—</td>
<td>All Gasoline</td>
<td>All</td>
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</table>

Catalyst Break-In Period Information

Catalyst Break-In Period Information

Notice:

- The catalyst break-in period has been approved by the California Air Resources Board (CARB) but vehicles operating within the break-in period may still be subject to an inspection within California’s Smog Inspection Program.

- The catalyst break-in period concern has been most prevalent in California because they have a Smog Inspection I/M Readiness Policy that allows only the Evaporative Monitor to not be ready on newer model year vehicles. This concern has occurred in other states and is expected to occur more frequently as other States adopt a similar Smog Inspection policy.

- When presenting a new vehicle for the California Smog Inspection or for a Smog Inspection in another State, some vehicles with less than 1,000 miles (1,609 km), may not report an Inspection/Maintenance System Check Monitor Complete Yes status as required to Pass the Smog Inspection. This may be caused by the engine control module (ECM) disabling some of the post catalyst oxygen sensor diagnostics until a preset catalyst break-in period (which varies by model and vehicle) has been completed. The post catalyst oxygen sensor diagnostics must report an Inspection/Maintenance System Yes (O2S/HO2S Monitor Complete — Yes) to the Smog Inspection test equipment, but cannot do so until after the preset calibrated catalyst break-in period has been completed.

In order to complete this catalyst break-in period, advise the Customer to operate their vehicle using the New Vehicle Break-In procedure as outlined in their Owner Manual.

- In some cases passing the Smog Inspection may be required for vehicle registration of brand new 50 State vehicles. This can happen in the following ways:
  - Any time a vehicle is sold, delivered or registered outside of the GM dealer network (i.e; a vehicle sold through a broker, drop shipped, or upfit and delivered through an upfitter) are among some of the possible examples meeting the California Registration definition for new vehicles delivered outside of the California Dealer network.
  - A new vehicle is purchased in another state and is temporarily registered in that state before being brought into California.

⇒ If this occurs a Smog Inspection is required in California. However, the vehicle will not be ready for the Smog Inspection until after the catalyst break-in period has been completed.
Customer Options to Resolve the Case of a New Vehicle Not Being Ready for the California Smog Inspection

When the vehicle is not ready for the Smog Inspection, the customer has a few options to resolve the situation as follows:

1. Obtain a Temporary Operating Permit from the California Department of Motor Vehicles, which will allow the customer to drive the vehicle allowing in many cases for the problem to resolve itself.
2. The customer can work with a GM Dealer to make sure the catalyst break-in period has completed and the O2S/HO2S Monitor Complete has been set to Yes, which could take 700–1000 miles of vehicle operation.
3. In California, the customer can call 1-800-622-7733 to make an appointment with the California Bureau of Automotive Repair (BAR) Referee Scheduling Center in order to get a waiver from the Oxygen Sensor Monitor Complete requirement.

In other states, for Smog Inspection/Emissions Testing requirements, refer to the various websites contained within this Bulletin in the section titled: Smog Inspection, Emissions Inspection Website Information

Service Procedure

Notice: This is not a warranty repair.

Verify that the vehicle owner has operated their vehicle for a minimum of 400 miles (644 km) using the New Vehicle Break-In procedure as outlined in the appropriate Owner Manual. New vehicles may not be able to complete the Inspection/Maintenance System Check for certain HO2S 2 diagnostics prior to 700 miles (1,127 km) and could require 1,000 miles (1,609 km) or more of catalyst break-in depending on driving conditions.

Observe the following O2S/HO2S Monitors on the scan tool. They must set to Yes in order to Pass the Smog Inspection:
- O2S/HO2S Monitor Complete
- O2S/HO2S Monitor Complete This Ignition Cycle
- O2S/HO2S Monitor Enabled
- O2S/HO2S Monitor Enabled This Ignition Cycle

Once the vehicle has reached 400 miles (644 km), perform the following:

1. When it is safe to do so, perform several deceleration maneuvers from a minimum speed of 45 mph (72 km/h) for at least 10 seconds. Repeat this maneuver 3 to 4 times. Stop the vehicle and turn the ignition OFF. Perform this complete Step three additional times.

Note: Decelerate/coast with no or limited brake input. Moderate to heavy braking can cause downshifts and the Diagnostic test will abort.

Note: Decelerate/coast for at least 10 seconds at 0% Throttle Pedal.

2. Use a scan tool to verify the O2S/HO2S Monitors have set to Yes.
   ⇒ If the O2S/HO2S Monitors have not set to Yes, then continue mileage accumulation and if possible repeat the verification every 100 miles (160 km).
3. Once a scan tool indicates that all O2S/HO2S Monitors are set to Yes, the vehicle is prepared for the Smog Inspection.

Note: At the time this was written, the California Smog Inspection only allows the EVAP Readiness Monitor to not be set to Yes and still pass the Smog Inspection.

⇒ If Readiness Monitors other than the O2S/HO2S Monitors are not set to Yes, refer to the Inspection/Maintenance Complete System Set Procedure in SI.
GDS 2 HO2S 2 Break-In Period

Remaining Parameter

Typical view of the GDS 2 HO2S 2 Break-In Period Remaining parameter. The parameter Range is from 100% to 0%, indicating a fully green catalyst to a completely broken-in catalyst, respectively. This parameter is not available on every vehicle.

Smog Inspection, Emissions Inspection Website Information

State laws regarding vehicle testing known as Smog Inspection, Emissions Inspection, Smog Testing and/or Smog Check vary by individual State. The following websites are examples of readily available information, but are not recommendations.

- [http://www.smogcheck.ca.gov/](http://www.smogcheck.ca.gov/) This website includes all information regarding the California Smog Check Program.


- [http://www.dmv.org/](http://www.dmv.org/) This is a privately owned website and is not owned or operated by any State Agency.


- [https://dmv.ny.gov/inspection/inspection-requirements](https://dmv.ny.gov/inspection/inspection-requirements) New York State Department of Motor Vehicles Inspection Requirements.
GM bulletins are intended for use by professional technicians, NOT a “do-it-yourselfer”. They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, **DO NOT** assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.
INCOMPLETE I/M READINESS STATUS

FORD:
2003 Focus

ISSUE
Some 2003 Focus vehicles may exhibit incomplete inspection/maintenance (I/M) readiness status during state inspection.

ACTION
If the vehicle exhibits this concern reprogram the powertrain control module (PCM) to the latest calibration using WDS release B42.2 and higher. Calibration files may also be obtained at the website.


OPERATION DESCRIPTION TIME
060705A 2003 Focus: Check 0.4 Hr.
Diagnostic Trouble Codes
And Reprogram The
Powertrain Control Module
(Do Not Use With 12650D
12650D84)

DEALER CODING CONDITION
BASIC PART NO. CODE
RECALEM 04
Dealer Service Instructions for:

California Emissions Recall K01
Reprogram ECM – OBD Readiness

Effective immediately all repairs on involved vehicles are to be performed according to this notification. Service Bulletin 18-038-09 is no longer applicable for the involved vehicles only.

Models

2003 (DR) Dodge Ram Truck (2500/3500 series pickup)
NOTE: This recall applies only to the above vehicles equipped with a 5.9L diesel engine (sales code ETC) and a California emission control system (sales code NAE).

2006-2007 (DH/D1) Dodge Ram Truck (2500/3500 series pickup)
NOTE: This recall applies only to the above vehicles equipped with a 5.9L diesel engine (sales code ETH) and a California emission control system (sales code NAE).

2007 (DC) Dodge Ram Truck (3500 series cab chassis)
NOTE: This recall applies only to the above vehicles equipped with a 6.7L diesel engine (sales code ETJ) and a California emission control system (sales code NAE) built through January 5, 2007 (MDH010508).

IMPORTANT: Some of the involved vehicles may be in dealer used vehicle inventory. Dealers should complete this recall service on these vehicles before retail delivery. Dealers should also perform this recall on vehicles in for service. Involved vehicles can be determined by using the VIP inquiry process or GRS DealerCONNECT functions.
The Engine Control Module (ECM) on about 25,208 of the above vehicles may fail to accurately report diagnostic system information with some generic scan tools. This may cause the vehicle to be rejected or fail an Inspection/Maintenance Test (also known as a Smog Check).

The Engine Control Module (ECM) must be reprogrammed (flashed).

Due to the likelihood that the required labels are already in your parts inventory, no labels will be distributed initially. The following label may be ordered as needed.

Each vehicle requires application of the following label:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04275086AB</td>
<td>Authorized Modifications Label</td>
</tr>
</tbody>
</table>
The following special tools are required to perform this repair:

- CH9401* StarSCAN Tool
- CH9404D* StarSCAN Vehicle Cable
- CH9409* StarSCAN Documentation Kit
- CH9410* StarSCAN/StarMobile Ethernet Cable 12 ft.
- CH9412* StarSCAN Software Update Device Kit
- CH9801 StarMOBILE Tool
- CH9804 StarMOBILE Vehicle Cable
- NPN TechCONNECT PC
- NPN StarSCAN/StarMOBILE Software Update CD
- NPN wiTECH VCI Pod Kit
- NPN Laptop Computer
- NPN wiTECH Software
- CH6000A DRBIII®
- CH7000A DRBIII® Flash Cable
- CH7035B DRBIII® Data Cable

* Part of CH9400 kit.
NOTE: The DRBIII® must be used to perform this recall on 2003 Model Year (MY) vehicles. The 2003 MY procedure is found in Section D of the Service Procedure. Either wiTECH, StarMOBILE or StarSCAN can be used to perform this recall on 2006-2007 MY vehicles. This procedure must be performed with software release level 10.03 or higher for wiTECH and Star Mobile applications, or software release level 9.05 for StarSCAN applications. If the reprogramming flash for the ECM is aborted or interrupted, repeat the procedure.

A. Reprogram the ECM Using wiTECH:

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.0 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge.
   NOTE: Use an accurate stand alone voltmeter. The battery charger voltmeter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the wiTECH VCI pod to the vehicle data link connector located under the steering column.

3. Place the ignition in the “RUN” position.

4. Open the wiTECH Diagnostic application.

5. Starting at the “Select Tool” screen, select the row/tool for the wiPOD device you are using.

6. Enter your “User id” and “Password”, then select “OK”.

7. Select the “Next” tab at the bottom of the screen.

8. From the “Vehicle View” screen, click on the PCM icon.

9. From the “PCM View” screen, compare the “Current ECU Flash Number” with the “New Part Number” listed on the “sort table”. If the “Current ECU Flash Number” is the same as the “New Part Number” continue to Step 15. If the part numbers are not the same, continue to Step 10.
10. With the cursor over the desired flash file, click the small green arrow button on the right side of the screen.

11. From the “ECU Flash” screen follow the wiTECH screen instructions to complete the flash.

12. Once the flash is complete click the “OK” button on the “ECU Flash” screen.

13. From the “Clear Stored DTC” screen clear all Diagnostic Trouble Codes (DTC’s) by clicking the “Clear DTC’s” button.

14. From the “PCM View” screen, compare the “Current ECU Flash Number” with the “New Part Number” listed on the “sort table”. If the “Current ECU Flash Number” is the same as the “New Part Number” the flash is complete. If the part numbers are not the same, repeat Steps 8 through 14.

15. Turn the ignition to the “OFF” position, remove the wiPOD and battery charger from the vehicle.

16. Continue with Section E. Install Authorized Modifications Label.
B. Reprogram the ECM Using StarSCAN:

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.0 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge.

   NOTE: Use an accurate stand alone voltmeter. The battery charger voltmeter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the CH9410 StarSCAN ethernet cable to the StarSCAN and the dealer’s network drop.

3. Connect the CH9404D StarSCAN vehicle cable to the StarSCAN and the vehicle.

4. Place the Ignition in the “RUN” position, then Power “ON” the StarSCAN.

5. Retrieve the old PCM part number. With the StarSCAN on the “Home” screen, follow the procedure below:
   a. Select “ECU View”.
   b. Select “PCM” in the list of modules.
   c. Select “More Options”.
   d. Select “ECU Flash”.
   e. Record the “Part Number” displayed at the end of the “Resident flash file for” statement near the top of “Flash PCM” screen for later reference.
6. Download the flash file from the internet to the StarSCAN. With the StarSCAN on the "Flash PCM" screen, follow the procedure below:
   a. Select “Browse for New File”. Follow the on screen instructions.
   b. If the newly downloaded flash file “Part Number” description is the same as the number recorded in Step 5e, then the PCM is up to date. Continue to Step 11. If the part numbers are not the same, continue to Step 6c.
   c. Highlight the listed calibration on the StarSCAN screen.
   d. Select “Download to Scan tool”.
   e. Select "Close" after the download is complete, then select “Back”.
   f. Highlight the listed calibration.
   g. Select "Update Controller" and follow the on screen instructions.
   h. When the update is completed, select “OK”.

7. Disconnect the CH9404D StarSCAN vehicle cable from the vehicle. Wait until the StarSCAN screen reads “Vehicle Disconnected”, then press “OK”.

8. Reconnect the CH9404D StarSCAN vehicle cable to the vehicle.

9. Retrieve the PCM part number. With the StarSCAN on the “Home” screen, follow the procedure below:
   a. Select “ECU View”.
   b. Select “PCM” in the list of modules.
   c. Select “More Options”.
   d. Select “ECU Flash”.
   e. Verify the “Part Number” (displayed at the end of the “Resident flash file for” statement) has been updated to the new part number. If it has updated, then the flash has been completed successfully.

10. Clear any Diagnostic Trouble Codes (DTCs) as follows:

    NOTE: Due to the ECM programming procedure, DTC(s) may be set in other modules (TCM, ABS, BCM, MIC, WCM, etc.) within the vehicle, if so equipped. Some DTC’s may cause the MIL to illuminate.
   a. From the “Home” screen select “System View”.
   b. Select “All DTCs”.
   c. Press “Clear All Stored DTCs” if there are any DTCs shown on the list.
11. Turn the ignition key to the “OFF” position and remove the StarSCAN unit, StarSCAN cable, StarSCAN ethernet cable and battery charger from the vehicle.

12. Continue with Section E. Install Authorized Modification Label.
C. Reprogram the ECM Using StarMOBILE:

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.0 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge. **NOTE:** Use an accurate stand alone voltmeter. The battery charger voltmeter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the StarMOBILE scan tool to the vehicle data link connector located under the steering column and turn the ignition key to the “RUN” position.

3. Power ON the StarMOBILE scan tool.

4. From the desktop, launch the “StarMOBILE Desktop Client” software.

5. Establish a connection with the StarMOBILE scan tool.

6. Retrieve the old PCM part number. With the StarMOBILE on the “Home” screen, follow the procedure below:
   a. Select “ECU View”.
   b. Select “PCM” in the list of modules.
   c. Select “More Options”.
   d. Select “ECU Flash”.
   e. Record the “Part Number” displayed at the end of the “Resident flash file for” statement near the top of “Flash PCM” screen for later reference.
7. Download the flash file from the internet to the StarMOBILE. With the StarMOBILE on the "Flash PCM" screen, follow the procedure below:
   a. Select “Browse for New File”. Follow the on screen instructions.
   b. Enter your “User id” and “Password”, then select “OK”.
   c. If the newly downloaded flash file “Part Number” description is the same as the number recorded in Step 6e, then the PCM is up to date. Continue to Step 10. If the part numbers are not the same, continue to Step 7d.
   d. Highlight the listed calibration on the StarMOBILE screen.
   e. Select “Download to Client”.
   f. Select "Close" after the download is complete, then select the “Back” arrow.
   g. Highlight the listed calibration.
   h. Select "Update Controller" and follow the on screen instructions.
   i. When the update is completed, select “OK”.

8. Retrieve the PCM part number. With the StarMOBILE on the “Home” screen, follow the procedure below:
   a. Select “ECU View”.
   b. Select “PCM” in the list of modules.
   c. Select “More Options”.
   d. Select “ECU Flash”.
   e. Verify the “Part Number” (displayed at the end of the “Resident flash file for” statement) has been updated to the new part number. If it has updated, then the flash has been completed successfully.

9. Clear any Diagnostic Trouble Codes (DTCs) as follows:
   **NOTE: Due to the ECM programming procedure, DTC(s) may be set in other modules (TCM, ABS, BCM, MIC, WCM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate.**
   a. From the “Home” screen select “System View”.
   b. Select “All DTCs”.
   c. Press “Clear All Stored DTCs” if there are any DTCs shown on the list.
10. Turn the ignition key to the “OFF” position and remove the StarMOBILE unit, StarMOBILE vehicle cable, and battery charger from the vehicle.

11. Continue with Section E. Install Authorized Modification Label.
D. Reprogram the ECM Using DRBIII®:

The DealerCONNECT System, DRBIII® (Diagnostic Readout Box scan tool), CH7000A flash cable and CH7035B data cable are required to perform this repair. Do not attempt to perform the flash procedure using an outdated CH7000/CH7001 flash cable.

NOTE: Whenever a controller is reprogrammed, the software in the DRBIII scan tool must be programmed with the latest revision level available.

NOTE: If the flash process is interrupted or aborted, the flash should be restarted and then follow the directions on the DRBIII scan tool.

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.0 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge.
   NOTE: Use an accurate stand alone voltmeter. The battery charger volt meter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the DRBIII CH7000A flash cable from the DRBIII scan tool to the data link connector located inside the vehicle under the steering column.

3. Connect the CH7035B data cable from the DealerCONNECT machine to the MDS port on the DRBIII scan tool.

4. Place the vehicle’s ignition key in the “RUN” position.

5. From the DealerCONNECT “WELCOME” screen, enter your “User I.D.,” “Password” and “Dealer Code”.

6. From the DealerCONNECT “HOME PAGE” select the “SERVICE” tab.

7. From the “SERVICE” tab screen select “TechTOOLS”.
8. If the DRBIII scan tool does not “Auto Connect” select #2 on the DRBIII key pad “Connect to TechCONNECT”.

9. After the “Auto Connect” process is complete, select “READ PART NUMBER(S) FROM VEHICLE” on the TechCONNECT screen.

10. Continue following the TechCONNECT on-screen instructions.

11. Select the applicable update calibration.

12. Select the “DRBIII” button located at the bottom of the TechCONNECT monitor screen.

13. Select the “DOWNLOAD / UPDATE” button located next to the “DRBIII” button.

   NOTE: The system software will automatically download to the DRBIII scan tool.

14. After the software download to the DRBIII scan tool is complete, close the “DOWNLOAD / UPDATE PROGRESS” window.

15. Disconnect the DRBIII scan tool from the TechCONNECT CH7035B data cable.

16. Select #1 “RETURN TO NORMAL MODE” on the DRBIII scan tool.

17. Use the following procedure to download the flash from the DRBIII scan tool to the vehicle.

   a. Select #7 “VEHICLE FLASH” on the DRBIII scan tool.

   b. Follow the directions displayed on the DRBIII scan tool screen.

   c. After the reprogramming is complete, record the new module part number displayed on the DRBIII scan tool screen.

   d. Press the “PAGE BACK” button on the DRBIII scan tool.
18. Due to the ECM flash procedure, Diagnostic Trouble Codes (DTC’s) may be set in other modules (ETAX, BCM, MIC, SKIM, ABS, ORC) within the vehicle (if so equipped). Some DTC’s may cause the Malfunction Indicator Light (MIL) to illuminate. All of the DTC’s relate to a loss of communications with the module that is being flashed. Check all modules, record the trouble codes, and erase the trouble codes using the following procedure:

a. Turn the vehicle’s ignition key to the “RUN” position.

b. From the DRBIII scan tool Main Menu select #1 “DRBIII Stand-Alone”.

c. From the DRBIII scan tool Stand-Alone menu select #3 “Vehicle Module Scan”.

d. From the DRBIII scan tool Vehicle Module Scan menu select #1 “1998 - 2005 Module Scan”.

e. Select “YES” on the DRBIII scan tool key pad to scan for DTC’s.

f. Follow the instructions on the DRBIII scan tool screen.

g. Once the scanning process is complete, the DRBIII scan tool will display a list of all the modules. Modules on the list that have an asterisk next to them have DTC’s that need to be cleared.

h. Select the module that needs to have the DTC’s cleared and follow the instructions on the DRBIII scan tool screen to clear the DTC’s.

i. Turn the vehicle’s ignition key to the “OFF” position.

   NOTE: Erase any DTC’s in the ECM only after all other modules have had their DTC’s erased.

19. Disconnect the DRBIII scan tool from the vehicle.

20. Turn off the battery charger and disconnect it from the vehicle.

21. Continue with Section E. Install Authorized Modification Label.
**Service Procedure (Continued)**

### E. Install the Authorized Modifications Label:

1. Type or print (with a ballpoint pen) the recall number, repair modification, dealer code and date on the Authorized Modifications Label (Figure 1).

2. Attach the label near the VECI label and then close the hood.

3. Complete Proof of Correction Form for California Residents.

   NOTE: This recall is subject to the **State of California Registration Renewal/Emissions Recall Enforcement Program**. Complete a Vehicle Emission Recall Proof of Correction Form (Form No. 81-016-1053) and supply it to vehicle owners residing in the state of California for proof that this recall has been performed when they renew the vehicle registration.
Completion Reporting and Reimbursement

Claims for vehicles that have been serviced must be submitted on the DealerCONNECT Claim Entry Screen located on the Service tab. Claims submitted will be used by Chrysler to record recall service completions and provide dealer payments.

Use one of the following labor operation numbers and time allowances:

<table>
<thead>
<tr>
<th>Labor Operation</th>
<th>Labor Operation Number</th>
<th>Time Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECM Update Previously Performed</td>
<td>08-K0-11-81</td>
<td>0.2 hours</td>
</tr>
<tr>
<td>Reprogram Engine Control Module</td>
<td>08-K0-11-83</td>
<td>0.4 hours</td>
</tr>
<tr>
<td>Using wiTECH, Star MOBILE or StarSCAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reprogram Engine Control Module Using DRB III</td>
<td>08-K0-11-82</td>
<td>0.7 hours</td>
</tr>
</tbody>
</table>

Add the cost of the label plus applicable dealer allowance to your claim.

NOTE: See the Warranty Administration Manual, Recall Claim Processing Section, for complete recall claim processing instructions.

Dealer Notification

To view this notification on DealerCONNECT, select “Global Recall System” on the Service tab, then click on the description of this notification.

Owner Notification and Service Scheduling

All involved vehicle owners known to Chrysler are being notified of the service requirement by first class mail. They are requested to schedule appointments for this service with their dealers. A generic copy of the owner letter is attached.

Enclosed with each owner letter is an Owner Notification postcard to allow owners to update our records if applicable.
Vehicle Lists, Global Recall System, VIP and Dealer Follow up

All involved vehicles have been entered into the DealerCONNECT Global Recall System (GRS) and Vehicle Information Plus (VIP) for dealer inquiry as needed. GRS provides involved dealers with an updated VIN list of their incomplete vehicles. The owner’s name, address and phone number are listed if known. Completed vehicles are removed from GRS within several days of repair claim submission.

To use this system, click on the “Service” tab and then click on “Global Recall System.” Your dealer’s VIN list for each recall displayed can be sorted by: those vehicles that were unsold at recall launch, those with a phone number, city, zip code, or VIN sequence.

Dealers must perform this repair on all unsold vehicles before retail delivery. Dealers should also use the VIN list to follow up with all owners to schedule appointments for this repair.

Recall VIN lists may contain confidential, restricted owner name and address information that was obtained from the Department of Motor Vehicles of various states. Use of this information is permitted for this recall only and is strictly prohibited from all other use.

Additional Information

If you have any questions or need assistance in completing this action, please contact your Service and Parts District Manager.

Customer Services Field Operations
Chrysler Group LLC

Return to Pg. 10
Dodge 2003

Return to Pg. 11
Dodge 2006/7
Dear: (Name)

Chrysler has determined that some 2003 and 2006 through 2007 model year Dodge Ram 2500/3500 trucks equipped with 5.9L or 6.7L diesel engines may require reprogramming of the Engine Control Module (ECM).

The problem is... The ECM on your truck (VIN: xxxxxxxxxxxxxxxx) may fail to accurately report diagnostic system information with some generic scan tools. This may cause the vehicle to be rejected or fail an Inspection/Maintenance Test (also known as a Smog Check).

What your dealer will do... Chrysler will repair your vehicle free of charge (parts and labor). To do this, your dealer will reprogram your vehicle’s ECM. The new software will eliminate an improperly functioning OBD system that does not comply with California regulations. The work will take about ¾ hour to complete. However, additional time may be necessary depending on service schedules.

What you must do... Simply contact your dealer right away to schedule a service appointment.

If you need help... If you have questions or concerns which your dealer is unable to resolve, please contact Chrysler at 1-800-853-1403.

California residents... The State of California requires the completion of emission recall repairs prior to vehicle registration renewal. Your dealer will provide you with a Vehicle Emission Recall Proof of Correction Form after the recall service is performed. Be sure to save this form since the California Department of Motor Vehicles may require that you supply it as proof that the recall has been performed.

Please help us update our records by filling out the attached prepaid postcard, if any of the conditions listed on the card apply to you or your vehicle. You may also update this information on the web at CCCCCCCCCCCCCCCCCCCCCCCCCCCC

If you have already experienced this condition and have paid to have it repaired, you may send your original receipts and/or other adequate proof of payment to the following address for reimbursement: Chrysler Recall Customer Assistance, P.O. Box 21-8007, Auburn Hills, MI 48321-8007, Attention: Reimbursement.

In order to ensure your full protection under the emission warranty provisions, it is recommended that you have your vehicle serviced as soon as possible. Failure to do so could legally be determined to be a lack of proper maintenance of your vehicle. Further, without this repair, your vehicle may fail a state or local emission inspection test.

We are sorry for any inconvenience but trust that you understand our interest in clean air. Thank you for your attention to this important matter.

Customer Services Field Operations
Chrysler Group LLC
Notification Code K01
1996 Dodge Intrepid V6-201 3.3L
Recall - Reprogram (flash) PCM

No. 678

September, 1996

To: All California Dodge, Chrysler-Plymouth and Jeep(R) & Eagle Dealers

Subject:
California Emissions Recall # 678-- Reprogram Powertrain Control Module

Models:
All Passenger Cars Listed Below Equipped With a California Emission Control System (OBD II) Which Are Currently Located in California:

^ 1996 Model Year Dodge Intrepid, Chrysler Concorde, Chrysler LHS and Eagle Vision (LH) Vehicles Built Through November 5, 1995 (MDH 1105XX)

^ 1996 Model Year Dodge Stratus, Plymouth Breeze and Chrysler Cirrus (JA) Vehicles Built Through November 5, 1995 (MDH 1105XX)

^ 1996 Model Year Chrysler Sebring Convertible (JX) Vehicles Built Through November 21, 1995 (MDH 1121XX)

^ 1996 Model Year Dodge and Plymouth Neon (PL) Vehicles Built Through November 12, 1995 (MDH 1112XX)

^ 1995 Model Year Dodge Stratus and Chrysler Cirrus (JA) Vehicles Equipped With a 2.0L Engine and Manual Transmission

The On Board Diagnostic (OBDII) readiness codes may be cleared, in violation of California Air Resources Board (CARB) regulations. The readiness codes indicate that all OBDII diagnostic tests have been performed and that diagnostic trouble codes (DTC's) can be read. Absence of readiness codes may cause owners to fail their SMOG Check inspection. To correct this condition, the Powertrain Control Module (PCM) must be reprogrammed (flashed).

Important: This recall is subject to the State of California Registration Renewal/Emissions Recall Enforcement Program. Involved vehicles must have the recall service completed before registration renewal.

The servicing dealer must provide a Vehicle Emission Recall Proof of Correction Form (Form No. 81-016-1053) to each owner upon completion of the recall service, for use as proof in renewal of the vehicle registration.

Details of this service action are explained in the following sections.

Service Procedure Videotape
No videotape of the service procedure for this recall will be provided.

Dealer Notification & Vehicle List

Involved dealers: Each dealer to whom involved vehicles were invoiced (or the current dealer at the same street address) will receive a copy of this dealer recall notification letter and a list of the involved vehicles by first class mail.

The Vehicle List is arranged in Vehicle Identification Number (VIN) sequence. Owners known to Chrysler are also listed. The lists are for dealer reference in arranging for service of involved vehicles as necessary.

All other California dealers: Each California Dodge, Chrysler-Plymouth, and Jeep & Eagle dealer who does not receive a Vehicle List will receive a copy of this dealer recall notification letter by first class mail.

Non-California Dealers will also receive copies of these recall instructions by CMMS Mail. Some involved vehicles may have been relocated outside of California, and the instructions will allow dealers to perform this service on such vehicles upon request.

DIAL System Function 70 and VIP

All involved vehicles will be entered to DIAL System Function 70 and VIP at the time of recall implementation for dealer inquiry by VIN as needed.

Recall Completion Label Requirement

There is a California Air Resources Board requirement to affix a label to the vehicle to certify that the emissions recall was completed. A label is included in each emissions service parts package. Refer to the Service Procedure of this letter for application instructions.

Parts

**Important**: A quantity of parts will be distributed initially and billed to all involved dealers. This quantity will cover a portion of the total vehicles involved. Additional parts may be ordered as needed to support customer demand.

Each involved dealer, to whom vehicles in the recall were invoiced (or the current dealer at the same street address), will receive enough Label Packages, Recall PN CHD06780, to service 50% of those vehicles.

Each parts package contains an authorized software update label and a recall completion label.

Owner Notification and Service Scheduling

All involved vehicle owners known to Chrysler are being notified of the service requirement by first class mail. They are requested to schedule appointments for the service with their dealers. A copy of the owner notification letter is included.

Enclosed with each owner notification is an Owner Notification Form. The involved vehicle and recall are identified on the form for owner or dealer reference as needed.
Completion Reporting and Reimbursement

Claims for vehicles which have been serviced must be submitted on the DIAL System. Claims submitted will be used by Chrysler to record recall service completions and provide dealer payments.

Use the following labor operation number and time allowance:

<table>
<thead>
<tr>
<th>Labor Operation</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCM update previously performed -- Install 08678181</td>
<td>0.2 hours</td>
</tr>
<tr>
<td>Reprogram <strong>Powertrain Control Module</strong> 08678182</td>
<td>0.5 hours</td>
</tr>
</tbody>
</table>

Add the cost of the recall parts package plus applicable dealer allowance to your claim.

**Note**: See the Warranty Administration Manual, Recall Claim Processing Section for complete recall claim processing instructions.

Parts Return

Not applicable.

Vehicle Not Available

If a vehicle is not available for service for a known reason, let us know by filling out the pre-addressed Vehicle Disposition Form portion of the Owner Notification Form or describe the reason on a postcard and mail to:

Chrysler Corporation
CIMS 482-00-85
800 Chrysler Drive East
Auburn Hills, Michigan 48326-2757

Following the above procedures will expedite the processing of your claim.

If you have any questions or need assistance in completing this action, please contact your Zone Service Office.
THIS BULLETIN SUPERSEDES SERVICE BULLETIN 18-022-09, DATED JULY 31, 2009 WHICH SHOULD BE REMOVED FROM YOUR FILES. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISKS** AND INCLUDE THE ADDITION OF NAS EMISSION CODE FOR 2003 AN VEHICLES.

WHENEVER A MODULE IS REPROGRAMMED, THE SOFTWARE IN THE DRBIII®; MUST BE PROGRAMMED WITH THE LATEST REVISION LEVEL AVAILABLE.

**SUBJECT:**
Flash: PCM To Allow The Generic Scan Tool To Properly Report Catalyst Monitor

**OVERVIEW:**
This bulletin involves selectively erasing and reprogramming the Powertrain Control Module (PCM) with new software.

**MODELS:**

- 2003 (DN) Durango
- 2003 (DR) Ram Truck
- 2003 (AN) Dakota

**NOTE:** This bulletin applies to DN or DR vehicles equipped with a 4.7L engine (sales code EVA) and California Emissions (sales code NAE).

**NOTE:** This bulletin applies to AN vehicles equipped with a 4.7L engine (sales code EVA) and California emissions or U.S 50 State Emissions (sales code NAE **or NAS**).

**SYMPTOM/CONDITION:**
The Customer may be rejected or failed at an I/M Test Station because the Generic Scan Tool does not show Catalyst Monitor as “supported”.

Flashing the PCM will allow the Generic Scan Tool to properly report that the Catalyst Monitor is a supported monitor on these packages.

**DIAGNOSIS:**
Using a Scan Tool (DRBIII®) with the appropriate Diagnostic Procedures available in TechCONNECT, verify all engine systems are functioning as designed. If DTCs are
present record them on the repair order and repair as necessary before proceeding further with this bulletin.

If the vehicle operator describes or experiences the Symptom/Condition, perform the Repair Procedure.

**PARTS REQUIRED:**

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>04275086AB</td>
<td>Label, Authorized Modification</td>
</tr>
</tbody>
</table>

**SPECIAL TOOLS / EQUIPMENT REQUIRED:**

<table>
<thead>
<tr>
<th>NPN</th>
<th>Battery Charger</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH2002</td>
<td>General Purpose Interface Bus Cable Assembly</td>
</tr>
<tr>
<td>CH6000A</td>
<td>Scan Tool (DRBIII®)</td>
</tr>
<tr>
<td>CH7000A/7001A</td>
<td>J1962 Cable with red DRBIII® connector</td>
</tr>
<tr>
<td></td>
<td>TechCONNECT Workstation</td>
</tr>
</tbody>
</table>

**REPAIR PROCEDURE FOR DOMESTIC VEHICLES USING DRBIII® AND DOWNLOADING THE FLASH FILE FROM DealerCONNECT:**

**NOTE:** Whenever a module is reprogrammed, the software in the DRBIII®; must be programmed with the latest revision level available.

**NOTE:** If this flash process is interrupted/aborted, the flash process should be restarted and then follow the directions on the DRBIII®.

1. Before beginning the flash procedure, remove any old flash files from the DRBIII® memory. To clear the memory from the MAIN MENU:
   a. Simultaneously press the “MORE” and “YES” keys.
   b. A screen will appear requesting a “COLD BOOT”.
   c. Follow the on screen instructions by selecting the “F4” key.
   d. When the DRBIII® reboots to the MAIN MENU, proceed to Step #2

2. With the ignition switch in the “RUN” position, determine the original part number of the PCM currently in the vehicle. Using the DRBIII® select:
   a. "DRBIII® Standalone".
   b. "1998 - 2005 Diagnostics".
   c. "All (Except Below)".
   d. “Engine”.
   e. “Module Display”.
   f. Record the “PCM part #” on the repair order for later reference.

3. Connect the DRBIII® to TechCONNECT. Open TechTOOLS and verify that the "DRBIII® Status: Connected" message is in the upper right corner of the TechTOOLS screen.

4. Enter the “PCM part #” recorded in Step #2 in the “Parts Criteria” area and select “Show Updates”. TechTOOLS will populate the appropriate flash file.

5. Select the flash file.

6. Select the “DRBIII” radio button which is next to the “Download/Update” button.
7. Select the “Download/Update” button.
8. Monitor the "Flash Download/Update Progress" window on the TechCONNECT and follow the instructions on TechCONNECT. When the flash process is complete, proceed to Step #9.
9. **Disconnect the DRBIII® from TechCONNECT.**
10. Open the hood, install a battery charger and verify that the charging rate provides approximately 13.5 volts.
11. Connect the DRBIII® to the vehicle.
12. Download the flash file from the DRBIII® to the vehicle. Using the DRBIII® select:
   a. “Vehicle Flash”.
   b. Follow the directions on the DRBIII® screen. When the flash process is complete, proceed to the next step.
13. Reset the “Pinion Factor” as necessary.
14. Perform the transmission Quick Learn Procedure as necessary.

**NOTE:** Due to the PCM programming procedure, a DTC may be set in other modules (TCM, BCM, MIC, SKIM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate. Check all modules using “Module Scan”, record the DTC's, and erase these DTC's prior to returning the vehicle to the customer. Erase any DTC's in the PCM only after all other modules have had their DTC's erased.

**NOTE:** The following step is required by law.
15. Type the necessary information on the “Authorized Modification Label” p/n 04275086AB and attach near the VECI label.

**REPAIR PROCEDURE FOR EXPORT VEHICLES USING DRBIII® AND DOWNLOADING THE FLASH FILE FROM DealerCONNECT:**

**NOTE:** Whenever a controller is programmed, the software in the DRBIII®; must be programmed with the latest revision level available.

**NOTE:** If this flash process is interrupted/aborted, the flash should be restarted and then follow the directions on the DRBIII®.

1. Before beginning the reprogramming procedure, remove any old flash reprogramming files from the DRBIII® memory. To clear the memory from the MAIN MENU:
   a. Simultaneously press the “MORE” and “YES” keys.
   b. A screen will appear requesting a “COLD BOOT”.
   c. Follow the on screen instructions by selecting the “F4” key.
   d. When the DRBIII® reboots to the MAIN MENU, proceed to Step #2
2. With the ignition switch in the “RUN” position, determine the original part number of the PCM currently in the vehicle. Using the DRBIII® select:
   a. "DRBIII® Standalone"
   b. "1998 - 2006 Diagnostics"
   c. "All (Except Below)"
   d. “Engine”
   e. “Module Display”
   f. Record the “PCM part #” on the repair order for later reference.
   g. Disconnect the DRBIII® from the vehicle.
   h. Connect the DRBIII® to the ITIL/ISIS PC and NULL modem cable.
3. Log into DealerCONNECT. Proceed to: Service / Repair - Flash.
4. Select vehicle Year, Model, and Engine (YME). Then select the “Submit” button at the bottom of the screen.
5. Compare the calibration part number available for flash reprogramming to the module part number recorded earlier. Select the new calibration if applicable.
6. Download the new calibration to the PC.
7. Using the “DRBIII - WINFLASH II” application on the PC, download the flash calibration file to the DRBIII® from the PC.
8. **Disconnect the DRBIII® from the PC and NULL modem cable.**
9. Open the hood, install a battery charger and verify that charging rate provides approximately 13.5 volts.
10. Connect the DRBIII® to the vehicle.
11. Turn the ignition switch to the “Run” position (engine not running).
12. Reprogram the PCM by downloading the flash from the DRBIII® to the vehicle. Using the DRBIII® select:
   a. “Vehicle Flash”
   b. Follow the directions on the DRBIII® screen. When the flash process is complete, proceed to the next step.
13. Reset the “Pinion Factor” if necessary.
14. Perform the transmission Quick Learn Procedure if necessary.
15. Update the Sentry Key Immobilizer Module (SKIM) or Sentry Key Remote Entry Module (SKREEM), Secret Key data if necessary.

**NOTE:** Due to the PCM programming procedure, a DTC may be set in other modules (TCM, BCM, MIC, SKIM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate. Check all modules using “Module Scan”, record the DTC's, and erase these DTC's prior to returning the vehicle to the customer. Erase any DTC's in the PCM only after all other modules have had their DTC's erased.

**NOTE:** The following step is required by law when reprogramming a PCM and/or TCM.

16. Type the necessary information on the “Authorized Software Update” label, p/n 04275086AB and attach near the VECI label.

**POLICY:**
Reimbursable within the provisions of the warranty.

**TIME ALLOWANCE:**

<table>
<thead>
<tr>
<th>Labor Operation No:</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-19-06-G3</td>
<td>Module, Powertrain Control (PCM) - Reprogram (B)</td>
<td>0.5 Hrs.</td>
</tr>
</tbody>
</table>

**FAILURE CODE:**

| FM | Flash Module |

*Return to Pg. 10*
2004 Dodge or Ram Truck RAM 2500 Truck 2WD L6-5.9L DSL Turbo VIN 6

NUMBER: 18-030-10

GROUP: Vehicle Performance

DATE: October 30, 2010


SUBJECT:
Flash: Smog Check On Board Diagnostic OBD Test OR Inspection And Maintenance Check Will Not Pass

OVERVIEW:
This bulletin involves selectively erasing and reprogramming the Engine Control Module (ECM) with new software.

MODELS:

<table>
<thead>
<tr>
<th>Year</th>
<th>Code</th>
<th>Model Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>DR</td>
<td>Ram Truck (2500/3500 Pick Up 5.9L)</td>
</tr>
<tr>
<td>2005</td>
<td>DH</td>
<td>Ram Truck (2500/3500 Pick Up 5.9L)</td>
</tr>
</tbody>
</table>

NOTE: This bulletin applies to 2004 & 2005 vehicles equipped with a 5.9L Cummins Diesel Engine (sales code ETH) with California emissions (sales code NAE) built after December 7, 2003.

NOTE: EPA or Federal certified vehicles from this period were not OBD regulated, and as a result are not subject to a Smog Check, therefore this bulletin does not apply to EPA or Federal certified vehicles.

SYMPTOM/CONDITION:
The customer's vehicle may have difficulty passing a government mandated SMOG check because 2 or more of the OBD monitors may report as not ready. This issue now affects RAM diesel vehicles due to recently mandated changes to SMOG check programs in some locations, including California.

NOTE: The SMOG check is also known as an Inspection/Maintenance, or I/M, test.

DIAGNOSIS:
Using a Scan Tool (DRBIII(R)) with the appropriate Diagnostic Procedures available in TechCONNECT, verify all engine systems are functioning as designed. If any DTC's are present record them on the repair order and repair as necessary before proceeding further with this bulletin.
Using the scantool, determine the current software level of the ECM. Record this number on the repair order. Is the software suffix level AJ for 2004 MY OR level AH for 2005 MY (or later)?

^Yes >>> This bulletin does not apply. The latest revisions for California emissions readiness monitor is included in this calibration. Further diagnosis is required.

^No >>> If the above symptom/condition is experienced, Proceed to REPAIR PROCEDURE.

### SPECIAL TOOLS / EQUIPMENT REQUIRED:

<table>
<thead>
<tr>
<th>NPN</th>
<th>Battery Charger</th>
</tr>
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<tbody>
<tr>
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<td>CH6000A</td>
<td>Scan Tool (DRBIII®)</td>
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<td>CH7000A</td>
<td>J1962 Cable with red DRBIII® connector</td>
</tr>
<tr>
<td></td>
<td>TechCONNECT Workstation</td>
</tr>
</tbody>
</table>

### PARTS REQUIRED:

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>04275086AB</td>
<td>Label, Authorized Modification</td>
</tr>
</tbody>
</table>

### REPAIR PROCEDURE:

NOTE :Whenever a controller is programmed, the software in the DRBIII(R) must be programmed with the latest revision level available. Current software version is 64.1.

NOTE :If this flash process is interrupted/aborted, the flash process should be restarted and then follow the directions on the DRBIII(R).

NOTE :Remove any unnecessary PCMCIA cards prior to starting a DRBIII(R) flash.

1. Before beginning the reprogramming procedure, remove any old flash reprogramming files from the DRBIII(R) memory. To clear the memory from the MAIN MENU power up the DRBIII(R) and then:
   a. Simultaneously press the "MORE" and "YES" keys.
b. A screen will appear requesting a "COLD BOOT".

c. Follow the on screen instructions by selecting the "F4 key.

d. When the DRBIII reboots to the MAIN MENU, proceed to Step #2

2. With the ignition switch in the "RUN" position, determine and record the "ECM part number" of the ECM currently in the vehicle. Using the DRBIII(R) select:

   a. "DRBIII Standalone"
   
   b. "1998 - 2007 Diagnostics"
   
   c. "All (Except Below)"
   
   d. "Engine"
   
   e. "Module Display"
   
   f. Record the "ECM part number" on the repair order for later reference.

   NOTE: If the ECM is not operational, the "ECM part number" can be obtained from the label on the controller. For 2003 and later vehicles, if the label on the controller is not legible, record the "Reference No." for use later. The "Reference No." is located in the Reference No. box at the top, center of the Engine Data Plate. The Engine Data Plate is located on the intake side of the breather cover or affixed to the APPS bracket.

3. Page back to the "Main Menu"

4. Determine if the vehicle is equipped with SKIM. Using the DRBIII(R) select:

   a. "DRBIII Standalone"
   
   b. "1998 - 2007 Diagnostics"
   
   C. "All"
   
   d. "System Monitor"
   
   e. "J1850 Module Scan"
   
   f. Look for "SKIM" in the list of modules.
5. If the vehicle is not equipped with SKIM then proceed to Step #6. If the vehicle is equipped with SKIM obtain the vehicle Personal Identification Number (PIN) before continuing with Step # 6. This information is available from:

   a. The original selling invoice.
   
   b. The DealerCONNECT system under the "Parts" tabs - select "Key Codes".
   
   c. By contacting the District Manager.

CAUTION : Failure to install the SKIM pin number into the module after flashing the Cummins ECM will cause a start and stall condition.

6. Install a battery charger and verify that the charging rate provides approximately 13.2 - 13.8 volts. Set the battery charger to continuous charge. Do not allow the charger to time out during the flash process. Remove the charger from the battery when the flash process is complete.

NOTE : When reprogramming a Cummins ECM be sure to do the following:

   ^ Download the flash file from TechCONNECT to the DRBIII(R) with the DRBIII(R) disconnected from the vehicle.

   ^ Download the flash file from the DRBIII(R) to the vehicle with the DRBIII(R) disconnected from TechCONNECT.

7. Connect the DRBIII(R) to TechCONNECT. Open TechTOOLS and verify that the "DRBIII(R) Status: Connected" message is in the upper right corner of the TechTOOLS screen.

8. Enter the old Cummins "ECM part number" obtained from the DRBIII(R) in Step # 2 into the "Parts Criteria" window.

9. Select "Show Updates".

10. Highlight the proper flash file from the list:

   a. If the old "ECM part number" is known, highlight the flash file listed, based on the old "ECM part number" recorded earlier Step # 2.

   b. If the old part number is not known, highlight the proper flash file based on the Reference No. located in the "Ref. No." box, at the top, center of the Engine Data Plate.

11. Select the "DRBIII" radio button which is next to the "Download/Update" button.

12. Select the "Download/Update" button.
Monitor the “Flash Download/Update Progress” window on the TechCONNECT and follow the instructions on TechCONNECT. When the flash process is complete, proceed to the next step.

14. Disconnect the DRBIII(R) from TechCONNECT.

15. Connect the DRBIII(R) to the vehicle.

16. Download the flash file from the DRBIII(R) to the vehicle. Using the DRBIII(R) select:
   a. "Vehicle Flash"
   b. Follow the directions on the DRBIII(R) screen. When the flash process is complete, proceed to the next step.

17. If the vehicle is equipped with SKIM, proceed to Step # 18. If the vehicle is not equipped with SKIM, proceed to Step # 19.

18. On vehicles equipped with SKIM, transfer the VIN and Security Key information from the SKIM to the ECM. Using the DRBIII(R) select:
   a. "DRBIII Standalone"
   b. "1998 - 2007 Diagnostics"
   c. "All"
   d. "Theft Alarm"
   e. "SKIM"
   f. "Miscellaneous"
   g. "Cummins ECM Replaced"
   h. Follow the directions on the DRBIII(R) screen. When the process is complete, proceed to Step # 20.

19. On vehicles not equipped with SKIM, manually enter the VIN in the ECM. Using the DRBIII(R) select:
   a. "DRBIII Standalone"
   b. "1998 - 2007 Diagnostics"
   c. "All"
d. "Engine"

e. "Cummins Controller (ECM/ENGINE)"

f. "Miscellaneous"

g. "CM84X Check VIN"

h. Follow the directions on the DRBIII(R) screen. When the process is complete, proceed to next step.

NOTE: Due to the Cummins controller programming procedure, a DTC may be set in other modules (PCM, TCM, BCM, MIC, SKIM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate. Check all modules using "Module Scan", record the DTC's, and erase these DTC's prior to returning the vehicle to the customer. Erase any DTC's in the PCM only after all other modules have had their DTC’s erased.

NOTE: The following step is required by law.

20. Type the necessary information on the "Authorized Modification Label" p/n 04275086AB and attach near the VECI label.

POLICY:
Reimbursable within the provisions of the warranty.

<table>
<thead>
<tr>
<th>Labor Operation No:</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-19-04-98</td>
<td>Module, Engine Control (ECM) - Reprogram (C)</td>
<td>0.8 Hrs.</td>
</tr>
</tbody>
</table>

TIME ALLOWANCE:

<table>
<thead>
<tr>
<th>FM</th>
<th>Flash Module</th>
</tr>
</thead>
</table>

FAILURE CODE:

Disclaimer: This bulletin is supplied as technical information only and is not an authorization for repair.
2006 Dodge or Ram Truck RAM 2500 Truck 2WD L6-5.9L DSL Turbo VIN C

NUMBER: 18-017-10

GROUP: Vehicle Performance

DATE: May 15, 2010

THIS BULLETIN SUPERSEDES SERVICE BULLETIN 18-038-09, DATED DECEMBER 19, 2009, WHICH SHOULD BE REMOVED FROM YOUR FILES. THIS REVISED BULLETIN WILL COVER FEDERAL EMISSIONS (EPA) CERTIFIED VEHICLES ONLY. VEHICLES EQUIPPED WITH CARB (CALIFORNIA) EMISSIONS HAVE BEEN REMOVED AND WILL NOW BE ADDRESSED IN RECALL K01, DATED MAY, 2010. THIS IS A COMPLETE REVISION AND NO ASTERISKS HAVE BEEN INCLUDED. WHENEVER A 2006-2007 MODULE IS REPROGRAMMED, THE wiTECH DIAGNOSTIC APPLICATION IS THE PREFERRED METHOD FOR FLASHING ECUs.

HELP USING THE wiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING "HELP" THEN "HELP CONTENTS" AT THE TOP OF THE wiTECH DIAGNOSTIC APPLICATION WINDOW.

SUBJECT:
Flash: Smog Check On-Board Diagnostic (OBD) Test OR Inspection & Maintenance Check Will Not Pass

OVERVIEW:
This bulletin involves selectively erasing and reprogramming the Engine Control Module (ECM) with new software.

MODELS:

<table>
<thead>
<tr>
<th>Year</th>
<th>Code</th>
<th>Model Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>DH</td>
<td>Ram Truck (2500 Pick Up 5.9L)</td>
</tr>
<tr>
<td>2006</td>
<td>D1</td>
<td>Ram Truck (3500 Pick Up 5.9L)</td>
</tr>
<tr>
<td>2007</td>
<td>DH</td>
<td>Ram Truck (2500 Pick Up 5.9L)</td>
</tr>
<tr>
<td>2007</td>
<td>D1</td>
<td>Ram Truck (3500 Pick Up 5.9L)</td>
</tr>
<tr>
<td>2007</td>
<td>DC</td>
<td>Ram Truck (3500 Cab Chassis 6.7L)</td>
</tr>
</tbody>
</table>

NOTE: This bulletin applies to 2006 & 2007 vehicles equipped with a 5.9L Cummins Diesel Engine (sales code ETC or ETH) with Federal emissions (sales code NAA) built after January 1, 2006, or Cab Chassis equipped with a 6.7L Cummins Diesel Engine (sales code ETJ) built prior to January 11, 2007.
NOTE: 2003, 2006 & 2007 5.9L (DR/DH/D1) & 2007 6.7L (DC) equipped vehicles with similar SYMPTOM/CONDITION as stated below equipped with California Emissions, (CARB Certified) (sales code NAE) will be addressed in Recall K01, dated May, 2010.

SYMPTOM/CONDITION:

The customer’s vehicle may have difficulty passing a government mandated SMOG / Emissions test or and Inspection & Maintenance (I & M) test due to a scan tool reporting issue. These issues now effect diesel vehicles due to the recent expansion/change of SMOG/Emissions tests and/or Inspection & Maintenance (I & M) test programs in some locations, including California.

DIAGNOSIS:
Using a Scan Tool (StarSCAN(R)) with the appropriate Diagnostic Procedures available in TechCONNECT, verify all engine systems are functioning as designed. If any DTC's are present record them on the repair order and repair as necessary before proceeding further with this bulletin. If the above symptom/condition is experienced, perform the Repair Procedure.

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>04275086AB</td>
<td>Label, Authorized Modification</td>
</tr>
</tbody>
</table>

PARTS REQUIRED:

REPAIR PROCEDURE 2006-2007 VEHICLE USING wiTECH or StarMOBILE(R):

NOTE: If this flash process is interrupted/aborted, the flash should be restarted.

1. Reprogram the ECM with the latest software. Follow the detailed service procedures available in DealerCONNECT/TechCONNECT, Refer To Group 8 - Electrical> Electronic Control Modules - Service Information> Module - Powertrain Control> Standard Procedures> PCM/ECM Programming - Diesel.

   After ECM reprogramming, the following must be performed:

   a. Clear any DTC’s that may have been set in other modules due to reprogramming. The wiTECH application will automatically present all DTCs after the flash and allow the tech to clear them.

2. Type the necessary information on the "Authorized Modification Label" and attach it near the VECI label.

POLICY:
Reimbursable within the provisions of the warranty.
<table>
<thead>
<tr>
<th>Labor Operation No:</th>
<th>Description</th>
<th>Year/Model</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-19-04-91</td>
<td>Module, Engine Control (ECM) - Reprogram (C)</td>
<td>2006/2007DH 5.9L 2007DC 6.7L</td>
<td>0.4 Hrs.</td>
</tr>
</tbody>
</table>

TIME ALLOWANCE:

- **FM**: Flash Module

FAILURE CODE:

Disclaimer: This bulletin is supplied as technical information only and is not an authorization for repair.
SUBJECT:
Setting Readiness - On Board Diagnostic (OBD) Test OR Inspection And Maintenance Check Will Not Pass

OVERVIEW:
Some vehicles may have difficulty passing an On Board Diagnostic (OBD) system inspection because too many OBD monitors report as not ready, including Comprehensive Component Monitor (CCM) readiness. The Engine Control Module (ECM) may be incapable of setting readiness for CCM without installation of a calibration update, and this inability could contribute to significantly delaying or precluding adequate readiness for an OBD system inspection. Refer to SB 18-030-10 on how to remedy incorrect CCM readiness setting on affected vehicles.

Chrysler LLC has extended the warranty on all affected vehicles to offer reprogramming of the ECM to fix this issue free of charge to the vehicle owner without limitations on age or mileage. With the update, CCM readiness will be set to “Ready” upon engine starting, as permitted by California and federal OBD requirements. Vehicle owners that have paid to have the ECM updated to fix the issue in question may submit their receipts and other relevant documentation to Chrysler for reimbursement.

MODELS:

2004  DR  Ram Truck (2500/3500 Pick Up)
2005  DH  Ram Truck (2500/3500 Pick Up)

NOTE: This bulletin applies to 2004 & 2005 vehicles equipped with a 5.9L Cummins Diesel Engine (sales code ETH) with California emissions (sales code NAE) built after December 7, 2003.

NOTE: 2004 and 2005 EPA/Federal certified vehicles from the models above were not required to have OBD systems. This bulletin does not apply to such vehicles because they should not be subject to an OBD inspection.

DISCUSSION:
OBD Monitor Information
Detailed information regarding the OBD readiness indicators on affected vehicle is provided below to aid in the setting of readiness when necessary.

The affected vehicles from model year 2004.5 and 2005 have three OBD monitors:
Comprehensive Component Monitor (CCM), Fuel System Monitor, and Misfire Monitor. For CCM and Fuel System Monitor, note that the behavior varies by calibration level, which is discussed below.

For vehicles updated to the calibrations listed below (or later), the Comprehensive Component Monitor and Fuel System Monitor will report as “Ready” immediately after the ignition is turned on.

Vehicles with the following calibration level software (or later version) will NOT require the processes below:

- MY2004.5 CARB Automatic - 20325233AM
- MY2004.5 CARB Manual - 20325231AM
- MY2005 CARB Automatic - 25325333AH
- MY2005 CARB Manual - 25325331AH

NOTE: The preferred repair for affected vehicles is updating the ECM per TSB 18-030-10. It is not necessary to follow the procedures below to run the monitors after updating the ECM.

Fuel System Monitor
For calibrations prior to the level listed above, the following conditions must be met:

- Fuel level greater than 25 percent.
- PTO or idle-up not engaged.
- Battery voltage must be between 11 and 16 volts.

To run monitor:

- Allow the vehicle to sit a minimum of 8.5 hours with the ignition OFF.
- Turn key to ON position, do not start.
- Wait a minimum of 15 seconds.
- Start vehicle and idle or drive until coolant temperature exceeds 100° F (38° C).
- Continue to idle or drive vehicle for a minimum of 10 minutes after coolant temp exceeds 100 F (38° C).

Comprehensive Component Monitor
For calibrations prior to those listed above, Comprehensive Component Monitor may not report as “Ready”.

In such cases, no sequence of driving events can cause the monitor status to change from “Not Ready” to “Ready”. The monitor can only be made to indicate “Ready” by updating the ECM per service bulletin 18-030-10.

Misfire Monitor
These conditions must be met for all calibrations:

- Fuel level greater than 25 percent.
- PTO / idle-up not engaged.
- Battery voltage must be between 11 and 16 volts.
- Coolant temperature must be over 160° F (71° C).

To Run Monitor:

- Allow the engine to idle for a minimum of 25 seconds.
- Vehicle must be stationary / not moving (Vehicle speed < 2 MPH).
- Do not depress accelerator pedal (Accelerator Pedal Position 0 percent).

**POLICY:**
Information Only

Return to Pg. 11
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THIS BULLETIN SUPERSEDES SERVICE BULLETIN 18-008-10, DATED MARCH 27, 2010, WHICH SHOULD BE REMOVED FROM YOUR FILES. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISK**S** AND INCLUDE THE ADDITION OF SOFTWARE FOR NAA EMISSIONS.

THE wiTECH DIAGNOSTIC APPLICATION IS THE PREFERRED METHOD FOR FLASHING ECUs. HELP USING THE wiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING “HELP” THEN “HELP CONTENTS” AT THE TOP OF THE wiTECH DIAGNOSTIC APPLICATION WINDOW.

THE wiTECH SOFTWARE LEVEL MUST BE AT RELEASE 10.03 OR HIGHER TO PERFORM THIS PROCEDURE.

StarMOBILE DESKTOP CLIENT MAY ALSO BE USED TO PERFORM THIS PROCEDURE.

SUBJECT:
Flash: MIL Illumination Or Failed/Rejected At State I/M Test Station Per Symptom/Conditions

OVERVIEW:
This bulletin involves selectively erasing and reprogramming the Powertrain Control Module (PCM) with new software.

MODELS:

2010  (LX)  300/Charger
2010  (LC)  Challenger

NOTE: This bulletin applies to all vehicles equipped with a 3.5L engine (Sales code EGG) and a NAG1 transmission (Sales code DGJ) and NAE or **NAA** emissions built before February 20, 2010 (MDH 0220XX).

SYMPTOM/CONDITION:
The Customer may be failed or rejected at a state I/M test station because:

  a. P0456 - Evap Small Leak Monitor has failed
  b. Evaporative Leak Detection Monitor is not “Ready”
  c. P1115 - General Temperature Sensor Rationality has failed
The Customer may have a complaint because:

a. MIL illumination. Upon further investigation the Technician may find that P1115 - General Temperature Sensor Rationality or P0452 - Evap Small Leak Monitor has been set.

b. They have checked Readiness per the Owner’s Manual instructions and found that the vehicle does not have all OBD Monitors “Ready” for their I/M test.

Flashing the PCM will correct the conditions.

**DIAGNOSIS:**

Using a Scan Tool (wiTECH™) with the appropriate Diagnostic Procedures available in TechCONNECT, verify all engine and transmission systems are functioning as designed. If DTC’s are present other then the ones listed above record them on the repair order and repair as necessary before proceeding further with this bulletin.

If the above condition is present, perform the Repair Procedure.

**PARTS REQUIRED:**

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>04275086AB</td>
<td>Label, Authorized Modification</td>
</tr>
</tbody>
</table>

**REPAIR PROCEDURE:**

**NOTE:** If this flash process is interrupted/aborted, the flash should be restarted.

1. Reprogram the PCM with the latest software. Follow the detailed service procedures available in DealerCONNECT/TechCONNECT, Refer To Group 8 - Electrical > Electronic Control Modules - Service Information > Module - Powertrain Control > Standard Procedures > PCM/ECM Programming - Gas. **After PCM reprogramming, the following must be performed:**
   a. Clear any DTC’s that may have been set in other modules due to reprogramming. The wiTECH application will automatically present all DTCs after the flash and allow the tech to clear them.

2. Type the necessary information on the “Authorized Modification Label” and attach it near the VECI label.
POLICY:
Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

<table>
<thead>
<tr>
<th>Labor Operation No:</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-19-06-93</td>
<td>Module, Powertrain Control (PCM) - Reprogram (C)</td>
<td>0.2 Hrs.</td>
</tr>
<tr>
<td><strong>International Related Operation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-00-00-WT</td>
<td>StarSCAN/StarMOBILE (International) (C)</td>
<td>0.2 Hrs.</td>
</tr>
</tbody>
</table>

FAILURE CODE:

<table>
<thead>
<tr>
<th>Failure Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM</td>
<td>Flash Module</td>
</tr>
</tbody>
</table>

Return to Pg. 9
Chrysler 2010

Return to Pg. 12
Dodge 2006/7
SUBJECT:
OBDII Readiness Code Retention

OVERVIEW:
This bulletin involves reprogramming the Powertrain Control Module.

MODELS:

1995 - 1996 (JA) Cirrus/Stratus/Breeze
1996 (JX) Sebring Convertible
1996 (LH) Intrepid/Vision/Concorde/LHS
1996 (PL) Neon

NOTE: THIS INFORMATION APPLIES TO FEDERAL EMISSION (SALES CODE NAA) AND CALIFORNIA EMISSION (SALES CODE NAE) MODELS BUILT PRIOR TO NOV. 21, 1995 (MDH1121XX) AND ALL 1995 JA MODELS EQUIPPED WITH A 2.0L ENGINE AND MANUAL TRANSAXLE. THE CALIFORNIA EMISSION MODELS ADDRESSED IN THIS BULLETIN WERE SOLD IN THE NORTHEAST STATES. CALIFORNIA MODELS SOLD IN CALIFORNIA WERE ADDRESSED WITH RECALL 678 DATED SEPT. 1996.

DISCUSSION:
The On Board Diagnostic (OBDII) system includes a monitor called readiness codes. The readiness codes indicate that all OBDII diagnostic tests have been performed and that diagnostic trouble codes (DTC's) can be read. It has been determined that the readiness codes may be cleared upon ignition key “OFF” cycles. Absence of readiness codes may cause owners to fail their emission inspection. To correct this condition, the Powertrain Control Module (PCM) must be reprogrammed.

PARTS REQUIRED:

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>04669020</td>
<td>Label, Authorized Software Update</td>
</tr>
<tr>
<td>1</td>
<td>04275086</td>
<td>Label, Authorized Modification</td>
</tr>
</tbody>
</table>
EQUIPMENT REQUIRED:

<table>
<thead>
<tr>
<th>CH6000</th>
<th>Scan Tool, DRBIII®</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH7000/7001</td>
<td>J1962 Cable</td>
</tr>
<tr>
<td>CH7035</td>
<td>General Purpose Interface Bus Cable (GPIB)</td>
</tr>
<tr>
<td></td>
<td>MDS2</td>
</tr>
</tbody>
</table>

NOTE: THE MDS2 MUST BE OPERATING WITH CIS CD2075 OR HIGHER.

1. Flash the PCM using the MDS2 (Mopar Diagnostic System) and DRBIII® (Scan Tool).

NOTE: THE FOLLOWING STEPS ARE REQUIRED BY LAW.

2. Type the necessary information on the Authorized Software Update Label p/n 04669020 (Fig. 1). Attach the label to the PCM and cover it with the clear plastic overlay. Type the necessary information on the Authorized Modification Label p/n 04275086 (Fig. 2) and attach the label near the VECI label.

   ![Fig. 1 AUTHORIZED SOFTWARE UPDATE LABEL](image1)

   ![Fig. 2 AUTHORIZED MODIFICATION LABEL](image2)

   1 - POWERTRAIN CONTROL MODULE P/N (INSERT P/N) USED  
   2 - CHANGE AUTHORITY: TSB XX-XX-XX  
   3 - DEALER CODE: XXXXX  
   4 - DATE: XX-XX-XX

   POLICY:
   Reimbursable within the provisions of the warranty.
TIME ALLOWANCE:

| 08-19-48-90 | Module, PCM Reprogram | 0.5 |

FAILURE CODE:

| FM | Flash Module |

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Return to Pg. 25

1996 Chrysler

1996 Dodge / Eagle

Return to Pg. 27

1996 Plymouth
CERTAIN 2004 MODEL YEAR E-SERIES CUTAWAY AND STRIPPED CHASSIS VEHICLES EQUIPPED WITH 5.4L ENGINE — POWERTRAIN CONTROL MODULE REPROGRAMMING

OVERVIEW

In all of the affected vehicles, a powertrain calibration flaw is present that may prevent the Catalyst Monitor from achieving a “Ready” condition. There is no perceivable impact on vehicle operation. However, the vehicle may not be able to complete emissions certification requirements in some states. Without completed emissions certification, certain states may not renew vehicle registrations. Dealers are to reprogram the Powertrain Control Module (PCM) using the following procedure.

SERVICE PROCEDURE

Module Reprogramming

NOTE: Reprogram appropriate vehicle modules before performing diagnostics and clear all Diagnostic Trouble Codes (DTCs) after programming. For DTCs generated after reprogramming, follow normal diagnostic service procedures.

1. Connect a battery charger to the 12V battery.
2. Reprogram the PCM using IDS release 97.03 or higher.

NOTE: Calibration files may also be obtained at www.motorcraftservice.com.

NOTE: Follow the IDS on-screen instructions to complete the reprogramming procedure.
3. Disconnect the battery charger from the 12V battery, once the reprogramming has completed.

Important Information for Module Programming

NOTE: When programming or reprogramming a module, use the following basic checks to ensure programming completes without errors.

• Make sure the 12V battery is fully charged before carrying out the programming steps and connect IDS/scan tool to a power source.
• Inspect Vehicle Communication Module (VCM) and cables for any damage. Make sure scan tool connections are not interrupted during programming.
• A hardwired connection is strongly recommended.
• Turn off all unnecessary accessories (radio, heated/cooled seats, headlamps, interior lamps, HVAC system, etc.) and close doors.
• Disconnect/depower any aftermarket accessories (remote start, alarm, power inverter, CB radio, etc.).
• Follow all scan tool on-screen instructions carefully.
• Disable IDS/scan tool sleep mode, screensaver, hibernation modes.
• Create all sessions Key On Engine Off (KOEO). Starting the vehicle before creating a session will cause errors within the programming inhale process.
Recovering a module when programming has resulted in a blank module:
NEVER DELETE THE ORIGINAL SESSION!

a. Obtain the original IDS that was used when the programming error occurred during Module Reprogramming (MR) or Programmable Module Installation (PMI).

b. Disconnect the VCM from the Data Link Connector (DLC) and the IDS.

c. Reconnect the VCM to IDS and then connect to the DLC. Once reconnected, the VCM icon should appear in the corner of the IDS screen. If it does not, troubleshoot the IDS to VCM connection.

d. Locate the ORIGINAL vehicle session when programming failed. This should be the last session used in most cases. If not, use the session created on the date that the programming failed.

NOTE: If the original session is not listed in the previous session list, click the "Recycle Bin" icon at the lower right of the previous session screen. This loads any deleted sessions and allows you to look through them. Double-click the session to restore it.

e. Once the session is loaded, the failed process should resume automatically.

f. If programming does not resume automatically, proceed to the Module Programming menu and select the previously attempted process, PMI or MR.

g. Follow all on-screen prompts/instructions.

h. The last screen on the IDS may list additional steps required to complete the programming process. Make sure all applicable steps listed on the screen are followed in order.
**SI B12 11 06: Recall 06E-A03:...**

**Engine Electrical Systems**

This Service Information bulletin supersedes S.I. B12 11 06 December 2006.

**PERFORM THE PROCEDURE OUTLINED IN THIS SERVICE INFORMATION ON ALL AFFECTED VEHICLES THE NEXT TIME THEY ARE IN THE SHOP FOR MAINTENANCE OR REPAIRS.**

New designates changes to this revision

**SUBJECT**

Voluntary Emissions Recall 06E-A03: S62, S54 - DME Reprogramming for OBD Communication

**MODEL**

- Z3 M Roadster/Coupe with S54
- E46 M3 Coupe/Convertible with S54 up to 8/27/04 production
- E52 Z8 with S62
- E39 M5 with S62

**SITUATION**

Under certain conditions, when the ignition is switched off and on again, the OBD communication cannot be established between the MSS52 or MSS54 DMEs and the generic scan tools. As a result, MY '00-'04 vehicles equipped with Motorsport S62 and S54 engines may not be able to pass a state emission inspection where the testing procedure consists of scanning OBD readiness codes.

The OBD communication and the On-board Diagnostics are always possible when using BMW DIS or GT1 testers.

In order to remedy the situation, BMW is conducting a Voluntary Emissions Recall Campaign to reprogram the engine control units (DME) on all affected vehicles.

**AFFECTED VEHICLES**

This Recall Campaign involves MY '01-'03 Z3 M Roadster/Coupe vehicles with S54 engines, MY '00-'03 Z8 and M5 vehicles with S62 engines, and M3 Coupe/Convertible vehicles with S54 engines which were produced from Series introduction up to 08/27/2004.

**IMPORTANT:**

Z8 Alpina Roadster vehicles equipped with M62S engines are not affected by this Emissions Recall.

In order to determine if a specific vehicle is affected by this Recall Campaign, it will be necessary to utilize the "Service Menu" of the DCS (Dealer Communication System). Based on the response of the system, either proceed with the corrective action or take no further action.

The Chassis Number Ranges listed below are only for informational purposes and are not to be considered the only deciding factor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Chassis Number Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z3 M Roadster</td>
<td>LJ80015 – LJ80913</td>
</tr>
<tr>
<td></td>
<td>LJ82013 – LJ82634</td>
</tr>
<tr>
<td>Z3 M Coupe</td>
<td>LK60019 – LK60335</td>
</tr>
<tr>
<td></td>
<td>LK61000 – LK61313</td>
</tr>
<tr>
<td>M3 Coupe</td>
<td>JR10058 – JR24983</td>
</tr>
<tr>
<td></td>
<td>PNS5023 – PN60027</td>
</tr>
<tr>
<td>M3 Convertible</td>
<td>EX20056 – EX24996</td>
</tr>
<tr>
<td></td>
<td>PK00008 – PK08211</td>
</tr>
<tr>
<td>Z8</td>
<td>AH60268 – AH62526</td>
</tr>
<tr>
<td>M5</td>
<td>BZ94051 – BZ99998</td>
</tr>
<tr>
<td></td>
<td>CF90008 – CF93976</td>
</tr>
</tbody>
</table>

**New CORRECTION**

On all affected vehicles, reprogram the DME using Progman 21.2 or higher.
Also, on M3 vehicles equipped with the SMG transmission, reprogram the SMG control module using Progman 21.2 or higher.

**IMPORTANT:**

**DO NOT PERFORM THE TEACH-IN PROCEDURE AFTER REPROGRAMMING THE SMG.**

It is NOT necessary to perform any of the SMG Teach-in Transmission procedures (e.g., "Teach-in clutch valve characteristic values", "Adapt compete transmission", or "Teach-in clutch slip point") after reprogramming the SMG control module. Readapting the complete transmission or clutch characteristic/biting point after SMG module programming may cause harsh shifting or incorrect clutch engagement.

**PROCEDURE**

1. Connect an approved battery charger and the DK diagnostic head.
2. Start a new Progman session and select the appropriate vehicle Series.
3. Select "Load Software" and then answer "NO" to the query as to whether any of the control modules have been replaced.
4. Select DME (SMG) from the list of the control modules.
5. Select "Program" menu and then "Update Software" from the submenu. The measure plan will be determined and displayed.
6. Select "Accept" and "Start" to start the programming. After the programming is completed, determine and clear any faults stored in control modules using DIS/GT1, if necessary.

The following part numbers for the DME control module should be displayed in the final report after the reprogramming:

**E39 M5 MY '00-'03**

DME MSS52  
Programmed P/N – 7 837 951 or higher  
Basic P/N – 7 837 965 or higher.

**E52 Z8 MY '00-'03**

DME MSS52  
Programmed P/N – 7 837 949 or higher  
Basic P/N – 7 837 965 or higher.

**Z3 M Roadster/Coupe MY '01-'03**

DME MSS54  
Programmed P/N – 7 837 925 or higher  
Basic P/N – 7 837 941 or higher.

**E46 M3 Coupe/Convertible with manual transmission MY '01-'02**

DME MSS54  
Programmed P/N – 7 837 913 or higher  
Basic P/N – 7 837 941 or higher.

**E46 M3 Coupe/Convertible with SMG transmission MY '01-'02**

DME MSS54  
Programmed P/N – 7 837 935 or higher  
Basic P/N – 7 837 941 or higher.

**E46 M3 Coupe/Convertible with manual transmission MY '03**
DME **MSS54**
Programmed P/N – 7 837 915 or higher
Basic P/N – 7 837 941 or higher.

**E46 M3 Coupe/Convertible with SMG transmission MY '03**

DME **MSS54**
Programmed P/N – 7 837 937 or higher
Basic P/N – 7 837 941 or higher.

**E46 M3 Coupe/Convertible with manual transmission MY '04**

DME **MSS54HP**
Programmed P/N – 7 837 877 or higher
Basic P/N – 7 837 805 or higher.

**E46 M3 Coupe/Convertible with SMG transmission MY '04**

DME **MSS54HP**
Programmed P/N – 7 837 801 or higher
Basic P/N – 7 837 805 or higher.

**Important Note:** If the MSS54HP DME control module has already been retrofitted into the earlier production 2001, 2002, or 2003 vehicle, the following DME part numbers should be displayed in the final report after programming:

**E46 M3 Coupe/Convertible with manual transmission MY '01-'03**

Replacement DME **MSS54HP**
Programmed P/N – 7 837 785 or higher
Basic P/N – 7 837 805 or higher.

**E46 M3 Coupe/Convertible with SMG transmission MY '01-'03**

Replacement DME **MSS54HP**
Programmed P/N – 7 837 799 or higher
Basic P/N – 7 837 805 or higher.

**IMPORTANT:**

The correct DME part numbers (regardless of the hardware level - MSS54 or MSS54HP) will be selected through the automatic programming path.

Manual determination of the basic and programmed control module numbers should be used only when the DME has already "crashed" during an aborted Progman session.

In such a case, to determine the correct hardware level (MSS54/MSS54HP), use the "New part no. progr. ctrl." printed from the failed Progman Measures Plan; or determine it from the DME label (see illustration below) and part numbers provided in this Service Information.
The following part numbers for the SMG control module should be displayed in the final report after the reprogramming of a M3:

**E46 M3 Coupe/Convertible with SMG transmission MY '01-'04**

SMG module,

Programmed P/N – 7 837 730 or higher

Basic P/N – 7 837 728 or higher.

**LABEL INSTRUCTIONS**

After the vehicle has been checked and corrected, obtain a label (SD 92-323) and with a ball-point pen print your dealer code (5 digits) on the Recall Completion Label (see illustration). An initial quantity of 100 labels will be sent to all BMW automotive centers. Peel the label from its backing and affix it to the right (passenger) rear side of the hood in the engine compartment, close to the windshield.

![Recall Completion Label Illustration](image)

For California centers only: It is required by the California Code of Regulations that an executed orange "Vehicle Emission Recall - Proof of Correction" certificate (SD92-084, see illustration) be provided to each customer (for vehicles registered in the state of California) once the Recall on his or her vehicle has been completed.

Note: Additional labels can be ordered online at BMW TIS.

**WARRANTY INFORMATION**

The repair described in this bulletin is covered under warranty regardless of time or mileage. Reimbursement for this Recall will be via normal claim entry utilizing the following information:

<table>
<thead>
<tr>
<th>Defect Code</th>
<th>00 12 23 02 00</th>
</tr>
</thead>
</table>

**Labor Operation:**

<table>
<thead>
<tr>
<th>Labor Allowance:</th>
</tr>
</thead>
</table>

| 00 56 172 – Reprogram DME module | 7 FRU |

| 00 56 173 – Reprogram DME & SMG modules on M3 | 8 FRU |

**REFUELING COST**

BMW of North America, LLC will provide reimbursement for having the gas tank topped off once, as required, for each vehicle affected by this Recall Campaign. Attach the appropriate receipt to the work order.

<table>
<thead>
<tr>
<th>Defect Code</th>
<th>85 99 00 66 NA</th>
</tr>
</thead>
</table>

**Refuel vehicle**

<table>
<thead>
<tr>
<th>Sublet:</th>
</tr>
</thead>
</table>

| Actual cost to top off the fuel tank |
Sublet code: 4

**VALET COST**

BMW of North America, LLC will provide reimbursement for vehicle valet services (pick up and delivery) for each vehicle affected by this Recall Campaign. Attach the appropriate receipt to the work order.

<table>
<thead>
<tr>
<th>Valet Service</th>
<th>99 99 77 77 NA</th>
</tr>
</thead>
</table>

Sublet: $25.00

Sublet code: 4

**RENTAL VEHICLES**

Retailers participating in the Retailer Administered Customer Assistance Program and the BMW Service Loaner Car Program may self-authorize claims for reimbursement of rental costs from independent rental agencies in certain situations. For more details, refer to SI B01 07 03.

**ATTACHMENTS**

View PDF attachment [B121106Customer_Letter](#).

Portions of materials contained herein are sourced from BMW of North America, LLC.

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SI B12 11 06
Engine Electrical Systems October 2007
Technical Service

This Service Information bulletin supersedes S.I. B12 11 06 December 2006.

PERFORM THE PROCEDURE OUTLINED IN THIS SERVICE INFORMATION ON ALL AFFECTED VEHICLES THE NEXT TIME THEY ARE IN THE SHOP FOR MAINTENANCE OR REPAIRS.

designates changes to this revision

SUBJECT
Voluntary Emissions Recall 06E-A03: S62, S54 - DME Reprogramming for OBD Communication

MODEL
Z3 M Roadster/Coupe with S54

E46 M3 Coupe/Convertible with S54 up to 8/27/04 production

E52 Z8 with S62

E39 M5 with S62

SITUATION
Under certain conditions, when the ignition is switched off and on again, the OBD communication cannot be established between the MSS52 or MSS54 DMEs and the generic scan tools. As a result, MY '00-04 vehicles equipped with Motorsport S62 and S54 engines may not be able to pass a state emission inspection where the testing procedure consists of scanning OBD readiness codes.

The OBD communication and the On-board Diagnostics are always possible when using BMW DIS or GT1 testers.

In order to remedy the situation, BMW is conducting a Voluntary Emissions Recall Campaign to reprogram the engine control units (DME) on all affected vehicles.

AFFECTED VEHICLES
This Recall Campaign involves MY '01-'03 Z3 M Roadster/Coupe vehicles with S54 engines, MY '00-'03 Z8 and M5 vehicles with S62 engines, and M3 Coupe/Convertible vehicles with S54 engines which were produced from Series introduction up to 08/27/2004.

IMPORTANT:

Z8 Alpina Roadster vehicles equipped with M62S engines are not affected by this Emissions
Recall.

In order to determine if a specific vehicle is affected by this Recall Campaign, it will be necessary to utilize the "Service Menu" of the DCS (Dealer Communication System). Based on the response of the system, either proceed with the corrective action or take no further action.

The Chassis Number Ranges listed below are only for informational purposes and are not to be considered the only deciding factor.

Model
Chassis Number Range

Z3 M Roadster
LJ80015 – LJ80913

LJ82013 – LJ82634

Z3 M Coupe
LK60019 – LK60335

LK61000 – LK61313

M3 Coupe
JR10058 – JR24983

PN55023 – PN60027

M3 Convertible
EX20056 – EX24996

PK00008 – PK08211

Z8
AH60268 – AH62526

M5
BZ94051 – BZ99998

CF90008 – CF93976

CORRECTION
On all affected vehicles, reprogram the DME using Progman 21.2 or higher.

Also, on M3 vehicles equipped with the SMG transmission, reprogram the SMG control module using Progman 21.2 or higher.
IMPORTANT:

DO NOT PERFORM THE TEACH-IN PROCEDURE AFTER REPROGRAMMING THE SMG.

It is NOT necessary to perform any of the SMG Teach-in Transmission procedures (e.g., "Teach-in clutch valve characteristic values", "Adapt complete transmission", or "Teach-In clutch slip point")

after reprogramming the SMG control module. Readapting the complete transmission or clutch characteristic/biting point after SMG module programming may cause harsh shifting or incorrect clutch engagement.

PROCEDURE

Connect an approved battery charger and the DK diagnostic head.

Start a new Progman session and select the appropriate vehicle Series.

Select "Load Software" and then answer "NO" to the query as to whether any of the control modules have been replaced.

Select DME (SMG) from the list of the control modules.

Select "Program" menu and then "Update Software" from the submenu. The measure plan will be determined and displayed.

Select "Accept" and "Start" to start the programming. After the programming is completed, determine and clear any faults stored in control modules using DIS/GT1, if necessary.

The following part numbers for the DME control module should be displayed in the final report after the reprogramming:

E39 M5 MY '00-'03
DME MSS52
Programmed P/N - 7 837 951 or higher
Basic P/N - 7 837 965 or higher.
E52 Z8 MY '00-'03
DME MSS52
Programmed P/N - 7 837 949 or higher
Basic P/N – 7 837 965 or higher.

Z3 M Roadster/Coupe MY '01-'03

DME MSS54

Programmed P/N – 7 837 925 or higher

Basic P/N – 7 837 941 or higher.

E46 M3 Coupe/Convertible with manual transmission MY '01-'02

DME MSS54

Programmed P/N – 7 837 913 or higher

Basic P/N – 7 837 941 or higher.

E46 M3 Coupe/Convertible with SMG transmission MY '01-'02

DME MSS54

Programmed P/N – 7 837 935 or higher

Basic P/N – 7 837 941 or higher.

E46 M3 Coupe/Convertible with manual transmission MY '03

DME MSS54

Programmed P/N – 7 837 915 or higher

Basic P/N – 7 837 941 or higher.

E46 M3 Coupe/Convertible with SMG transmission MY '03

DME MSS54

Programmed P/N – 7 837 937 or higher

Basic P/N – 7 837 941 or higher.

E46 M3 Coupe/Convertible with manual transmission MY '04

DME MSS54HP
Programmed P/N – 7 837 787 or higher

Basic P/N – 7 837 805 or higher.

E46 M3 Coupe/Convertible with SMG transmission MY '04

DME MSS54HP

Programmed P/N – 7 837 801 or higher

Basic P/N – 7 837 805 or higher.

Important Note: If the MSS54HP DME control module has already been retrofitted into the earlier production 2001, 2002, or 2003 vehicle, the following DME part numbers should be displayed in the final report after programming:

E46 M3 Coupe/Convertible with manual transmission MY '01-'03

Replacement DME MSS54HP

Programmed P/N – 7 837 785 or higher

Basic P/N – 7 837 805 or higher.

E46 M3 Coupe/Convertible with SMG transmission MY '01-'03

Replacement DME MSS54HP

Programmed P/N – 7 837 799 or higher

Basic P/N – 7 837 805 or higher.

IMPORTANT:

The correct DME part numbers (regardless of the hardware level - MSS54 or MSS54HP) will be selected through the automatic programming path.

Manual determination of the basic and programmed control module numbers should be used only when the DME has already "crashed" during an aborted Progman session.

In such a case, to determine the correct hardware level (MSS54/MSS54HP), use the "New part no. progr. ctrl." printed from the failed Progman Measures Plan; or determine it from the DME label (see illustration below) and part numbers provided in this Service Information.
MSS54HP DME label

The following part numbers for the SMG control module should be displayed in the final report after the reprogramming of a M3:

E46 M3 Coupe/Convertible with SMG transmission MY '01-'04

SMG module,

Programmed P/N – 7 837 730 or higher

Basic P/N – 7 837 728 or higher.

LABEL INSTRUCTIONS

After the vehicle has been checked and corrected, obtain a label (SD 92-323) and with a ball-point pen print your dealer code (5 digits) on the Recall Completion Label (see illustration). An initial quantity of 100 labels will be sent to all BMW automotive centers. Peel the label from its backing and affix it to the right (passenger) rear side of the hood in the engine compartment, close to the windshield.

For California centers only: it is required by the California Code of Regulations that an executed orange "Vehicle Emission Recall - Proof of Correction" certificate (SD92-084, see illustration) be provided to each customer (for vehicles registered in the state of California) once the Recall on his or her vehicle has been completed.

Note: Additional labels can be ordered online at BMW TIS.

WARRANTY INFORMATION
The repair described in this bulletin is covered under warranty regardless of time or mileage. Reimbursement for this Recall will be via normal claim entry utilizing the following information:

Defect Code
00 12 23 02 00

Labor Operation:
Labor Allowance:

00 56 172 – Reprogram DME module
7 FRU

00 56 173 – Reprogram DME & SMG modules on M3
8 FRU

REFUELING COST
BMW of North America, LLC will provide reimbursement for having the gas tank topped off once, as required, for each vehicle affected by this Recall Campaign. Attach the appropriate receipt to the work order.

Defect Code
85 99 00 66 NA
Refuel vehicle

Sublet:
Actual cost to top off the fuel tank

Sublet code:
4

VALET COST
BMW of North America, LLC will provide reimbursement for vehicle valet services (pick up and delivery) for each vehicle affected by this Recall Campaign. Attach the appropriate receipt to the work order.

Defect Code
99 99 77 77 NA
Valet Service

Sublet:
$25.00

Sublet code:
4

RENTAL VEHICLES
Retailers participating in the Retailer Administered Customer Assistance Program and the BMW Service Loaner Car Program may self-authorize claims for reimbursement of rental costs from independent rental agencies in certain situations. For more details, refer to SI B01 07 03.

ATTACHMENTS
view PDF attachment B121106Customer_Letter.
PERFORM THE PROCEDURE OUTLINED IN THIS SERVICE INFORMATION ON ALL AFFECTED VEHICLES THE NEXT TIME THEY ARE IN THE SHOP FOR MAINTENANCE OR REPAIRS.

THE MY 2000 VEHICLES WERE INADVERTENTLY OMITTED FROM THE INITIAL BULLETIN AND CUSTOMER LETTER. AN UPDATED CUSTOMER LETTER WILL BE MAILED.

This Service Information bulletin supersedes S.I. 12 15 99 dated May 2000.

\* designates changes to this revision

**SUBJECT**

Voluntary Emissions Recall 00E-A01: Fault Access/O2 Readiness Codes

**MODEL**

<table>
<thead>
<tr>
<th>Model</th>
<th>Chassis Number Range</th>
<th>Production Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>E39</td>
<td>528i, 528iA, 528iT, 528iAT</td>
<td>2/99 – 7/99</td>
</tr>
<tr>
<td>E46</td>
<td>328i, 328iA, 323i, 323iA</td>
<td>3/98 – 7/99</td>
</tr>
<tr>
<td>E46</td>
<td>328iC, 328iCA, 323iC, 323iCA</td>
<td>2/99 – 7/99</td>
</tr>
<tr>
<td>E36/7</td>
<td>Z3 coupe 2.8</td>
<td>4/99 – 7/99</td>
</tr>
<tr>
<td>E36/7</td>
<td>Z3 roadster 2.8</td>
<td>4/99 – 7/99</td>
</tr>
<tr>
<td>E36/7</td>
<td>Z3 roadster 2.3</td>
<td>9/98 – 7/99</td>
</tr>
</tbody>
</table>

**SITUATION**

BMW has determined that certain 1999 & 2000 model year BMW automobiles with 2.5 liter and 2.8 liter displacement engines may not fully meet Federal Environmental Protection Agency (EPA) and California Air Resources Board on-board diagnostic requirements.

- Due to an engine control module software error, a communication conflict exists between the engine control module and the transmission control module. This may lead to difficulties or prevent communication and data transmission between the engine control module and an off-board scan tool. Such a scan tool may be used during an official vehicle inspection, smog check, or an engine repair.
- The oxygen sensor readiness code may not set on the affected E36/7, E46 and E39 vehicles.

A customer notification letter was sent out in August 2000 (attached).

**CAUSE**

DME programming error.

**AFFECTED VEHICLES**


In order to determine if a specific vehicle is affected by this recall, it will be necessary to utilize the "Service Menu" of the DCS (Dealer Communication System). Based on the response of the system, either proceed with the corrective action or take no further action.

The Chassis Number Ranges listed below are only for informational purposes and are not to be considered as the only deciding factor.
CORRECTION
In order to complete this recall, the Engine Control Module (ECM/DME) must be reprogrammed using the DIS or MoDiC with P21.0 programming software or higher.

PROCEDURE

1. Check if the ECM/DME needs to be reprogrammed:

Vehicles produced up to 7/99 that have not been reprogrammed will have one of the following part numbers for a "Programmed control unit" displayed on the DME identification screen of the DIS/MoDiC. If one of these numbers is displayed, the control module MUST be reprogrammed:

<table>
<thead>
<tr>
<th>Body</th>
<th>Model</th>
<th>&quot;Programmed control unit&quot; before reprogramming</th>
</tr>
</thead>
<tbody>
<tr>
<td>E36/7</td>
<td>Z3 coupe 2.3</td>
<td>7 500 105</td>
</tr>
<tr>
<td></td>
<td>Z3 roadster 2.3</td>
<td>7 501 879</td>
</tr>
<tr>
<td></td>
<td>Z3 coupe 2.8</td>
<td>7 501 790</td>
</tr>
<tr>
<td></td>
<td>Z3 roadster 2.8</td>
<td>7 503 435</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 430 543</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 430 830</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 430 886</td>
</tr>
<tr>
<td>E46</td>
<td>323i</td>
<td>7 501 793</td>
</tr>
<tr>
<td></td>
<td>323iA</td>
<td>7 501 877</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 501 103</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 500 103</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 501 877</td>
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<td></td>
<td></td>
<td>7 503 437</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 438 296</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 438 541</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 438 674</td>
</tr>
<tr>
<td></td>
<td>328i</td>
<td>7 501 795</td>
</tr>
<tr>
<td></td>
<td>328iA</td>
<td>7 503 429</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 430 828</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 430 753</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 430 848</td>
</tr>
<tr>
<td>E39</td>
<td>528i, 528iA</td>
<td>7 501 797</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 503 431</td>
</tr>
<tr>
<td></td>
<td>528iT, 528iAT</td>
<td>7 501 846</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 503 433</td>
</tr>
</tbody>
</table>

2. If the ECM/DME must be reprogrammed, use P21.0 programming software or higher (available as of CD21.0). Refer to the attachment for programming instructions.

3. After reprogramming, the following "Programmed control unit" numbers will be installed:

<table>
<thead>
<tr>
<th>Body</th>
<th>Model</th>
<th>&quot;Programmed control unit&quot; after reprogramming</th>
</tr>
</thead>
<tbody>
<tr>
<td>E36/7</td>
<td>Z3 coupe 2.3</td>
<td>7 505 530</td>
</tr>
<tr>
<td></td>
<td>Z3 roadster 2.3</td>
<td>7 505 530</td>
</tr>
<tr>
<td></td>
<td>Z3 coupe 2.8</td>
<td>7 505 526</td>
</tr>
<tr>
<td></td>
<td>Z3 roadster 2.8</td>
<td>7 505 526</td>
</tr>
</tbody>
</table>
After the vehicle has been checked and, if necessary, corrected, obtain a label (SD 92-163) and with a ballpoint pen print your dealer code (5 digits) on the Recall Completion Label (see illustration). An initial quantity of 100 labels will be sent to all BMW automotive centers. Peel the label from its backing and affix it to the left front strut tower (in the engine compartment) next to the Vehicle Emission Control Label.

For California centers only it is required by the California Code of Regulations that an executed orange "Vehicle Emission Recall - Proof of Correction" certificate (SD92-084, see illustration) be provided to each customer (for vehicles registered in the state of California) once the Recall on their vehicle has been completed.

Note: Additional labels can be ordered from Product Engineering.

**WARRANTY INFORMATION**

Reimbursement for this recall will be provided through campaign entry without regard to vehicle age or mileage.

**Defect Code** 00 12 36 01 00

**Work Package 1** Check/verify if ECM/DME has been reprogrammed (no reprogramming required).

| Labor Operation: | 00 52 057 |
| Labor Allowance: | 5 FRU | All affected vehicles |

**Work Package 2** Check/verify if ECM/DME has been reprogrammed & reprogram DME.

| Labor Operation: | 00 52 058 |
| Labor Allowance: | 7 FRU | Z3 coupe & roadster |
| | 7 FRU | E46 |
| | 8 FRU | E39 |

September 2000

Dear BMW Owner:
Due to a word processing error, "2000 model year" was inadvertently omitted from the letter in the original mailing you received regarding recall 00E-A01. Your BMW is indeed affected by this voluntary emissions recall campaign.

We do apologize for any inconvenience this may have caused you.

Very truly yours,

BMW OF NORTH AMERICA

Attachments: 2

BMW VOLUNTARY EMISSIONS RECALL CAMPAIGN TO UPDATE ENGINE CONTROL MODULE SOFTWARE CORRECTING POTENTIAL ON-BOARD DIAGNOSTIC SYSTEM FAULT MEMORY ACCESS AND OXYGEN SENSOR READINESS CODE SHORTCOMINGS

CAMPAIGN NUMBER: 00E-A01

Dear BMW Owner:

BMW has determined that certain 1999 and 2000 model year BMW automobiles with 2.5 liter and 2.8 liter displacement engines may not fully meet Federal Environmental Protection Agency (EPA) and California Air Resources Board on-board diagnostic requirements.

In order to remedy this situation, BMW is conducting a Voluntary Emissions Recall Campaign. We are asking you as the owner of an affected vehicle to contact your Authorized BMW center at your earliest convenience to have the repair carried out.

The Problem is...

BMW has determined that one or both of the following problems exist on your vehicle:

• Due to an engine control module software error a communication conflict exists between the engine control module and the transmission control module in an effected vehicle. This may lead to difficulties or prevent communication and data transmission between the engine control module and an off-board scan tool. Such a scan tool may be used during an official vehicle inspection or smog check, or an engine repair.
  • The oxygen sensor readiness code may not set on the affected E36/7, E46 and E39 vehicles.

What BMW and your Authorized BMW center will do...

BMW will repair your vehicle free of charge for parts and labor. Your authorized BMW center will reprogram the effected control units with the most up-to-date software. The complete repair should not take more than one hour. The reprogramming does not have any adverse impact on drivability.

Your obligations are...

At your earliest convenience, please contact your Authorized BMW center to schedule an appointment to have this Emissions Recall Campaign performed.

If you fail to get this free Emissions Recall Campaign performed...

If you live in a State with a SMOG Check program, your vehicle must pass an emissions test, as required by State law. Without having this Recall performed your vehicle may be more likely to fail this test.

For vehicles registered in the State of California, the completion of emission recall repairs is required prior to vehicle registration renewal. In addition, the State of California requires that every vehicle must pass an emissions test (SMOG Check) in two year intervals and whenever a vehicle is sold. California regulations require BMW to provide the Department of Motor Vehicles with a record of all vehicles, which have not had the Recall repair performed.

Furthermore, your Authorized BMW center will provide you with a Proof of Correction form after this repair is completed. Please save this form since the California Department of Motor Vehicles may require it as proof of Emissions Recall Campaign completion.

Failure to have this free repair work performed could be determined as lack of proper maintenance of your vehicle and could jeopardize your full protection under the emissions warranty provisions.

If you need help...

Should you have any questions about this Emissions Recall Campaign that cannot be answered by your Authorized BMW center, please call our Customer Relations Department, toll free, at 1-800-831-1117.

If you don't own this vehicle...

If you are no longer the owner of this vehicle, we would greatly appreciate your furnishing us with the name and address of the new owner, using the enclosed return postage-paid card.

On a personal note...

We appreciate your confidence in our product and wish to do everything we can to retain that confidence. BMW of North America, Inc. in cooperation with our Authorized centers will strive to minimize any inconvenience to you caused by this Campaign. We ask that you join us in our desire to minimize air pollution and any adverse impact on our environment and have this Emissions Recall Campaign conducted on your vehicle.
45 Vehicle will not communicate with scan tool

45 15 10 2042048/1 October 5, 2015.

<table>
<thead>
<tr>
<th>Model(s)</th>
<th>Year</th>
<th>VIN Range</th>
<th>Vehicle-Specific Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4, A6, A8</td>
<td>1997 - 2001</td>
<td>All</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Condition**

- Vehicle will not communicate with diagnostic scan tool or emissions test equipment.
  - Customers may have issues with vehicle passing state IM emissions test programs because the scan tool cannot communicate with the vehicle.
  - ABS and/or brake lamp(s) will be illuminated in IP cluster.

**Technical Background**

Broken ground bond wire within the ABS module (ABS 5.3 system) causes diagnostic communication issues with the ABS module, ECM, and TCM.

⚠️ Note:

Brake system and ABS system functionality are not affected by the broken ground circuit.

⚠️ Note:

This bulletin only addresses the communication issue (broken ground circuit) between the vehicle and the diagnostic scan tool described above. This bulletin does not address any subsequent vehicle diagnostic system issues that may exist:

- OBD system works normally; emission or diagnostic critical malfunctions will be indicated by MIL illumination.
- ABS system is not functionally affected by the broken ground circuit.

**Production Solution**

Not applicable.
Service

Diagnose Open Ground Circuit:
1. Disable ABS module in one of the following ways:
   - Remove ABS module connector.
   - Pull ABS module fuse.
2. Test for scan tool communication:
   - If communication is restored, replace ABS module.
   - If communication is not restored, further diagnosis is required following normal GFF protocol.

⚠️ Note:
Once this communication issue has been repaired and normal diagnostic communication with the vehicle has been restored, it will be necessary to diagnose further vehicle issues, including possible OBD or ABS issues that may be still indicated by:
   - MIL lamp illuminated
   - ABS lamp illuminated
   - Brake lamp illuminated
If any of these conditions still exist, follow correct diagnostic procedures in GFF.

Warranty

This TSB is informational only and not applicable to any Audi warranty.

Additional Information

All parts and service references provided in this TSB (2042048) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.