THROTTLE VALVE CLOSED POSITION LEARNING

Description

INFOID:0000000012602251

Throttle Valve Closed Position Learning is a function of ECM to learn the fully closed position of the throttle valve by monitoring the throttle position sensor output signal. It must be performed each time the harness connector of the electric throttle control actuator or ECM is disconnected or electric throttle control actuator inside is cleaned. (For details, refer to .)

Work Procedure

INFOID:0000000012602252

1.START

ⓐWith CONSULT
1. Turn ignition switch ON.
2. Select "CLSD THL POS LEARN" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
3. Follow the instructions on the CONSULT display.
4. Turn ignition switch OFF and wait at least 10 seconds.
   Check that throttle valve moves during the above 10 seconds by confirming the operating sound.
ⓧWithout CONSULT
1. Start the engine.
   NOTE:
   Engine coolant temperature is 25°C (77°F) or less before engine starts.
2. Warm up the engine.
   NOTE:
   Raise engine coolant temperature until it reaches 65°C (149°F) or more.
3. Turn ignition switch OFF and wait at least 10 seconds.
   Check that throttle valve moves during the above 10 seconds by confirming the operating sound.

>> END

IDLE AIR VOLUME LEARNING

Description

INFOID:0000000012602253

Idle Air Volume Learning is a function of ECM to learn the idle air volume that keeps each engine idle speed within the specific range. (For details, refer to EC-187, "Work Procedure".) It must be performed under any of the following conditions:
• Each time electric throttle control actuator or ECM is replaced.
• Idle speed or ignition timing is out of specification.

Work Procedure

INFOID:0000000012602254

1.PRECONDITIONING

Make sure that all of the following conditions are satisfied.
Learning will be cancelled if any of the following conditions are missed for even a moment.
• Battery voltage: More than 12.9 V (At idle)
• Engine coolant temperature: 70 - 100°C (158 - 212°F)
• Selector lever : P or N
• Electric load switch: OFF
  (Air conditioner, headlamp, rear window defogger)
  On vehicles equipped with daytime running light systems, set lighting switch to the 1st position to light only small lamps.
• Steering wheel: Neutral (Straight-ahead position)
• Vehicle speed: Stopped
• Transmission: Warmed-up
- ⬚With CONSULT
  Drive vehicle until "ATF TENP SEN" in "DATA MONITOR" mode of "CVT" system indicates less than 0.9 V.
- ⊗Without CONSULT
  Drive vehicle for 10 minutes.
Do you have CONSULT?

  YES   >> GO TO 2.
  NO   >> GO TO 3.

2.IDLE AIR VOLUME LEARNING

⬚With CONSULT
1. Perform Accelerator Pedal Released Position Learning. Refer to EC-185, "Description".
2. Perform Throttle Valve Closed Position Learning. Refer to EC-186, "Description".
3. Start engine and warm it up to normal operating temperature.
4. Select "IDLE AIR VOL LEARN" in "WORK SUPPORT" mode of "ENGINE".
5. Touch "START" and wait 20 seconds.
Is "CMPLT" displayed on CONSULT screen?

  YES   >> GO TO 4.
  NO   >> GO TO 5.

3.IDLE AIR VOLUME LEARNING

⊗Without CONSULT
NOTE:
• **It is better to count the time accurately with a clock.**
• **It is impossible to switch the diagnostic mode when an accelerator pedal position sensor circuit has a malfunction.**
1. Perform Accelerator Pedal Released Position Learning. Refer to EC-185, "Description".
2. Perform Throttle Valve Closed Position Learning. Refer to EC-186, "Description".
3. Start engine and warm it up to normal operating temperature.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Confirm that accelerator pedal is fully released, turn ignition switch ON and wait 3 seconds.
6. Repeat the following procedure quickly five times within 5 seconds.
-   Fully depress the accelerator pedal.
-   Fully release the accelerator pedal.

7. Wait 7 seconds, fully depress the accelerator pedal and keep it for approx. 20 seconds until the MIL stops blinking and turned ON.
8. Fully release the accelerator pedal within 3 seconds after the MIL turned ON.
9. Start engine and let it idle.
10. Wait 20 seconds.

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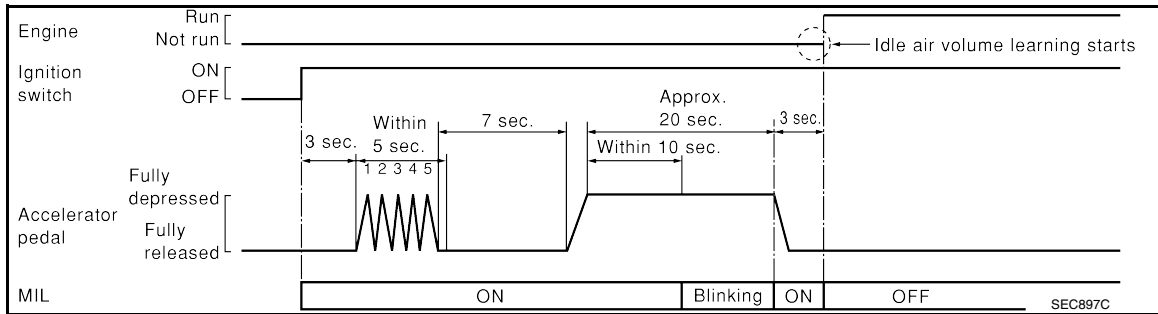
>> GO TO 4

4.CHECK IDLE SPEED AND IGNITION TIMING

Rev up the engine two or three times and make sure that idle speed and ignition timing are within the specifications. For specification, refer to EC-578, "Idle Speed" and EC-578, "Ignition Timing".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following
• Check that throttle valve is fully closed.
• Check PCV valve operation.
• Check that downstream of throttle valve is free from air leakage.

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace malfunctioning part.

6.DETECT MALFUNCTIONING PART

Engine component parts and their installation condition are questionable. Check and eliminate the cause of the incident.

It is useful to perform "TROUBLE DIAGNOSIS - SPECIFICATION VALUE". Refer to EC-203, "Description".

If any of the following conditions occur after the engine has started, eliminate the cause of the incident and perform Idle Air Volume Learning all over again:
• Engine stalls.
• Erroneous idle.

>> INSPECTION END