

## READINESS MONITOR DRIVE PATTERN

### 1. PURPOSE OF READINESS TESTS

- The On-Board Diagnostic (OBD II) system is designed to monitor the performance of emission related components, and indicate any detected abnormalities with DTCs (Diagnostic Trouble Codes). Since various components need to be monitored during different driving conditions, the OBD II system is designed to run separate monitoring programs called Readiness Monitors.
- The intelligent tester's software must be version 9.0 or newer to view the Readiness Monitor status. To view the status, select the following menu items: DIAGNOSIS / ENHANCED OBD II / MONITOR INFO / MONITOR STATUS.
- When the Readiness Monitor status reads COMPL (complete), the necessary conditions have been met for running the performance tests for that Readiness Monitor.
- A generic OBD II scan tool can also be used to view the Readiness Monitor status.

#### HINT:

Many state Inspection and Maintenance (I/M) programs require a vehicle's Readiness Monitor status to show COMPL before beginning emission tests.

The Readiness Monitor will be reset to INCMPL (incomplete) if:

- The ECM has lost battery power or blown a fuse.
- DTCs have been cleared.
- The conditions for running the Readiness Monitor have not been met.

If the Readiness Monitor status shows INCMPL, follow the appropriate Readiness Monitor Drive Pattern to change the status to COMPL.

#### CAUTION:

**Strictly observe posted speed limits, traffic laws, and road conditions when performing these drive patterns.**

#### NOTICE:

**These drive patterns represent the fastest method of satisfying all conditions necessary to achieve complete status for each specific Readiness Monitor.**

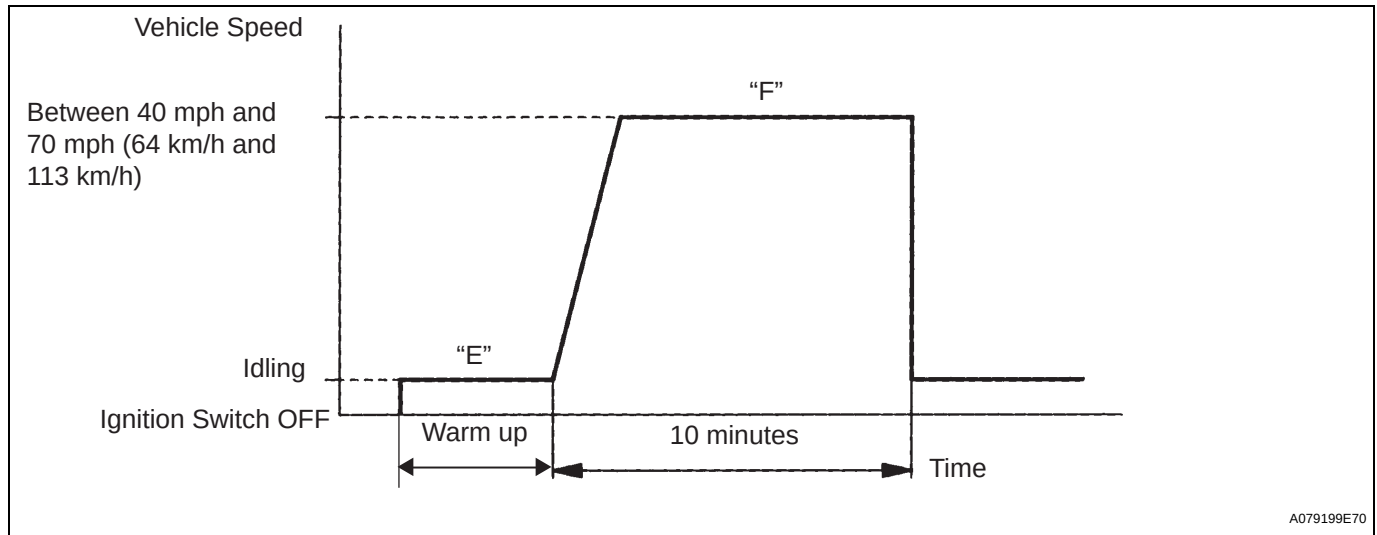
**In the event of a drive pattern being interrupted (possibly due to factors such as traffic conditions), the drive pattern can be resumed. In most cases, the Readiness Monitor will still achieve complete status upon completion of the drive pattern.**

**To ensure completion of the Readiness Monitors, avoid sudden changes in vehicle load and speed (driving up and down hills and/or sudden acceleration).**

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| 2     | EVAP System Monitor<br>(Key-OFF Type)                                                                       |
| 3     | Air-Fuel Ratio (A/F) and Heated Oxygen (HO2) Sensor Monitors<br>(Active Air-Fuel Ratio Control Type)        |
| 4     | Air-Fuel Ratio (A/F) and Heated Oxygen (HO2) Sensor Heater Monitors<br>(Front A/F and Rear HO2 Sensor Type) |

## 2. CATALYST MONITOR (ACTIVE AIR-FUEL RATIO CONTROL TYPE)



## (a) Preconditions

The monitor will not run unless:

- The MIL is OFF.

## (b) Drive Pattern

**NOTICE:**

**This test will not be completed if the vehicle is driven under absolute constant speed condition such as with cruise control activated.**

**HINT:**

Even when the vehicle stops during driving pattern, the test can be resumed.

- (1) Connect an intelligent tester or OBD II scan tool to the DLC3 (Procedure "A").
- (2) Turn the ignition switch to ON (Procedure "B").
- (3) Turn the tester or scan tool ON (Procedure "C").
- (4) Clear DTCs (where set) (See page [ES-30](#) (Procedure "D").
- (5) Start the engine, and warm it up (Procedure "E").
- (6) Drive the vehicle at between 40 mph and 70 mph (64 km/h and 113 km/h) for at least 10 minutes (Procedure "F").

## (c) Monitor Status

- (1) Check the Readiness Monitor status displayed on the tester or scan tool.
- (2) If the status does not switch to COMPL (complete), extend the driving time.

### 3. EVAP SYSTEM MONITOR (KEY-OFF TYPE)

#### (a) Preconditions

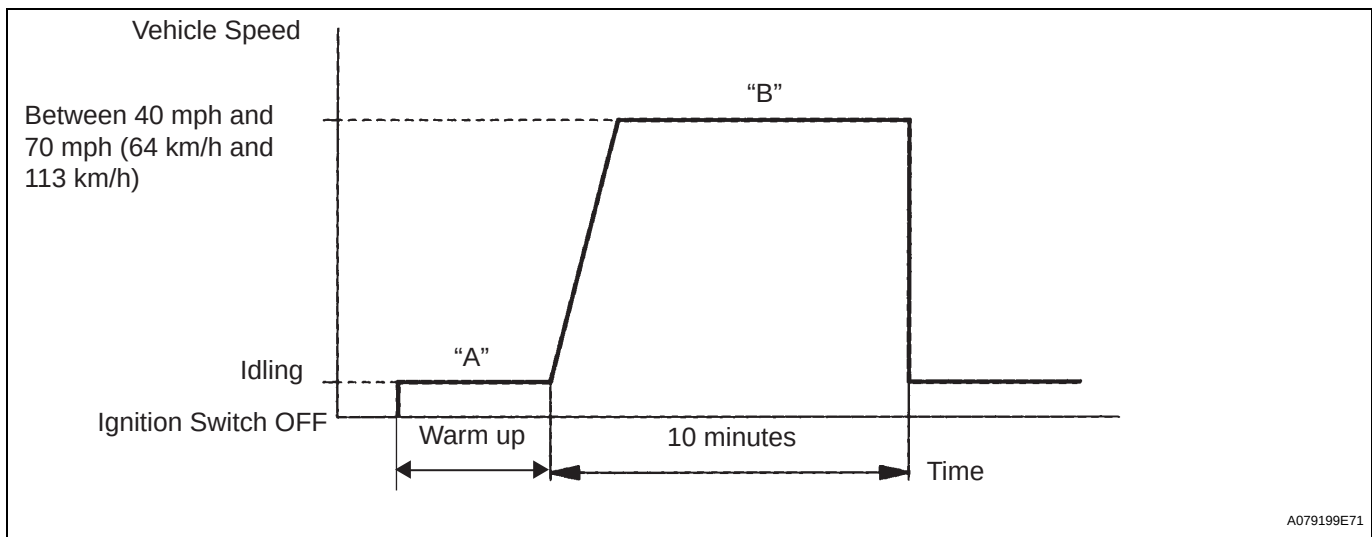
The monitor will not run unless:

- The fuel level is less than 90 % full.
- The altitude is less than 8,000 ft. (2,450 m).
- The vehicle is at stationary.
- The Engine Coolant Temperature is between 4.4 and 35°C (40 to 95°F).
- The Intake Air Temperature is between 4.4 and 35°C (40 to 95°F).

#### (b) Monitor condition

- (1) Allow the engine to idle for 300 seconds or more.
- (2) Turn the ignition switch OFF and wait for 6 hours.
- (3) Connect the scan tool to the DLC3 to check the monitor status and the preconditions.
- (4) Check the readiness monitor status.  
If the status does not switch to COMPL (complete), restart the engine, make sure that the preconditions have been met, and then perform the Monitor Conditions again.

### 4. AIR-FUEL RATIO (A/F) AND HEATED OXYGEN (HO2) SENSOR MONITORS (ACTIVE AIR-FUEL RATIO CONTROL TYPE)



#### (a) Preconditions

The monitor will not run unless:

- The MIL is OFF

#### (b) Drive Pattern

##### NOTICE:

**This test will not be completed if the vehicle is driven under absolute constant speed condition such as with cruise control activated.**

##### HINT:

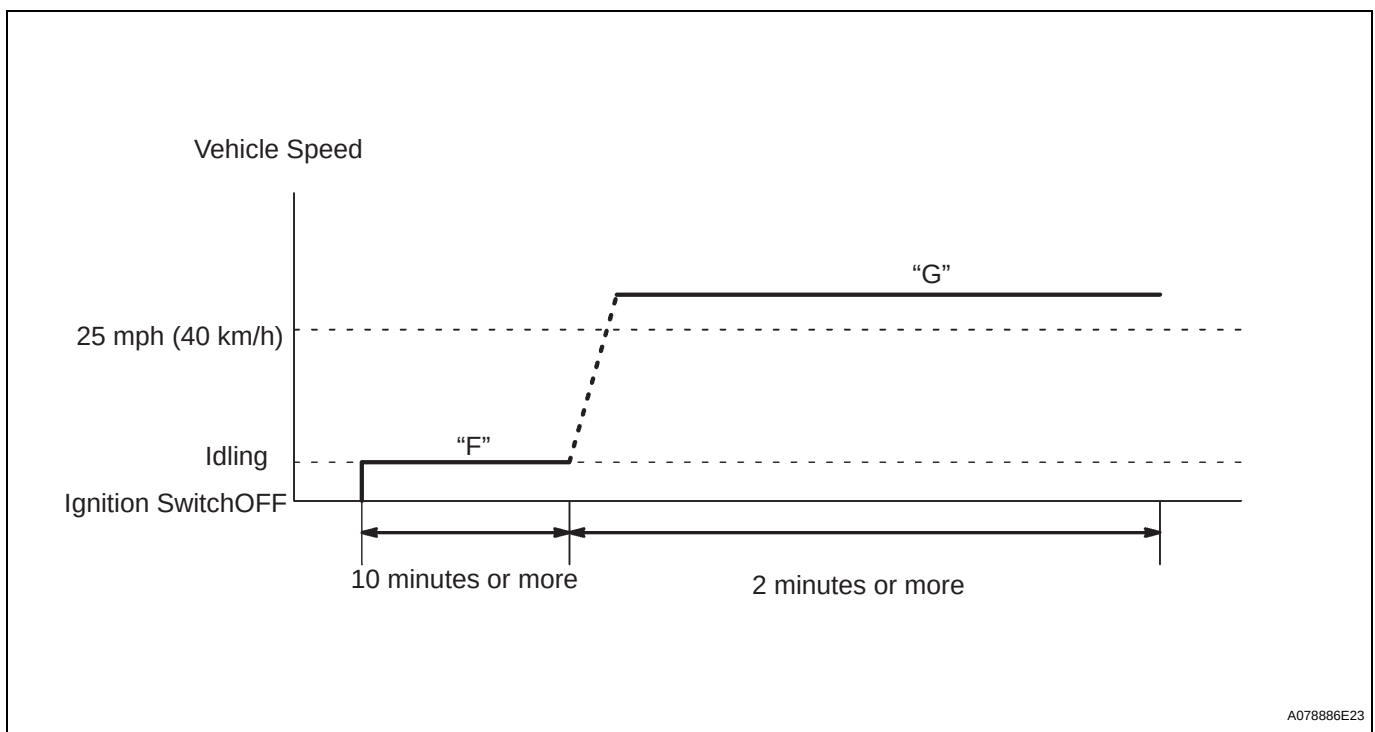
Even when the vehicle stops during driving pattern, the test can be resumed.

- (1) Connect an intelligent tester or OBD II scan tool to the DLC3.

- (2) Turn the ignition switch to ON.
- (3) Turn the tester or scan tool ON.
- (4) Clear DTCs (where set) (See page [ES-30](#)).
- (5) Start the engine and warm it up (Procedure "A").
- (6) Drive the vehicle at between 40 mph and 70 mph (64 km/h and 113 km/h) for at least 10 minutes (Procedure "B").
- (c) Monitor Status
  - (1) Check the Readiness Monitor status displayed on the tester or scan tool.
  - (2) If the status does not switch to COMPL (complete), extend the driving time.

**5. AIR-FUEL RATIO (A/F) AND HEATED OXYGEN (HO2) SENSOR HEATER MONITORS (FRONT A/F and REAR HO2 SENSOR TYPE)**

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- (a) Preconditions
 

The monitor will not run unless:

  - The MIL is OFF
- (b) Drive Pattern
  - (1) Connect an intelligent tester or the OBD II scan tool to the DLC3 (Procedure "A").
  - (2) Turn the ignition switch to ON (Procedure "B").
  - (3) Turn the tester or scan tool ON (Procedure "C").
  - (4) Clear DTCs (where set) (See page [ES-30](#)) (Procedure "D").
  - (5) Start the engine (Procedure "E").
  - (6) Allow the engine to idle for 10 minutes or more (Procedure "F").
  - (7) Drive the vehicle at 25 mph (40 km/h) or more for at least 2 minutes (Procedure "G").

## (c) Monitor Status

- (1) Check the Readiness Monitor status displayed on the tester or scan tool.

If the status does not switch to COMPL (complete), make sure that the preconditions have been met, and repeat procedures through "E" to "G" described in the Drive Pattern above.