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## Drive Cycles

### OBD II Drive Cycle

#### Description

The primary intention of the OBD II Drive Cycle is to clear the DTC P1000 and to satisfy the specifications for SAE specification J1979. Each OBD II monitor must run during the drive cycle.

If the drive cycle is completed and P1000 is not cleared, repeat the entire drive cycle. If a particular step is interrupted, simply repeat the drive mode. If the drive cycle is interrupted with a key-off, only drive modes that were incomplete must be run.



**CAUTION: Strict observance of posted speed limits and attention to driving conditions are mandatory when proceeding through the drive cycle.**

Rough road conditions may prevent certain steady state conditions and steady accelerations from validating the transmission- and load-related monitors.

**Vehicles equipped with Power Take-Off (PTO) must have that system disengaged before the OBD II drive cycle is initiated.**

#### Drive Cycle Procedure:

1. Key on. Do not crank until the WAIT TO START light extinguishes, or at least 10 seconds, whichever is greater.
2. Start the engine. Idle in PARK or NEUTRAL for 40 seconds.
3. The following outlines the appropriate conditions for running certain OBD II monitors that require the engine to be under load:
  - a. For vehicles with automatic transmission, select OVERDRIVE CANCEL to run the test in third gear. Turn on accessories such as headlamps, A/C compressor, blower fan, etc. Do not use hazards or PTO. Select an uphill or level road. Driving downhill will unload the engine, thereby defeating the test.
  - b. Accelerate steadily to third gear (M/T use fourth gear) and hold at 1500 rpm for 3 seconds. Accelerate steadily from 35 mph to 65 mph over approximately 15 seconds (M/T 11 seconds minimum).
  - c. Repeat Step 3b three times while maintaining the conditions in Step 3a.
  - d. Before proceeding, turn all accessories off and disengage overdrive cancel.
4. Automatic transmission only:
  - a. Drive in fourth gear continuously for 60 seconds.
  - b. Accelerate steadily from a full stop to fourth gear and then return to a full stop. Repeat 10 times.
5. Before continuing, EOT must exceed 60°C (140°F).
6. Idle the vehicle for 20 seconds in PARK or NEUTRAL.
7. Key off.
8. Start the engine. Idle in PARK or NEUTRAL for 40 seconds.
9. Rerun Quick Test.

**Note:** If P1000 is present after running the drive cycle:

- Rerun Step 3b, being certain to maintain a minimum MFDES of 37 mg/stroke above 1500 rpm for 11 seconds. Also, maintain a minimum MFDES of 37 mg/stroke above 2300 rpm for at least 6 seconds.

- Rerun Step 6. MFDES must remain below 12 mg/stroke for 11 consecutive seconds.

## **OBD II PID Data Monitor**

The PID monitor for OBD II offers real time evaluation of several emission-related parameters. Most of these are related to the HO2S and EGR, for which the diesel has no equivalent. The only parameters that apply to 7.3L diesel applications are CCNT, MAP, MIL, RPM and VSS.

### **Accessing the PID Data Monitor**

#### **New Generation Star**

- Perform the necessary vehicle preparation and visual inspection.
- Connect scan tool to DLC.
- SELECT CORRECT VEHICLE, YEAR and MODEL.
- Select year, engine, model with the appropriate qualifier, if needed (for example, transmission, 49 States, California).
- Follow operating instructions from the menu.
- Select GENERIC OBD II FUNCTIONS.
- Select PID Data Monitor, choose only diesel-related PIDs.

#### **Generic Scan Tool**

Refer to the manufacturer's manual for specific instructions.

## **OBD II Pending Codes**

Pending codes are codes that have only set during one drive cycle and may not have set the MIL yet. While some codes can set the MIL during one drive cycle, they are not recorded as OBD II DTCs until failing during a second drive cycle. These DTCs can be identified using the Retrieve Pending Codes feature. Additionally, they will be found in the vehicle-specific mode RETRIEVE/CLEAR CONTINUOUS DTCs from the instant the code is set.

This function will only report pending failures that have occurred during the present or previous drive cycle, but will not indicate single failures that happened on any two previous drive cycles.

### **Accessing the PID Data Monitor**

#### **New Generation Star**

- Perform the necessary vehicle preparation and visual inspection.
- Connect scan tool to DLC.
- SELECT CORRECT VEHICLE, YEAR and MODEL.
- Select year, engine, model with the appropriate qualifier, if needed (for example, transmission, 49 States, California).
- Follow operating instructions from the menu.
- Select GENERIC OBD II FUNCTIONS.
- Select RETRIEVE PENDING CODES.

#### **Generic Scan Tool**

Refer to the manufacturer's manual for specific instructions.

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