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**2005 HUMMER H2**

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## Intermittent Conditions

Inspection/Test	Action
<p>DEFINITION: The problem is not currently present but is indicated in DTC History.</p> <p>OR</p> <p>There is a customer complaint, but the symptom can not currently be duplicated, if the problem is not DTC related.</p>	
Preliminary	Refer to <a href="#">Symptoms - Engine Controls</a> before starting.
Harness/Connector	<p>Many intermittent open or shorted circuits are affected by harness/connector movement that is caused by vibration, engine torque, bumps/rough pavement, etc. Test for this type of condition by performing the applicable procedure from the following list:</p> <ul style="list-style-type: none"> <li>• Move related connectors and wiring while monitoring the appropriate scan tool data.</li> <li>• Move related connectors and wiring with the component commanded ON, and OFF, with the scan tool. Observe the component operation.</li> <li>• With the engine running, move related connectors and wiring while monitoring engine operation.</li> </ul> <p>If harness or connector movement affects the data displayed, component/system operation, or engine operation, inspect and repair the harness/connections as necessary.</p> <p>Refer to Electrical Connections or Wiring.</p>
Electrical Connections or Wiring	<p>Poor electrical connections, terminal tension or wiring problems cause most intermittents. Refer to <a href="#">Testing for Intermittent Conditions and Poor Connections</a> , <a href="#">Circuit Testing</a> , <a href="#">Connector Repairs</a> , or <a href="#">Wiring Repairs</a> in Wiring Systems to perform the following inspections:</p> <ul style="list-style-type: none"> <li>• Inspect for poor mating of the connector halves, or terminals improperly seated in the connector body.</li> <li>• Inspect for improperly formed or damaged terminals. Test for poor terminal tension.</li> <li>• Inspect for poor terminal to wire connections including terminals crimped over insulation. This requires removing the terminal from the connector body.</li> <li>• Inspect for corrosion/water intrusion. Pierced or damaged insulation can allow moisture to enter the wiring. The conductor can corrode inside the insulation, with little visible evidence. Look for swollen and stiff sections of wire in the suspect circuits.</li> <li>• Inspect for wires that are broken inside the insulation.</li> </ul>

	<ul style="list-style-type: none"><li>• Inspect the harness for pinched, cut or rubbed through wiring.</li><li>• Ensure that the wiring does not come in contact with hot exhaust components.</li></ul>
Control Module Power and Grounds  Component Power and Grounds	<p>Poor power or ground connections can cause widely varying symptoms.</p> <ul style="list-style-type: none"><li>• Test all control module power supply circuits. Many vehicles have multiple circuits supplying power to the control module. Other components in the system may have separate power supply circuits that may also need to be tested. Inspect connections at the module/component connectors, fuses, and any intermediate connections between the power source and the module/component. A test lamp or a DMM may indicate that voltage is present, but neither tests the ability of the circuit to carry sufficient current. Ensure that the circuit can carry the current necessary to operate the component. Refer to <a href="#">Circuit Testing</a> and <a href="#">Power Distribution Schematics</a> in Wiring Systems.</li><li>• Test all control module ground and system ground circuits. The control module may have multiple ground circuits. Other components in the system may have separate grounds that may also need to be tested. Inspect grounds for clean and tight connections at the grounding point. Inspect the connections at the component and in splice packs, where applicable. Ensure that the circuit can carry the current necessary to operate the component. Refer to <a href="#">Circuit Testing</a> and <a href="#">Ground Distribution Schematics</a> in Wiring Systems.</li></ul>
Temperature Sensitivity	<ul style="list-style-type: none"><li>• An intermittent condition may occur when a component/connection reaches normal operating temperature. The condition may occur only when the component/connection is cold, or only when the component/connection is hot.</li><li>• Freeze Frame, Failure Records, Snapshot, or Vehicle Data Recorder data may help with this type of intermittent condition, where applicable.</li><li>• If the intermittent is related to heat, review the data for a relationship with the following:<ul style="list-style-type: none"><li>■ High ambient temperatures</li><li>■ Underhood/engine generated heat</li><li>■ Circuit generated heat due to a poor connection, or high electrical load</li><li>■ Higher than normal load conditions, towing, etc.</li></ul></li><li>• If the intermittent is related to cold, review the data for the following:<ul style="list-style-type: none"><li>■ Low ambient temperatures--In extremely low temperatures, ice may form in a connection or component. Test for water intrusion.</li><li>■ The condition only occurs on a cold start.</li><li>■ The condition goes away when the vehicle warms up.</li></ul></li><li>• Information from the customer may help to determine if the trouble follows a pattern that is temperature related.</li></ul>

<p>Electromagnetic Interference (EMI) and Electrical Noise</p>	<p>Some electrical components/circuits are sensitive to EMI or other types of electrical noise. Inspect for the following conditions:</p> <ul style="list-style-type: none"> <li>• A misrouted harness that is too close to high voltage/high current devices such as secondary ignition components, motors, generator etc. These components may induce electrical noise on a circuit that could interfere with normal circuit operation.</li> <li>• Electrical system interference caused by a malfunctioning relay, or a powertrain control module (PCM) driven solenoid or switch. These conditions can cause a sharp electrical surge. Normally, the problem will occur when the malfunctioning component is operating.</li> <li>• Improper installation of non-factory or aftermarket add on accessories such as lights, 2-way radios, amplifiers, electric motors, remote starters, alarm systems, cell phones, etc. These accessories may lead to an emission related OBD II failure while in use, but do not fail when the accessories are not in use. Refer to <a href="#">Checking Aftermarket Accessories</a> in Wiring Systems.</li> <li>• Test for an open diode across the A/C compressor clutch and for other open diodes. Some relays may contain a clamping diode.</li> <li>• Test the generator for a bad rectifier bridge that may be allowing AC noise into the electrical system.</li> </ul>
<p>Incorrect PCM Programming</p>	<ul style="list-style-type: none"> <li>• There are only a few situations where reprogramming a PCM is appropriate: <ul style="list-style-type: none"> <li>■ A new service PCM is installed.</li> <li>■ A PCM from another vehicle is installed.</li> <li>■ Revised software/calibration files have been released for this vehicle.</li> </ul> </li> <li>• <b>Important:</b></li> </ul> <p style="color: red;">DO NOT re-program the PCM with the SAME software/calibration files that are already present in the PCM. This is not an effective repair for any type of driveability problem.</p> <p>Verify that the PCM contains the correct software/calibration. If incorrect programming is found, reprogram the PCM with the most current software/calibration. Refer to <a href="#">Service Programming System (SPS)</a> in Programming and Setup.</p>
<p>Duplicating Failure Conditions</p>	<ul style="list-style-type: none"> <li>• If none of the previous tests are successful, attempt to duplicate and/or capture the failure conditions.</li> <li>• Freeze Frame/Failure Records data, where applicable, contains the conditions that were present when the DTC set. <ol style="list-style-type: none"> <li>1. Review and record Freeze Frame/Failure Records data.</li> <li>2. Clear the DTCs using the scan tool.</li> <li>3. Turn the key to OFF and wait 15 seconds.</li> <li>4. Operate the vehicle under the same conditions that were noted in Freeze Frame/Failure Records data, as closely as</li> </ol> </li> </ul>

	<p>possible. The vehicle must also be operating within the Conditions for Running the DTC. Refer to Conditions for Running the DTC in the supporting text of the DTC being diagnosed.</p> <p>5. Monitor DTC Status for the DTC being tested. The scan tool will indicate Ran, when the enabling conditions have been satisfied long enough for the DTC to run. The scan tool will also indicate whether the DTC passed or failed.</p> <ul style="list-style-type: none"><li>• An alternate method is to drive the vehicle with the DMM connected to a suspected circuit. An abnormal reading on the DMM when the problem occurs, may help you locate the problem.</li></ul>
Scan Tool Snapshot	<p>The scan tool can be set up to take a Snapshot of the parameters available via serial data. The Snapshot function records live data over a period of time. The recorded data can be played back and analyzed. The scan tool can also graph parameters singly or in combinations of parameters for comparison. The Snapshot can be triggered manually at the time the symptom is noticed, or set up in advance to trigger when a DTC sets.</p> <p>An abnormal value captured in the recorded data may point to a system or component that needs to be investigated further.</p> <p>Refer to the scan tool user instructions for more information on the Snapshot function.</p>
Vehicle Data Recorder	<p>The <a href="#">J 42598</a> Vehicle Data Recorder is connected to the data link connector (DLC) and sent with the customer. The <a href="#">J 42598</a> captures data for later retrieval and analysis by the technician. Refer to the vehicle data recorder user instructions for more information.</p>

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