

Accumulating PCM Data

Accumulating PCM data can be done in a number of ways. Gather as much data as possible when the malfunction is occurring to prevent misdiagnosis. Data should be accumulated in different operating conditions and based on the customer description of the intermittent fault. Acquisition of PCM PID data using a scan tool is one of the easiest ways to gather information. Listed below are instructions for gathering PID data using a Rotunda New Generation Star (NGS) Tester 007-00500.

Selecting and Viewing PIDs

1. Select VEHICLE & ENGINE SELECTION menu.
2. SELECT CORRECT VEHICLE, YEAR and MODEL.
3. Select DIAGNOSTIC DATA LINK.
4. Select PCM — POWERTRAIN CONTROL MODULE.
5. Select PID/DATA MONITOR AND RECORD.
6. Select the PIDs from the intermittent symptom chart or the PCM Pinpoint Test. The star symbol next to each PID on the screen indicates that PID has been selected. Scroll through the PID list using the menu dial and select PIDs using the trigger button.
7. Turn ignition key on or start vehicle.
8. Select the START key and access the PIDs.

Storing PIDs

1. When ready to capture and store the selected PIDs, press the trigger button.
2. Press trigger again when ready to save information.
3. Information saved is now located in the main recording area. Save to a viewing area before starting another recording or the data will be overwritten.

Recording Measurements Along with PIDs

1. Select DIGITAL MEASUREMENT SYSTEM.
2. Select a meter (i.e., VOLTMETER).
3. Select PIDs.
4. Select the PIDs and START recording.
5. Press REC to save DVOM function and PID data.

Playback of Stored PIDs

Look for abnormal behavior or values that are clearly incorrect. Inspect the signals for abrupt or unexpected changes. For example, during a steady cruise most of the sensor values should be relatively stable. Sensors such as accelerator pedal (AP), manifold absolute pressure (MAP) and rpm that change abruptly when the vehicle is traveling at a constant speed are clues to a possible fault area.

Look for agreement in related signals. For example, if accelerator pedal position is changed during acceleration, a corresponding change should occur in rpm.

Make sure the signals act in proper sequence. An increase in rpm after the accelerator pedal's position is increased is expected. However, if rpm increases without an accelerator pedal position change, then a problem may exist.

1. Select VIEW RECORDER AREAS.
2. Select a viewing area.
3. Select up to four PIDs to review in the table format or two PIDs to review in the graph mode.
4. Table Format: Scroll through the PID data while analyzing the information. Look for sudden drops or spikes in the values. (Refer to the following AP example or reference the EEC-V charts and graphs in this section.)
5. Graph Format: Scroll through the PID data while analyzing the information. Look for sudden drops or spikes in the linear lines showing the transformation of values to the line graph. (Refer to the following TP example or reference the EEC-V charts and graphs in this section.) This example only applies to an analog signal.

Peripheral Inputs

Some signals may require certain peripherals or auxiliary tools. In some cases, these devices can be inserted into the measurement jacks of the scan tool or digital multimeter. The NGS Tester is capable of recording the value from the measurement jacks on the NGS Tester and storing the value with the other PIDs. For example, connecting an electronic fuel pressure gauge to monitor and record the fuel pressure would capture the data that would help find the fault. Listed are peripheral devices available.

Comparing PCM Data

After the PCM values have been acquired, it is necessary to determine the fault area. Typically, it will require the comparison of the actual values from the vehicle to the typical values. Refer to the pinpoint test procedures. Refer to the following example:

Circuit	Good PID Values	Actual Vehicle PID Values
AP	0.8V	0.9V
EOT	205°F--->	35°F<--Example of Fault
IAT	2.8V	2.7V
IPR	35%	50%

