

Computers and Control Systems: Diagnostic Trouble Code Tests and Associated Procedures

P0507

DTC P0507 ISC SYSTEM

Description

NOTE: If DTC P0507 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.

The ECM controls the engine idle speed to a specified level through the fine adjustment of the air, which is let into the intake manifold, by operating the electric throttle control actuator. The operating of the throttle valve is varied to allow for optimum control of the engine idling speed. The crankshaft position sensor (POS) detects the actual engine speed and sends a signal to the ECM.

The ECM controls the electric throttle control actuator so that the engine speed coincides with the target value memorized in the ECM. The target engine speed is the lowest speed at which the engine can operate steadily. The optimum value stored in the ECM is determined by taking into consideration various engine conditions, such as during warming up, deceleration, and engine load (air conditioner, power steering and cooling fan operation, etc.).

On Board Diagnosis Logic

ABS004/E

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0507 0507	Idle speed control system RPM higher than expected	The idle speed is more than the target idle speed by 200 rpm or more.	<ul style="list-style-type: none"> ● Electric throttle control actuator ● Intake air leak ● PCV system

On Board Diagnosis Logic

DTC Confirmation Procedure

NOTE:

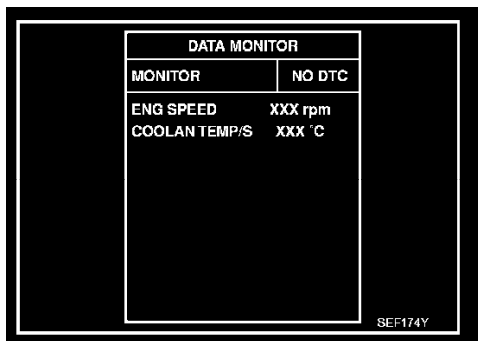
- If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least **10 seconds** before conducting the next test.
- If the target idle speed is out of the specified value, perform EC-90, "Idle Air Volume Learning", See: Programming and Relearning/Idle Air Volume Learning before conducting DTC Confirmation Procedure. For the target idle speed, refer to the "SERVICE DATA AND SPECIFICATIONS (SDS)".

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than **11 V** at idle.
- Always perform the test at a temperature above **-10 °C (14 °F)**.

WITH CONSULT-II

1. Open engine hood.
2. Start engine and warm it up to normal operating temperature.
3. Turn ignition switch OFF and wait at least **10 seconds**.



4. Turn ignition switch ON again and select "DATA MONITOR" mode with CONSULT-II.
5. Start engine and run it for at least **1 minute** at idle speed.
6. If 1st trip DTC is detected, go to "Diagnostic Procedure".

WITH GST

Follow the procedure "WITH CONSULT-II" above.

Diagnostic Procedure

ABS004IG

1. CHECK PCV HOSE CONNECTION

Confirm that PCV hose is connected correctly.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace.

2. CHECK INTAKE AIR LEAK

1. Start engine and let it idle.

2. Listen for an intake air leak after the mass air flow sensor.

OK or NG

OK >> GO TO 3.

NG >> Discover air leak location and repair.

3. REPLACE ECM

1. Stop engine.

2. Replace ECM.

3. Perform initialization of NVIS(NATS) system and registration of all NVIS(NATS) ignition key IDs. Refer to BL-236, "ECM Re-communicating Function" .

4. Perform EC-89, "VIN Registration" .

5. Perform EC-89, "Accelerator Pedal Released Position Learning" .

6. Perform EC-89, "Throttle Valve Closed Position Learning" .

7. Perform EC-90, "Idle Air Volume Learning" .

>> INSPECTION END

Diagnostic Procedure**DIAGNOSTIC PROCEDURE**