On Board Diagnostic (OBD) Drive Cycle

Description of On Board Diagnostic (OBD) Drive Cycle

The following procedure is designed to execute and complete the OBD monitors and to clear the Ford P1000, I/M readiness code. To complete a specific monitor for repair verification, follow steps 1 through 4, then continue with the step described by the appropriate monitor found under the OBD Monitor Exercised column. For the EVAP monitor to run, the ambient air temperature must be between 4.4 to 37.8°C (40 to 100°F), and the altitude below 2,438 meters (8,000 feet). If the P1000 code must be cleared in these conditions, the PCM must detect them once (twice on some applications) before the EVAP monitor can be bypassed and the P1000 cleared. The EVAP bypassing procedure is described in the following drive cycle.

The OBD drive cycle will be carried out using a diagnostic tool. Consult the instruction manual for each described function.

Note: A detailed description for clearing the DTCs is found in this section. Refer to Clear The Continuous Diagnostic Trouble Codes (DTCs) And Reset The Emission Monitors Information in The Powertrain Control Module (PCM).

Drive Cycle Recommendations

⚠ **WARNING: Strict observance of posted speed limits and attention to driving conditions are mandatory when proceeding through the following drive cycles. Failure to follow these instructions may result in personal injury.**

1. Most OBD monitors complete more readily using a steady foot driving style during cruise or acceleration modes. Operating the throttle in a smooth fashion minimizes the time required for monitor completion.

2. The fuel tank level should be between 1/2 and 3/4 full with 3/4 full being the most desirable.

3. The evaporative monitor can only operate during the first 30 minutes of engine operation. When executing the procedure for this monitor, stay in part throttle mode and drive in a smooth fashion to minimize fuel slosh.

4. When bypassing the EVAP engine soak times, the PCM must remain powered (key ON) after clearing the continuous diagnostic trouble codes (DTCs) and relearning emission diagnostic information.

For best results, follow each of the following steps as accurately as possible:

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OBD Monitor Exercised	Drive Cycle Procedure	Purpose of Drive Cycle Procedure
Drive Cycle Preparation	Note: To bypass the EVAP soak timer (normally 6 hours), the PCM must remain powered after clearing the continuous diagnostic trouble codes (DTCs) and resetting the emission monitors information in the powertrain control module (PCM). 1. Install the diagnostic tool. Turn the key on with the engine off. Cycle the key off, then on. Select the appropriate vehicle and engine qualifier. Clear the continuous diagnostic trouble codes (DTCs) and reset the emission monitors information in the powertrain control module (PCM) 2. Begin to monitor the following PIDs: ECT, EVAPDC, FLI (if available) and TP MODE. Start the vehicle without returning to key off. 3. Idle the vehicle for 15 seconds. Drive at 64 km/h (40 mph) until the ECT is at least 76.7°C (170°F).	Bypass the engine soak timer. Resets the OBD Monitor status.
Prep for Monitor Entry	4. Is the IAT within 4.4 to 37.8°C (40 to 100°F)? If not, complete the following steps, but note that step 14 will be required to bypass the EVAP monitor and clear the P1000.	Engine warm-up and provide IAT input to the PCM.
HEGO	5. Cruise at 64 km/h (40 mph) for at least 5 minutes.	Executes the HO2S monitor.
EVAP	6. Cruise at 64 to 89 km/h (40 to 55 mph) for 10 minutes (avoid sharp turns and hills). NOTE: To initiate the monitor, TP MODE should = PT, EVAPDC must be > 75%, and FLI must be between 15 and 85%, and for fuel tanks over 25 gallons FLI must be between 30 and 85%.	Executes the EVAP monitor if the IAT is within 4.4 to 37.8°C (40 to 100°F).
Catalyst	7. Drive in stop-and-go traffic conditions. Include five different constant cruise speeds, ranging from 32 to 89 km/h (20 to 55 mph) over a 10 minute period.	Executes the catalyst monitor.
EGR	8. From a stop, accelerate to 72 km/h (45 mph) at 1/2 to 3/4 throttle. Repeat 3 times.	Executes the EGR monitor.
SEC AIR/CCM (Engine)	9. Bring the vehicle to a stop. Idle with the transmission in drive (neutral for M/T) for 2 minutes.	Executes the ISC portion of the CCM.

(Continued)

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CCM (Trans)	10. For M/T, accelerate from 0 to 81 km/h (0 to 50 mph), and continue to step 11. For A/T, from a stop and in overdrive, moderately accelerate to 81 km/h (50 mph) and cruise for at least 15 seconds. Stop the vehicle and repeat without overdrive to 64 km/h (40 mph) cruising for at least 30 seconds. While at 64 km/h (40 mph), activate the overdrive, accelerate to 81 km/h (50 mph) and cruise for at least 15 seconds. Stop for at least 20 seconds and repeat step 10 five times.	Executes the transmission portion of the CCM.
Misfire and Fuel Monitors	11. From a stop, accelerate to 97 km/h (60 mph). Decelerate at closed throttle to 64 km/h (40 mph) (no brakes). Repeat this 3 times.	Allows learning for the misfire monitor.
Readiness Check	12. Access the On-Board System Readiness (OBD monitor status) function on the diagnostic tool. Determine whether all non-continuous monitors have completed. If not, go to step 13.	Determines if any monitor has not completed.
Pending Code Check and EVAP Monitor Bypass Check	13. With the diagnostic tool, check for pending codes. Conduct the normal repair procedures for any pending code concern. Otherwise, rerun any incomplete monitor. If the EVAP monitor is not complete and the IAT was out of the 4.4 to 37.8°C (40 to 100°F) temperature range in step 4, or the altitude is over 2438 m (8000 ft.), the EVAP bypass procedure must be followed. Go to Step 14.	Determines if a pending code is preventing the clearing of P1000.
EVAP Monitor Bypass	14. Park the vehicle for a minimum of 8 hours. Repeat steps 2 through 12. Do not repeat step 1.	Allow the bypass counter to increment to two.