

Computers and Control Systems: Testing and Inspection Procedures

Evaporative Emission System Set Procedure

DESCRIPTION

The purpose of this test is to satisfy the enable criteria necessary to execute I/M readiness diagnostics for the evaporative emission (EVAP) system. The test may be used to set the I/M System Status indicators to YES. Service Bay Tests are included on the scan tool for some systems depending upon vehicle make and model. The test is designed to allow the EVAP Diagnostic Tests to run in service bay conditions. Ensure that the vehicle meets the requirements listed in Conditions for Running before performing either EVAP System Test. Failure to meet the necessary requirements may produce inaccurate test results.

CONDITIONS FOR RUNNING

Non Scan Tool Service Bay Test equipped vehicles

- ^ The barometric pressure (BARO) is more than **75 kPa**.
- ^ The fuel level is between **15-18 percent**.
- ^ The battery voltage is between **10-18 volts**.
- ^ The test will initiate only after a cold start. The control module considers the engine to be cold if the following conditions are met:
 - The engine coolant temperature (ECT) is between **4-30°C (39-86°F)**.
 - The intake air temperature (IAT) is between **4-30°C (39-86°F)**.
 - The difference between the ECT and the IAT is less than **8°C (14°F)**.

Scan Tool Service Bay Test equipped vehicles

- ^ The BARO is more than **75 kPa**.
- ^ The ECT is less than **70°C (158°F)**.
- ^ The fuel level is between **15-18 percent**.
- ^ The battery voltage is between **9-18 volts**.

DIAGNOSTIC AIDS

Extreme high or low ambient temperatures may prevent the EVAP System Tests from initiating. Performing a visual inspection prior to running the EVAP Service Bay Test may prevent having to repeat the test. A loose fuel cap may cause a Service Bay Test to abort or fail and prevent the I/M System Status from updating. A failed or aborted test will require the vehicle to cool down in order to meet the enable criteria to run another test.

The I/M System Status does not indicate whether the test has passed or failed, only that a decision was made. When all of the diagnostics for a specific system have run and passed, the I/M System Status will update to YES. If a test for a specific system has failed, the I/M System Status will update to YES, indicating a determination was made, even if all of the required tests have not run. When a failure occurs, the Emission Related DTC portion of the I/M System Status display will indicate the malfunction indicator lamp (MIL) is requested. The I/M System Status also registers the number of diagnostic trouble codes (DTCs).

The first failure of a type B DTC does not constitute a final determination of pass or fail, and will not update the I/M System Status to YES. A second trip is required, and all the conditions to run must be met in order for the test to run again. These conditions may include a partial to complete engine cool down.

The I/M System Status will update only when an emission related DTC fails the second time, or when all of the tests pass.

If there is an impending failure, the system may require more time to run the diagnostic than was allotted in the set procedure. If the test does not run after numerous attempts and no DTC is set, review the appropriate scan tool data list and the service information for an indication of why the test does not complete. Some tests may abort due to changes in the conditions while the test is running. For example, changes in engine load, such as a cooling fan or an A/C compressor clutch turning ON, may cause the test to abort.

If a diagnostic test is difficult to run, observe the I/M System Status display while maintaining the necessary enable conditions until the system status updates to YES.

TEST DESCRIPTION

Inspection/Maintenance (I/M) Evaporative Emission (EVAP) System Set Procedure

Step	Action	Yes	No
1	Did you perform the Inspection/Maintenance (I/M) System Check?	Go to <i>Step 2</i>	Go to <i>Inspection/Maintenance (I/M) System Check</i>
2	1. Using a scan tool, select Special Functions. 2. Determine if the vehicle is equipped with a Service Bay Test for the EVAP System. Is the vehicle equipped with EVAP Service Bay Test?	Go to <i>Step 3</i>	Go to <i>Step 5</i>
3	1. Ensure that the vehicle is within the Conditions for Running specified in the supporting text. 2. Turn OFF all of the accessories, e.g., A/C, blower fan, etc. 3. Following the directions on the scan tool, perform the EVAP Service Bay Test. Did the EVAP System pass the Service Bay Test?	Go to <i>Step 8</i>	Go to <i>Step 4</i>
4	1. Observe the scan tool Service Bay Test for an indication of why the test did not pass, e.g., failed DTC, test aborted, etc. 2. Refer to the appropriate service information for diagnosis and repair of the condition as necessary. Is the repair complete?	Go to <i>Inspection/Maintenance (I/M) Complete System Set Procedure</i>	—

Steps 1-4

Inspection/Maintenance (I/M) Evaporative Emission (EVAP) System Set Procedure

Step	Action	Yes	No
5	<ol style="list-style-type: none"> 1. Ensure that the vehicle is within the Conditions for Running specified in the supporting text. 2. Turn OFF all of the accessories, including the A/C and the blower fan. <p>Important: Once the engine is started, DO NOT turn the engine OFF for the remainder of the procedure until the test is complete.</p> <ol style="list-style-type: none"> 3. Start the engine and idle. <p>Caution: Refer to Road Test Caution in Service Precautions.</p> <p>Important: In order for this test to run, the vehicle must operate in the following conditions:</p> <ol style="list-style-type: none"> 4. Acceleration at part throttle to 72 km/h (45 mph) with this speed maintained until the engine reaches operating temperature. This may be up to 8–10 minutes depending on the start up coolant temperature. 5. Continue the operating conditions for an additional 3 minutes after the engine reaches operating temperature, or until the I/M System Status indicator updates to YES. <p>Did the EVAP System Status update to YES?</p>	Go to Step 8	Go to Step 6
6	<p>With a scan tool, observe the DTC Information.</p> <p>Does the scan tool indicate any failed DTCs?</p>	Go to Diagnostic Trouble Code (DTC) List	Go to Step 7
7	<ol style="list-style-type: none"> 1. Refer to <i>Inspection/Maintenance (I/M) System DTC Table</i> to determine which DTCs are required to run in order to complete this test. 2. With a scan tool, observe the Not Ran Since Code Cleared display. 3. Determine which of the DTCs required for a YES status has not run. 4. Enter the DTC number in the Specific DTC menu of the scan tool. 5. Operate the vehicle within the Conditions for Running the DTC, located in the supporting text for the diagnostic table of the DTC. 6. Repeat the procedure until the scan tool indicates the diagnostic test has run. 7. Repeat steps 4–6 for any additional required DTCs that have not run. 8. With a scan tool, observe the I/M System Status display. <p>Did the EVAP System Status update to YES?</p>	Go to Step 8	Go to Diagnostic Aids
8	<p>With a scan tool, observe the Emission Related DTC portion of the I/M System Status display.</p> <p>Does the scan tool indicate any Emission Related DTCs set?</p>	Go to Diagnostic Trouble Code (DTC) List	System OK

Steps 5-8

The numbers below refer to the step numbers on the diagnostic table.

1. Perform the I/M System Check before performing this test. Failure to do so may result in difficulty updating the status to YES. See: Inspection/Maintenance (I/M) System Check
3. This step is to determine whether or not the EVAP System Test has passed. If the system is operating correctly, the scan tool indicates that the system has passed and the I/M System Status updates to YES. If the EVAP Service Bay Test aborts because of lost enable conditions, the test can be repeated once the enable criteria is met.
4. A failed DTC during the EVAP Service Bay Test may not appear in the DTC Information display on some vehicles. The Service Bay Test displays an indication of which test failed as a directive to the appropriate service information. Some vehicles will display the test as aborted and the first failure of type B DTC appears in the DTC Information.
5. The EVAP System Test usually begins around an ECT of 4-30°C (39-86°F). The vehicle should be operated moderately until this temperature is reached. The ECT can be monitored using the scan tool.
6. This step is to identify a first failure of a type B DTC. A DTC only appears on the I/M System Status display when the DTC becomes a MIL illuminating DTC. This occurs on the second failure of a type B DTC. A first failure of a type B DTC will not allow the I/M System Status to update to YES. Refer to Diagnostic Aids.
7. This step is to help identify any unique or unusual criteria required to run the diagnostic test in the event the universal set procedure does not. This information is located in the service information under Conditions for Running the DTC.
8. The I/M System Status only reports on whether or not a diagnostic has run, not what the outcome of the test was. If any emission related

DTC sets after the tests are complete, the DTC will require diagnosis.