

## READINESS MONITOR DRIVE PATTERN

### 1. PURPOSE OF THE READINESS TESTS

- The On-Board Diagnostic (OBD II) system is designed to monitor the performance of emission-related components, and report any detected abnormalities with Diagnostic Trouble Codes (DTCs). 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 hand-held tester's software must be version 9.0 or newer to view the readiness monitor status. From the "Enhanced OBD II Menu", select "Monitor Status" to view the readiness monitor status.
- A generic OBD II scan tool can also be used to view the readiness monitor status.
- When the readiness monitor status reads "complete", the necessary conditions have been met for running performance tests for that readiness monitor.

#### HINT:

Many state Inspection and Maintenance (I/M) programs require a vehicle's readiness monitor status to show "complete".

- The Readiness Monitor will be reset to "incomplete" if:
  - The ECM has lost battery power or a fuse has blown.
  - DTCs have been cleared.
  - The conditions for running the Readiness Monitor have not been met.
- If the readiness monitor status shows "incomplete", follow the appropriate readiness monitor drive pattern to change the status to "complete".

#### CAUTION:

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

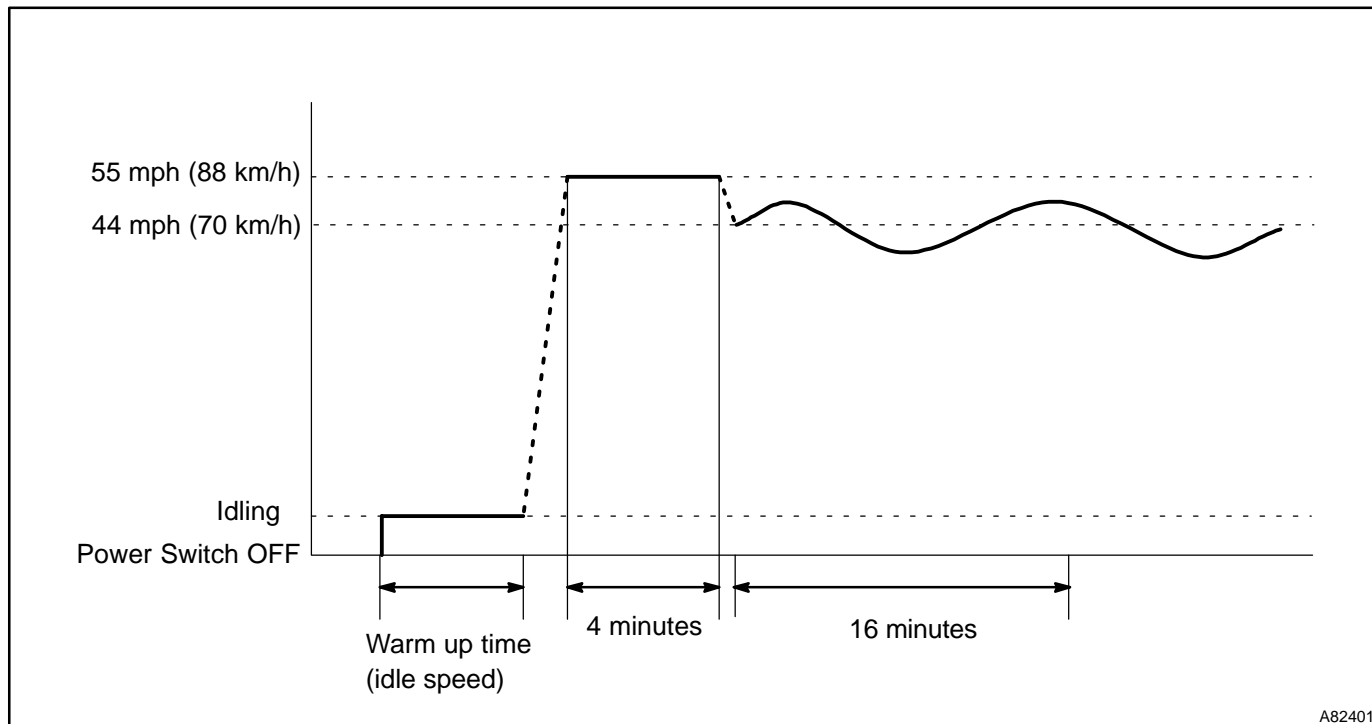
#### NOTICE:

**The following drive patterns are the fastest method of completing all the requirements necessary for making the readiness monitor status read "complete".**

**If forced to momentarily stop a drive pattern due to traffic or other factors, the drive pattern can be resumed. Upon completion of the drive pattern, in most cases, the readiness monitor status will change to "complete".**

**Sudden changes in vehicle loads and speeds, such as driving up and down hills and / or sudden acceleration, hinder readiness monitor completion.**

## 2. CATALYST MONITOR (A/F SENSOR TYPE)



### (a) Preconditions

The monitor will not run unless:

- MIL is OFF.
- Engine Coolant Temperature (ECT) is 80°C (176°F) or greater.
- Intake Air Temperature (IAT) is -10°C (14°F) or greater.\*

### NOTICE:

\* 2002 and later MY vehicles:

To completed the readiness test in cold ambient conditions (less than -10°C [14°F]), turn the power switch OFF and then turn it ON again. Perform the drive pattern a second time.

### (b) Drive Pattern

- (1) Connect the hand-held tester or OBD II scan tool to DLC3 to check readiness monitor status and preconditions.
- (2) Put the engine in inspection mode (see page 01-27 ).
- (3) Start the engine and warm it up.
- (4) Deactivate inspection mode and drive the vehicle with shift position in B at 44 to 55 mph (70 to 88 km/h) for approximately 4 minutes(the engine must be run during monitoring).

### NOTICE:

Drive with smooth throttle operation and avoid sudden acceleration.

If IAT was less than 10°C (50°F) when the engine was started, drive the vehicle at 44 to 55 mph (70 to 88 km/h) for additional 4 minutes.

- (5) Drive the vehicle allowing speed to fluctuate between 44 to 55 mph (70 to 88 km/h) for about 16 minutes.

### NOTICE:

Drive with smooth throttle operation and avoid sudden closure of the throttle valve.

- (6) Check the status of the readiness monitor on the scan tool display. If readiness monitor status did not switch to complete, verify that the preconditions are met, turn the power switch OFF, and then repeat steps (4) and (5).

### 3. EVAP MONITOR (VACUUM PRESSURE MONITOR)

#### NOTICE:

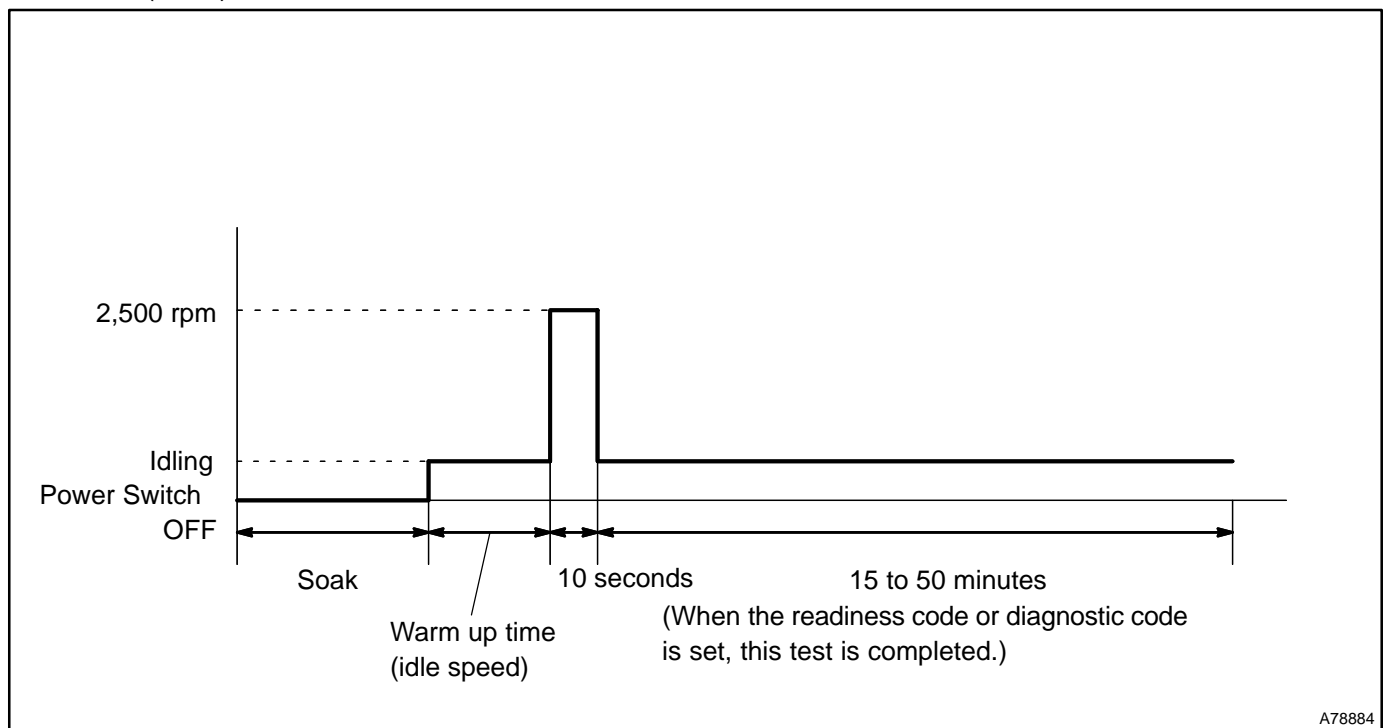
**A cold soak must be performed prior to conducting the drive pattern to complete the Internal Pressure Readiness Monitor.**

#### (a) Cold Soak Preconditions

- MIL is OFF.
- Fuel level is approximately 1/2 to 3/4 full.
- Altitude is 8,000 feet (2,438 m) or less.

#### (b) Cold Soak Procedure

Let the vehicle cold soak for 8 hours or until the difference between IAT and ECT reaches less than 7°C (13°F).



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#### (c) EVAP Monitor Preconditions

The monitor will not run unless:

- MIL is OFF.
- Fuel level is approximately 1/2 to 3/4 full.
- Altitude is 8,000 feet (2438 m) or less.\*
- Engine Coolant Temperature (ECT) is between 4.4°C and 35°C (40°F and 95°F).
- Intake Air Temperature (IAT) is between 4.4°C and 35°C (40°F and 95°F).\*
- Cold Soak Procedure has been completed.
- Before starting the engine, the difference between ECT and IAT must be less than 7°C (13°F).

#### HINT:

- Example 1

ECT = 24°C (75°F)

IAT = 16°C (60°F)

Difference between ECT and IAT is 8°C (15°F).

→ The monitor will not run because the difference between ECT and IAT is greater than 7°C (13°F).

- Example 2  
ECT = 21°C (70°F)  
IAT = 20°C (68°F)  
Difference between ECT and IAT is 1°C (2°F).  
→ The monitor will run because the difference between ECT and IAT is less than 7°C (13°F).

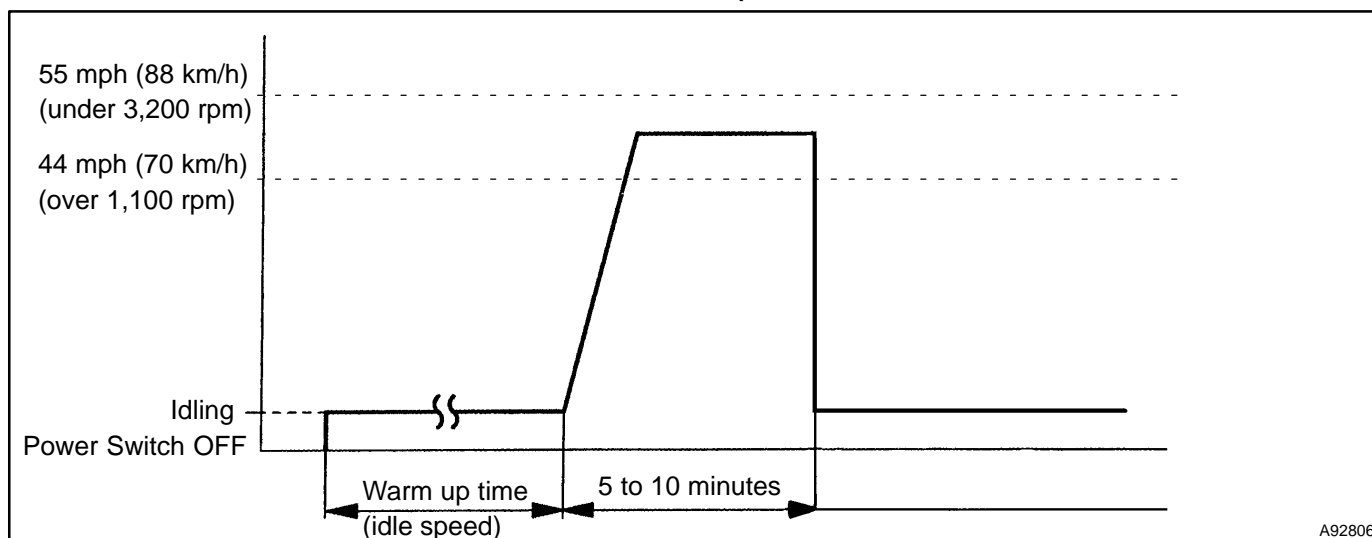
**NOTICE:**

\* **NOTE for 2002 and later MY vehicles:**

The readiness test can be completed in cold ambient conditions (less than 4.4°C [40°F]) and/or at high altitudes (more than 8,000 feet / 2,438 m). Finish the drive pattern, turn the power switch OFF and then turn ON the HV main system again, and repeat the drive pattern a second time.

## (d) Drive Pattern

- (1) Connect the hand-held tester or OBD II scan tool to DLC3 to check monitor status and preconditions (refer to step "c").
- (2) Release pressure in fuel tank by removing the fuel tank cap, and then reinstall it.
- (3) Put the engine in inspection mode (see page 01-27).
- (4) Start the engine and allow it to idle until ECT reaches 75°C (167°F) or higher.
- (5) Run the engine at 2,500 rpm for about 10 seconds.
- (6) Allow the engine to idle with the A/C ON (to create slight load) for 15 to 50 minutes.

**4. OXYGEN / AIR FUEL RATIO SENSOR MONITOR (FRONT A/F SENSOR AND REAR O2S SYSTEM)**

## (a) Preconditions

The monitor will not run unless:

MIL is OFF

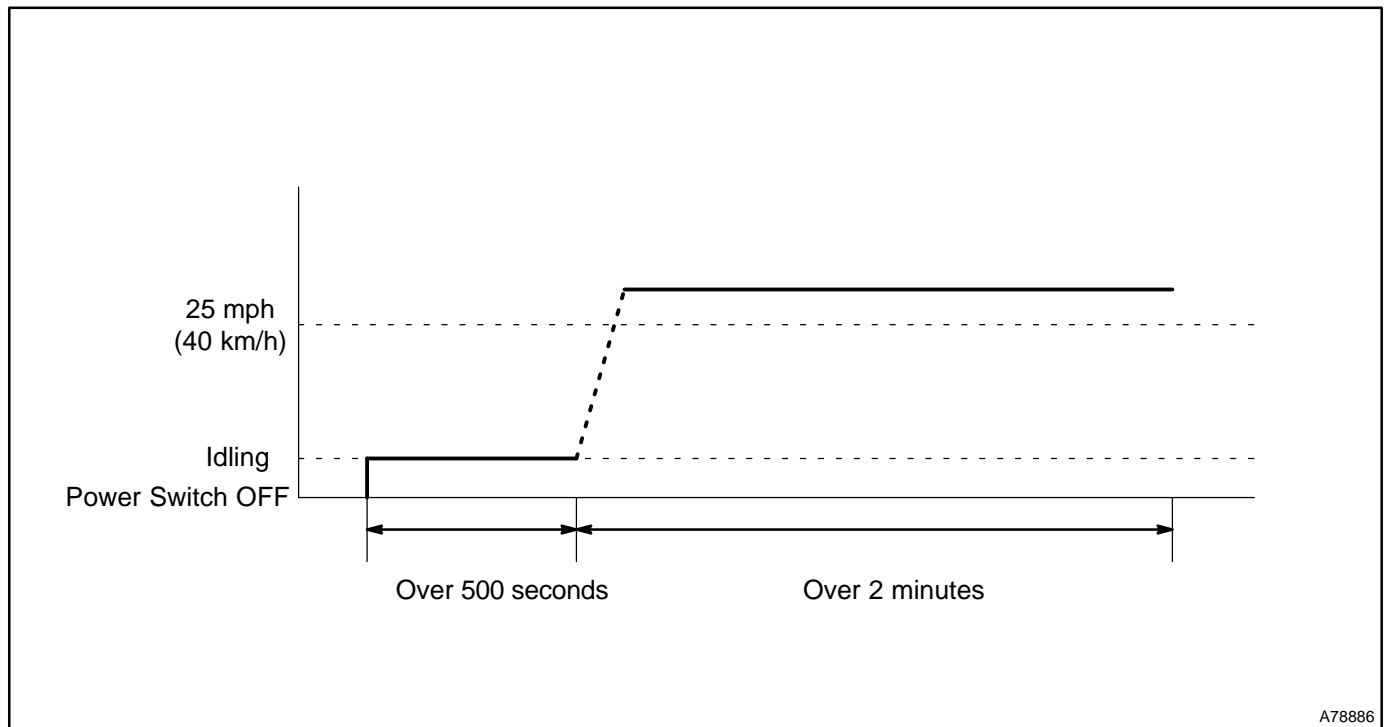
## (b) Drive Pattern

- (1) Connect the hand-held tester or OBD II scan tool to DLC3 to check monitor status and preconditions.
- (2) Put the engine in inspection mode.
- (3) Start the engine and allow it to idle for 2 minutes.
- (4) Deactivate the inspection mode and drive the vehicle at 44 to 55 mph (70 to 88 km/h) or more for 5 to 10 minutes.
- (5) Check the readiness monitor status. If the readiness monitor status did not switch to "complete," check the preconditions, turn the power switch OFF, and then repeat steps (1) to (9).

**NOTICE:**

**Do not drive the vehicle without deactivating inspection mode, otherwise damaging the transaxle may result.**

## 5. OXYGEN / A/F SENSOR HEATER MONITOR



### (a) Preconditions

The monitor will not run unless:  
MIL is OFF.

### (b) Drive Pattern

- (1) Connect the hand-held tester or OBD II scan tool to DLC3 to check monitor status and preconditions.
- (2) Put the engine in inspection mode.
- (3) Start the engine and allow it to idle for 500 seconds or more.
- (4) Deactivate the inspection mode and drive the vehicle at 25 mph (40 km/h) or more at least for 2 minutes.
- (5) Check the readiness monitor status. If the readiness monitor status did not change to "complete", check the preconditions, turn the power switch OFF, and repeat steps (2) and (3).

### NOTICE:

**Do not drive the vehicle without deactivating inspection mode, otherwise damaging the transaxle may result.**