

Readiness Tests Drive Patterns Examples

The following Readiness Tests drive patterns examples are a guide to the preconditions and drive patterns needed to operate the Non-Continuous monitors. Please consult the latest service information before performing the drive patterns.

EGR Monitor (All Except 1FZ-FE)

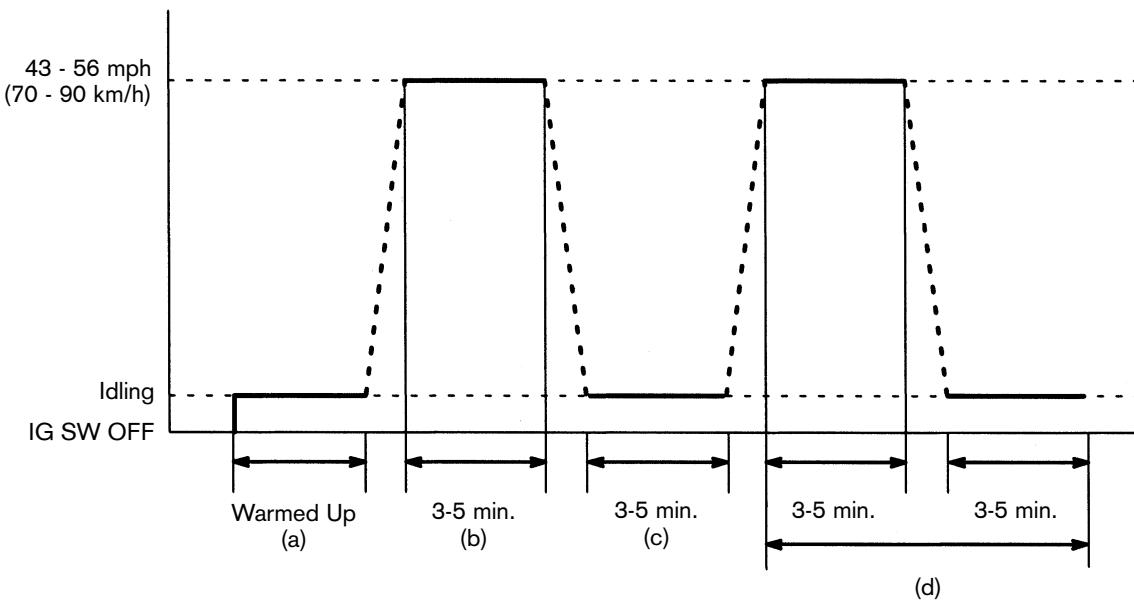


Fig.. H-1

TL874H01

EGR Monitor Preconditions (All Except 1FZ-FE)

The monitor will not run unless:

- MIL is OFF
- Altitude is 7800 feet (2400m) or less
- IAT (Intake Air) is -10°C (14°F) or greater

Drive Pattern

Connect the Diagnostic Tester to the DLC3 connector to check monitor status preconditions.

a) If IAT (Intake Air) is less than 10°C (50°F) when starting the engine, idle the engine for approximately 10 minutes.

b) Drive vehicle at 43 – 56 mph (70 – 90 km/h) for a period of 3 – 5 minutes.

NOTE

- **Do not allow the Throttle Position (TP) to exceed 30%.**

- **Drive with smooth throttle operation and avoid sudden acceleration.**

c) Stop vehicle and let engine idle for 3 – 5 minutes

d) Repeat steps "b" and "c" once

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, and then repeat steps "b" through "d".

EGR Monitor (For 1FZ-FE Engine)

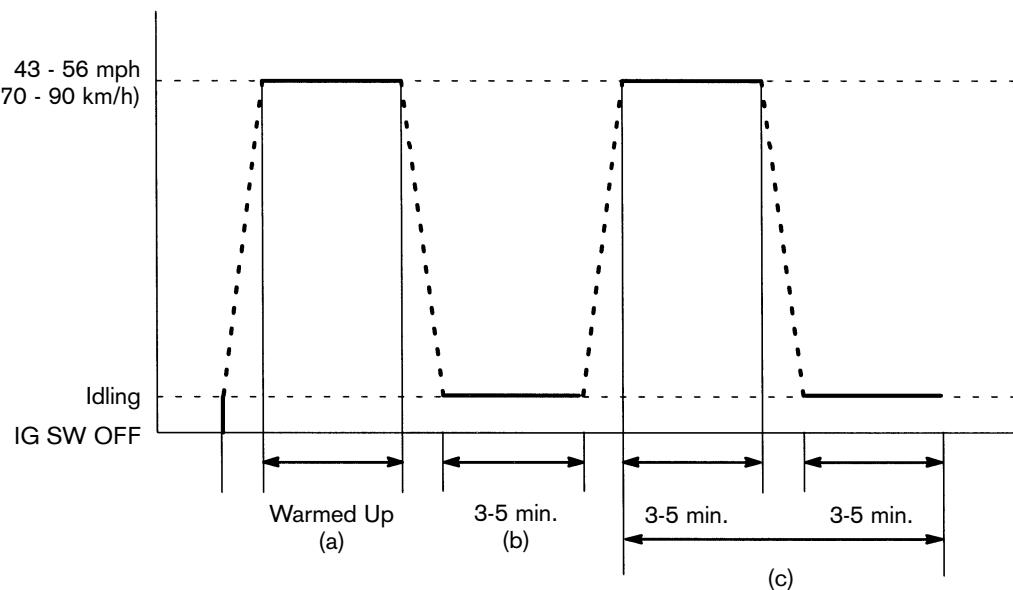


Fig. H-2

TL874ff02

EGR Monitor **Preconditions** (For 1FZ-FE Engine)

The monitor will not run unless:

- MIL is OFF
- Altitude is 7800 feet (2400m) or less
- IAT (Intake Air) is -10°C (14°F) or greater
- ECT (Coolant Temperature) is less than 40°C (104°F)

Drive Pattern

Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions.

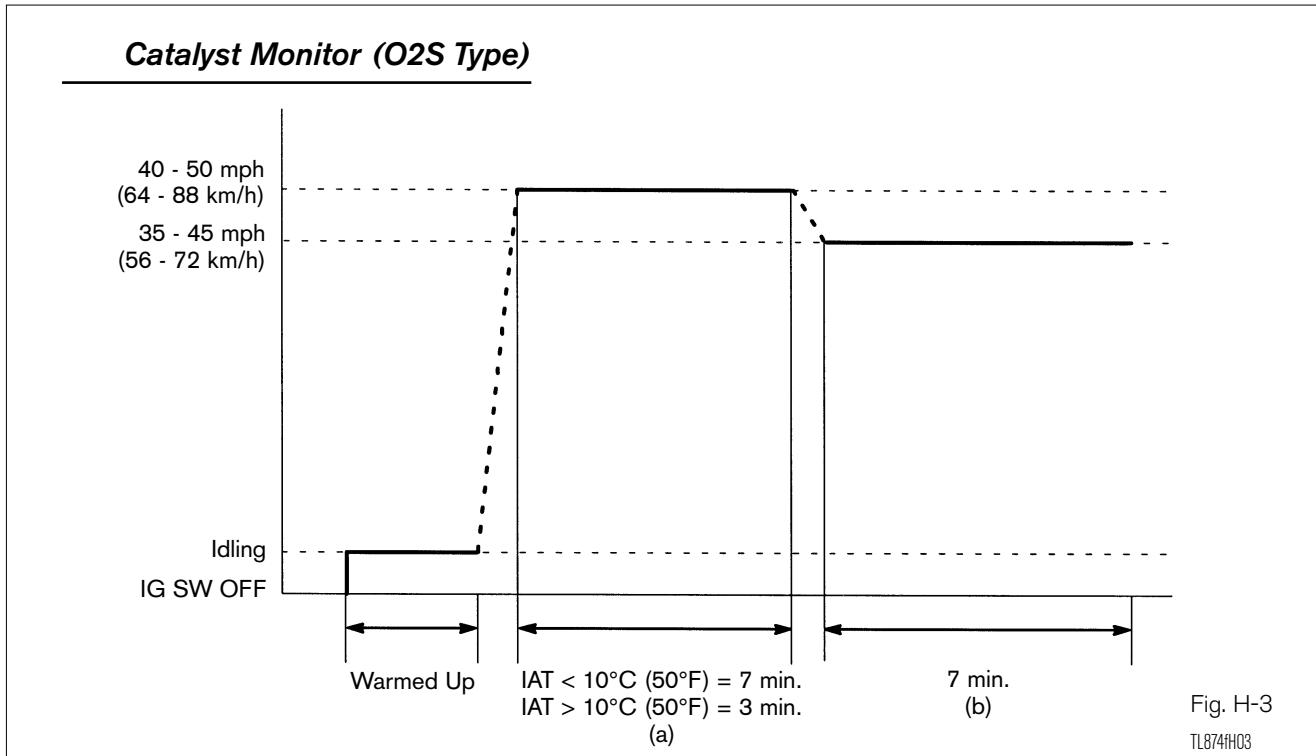
- a) Start the engine and immediately begin driving vehicle at 43 - 56 mph (70 - 90 km/h) for a period of 3 - 5 minutes.

NOTE

- **Do not allow the Throttle Position (TP) to exceed 30 %.**
- **Drive with smooth throttle operation and avoid sudden acceleration.**

- b) Stop vehicle and let engine idle for 3 - 5 minutes.
- c) Repeat steps "a" and "b" once.

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, and then repeat steps "a" through "c".



Catalyst Monitor (O2S Type)

Preconditions

The monitor will not run unless:

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

NOTE

For 2002 and later MY vehicles:

- The readiness test can be completed in cold ambient conditions (less than -10°C (14°F)), if the drive pattern is repeated a second time after cycling the ignition off.

Drive Pattern

Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions. Note the IAT (Intake Air) value during engine startup. The driving time must be adjusted during step (a) based upon IAT (Intake Air) value at startup.

a) Drive vehicle at 40 - 55 mph (64 - 88 km/h) for the time described below:

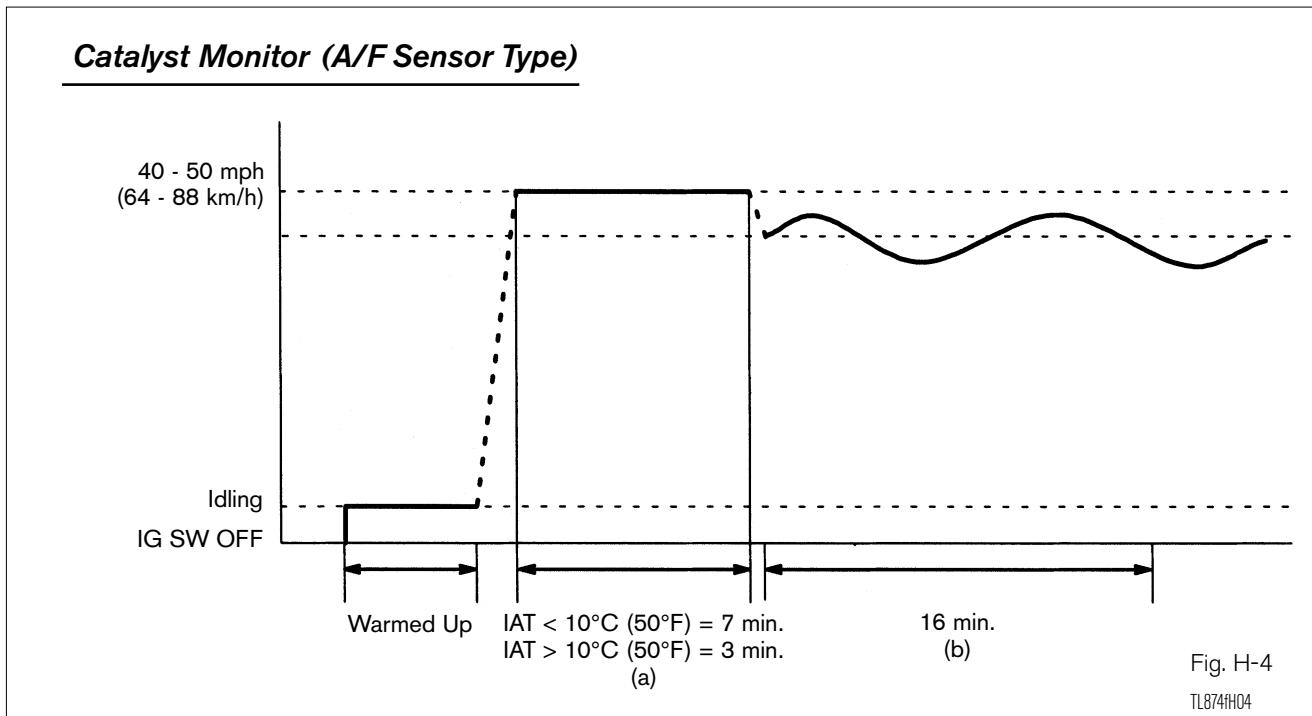
- If IAT (Intake Air) was less than 10°C (50°F) when engine started. then drive for 7 minutes.
- If IAT (Intake Air) was greater than 10°C (50°F) when engine started. then drive for 3 minutes.

b) Drive vehicle at 35 - 45 mph (56 - 72 km/h) for approximately 7 minutes.

NOTE

- **Drive with smooth throttle operation and avoid sudden acceleration.**
- **Drive with smooth throttle operation and avoid sudden deceleration as much as possible with the throttle fully closed.**

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, and then repeat steps "a" through "b".



Catalyst Monitor (A/F Sensor Type) Preconditions

The monitor will not run unless:

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

NOTE

For 2002 and later MY vehicles:

- The readiness test can be completed in cold ambient conditions (less than -10°C (14°F)), if the drive pattern is repeated a second time after cycling the ignition off.

Drive Pattern

Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions. Note the IAT value (Intake Air) during engine startup. The driving time must be adjusted during step (a) based upon IAT value (Intake Air) at startup.

a) Drive vehicle at 40 - 55 mph (64 - 88 km/h) for the time described below:

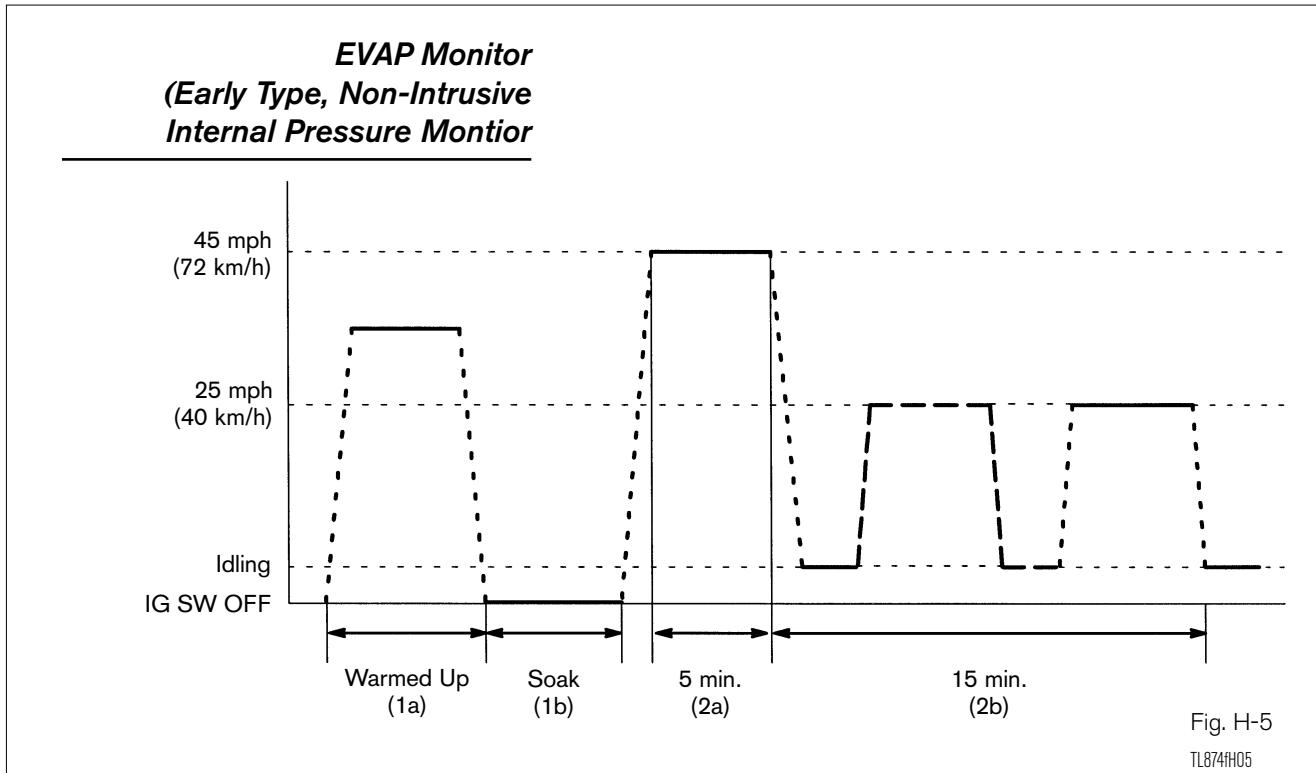
- If IAT (Intake Air) was less than 10°C (50°F) when engine started then drive for 7 minutes
- If IAT (Intake Air) was greater than 10°C (50°F) when engine started then drive for 3 minutes.

b) Drive vehicle allowing speed to fluctuate between 35 - 45 mph (56 - 72 km/h) for about 16 minutes.

NOTE

- **Drive with smooth throttle operation and avoid sudden acceleration.**
- **Drive with smooth throttle operation and avoid sudden deceleration as much as possible with the throttle fully closed.**

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, and then repeat steps "a" and "b".



EVAP Monitor
(Early Type,
Non-Intrusive
Internal
Pressure
Monitor)

Cold Soak Preconditions

The monitor will not run unless:

- MIL is OFF
- Altitude is 7800 feet (2400m) or less

NOTE

For faster operation, the fuel level should be approximately 1/2 to 3/4 full.

IMPORTANT

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

Cold Soak Procedure

1a) Start the engine and allow ECT (Coolant Temperature) to reach 80°C (176°F) or greater

1b) Let vehicle cold soak for 8 hours or until the difference between IAT (Intake Air) and ECT (Coolant Temperature) is less than 7°C (13°F)

Drive Pattern Preconditions

The monitor will not run unless:

- MIL is OFF
- Altitude is 7800 feet (2400m) or less
- ECT (Coolant Temperature) is between 4.4°C - 35°C (40°F and 95°F)
- IAT (Intake Air) is between 4.4°C - 35°C (40°F and 95°F)
- Cold Soak Procedure has been completed

NOTE

- **Before starting the engine, the difference between ECT (Coolant Temperature) and IAT (Intake Air) must be less than 7°C (13°F)**

Drive Pattern Procedure

- Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions.
- Release pressure in fuel tank by removing and then reinstalling the fuel tank cap.
- Start the engine and begin driving as directed.

NOTE

- **Do not turn the ignition off until drive pattern is complete.**
- **Drive on smooth roads to reduce excessive fuel sloshing.**

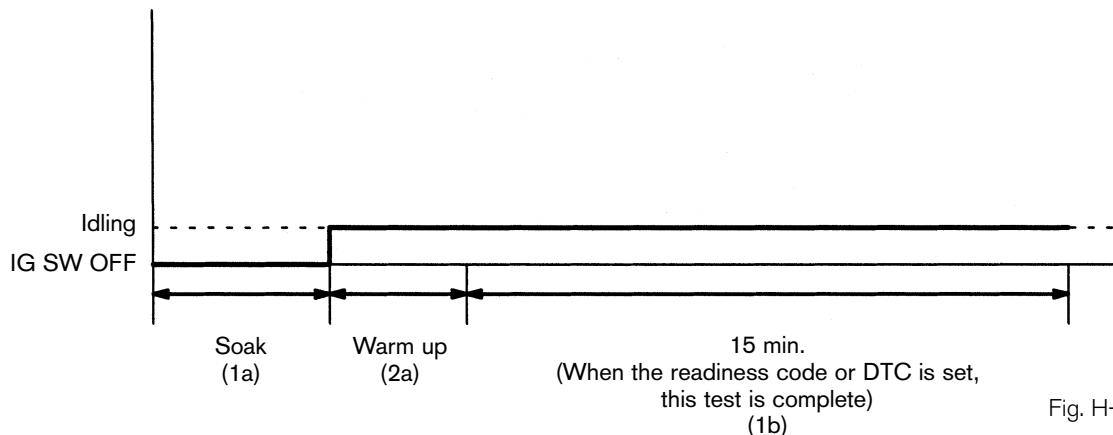
2a) Start the engine and immediately begin driving at approximately 45 mph (72km/h) for approximately 5 minutes.

2b) Drive vehicle at approximately 25 mph (40 km/h) for about 15 minutes and include a minimum of two stops for approximately 30 seconds.

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, repeat step "2b".

Cold Soak Preconditions

EVAP Monitor
(Late Type, Intrusive,
Vacuum Pressure Monitor



EVAP Monitor
(Late Type,
Intrusive
Vacuum
Pressure
Monitor)

The monitor will not run unless:

- MIL is OFF
- Altitude is 7800 feet (2400m) or less

For faster operation, the fuel level should be approximately 1/2 to 3/4 full.

NOTE

Cold Soak Procedure

- 1a) Let the vehicle cold soak for 8 hours or until the difference between IAT (Intake Air) and ECT (Coolant Temperature) is less than 7°C (13°F).

Drive Pattern Preconditions

The monitor will not run unless:

- MIL is OFF
- Altitude is 7800 feet (2400m) or less
- ECT (Coolant Temperature) is between 4.4°C - 35°C (40°F and 95°F)
- IAT (Intake Air) is between 4.4°C - 35°C (40°F and 95°F)

- Cold Soak Procedure has been completed
- Before starting the engine, the difference between ECT (Coolant Temperature) and IAT (Intake Air) must be less than 7°C (13°F)

NOTE

- **2002 and later MY vehicles the readiness test can be completed in cold ambient conditions (less than 4.4°C (40°F) and/or high altitudes (more than 7800 feet (2400m)) if the drive pattern is repeated a second time after cycling the ignition OFF.**

Drive Pattern Procedure

- Connect the Diagnostic Tester to the DLC3 to check monitor status and preconditions.
- Release pressure in the fuel tank by removing and then reinstalling the fuel tank cap.

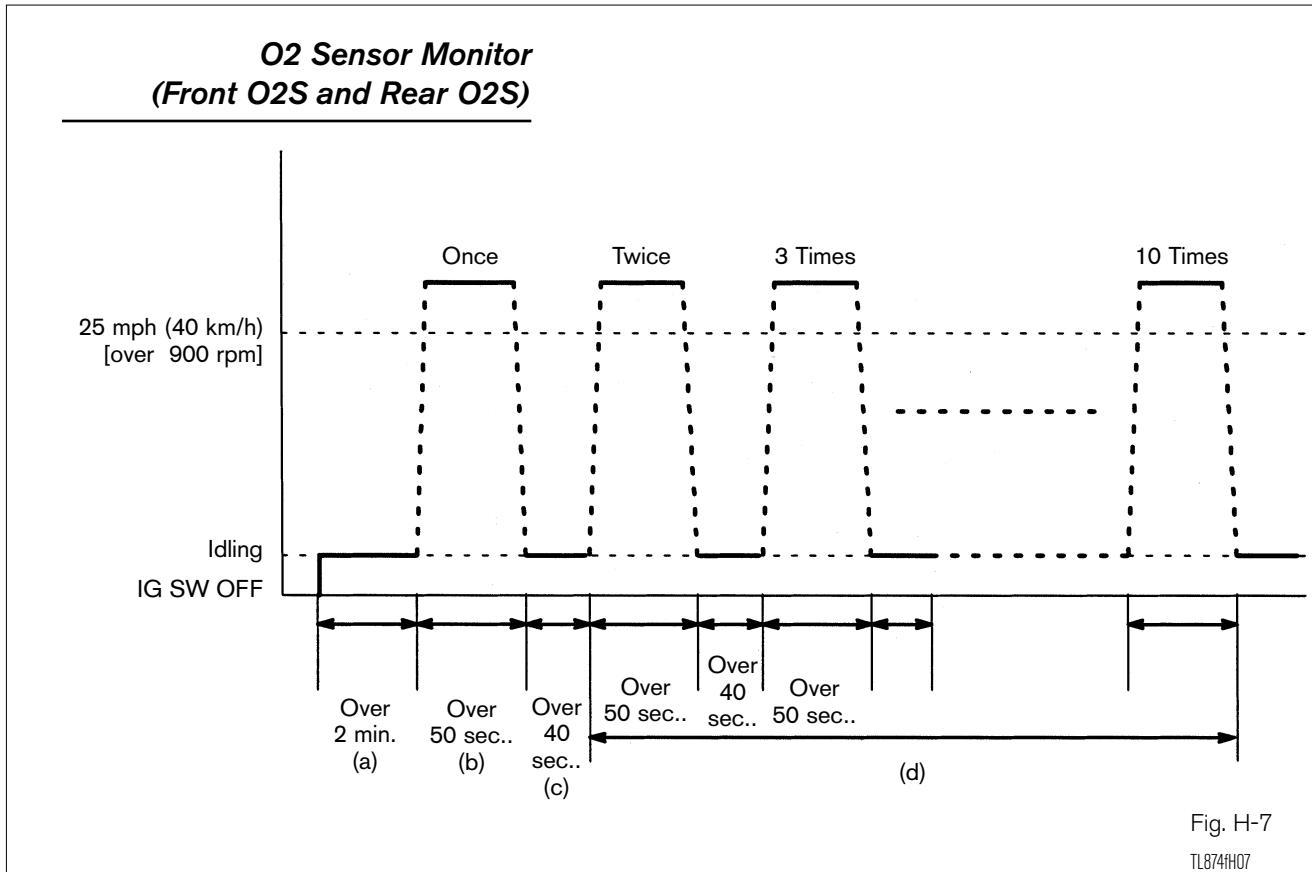
2a) Start the engine and allow it to idle until ECT (Coolant Temperature) is 75°C (167°F) or greater.

1b) Allow the engine to idle with the A/C ON (to create a slight load) for 15 minutes.

NOTE

- **If vehicle is not equipped with A/C put a slight load on the engine by:**
 - 1) Securely set the parking brake.
 - 2) Block the drive wheels with wheel chocks.
 - 3) Allow vehicle to idle in drive for 15 minutes.

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met by turning the ignition OFF; then, allow vehicle to idle as directed in step 1b for an additional 35 minutes.



O2 Sensor Monitor (Front O2S & Rear O2S)

Preconditions

The monitor will not run unless:

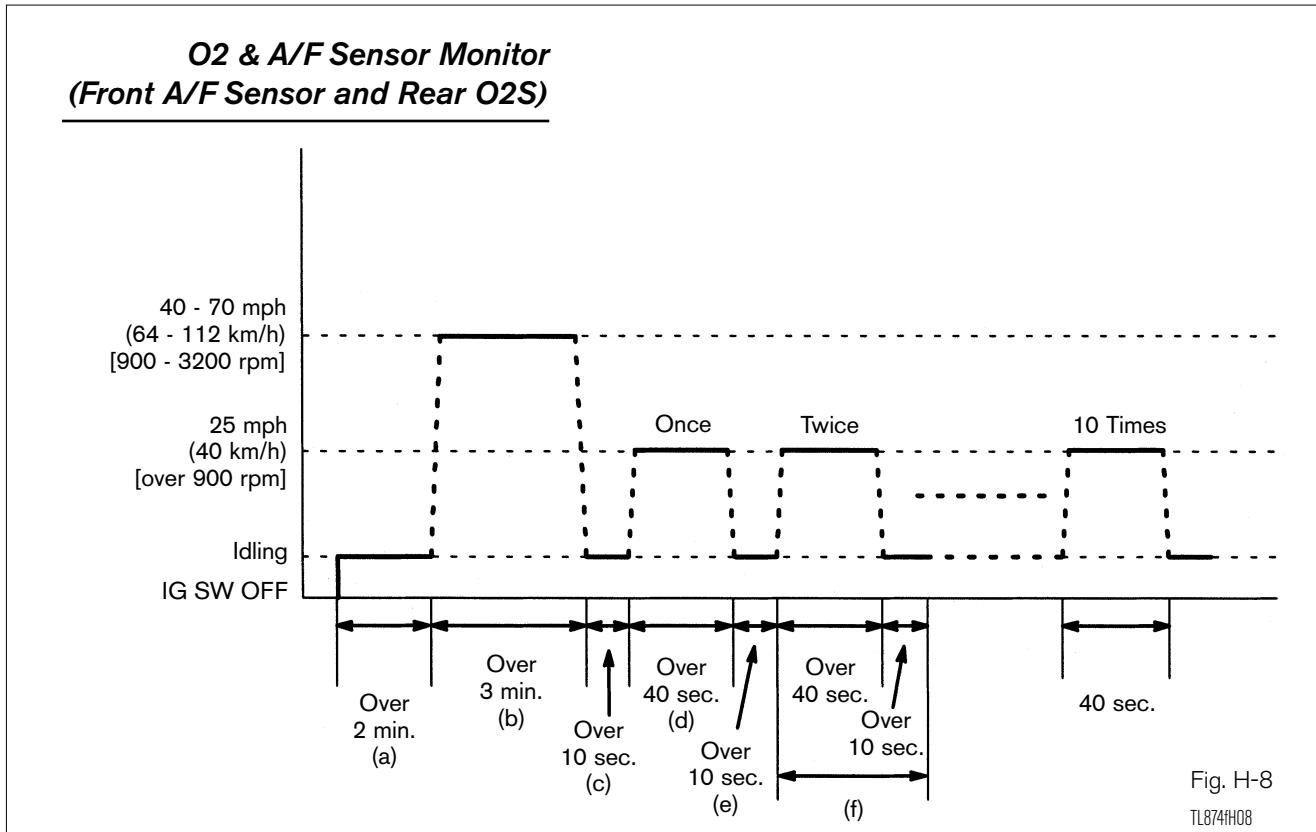
- MIL is OFF

Drive Pattern

Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions.

- Start the engine and allow to idle for 2 minutes or more.
- Drive vehicle at 25 mph (40 km/h) or more for at least 50 seconds.
- Stop vehicle and allow engine to idle for 40 seconds or more.
- Perform steps "b" and "c" ten times.

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, and then repeat steps "a" through "d".



O2 & A/F Sensor Monitor (Front A/F Sensor & Rear O2S)

Preconditions

The monitor will not run unless:

- MIL is OFF

Drive Pattern

Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions.

- Start the engine and allow to idle for 2 minutes or more.
- Drive vehicle at 40 - 70 mph (64 - 112 km/h) or more for at least 3 seconds.
- Stop vehicle and allow engine to idle for 10 seconds or more.
- Drive vehicle at 25 mph (40 km/h) for at least 40 seconds or more.
- Stop vehicle and allow engine to idle for 10 seconds or more.
- Perform steps "d" and "e" ten times.

Observe status of Readiness Tests monitors. If readiness status does not switch to complete, go to the Non-Continuous Tests screen to see monitor status. If Non-Continuous Tests screen still shows Pass, ensure preconditions are met, turn ignition OFF, and then repeat steps "a" through "f".

O2 & A/F Sensor Heater Monitor

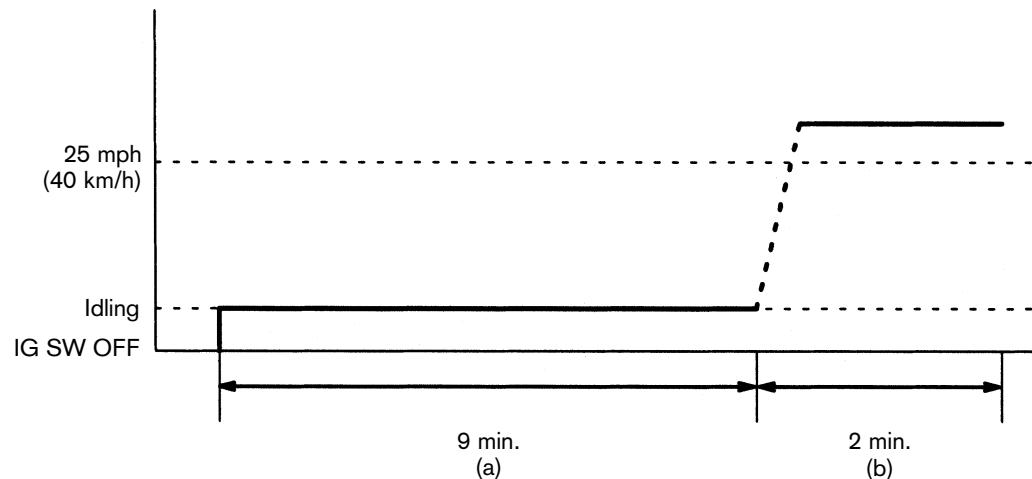


Fig. H-9

TL874H09

O2 & A/F Sensor Heater Monitor

Preconditions The monitor will not run unless:

- MIL is OFF

Drive Pattern

Connect the Diagnostic Tester to DLC3 to check monitor status and preconditions.

- Start the engine and allow to idle for 9 minutes.
- Drive vehicle at 25 mph (40 km/h) or more for at least 2 minutes.

If readiness status does not switch to complete, ensure preconditions are met, turn ignition off and then repeat steps "a" and "b".