Quick Test Description

Quick Test

The quick test is divided into 3 specialized tests:

1. Key On Engine Off (KOEO) On Demand Self-Test
2. Key On Engine Running (KOER) On Demand Self-Test
3. Continuous Memory Self-Test

The quick test checks the integrity and function of the electronic engine control (EEC) system and outputs the test results when requested by the scan tool. The quick test also provides a quick check of the powertrain control system, and is usually carried out at the start of each diagnostic procedure with all accessories off. The quick test is also carried out at the end of most pinpoint tests for verification of the repair and to make sure no other concerns are incurred while repairing a previous concern. A system pass is displayed when no diagnostic trouble codes (DTCs) are output and a scan tool communication error does not exist. System pass means that hardware monitored by the powertrain control module (PCM) is functioning within the normal operating limits. Only a system pass, a DTC, or an incomplete on board diagnostic (OBD) drive cycle (P1000) is displayed.

For applications that use a stand-alone transmission control module (TCM) the PCM does not output TCM DTCs. For TCM self-test and diagnostics, refer to the Workshop Manual Section 307-01 Automatic Transmission.

Key On Engine Off (KOEO) On Demand Self-Test

The KOEO on demand self-test is a functional test of the PCM carried out on demand with the ignition on and the engine off. This test carries out checks on certain sensor and actuator circuits. A concern must be present at the time of testing for the KOEO self-test to detect the concern. When a concern is detected, a DTC is output on the data link at the end of the test as requested by the scan tool.

Key On Engine Running (KOER) On Demand Self-Test

The KOER on demand self-test is a functional test of the PCM carried out on demand with the ignition on, the engine running and the vehicle stopped. A check of certain inputs and outputs is made during operating conditions and at a normal operating temperature. The brake pedal position, transmission control, and the power steering tests are part of the KOER on demand self-test and must be carried out during this operation if applicable. These are described below. A concern must be present at the time of testing for the KOER on demand self-test to detect the concern. When a concern is detected, a DTC is output on the data link at the end of the test as requested by the scan tool.

Brake Pedal Position (BPP) Test

The BPP test checks the ability of the EEC system to detect a change of state in the BPP switch. The brake pedal is briefly applied and released on all vehicles equipped with a BPP input. This is done during a KOER on demand self-test.

Power Steering Pressure (PSP) Test

The PSP test checks the ability of the EEC system to detect a change in the power steering system fluid pressure. The steering wheel is briefly turned at least 1/4 of a revolution on vehicles equipped with a PSP switch or sensor. This is done during a KOER on demand self-test.

Transmission Control Switch (TCS) Test

The TCS test checks the ability of the EEC system to detect a change of state in the TCS. The switch is briefly cycled on all vehicles equipped with a TCS input. This is done during a KOER on demand self-test.

Continuous Memory Self-Test

The continuous memory self-test is a functional test of the PCM carried out under any condition (engine running or off) with the ignition on. Unlike the KOEO and KOER self-tests, which can only be activated on demand, the continuous self-test is always active. A concern does not need to be present when accessing continuous memory self-test DTCs, making the test valuable when diagnosing intermittent concerns. The vehicle may need to be driven or the on board diagnostic (OBD) drive cycle completed to allow the PCM to detect a concern. Refer to On Board Diagnostic (OBD) Drive Cycle in this section for more information. When a concern is stored in memory, a DTC is output on the data link when requested by the scan tool.

There are two types of continuous DTCs. The first type is an emission-related code which illuminates the malfunction indicator lamp (MIL) in the instrument cluster. The second is a non-emission related, non-MIL DTC which does not illuminate the instrument cluster indicator.

For emission-related MIL DTCs, the PCM stores the DTC in continuous memory when a concern is detected for the first time. At this point the DTC does not illuminate the MIL and is considered a pending code. The purpose of pending codes is to assist in repair verification by reporting a pending DTC after one drive cycle. If the same concern is detected after the next drive cycle, the emission-related MIL code illuminates the MIL and sets both a confirmed MIL DTC and a permanent DTC. The MIL remains illuminated even if the concern is intermittent. A permanent DTC is stored until three consecutive passing drive cycles have been completed after a repair and the MIL turns off, or after a request to clear DTCs has been made using the scan tool and the next monitoring cycle has completed and passed for that DTC.

Confirmed emission-related MIL DTCs and any non-emission related, non-MIL DTCs are erased approximately 40 vehicle warm-up cycles after the concern was last detected, or if the DTCs are cleared by the scan tool.

Pending emission-related MIL DTCs that never detect a concern on a second consecutive drive cycle (and never light the MIL) are not retained in memory for any number of vehicle warm-up cycles; they are immediately cleared when the next monitoring cycle has completed and passed for that DTC, or until a request to clear DTCs has been made by the scan tool.

Any scan tool that meets OBD requirements can access the continuous memory to retrieve emission-related MIL DTCs. However, not all scan tools access pending and non-emission related, non-MIL DTCs in the same way.

During most diagnostic procedures in this manual, it is required that all DTCs be retrieved and cleared. Permanent DTCs cannot be directly cleared by the scan tool. When a scan tool clears DTCs, pending and confirmed DTCs are immediately cleared. Permanent DTCs will not clear until the next monitoring cycle has completed and passed for that DTC. For additional information, refer to Powertrain Control Software , Permanent Diagnostic Trouble Code (DTC).