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Document ID# 691625
2001 Chevrolet/Geo Blazer - 4WD

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DTC P1345

Circuit Description

This diagnostic trouble code (DTC) monitors the crankshaft position (CKP) and the camshaft position (CMP) signals to determine if they are synchronized. If both signals are not observed by the control module within a narrow time window, the powertrain control module (PCM) will determine that an error has occurred.

Conditions for Running the DTC

The engine is running.

Conditions for Setting the DTC

When the engine is running, the cam sensor pulse is not detected at the correct relative position to the CKP sensor pulse.

Action Taken When the DTC Sets

- The control module illuminates the malfunction indicator lamp (MIL) when the diagnostic runs and fails.
- The control module records the operating conditions at the time the diagnostic fails. The control module stores this information in the Freeze Frame/Failure Records.

Conditions for Clearing the MIL/DTC

- The control module turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
- A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- Clear the MIL and the DTC with a scan tool.

Diagnostic Aids

Check for the following items:

- A loose or missing distributor hold down bolt
- A loose CMP sensor causing a variance in the sensor signal
- An incorrectly installed distributor--1 tooth OFF in either advance or retard positions
- A loose distributor rotor on the distributor shaft
- Excessive free play in the timing chain and gear assembly

If an intermittent condition is suspected, refer to [Intermittent Conditions](#) .

Test Description

The numbers below refer to the step numbers on the table.

4. This test will determine if this DTC is intermittent.
5. If there is a variance in the camshaft sensor signal the variance will be detected in this step.
6. Unintentional damage to the distributor shaft may result if excessive pressure is used to rotate the distributor.

Step	Action	Values	Yes	No
<i>Schematic Reference: Engine Controls Schematics</i>				
1	Did you perform the Diagnostic System Check-Engine Controls?	--	Go to Step 2	Go to Diagnostic System Check - Engine Controls
2	<ol style="list-style-type: none"> 1. Install the scan tool. 2. Start the engine. 3. Use the scan tool in order to monitor the engine speed. <p>Does the engine speed fluctuate, up to twice the desired RPM?</p>	--	Go to Step 3	Go to Step 4
3	<p>Replace the CKP sensor. Refer to Crankshaft Position (CKP) Sensor Replacement .</p> <p>Did you complete the replacement?</p>	--	Go to Step 10	--
4	<p>Perform the camshaft retard offset test procedure as follows:</p> <ol style="list-style-type: none"> 1. Install the scan tool. 2. Start the engine. <p>Important</p> <p>The camshaft retard reading will not be accurate below 1,000 RPM.</p> <ol style="list-style-type: none"> 3. Raise the engine speed to the first specified value. 4. Monitor the camshaft retard with the scan tool. <p>Is the camshaft retard reading within the second specified value?</p>	<p>1,000 RPM</p> <p>-</p> <p>2 to +2 degrees</p>	Go to Step 5	Go to Step 6
	1. Note the camshaft retard reading			

5	<p>from the previous step.</p> <p>2. Raise the engine speed to the first specified value.</p> <p>Does the camshaft retard reading change more than the second specified value?</p>	<p>2,000 RPM</p> <p>2 degrees</p>	<p>Go to Step 6</p>	<p>Go to Diagnostic Aids</p>
6	<p>With the engine at operating temperature and the engine OFF, perform the following procedure:</p> <p>1. Remove the distributor cap.</p> <p>2. Grasp the distributor rotor and gently attempt to rotate the rotor.</p> <p>Does the rotor turn on the distributor shaft?</p>	<p>--</p>	<p>Go to Step 9</p>	<p>Go to Step 7</p>
7	<p>1. Check for proper installation of the distributor.</p> <p>2. Repair as necessary. Refer to Distributor Replacement.</p> <p>Did you find a problem?</p>	<p>--</p>	<p>Go to Step 10</p>	<p>Go to Step 8</p>
8	<p>Replace the distributor. Refer to Distributor Replacement.</p> <p>Did you complete the replacement?</p>	<p>--</p>	<p>Go to Step 9</p>	<p>--</p>
9	<p>1. Using the scan tool, clear the DTCs.</p> <p>2. Turn OFF the ignition for 30 seconds.</p> <p>3. Start the engine.</p> <p>4. Operate the vehicle, within the Conditions for Running this DTC, as specified in the supporting text.</p> <p>Does the DTC run and pass?</p>	<p>--</p>	<p>Go to Step 10</p>	<p>Go to Step 2</p>
10	<p>With a scan tool, observe the stored information, Capture Info.</p> <p>Does the scan tool display any DTCs that you have not diagnosed?</p>	<p>--</p>	<p>Go to Diagnostic Trouble Code (DTC) List</p>	<p>System OK</p>

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