

SECTION **EC**

ENGINE CONTROL SYSTEM

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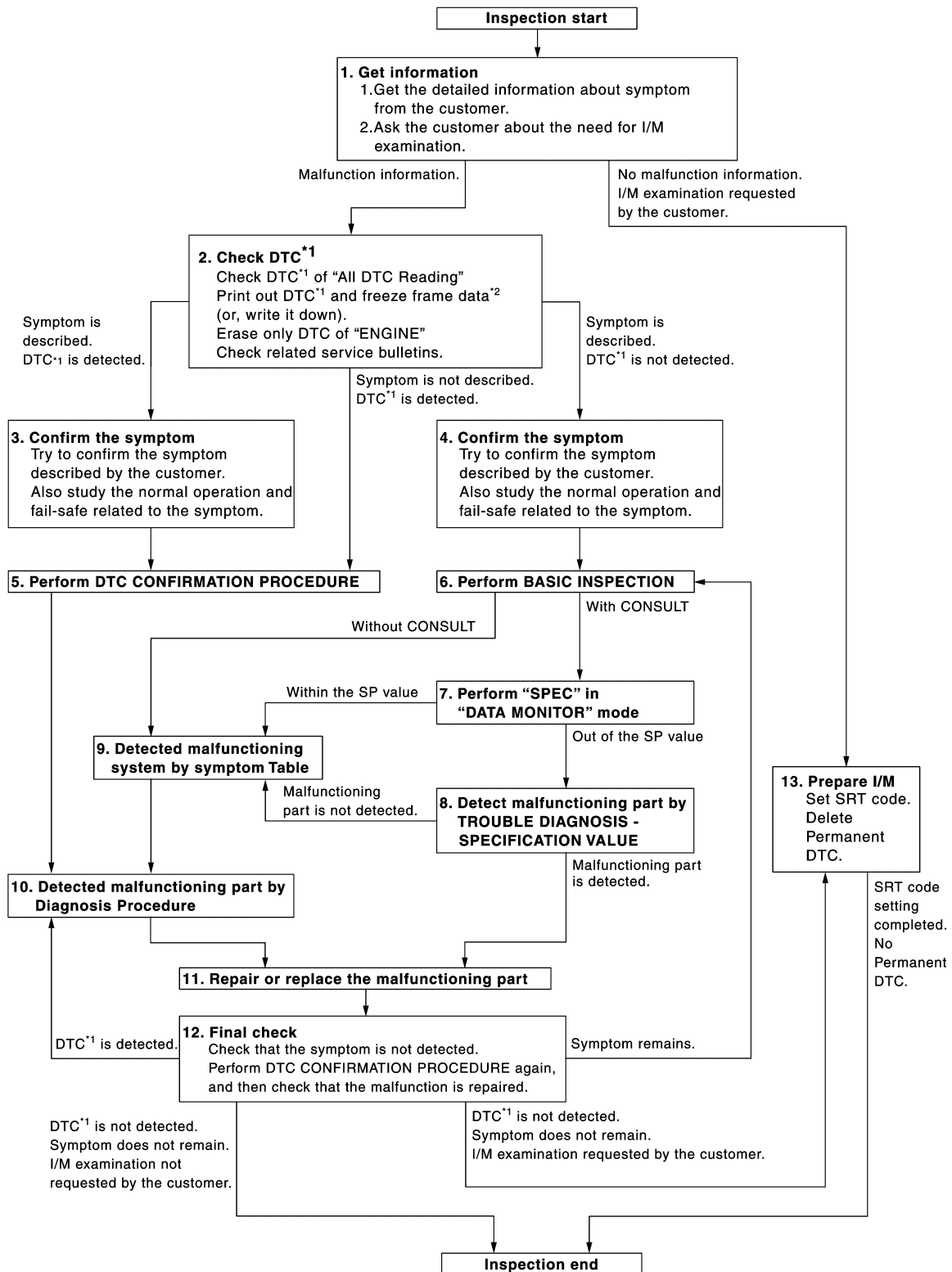
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow (GT-R certified NISSAN dealer)

INFOID:000000011486193

OVERALL SEQUENCE



JSBIA0123GB

*1: Include 1st trip DTC.

*2: Include 1st trip freeze frame data.

DETAILED FLOW

1. GET INFORMATION FOR SYMPTOM

1. Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using the "Diagnostic Work Sheet". (Refer to [EC-15, "Diagnostic Work Sheet \(GT-R certified NISSAN dealer\)"](#).)
2. Ask if the customer requests I/M examination.

Malfunction information, obtained>>GO TO 2.

No Malfunction information, but a request for I/M examination>>GO TO 13.

2. CHECK DTC

1. Check DTC of "All DTC Reading".
2. Perform the following procedure if DTC is displayed.
 - Record DTC and freeze frame data. (Print them out with CONSULT or GST.)
 - Erase only DTC of "ENGINE".
 - ⊗ With CONSULT: Refer to "How to Erase DTC and 1st Trip DTC" in [EC-172, "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).
 - ⊗ Without CONSULT: Refer to "How to Erase Self-diagnostic Results" in [EC-168, "On Board Diagnosis Function \(GT-R certified NISSAN dealer\)"](#).
 - Turn ignition switch OFF.
 - Study the relationship between the cause detected by DTC and the symptom described by the customer. (Symptom Table is useful. Refer to [EC-625, "Symptom Table \(GT-R certified NISSAN dealer\)"](#).)
3. Check related service bulletins for information.

Are any symptoms described and any DTCs detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer (except MIL ON).

Also study the normal operation and fail-safe related to the symptom. Refer to [EC-629, "Description \(GT-R certified NISSAN dealer\)"](#) and [EC-588, "Fail Safe \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Work Sheet is useful to verify the incident.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Also study the normal operation and fail-safe related to the symptom. Refer to [EC-629, "Description \(GT-R certified NISSAN dealer\)"](#) and [EC-588, "Fail Safe \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Work Sheet is useful to verify the incident.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the displayed DTC, and then make sure that DTC is detected again.

If two or more DTCs are detected, refer to [EC-590, "DTC Inspection Priority Chart \(GT-R certified NISSAN dealer\)"](#) and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.

DIAGNOSIS AND REPAIR WORKFLOW

[VR38]

< BASIC INSPECTION >

- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

- YES >> GO TO 10.
- NO >> Check according to [GI-39, "Intermittent Incident"](#).

6. PERFORM BASIC INSPECTION

Perform [EC-17, "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

Do you have CONSULT?

- YES >> GO TO 7.
- NO >> GO TO 9.

7. PERFORM SPEC IN DATA MONITOR MODE

With CONSULT

Make sure that "MAS A/F SE-B1", "MAS A/F SE-B2", "B/FUEL SCHDL", "A/F ALPHA-B1" and "A/F ALPHA-B2" are within the SP value using CONSULT "SPEC" in "DATA MONITOR" mode of "ENGINE". Refer to [EC-183, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

Is the measurement value within the SP value?

- YES >> GO TO 9.
- NO >> GO TO 8.

8. DETECT MALFUNCTIONING PART BY TROUBLE DIAGNOSIS - SPECIFICATION VALUE

Detect malfunctioning part according to [EC-184, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is a malfunctioning part detected?

- YES >> GO TO 11.
- NO >> GO TO 9.

9. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to [EC-625, "Symptom Table \(GT-R certified NISSAN dealer\)"](#) based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptoms.

>> GO TO 10.

10. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.



NOTE:

The Diagnosis Procedure in EC section described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnosis Procedure. For details, refer to [GI-42, "Circuit Inspection"](#).

Is a malfunctioning part detected?

- YES >> GO TO 11.
- NO >> Monitor input data from related sensors or check voltage of related ECM terminals using CONSULT. Refer to [EC-570, "Reference Value \(GT-R certified NISSAN dealer\)"](#).

11. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.
 -  With CONSULT: Refer to "How to Erase DTC and 1st Trip DTC" in [EC-172, "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).
 -  Without CONSULT: Refer to "How to Erase Self-diagnostic Results" in [EC-168, "On Board Diagnosis Function \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 12.

12. FINAL CHECK

When DTC was detected in step 2, perform DTC CONFIRMATION PROCEDURE or Component Function Check again, and then make sure that the malfunction have been completely repaired.
When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and make sure that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 10.

YES-2 >> Symptom remains: GO TO 6.

NO-1 >> No request for I/M examination from the customer: Before returning the vehicle to the customer, always erase unnecessary DTC in ECM and TCM (⊗) With CONSULT: Refer to "How to Read DTC and 1st Trip DTC" in [EC-172. "CONSULT Function \(GT-R certified NISSAN dealer\)"](#), (⊗) Without CONSULT: Refer to "How to Read Self-diagnostic Results" in [EC-168. "On Board Diagnosis Function \(GT-R certified NISSAN dealer\)"](#).

NO-2 >> I/M examination, requested from the customer: GO TO 13.

13. PREPARE FOR I/M EXAMINATION

1. Set SRT codes. Refer to [EC-27. "Description \(GT-R certified NISSAN dealer\)"](#).
2. Erase permanent DTCs. Refer to [EC-33. "Description \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END.

Diagnostic Work Sheet (GT-R certified NISSAN dealer)

INFOID:000000011486194

DESCRIPTION

There are many operating conditions that lead to the malfunction of engine components. A good grasp of such conditions can make troubleshooting faster and more accurate.

In general, each customer feels differently about symptoms. It is important to fully understand the symptoms or conditions for a customer complaint.

Utilize a diagnostic worksheet like the WORKSHEET SAMPLE below in order to organize all the information for troubleshooting.

Some conditions may cause the MIL to illuminate or blink, and DTC to be detected. Examples:

- Vehicle ran out of fuel, which caused the engine to misfire.
- Fuel filler cap was left off or incorrectly screwed on, allowing fuel to evaporate into the atmosphere.

KEY POINTS

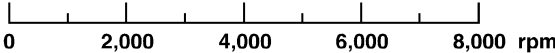
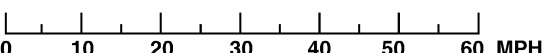
WHAT Vehicle & engine model
WHEN Date, Frequencies
WHERE Road conditions
HOW Operating conditions, Weather conditions, Symptoms

SEF907L

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >
WORKSHEET SAMPLE

[VR38]

Customer name MR/MS		Model & Year	VIN
Engine #		Trans.	Mileage
Incident Date		Manuf. Date	In Service Date
Fuel and fuel filler cap		<input type="checkbox"/> Vehicle ran out of fuel causing misfire <input type="checkbox"/> Fuel filler cap was left off or incorrectly screwed on.	
Symptoms	<input type="checkbox"/> Startability	<input type="checkbox"/> Impossible to start <input type="checkbox"/> No combustion <input type="checkbox"/> Partial combustion <input type="checkbox"/> Partial combustion affected by throttle position <input type="checkbox"/> Partial combustion NOT affected by throttle position <input type="checkbox"/> Possible but hard to start <input type="checkbox"/> Others []	
	<input type="checkbox"/> Idling	<input type="checkbox"/> No fast idle <input type="checkbox"/> Unstable <input type="checkbox"/> High idle <input type="checkbox"/> Low idle <input type="checkbox"/> Others []	
	<input type="checkbox"/> Driveability	<input type="checkbox"/> Stumble <input type="checkbox"/> Surge <input type="checkbox"/> Knock <input type="checkbox"/> Lack of power <input type="checkbox"/> Intake backfire <input type="checkbox"/> Exhaust backfire <input type="checkbox"/> Others []	
	<input type="checkbox"/> Engine stall	<input type="checkbox"/> At the time of start <input type="checkbox"/> While idling <input type="checkbox"/> While accelerating <input type="checkbox"/> While decelerating <input type="checkbox"/> Just after stopping <input type="checkbox"/> While loading	
Incident occurrence		<input type="checkbox"/> Just after delivery <input type="checkbox"/> Recently <input type="checkbox"/> In the morning <input type="checkbox"/> At night <input type="checkbox"/> In the daytime	
Frequency		<input type="checkbox"/> All the time <input type="checkbox"/> Under certain conditions <input type="checkbox"/> Sometimes	
Weather conditions		<input type="checkbox"/> Not affected	
Weather		<input type="checkbox"/> Fine <input type="checkbox"/> Raining <input type="checkbox"/> Snowing <input type="checkbox"/> Others []	
Temperature		<input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold <input type="checkbox"/> Humid °F	
Engine conditions		<input type="checkbox"/> Cold <input type="checkbox"/> During warm-up <input type="checkbox"/> After warm-up Engine speed  0 2,000 4,000 6,000 8,000 rpm	
Road conditions		<input type="checkbox"/> In town <input type="checkbox"/> In suburbs <input type="checkbox"/> Highway <input type="checkbox"/> Off road (up/down)	
Driving conditions		<input type="checkbox"/> Not affected <input type="checkbox"/> At starting <input type="checkbox"/> While idling <input type="checkbox"/> At racing <input type="checkbox"/> While accelerating <input type="checkbox"/> While cruising <input type="checkbox"/> While decelerating <input type="checkbox"/> While turning (RH/LH) Vehicle speed  0 10 20 30 40 50 60 MPH	
Malfunction indicator lamp		<input type="checkbox"/> Turned on <input type="checkbox"/> Not turned on	

MTBL0017

INSPECTION AND ADJUSTMENT

BASIC INSPECTION

BASIC INSPECTION : Special Repair Requirement (GT-R certified NISSAN dealer)

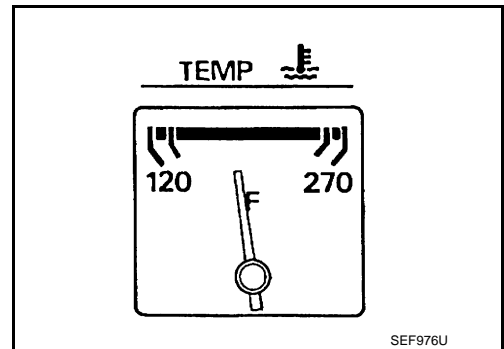
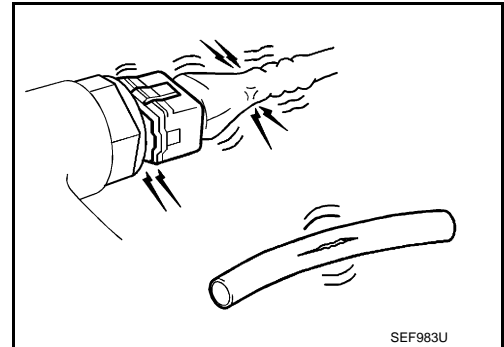
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EC

1.INSPECTION START

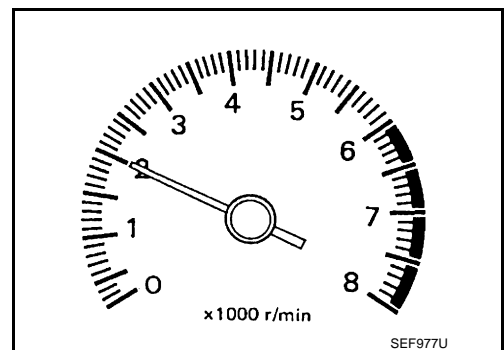
1. Check service records for any recent repairs that may indicate a related malfunction, or a current need for scheduled maintenance.
2. Open engine hood and check the following:
 - Harness connectors for improper connections
 - Wiring harness for improper connections, pinches and cut
 - Vacuum hoses for splits, kinks and improper connections
 - Hoses and ducts for leakage
 - Air cleaner clogging
 - Gasket
3. Check that electrical or mechanical loads are not applied.
 - Headlamp switch is OFF.
 - Air conditioner switch is OFF.
 - Rear window defogger switch is OFF.
 - Steering wheel is in the straight-ahead position, etc.
4. Start engine and warm it up until engine coolant temperature indicator points to the middle of gauge. Ensure engine stays below 1,000 rpm.



5. Run engine at about 2,000 rpm for about 2 minutes under no load.
6. Check that no DTC is displayed with CONSULT or GST.

Are any DTCs detected?

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



2.REPAIR OR REPLACE

Repair or replace components as necessary according to corresponding Diagnosis Procedure.

>> GO TO 3

3.CHECK TARGET IDLE SPEED

1. Run engine at about 2,000 rpm for about 2 minutes under no load.

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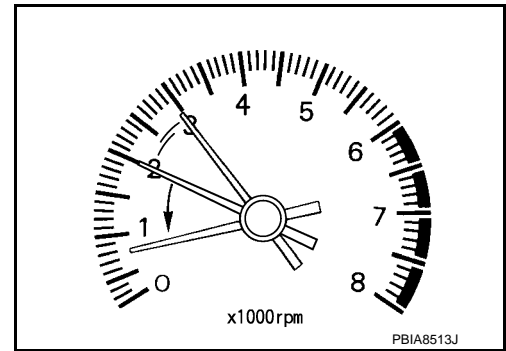
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INSPECTION AND ADJUSTMENT

[VR38]

< BASIC INSPECTION >

- Rev engine (2,000 to 3,000 rpm) two or three times under no load, then run engine at idle speed for about 1 minute.
- Check idle speed.
For procedure, refer to [EC-22. "IDLE SPEED : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
For specification, refer to [EC-640. "Idle Speed".](#)



Is the inspection result normal?

- YES >> GO TO 10.
NO >> GO TO 4.

4.PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

- Stop engine.
- Perform [EC-23. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

>> GO TO 5.

5.PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Perform [EC-24. "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

>> GO TO 6.

6.PERFORM IDLE AIR VOLUME LEARNING

Perform [EC-24. "IDLE AIR VOLUME LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

Is Idle Air Volume Learning carried out successfully?

- YES >> GO TO 7.
NO >> Follow the instruction of Idle Air Volume Learning. Then GO TO 4.

7.CHECK TARGET IDLE SPEED AGAIN

- Start engine and warm it up to normal operating temperature.
- Check idle speed.
For procedure, refer to [EC-22. "IDLE SPEED : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
For specification, refer to [EC-640. "Idle Speed".](#)

Is the inspection result normal?

- YES >> GO TO 10.
NO >> GO TO 8.

8.DETECT MALFUNCTIONING PART

Check the Following.

- Check camshaft position sensor (PHASE) and circuit. Refer to [EC-338. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)
- Check crankshaft position sensor (POS) and circuit. Refer to [EC-334. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 9.
NO >> Repair or replace malfunctioning part. Then GO TO 4.

9.CHECK ECM FUNCTION

- Substitute with a non-malfunctioning ECM to check ECM function. (ECM may be the cause of the incident, although this is rare.)
- Perform initialization of NATS system and registration of all NATS ignition key IDs. Refer to [SEC-8. "ECM RE-COMMUNICATING FUNCTION : Work Procedure".](#)

< BASIC INSPECTION >

>> GO TO 4.

10. CHECK IGNITION TIMING

1. Run engine at idle.
2. Check ignition timing with a timing light.
For procedure, refer to [EC-22, "IGNITION TIMING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
For specification, refer to [EC-640, "Ignition Timing"](#).

Is the inspection result normal?

- YES >> GO TO 19.
NO >> GO TO 11.

11. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

1. Stop engine.
2. Perform [EC-23, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 12.

12. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Perform [EC-24, "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 13.

13. PERFORM IDLE AIR VOLUME LEARNING

Perform [EC-24, "IDLE AIR VOLUME LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

Is Idle Air Volume Learning carried out successfully?

- YES >> GO TO 14.
NO >> Follow the instruction of Idle Air Volume Learning. Then GO TO 4.

14. CHECK TARGET IDLE SPEED AGAIN

1. Start engine and warm it up to normal operating temperature.
2. Check idle speed.
For procedure, refer to [EC-22, "IDLE SPEED : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
For specification, refer to [EC-640, "Idle Speed"](#).

Is the inspection result normal?

- YES >> GO TO 15.
NO >> GO TO 17.

15. CHECK IGNITION TIMING AGAIN

1. Run engine at idle.
2. Check ignition timing with a timing light.
For procedure, refer to [EC-22, "IGNITION TIMING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
For specification, refer to [EC-640, "Ignition Timing"](#).

Is the inspection result normal?

- YES >> GO TO 19.
NO >> GO TO 16.

16. CHECK TIMING CHAIN INSTALLATION

Check timing chain installation. Refer to [EM-70, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 17.
NO >> Repair the timing chain installation. Then GO TO 4.

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< BASIC INSPECTION >

17. DETECT MALFUNCTIONING PART

Check the following.

- Check camshaft position sensor (PHASE) and circuit. Refer to [EC-338, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).
- Check crankshaft position sensor (POS) and circuit. Refer to [EC-334, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace malfunctioning part. Then GO TO 4.

18. CHECK ECM FUNCTION

1. Substitute with a non-malfunctioning ECM to check ECM function. (ECM may be the cause of the incident, although this is rare.)
2. Perform initialization of NATS system and registration of all NATS ignition key IDs. Refer to [SEC-8, "ECM RE-COMMUNICATING FUNCTION : Work Procedure"](#).

>> GO TO 4.

19. INSPECTION END

If ECM is replaced during this BASIC INSPECTION procedure, go to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description (GT-R certified NISSAN dealer)

INFOID:000000011486196

When replacing ECM, the following procedure must be performed. (For details, refer to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).)

PROGRAMMING OPERATION**NOTE:**

After replacing with a blank ECM, programming is required to write ECM information. Be sure to follow the procedure to perform the programming.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486197

1. SAVE ECM DATA

④ With CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Turn ignition switch ON.
4. Select "SAVING DATA FOR REPLC CPU" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
5. Follow the instruction of CONSULT display.

NOTE:

- Necessary data in ECM is copied and saved to CONSULT.
- Go to Step 2 regardless of with or without success in saving data.

>> GO TO 2.

2. CHECK ECM PART NUMBER

Check ECM part number to see whether it is blank ECM or not.

NOTE:

- Part number of blank ECM is 23703 - xxxxxx.

INSPECTION AND ADJUSTMENT

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< BASIC INSPECTION >

- Check part number when ordering ECM or the one included in the label on the container box.

Is the ECM a blank ECM?

YES >> GO TO 3.

NO >> GO TO 5.

3. SAVE ECM PART NUMBER

Read out the part number from the old ECM and save the number, following the programming instructions. Refer to CONSULT Operation Manual.

NOTE:

- The ECM part number is saved in CONSULT.
- Even when ECM part number is not saved in CONSULT, go to 4.

>> GO TO 4.

4. PERFORM ECM PROGRAMMING

After replacing ECM, perform the ECM programming. Refer to CONSULT Operation Manual.

NOTE:

- During programming, maintain the following conditions:
 - Ignition switch: ON
 - Electric load: OFF
 - Brake pedal: Not depressed
 - Battery voltage: 12 – 13.5 V (Be sure to check the value of battery voltage by selecting “BATTERY VOLT” in “Data monitor” of CONSULT.)

>> GO TO 6.

5. REPLACE ECM

Replace ECM.

>> GO TO 6.

6. PERFORM INITIALIZATION OF IVIS (NATS) SYSTEM AND REGISTRATION OF ALL IVIS (NATS) IGNITION KEY IDS

Refer to [SEC-8. "ECM RE-COMMUNICATING FUNCTION : Work Procedure"](#).

>> GO TO 7.

7. CHECK ECM DATA STATUS

Check if the data is successfully copied from the ECM at Step 1 (before replacement) and saved in CONSULT.

Is the data saved successfully?

YES >> GO TO 8.

NO >> GO TO 9.

8. WRITE ECM DATA

Ⓜ With CONSULT

1. Select “WRITING DATA FOR REPLC CPU” in “WORK SUPPORT” mode of “ENGINE” using CONSULT.
2. Follow the instruction of CONSULT display.

NOTE:

The data saved by “SAVING DATA FOR REPLC CPU” is written to ECM.

>> GO TO 10.

9. PERFORM VIN REGISTRATION

Refer to [EC-23. "VIN REGISTRATION : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 10.

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INSPECTION AND ADJUSTMENT

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10. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform Accelerator Pedal Released Position Learning. Refer to [EC-23. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 11.

11. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Refer to [EC-24. "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 12.

12. PERFORM IDLE AIR VOLUME LEARNING

Refer to [EC-24. "IDLE AIR VOLUME LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> END

IDLE SPEED

IDLE SPEED : Description (GT-R certified NISSAN dealer)

INFOID:000000011486198

This describes how to check the idle speed. For the actual procedure, follow the instructions in "BASIC INSPECTION".

IDLE SPEED : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486199

1. CHECK IDLE SPEED

With CONSULT

Check idle speed in "DATA MONITOR" mode with CONSULT.

With GST

Check idle speed with Service \$01 of GST.

>> INSPECTION END

IGNITION TIMING

IGNITION TIMING : Description (GT-R certified NISSAN dealer)

INFOID:000000011486200

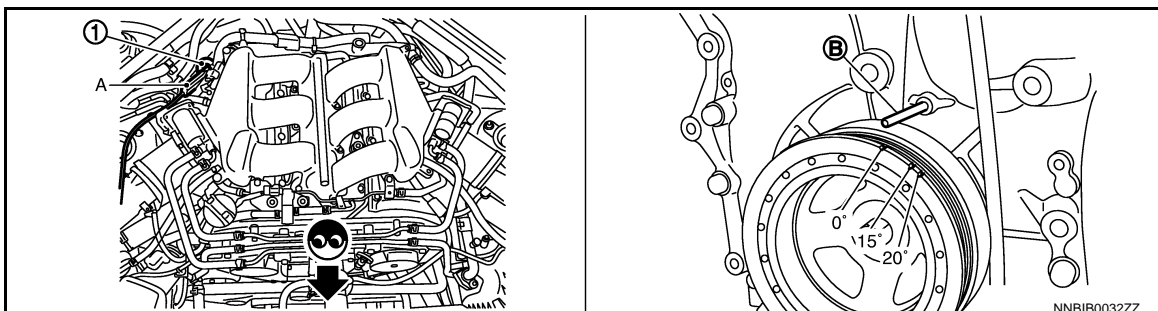
This describes how to check the ignition timing. For the actual procedure, follow the instructions in "BASIC INSPECTION".

IGNITION TIMING : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486201

1. CHECK IGNITION TIMING

1. Attach timing light to loop wire as shown.



- 1. Loop wire
- A. Timing light
- B. Timing indicator

NOTE:

Timing indicator is not included because it is not factory-supplied.

- 2. Check ignition timing.

>> INSPECTION END

VIN REGISTRATION

VIN REGISTRATION : Description (GT-R certified NISSAN dealer)

INFOID:000000011486202

VIN Registration is an operation to register VIN in ECM. It must be performed each time ECM is replaced.

NOTE:

Accurate VIN which is registered in ECM may be required for Inspection & Maintenance (I/M).

VIN REGISTRATION : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486203

1.CHECK VIN

Check the VIN of the vehicle and note it. Refer to [GI-19, "Information About Identification or Model Code"](#).

>> GO TO 2.

2.PERFORM VIN REGISTRATION

 **With CONSULT**

- 1. Turn ignition switch ON with engine stopped.
- 2. Select "VIN REGISTRATION" in "WORK SUPPORT" mode.
- 3. Follow the instructions on the CONSULT display.

>> END

ACCELERATOR PEDAL RELEASED POSITION LEARNING

ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description (GT-R certified NISSAN dealer)

INFOID:000000011486204

Accelerator Pedal Released Position Learning is a function of ECM to learn the fully released position of the accelerator pedal by monitoring the accelerator pedal position sensor output signal. It must be performed each time the harness connector of the accelerator pedal position sensor or ECM is disconnected.

ACCELERATOR PEDAL RELEASED POSITION LEARNING : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486205

1.START

- 1. Check that accelerator pedal is fully released.
- 2. Turn ignition switch ON and wait at least 2 seconds.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON and wait at least 2 seconds.
- 5. Turn ignition switch OFF and wait at least 10 seconds.

>> END

THROTTLE VALVE CLOSED POSITION LEARNING

THROTTLE VALVE CLOSED POSITION LEARNING : Description (GT-R certified NIS-

SAN dealer)

INFOID:000000011486206

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 harness connector of electric throttle control actuator or ECM is disconnected.

THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486207

1. START

1. Check that accelerator pedal is fully released.
2. Turn ignition switch ON.
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

IDLE AIR VOLUME LEARNING : Description (GT-R certified NISSAN dealer)

INFOID:000000011486208

Idle Air Volume Learning is a function of ECM to learn the idle air volume that keeps engine idle speed within the specific range. It must be performed under the following conditions:

- Each time electric throttle control actuator or ECM is replaced.
- Idle speed or ignition timing is out of specification.

IDLE AIR VOLUME LEARNING : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486209

1. PRECONDITIONING

Check 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: 80 - 100°C (176 - 212°F)
- Shift lever: P or N
- Electric load switch: OFF
(Air conditioner, headlamp, rear window defogger)
- **For vehicles equipped with daytime light systems, perform one of the following procedures before starting engine not to illuminate headlamps.**
- Apply parking brake
- Set lighting switch to the 1st position
- Steering wheel: Neutral (Straight-ahead position)
- Vehicle speed: Stopped
- Transmission: Warmed-up
- With CONSULT: Drive vehicle until "FLUID TEMP SEN" in "DATA MONITOR" mode of "TRANSMISSION" 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. PERFORM IDLE AIR VOLUME LEARNING

With CONSULT

1. Perform Accelerator Pedal Released Position Learning. Refer to [EC-23, "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
2. Perform Throttle Valve Closed Position Learning. [EC-24, "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
3. Start engine and warm it up to normal operating temperature.
4. Select "IDLE AIR VOL LEARN" in "WORK SUPPORT" mode.

< BASIC INSPECTION >

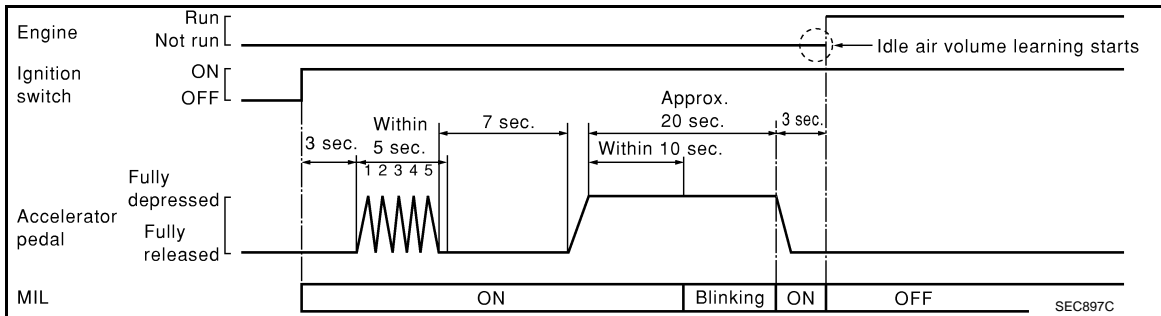
5. Touch "START" and wait 20 seconds.
- Is "CMPLT" displayed on CONSULT screen?
- YES >> GO TO 4.
NO >> GO TO 5.

3. PERFORM 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-23. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
 2. Perform Throttle Valve Closed Position Learning. [EC-24. "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
 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 it for approx. 20 seconds until the MIL stops blinking and turn ON.
 8. Fully release the accelerator pedal within 3 seconds after the MIL turns ON.
 9. Start engine and let it idle.
 10. Wait 20 seconds.



>> GO TO 4.

4. CHECK IDLE SPEED AND IGNITION TIMING

Rev up the engine two or three times and check that idle speed and ignition timing are within the specifications. Refer to [EC-640. "Idle Speed"](#) and [EC-640. "Ignition Timing"](#).

Is the inspection result normal?

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

5. DETECT MALFUNCTIONING PART-I

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-II

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

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[VR38]

It is useful to perform "TROUBLE DIAGNOSIS - SPECIFICATION VALUE". Refer to [EC-183. "Description \(GT-R certified NISSAN dealer\)".](#)

If any of the following conditions occur after the engine has started, eliminate the cause of the incident and perform Idle Air Volume Learning again:

- Engine stalls.
- Incorrect idle.

>> INSPECTION END

MIXTURE RATIO SELF-LEARNING VALUE CLEAR

MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Description (GT-R certified NISSAN dealer)

INFOID:000000011486210

This describes how to erase the mixture ratio self-learning value. For the actual procedure, follow the instructions in "Diagnosis Procedure".

MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement (GT-R certified NISSAN dealer)

INFOID:000000011486211

1. START

With CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Select "SELF-LEARNING CONT" in "WORK SUPPORT" mode with CONSULT.
3. Clear mixture ratio self-learning value by touching "CLEAR".

With GST

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF.
3. Disconnect mass air flow sensor (bank 1) harness connector.
4. Restart engine and let it idle for at least 5 seconds.
5. Stop engine and reconnect mass air flow sensor (bank 1) harness connector.
6. Select Service \$03 with GST. Check DTC P0102 is detected.
7. Select Service \$04 with GST to erase the DTC P0102.

>> END

HOW TO SET SRT CODE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486212

OUTLINE

In order to set all SRTs, the self-diagnoses as in the “SRT ITEM” table must have been performed at least once. Each diagnosis may require actual driving for a long period of time under various conditions.

SRT ITEM

The table below shows required self-diagnostic items to set the SRT to “CMPLT”.

SRT item* ¹ (CONSULT indication)	Performance Priority* ²	Required self-diagnostic items to set the SRT to “CMPLT”	Corresponding DTC No.
CATALYST	2	Three way catalyst function	P0420, P0430
S-AIR SYSTEM	2	Secondary air injection system	P0411
	2	Secondary air injection system	P0491, P0492
	2	Air cut solenoid valve	P2440, P2442
EVAP SYSTEM	2	EVAP control system purge flow monitoring	P0441
	1	EVAP control system	P0442
	2	EVAP control system	P0456
HO2S	2	Air fuel ratio (A/F) sensor 1	P014C, P014D, P014E, P014F, P015A, P015B, P015C, P015D
		Heated oxygen sensor 2	P0137, P0157
		Heated oxygen sensor 2	P0138, P0158
		Heated oxygen sensor 2	P0139, P0159
EGR/VVT SYSTEM	3	Intake valve timing control function	P0011, P0021

- *1: Though displayed on the CONSULT screen, “HO2S HTR” is not SRT item.
- *2: If completion of several SRTs is required, perform driving patterns (DTC confirmation procedure), one by one based on the priority for models with CONSULT.

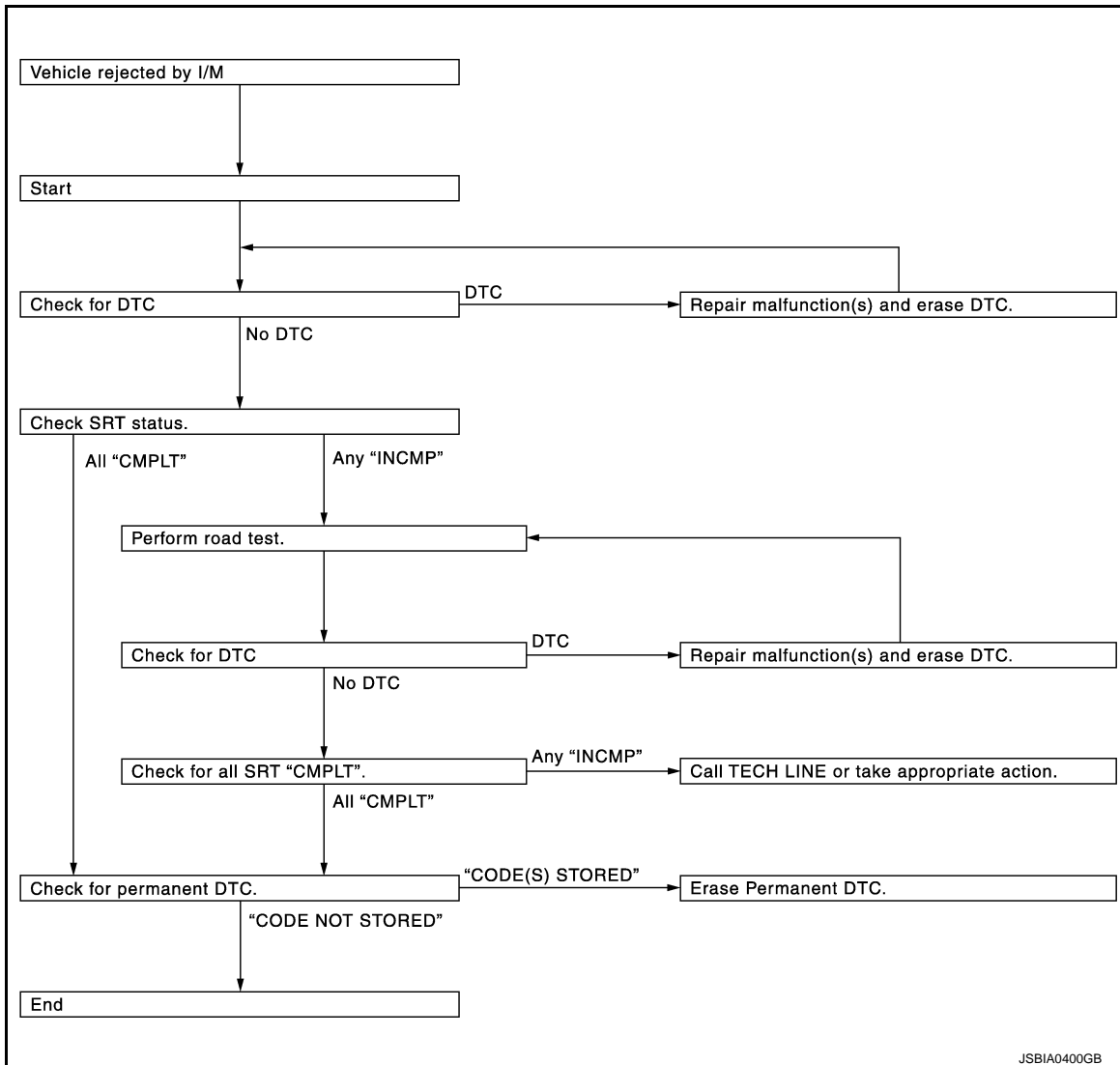
SRT SERVICE PROCEDURE

If a vehicle has failed the state emissions inspection due to one or more SRT items indicating “INCMP”, review the flowchart diagnostic sequence, referring to the following flowchart.

HOW TO SET SRT CODE

< BASIC INSPECTION >

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SRT Set Driving Pattern (GT-R certified NISSAN dealer)

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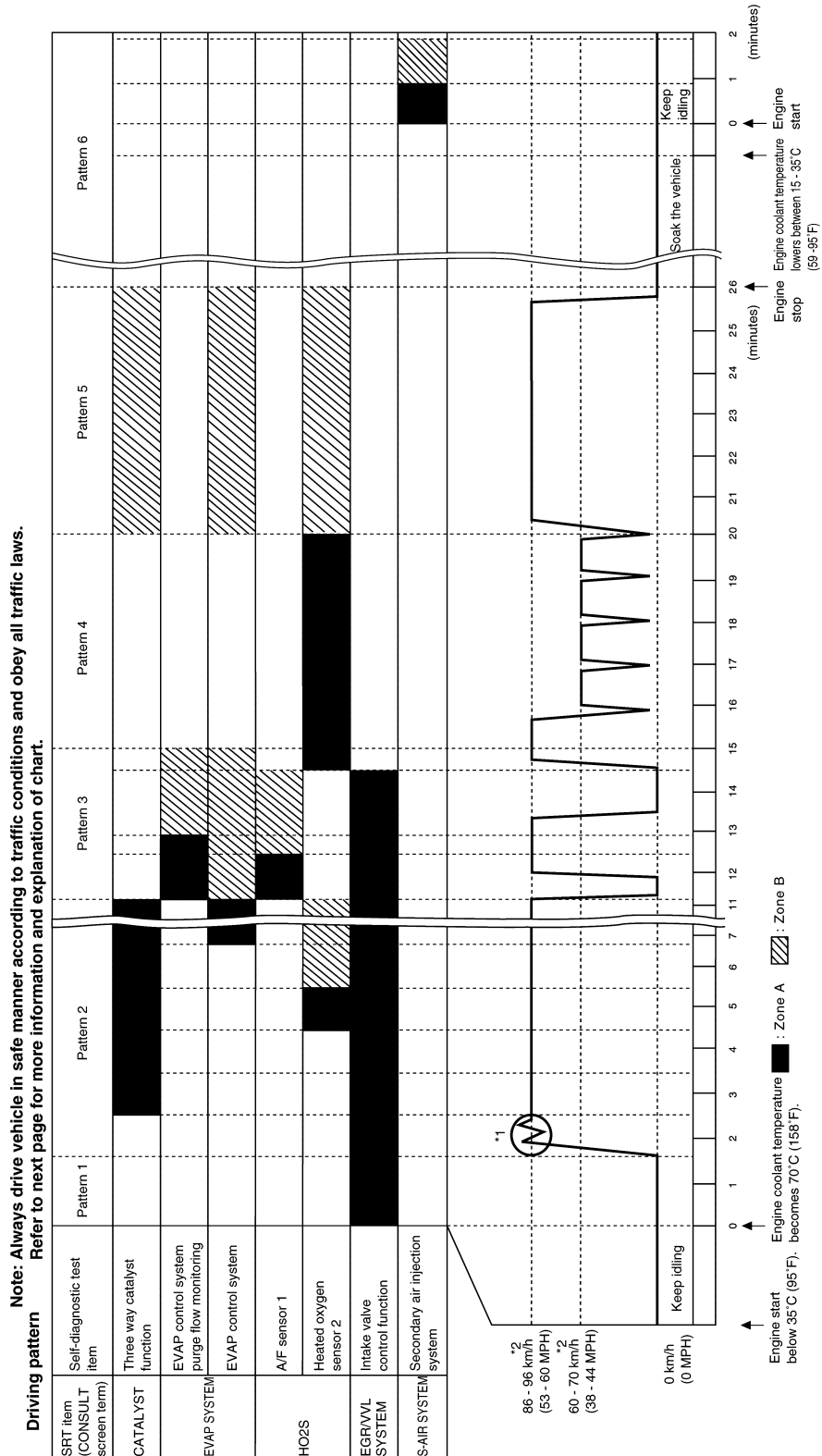
CAUTION:

HOW TO SET SRT CODE

< BASIC INSPECTION >

[VR38]

Always drive the vehicle in safe manner according to traffic conditions and obey all traffic laws.



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*1: Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again.

*2: Checking the vehicle speed with GST is advised.

- The time required for each diagnosis varies with road surface conditions, weather, altitude, individual driving habits, etc.
- "Zone A" is the fastest time where required for the diagnosis under normal conditions*. If the diagnosis is not completed within "Zone A", the diagnosis can still be performed within "Zone B".

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< BASIC INSPECTION >

*: Normal conditions

- Sea level
- Flat road
- Ambient air temperature: 20 – 30°C (68 – 86°F)

NOTE:

Diagnosis is performed as quickly as possible under normal conditions. However, under other conditions, diagnosis may also be performed. [For example: ambient air temperature other than 20 – 30°C (68 – 86°F)]

Work Procedure (GT-R certified NISSAN dealer)

INFOID:0000000011486214

1. CHECK DTC

Check DTC.

Is any DTC detected?

- YES >> Repair malfunction(s) and erase DTC.
- NO >> GO TO 2.

2. CHECK SRT STATUS

With CONSULT

Select "SRT STATUS" mode with CONSULT.

Without CONSULT

Perform "SRT status" mode with [EC-168, "On Board Diagnosis Function \(GT-R certified NISSAN dealer\)".](#)

With GST

Select Service \$01 with GST.

Is SRT code(s) set?

- YES >> GO TO 11.
- NO-1 >> With CONSULT: GO TO 3.
- NO-2 >> Without CONSULT: GO TO 4.

3. DTC CONFIRMATION PROCEDURE

1. Select "DTC WORK SUPPORT" mode with CONSULT.
2. For SRT(s) that is not set, perform the corresponding "DTC CONFIRMATION PROCEDURE" according to the "Performance Priority" in the "SRT ITEM" table. Refer to [EC-27, "Description \(GT-R certified NISSAN dealer\)".](#)
3. Check DTC.

Is any DTC detected?

- YES >> Repair malfunction(s) and erase DTC.
- NO >> GO TO 10.

4. PERFORM ROAD TEST

- Check the "Performance Priority" in the "SRT ITEM" table. Refer to [EC-27, "Description \(GT-R certified NISSAN dealer\)".](#)
- Perform the most efficient SRT set driving pattern to set the SRT properly. Refer to [EC-28, "SRT Set Driving Pattern \(GT-R certified NISSAN dealer\)".](#)
In order to set all SRTs, the SRT set driving pattern must be performed at least once.

>> GO TO 5.

5. PATTERN 1

1. Check the vehicle condition;
 - Engine coolant temperature is –10 to 35°C (14 to 95°F).
 - Fuel tank temperature is more than 0°C (32°F).
2. Start the engine.
3. Keep engine idling until the engine coolant temperature is greater than 70°C (158°F)

NOTE:

ECM terminal voltage is follows;

- Engine coolant temperature
 - –10 to 35°C (14 to 95°F): 3.0 – 4.3 V
 - 70°C(158°F): Less than 4.1 V
- Fuel tank temperature: Less than 1.4 V

HOW TO SET SRT CODE

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< BASIC INSPECTION >

Refer to [EC-570, "Reference Value \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 6.

6.PATTERN 2

1. Drive the vehicle. And depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds.
2. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again

NOTE:

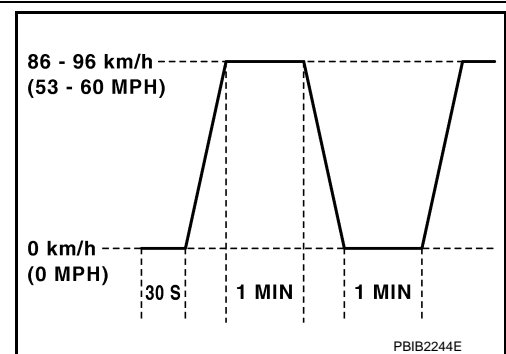
- Checking the vehicle speed with GST is advised.
- When steady-state driving is performed again even after it is interrupted, each diagnosis can be conducted. In this case, the time required for diagnosis may be extended.

>> GO TO 7.

7.PATTERN 3

- Operate vehicle following the driving pattern shown in the figure.
- Release the accelerator pedal during deceleration of vehicle speed from 90 km/h (56 MPH) to 0 km/h (0 MPH).

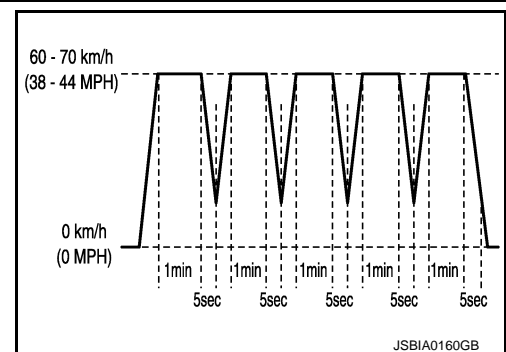
>> GO TO 8.



8.PATTERN 4

- Operate vehicle following the driving pattern shown in the figure.
- Drive the vehicle in a proper gear at 60 km/h (38 MPH) and maintain the speed.
- Release the accelerator pedal fully at least 5 seconds.
- Repeat the above two steps at least 5 times.

>> GO TO 9.



9.PATTERN 5

- The accelerator pedal must be held very steady during steady-state driving.
- If the accelerator pedal is moved, the test must be conducted again.

>> GO TO 10.

10.PATTERN 6

- Cool down the engine so that the engine coolant temperature lowers between 15 – 35°C (59 – 95°F).

CAUTION:

Never turn the ignition switch ON while cooling down the engine.

- Engine coolant temperature at engine start is between 15 – 35°C (59 – 95°F) and has lowered 45°C (113°F) or more since the latest engine stop.

>> GO TO 11.

11.CHECK SRT STATUS

☑ With CONSULT

HOW TO SET SRT CODE

[VR38]

< BASIC INSPECTION >

Select "SRT STATUS" mode with CONSULT.

Without CONSULT

Perform "SRT status" mode with [EC-168, "On Board Diagnosis Function \(GT-R certified NISSAN dealer\)"](#).

With GST

Select Service \$01 with GST.

Is SRT(s) set?

YES >> GO TO 12.

NO >> Call TECH LINE or take appropriate action.

12.CHECK PERMANENT DTC

NOTE:

Permanent DTC cannot be checked with a tool other than CONSULT or GST.

With CONSULT

Select "SRT STATUS" mode with CONSULT.

With GST

Select Service \$0A with GST.

Is permanent DTC(s) detected?

YES >> Go to [EC-33, "Description \(GT-R certified NISSAN dealer\)"](#).

NO >> END

HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[VR38]

HOW TO ERASE PERMANENT DTC

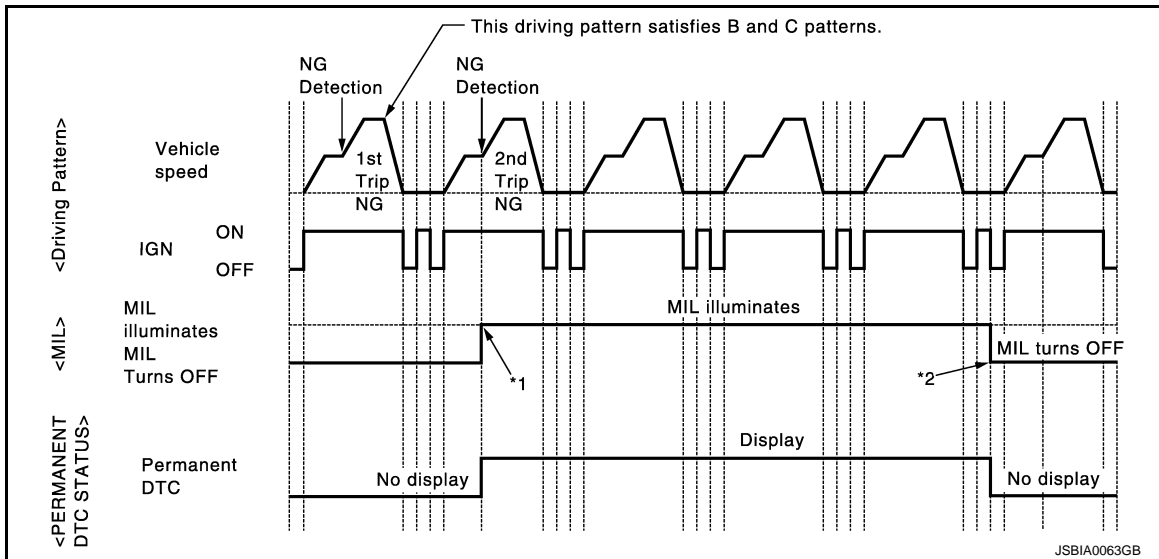
Description (GT-R certified NISSAN dealer)

INFOID:000000011486215

OUTLINE

When a DTC is stored in control module

When a DTC is stored in control module and MIL is ON, a permanent DTC is erased with MIL shutoff if the same malfunction is not detected after performing the driving pattern for MIL shutoff three times in a row.



*1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.

*2: MIL will turn off after vehicle is driven 3 times (driving pattern B) without any malfunctions.

When a DTC is not stored in control module

The erasing method depends on a permanent DTC stored in control module. Refer to the following table.

×: Applicable —: Not applicable

Group*	Perform "DTC CONFIRMATION PROCEDURE" for applicable DTCs.	Driving pattern		Reference
		B	D	
A	×	—	—	EC-34
B	—	×	×	EC-36

*: For group, refer to "DTC Index" of each control module.

PERMANENT DTC ITEM

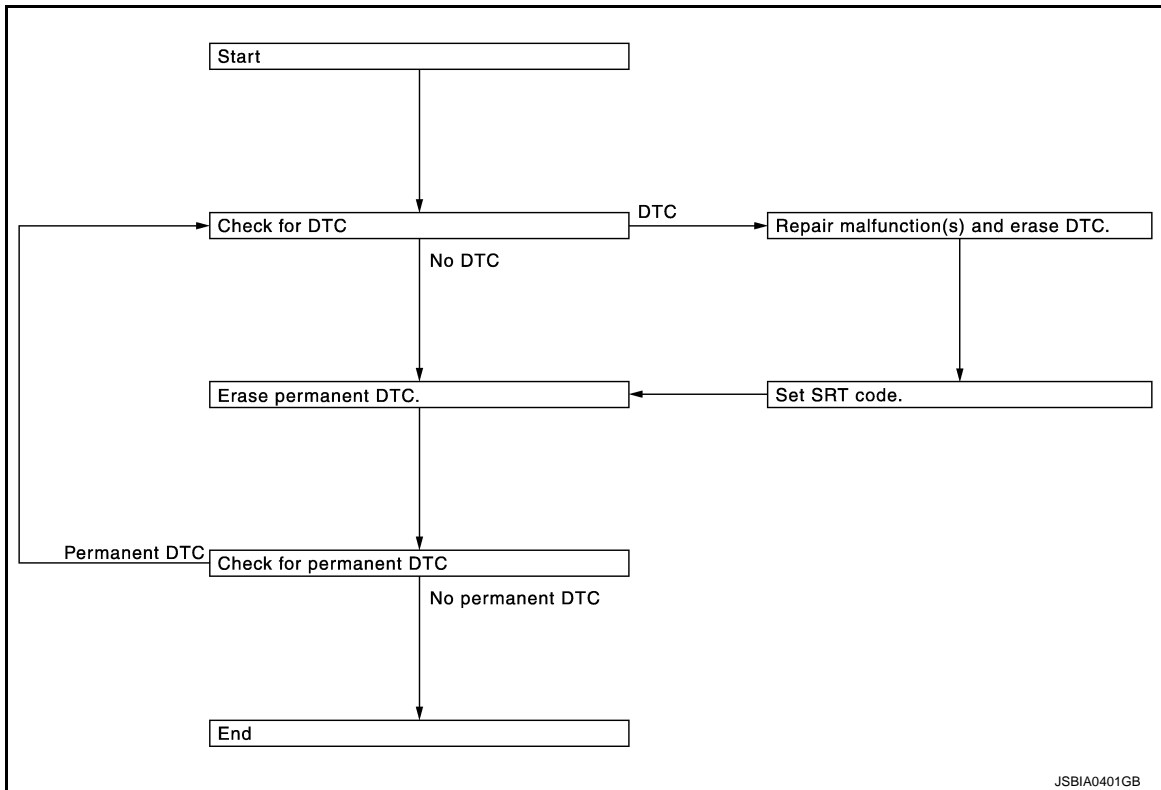
For permanent DTC items, MIL turns ON. Refer to "DTC Index" of each control module.

HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[VR38]

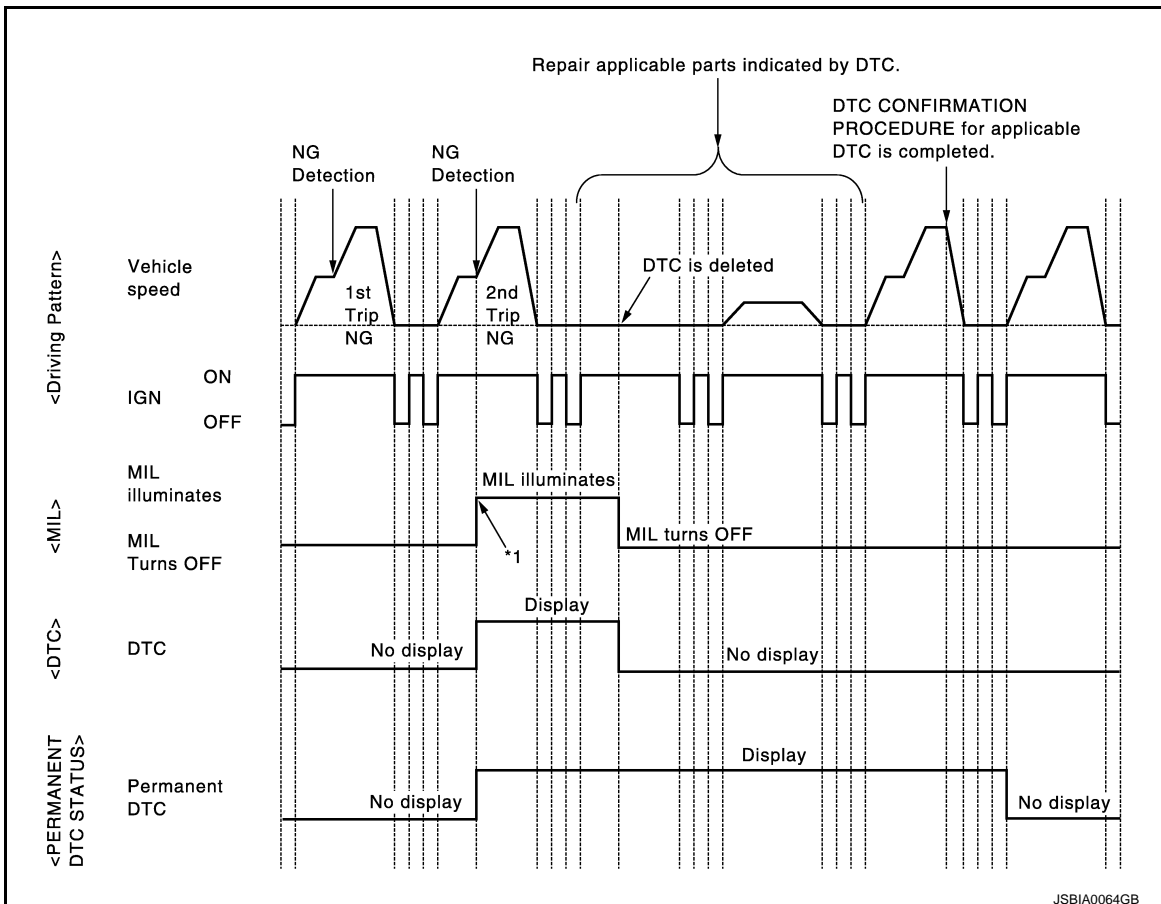
PERMANENT DTC SERVICE PROCEDURE



JSBIA0401GB

Work Procedure (Group A) (GT-R certified NISSAN dealer)

INFOID:000000011486216



JSBIA0064GB

HOW TO ERASE PERMANENT DTC

[VR38]

< BASIC INSPECTION >

*1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.

A

1. CHECK DTC

EC

Check DTC.

Is any DTC detected?

C

YES >> Repair malfunction(s) and erase DTC.

NO >> GO TO 2.

2. CHECK PERMANENT DTC

D

 With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select "PERMANENT DTC STATUS" mode with CONSULT.

E

 With GST

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select Service \$0A with GST.

F

G

Is any permanent DTC detected?

H

YES >> GO TO 3.

NO >> END

3. PERFORM DTC CONFIRMATION PROCEDURE

I


Perform "DTC CONFIRMATION PROCEDURE" for DTCs which are the same as permanent DTCs stored in control module.

J

>> GO TO 4.

4. CHECK PERMANENT DTC

K

 With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select "PERMANENT DTC STATUS" mode with CONSULT.

L

 With GST

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select Service \$0A with GST.

M

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Is any permanent DTC detected?

O

YES >> GO TO 1.

NO >> END

P

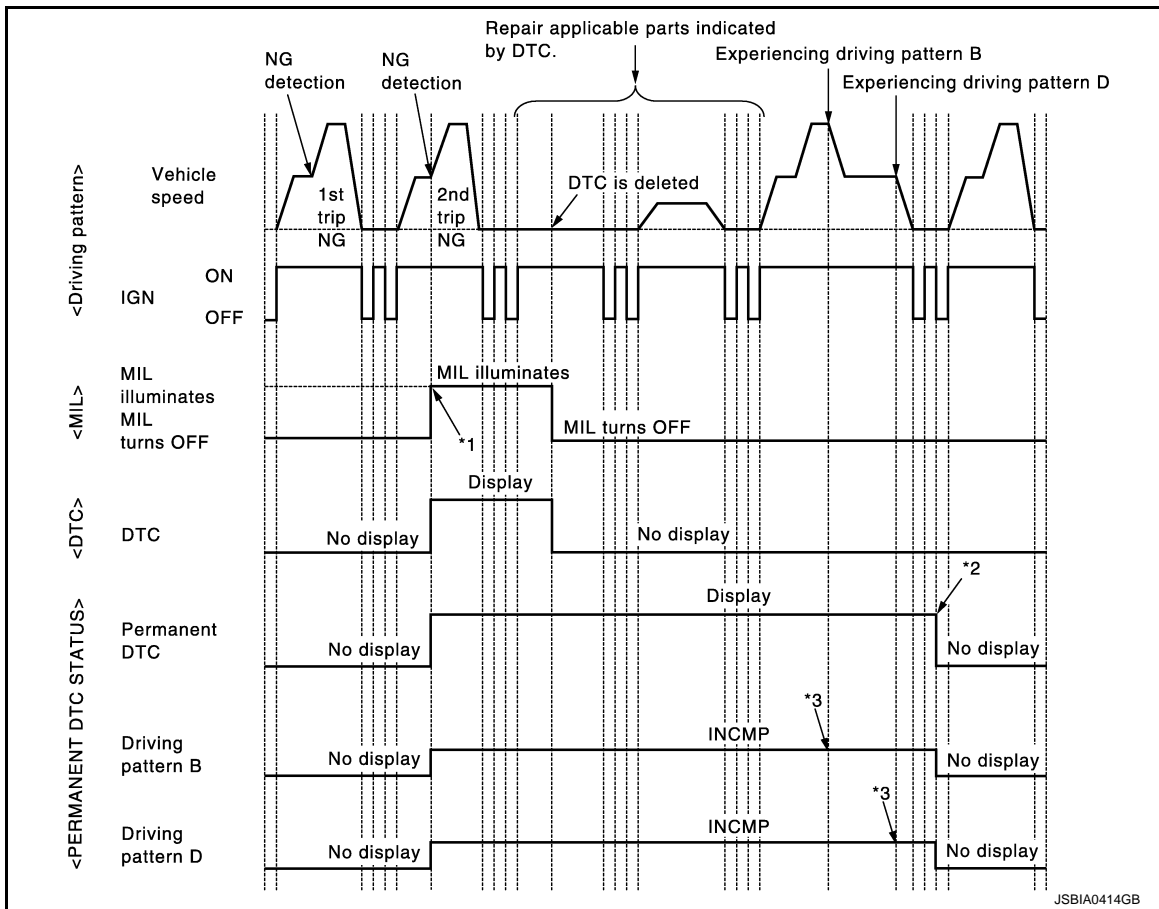
HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[VR38]

Work Procedure (Group B) (GT-R certified NISSAN dealer)

INFOID:000000011486217



*1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.

*2: After experiencing driving pattern B and D, permanent DTC is erased.

*3: Indication does not change unless the ignition switch is turned from ON to OFF twice even after experiencing driving pattern B or D.

NOTE:

Drive the vehicle according to only driving patterns indicating "INCMP" in driving patterns B and D on the "PERMANENT DTC STATUS" screen.

1. CHECK DTC

Check DTC.

Is any DTC detected?

YES >> Repair malfunction(s) and erase DTC.

NO >> GO TO 2.

2. CHECK PERMANENT DTC

Ⓛ With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select "PERMANENT DTC STATUS" mode with CONSULT.

Ⓜ With GST

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.

HOW TO ERASE PERMANENT DTC

[VR38]

< BASIC INSPECTION >

5. Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 3.

NO >> END

3.DRIVE DRIVING PATTERN B

CAUTION:

- Always drive at a safe speed.
- Never erase self-diagnosis results.
- If self-diagnosis results are erased during the trip of driving pattern B or D, the counter of driving pattern B and D is reset.

 With CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Use "PERMANENT DTC WORK SUPPORT" mode with CONSULT to drive the vehicle according to driving pattern B. Refer to [EC-172. "CONSULT Function \(GT-R certified NISSAN dealer\)"](#), [EC-165. "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)"](#).

 With GST

1. Start engine and warm it up to normal operating temperature.
2. Drive the vehicle according to driving pattern B. Refer to [EC-165. "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 4.

4.CHECK PERMANENT DTC

 With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select "PERMANENT DTC STATUS" mode with CONSULT.

 With GST

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 5.

NO >> END

5.DRIVE DRIVING PATTERN D


CAUTION:

- Always drive at a safe speed.
- Never erase self-diagnosis results.
- If self-diagnosis results are erased during the trip of driving pattern B or D, the counter of driving pattern B and D is reset.

1. Drive the vehicle according to driving pattern D. Refer to [EC-165. "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 6.

6.CHECK PERMANENT DTC


 With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select "PERMANENT DTC STATUS" mode with CONSULT.

HOW TO ERASE PERMANENT DTC

[VR38]

< BASIC INSPECTION >

 With GST

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 1.
NO >> END

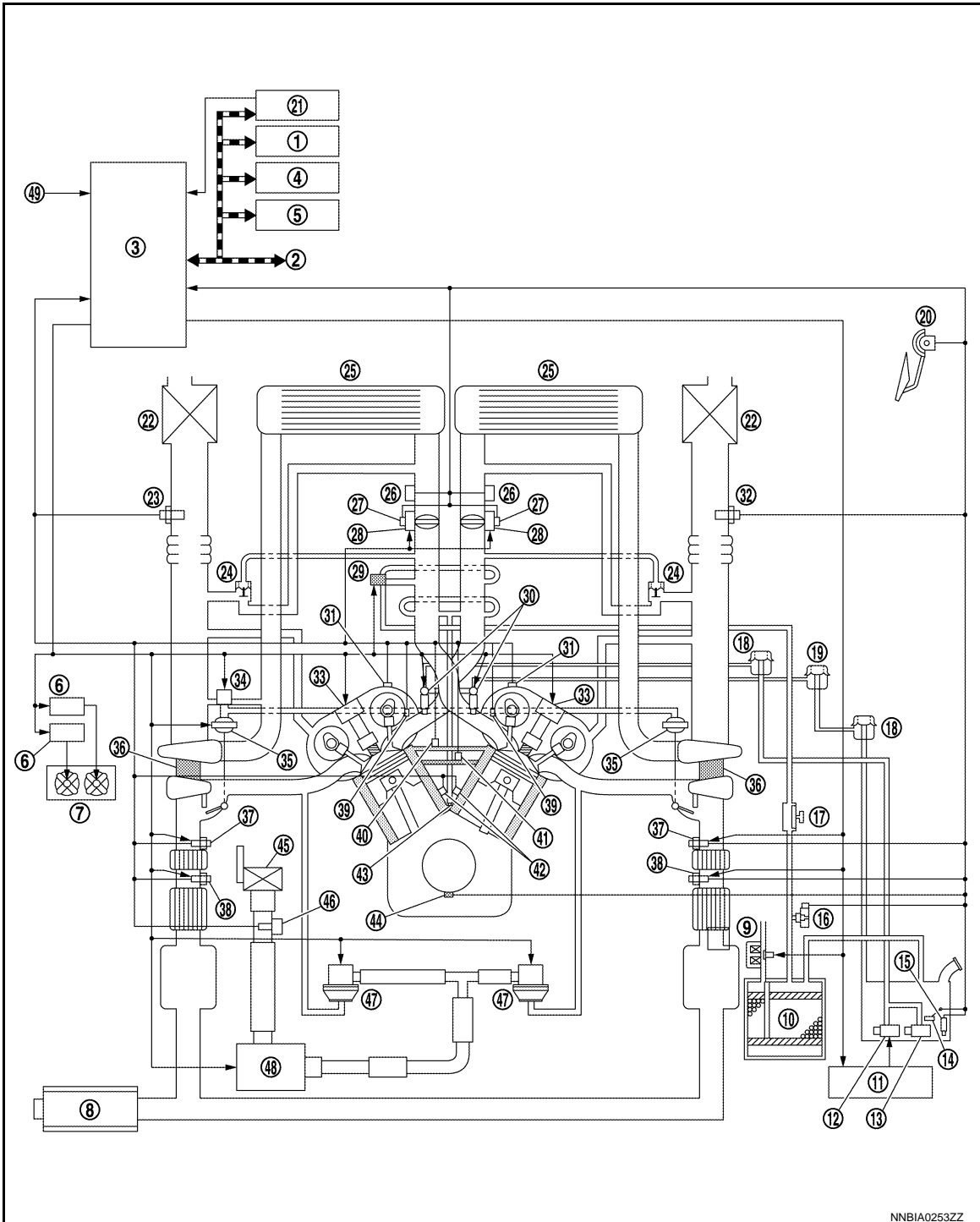
SYSTEM DESCRIPTION

ENGINE CONTROL SYSTEM

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486218

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NNBIA0253ZZ

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|------------------------|-------------------------------------|-------------------------------------|
| 1. Data link connector | 2. CAN communication | 3. ECM |
| 4. Combination meter | 5. BCM | 6. Cooling fan control module |
| 7. Cooling fan | 8. Muffler | 9. EVAP canister vent control valve |
| 10. EVAP canister | 11. Fuel pump control module (FPCM) | 12. Fuel pump |
| 13. Sub fuel pump | 14. Fuel level sensor | 15. Fuel tank temperature sensor |

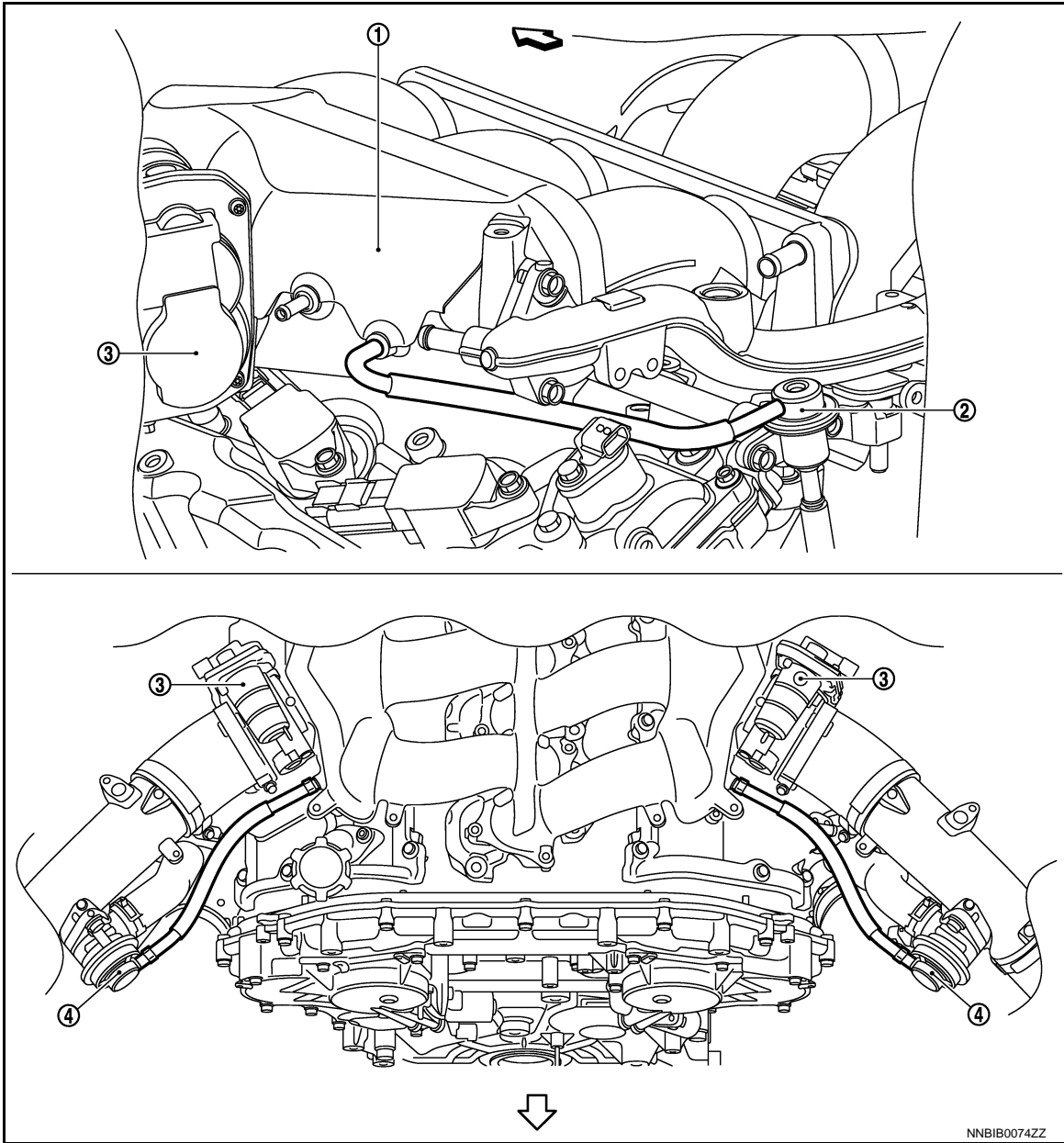
ENGINE CONTROL SYSTEM

[VR38]

< SYSTEM DESCRIPTION >

- | | | |
|---|---|---|
| 16. EVAP control system pressure sensor | 17. EVAP service port | 18. Fuel damper |
| 19. Fuel pressure regulator | 20. Accelerator pedal position sensor | 21. TCM |
| 22. Air cleaner | 23. Mass air flow sensor | 24. Recirculation valve |
| 25. Charge air cooler | 26. Turbocharger boost sensor | 27. Throttle position sensor |
| 28. Electric throttle control actuator | 29. EVAP canister purge volume control solenoid valve | 30. Fuel injector |
| 31. Intake valve timing control solenoid valve | 32. Mass air flow sensor (with intake air temperature sensor) | 33. Ignition coil (with power transistor) |
| 34. Turbocharger boost control solenoid valve | 35. Boost control actuator | 36. Turbocharger |
| 37. A/F sensor 1 | 38. Heated oxygen sensor 2 | 39. Camshaft position sensor (PHASE) |
| 40. Engine coolant temperature sensor | 41. Engine oil temperature sensor | 42. Knock sensor |
| 43. PCV valve | 44. Crankshaft position sensor (POS) | 45. Air pump cleaner |
| 46. Secondary air injection system mass air flow sensor | 47. Air cut solenoid valve | 48. Air pump |
| 49. Battery current sensor | | |

VACUUM LINE DRAWING



1. Intake manifold collector 2. Fuel pressure regulator 3. Electric throttle control actuator

4. Recirculation valve

↶ :Vehicle front

System Description (GT-R certified NISSAN dealer)

INFOID:000000011486219

ECM performs various controls such as fuel injection control and ignition timing control.

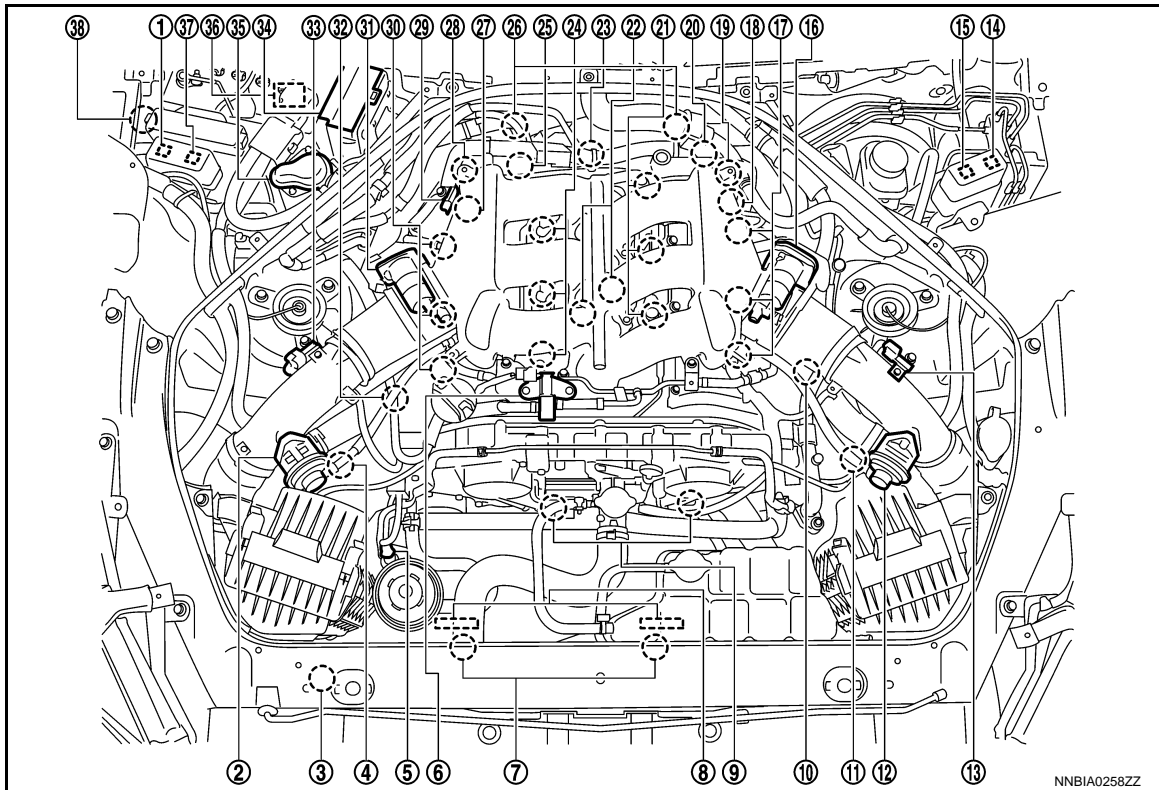
ENGINE CONTROL SYSTEM

< SYSTEM DESCRIPTION >

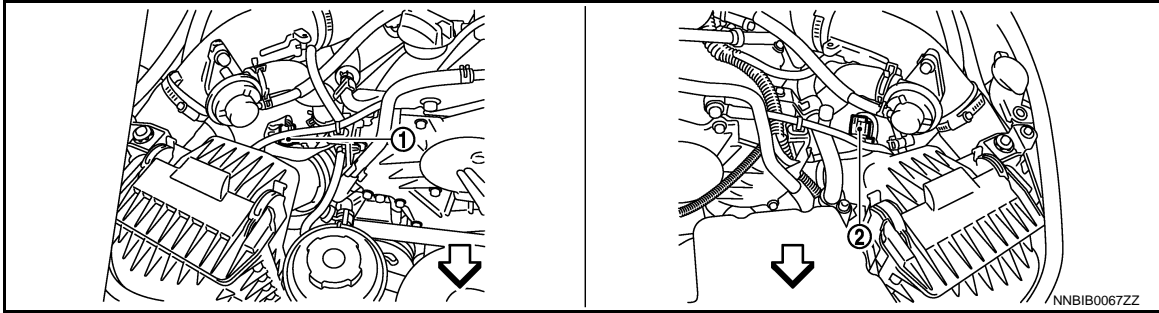
[VR38]

Component Parts Location (GT-R certified NISSAN dealer)

INFOID:000000011486220

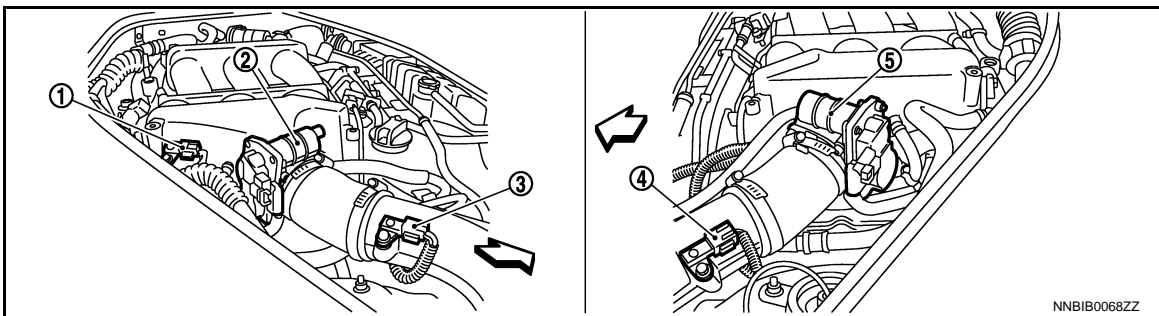


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |



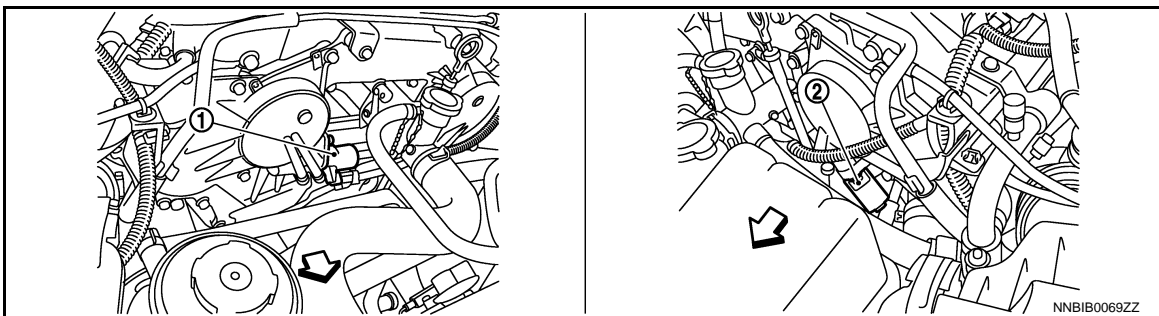
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

← :Vehicle front

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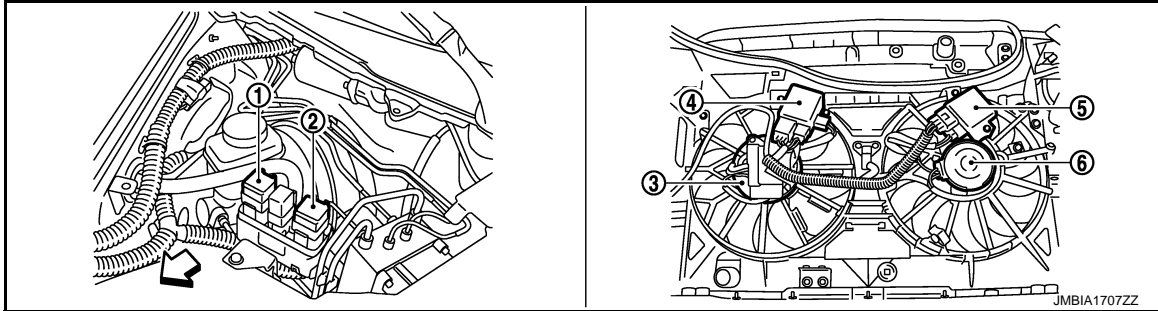
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ENGINE CONTROL SYSTEM

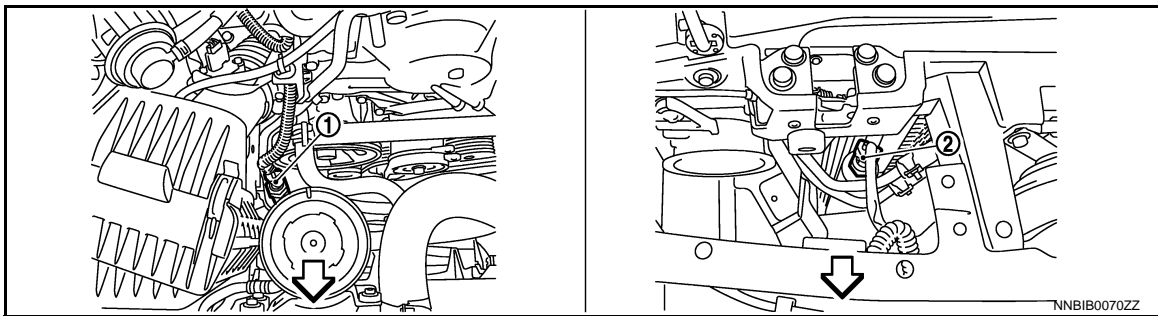
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[VR38]



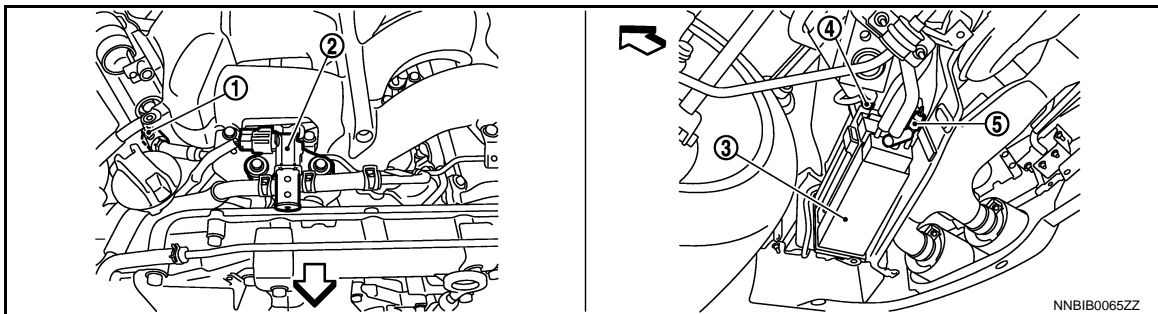
- | | | |
|---------------------------------|---------------------------------|------------------------|
| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



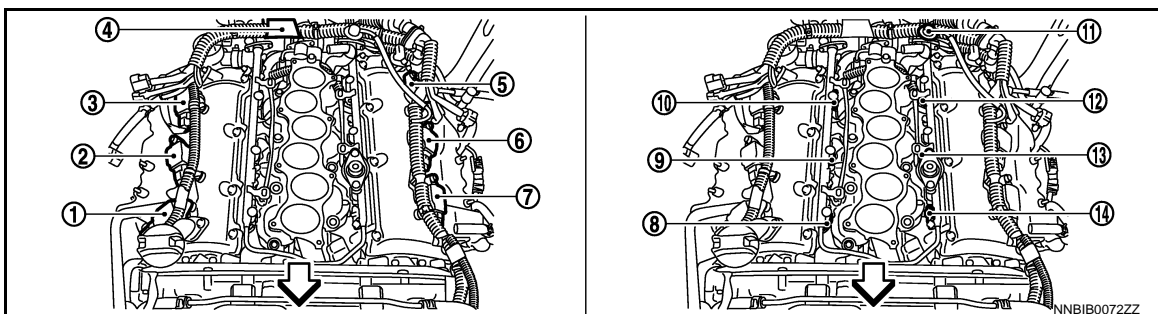
- | | |
|-----------------------------------|--------------------------------|
| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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|--|---------------------------------------|---------------------------------|
| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



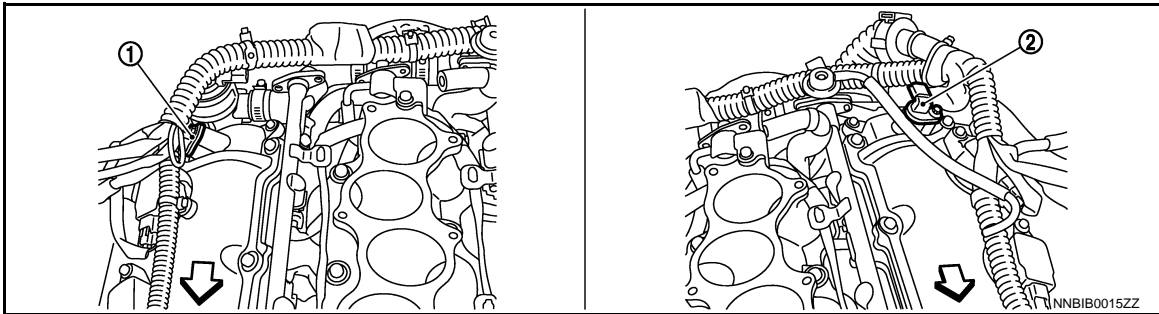
ENGINE CONTROL SYSTEM

[VR38]

< SYSTEM DESCRIPTION >

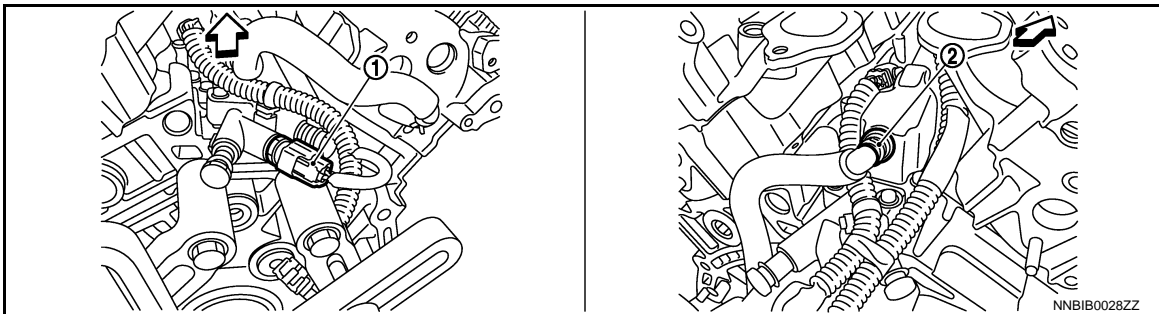
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



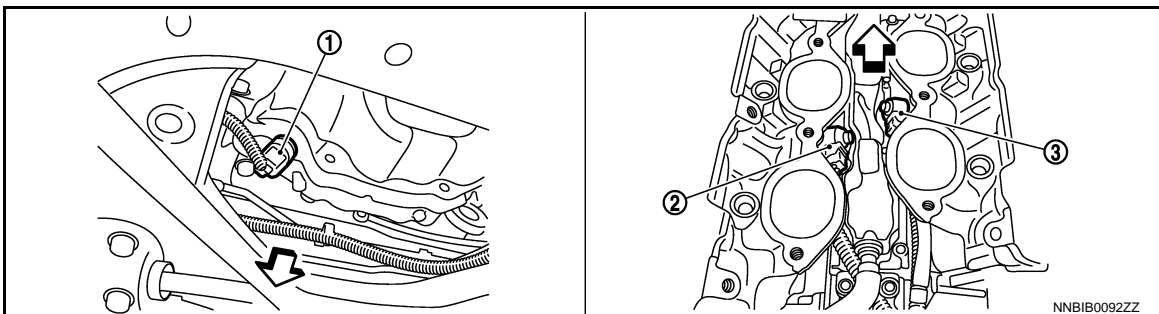
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
|--|--|

↶ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
|----------------------------------|--------------|

↶ :Vehicle front



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|-------------------------------------|--------------------------|--------------------------|
| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
|-------------------------------------|--------------------------|--------------------------|

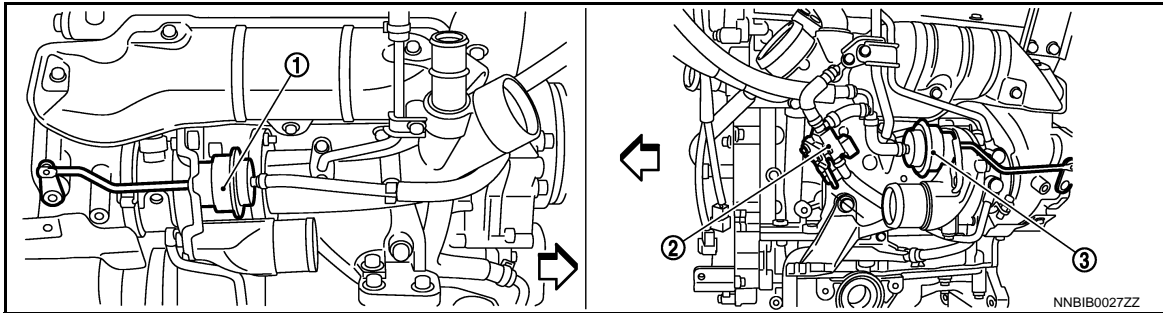
↶ :Vehicle front

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ENGINE CONTROL SYSTEM

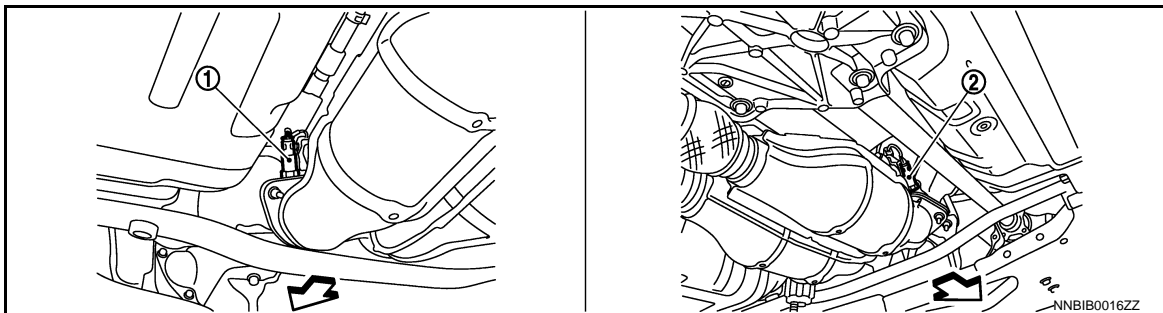
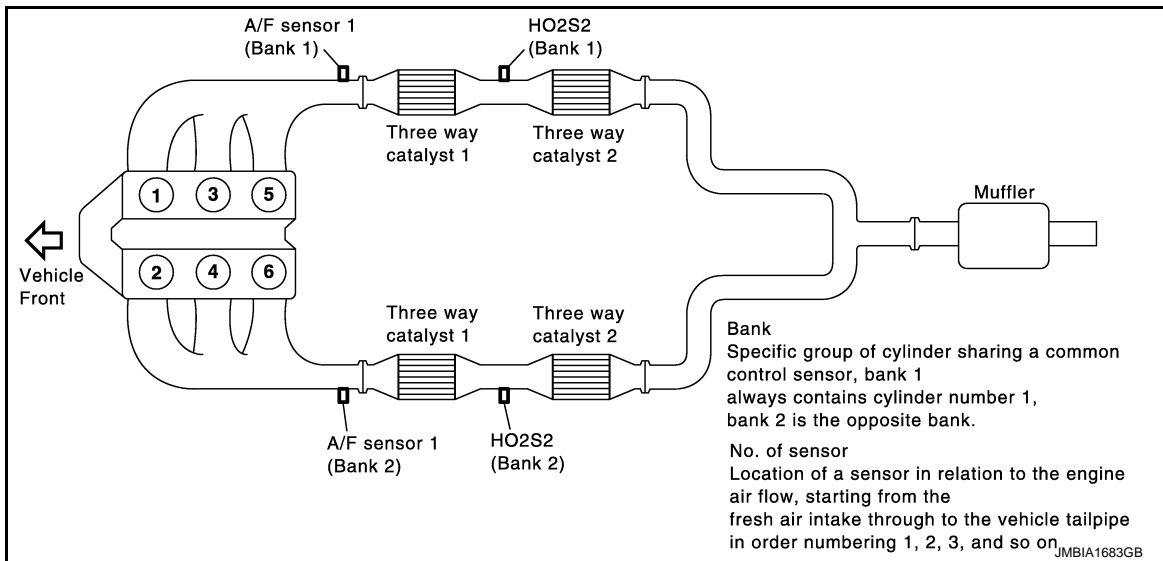
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[VR38]



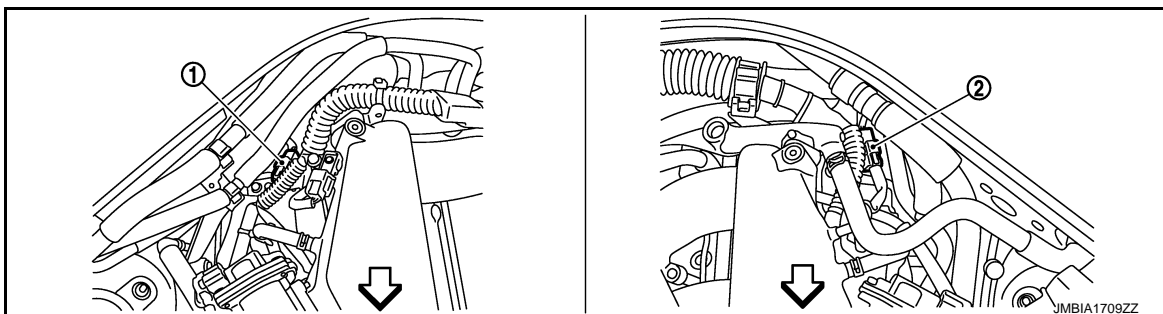
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



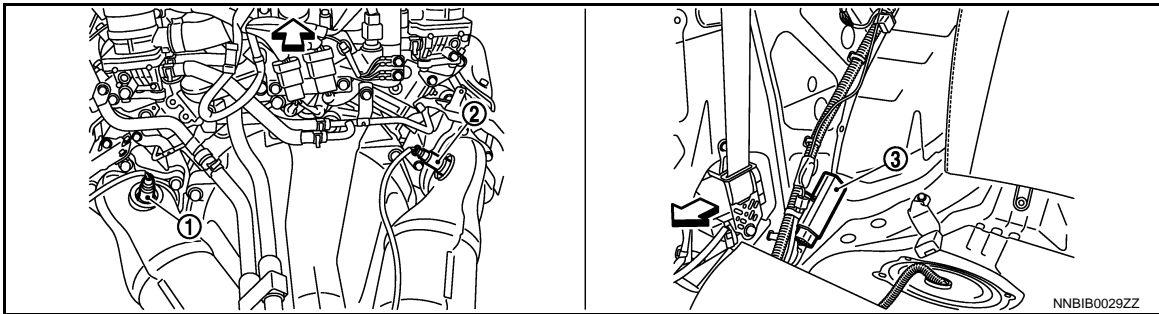
ENGINE CONTROL SYSTEM

[VR38]

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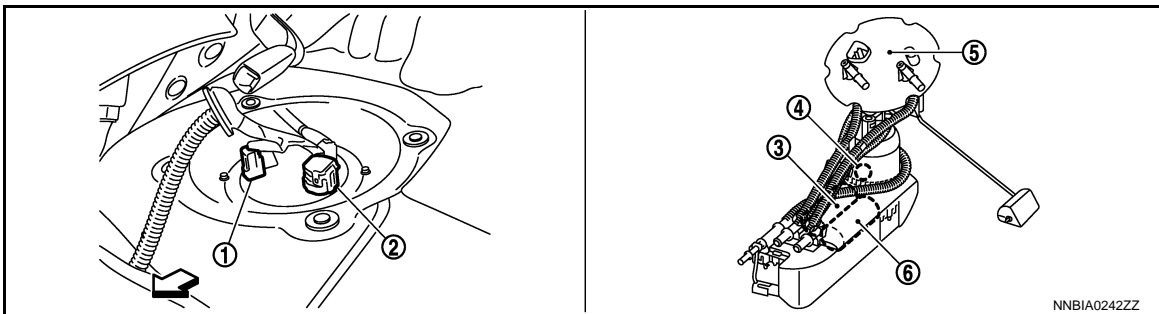
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



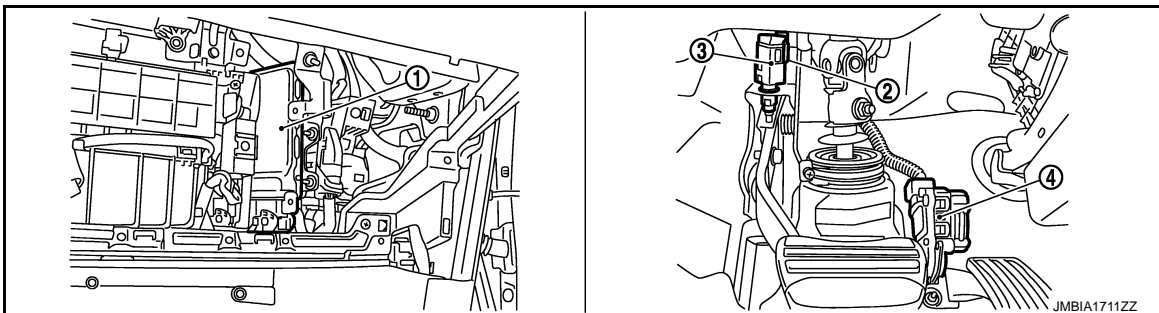
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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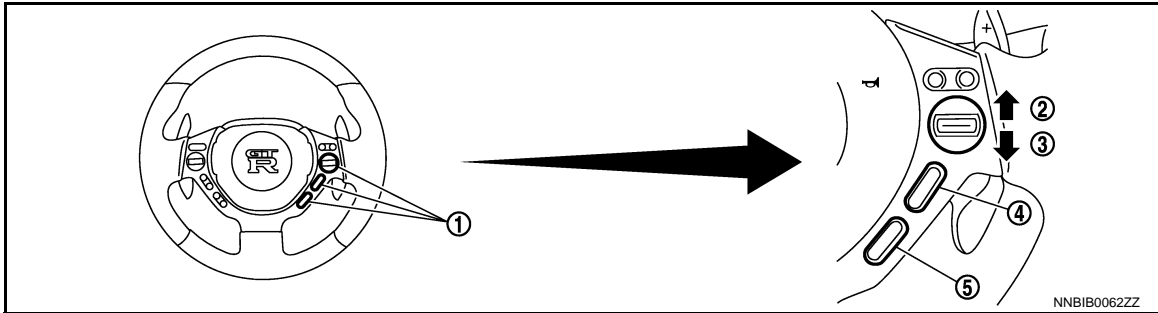
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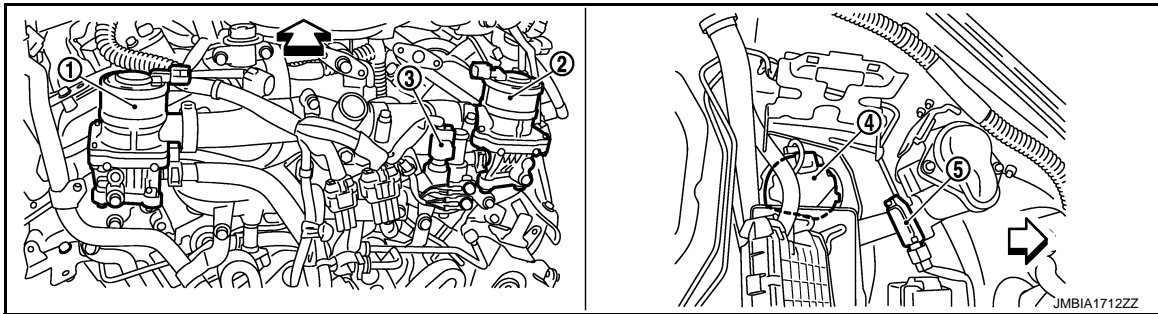
ENGINE CONTROL SYSTEM

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[VR38]

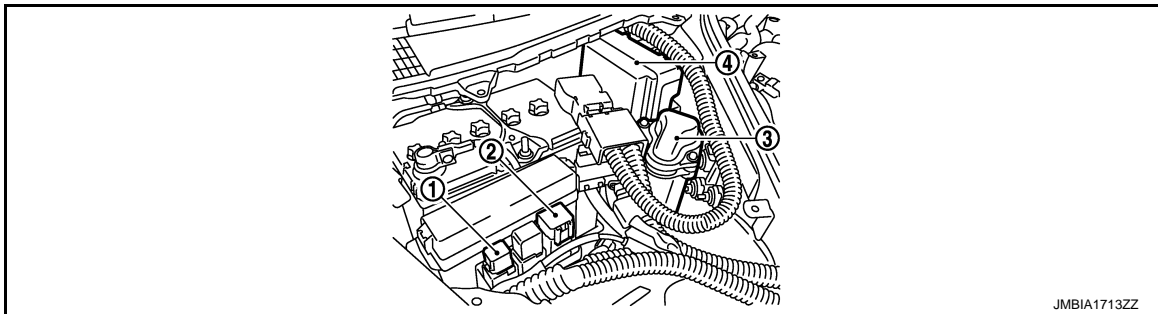


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

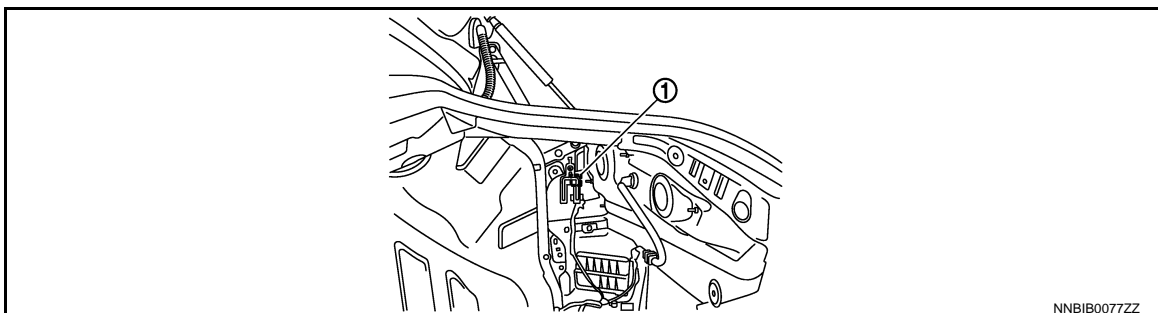


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

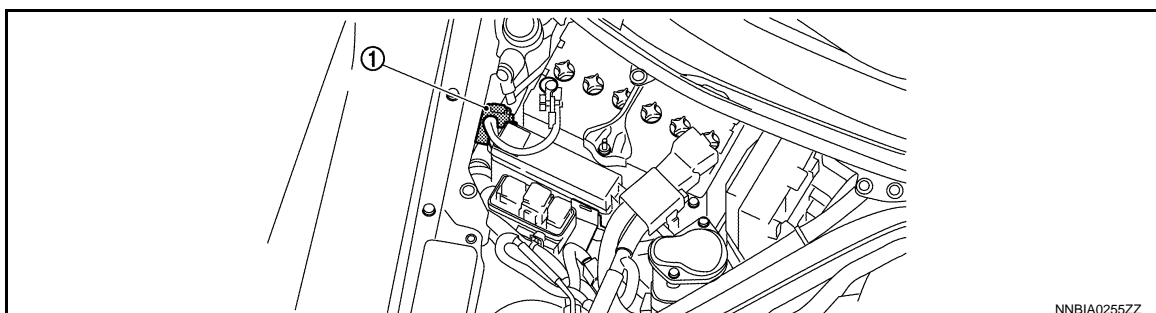
← :Vehicle front



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| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |



- | |
|------------------------|
| 1. Sub fuel pump relay |
|------------------------|



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:0000000011486221

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

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ENGINE CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

MULTIPOINT FUEL INJECTION SYSTEM

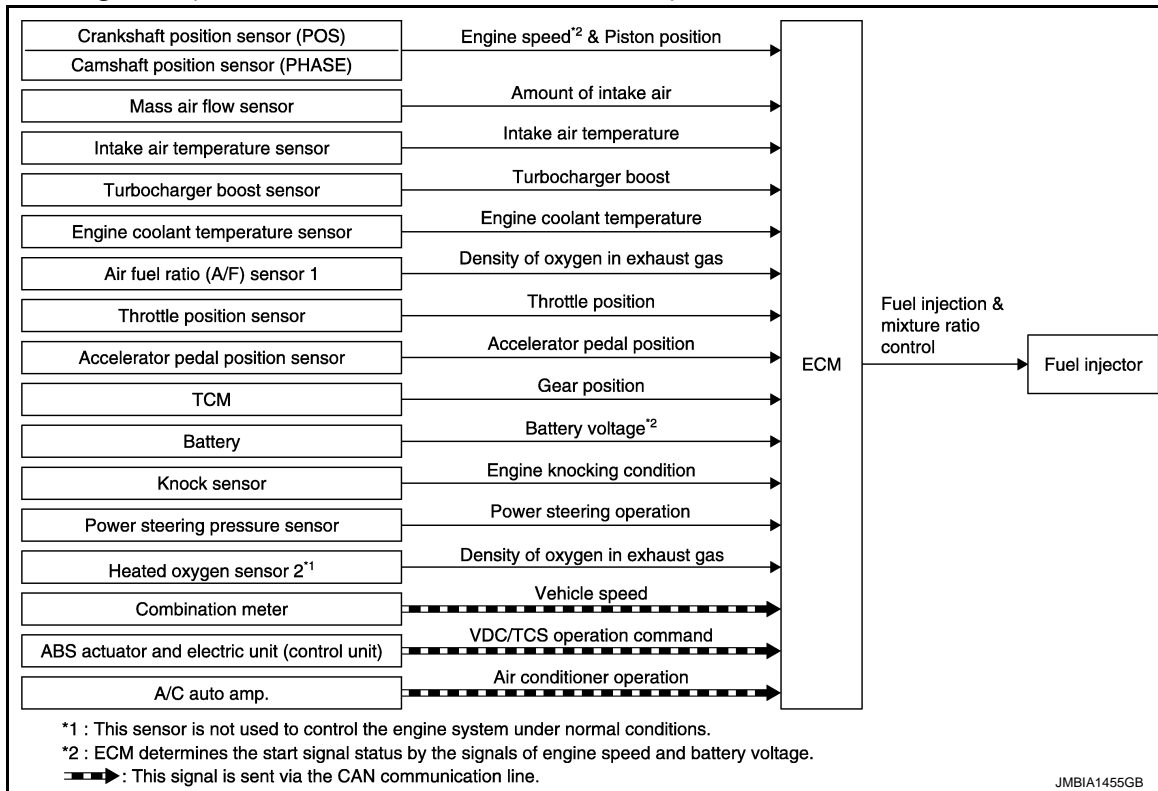
< SYSTEM DESCRIPTION >

[VR38]

MULTIPOINT FUEL INJECTION SYSTEM

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486222



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486223

INPUT/OUTPUT SIGNAL CHART

Sensor	Input Signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed*3 Piston position	Fuel injection & mixture ratio control	Fuel injector
Camshaft position sensor (PHASE)			
Mass air flow sensor	Amount of intake air		
Intake air temperature sensor	Intake air temperature		
Turbocharger boost sensor	Turbocharger boost		
Engine coolant temperature sensor	Engine coolant temperature		
Air fuel ratio (A/F) sensor 1	Density of oxygen in exhaust gas		
Throttle position sensor	Throttle position		
Accelerator pedal position sensor	Accelerator pedal position		
TCM	Gear position		
Battery	Battery voltage*3		
Knock sensor	Engine knocking condition		
Power steering pressure sensor	Power steering operation		
Heated oxygen sensor 2*1	Density of oxygen in exhaust gas		
Combination meter	Vehicle speed*2		
ABS actuator and electric unit (control unit)	VDC/TCS operation command*2		
A/C auto amp.	Air conditioner operation*2		

*1: This sensor is not used to control the engine system under normal conditions.

MULTIPOINT FUEL INJECTION SYSTEM

[VR38]

< SYSTEM DESCRIPTION >

*2: This signal is sent to the ECM via the CAN communication line.

*3: ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

The amount of fuel injected from the fuel injector is determined by the ECM. The ECM controls the length of time the valve remains open (injection pulse duration). The amount of fuel injected is a program value in the ECM memory. The program value is preset by engine operating conditions. These conditions are determined by input signals (for engine speed, intake air and boost) from the crankshaft position sensor (POS), camshaft position sensor (PHASE), mass air flow sensor and the turbocharger boost sensor.

VARIOUS FUEL INJECTION INCREASE/DECREASE COMPENSATION

In addition, the amount of fuel injected is compensated to improve engine performance under various operating conditions as listed below.

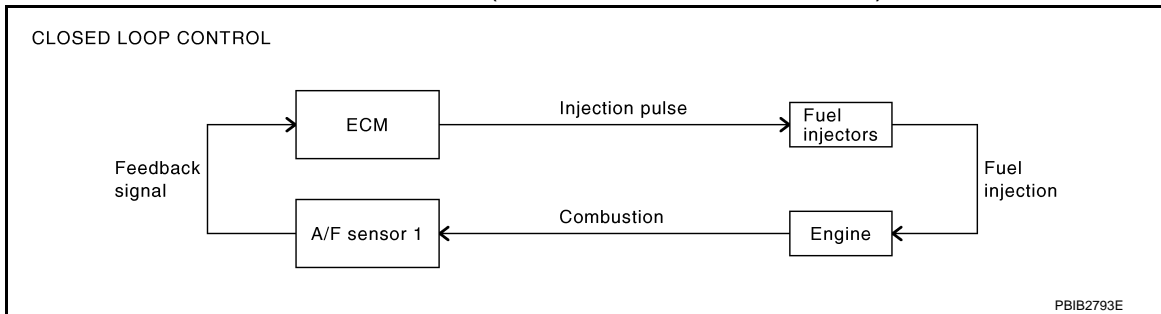
<Fuel increase>

- During warm-up
- When starting the engine
- During acceleration
- Hot-engine operation
- When shift lever is changed from N to A
- High-load, high-speed operation

<Fuel decrease>

- During deceleration
- During high engine speed operation

MIXTURE RATIO FEEDBACK CONTROL (CLOSED LOOP CONTROL)



The mixture ratio feedback system provides the best air-fuel mixture ratio for derivatively and emission control. The three way catalyst 1 can better reduce CO, HC and NOx emissions. This system uses A/F sensor 1 in the exhaust manifold to monitor whether the engine operation is rich or lean. The ECM adjusts the injection pulse width according to the sensor voltage signal. For more information about A/F sensor 1, refer to [EC-248, "Description \(GT-R certified NISSAN dealer\)"](#). This maintains the mixture ratio within the range of stoichiometric (ideal air-fuel mixture).

This stage is referred to as the closed loop control condition.

Heated oxygen sensor 2 is located downstream of the three way catalyst 1. Even if the switching characteristics of A/F sensor 1 shift, the air-fuel ratio is controlled to stoichiometric by the signal from heated oxygen sensor 2.

• Open Loop Control

The open loop system condition refers to when the ECM detects any of the following conditions. Feedback control stops in order to maintain stabilized fuel combustion.

- Deceleration and acceleration
- Malfunction of A/F sensor 1 or its circuit
- Insufficient activation of A/F sensor 1 at low engine coolant temperature
- High engine coolant temperature
- During warm-up
- After shifting from N to A
- When starting the engine

MIXTURE RATIO SELF-LEARNING CONTROL

The mixture ratio feedback control system monitors the mixture ratio signal transmitted from A/F sensor 1. This feedback signal is then sent to the ECM. The ECM controls the basic mixture ratio as close to the theoretical mixture ratio as possible. However, the basic mixture ratio is not necessarily controlled as originally

MULTIPOINT FUEL INJECTION SYSTEM

[VR38]

< SYSTEM DESCRIPTION >

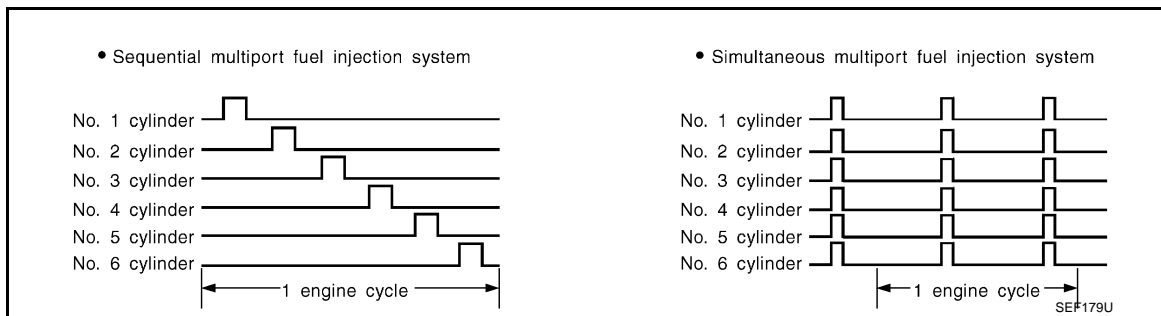
designed. Both manufacturing differences (i.e., mass air flow sensor hot wire) and characteristic changes during operation (i.e., fuel injector clogging) directly affect mixture ratio. Accordingly, the difference between the basic and theoretical mixture ratios is monitored in this system. This is then computed in terms of "injection pulse duration" to automatically compensate for the difference between the two ratios.

"Fuel trim" refers to the feedback compensation value compared against the basic injection duration. Fuel trim includes short term fuel trim and long term fuel trim.

"Short term fuel trim" is the short-term fuel compensation used to maintain the mixture ratio at its theoretical value. The signal from A/F sensor 1 indicates whether the mixture ratio is RICH or LEAN compared to the theoretical value. The signal then triggers a reduction in fuel volume if the mixture ratio is rich, and an increase in fuel volume if it is lean.

"Long term fuel trim" is overall fuel compensation carried out over time to compensate for continual deviation of the short term fuel trim from the central value. Continual deviation will occur due to individual engine differences, wear over time and changes in the usage environment.

FUEL INJECTION TIMING



Two types of systems are used.

- Sequential Multiport Fuel Injection System

Fuel is injected into each cylinder during each engine cycle according to the firing order. This system is used when the engine is running.

- Simultaneous Multiport Fuel Injection System

Fuel is injected simultaneously into all six cylinders twice each engine cycle. In other words, pulse signals of the same width are simultaneously transmitted from the ECM.

The six injectors will then receive the signals two times for each engine cycle.

This system is used when the engine is being started and/or if the fail-safe system (CPU) is operating.

FUEL SHUT-OFF

Fuel to each cylinder is cut off during deceleration, operation of the engine at excessively high speeds or operation of the vehicle at excessively high speeds.

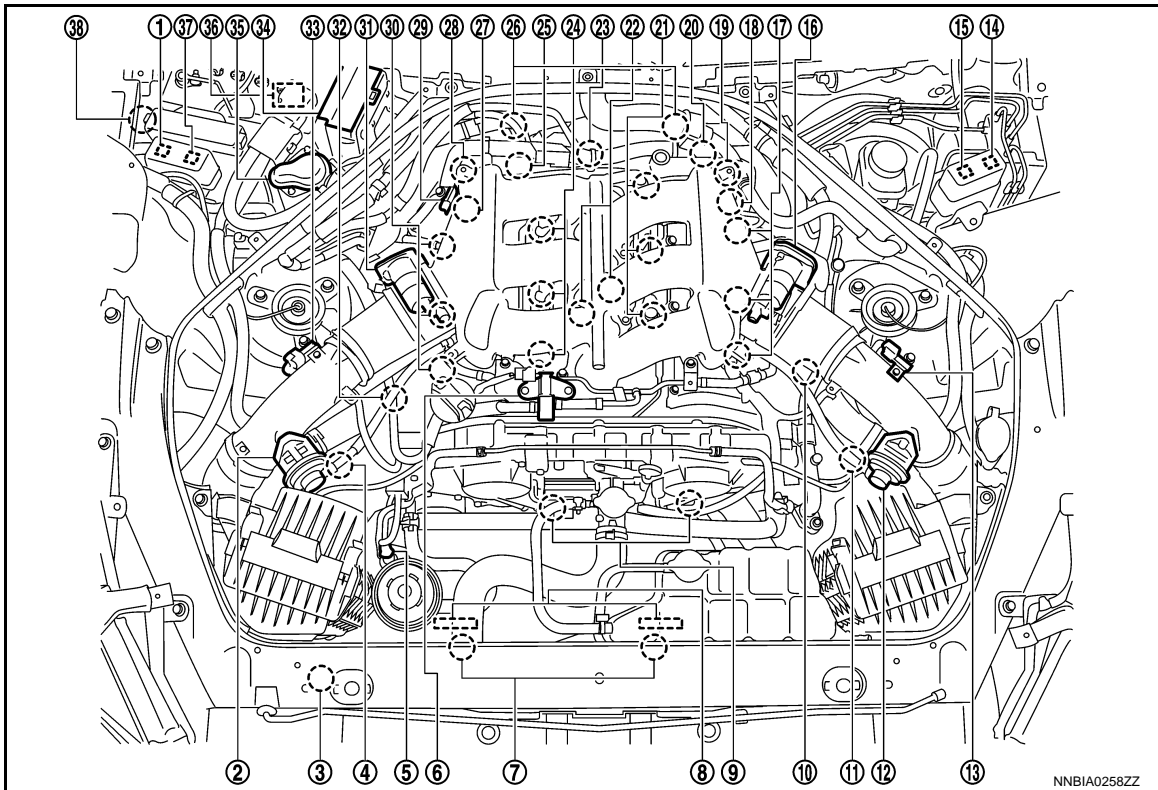
MULTIPOINT FUEL INJECTION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

Component Parts Location (GT-R certified NISSAN dealer)

INFOID:000000011486224

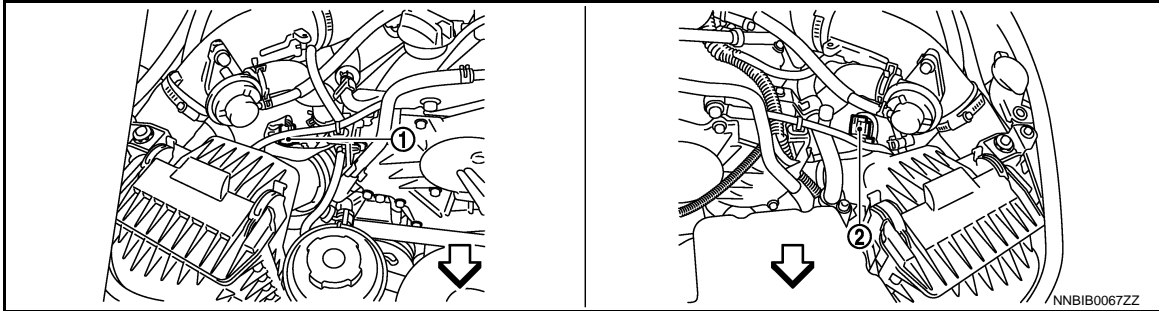


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

MULTIPOINT FUEL INJECTION SYSTEM

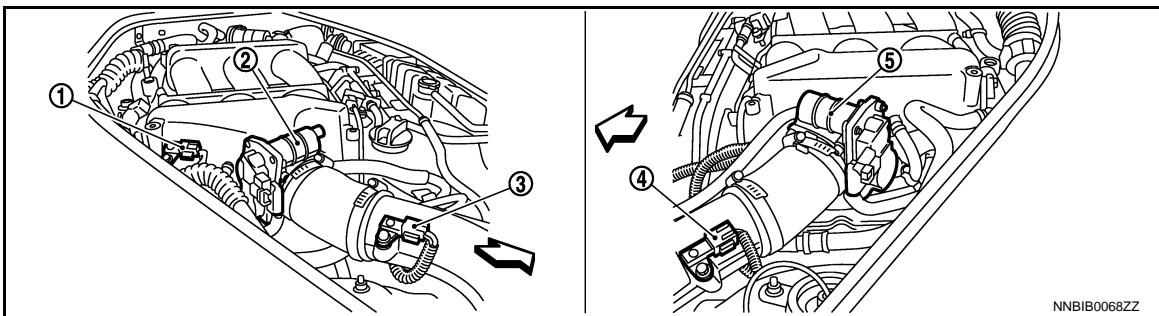
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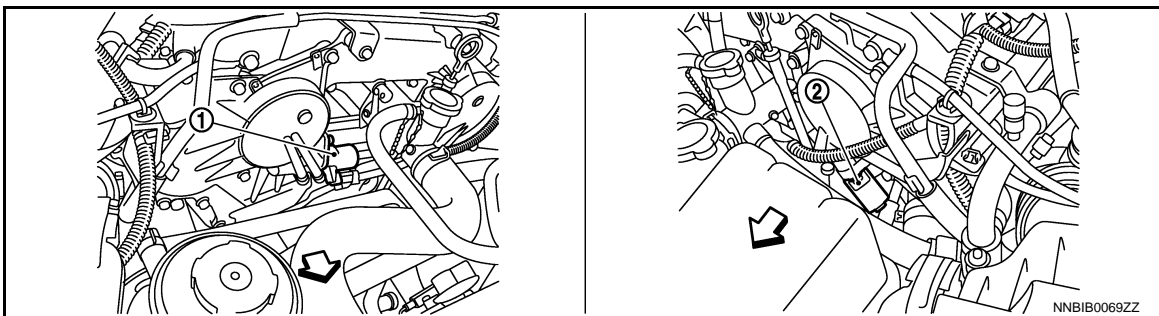
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

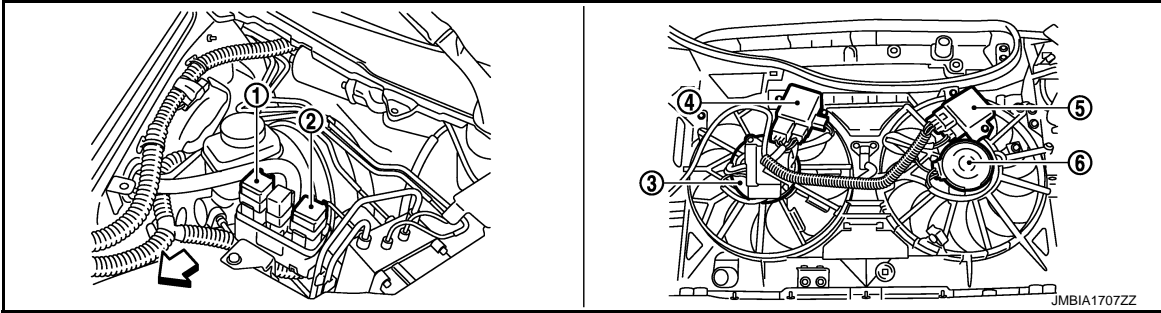
← :Vehicle front

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MULTIPOINT FUEL INJECTION SYSTEM

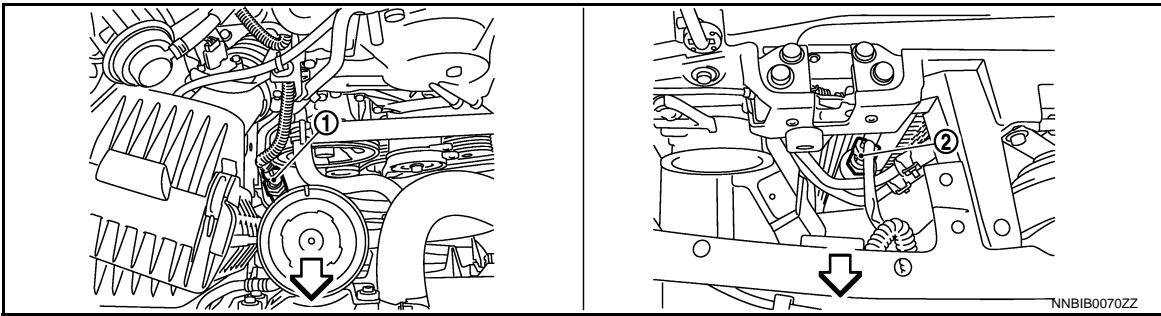
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[VR38]



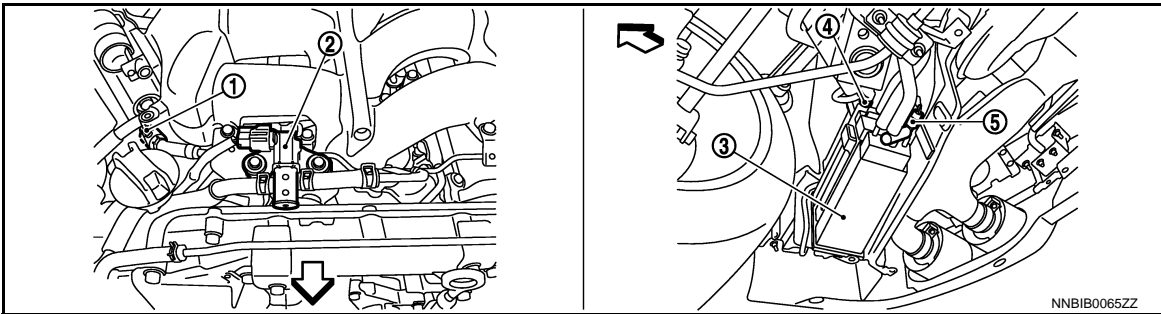
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| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



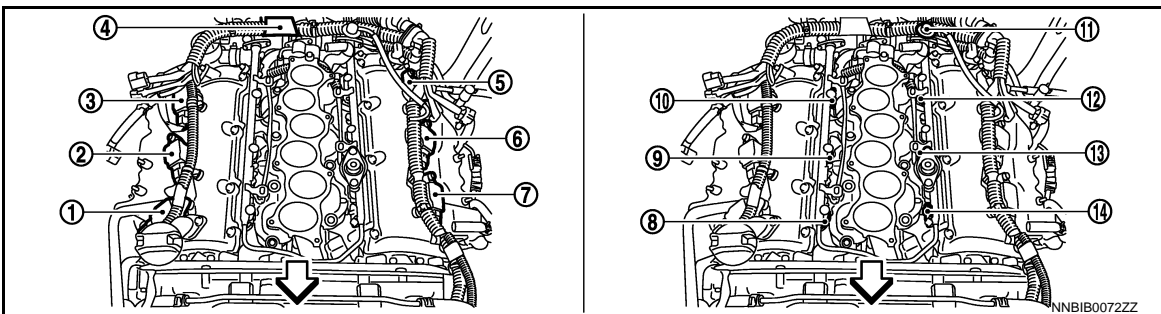
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| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



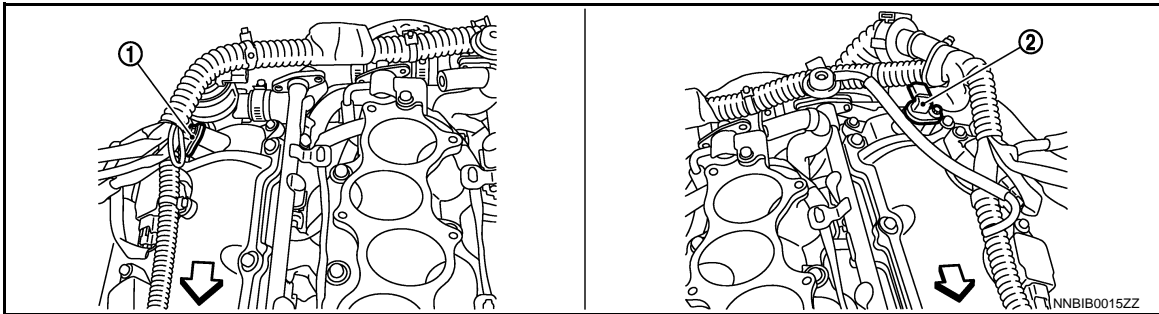
MULTIPOINT FUEL INJECTION SYSTEM

[VR38]

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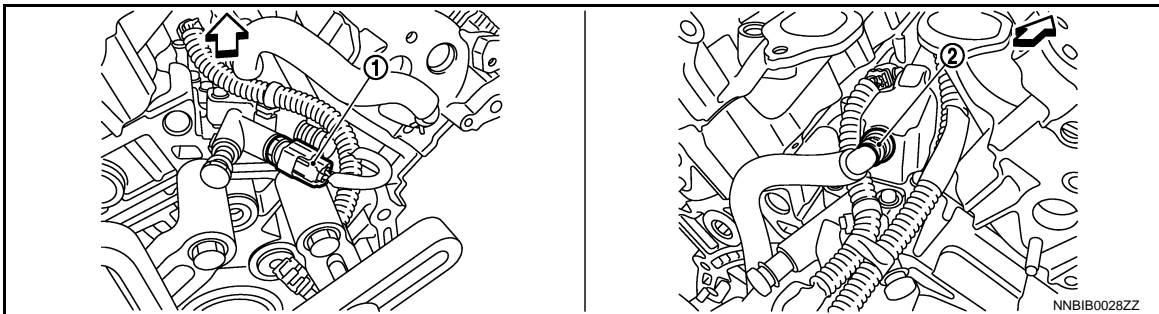
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| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



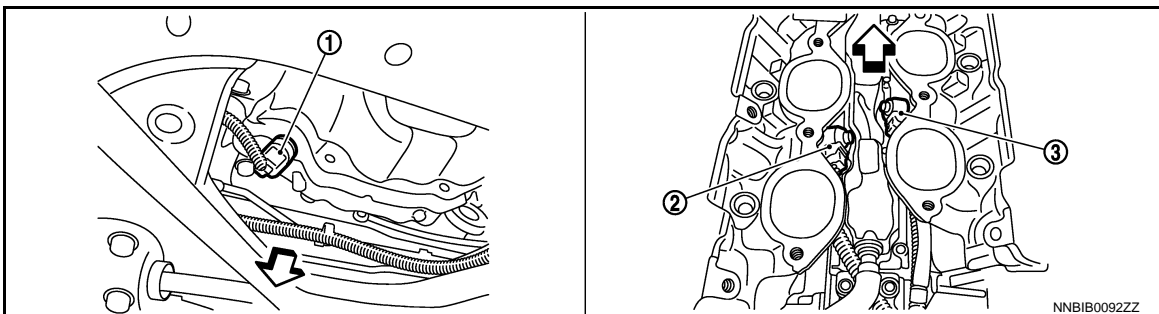
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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↶ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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↶ :Vehicle front



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| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
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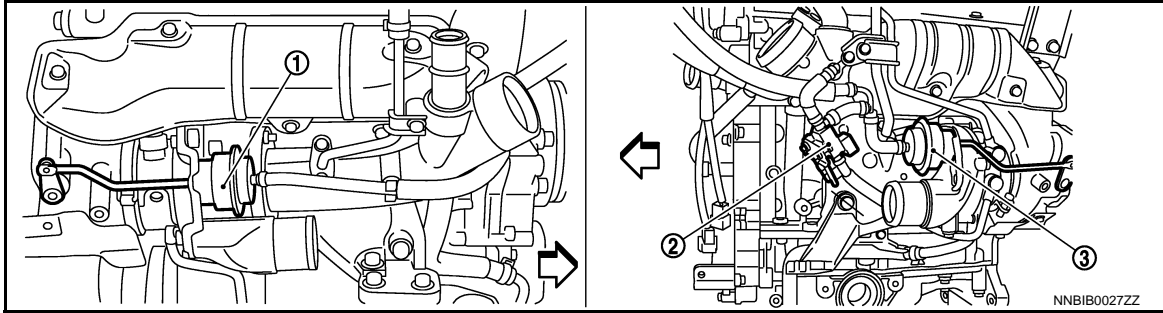
↶ :Vehicle front

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MULTIPOINT FUEL INJECTION SYSTEM

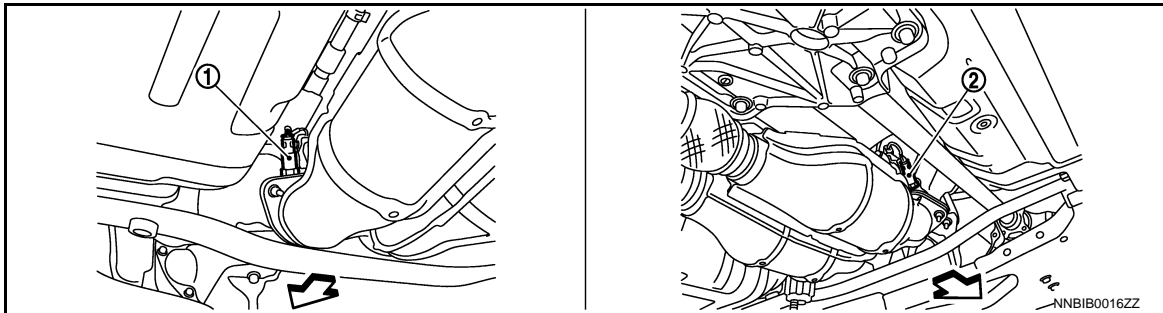
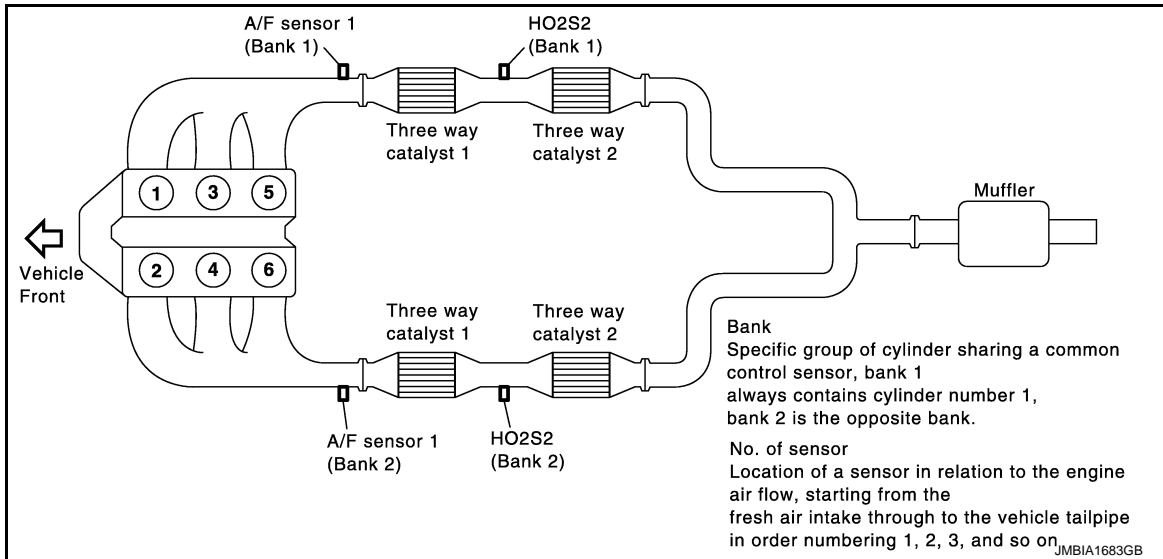
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[VR38]



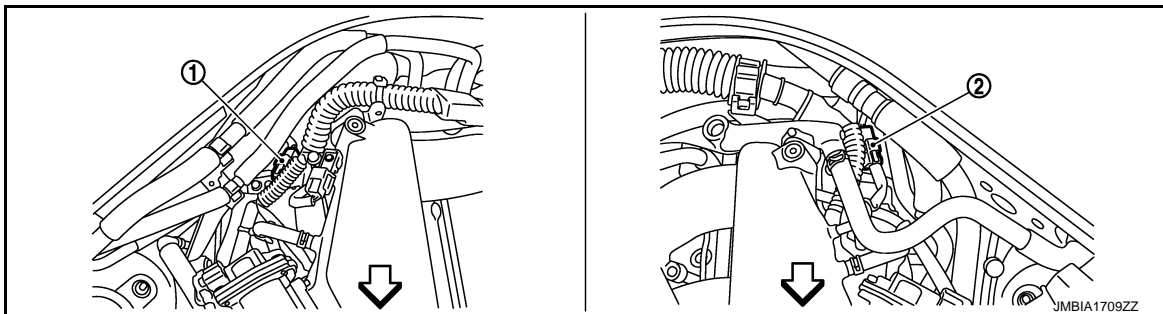
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



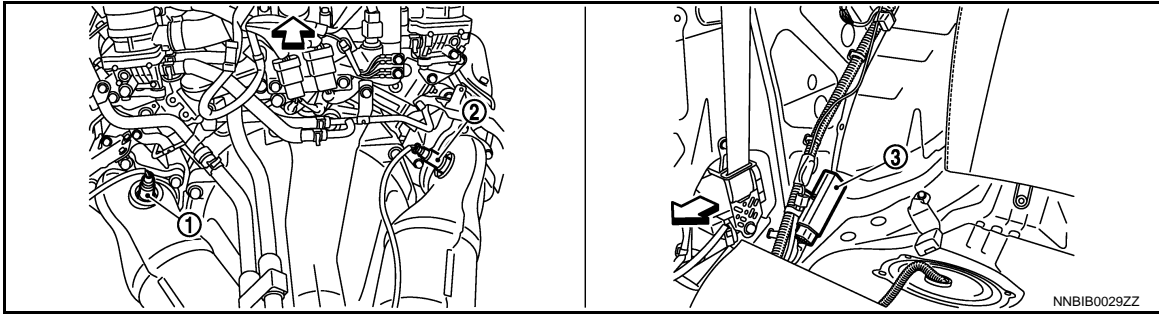
MULTIPOINT FUEL INJECTION SYSTEM

[VR38]

< SYSTEM DESCRIPTION >

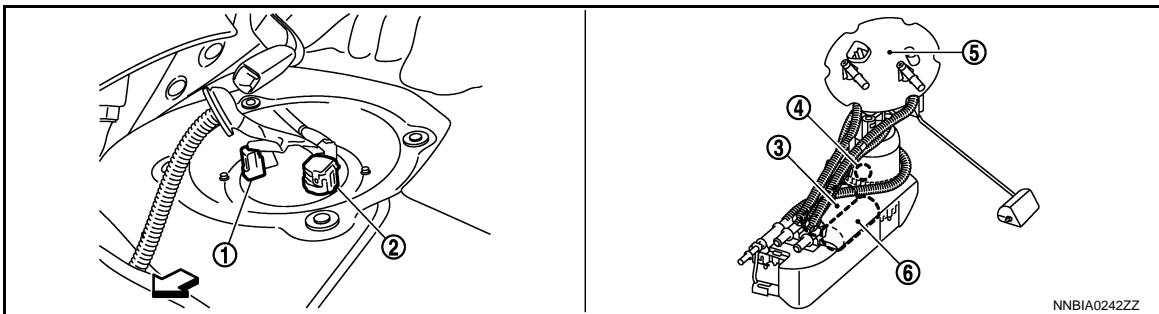
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



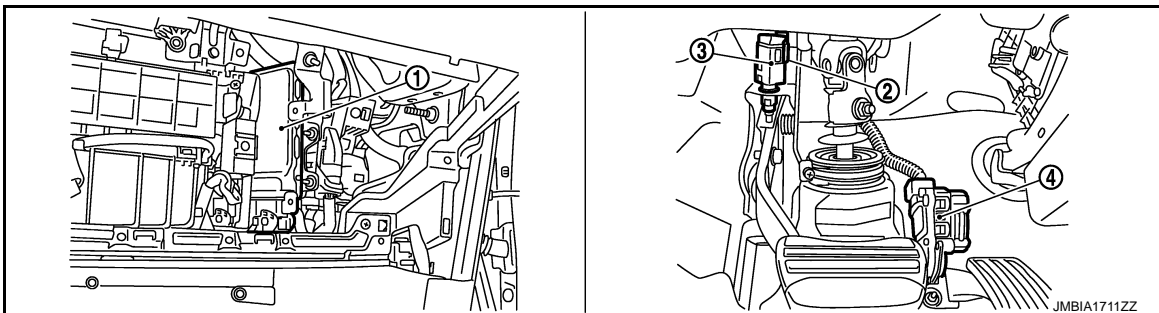
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



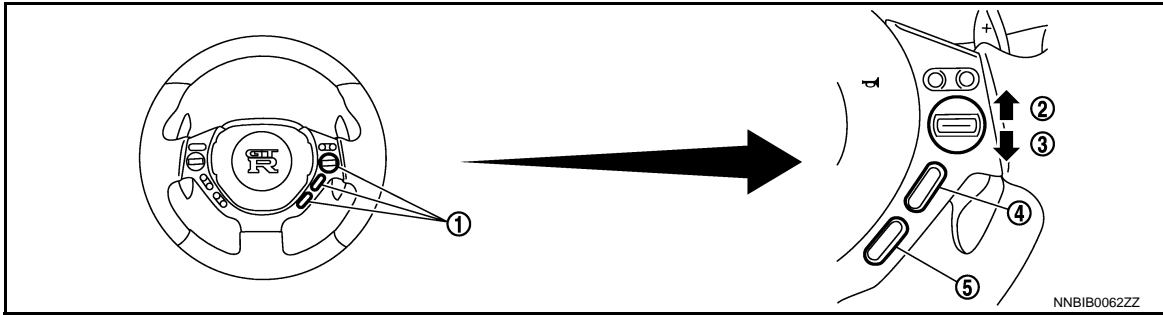
1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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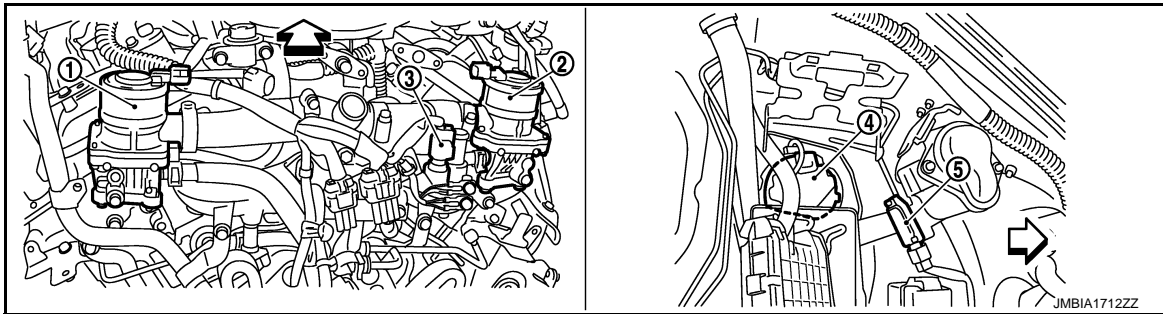
MULTIPOINT FUEL INJECTION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

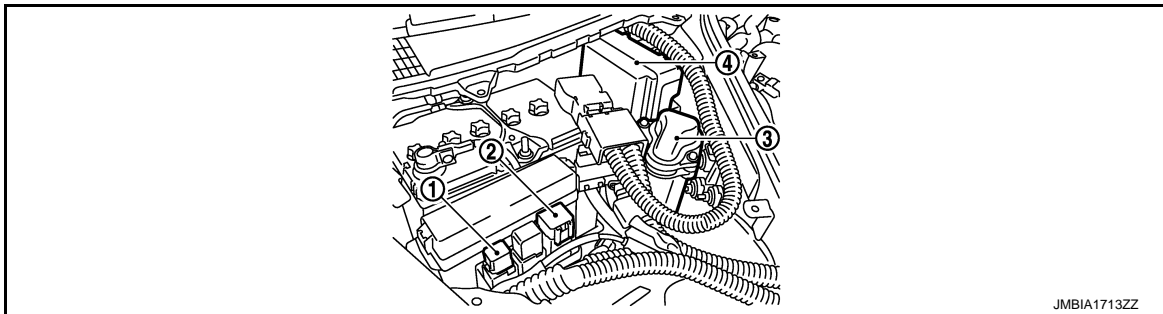


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

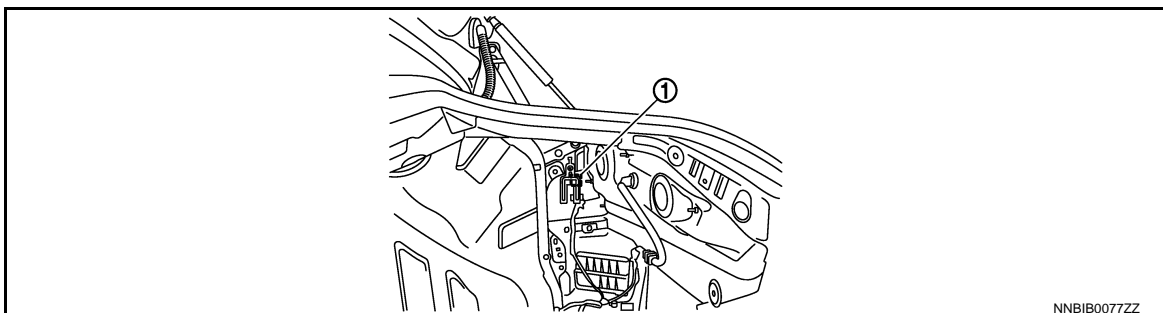


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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|---------------------------------|-------------------|---------------------|
| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |

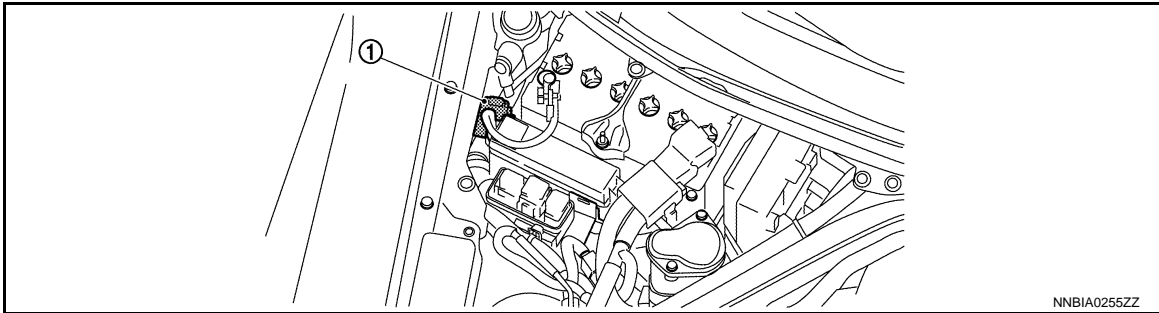


- | |
|------------------------|
| 1. Sub fuel pump relay |
|------------------------|

MULTIPOINT FUEL INJECTION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:000000011486225

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

MULTIPOINT FUEL INJECTION SYSTEM

< SYSTEM DESCRIPTION >

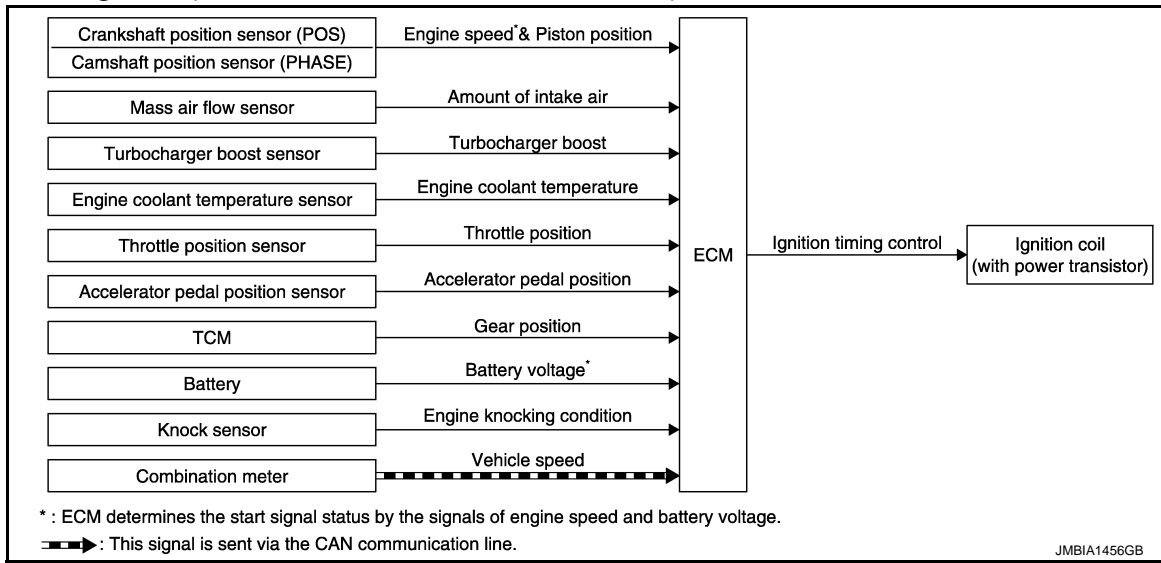
[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

ELECTRIC IGNITION SYSTEM

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486226



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486227

INPUT/OUTPUT SIGNAL CHART

Sensor	Input Signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed*2 Piston position	Ignition timing control	Ignition coil (with power transistor)
Camshaft position sensor (PHASE)			
Mass air flow sensor	Amount of intake air		
Turbocharger boost sensor	Turbocharger boost		
Engine coolant temperature sensor	Engine coolant temperature		
Throttle position sensor	Throttle position		
Accelerator pedal position sensor	Accelerator pedal position		
TCM	Gear position		
Battery	Battery voltage*2		
Knock sensor	Engine knocking		
Combination meter	Vehicle speed*1		

*1: This signal is sent to the ECM via the CAN communication line.

*2: ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

Ignition order: 1 - 2 - 3 - 4 - 5 - 6

The ignition timing is controlled by the ECM to maintain the best air-fuel ratio for every running condition of the engine. The ignition timing data is stored in the ECM.

The ECM receives information such as the injection pulse width and camshaft position sensor (PHASE) signal. Computing this information, ignition signals are transmitted to the power transistor.

During the following conditions, the ignition timing is revised by the ECM according to the other data stored in the ECM.

- At starting
- During warm-up
- At idle
- At low battery voltage
- During acceleration

ELECTRIC IGNITION SYSTEM

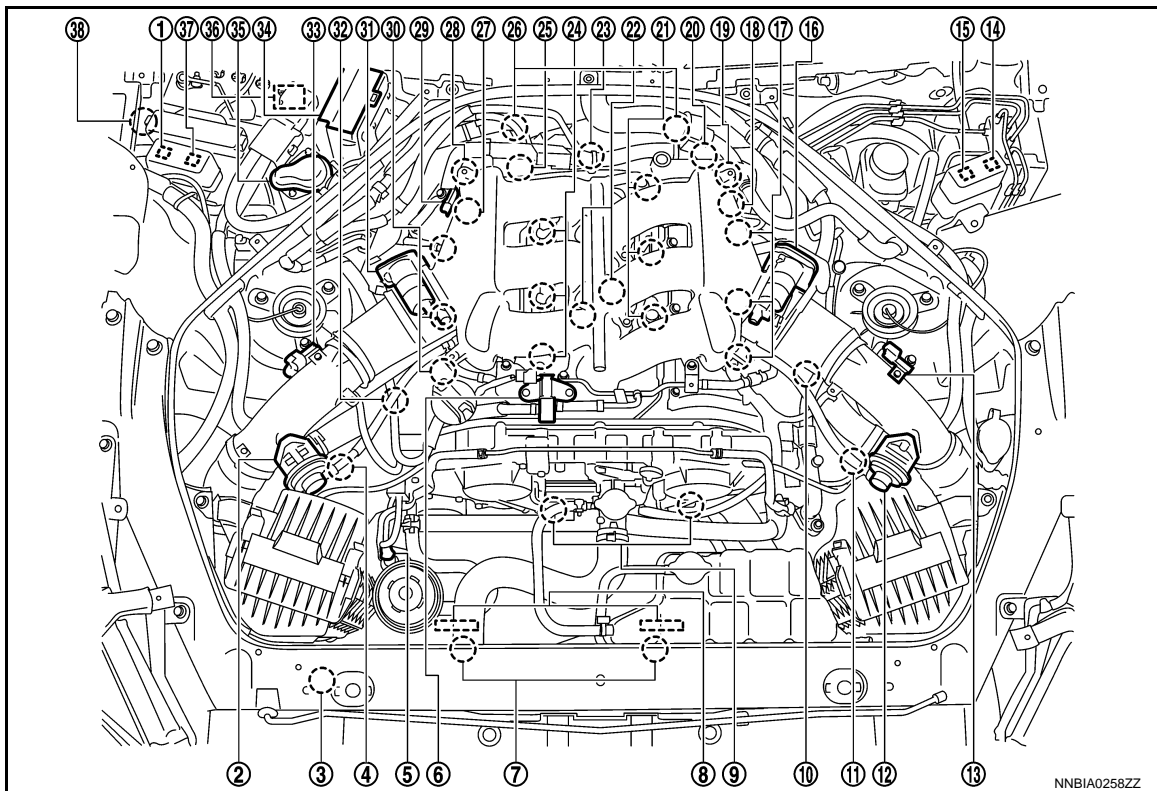
[VR38]

< SYSTEM DESCRIPTION >

The knock sensor retard system is designed only for emergencies. The basic ignition timing is programmed within the anti-knocking zone, if recommended fuel is used under dry conditions. The retard system does not operate under normal driving conditions. If engine knocking occurs, the knock sensor monitors the condition. The signal is transmitted to the ECM. The ECM retards the ignition timing to eliminate the knocking condition.

Component Parts Location (GT-R certified NISSAN dealer)

INFOID:000000011486228

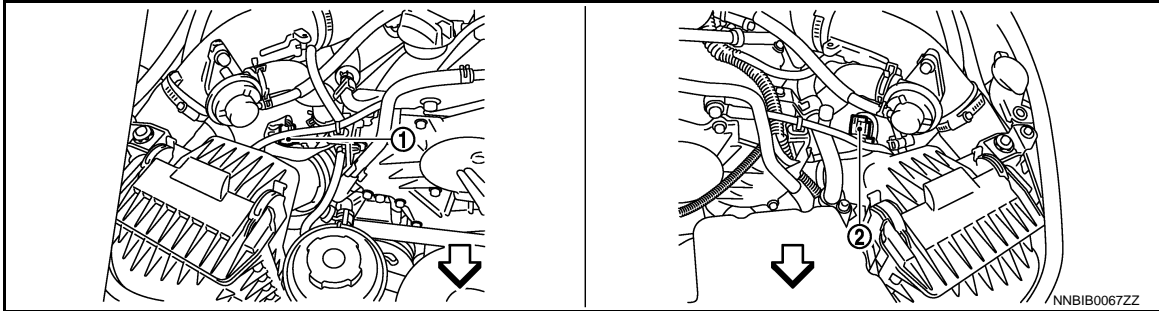


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

ELECTRIC IGNITION SYSTEM

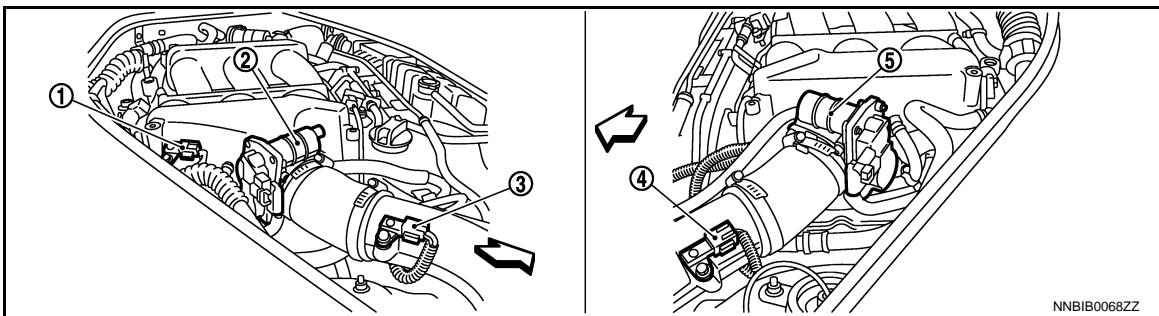
< SYSTEM DESCRIPTION >

[VR38]



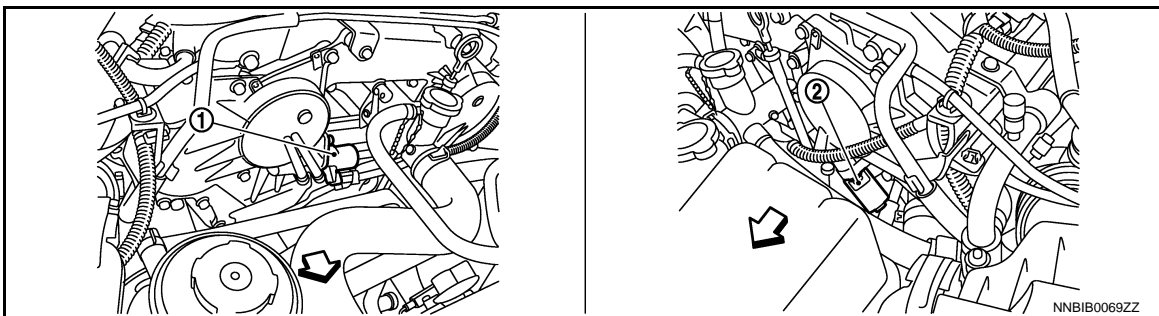
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

← :Vehicle front

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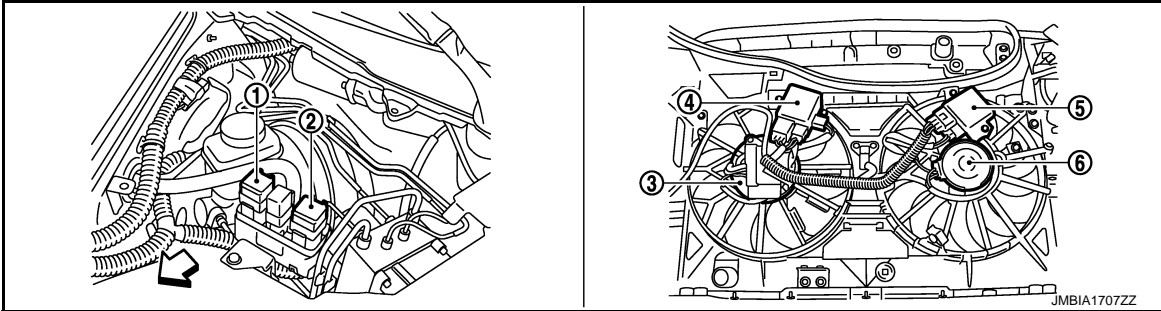
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ELECTRIC IGNITION SYSTEM

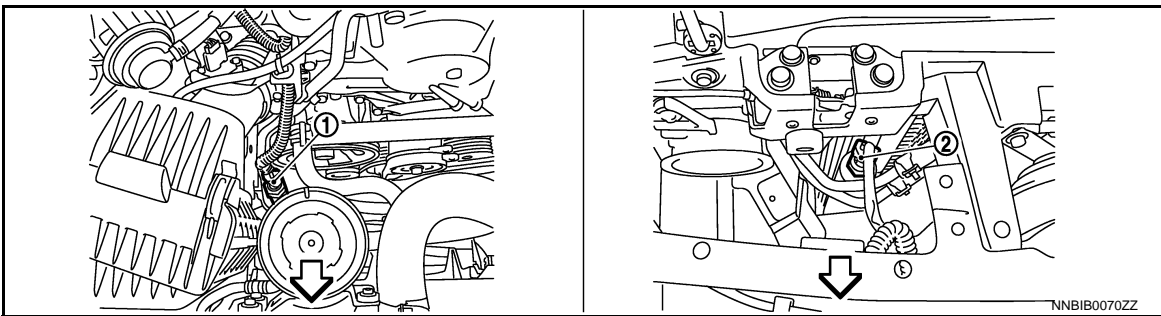
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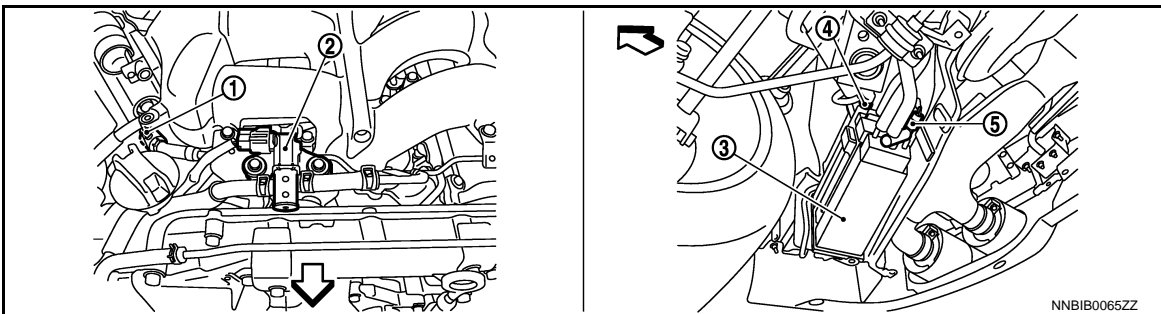
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|---------------------------------|---------------------------------|------------------------|
| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



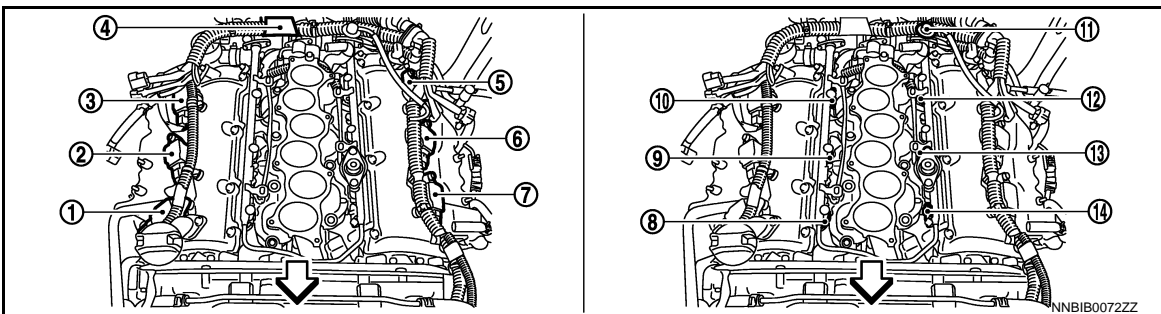
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|-----------------------------------|--------------------------------|
| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



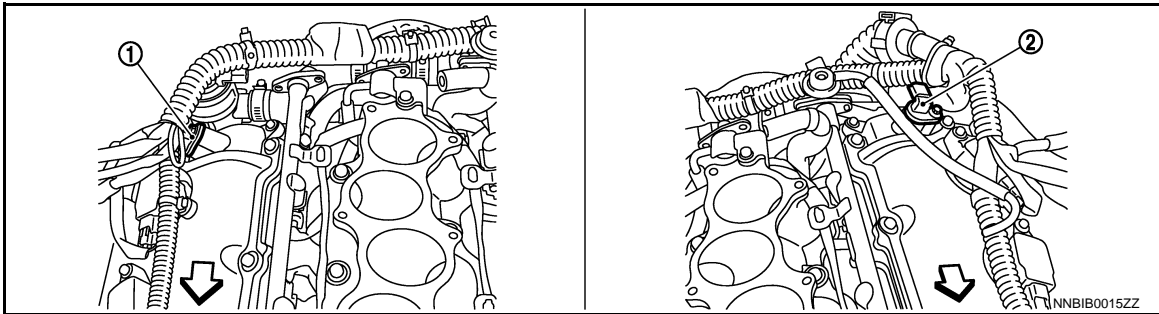
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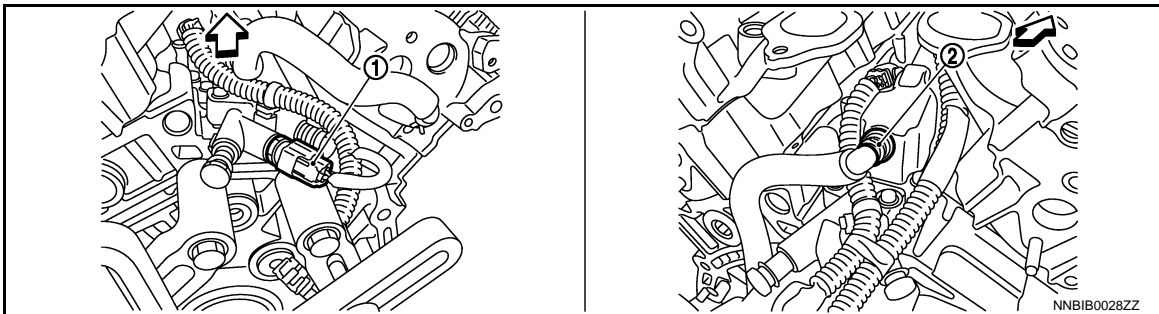
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



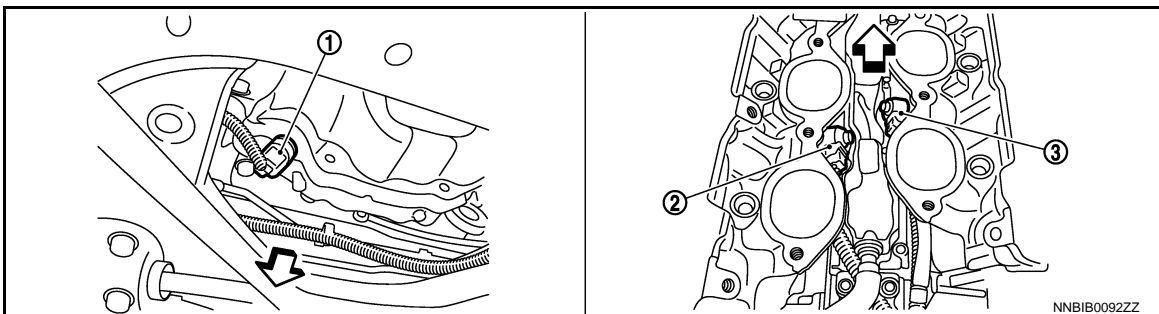
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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↶ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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↶ :Vehicle front



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|-------------------------------------|--------------------------|--------------------------|
| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
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↶ :Vehicle front

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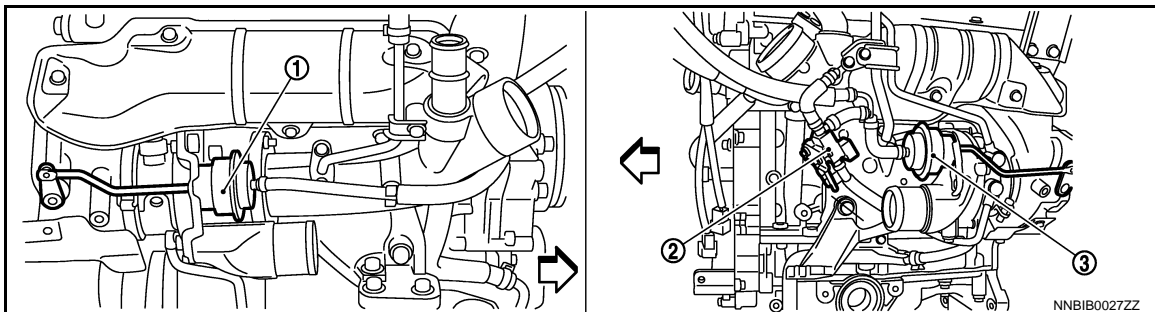
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ELECTRIC IGNITION SYSTEM

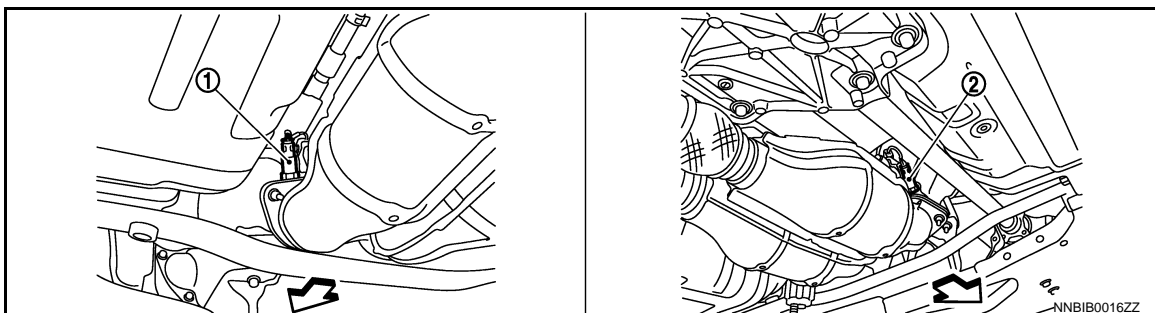
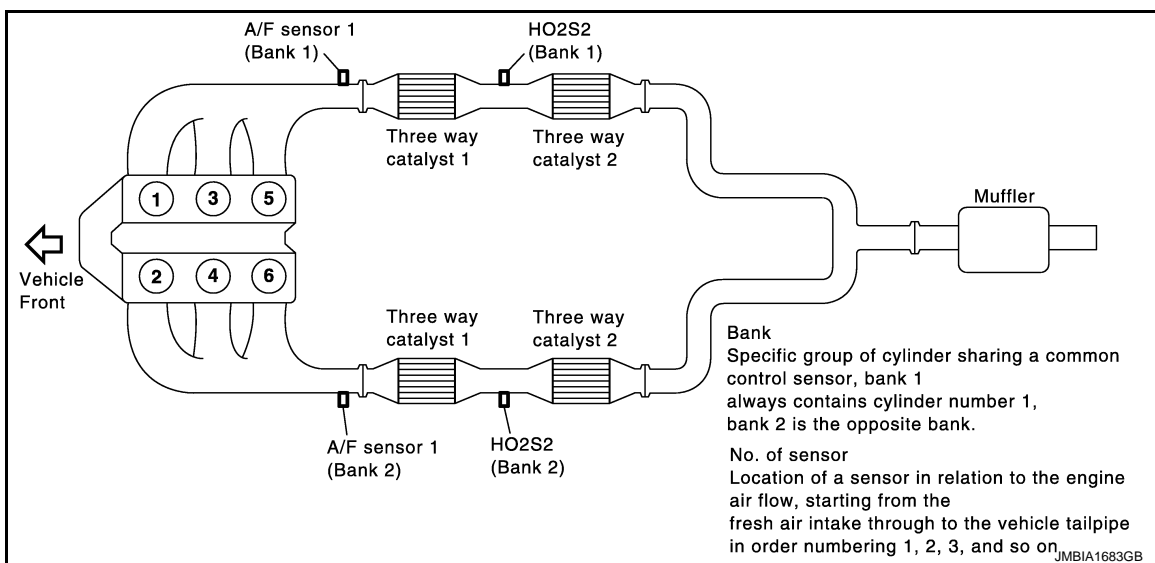
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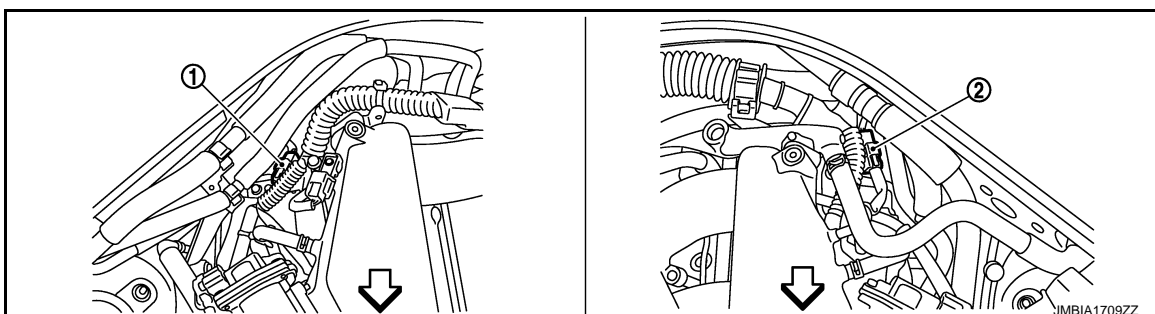
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



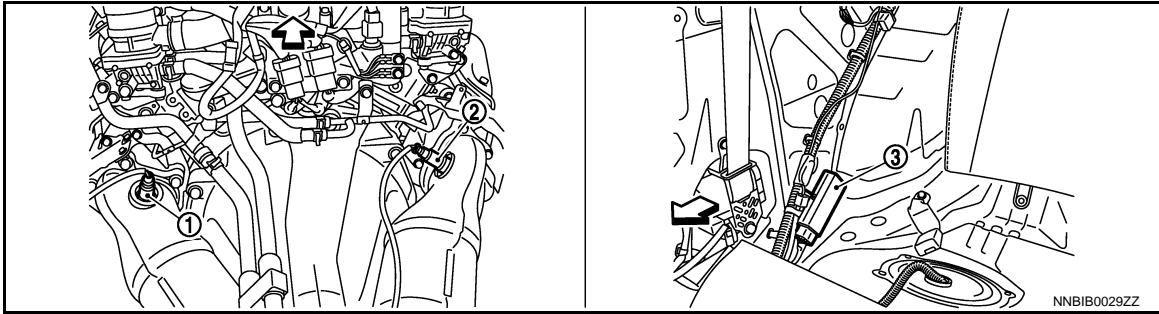
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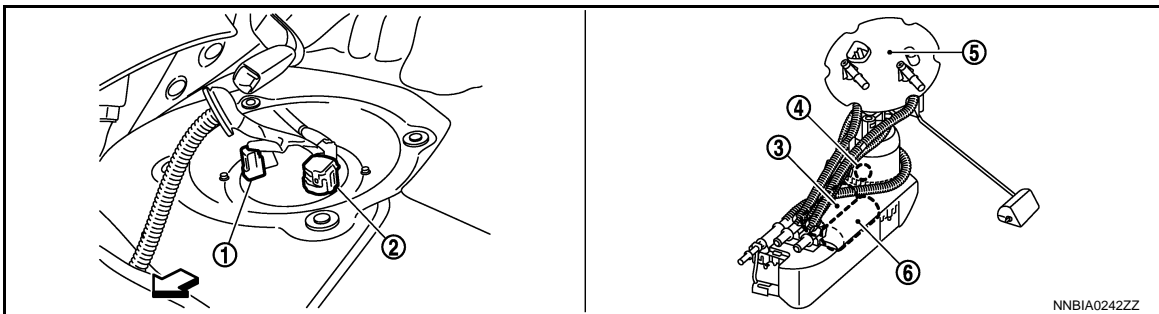
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



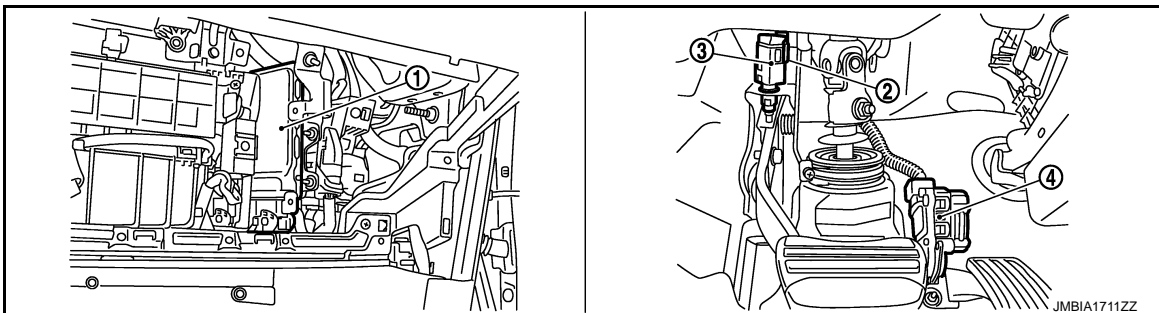
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



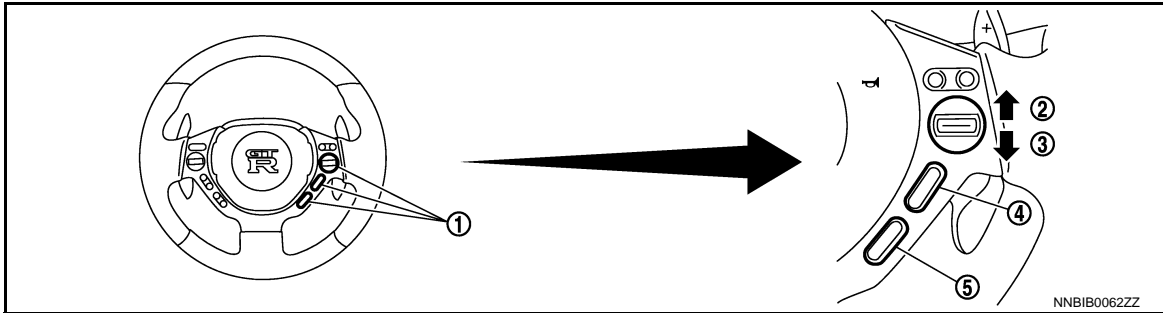
1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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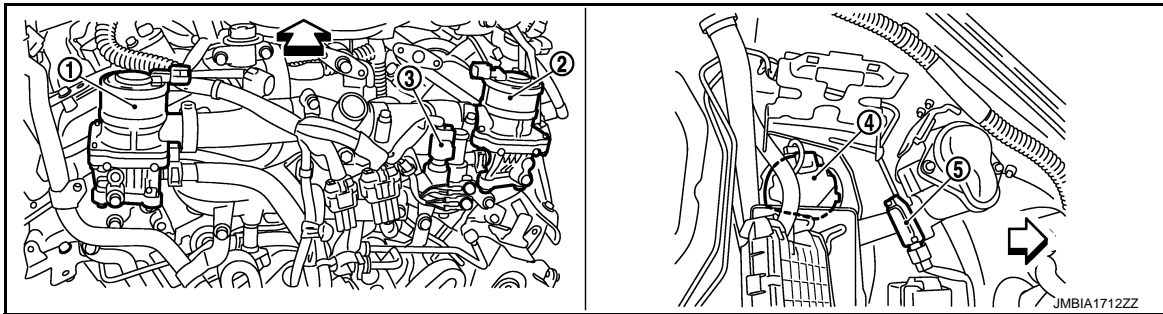
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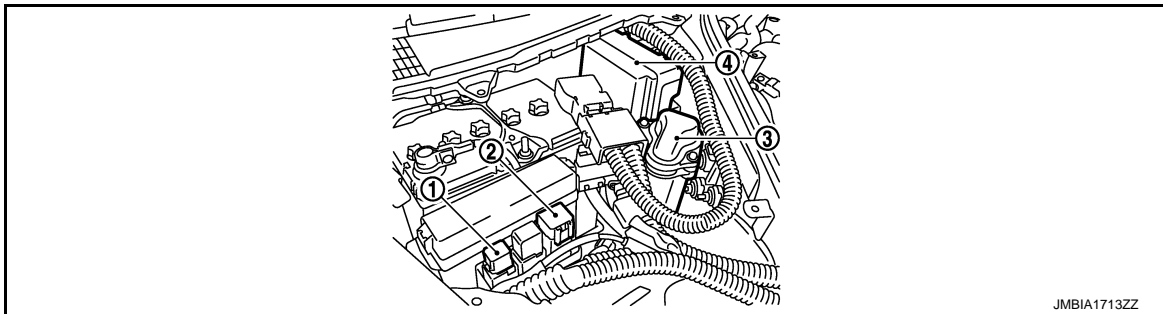


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

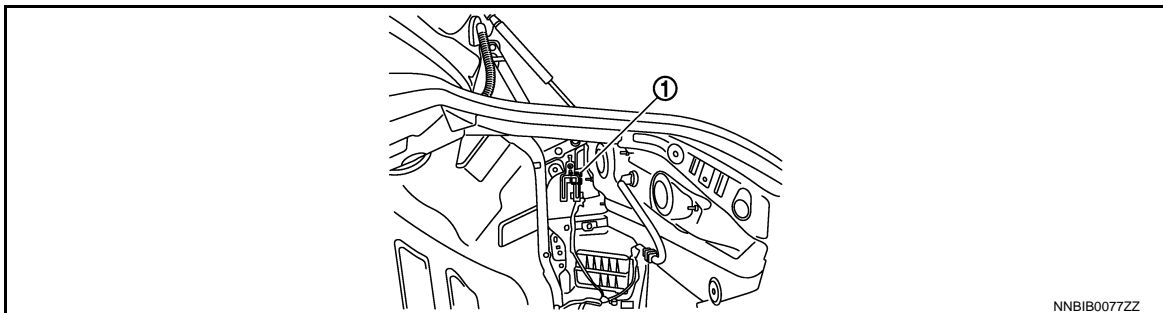


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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|---------------------------------|-------------------|---------------------|
| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |

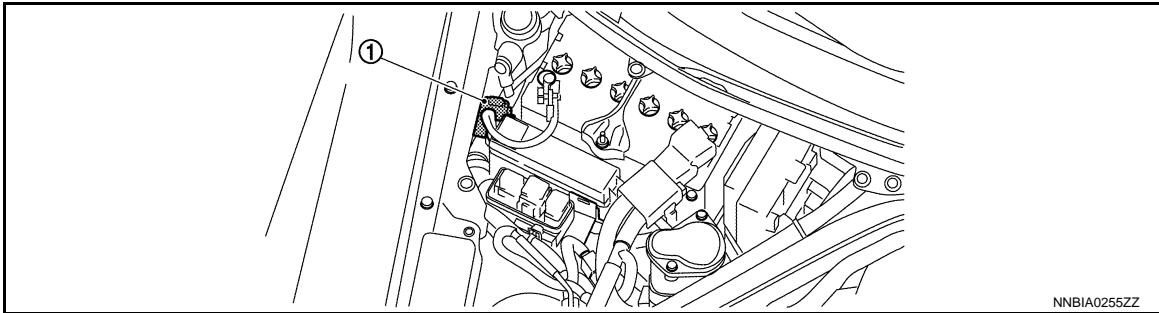


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| 1. Sub fuel pump relay |
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ELECTRIC IGNITION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:0000000011486229

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

ELECTRIC IGNITION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

AIR CONDITIONING CUT CONTROL

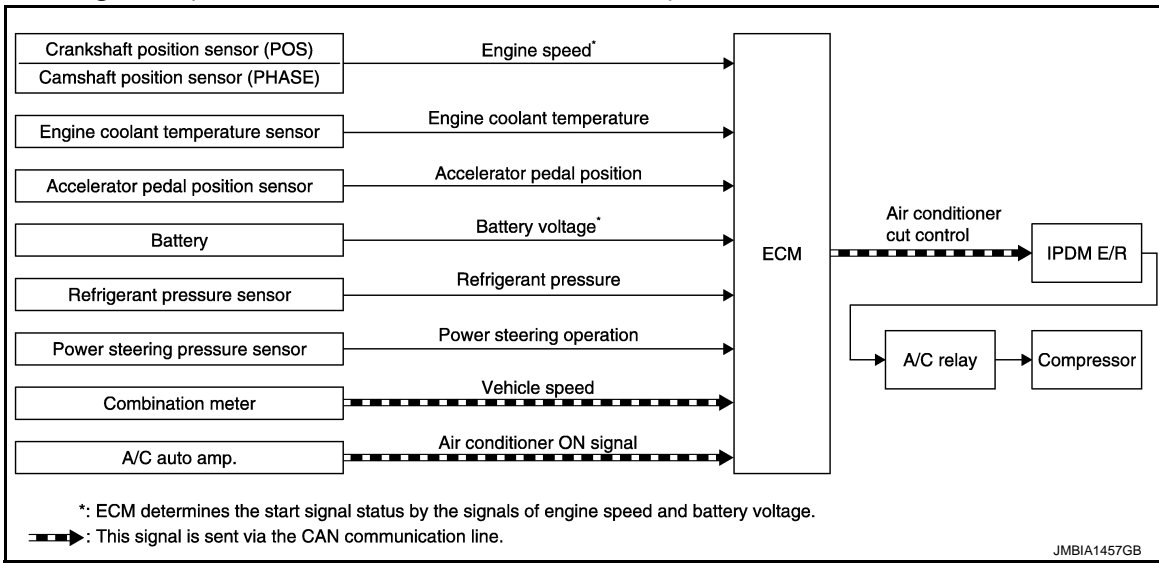
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< SYSTEM DESCRIPTION >

AIR CONDITIONING CUT CONTROL

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486230



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486231

INPUT/OUTPUT SIGNAL CHART

Sensor	Input Signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed*2	Air conditioner cut control	IPDM E/R ↓ A/C relay ↓ Compressor
Engine coolant temperature sensor	Engine coolant temperature		
Accelerator pedal position sensor	Accelerator pedal position		
Battery	Battery voltage*2		
Refrigerant pressure sensor	Refrigerant pressure		
Power steering pressure sensor	Power steering operation		
Combination meter	Vehicle speed*1		
A/C auto amp.	Air conditioner ON signal*1		

*1: This signal is sent to the ECM via the CAN communication line.

*2: ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

This system improves engine operation when the air conditioner is used. Under the following conditions, the air conditioner is turned off.

- When cranking the engine.
- At high engine speeds.
- When the engine coolant temperature becomes excessively high.
- When operating power steering during low engine speed or low vehicle speed.
- When engine speed is excessively low.
- When refrigerant pressure is excessively low or high.

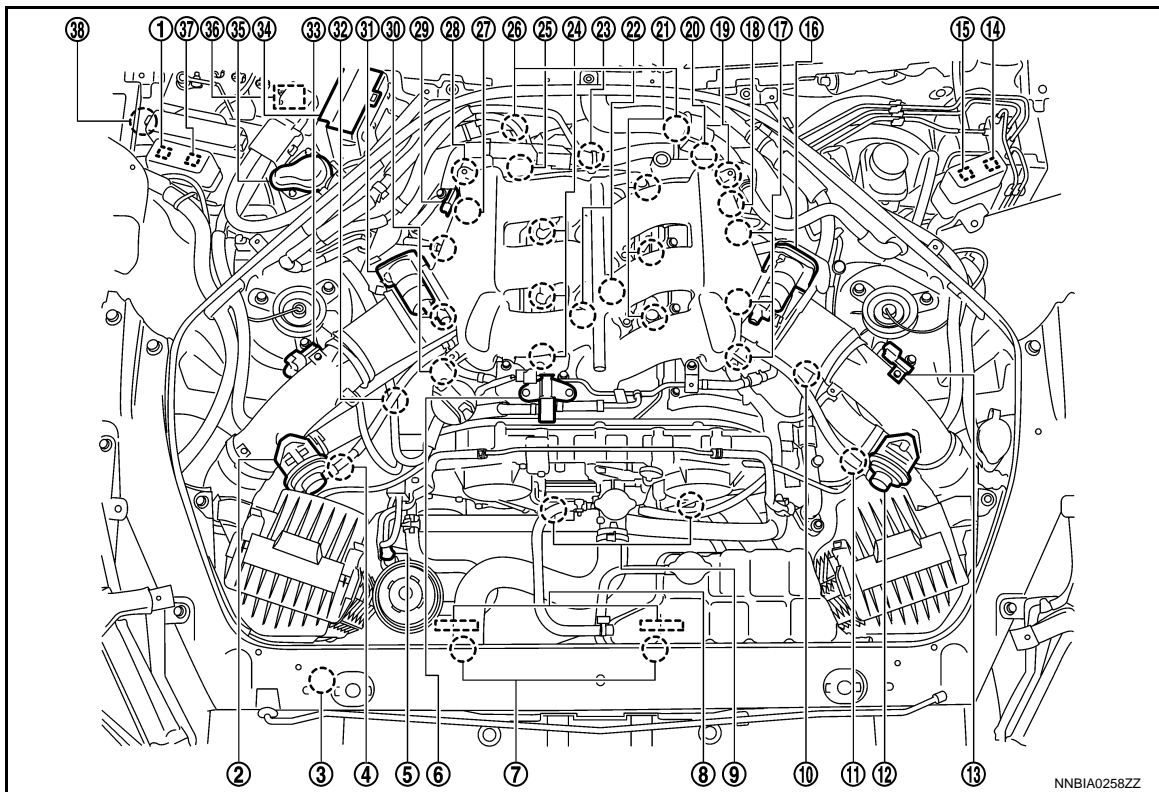
AIR CONDITIONING CUT CONTROL

< SYSTEM DESCRIPTION >

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Component Parts Location (GT-R certified NISSAN dealer)

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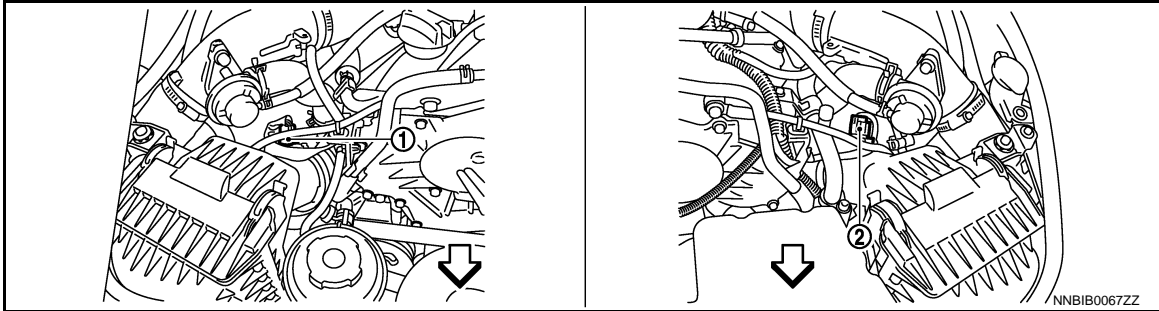


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

AIR CONDITIONING CUT CONTROL

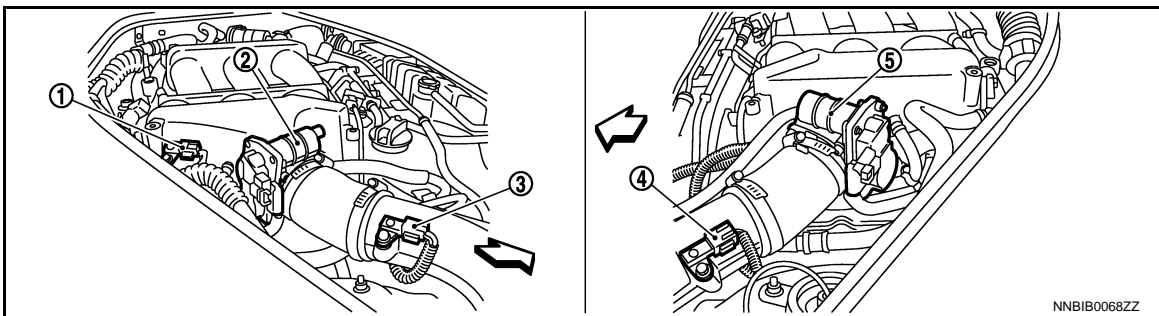
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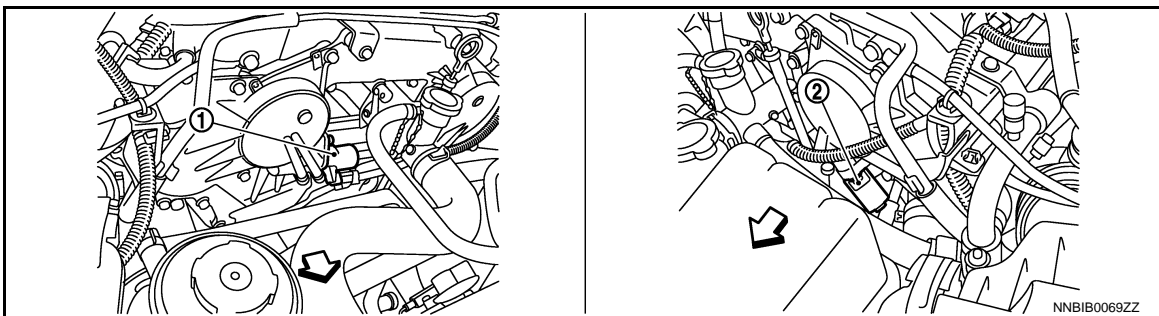
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

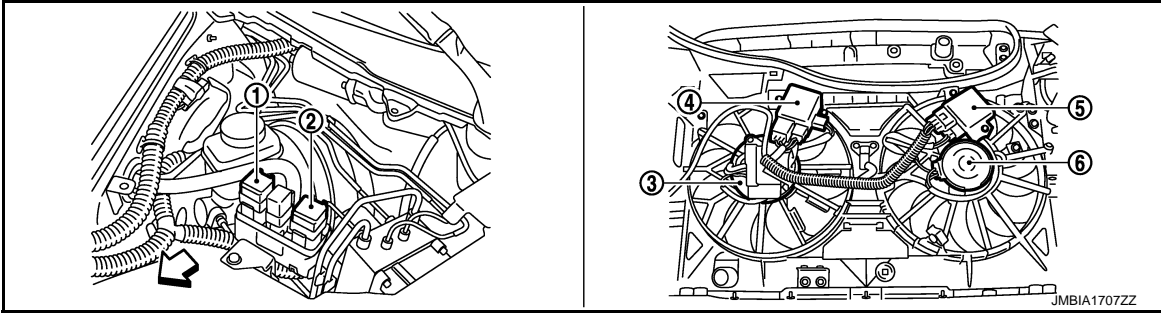
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AIR CONDITIONING CUT CONTROL

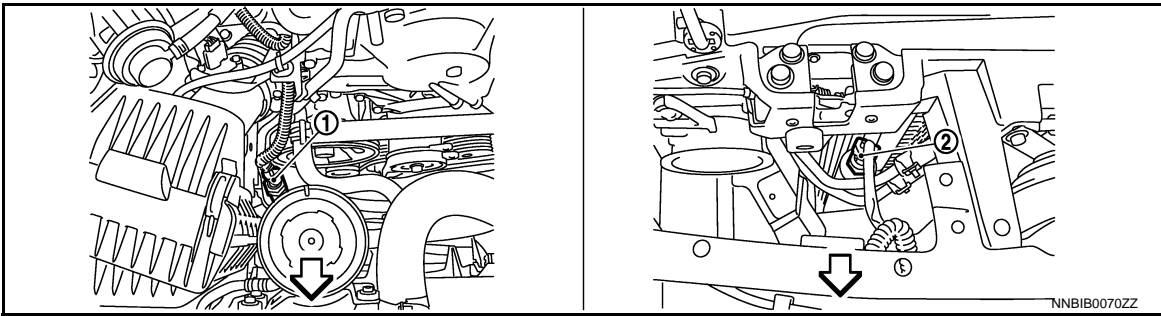
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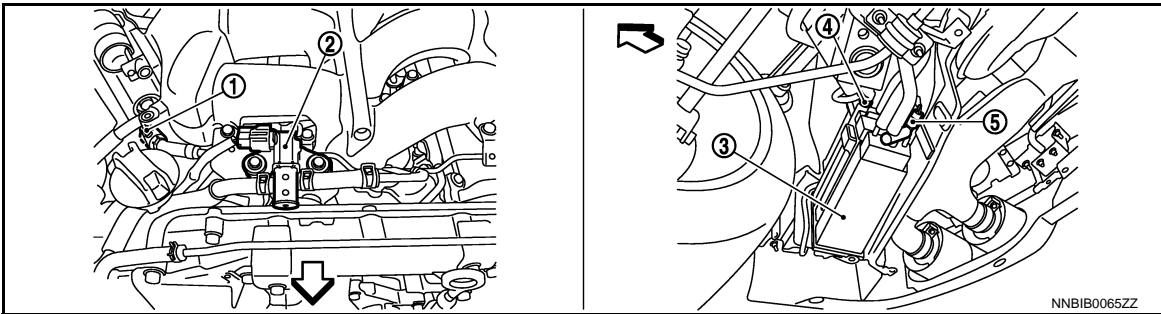
- 1. Cooling fan relay-2
- 2. Cooling fan relay-1
- 3. Cooling fan motor-1
- 4. Cooling fan control module-1
- 5. Cooling fan control module-2
- 6. Cooling fan motor-2

↶ :Vehicle front



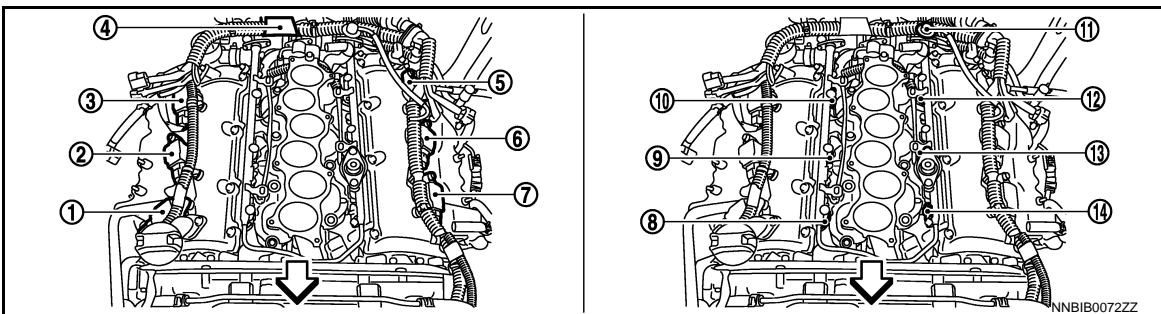
- 1. Power steering pressure sensor
- 2. Refrigerant pressure sensor

↶ :Vehicle front



- 1. EVAP service port
- 2. EVAP canister purge volume control
- 3. EVAP canister solenoid valve
- 4. EVAP control system pressure sensor
- 5. EVAP canister vent control valve

↶ :Vehicle front



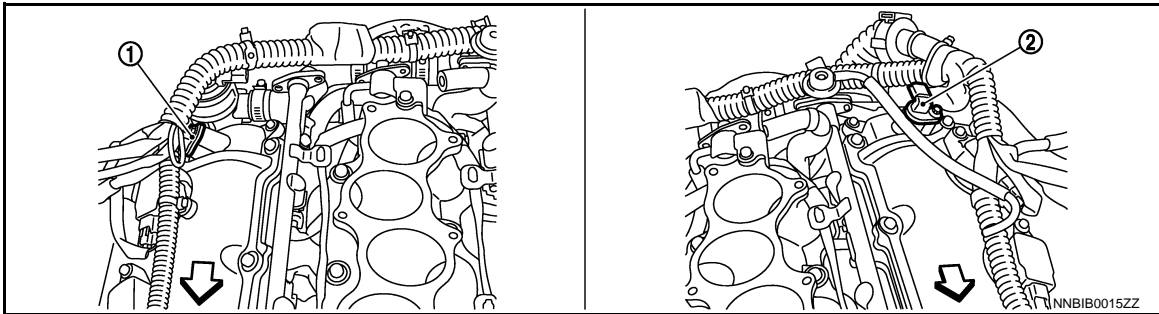
AIR CONDITIONING CUT CONTROL

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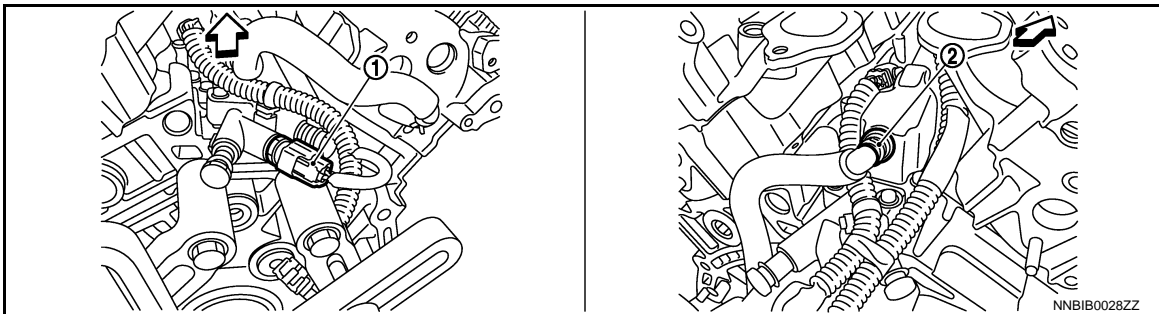
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



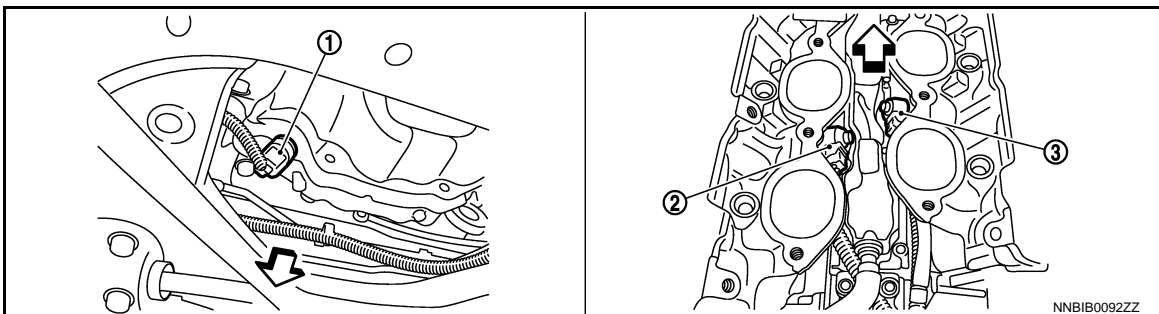
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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↶ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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↶ :Vehicle front

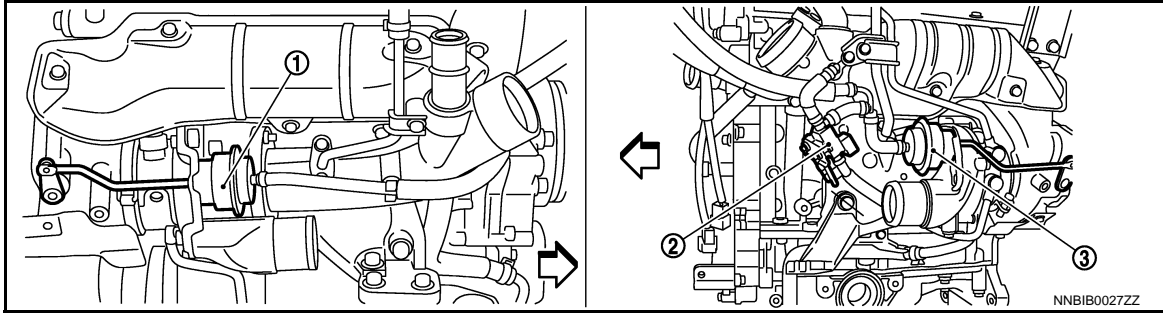


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| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
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↶ :Vehicle front

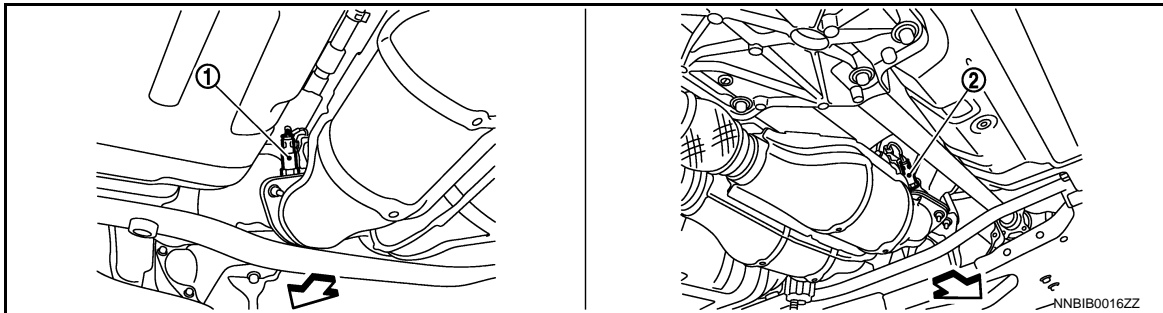
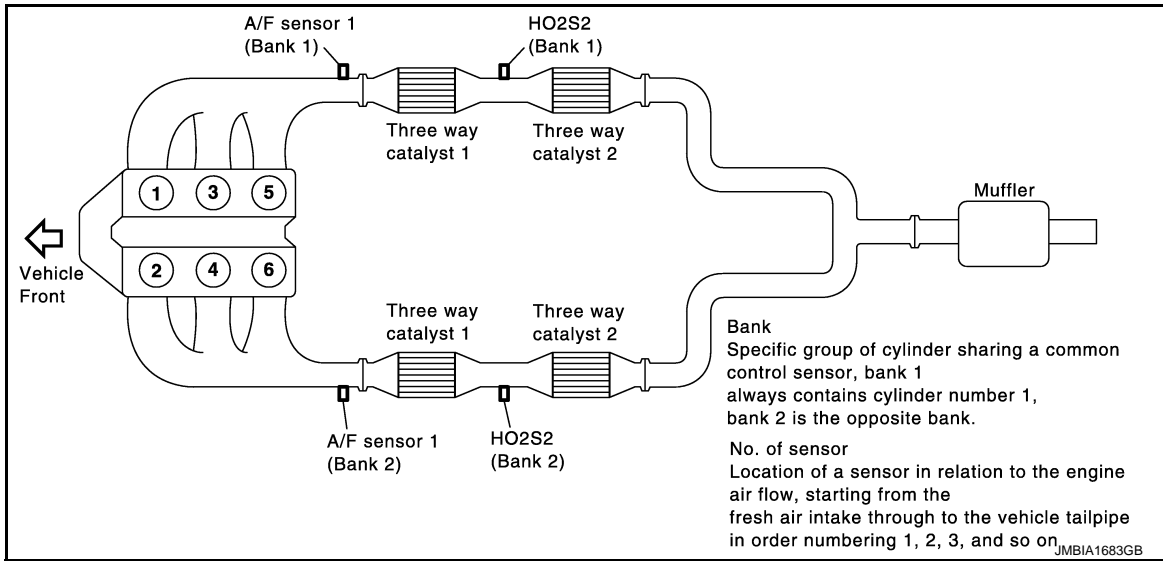
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AIR CONDITIONING CUT CONTROL



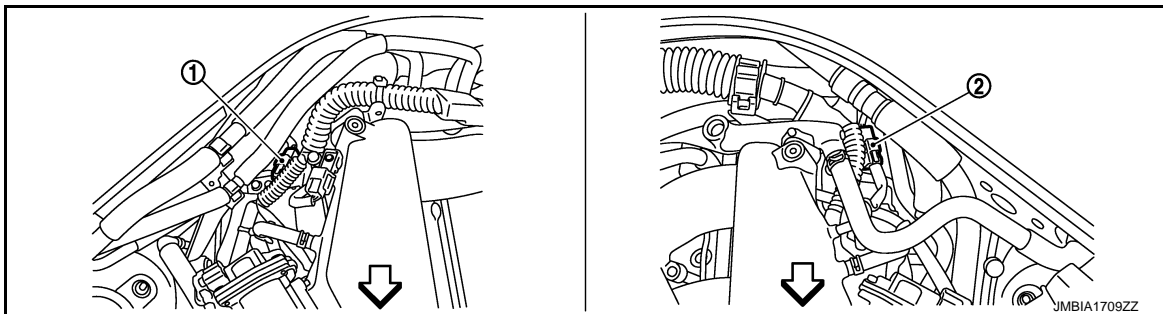
- 1. Boost control actuator (bank 1)
- 2. Turbocharger boost control solenoid
- 3. Boost control actuator (bank 2)

← :Vehicle front



- 1. Heated oxygen sensor 2 (bank 2)
- 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



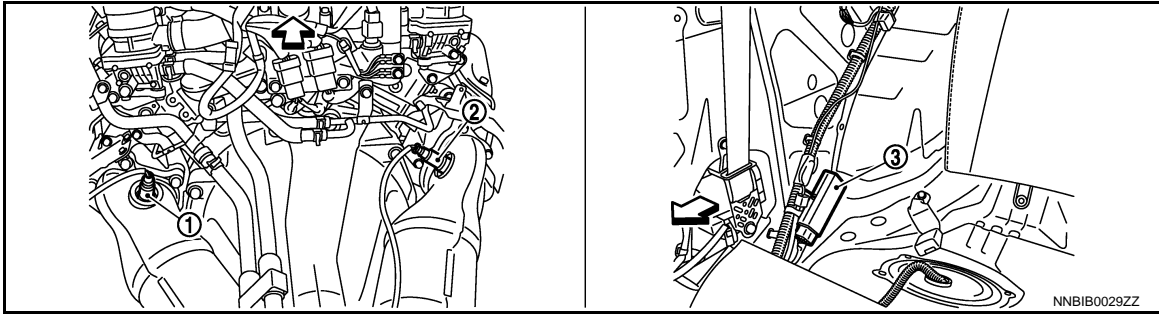
AIR CONDITIONING CUT CONTROL

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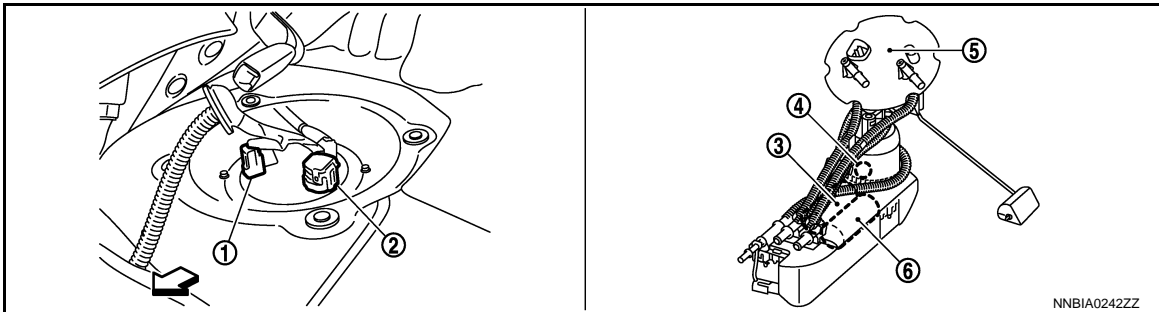
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



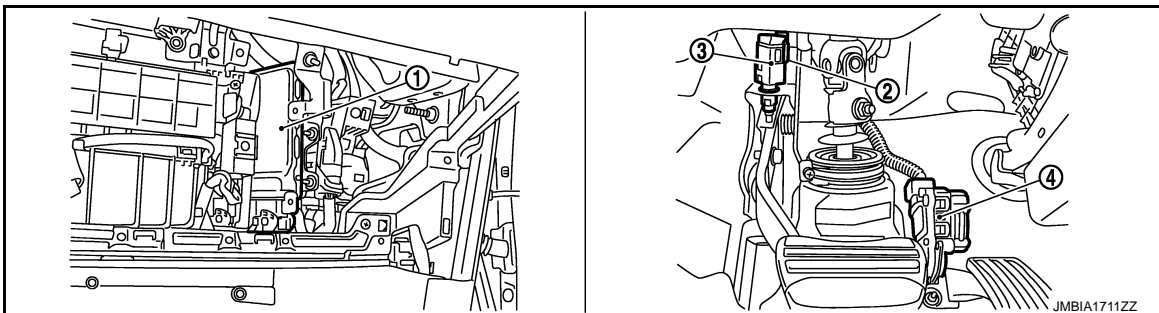
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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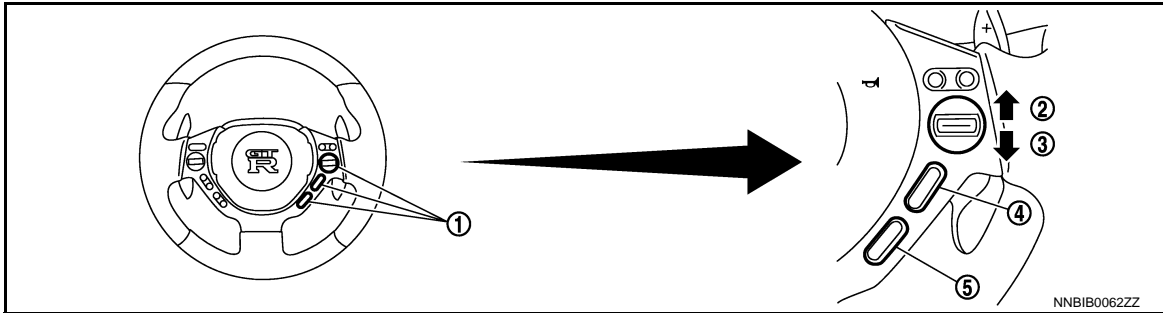
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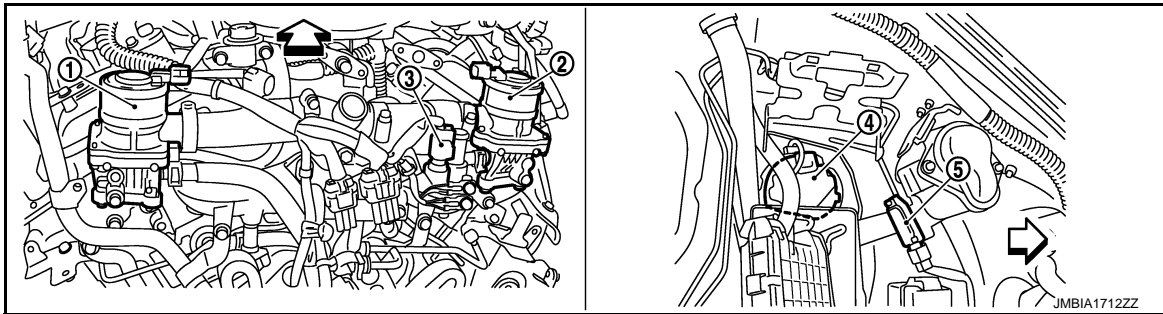
AIR CONDITIONING CUT CONTROL

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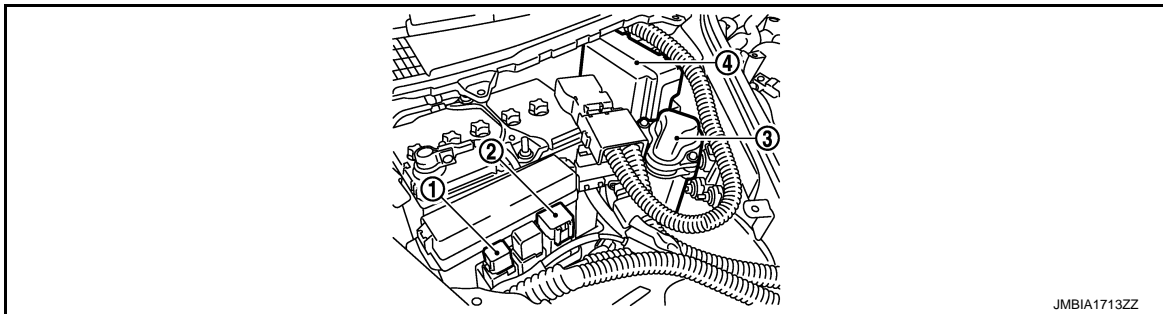


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|-------------------------|-----------------------------|---------------------|
| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

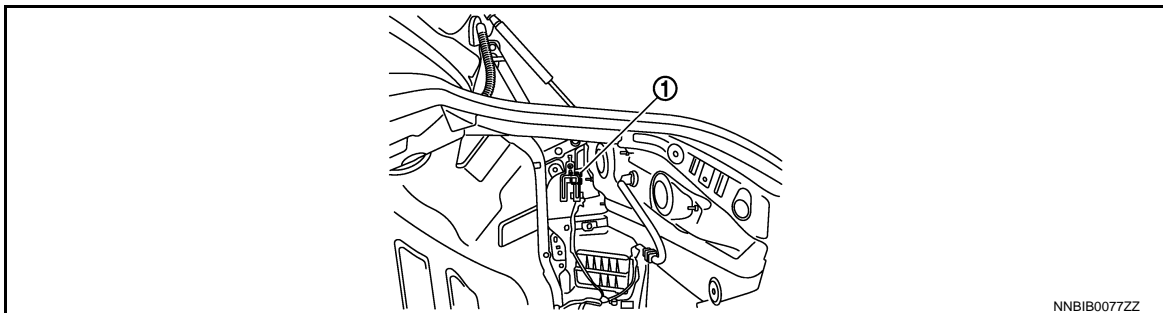


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |

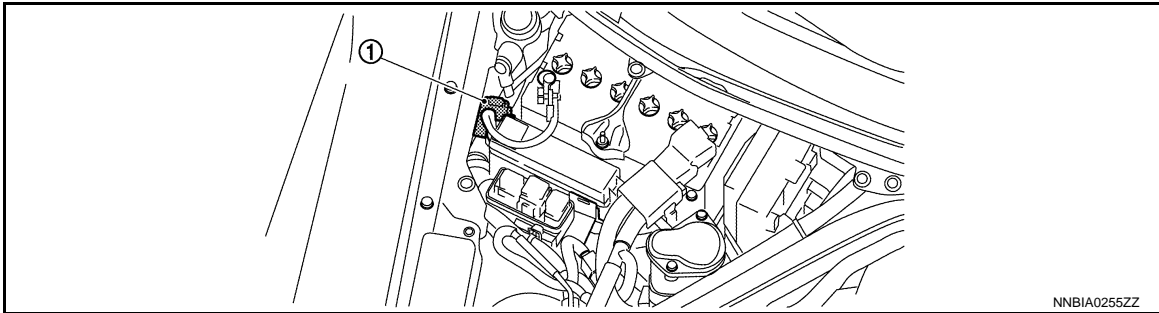


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|------------------------|
| 1. Sub fuel pump relay |
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AIR CONDITIONING CUT CONTROL

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:000000011486233

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

AIR CONDITIONING CUT CONTROL

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

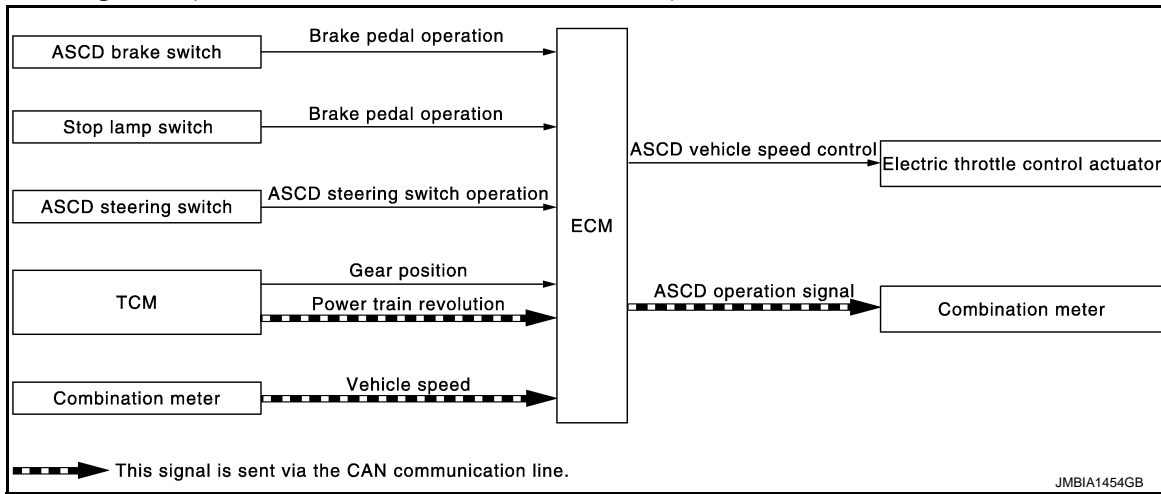
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

< SYSTEM DESCRIPTION >

[VR38]

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Diagram (GT-R certified NISSAN dealer)



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486235

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
ASCD brake switch	Brake pedal operation	<ul style="list-style-type: none"> ASCD vehicle speed control ASCD operation signal 	<ul style="list-style-type: none"> Electric throttle control actuator Combination meter (ASCD indicator) (Information display)
Stop lamp switch	Brake pedal operation		
ASCD steering switch	ASCD steering switch operation		
TCM	Gear position Powertrain revolution*		
Combination meter	Vehicle speed*		

*: This signal is sent to the ECM via the CAN communication line

BASIC ASCD SYSTEM

Refer to Owner's Manual for ASCD operating instructions.

Automatic Speed Control Device (ASCD) allows a driver to keep vehicle at predetermined constant speed without depressing accelerator pedal. Driver can set vehicle speed in advance between approximately 40 km/h (25 MPH) and 250 km/h (155 MPH).

NOTE:

During the SAVE mode control, the set vehicle speed can set to approximately 200 km/h (124 MPH).

ECM controls throttle angle of electric throttle control actuator to regulate vehicle speed.

Operation status of ASCD is indicated by CRUISE lamp and SET lamp in combination meter. Refer to [EC-528, "Description \(GT-R certified NISSAN dealer\)"](#). The operation status is also indicated on the information display in the combination meter. Refer to [EC-549, "Description \(GT-R certified NISSAN dealer\)"](#). If any malfunction occurs in the ASCD system, it automatically deactivates control.

NOTE:

Always drive vehicle in a safe manner according to traffic conditions and obey all traffic laws.

SET OPERATION

Press MAIN switch. (The CRUISE lamp in combination meter illuminates.)

When vehicle speed reaches a desired speed between approximately 40 km/h (25 MPH) and 250 km/h (155 MPH), press SET/COAST switch. (Then SET lamp in combination meter illuminates.)

ACCELERATE OPERATION

If the RESUME/ACCELERATE switch is pressed during cruise control driving, increase the vehicle speed until the switch is released or vehicle speed reaches maximum speed controlled by the system.

And then ASCD will maintain the new set speed.

CANCEL OPERATION

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

[VR38]

< SYSTEM DESCRIPTION >

When any of following conditions exist, cruise operation will be canceled.

- MAIN switch is pressed (Set speed will be cleared)
- CANCEL switch is pressed
- More than 2 switches at ASCD steering switch are pressed at the same time (Set speed will be cleared)
- Brake pedal is depressed
- Shift lever position is P, N or R
- Vehicle speed decreased to 13 km/h (8 MPH) lower than the set speed
- VDC system is operated
- When the vehicle speed is approximately 30 km/h (19 MPH) or less

When the ECM detects any of the following conditions, the ECM will cancel the cruise operation and inform the driver by blinking indicator lamp.

- Engine coolant temperature is slightly higher than the normal operating temperature, CRUISE lamp may blink slowly.

When the engine coolant temperature decreases to the normal operating temperature, CRUISE lamp will stop blinking and the cruise operation will be able to work by pressing SET/COAST switch or RESUME/ACCELERATE switch.

- Malfunction for some self-diagnoses regarding ASCD control: SET lamp will blink quickly.

If ASCD is activated, all of ASCD operations will be canceled and vehicle speed memory will be erased.

COAST OPERATION

When the SET/COAST switch is pressed during cruise control driving, decrease vehicle set speed until the switch is released. And then ASCD will keep the new set speed.

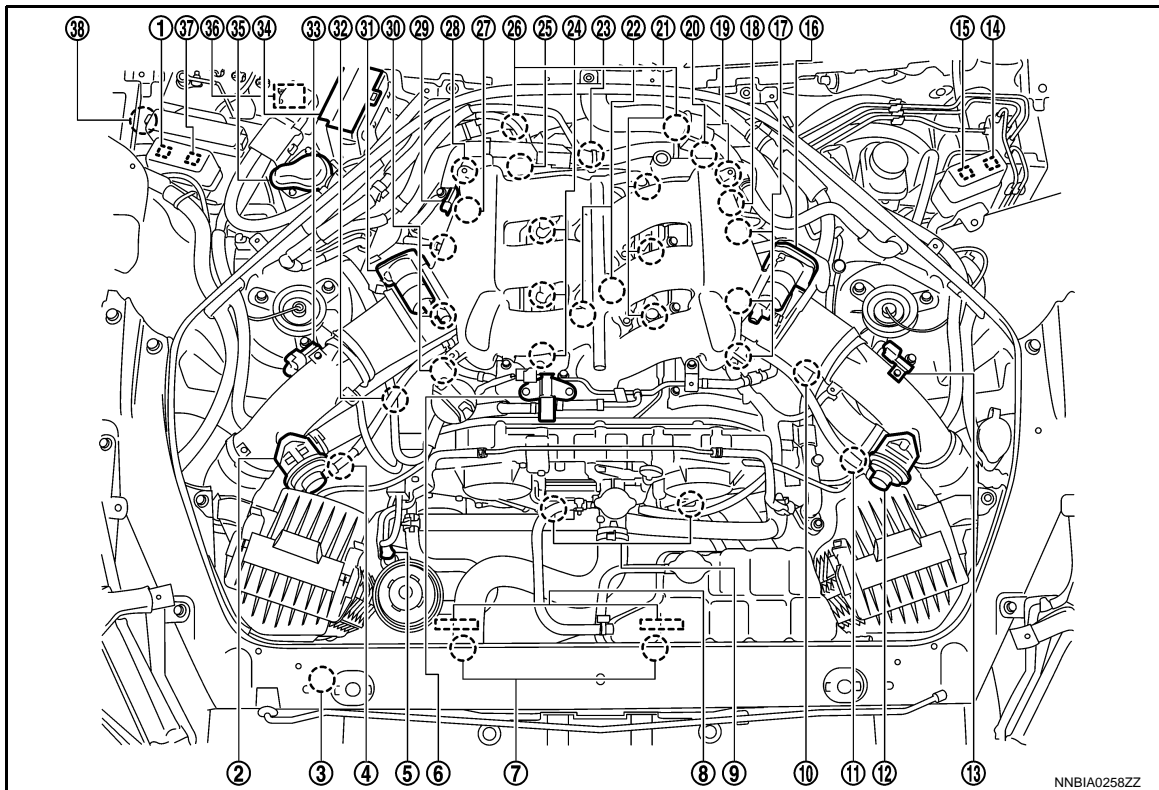
RESUME OPERATION

When the RESUME/ACCELERATE switch is pressed after canceling operation other than pressing the MAIN switch, vehicle speed will return to last set speed. To resume vehicle set speed, vehicle condition must meet following conditions.

- Brake pedal is released
- Shift lever position is other than P, N and R
- Vehicle speed is greater than 40 km/h (25 MPH) and less than 250 km/h (155 MPH)

Component Parts Location (GT-R certified NISSAN dealer)

INFOID:000000011486236



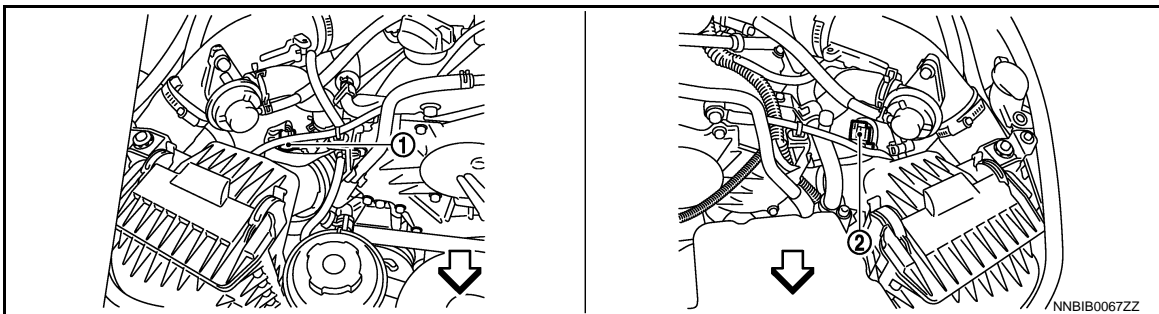
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

< SYSTEM DESCRIPTION >

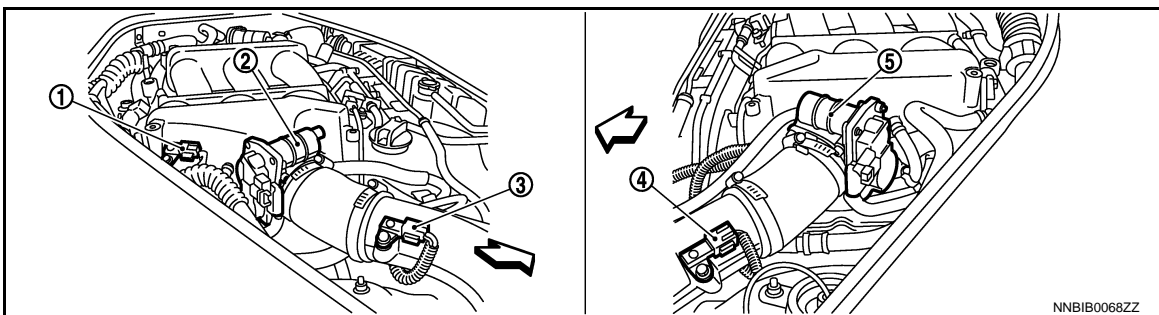
[VR38]

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|---|---|---|----|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor | A |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve | |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve | EC |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) | |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 | C |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) | |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) | D |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) | |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) | E |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) | |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) | F |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump | |
| 37. Air pump relay | 38. Battery current sensor | | G |



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| 1. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 2. Mass air flow sensor (bank 2) |
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← :Vehicle front



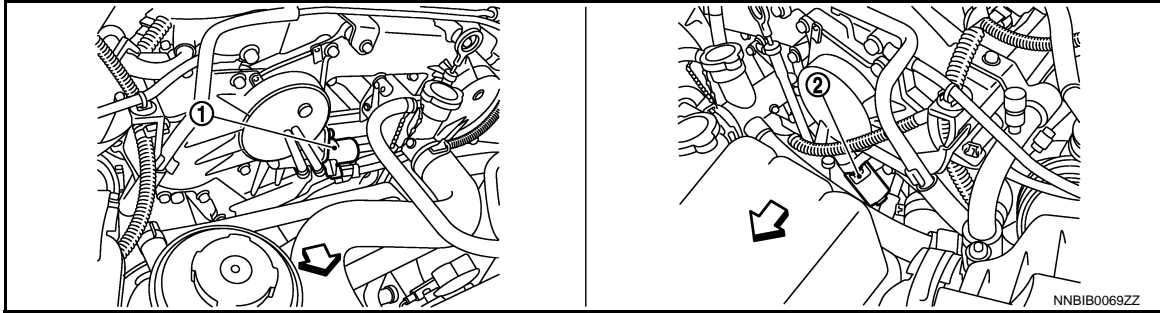
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| 1. Manifold absolute pressure sensor | 2. Electric throttle control actuator (bank 1) | 3. Turbocharger boost sensor (bank 1) |
| 4. Turbocharger boost sensor (bank 2) | 5. Electric throttle control actuator (bank 2) | |

← :Vehicle front

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

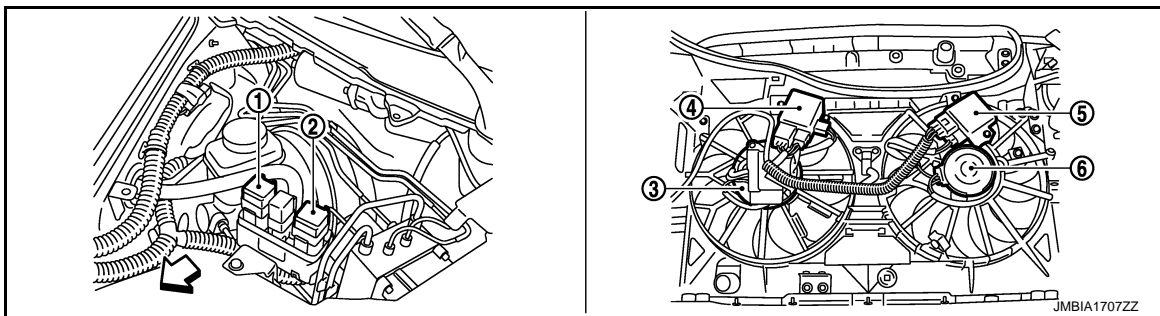
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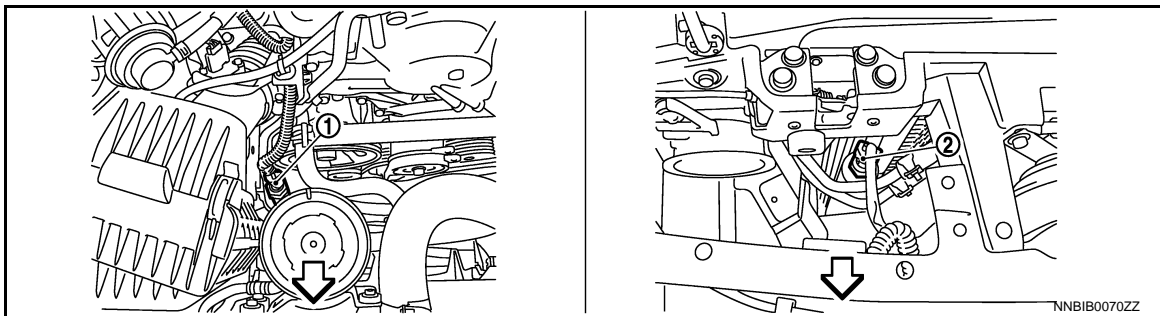
- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

↶ :Vehicle front



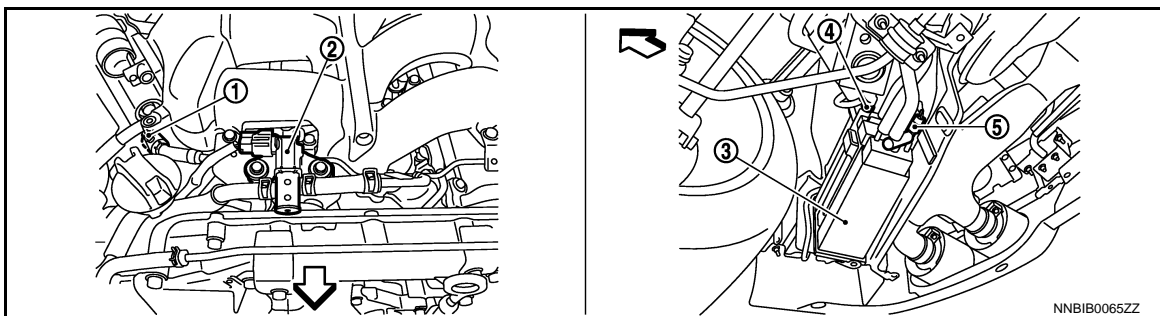
- 1. Cooling fan relay-2
- 2. Cooling fan relay-1
- 3. Cooling fan motor-1
- 4. Cooling fan control module-1
- 5. Cooling fan control module-2
- 6. Cooling fan motor-2

↶ :Vehicle front



- 1. Power steering pressure sensor
- 2. Refrigerant pressure sensor

↶ :Vehicle front



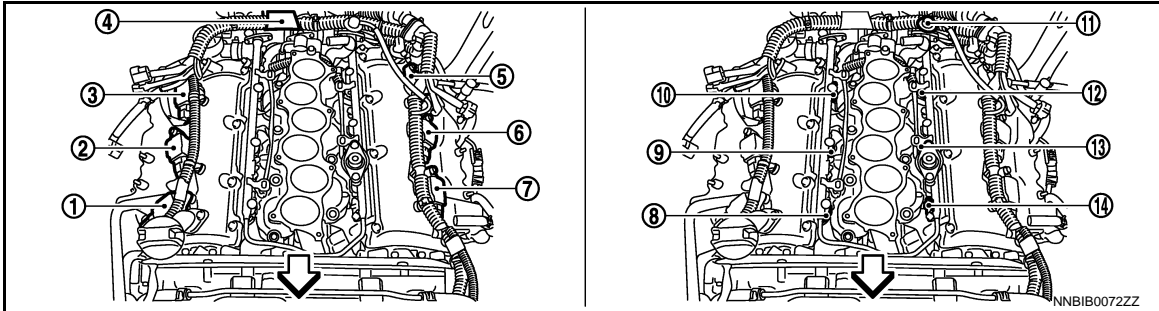
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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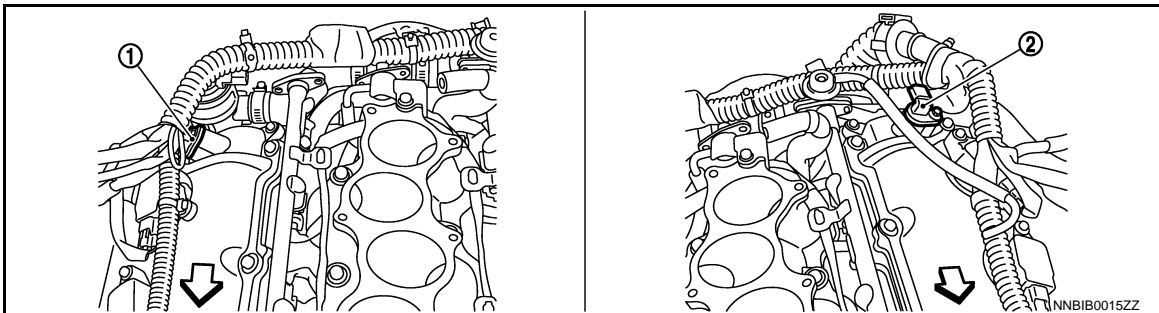
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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

← :Vehicle front



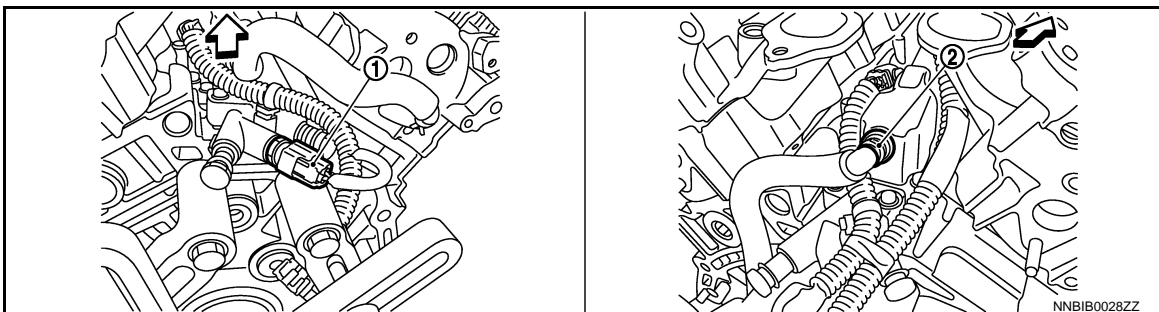
- | | | |
|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

← :Vehicle front



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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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← :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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← :Vehicle front

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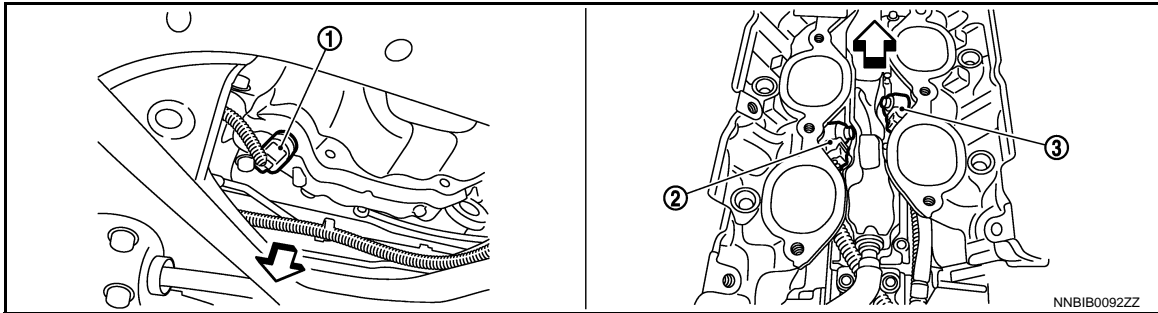
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

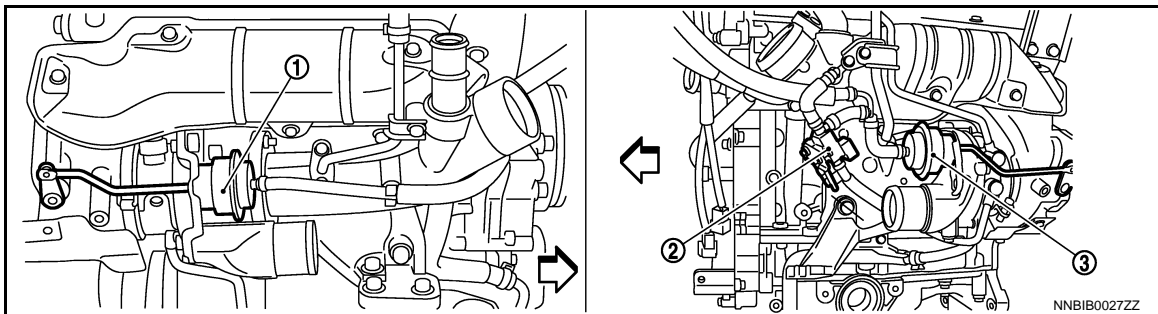
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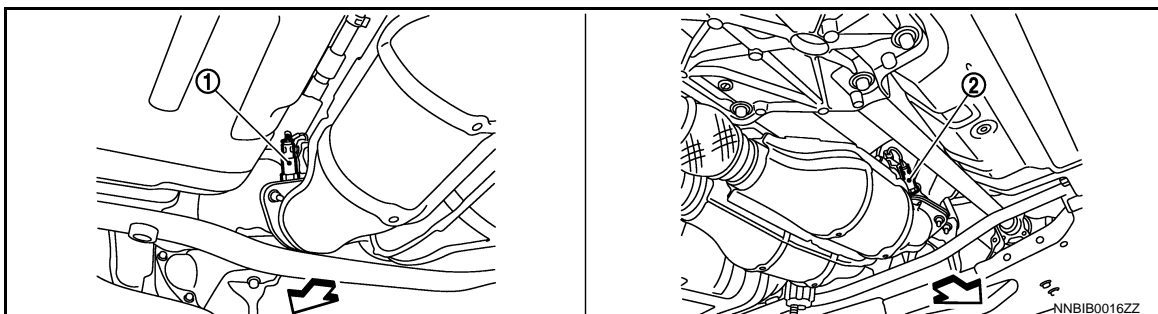
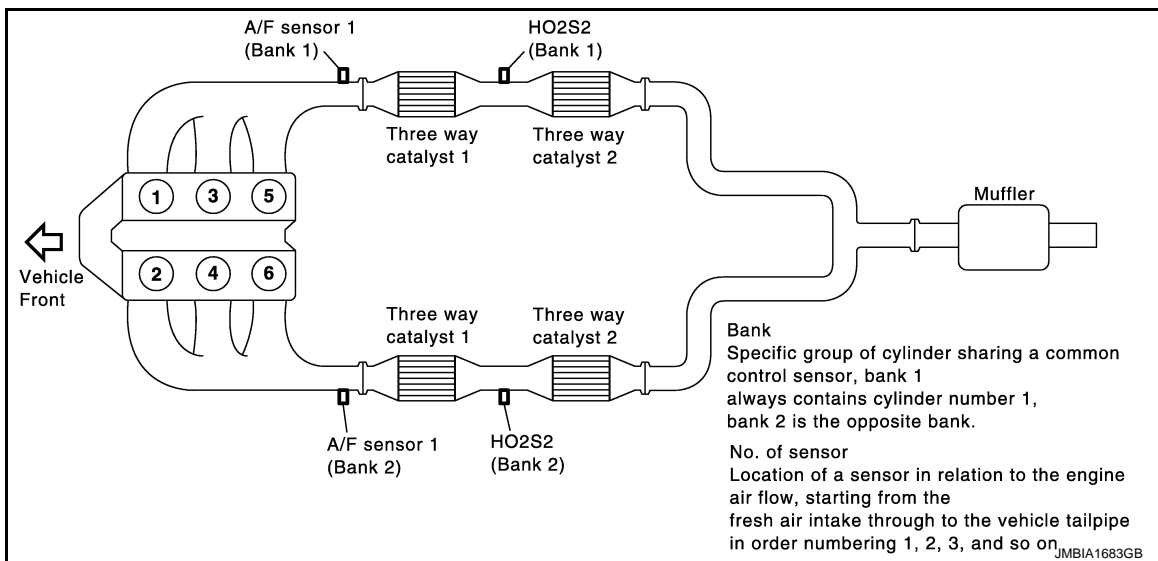
1. Crankshaft position sensor (POS) 2. Knock sensor (bank 2) 3. Knock sensor (bank 1)

← :Vehicle front



1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



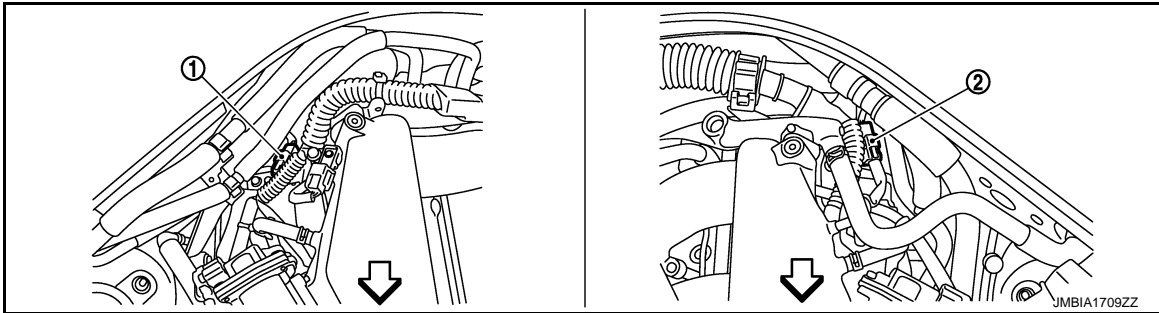
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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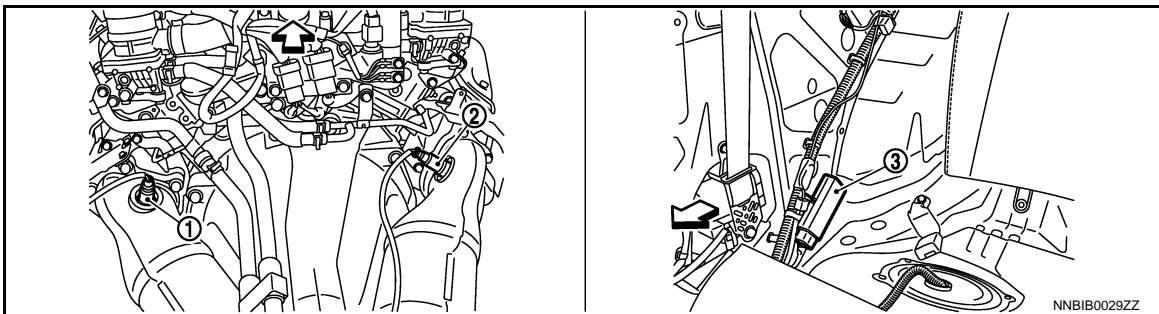
1. Heated oxygen sensor 2 (bank 2)
2. Heated oxygen sensor 2 (bank 1)

↶ :Vehicle front



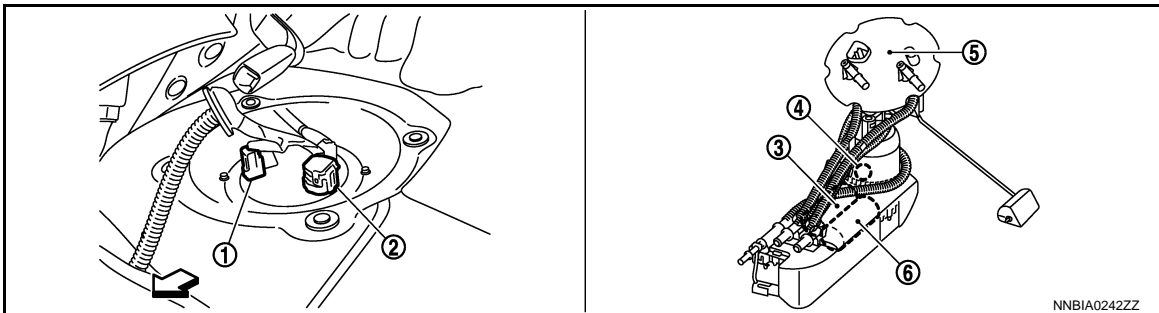
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

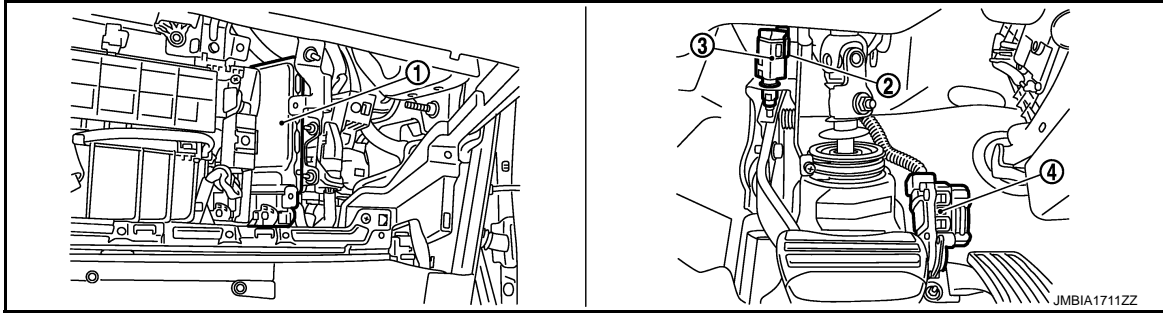
↶ :Vehicle front

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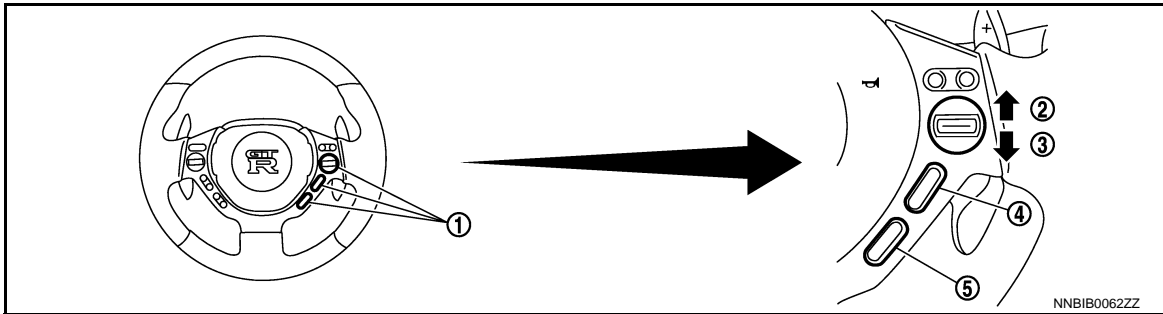
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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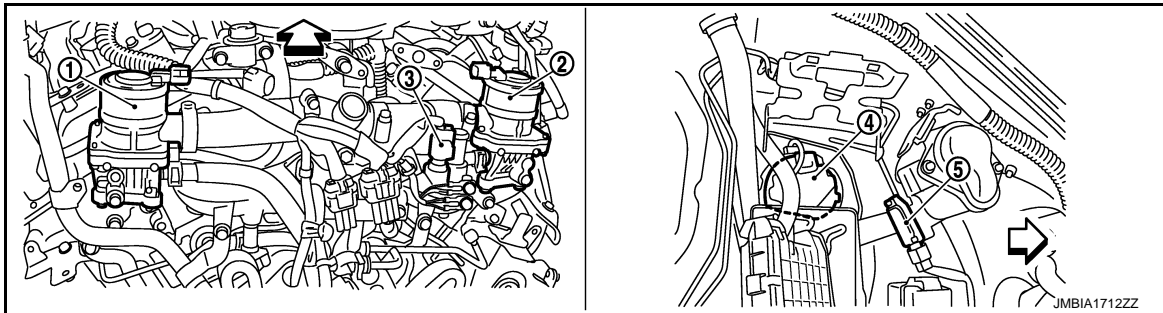
[VR38]



- 1. ECM
- 2. ASCD brake switch
- 3. Stop lamp switch
- 4. Accelerator pedal position sensor

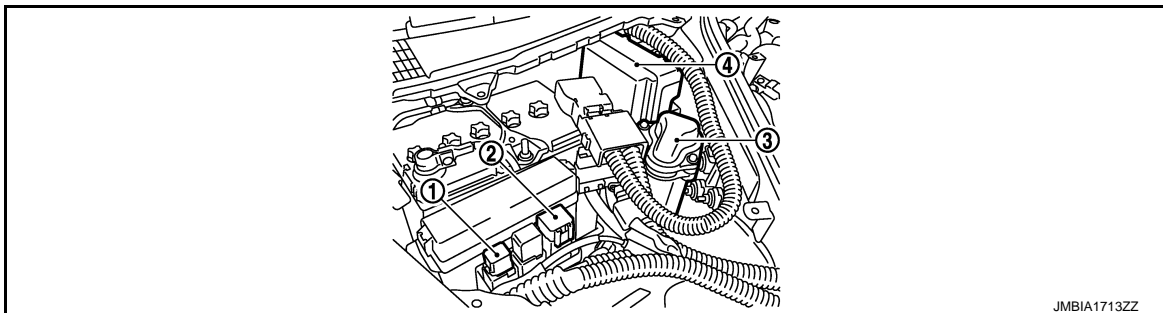


- 1. ASCD steering switch
- 2. RESUME/ACCELERATE switch
- 3. SET/COAST switch
- 4. CANCEL switch
- 5. MAIN switch



- 1. Air cut solenoid valve (bank 2)
- 2. Air cut solenoid valve (bank 1)
- 3. Engine coolant temperature sensor
- 4. Air pump
- 5. Secondary air injection system mass air flow sensor

↶ :Vehicle front



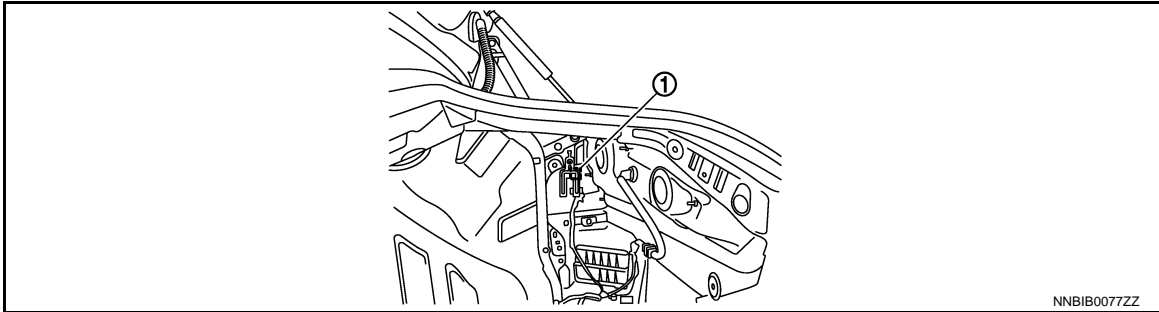
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

< SYSTEM DESCRIPTION >

[VR38]

- 1. Air cut solenoid valve relay
- 2. Air pump relay
- 3. Air pump cleaner
- 4. IPDM E/R

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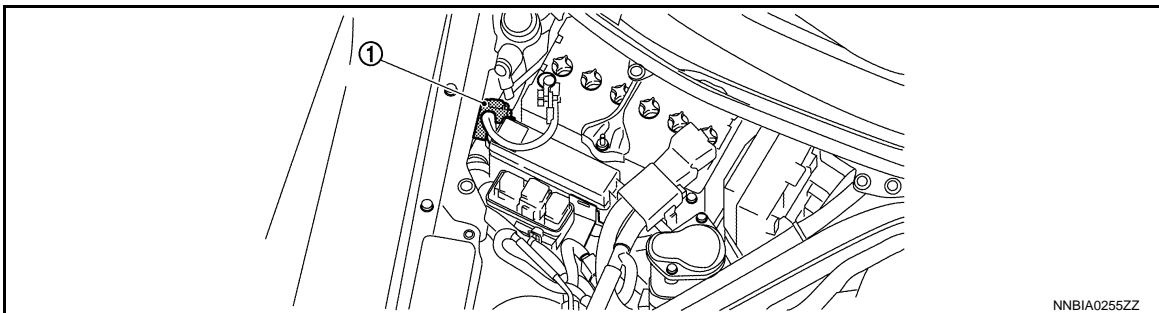
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- 1. Sub fuel pump relay



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- 1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:000000011486237

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

CAN COMMUNICATION

System Description (GT-R certified NISSAN dealer)

INFOID:000000011486238

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Refer to [LAN-24. "CAN Communication Signal Chart"](#), about CAN communication for detail.

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COOLING FAN CONTROL

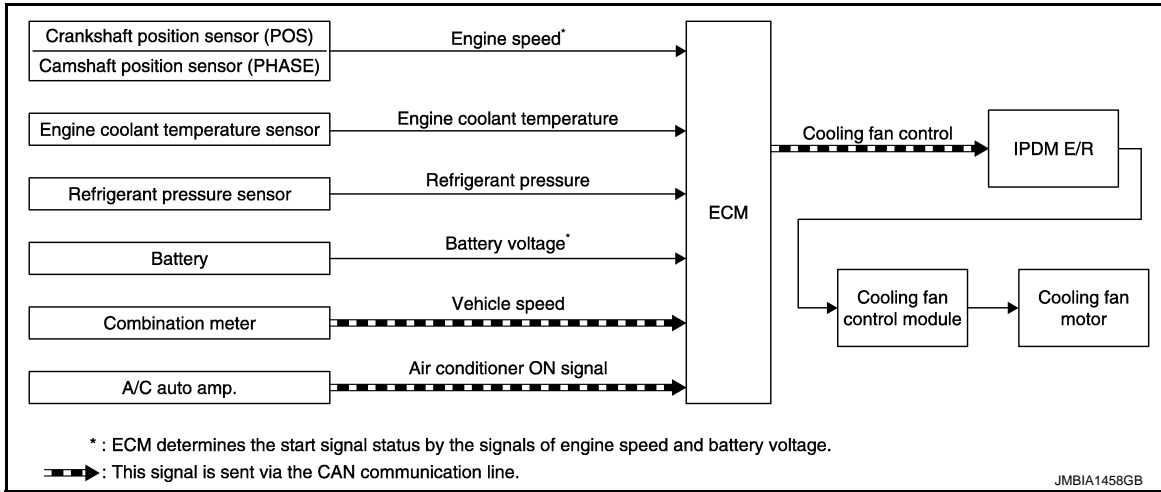
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[VR38]

COOLING FAN CONTROL

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486239



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486240

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed*1	Cooling fan control	IPDM E/R ↓ Cooling fan control module ↓ Cooling fan motor
Engine coolant temperature sensor	Engine coolant temperature		
Refrigerant pressure sensor	Refrigerant pressure		
Battery	Battery voltage*1		
Combination meter	Vehicle speed*2		
A/C auto amp.	Air conditioner ON signal*2		

*1: ECM determines the start signal status by the signals of engine speed and battery voltage.

*2: This signal is sent to ECM via the CAN communication line.

SYSTEM DESCRIPTION

ECM controls cooling fan speed corresponding to vehicle speed, engine coolant temperature, air conditioner ON signal, refrigerant pressure.

Cooling fan control signal is sent to IPDM E/R from ECM by CAN communication line. Then, IPDM E/R sends ON/OFF pulse duty signal to cooling fan control module. Corresponding to this ON/OFF pulse duty signal, cooling fan control module gives cooling fan motor operating voltage to cooling fan motors. Cooling fan speed is controlled by duty cycle of cooling fan motor operating voltage sent from cooling fan control module.

NOTE:

To cool off the engine, the cooling fan may continue to say ON for two minutes after turning OFF the ignition switch.

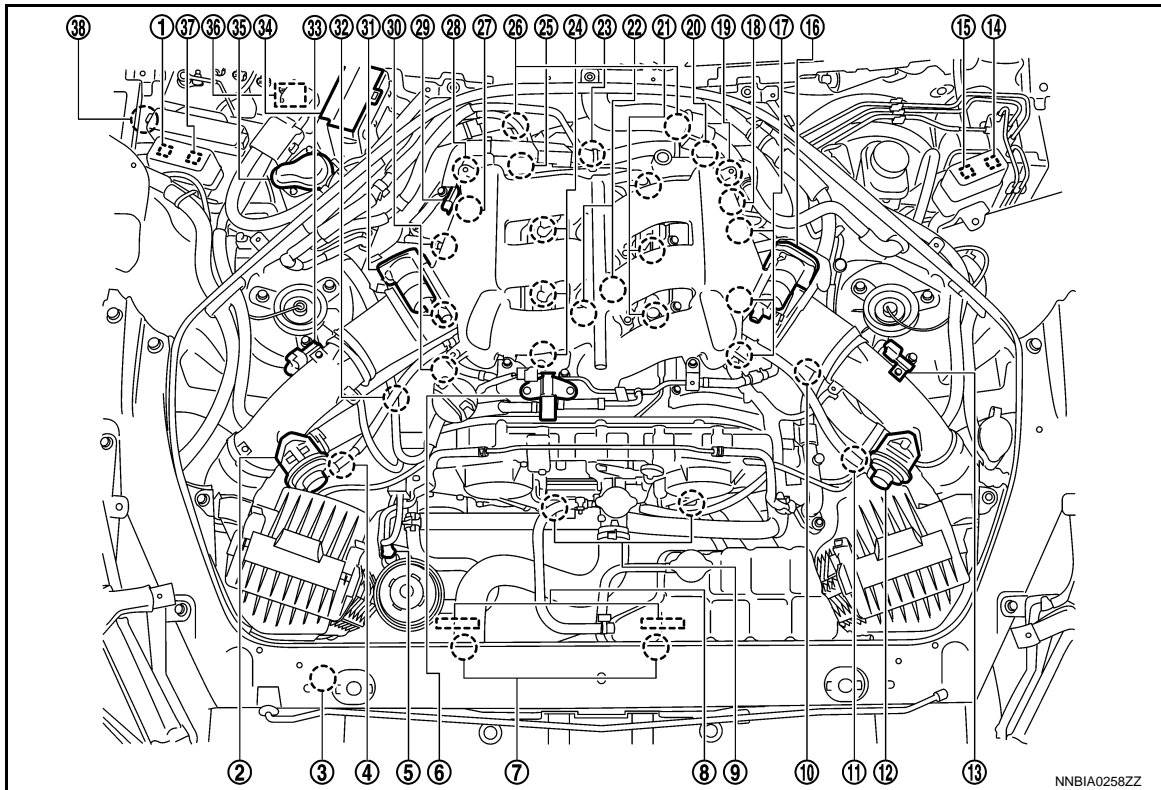
COOLING FAN CONTROL

< SYSTEM DESCRIPTION >

[VR38]

Component Parts Location (GT-R certified NISSAN dealer)

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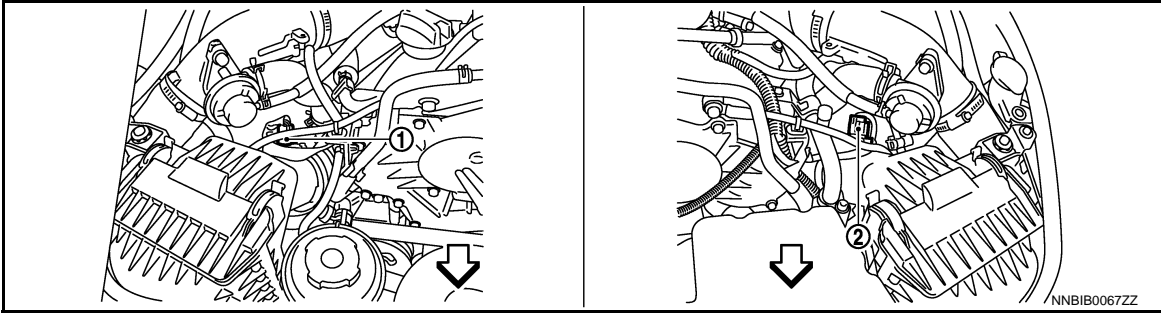


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

COOLING FAN CONTROL

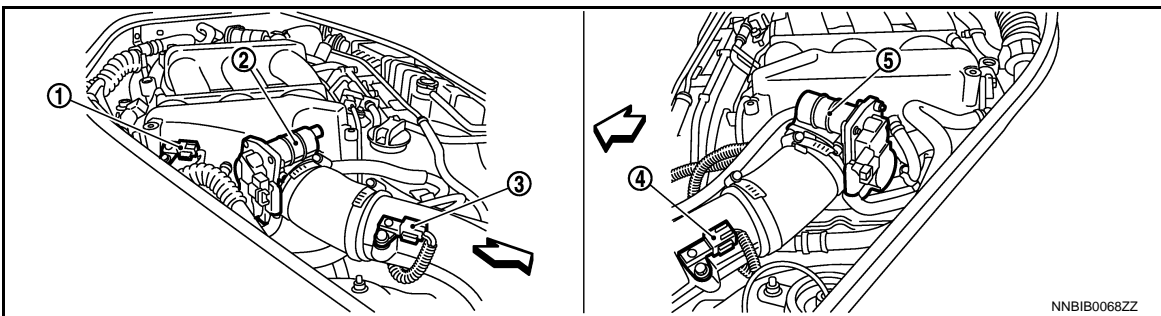
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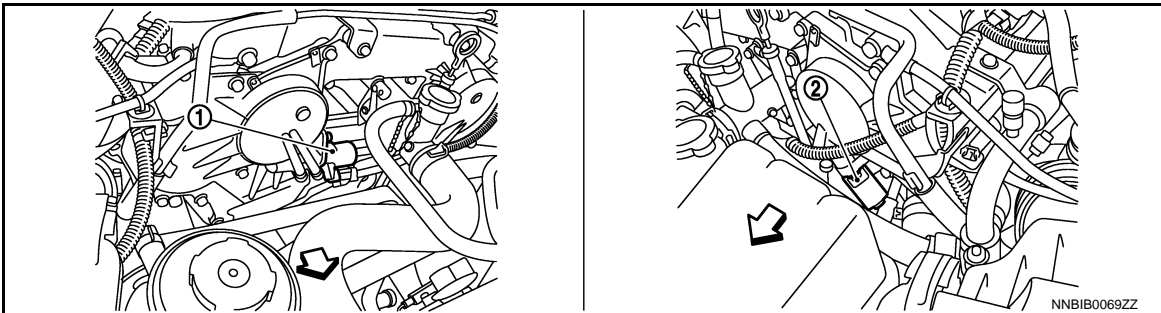
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

↶ :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

↶ :Vehicle front



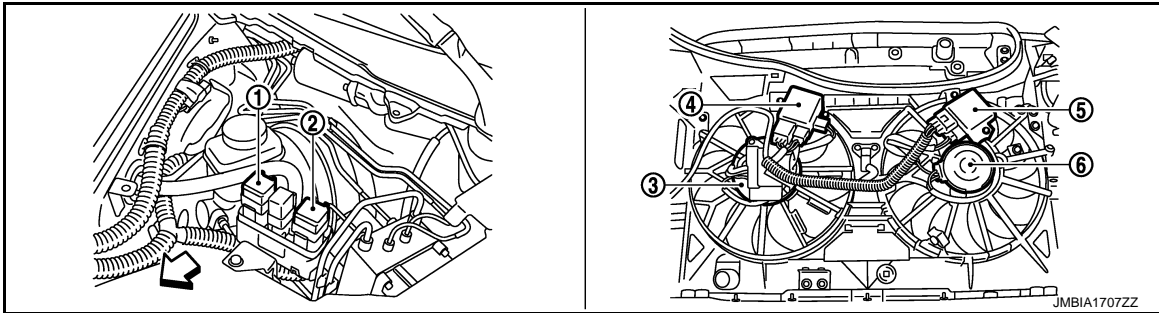
- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

↶ :Vehicle front

COOLING FAN CONTROL

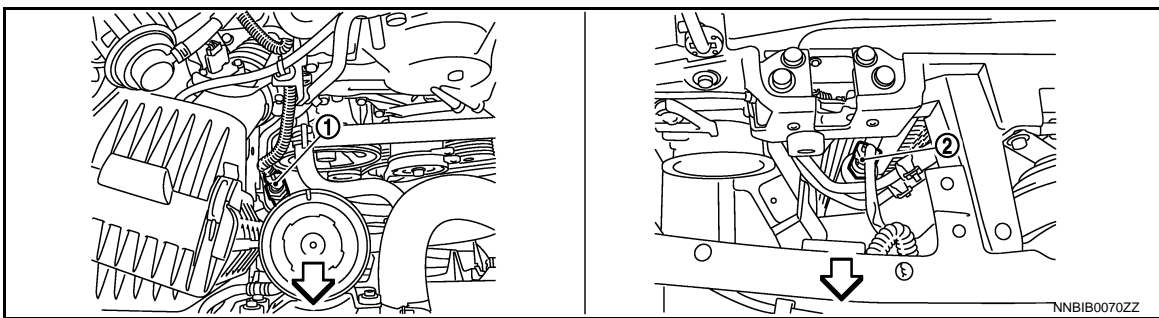
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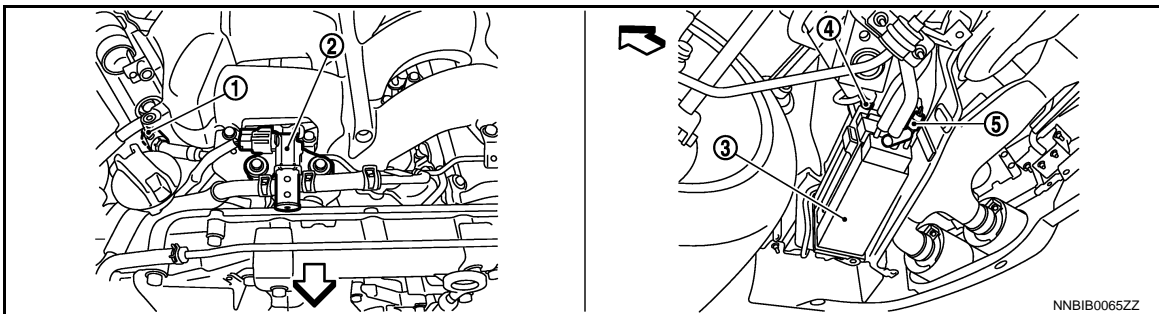
- | | | |
|---------------------------------|---------------------------------|------------------------|
| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



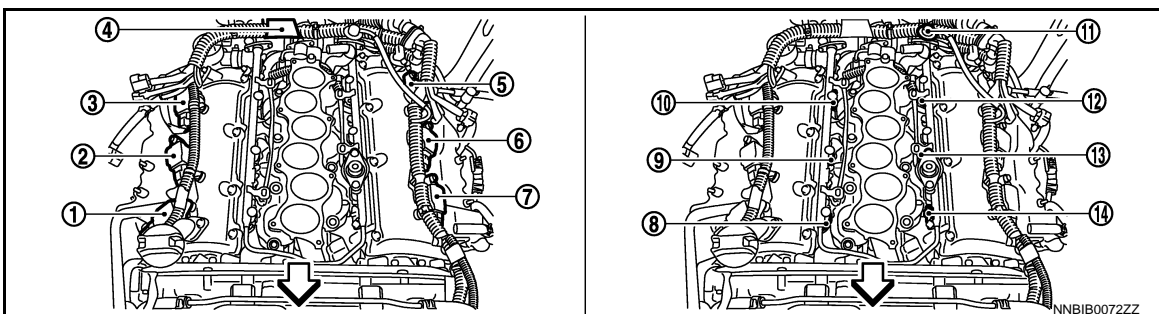
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| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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|--|---------------------------------------|---------------------------------|
| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



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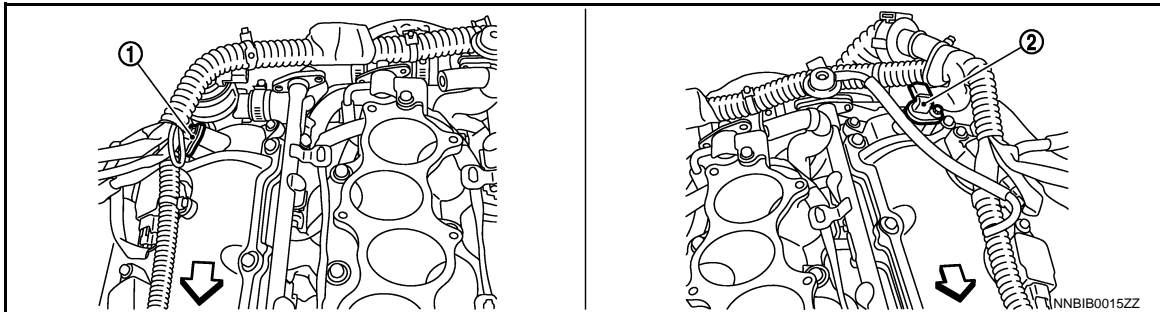
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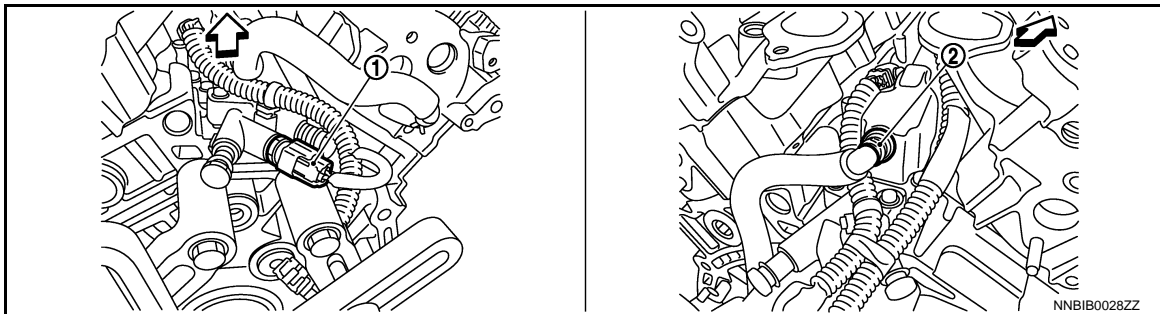
- | | | |
|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

⇐ :Vehicle front



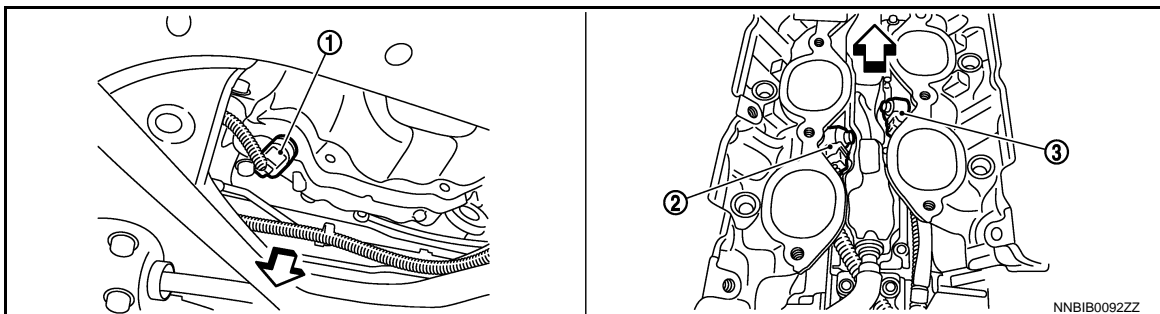
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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⇐ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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⇐ :Vehicle front



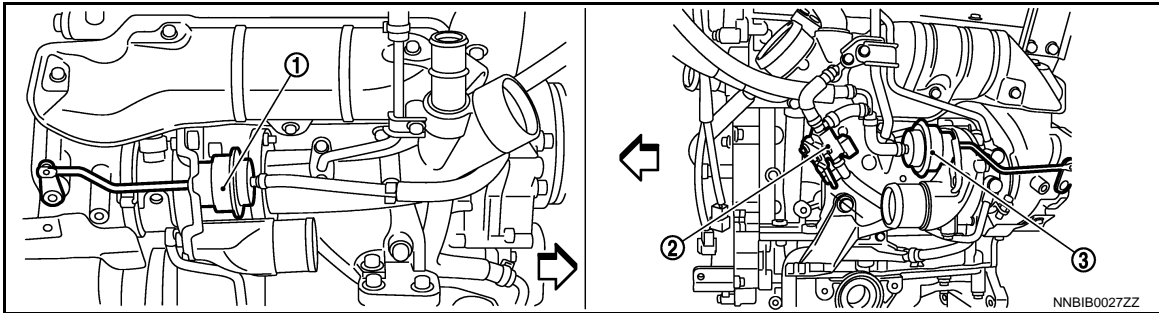
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|-------------------------------------|--------------------------|--------------------------|
| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
|-------------------------------------|--------------------------|--------------------------|

⇐ :Vehicle front

COOLING FAN CONTROL

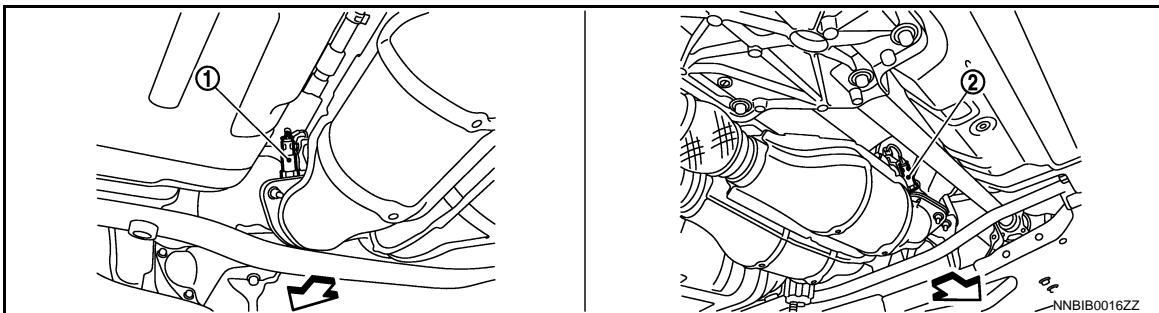
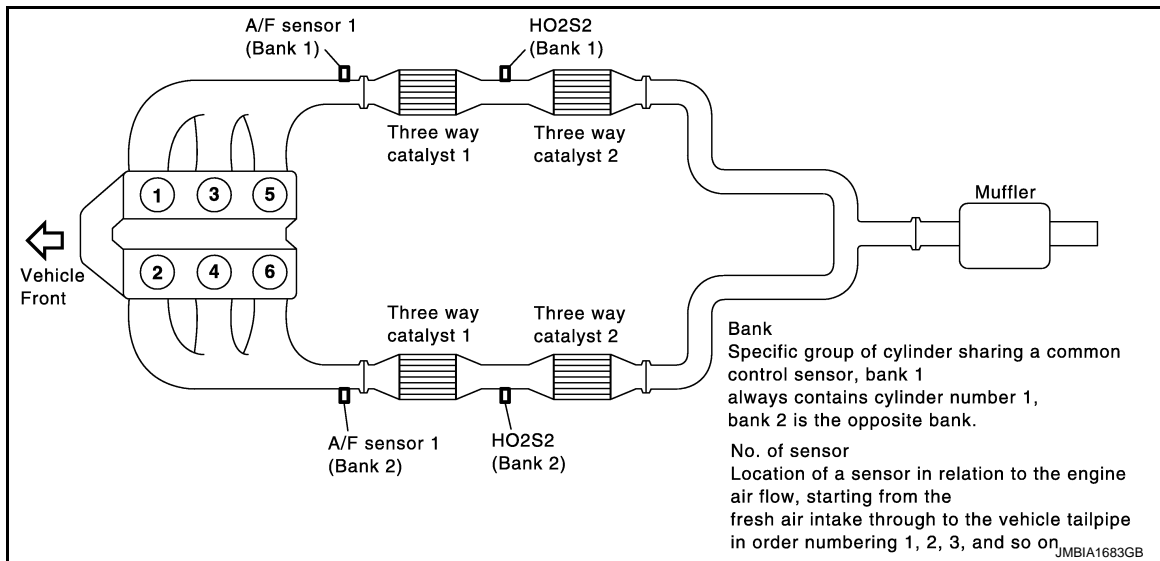
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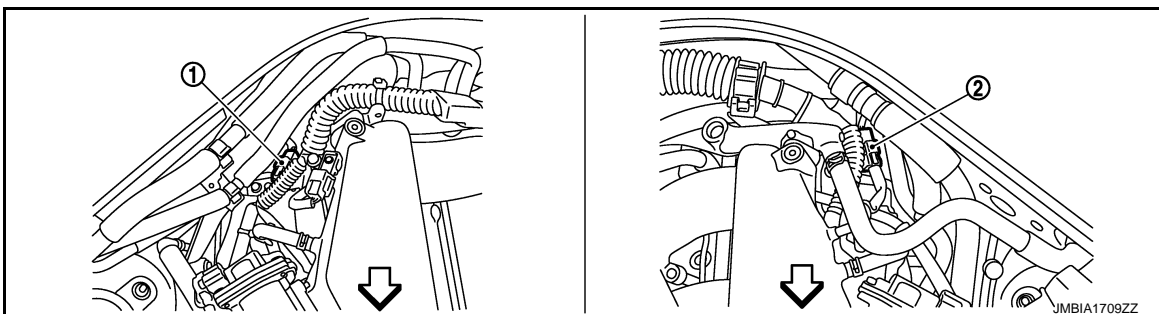
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



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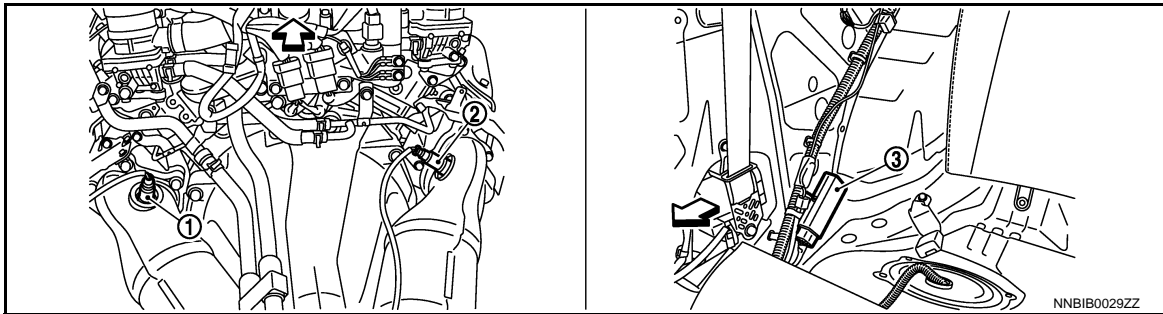
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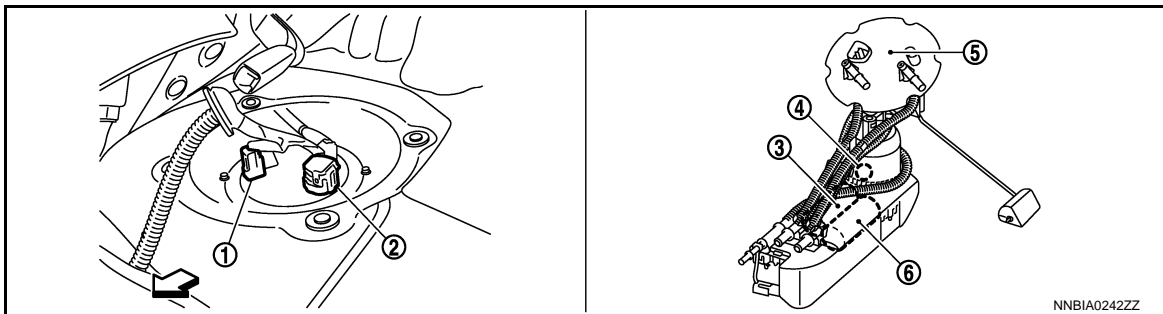
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



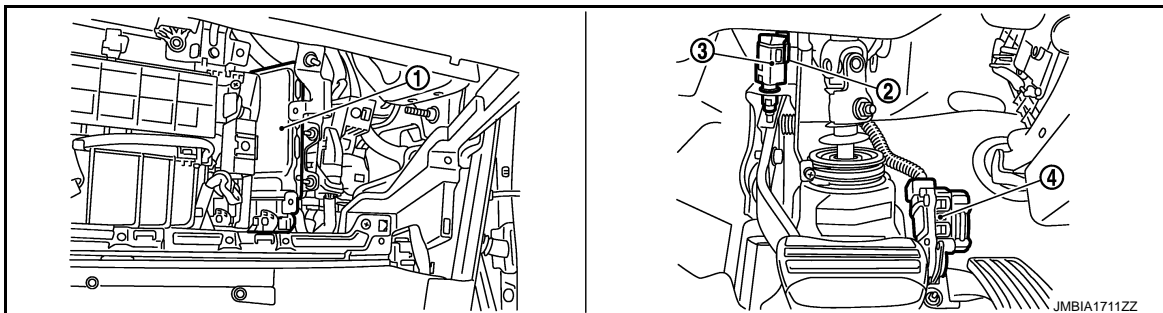
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump (main) harness connector
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front

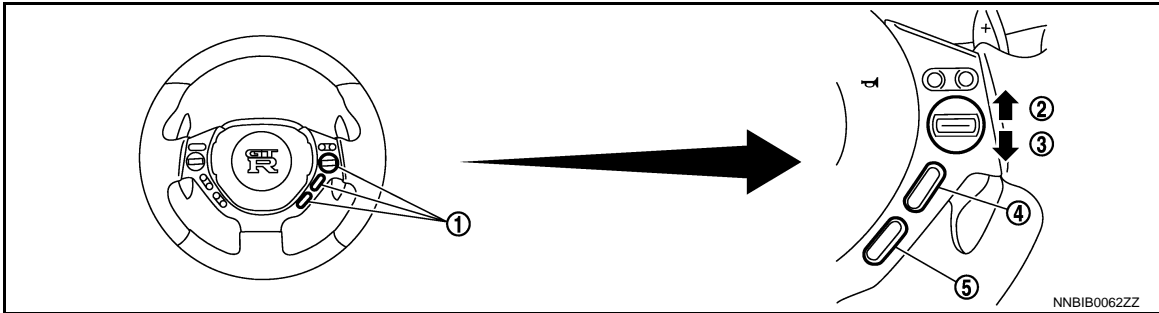


1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

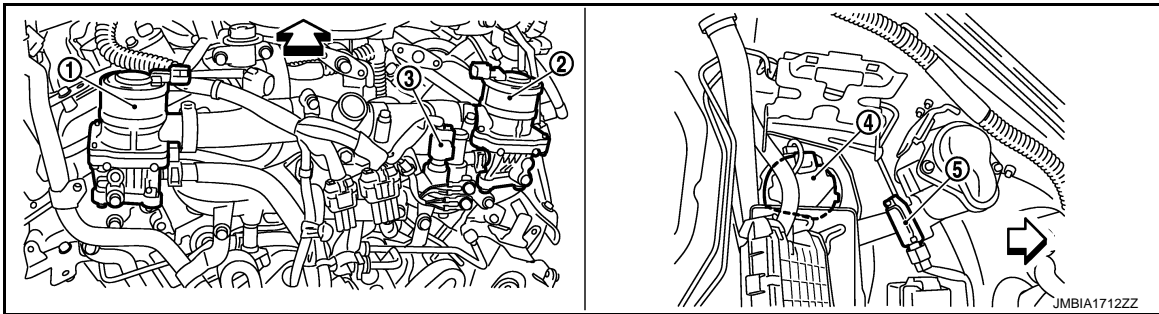
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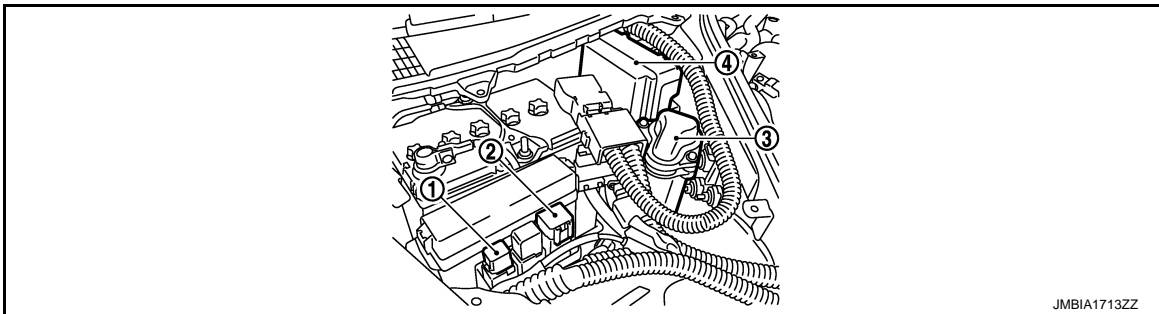


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

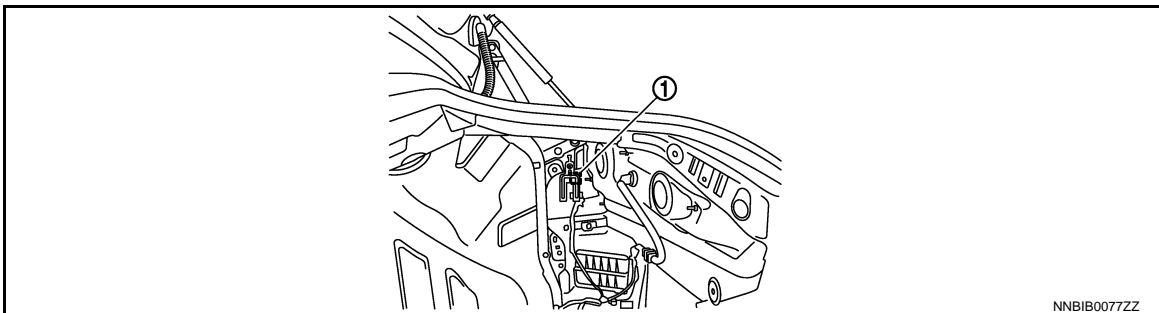


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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|---------------------------------|-------------------|---------------------|
| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |



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| 1. Sub fuel pump relay |
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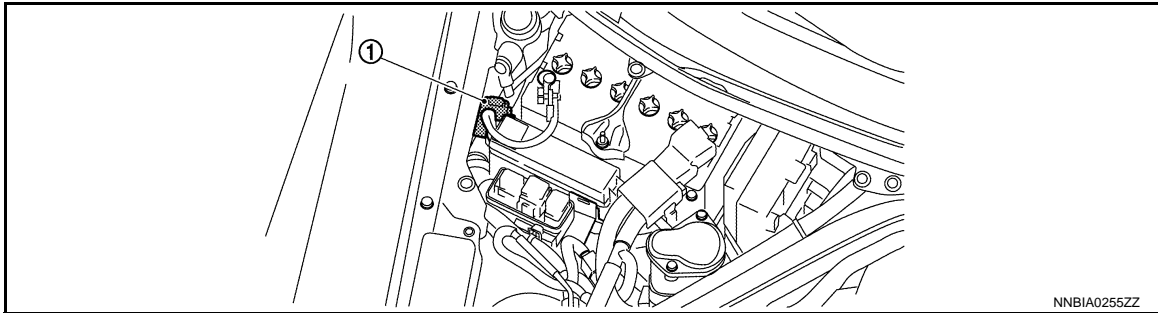
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COOLING FAN CONTROL

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:000000011486242

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

COOLING FAN CONTROL

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

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EVAPORATIVE EMISSION SYSTEM

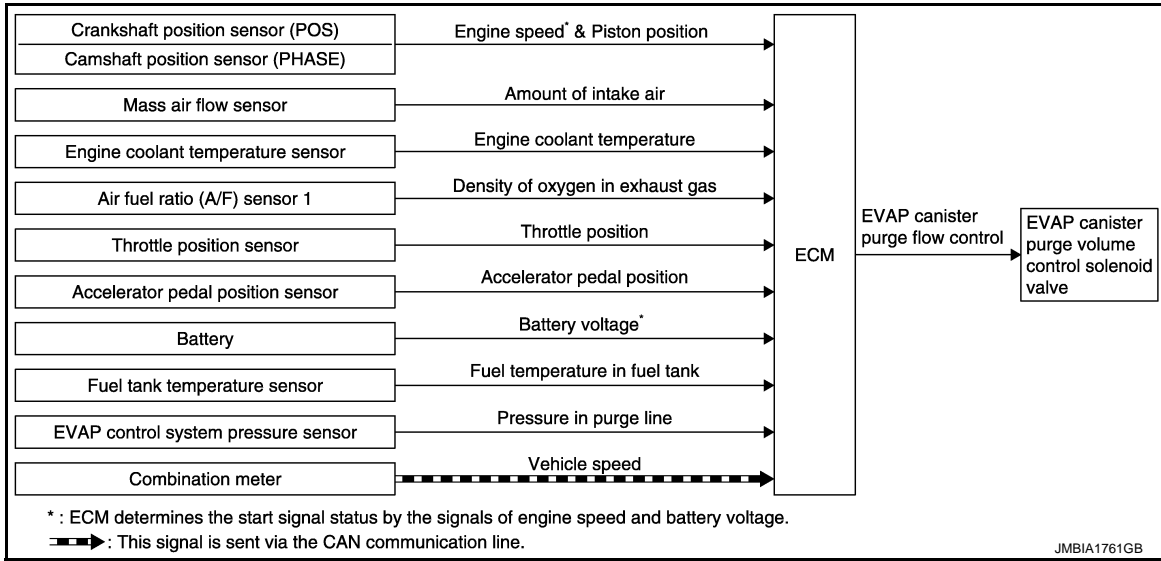
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[VR38]

EVAPORATIVE EMISSION SYSTEM

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486243



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486244

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed*1 Piston position	EVAP canister purge flow control	EVAP canister purge vol- ume control solenoid valve
Camshaft position sensor (PHASE)			
Mass air flow sensor	Amount of intake air		
Engine coolant temperature sensor	Engine coolant temperature		
Throttle position sensor	Throttle position		
Accelerator pedal position sensor	Accelerator pedal position		
Air fuel ratio (A/F) sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)		
Battery	Battery voltage*1		
Fuel tank temperature sensor	Fuel temperature in fuel tank		
EVAP control system pressure sensor	Pressure in purge line		
Combination meter	Vehicle speed*2		

*1: ECM determines the start signal status by the signals of engine speed and battery voltage.

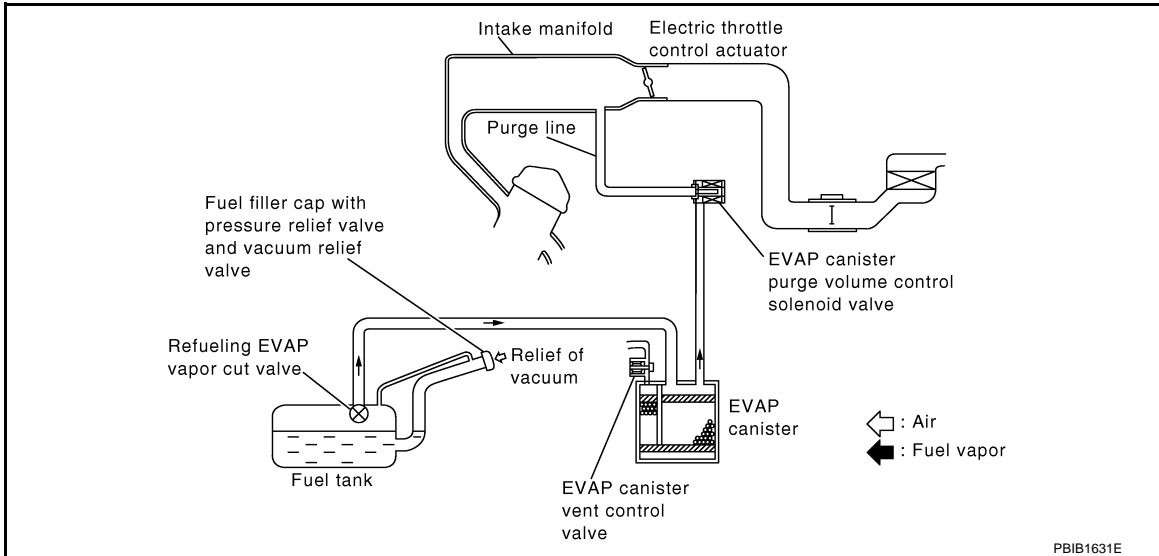
*2: This signal is sent to the ECM via the CAN communication line.

EVAPORATIVE EMISSION SYSTEM

[VR38]

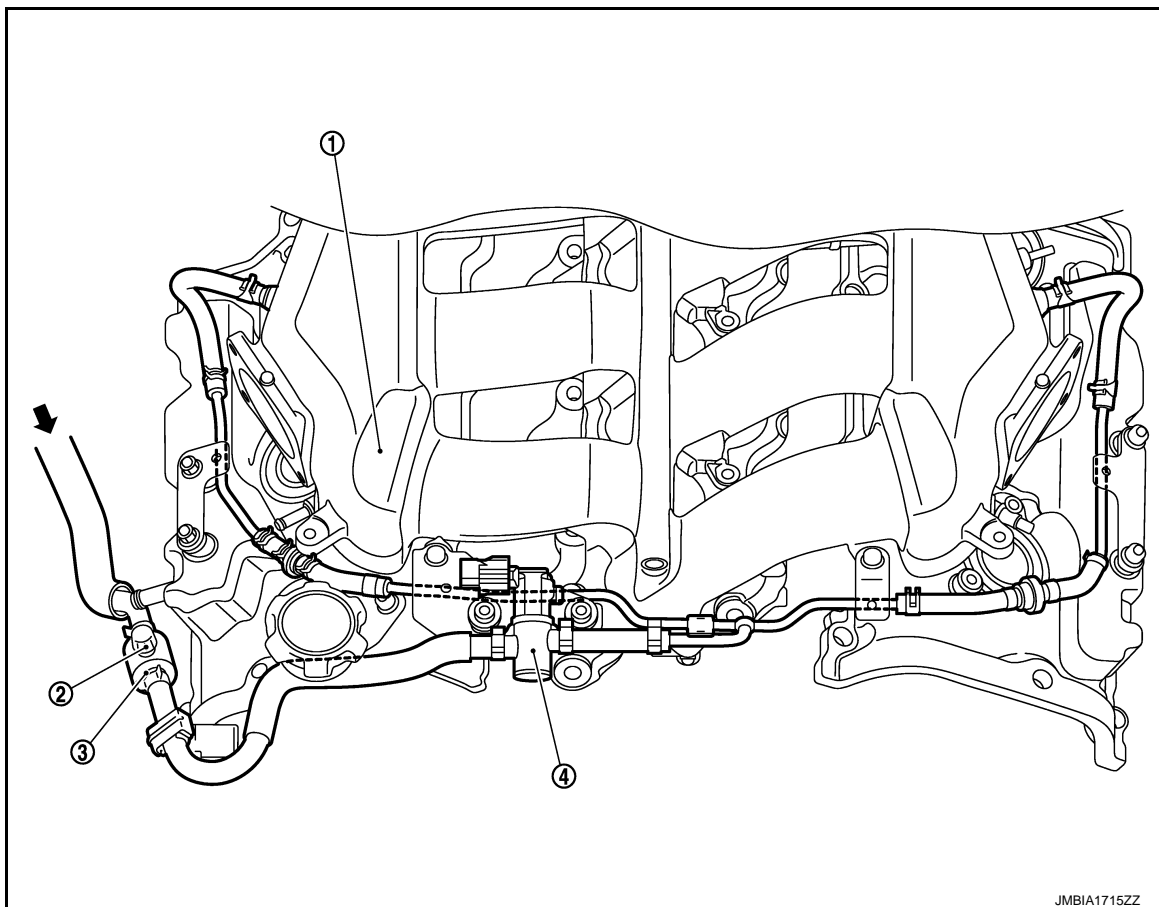
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION



The evaporative emission system is used to reduce hydrocarbons emitted into the atmosphere from the fuel system. This reduction of hydrocarbons is accomplished by activated charcoals in the EVAP canister. The fuel vapor in the sealed fuel tank is led into the EVAP canister which contains activated carbon and the vapor is stored there when the engine is not operating or when refueling to the fuel tank. The vapor in the EVAP canister is purged by the air through the purge line to the intake manifold when the engine is operating. EVAP canister purge volume control solenoid valve is controlled by ECM. When the engine operates, the flow rate of vapor controlled by EVAP canister purge volume control solenoid valve is proportionally regulated as the air flow increases.

EVAPORATIVE EMISSION LINE DRAWING



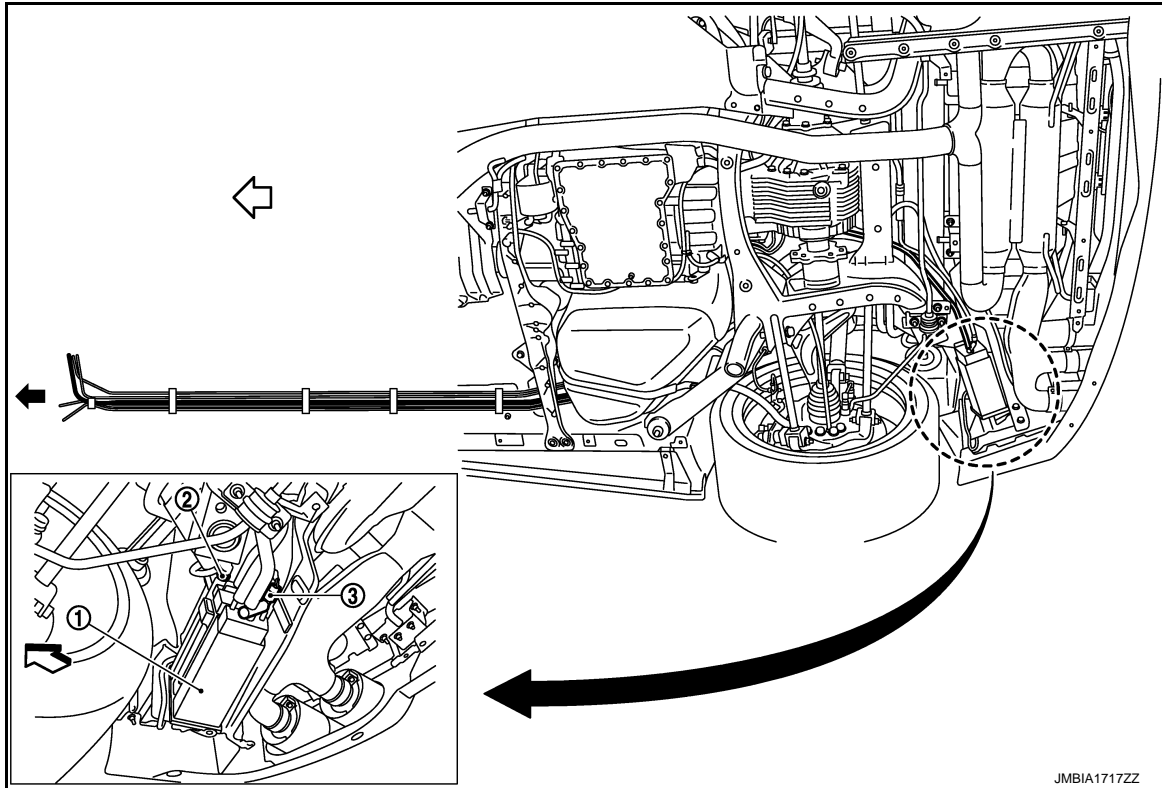
EVAPORATIVE EMISSION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

1. Intake manifold collector
2. EVAP service port
3. EVAP purge resonator
4. EVAP canister purge volume control solenoid valve

← : From next figure



1. EVAP canister
2. EVAP canister vent control valve
3. EVAP control system pressure sensor

↔ : Vehicle front

← : To previous figure

NOTE:

Do not use soapy water or any type of solvent while installing vacuum hose or purge hoses.

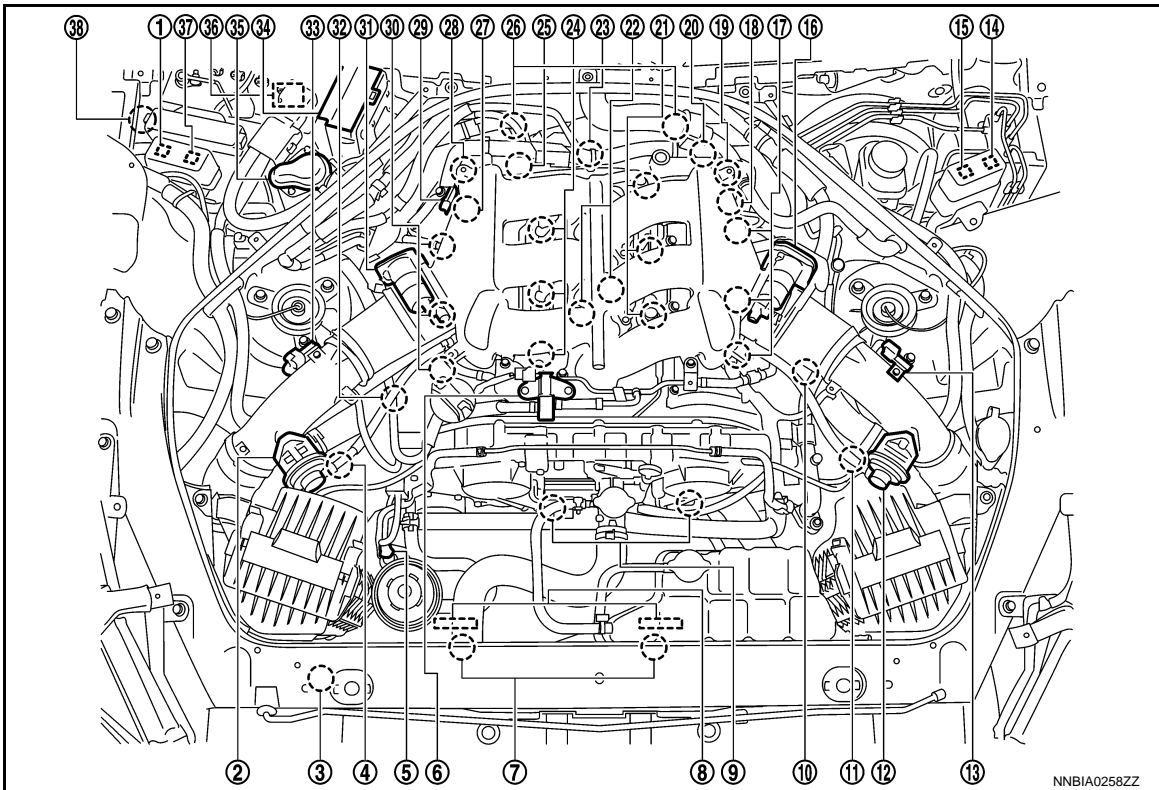
EVAPORATIVE EMISSION SYSTEM

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[VR38]

Component Parts Location (GT-R certified NISSAN dealer)

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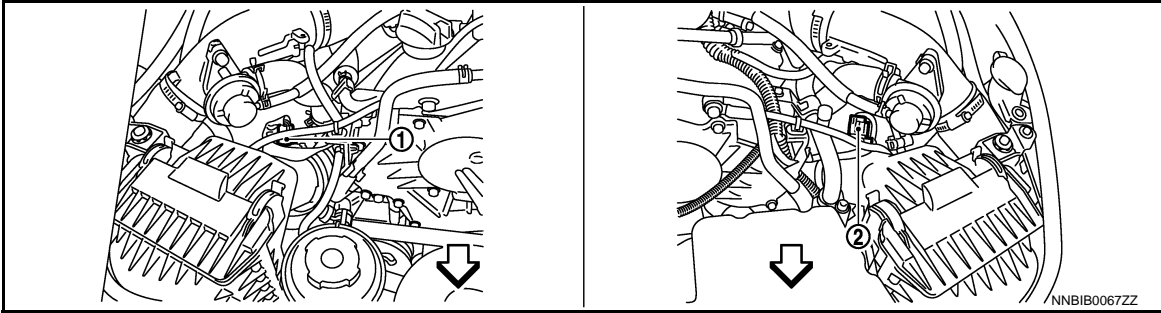


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|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

EVAPORATIVE EMISSION SYSTEM

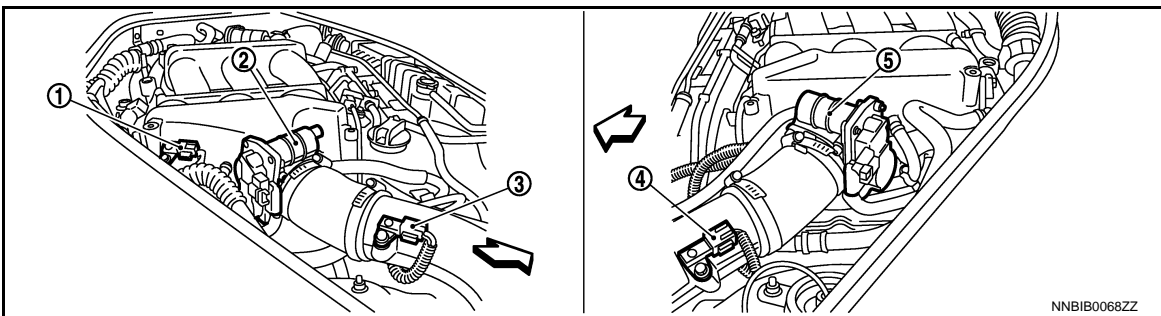
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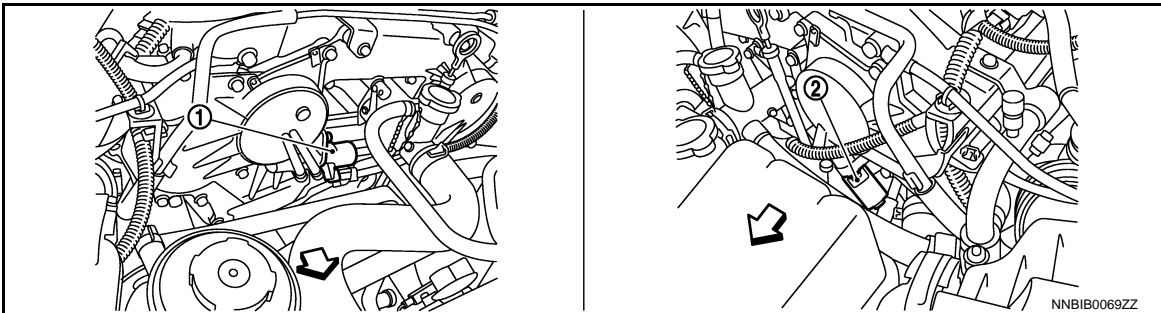
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

↶ :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

↶ :Vehicle front



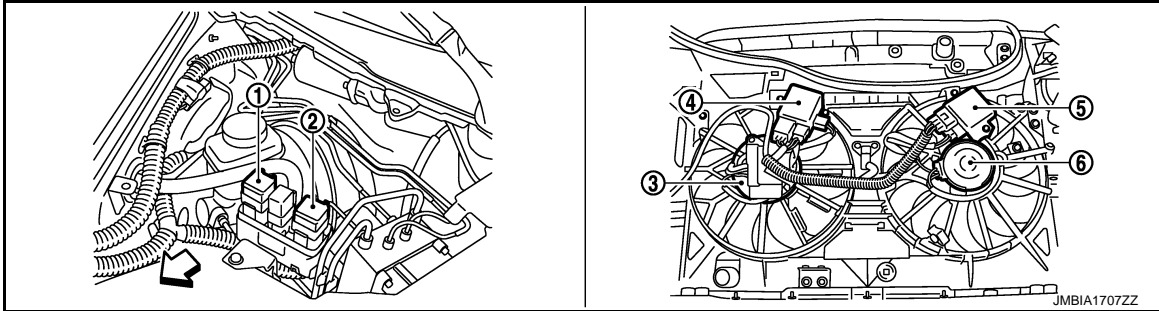
- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

↶ :Vehicle front

EVAPORATIVE EMISSION SYSTEM

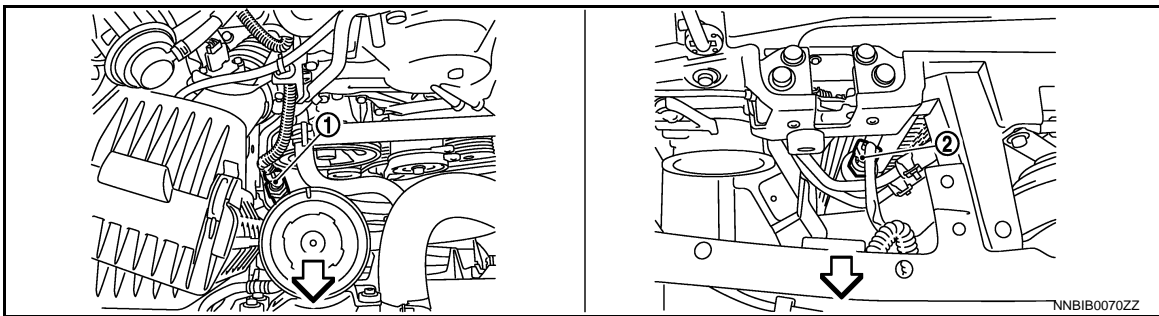
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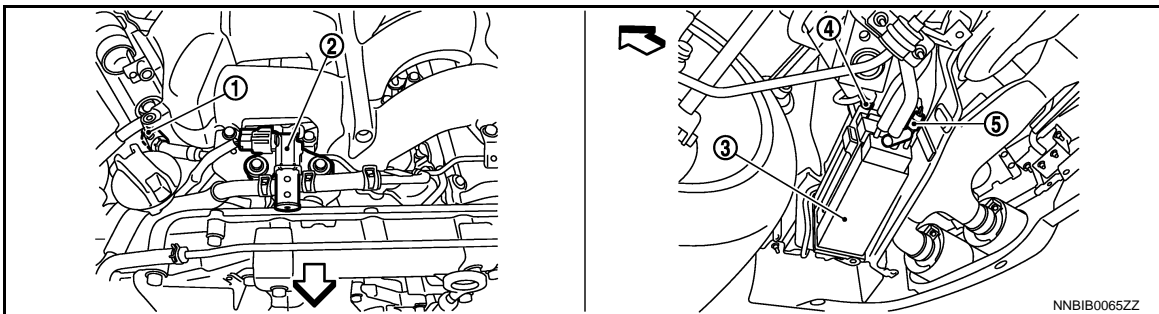
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|---------------------------------|---------------------------------|------------------------|
| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



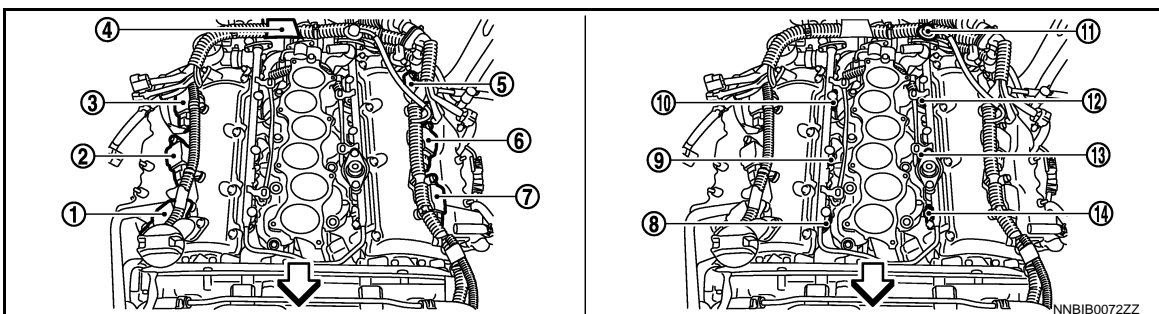
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|-----------------------------------|--------------------------------|
| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



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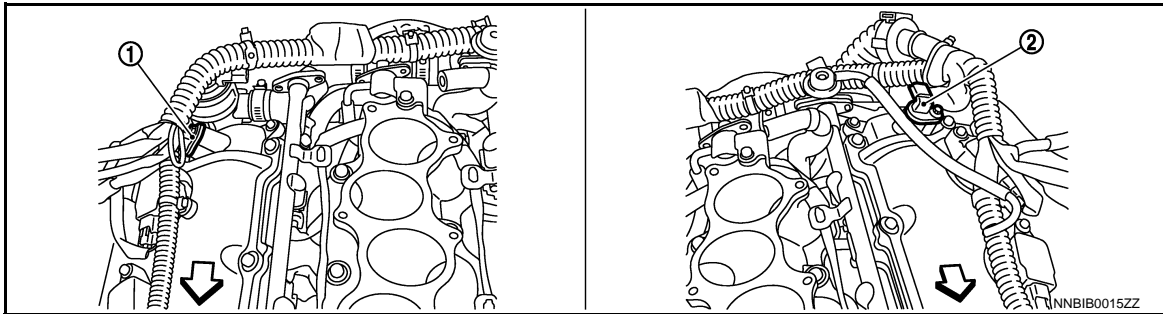
EVAPORATIVE EMISSION SYSTEM

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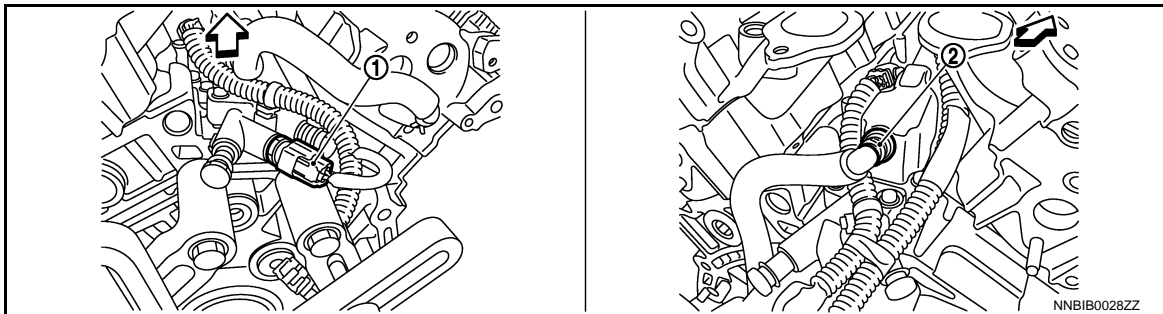
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

⇐ :Vehicle front



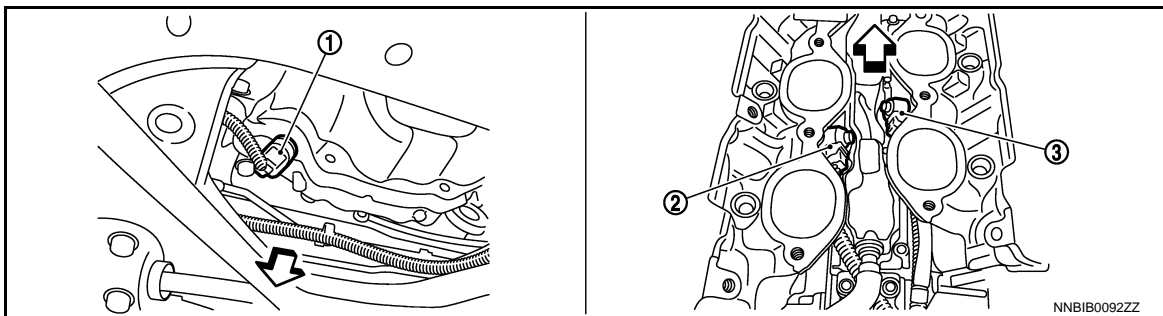
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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⇐ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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⇐ :Vehicle front



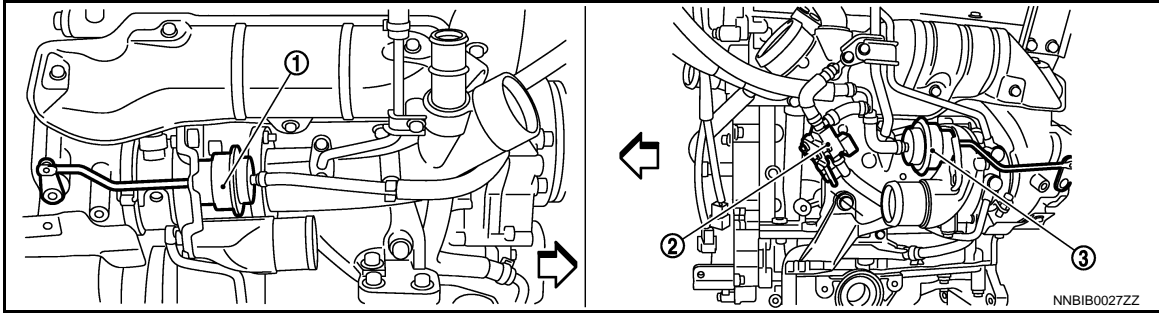
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| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
|-------------------------------------|--------------------------|--------------------------|

⇐ :Vehicle front

EVAPORATIVE EMISSION SYSTEM

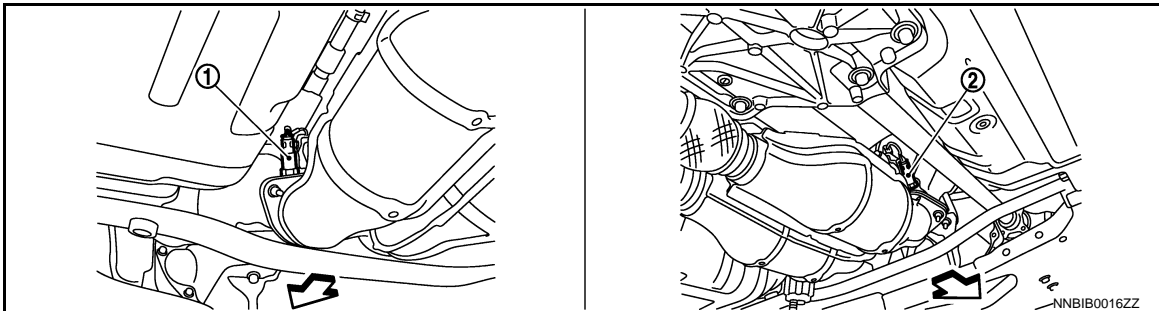
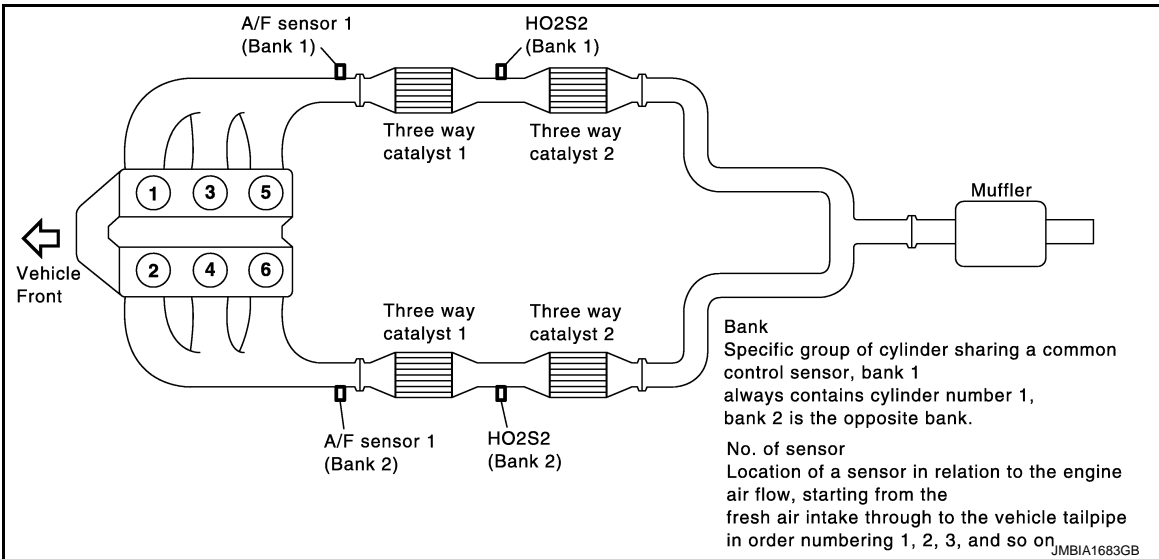
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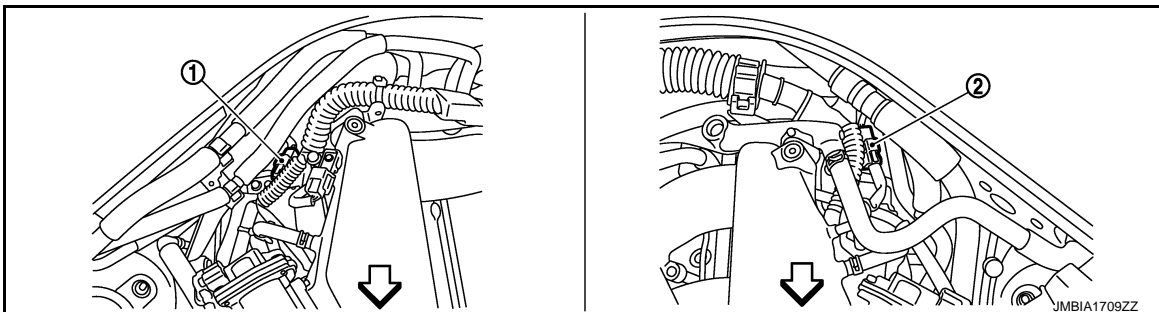
- 1. Boost control actuator (bank 1)
- 2. Turbocharger boost control solenoid
- 3. Boost control actuator (bank 2)

← :Vehicle front



- 1. Heated oxygen sensor 2 (bank 2)
- 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



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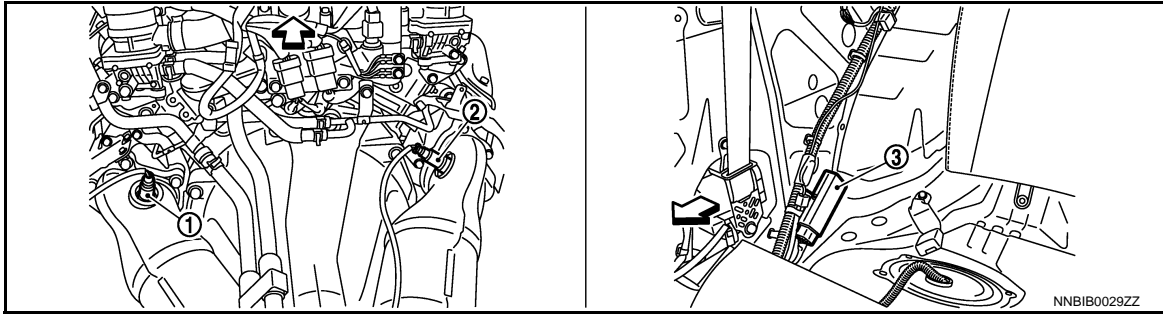
EVAPORATIVE EMISSION SYSTEM

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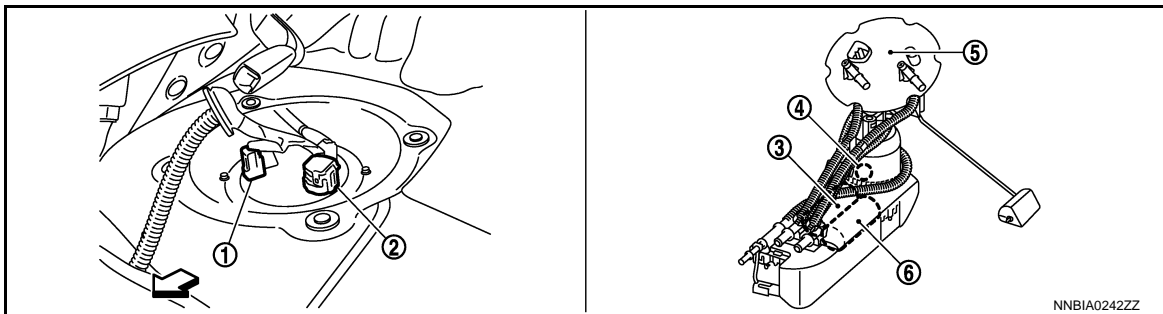
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



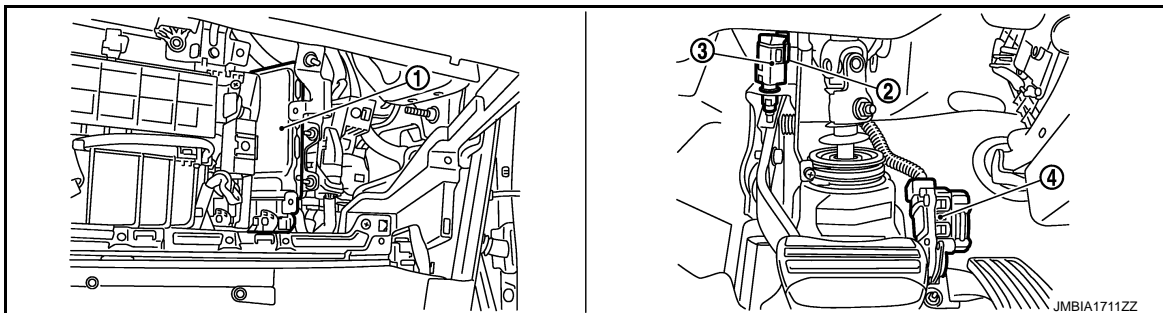
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump (main) harness connector
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front

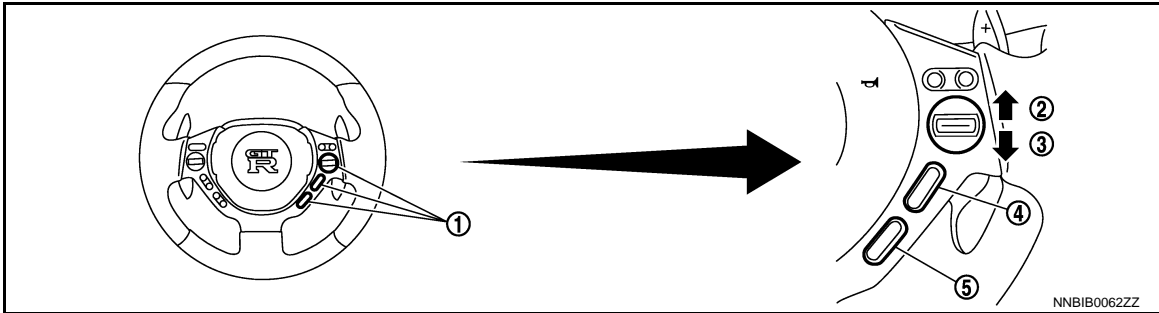


1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

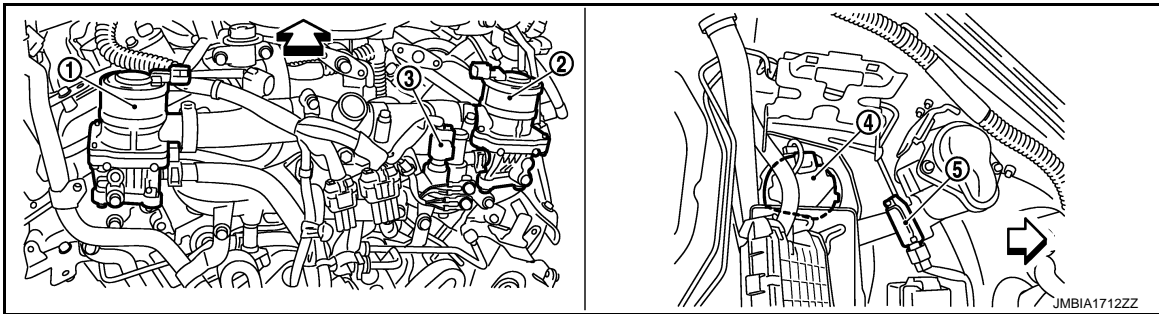
EVAPORATIVE EMISSION SYSTEM

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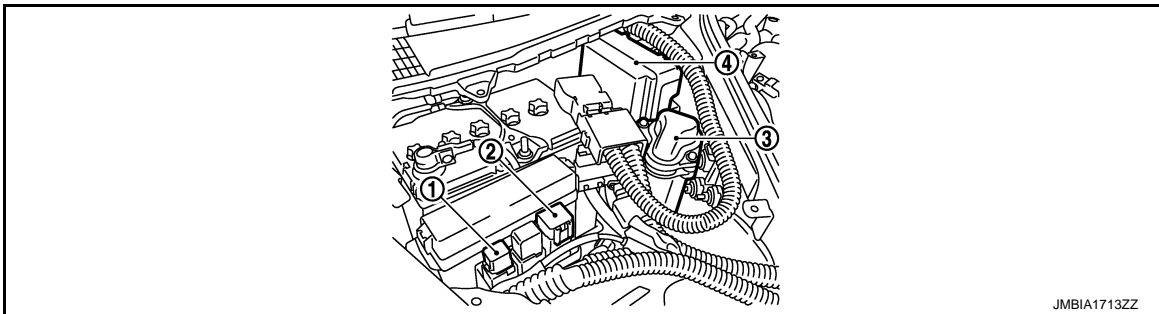


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

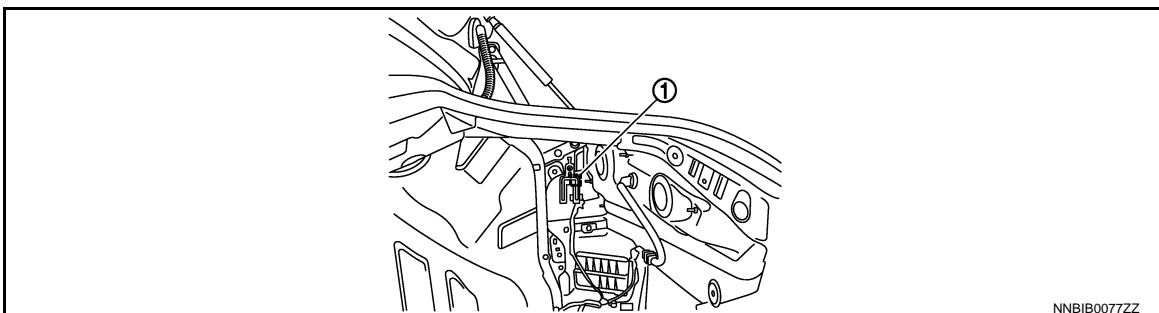


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |



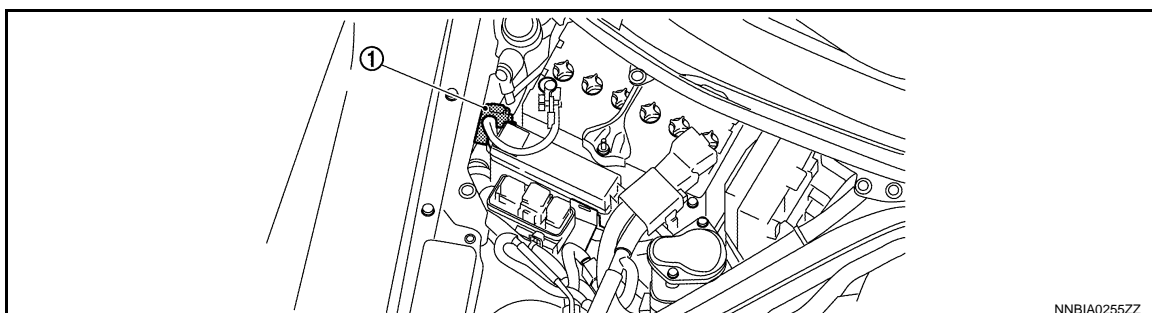
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| 1. Sub fuel pump relay |
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EVAPORATIVE EMISSION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:000000011486246

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

EVAPORATIVE EMISSION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

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INTAKE VALVE TIMING CONTROL

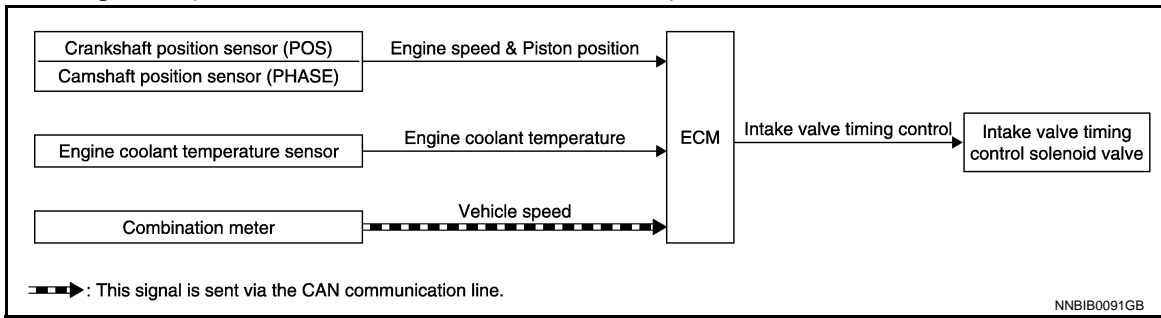
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INTAKE VALVE TIMING CONTROL

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486247



System Description (GT-R certified NISSAN dealer)

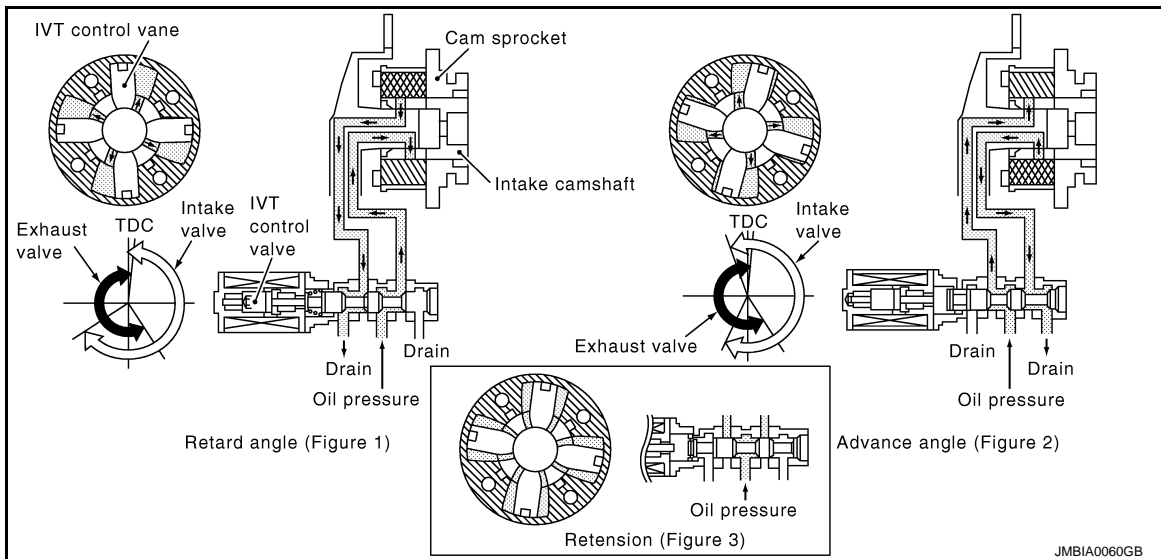
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INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed and piston position	Intake valve timing control	Intake valve timing control solenoid valve
Camshaft position sensor (PHASE)			
Engine coolant temperature sensor	Engine coolant temperature		
Combination meter	Vehicle speed*		

*: This signal is sent to the ECM via the CAN communication line

SYSTEM DESCRIPTION



This mechanism hydraulically controls cam phases continuously with the fixed operating angle of the intake valve.

The ECM receives signals such as crankshaft position, camshaft position, engine speed, and engine coolant temperature. Then, the ECM sends ON/OFF pulse duty signals to the intake valve timing (IVT) control solenoid valve depending on driving status. This makes it possible to control the shut/open timing of the intake valve to increase engine torque in low/mid speed range and output in high-speed range.

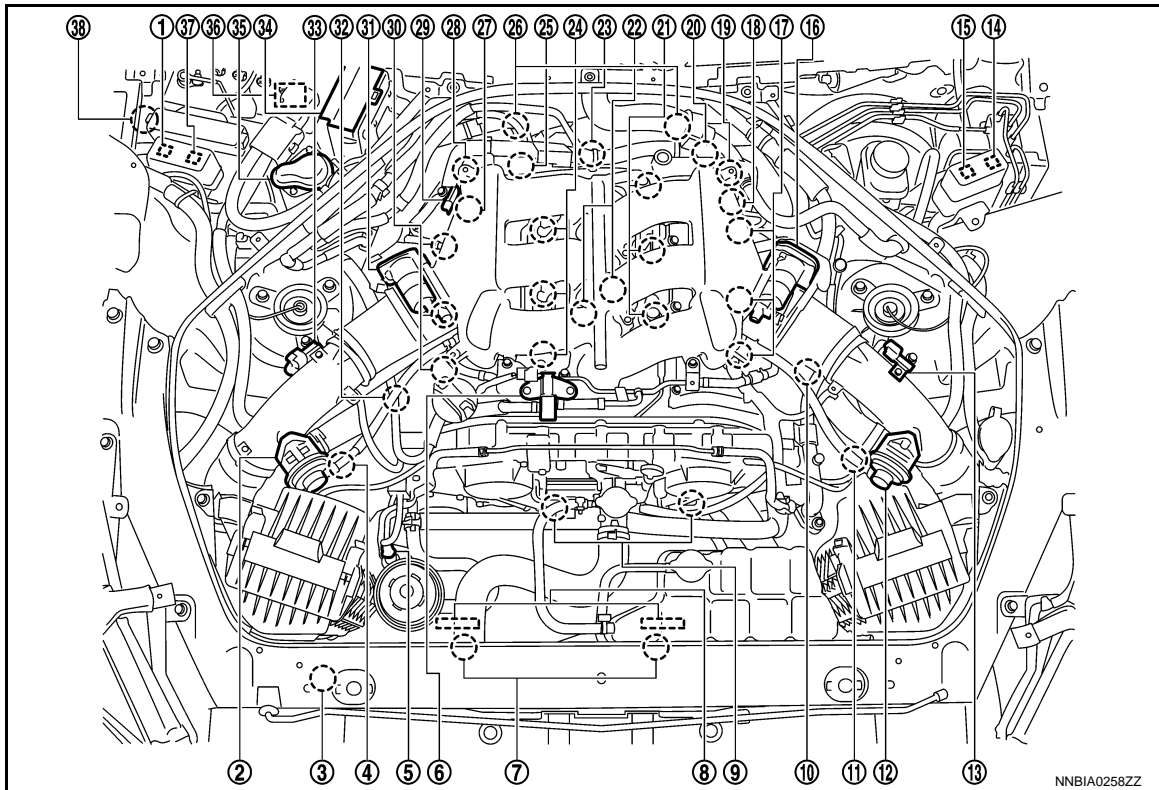
INTAKE VALVE TIMING CONTROL

< SYSTEM DESCRIPTION >

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Component Parts Location (GT-R certified NISSAN dealer)

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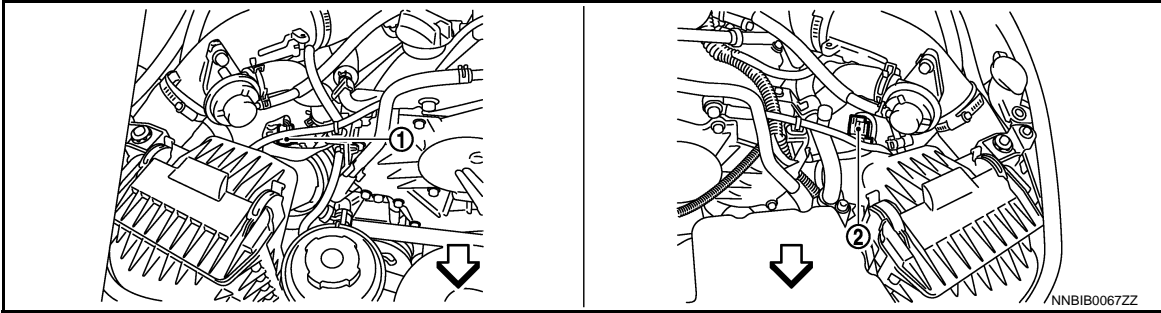


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

INTAKE VALVE TIMING CONTROL

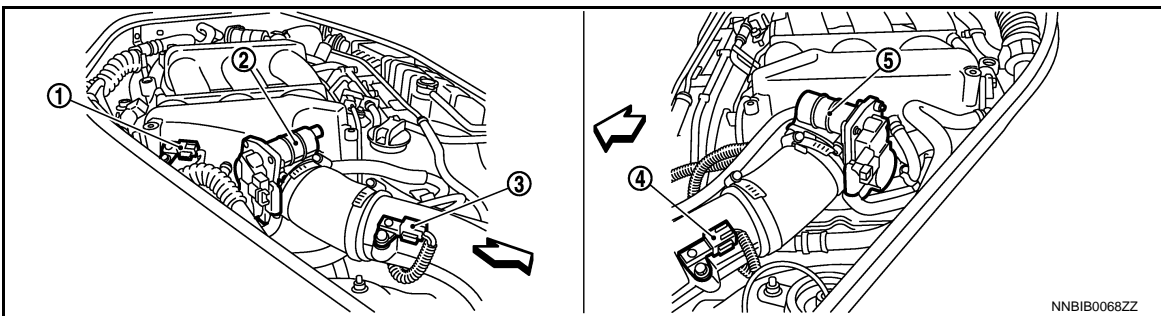
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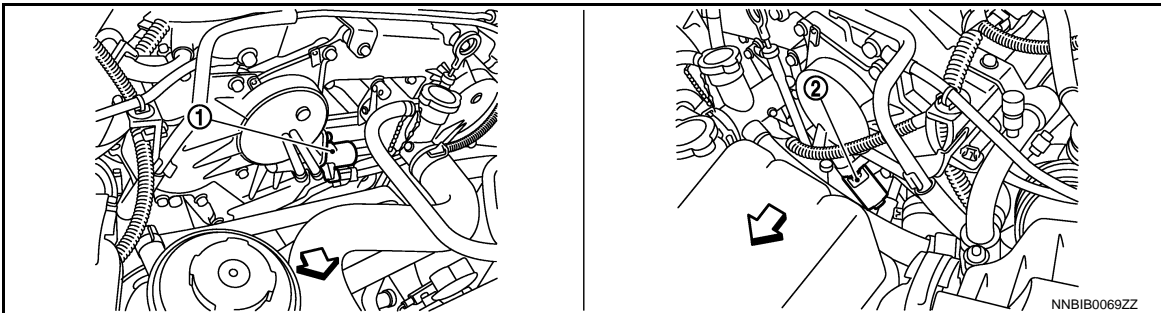
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

↶ :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

↶ :Vehicle front



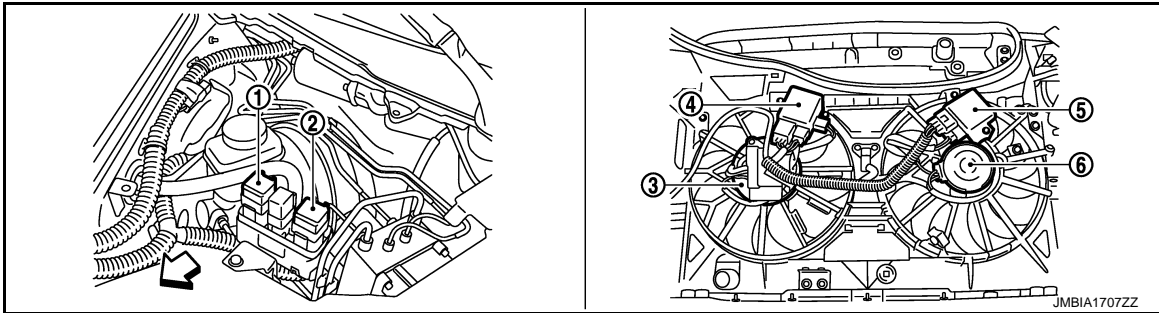
- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

↶ :Vehicle front

INTAKE VALVE TIMING CONTROL

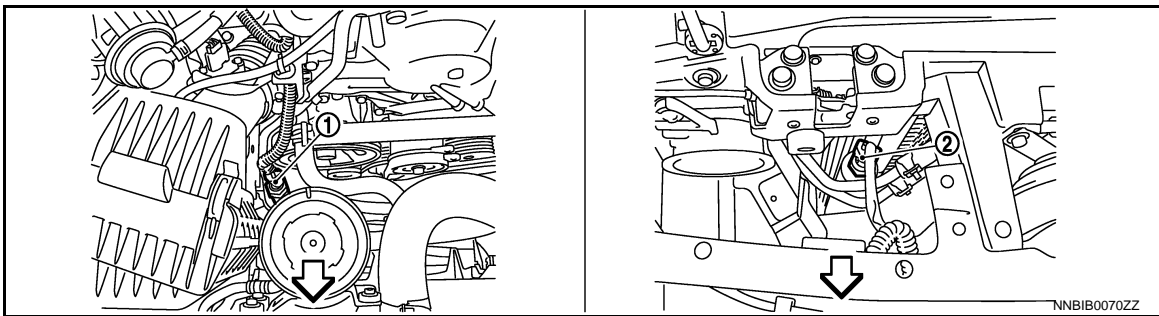
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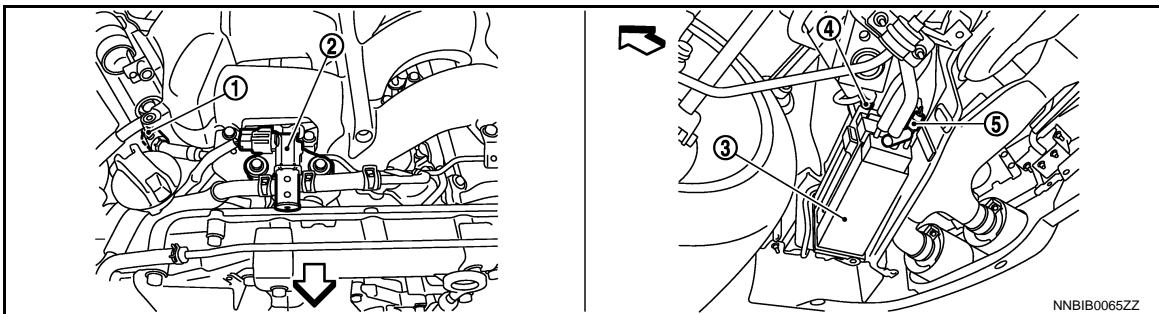
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| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



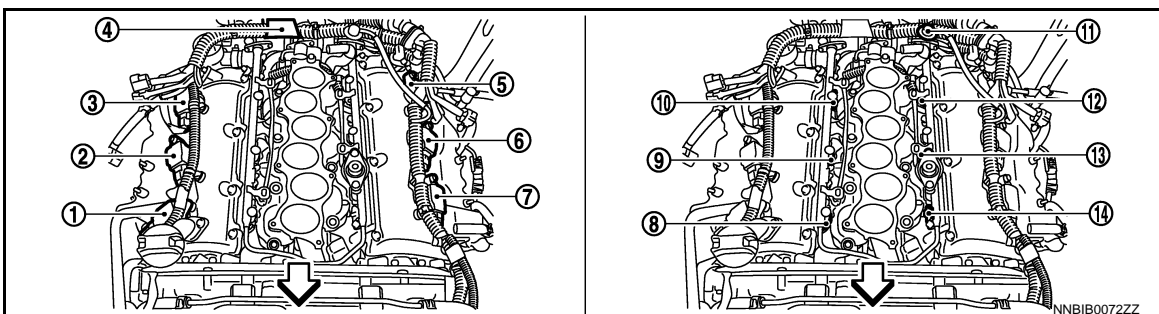
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| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



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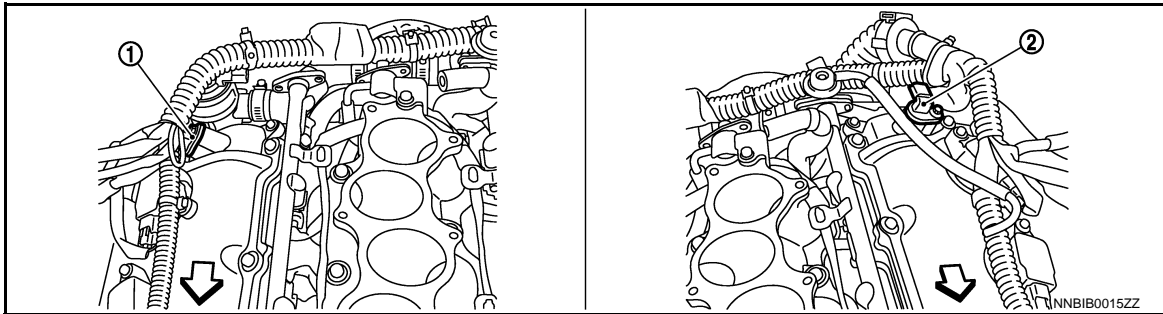
INTAKE VALVE TIMING CONTROL

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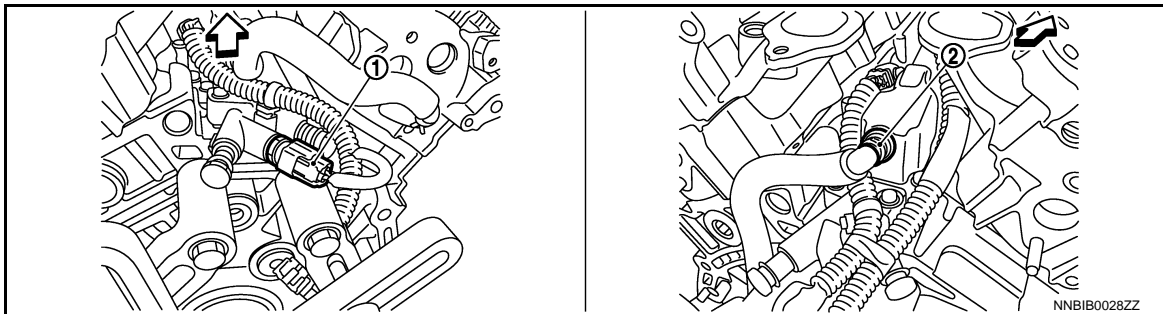
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

← :Vehicle front



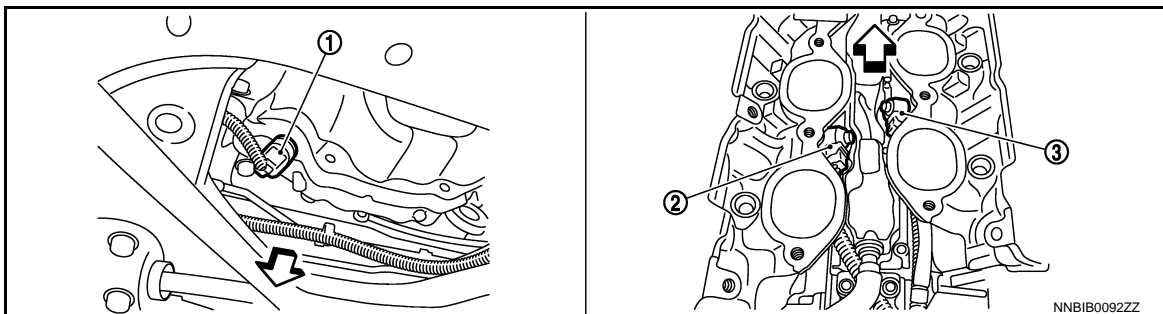
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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← :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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← :Vehicle front



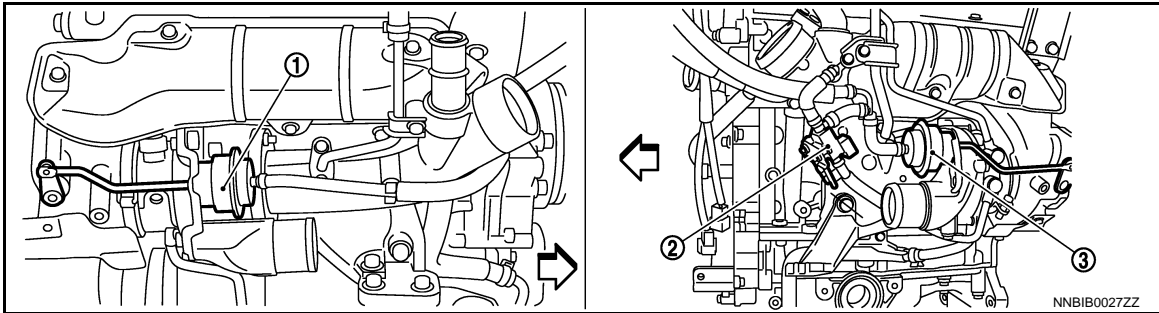
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| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
|-------------------------------------|--------------------------|--------------------------|

← :Vehicle front

INTAKE VALVE TIMING CONTROL

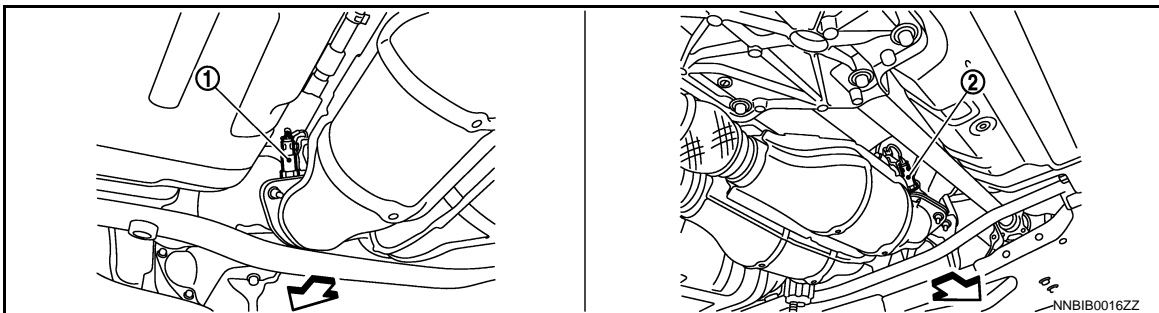
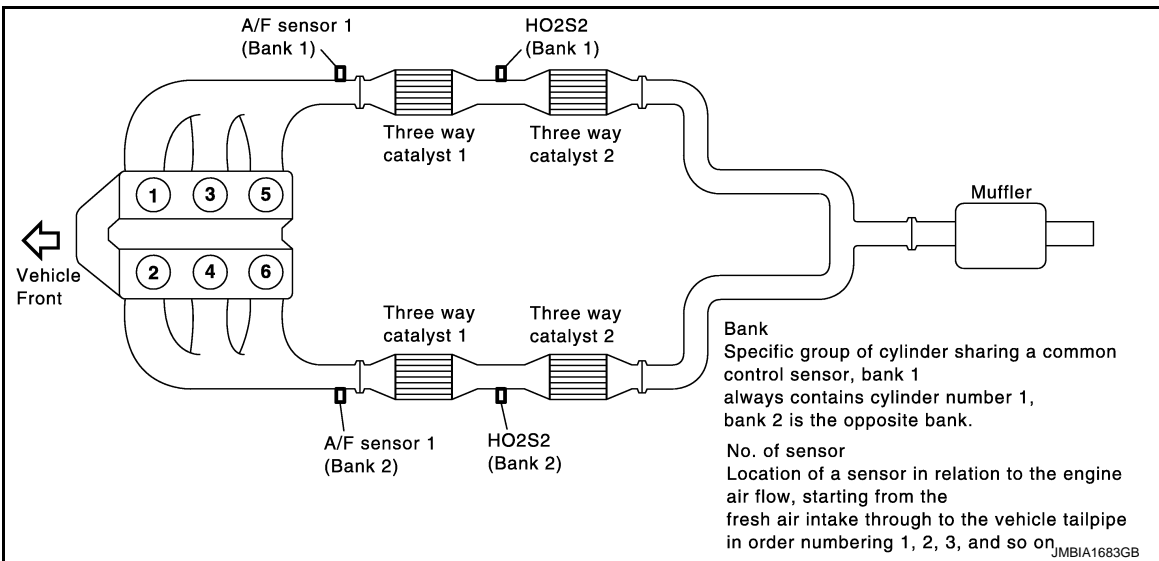
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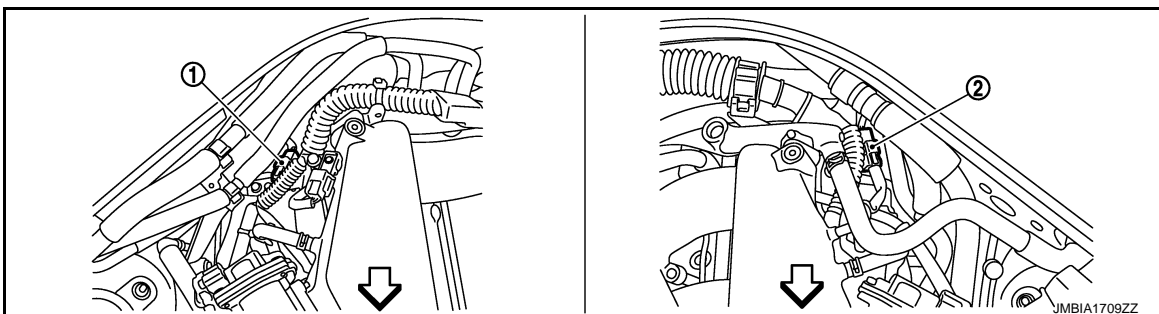
- 1. Boost control actuator (bank 1)
- 2. Turbocharger boost control solenoid
- 3. Boost control actuator (bank 2)

← :Vehicle front



- 1. Heated oxygen sensor 2 (bank 2)
- 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



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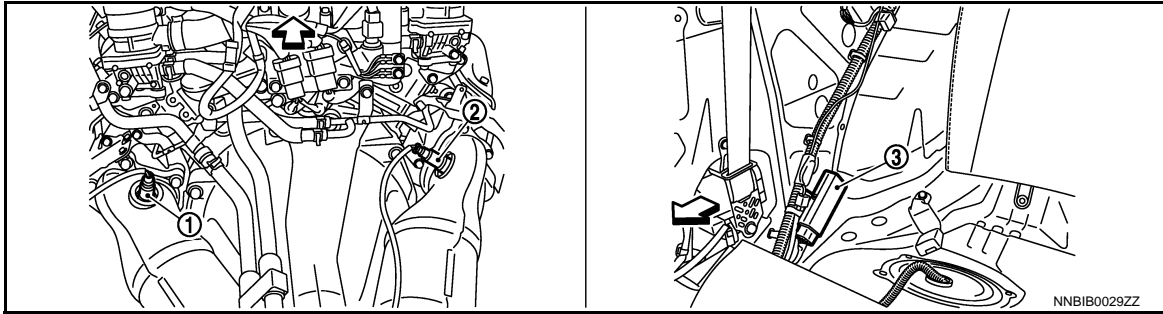
INTAKE VALVE TIMING CONTROL

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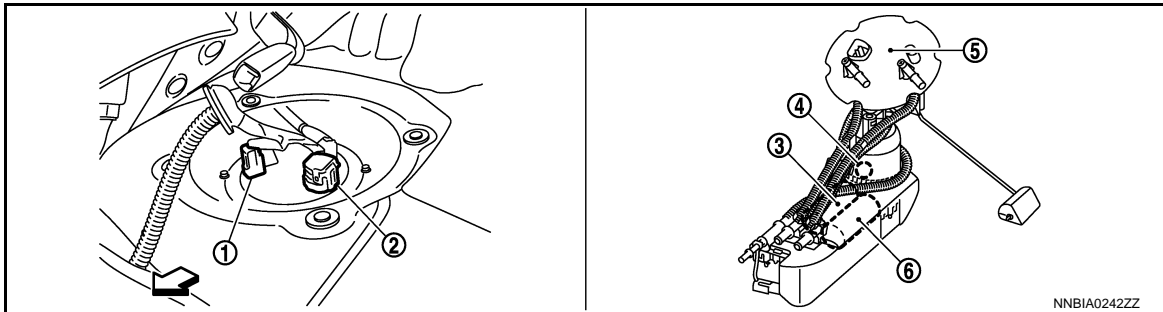
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



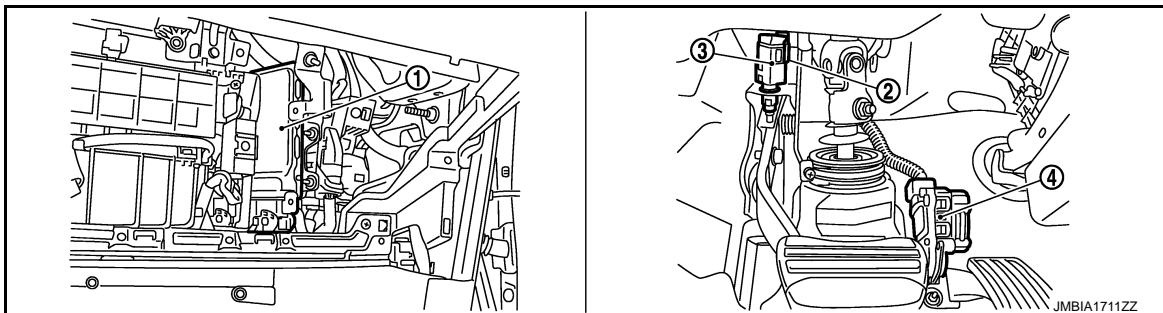
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump (main) harness connector
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front

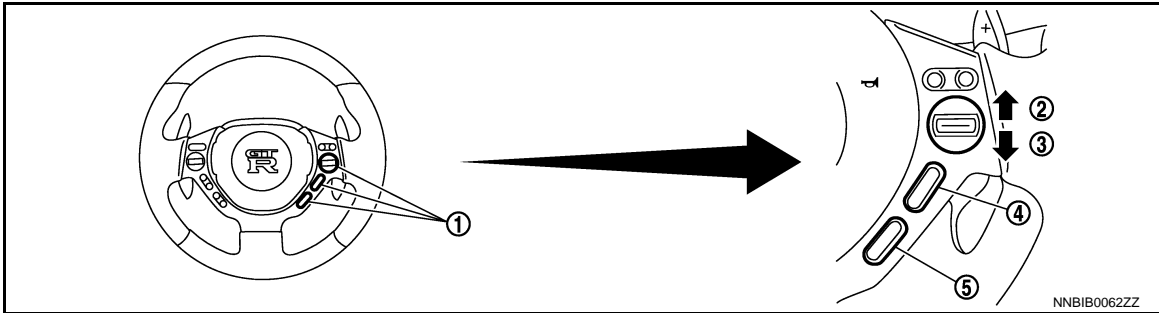


1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

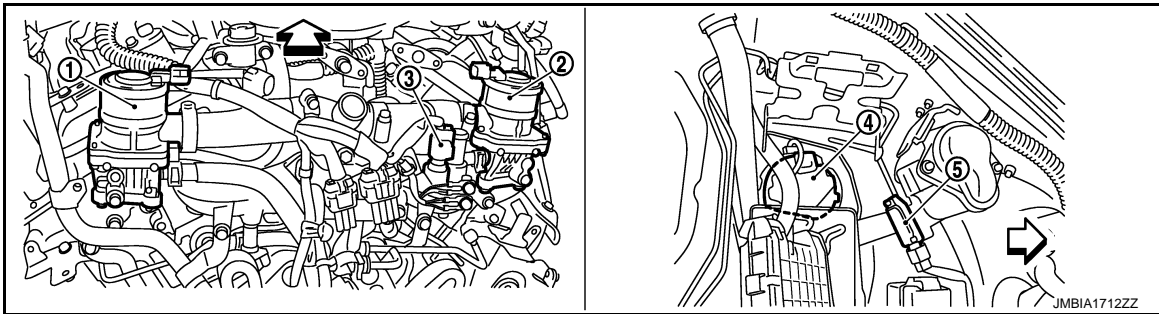
INTAKE VALVE TIMING CONTROL

< SYSTEM DESCRIPTION >

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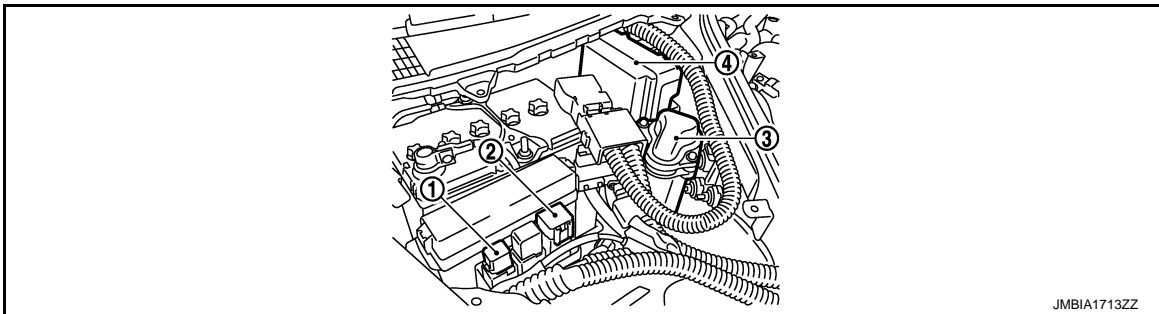


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

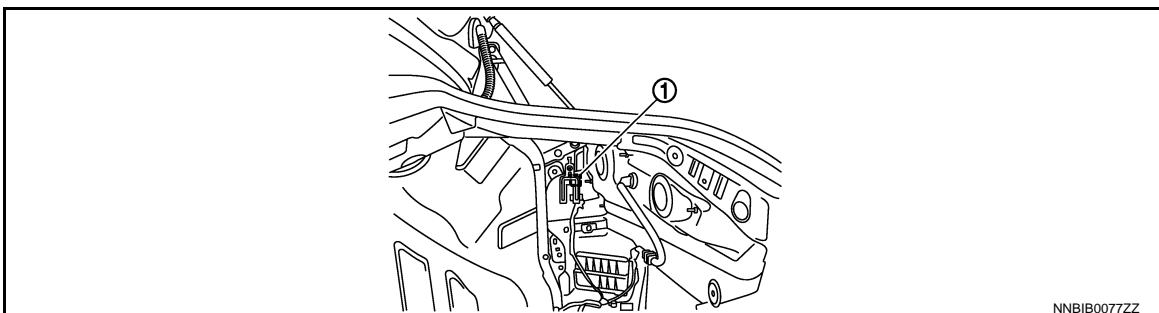


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |



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| 1. Sub fuel pump relay |
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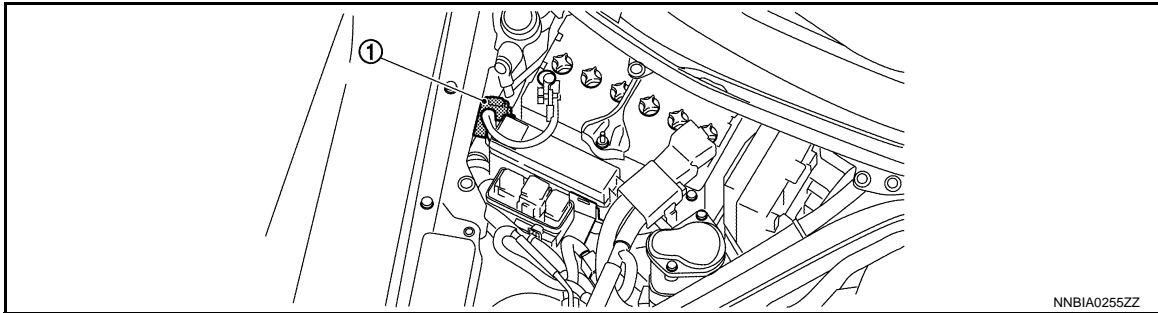
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INTAKE VALVE TIMING CONTROL

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:000000011486250

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

INTAKE VALVE TIMING CONTROL

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

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SECONDARY AIR INJECTION SYSTEM

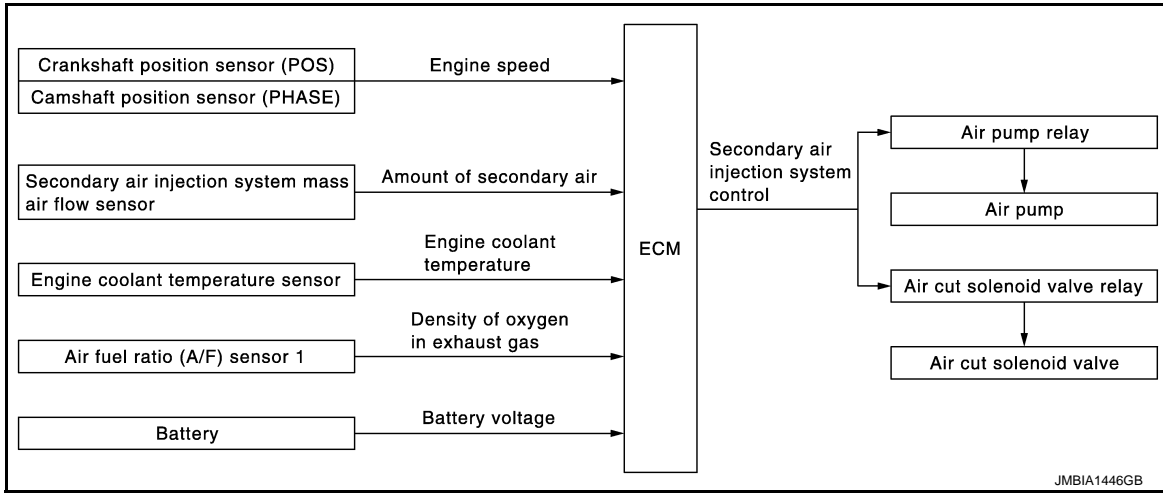
[VR38]

< SYSTEM DESCRIPTION >

SECONDARY AIR INJECTION SYSTEM

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486251



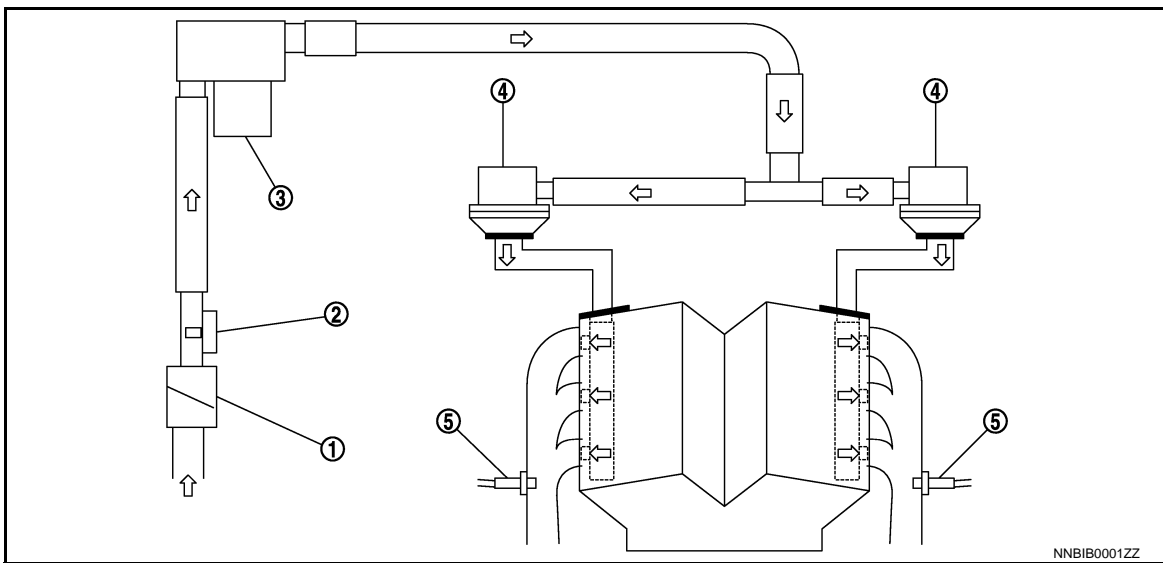
System Description (GT-R certified NISSAN dealer)

INFOID:000000011486252

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed	Secondary air injection system control	• Air pump relay ↓ Air pump
Secondary air injection system mass air flow sensor	Amount of secondary air		
Engine coolant temperature sensor	Engine coolant temperature		• Air cut solenoid valve relay ↓ Air cut solenoid valve
Air fuel ratio (A/F) sensor 1	Density of oxygen in exhaust gas		
Battery	Battery voltage		

SYSTEM DESCRIPTION



1. Air pump cleaner
2. Secondary air injection system mass
3. Air pump air flow sensor
4. Air pump
5. Air cut solenoid valve

SECONDARY AIR INJECTION SYSTEM

[VR38]

< SYSTEM DESCRIPTION >

4. Air cut solenoid valve 5. Air fuel ratio sensor 1

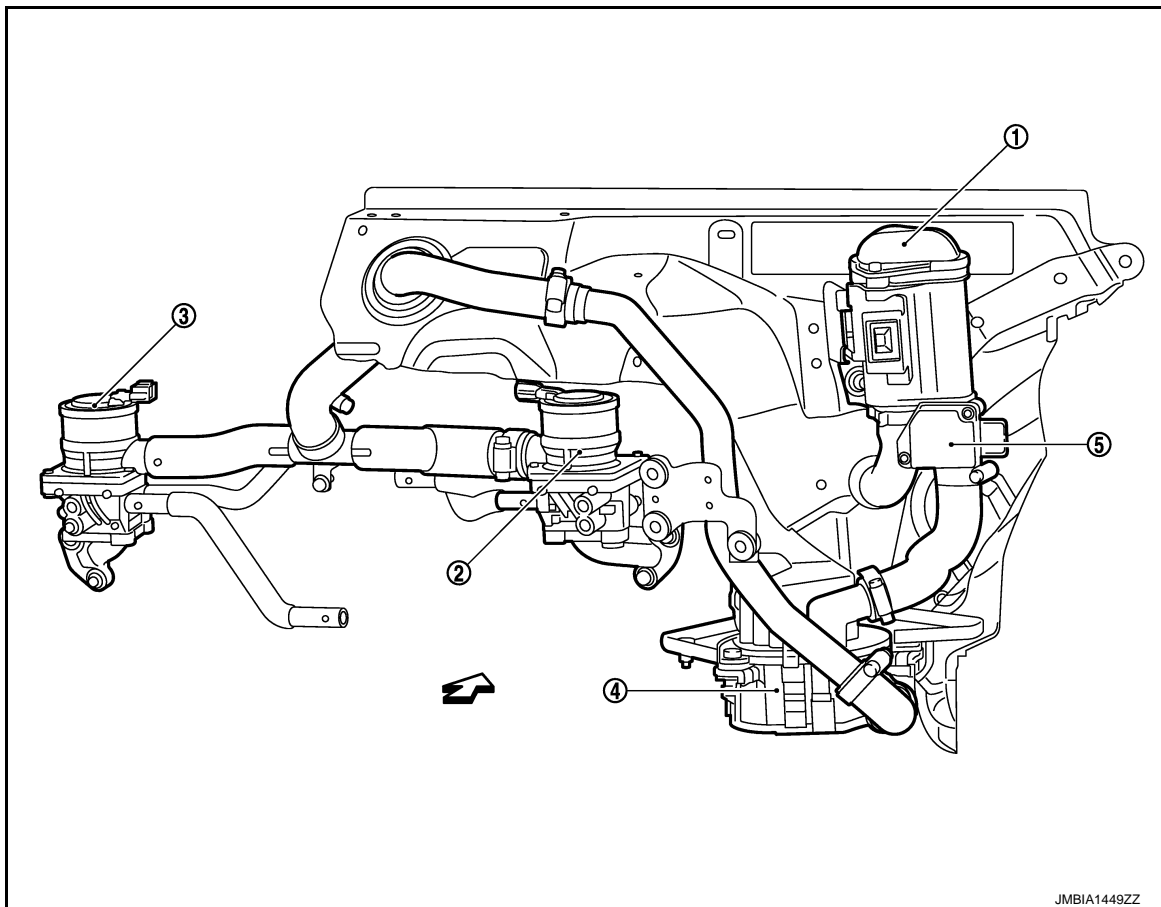
⇐ : Secondary air

During a cold start, the secondary air injection system supplies the air to the engine exhaust port so that the CO and HC burns and an increase in the temperature of the three way catalyst is facilitated. The three way catalyst is quickly activated and the emission gas during the cold start is reduced. When all of the following conditions are satisfied, the ECM activates the air pump, opens the air cut solenoid valve and supplies the secondary air to the exhaust port. The secondary air injection system operates for approximately a few tenths of a second depending on the engine coolant temperature and other conditions. When the system is deactivated, the ECM closes the air cut solenoid valve and stops the air pump to prevent the emission gas from blowing back.

< Activating conditions >

- When starting the engine
- Battery voltage: More than 10 V
- Engine coolant temperature at engine start is between 15 - 35 °C (59 - 95° F) and has lowered 45°C (113° F) or more since the latest engine stop.

SECONDARY AIR INJECTION SYSTEM LINE DRAWING



1. Air pump cleaner 2. Air cut solenoid valve (bank 1) 3. Air cut solenoid valve (bank 2)
4. Air pump 5. Secondary air injection system mass air flow sensor

⇐: Vehicle front

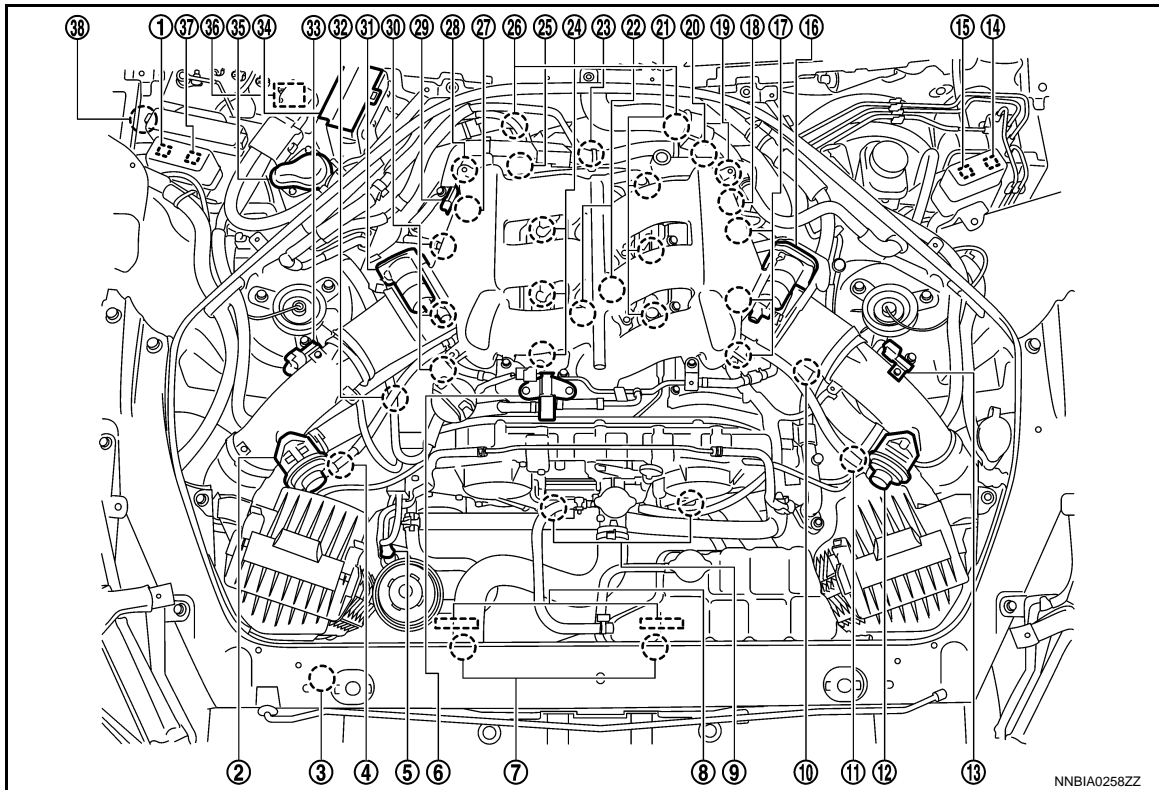
SECONDARY AIR INJECTION SYSTEM

< SYSTEM DESCRIPTION >

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Component Parts Location (GT-R certified NISSAN dealer)

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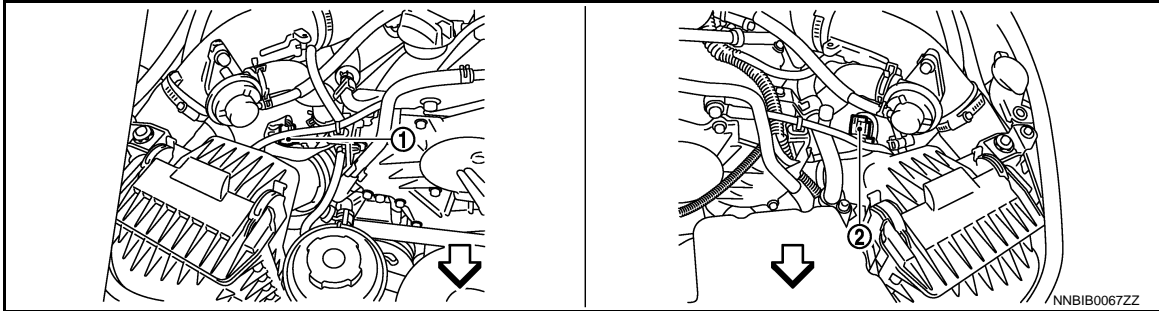


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

SECONDARY AIR INJECTION SYSTEM

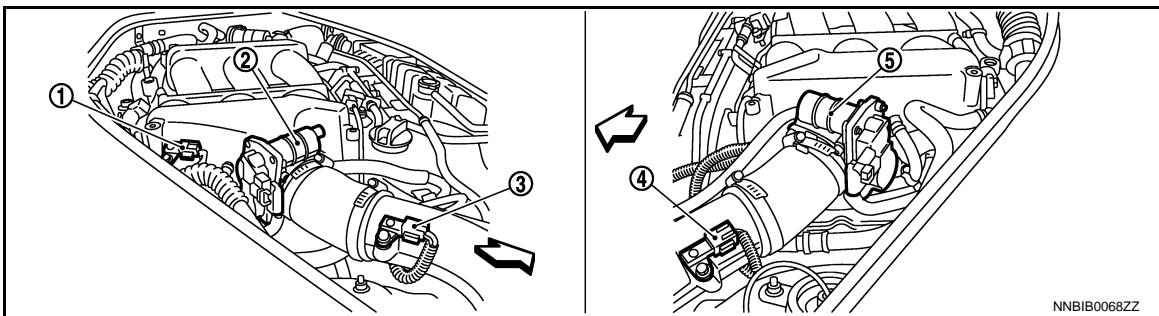
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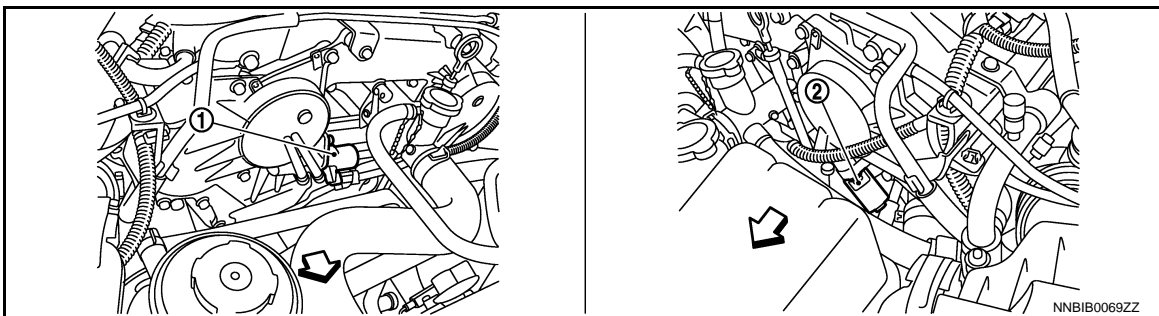
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

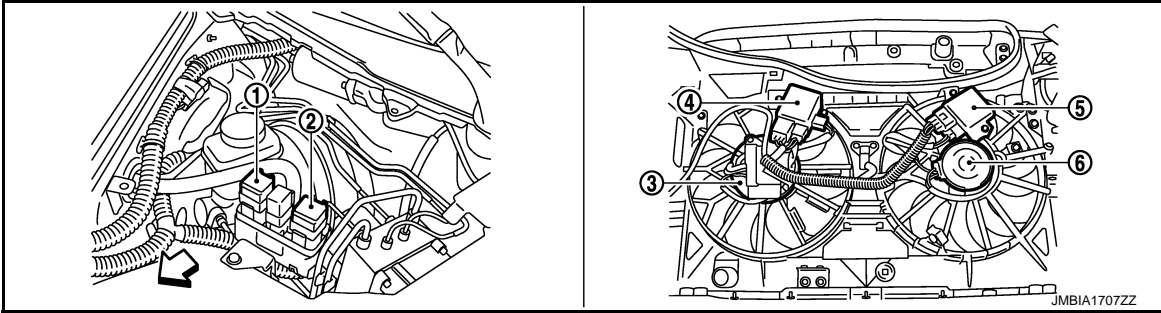
← :Vehicle front

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SECONDARY AIR INJECTION SYSTEM

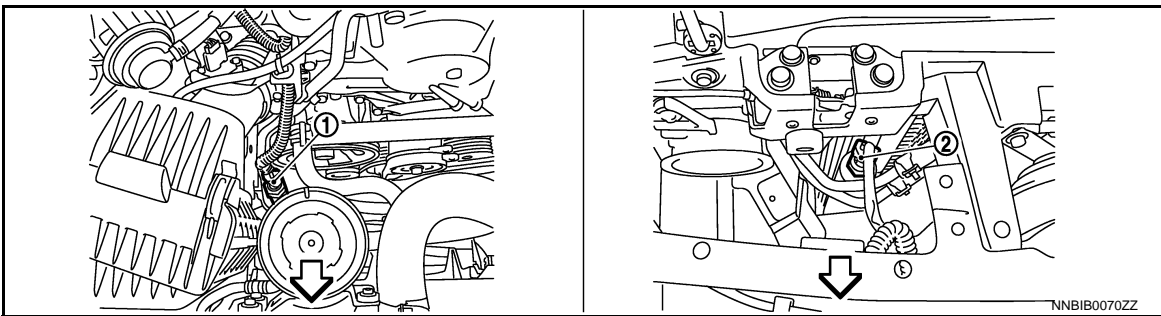
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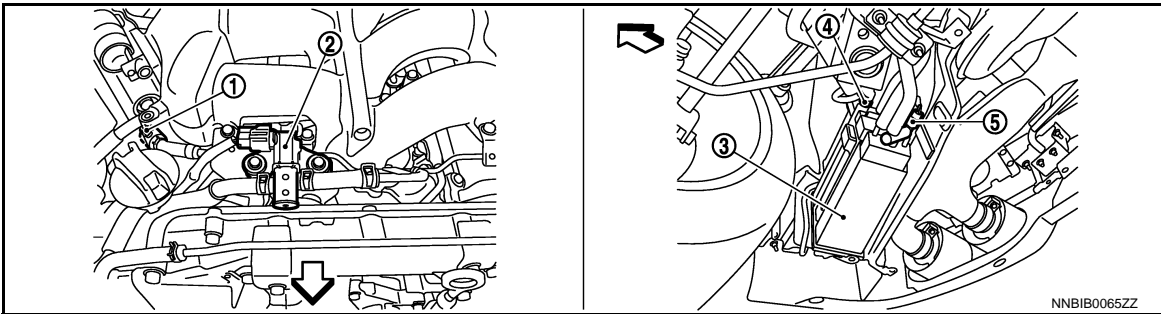
- 1. Cooling fan relay-2 2. Cooling fan relay-1 3. Cooling fan motor-1
- 4. Cooling fan control module-1 5. Cooling fan control module-2 6. Cooling fan motor-2

↙ :Vehicle front



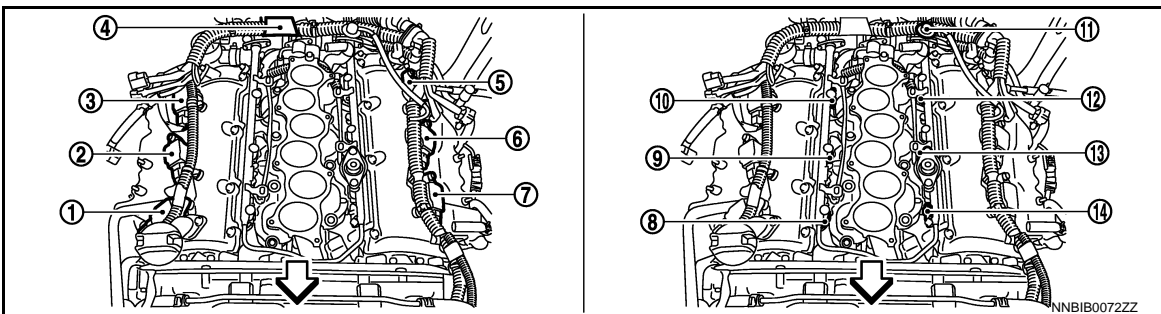
- 1. Power steering pressure sensor 2. Refrigerant pressure sensor

↙ :Vehicle front



- 1. EVAP service port 2. EVAP canister purge volume control 3. EVAP canister solenoid valve
- 4. EVAP control system pressure sensor 5. EVAP canister vent control valve

↙ :Vehicle front



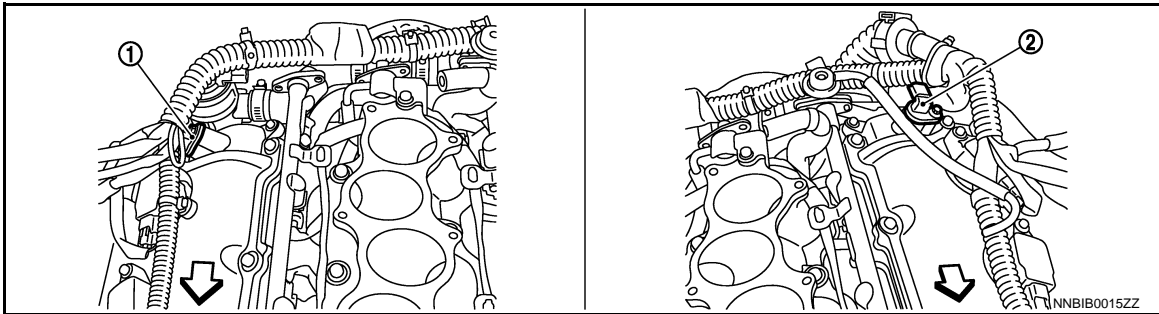
SECONDARY AIR INJECTION SYSTEM

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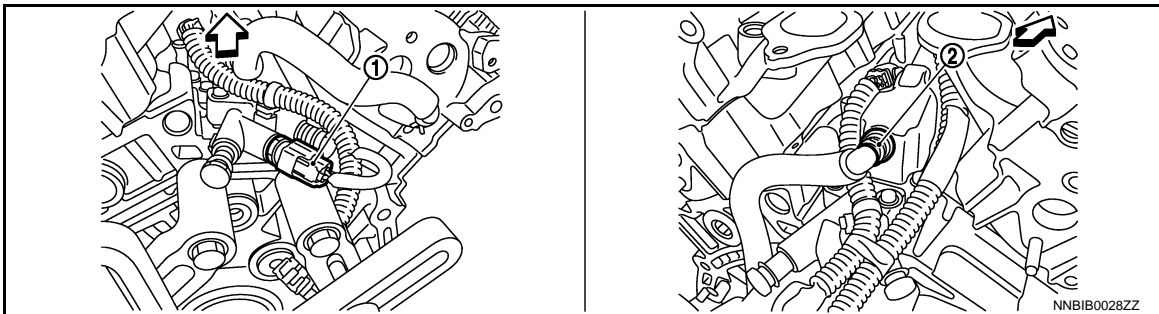
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



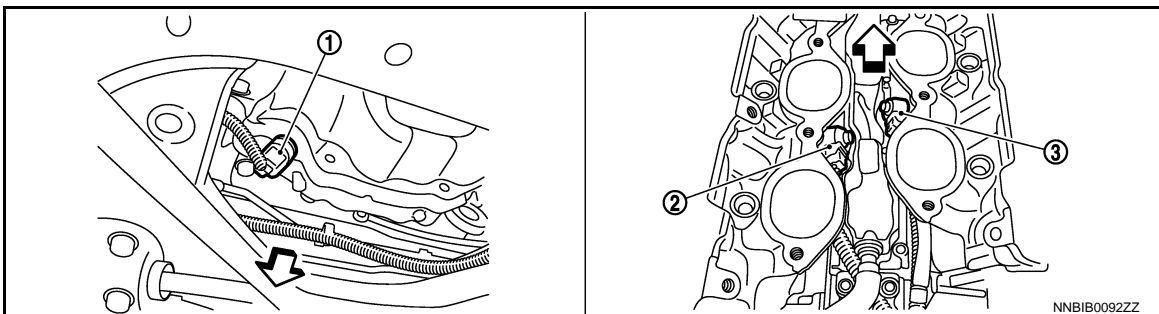
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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↶ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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↶ :Vehicle front



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| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
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↶ :Vehicle front

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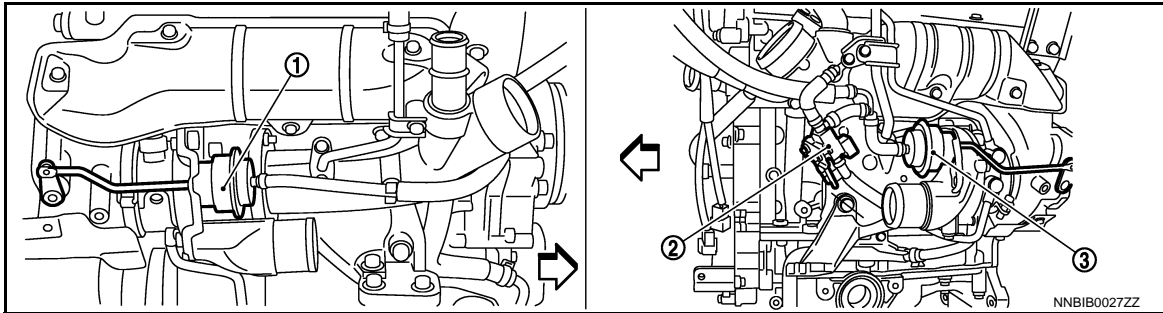
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SECONDARY AIR INJECTION SYSTEM

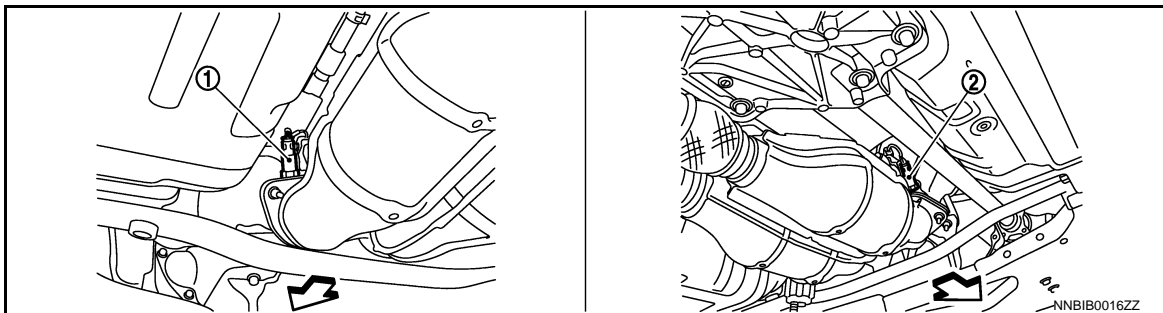
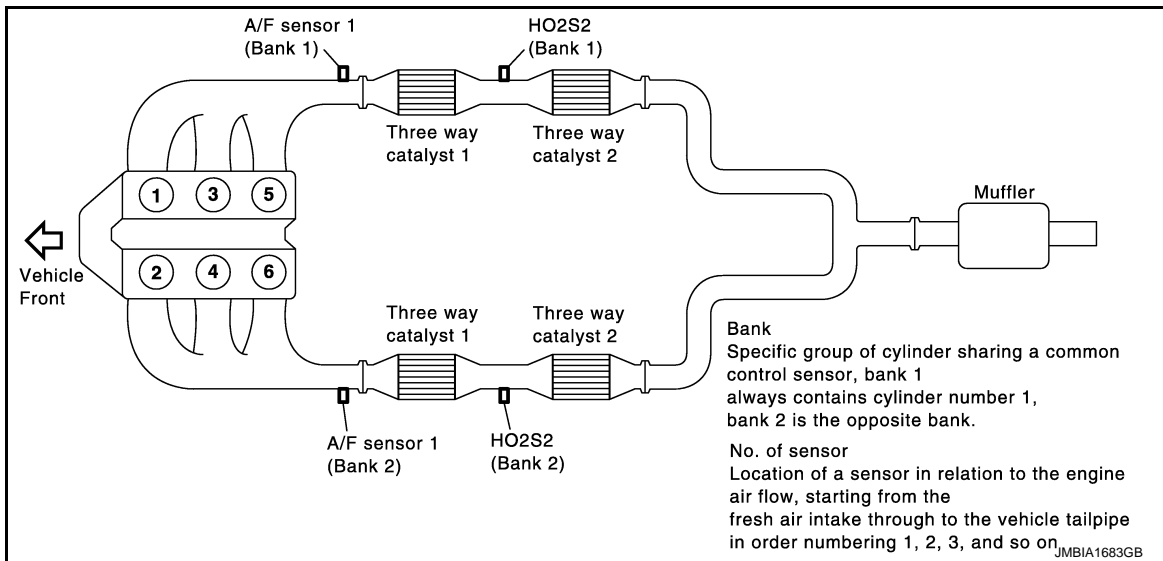
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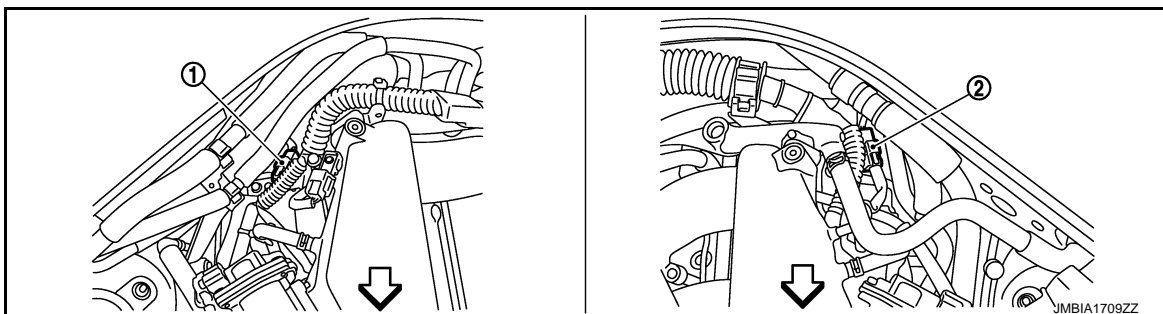
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



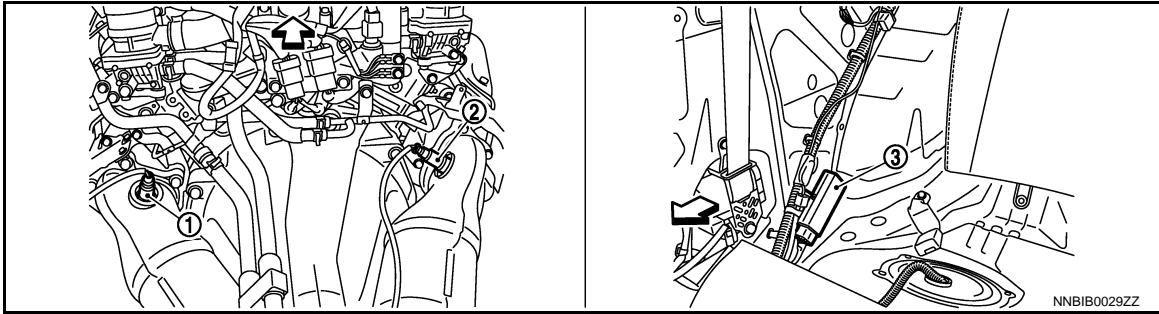
SECONDARY AIR INJECTION SYSTEM

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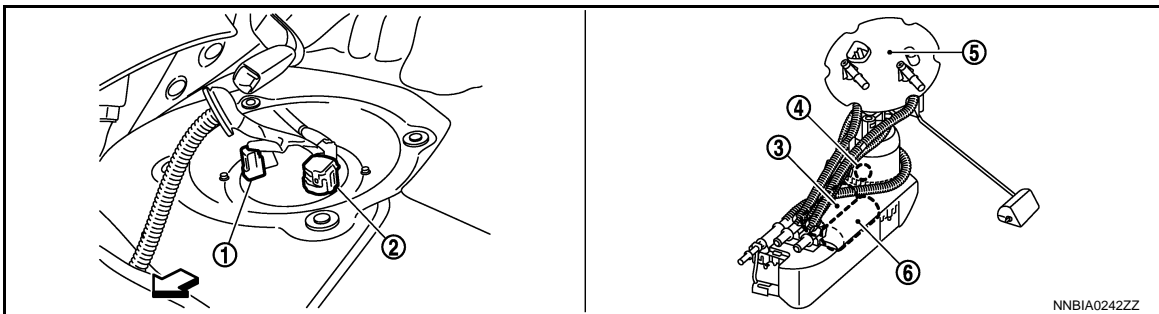
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



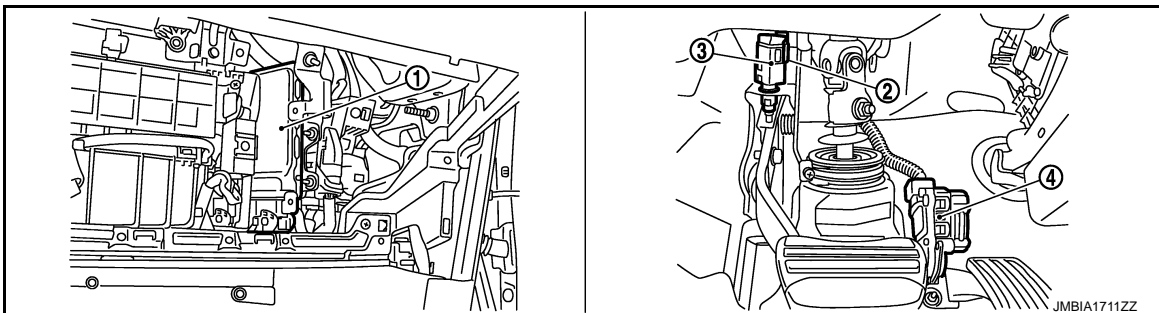
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



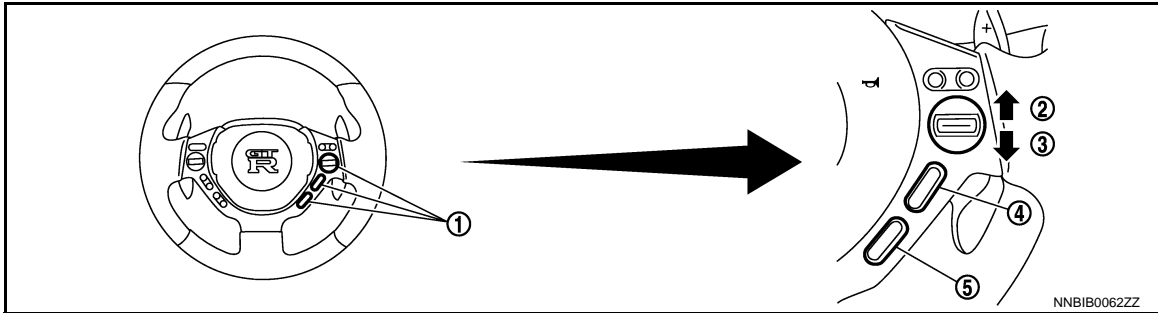
1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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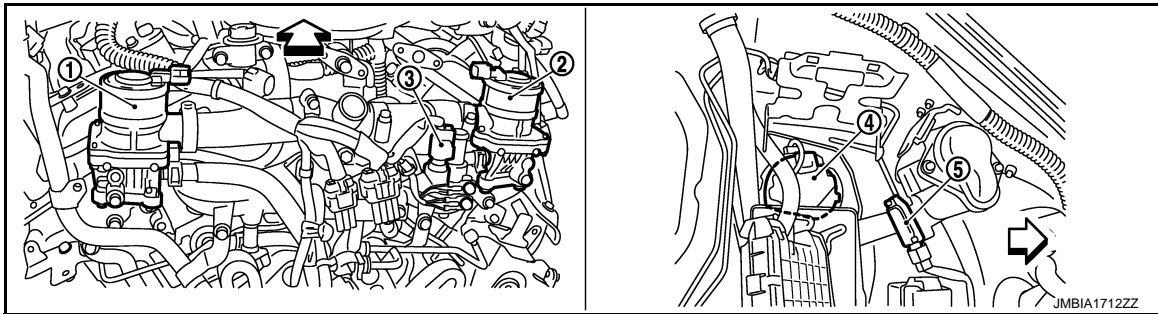
SECONDARY AIR INJECTION SYSTEM

< SYSTEM DESCRIPTION >

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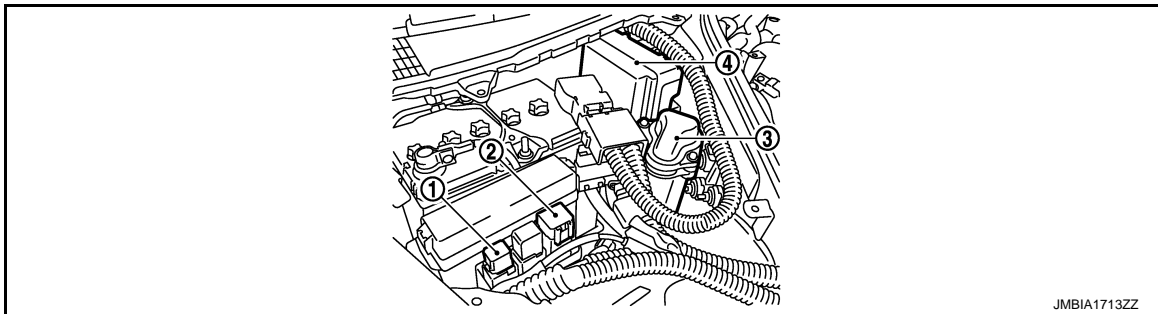


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

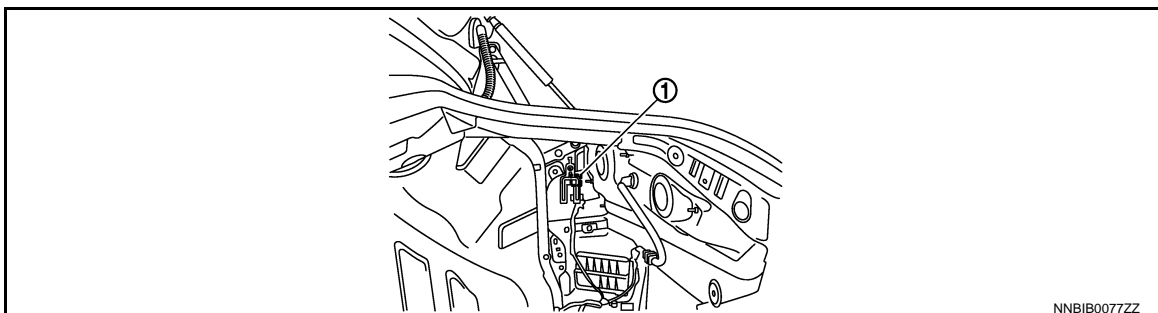


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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|---------------------------------|-------------------|---------------------|
| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |

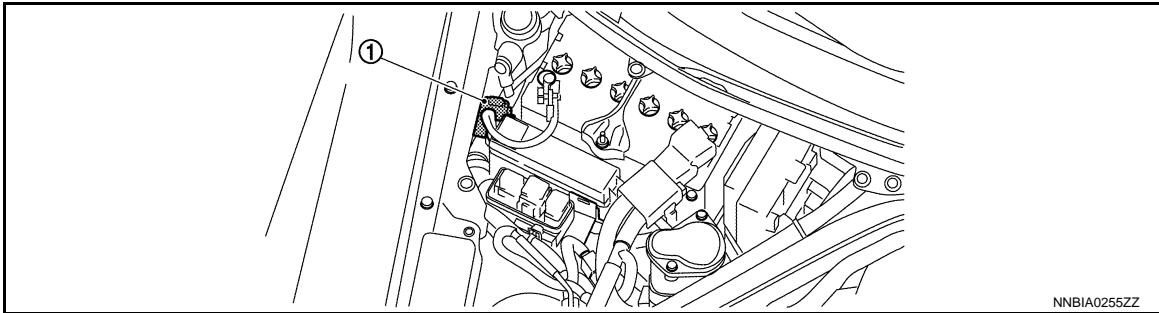


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| 1. Sub fuel pump relay |
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SECONDARY AIR INJECTION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:0000000011486254

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

SECONDARY AIR INJECTION SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

TURBOCHARGER BOOST CONTROL

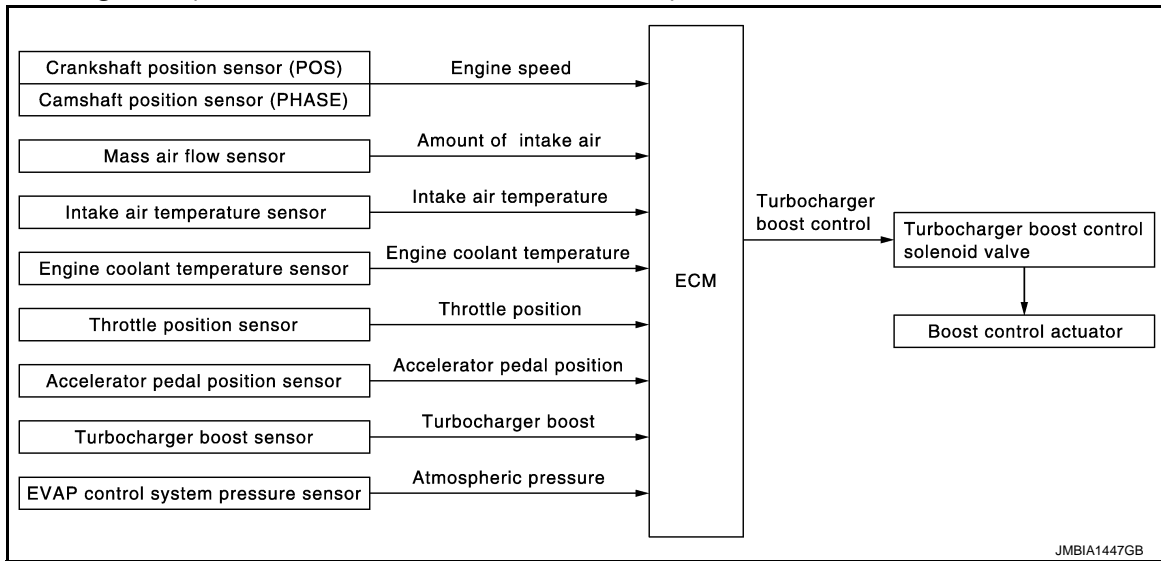
< SYSTEM DESCRIPTION >

[VR38]

TURBOCHARGER BOOST CONTROL

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486255



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486256

INPUT/OUTPUT SIGNAL CHART

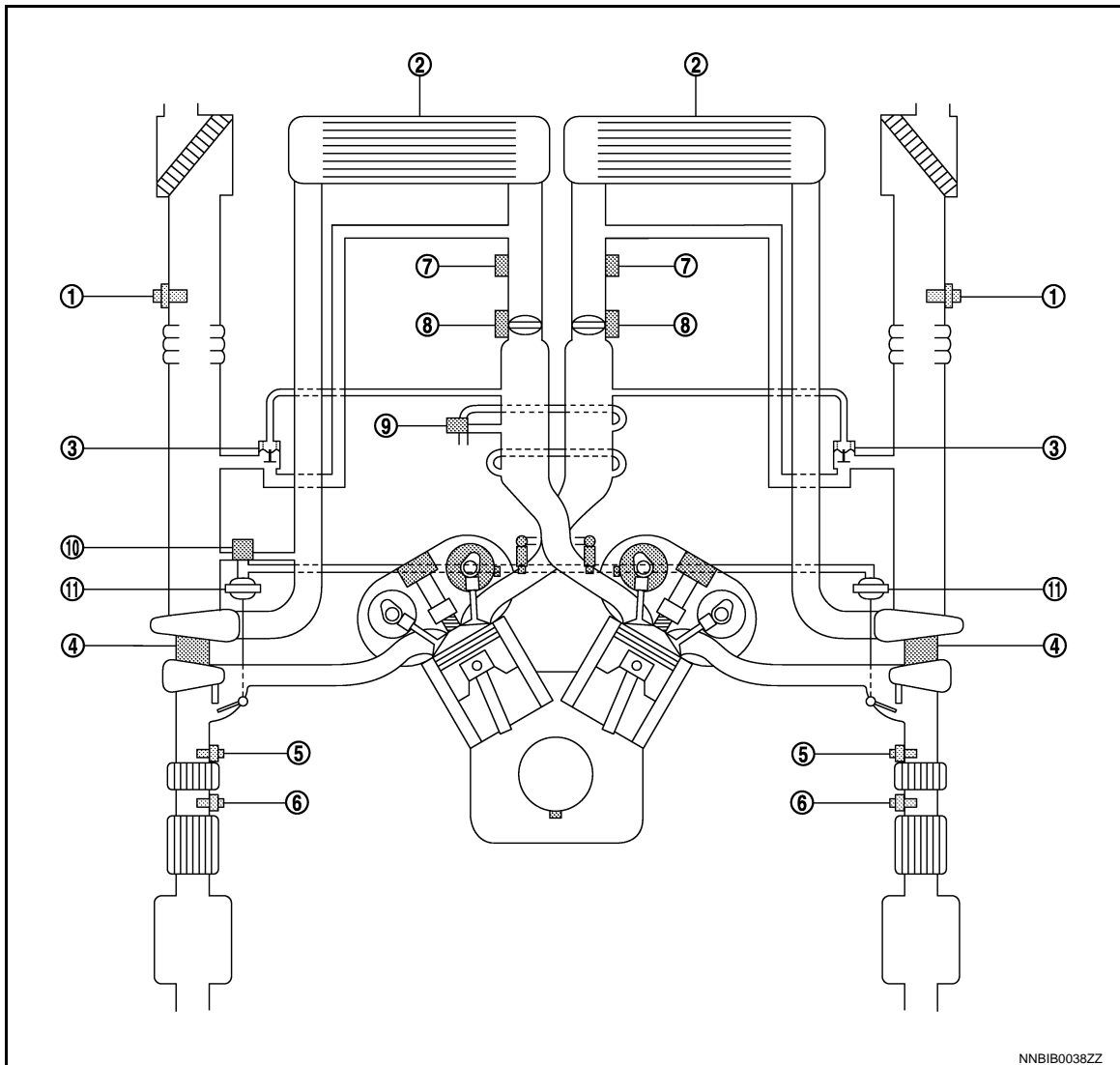
Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed	Turbocharger boost control	Turbocharger boost control solenoid valve ↓ Boost control actuator
Mass air flow sensor	Amount of intake air		
Intake air temperature sensor	Intake air temperature		
Engine coolant temperature sensor	Engine coolant temperature		
Throttle position sensor	Throttle position		
Accelerator pedal position sensor	Accelerator pedal position		
Turbocharger boost sensor	Turbocharger boost		
EVAP control system pressure sensor	Atmospheric pressure		

SYSTEM DESCRIPTION

TURBOCHARGER BOOST CONTROL

< SYSTEM DESCRIPTION >

[VR38]



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|---|---------------------------------------|--|
| 1. Mass air flow sensor | 2. Charge air cooler | 3. Recirculation valve |
| 4. Turbocharger | 5. Air fuel ratio sensor 1 | 6. Heated oxygen sensor 2 |
| 7. Turbocharger boost sensor | 8. Electric throttle control actuator | 9. EVAP canister purge volume control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Boost control actuator | |

Depending on driving conditions, the ECM performs ON/OFF duty control of the turbocharger boost control solenoid valve and controls the boost by adjusting the pressure to the diaphragm of the boost control actuator. When driving conditions demand an increase in boost, the ECM prolongs the ON time of the turbocharger boost control solenoid valve and moves the boost control valve towards the closing direction by reducing the pressure in the diaphragm of the boost control actuator. The emission gas to the turbine wheel is then increased. When driving conditions demand a decrease in boost, the ECM shortens the ON time of the turbocharger boost control solenoid valve and moves the boost control valve towards the opening position by increasing the pressure in the diaphragm of the boost control actuator. The emission bypassing to the turbine wheel is then increased. Thus, by performing the most optimal boost control, the ECM improves engine output and response.

NOTE:

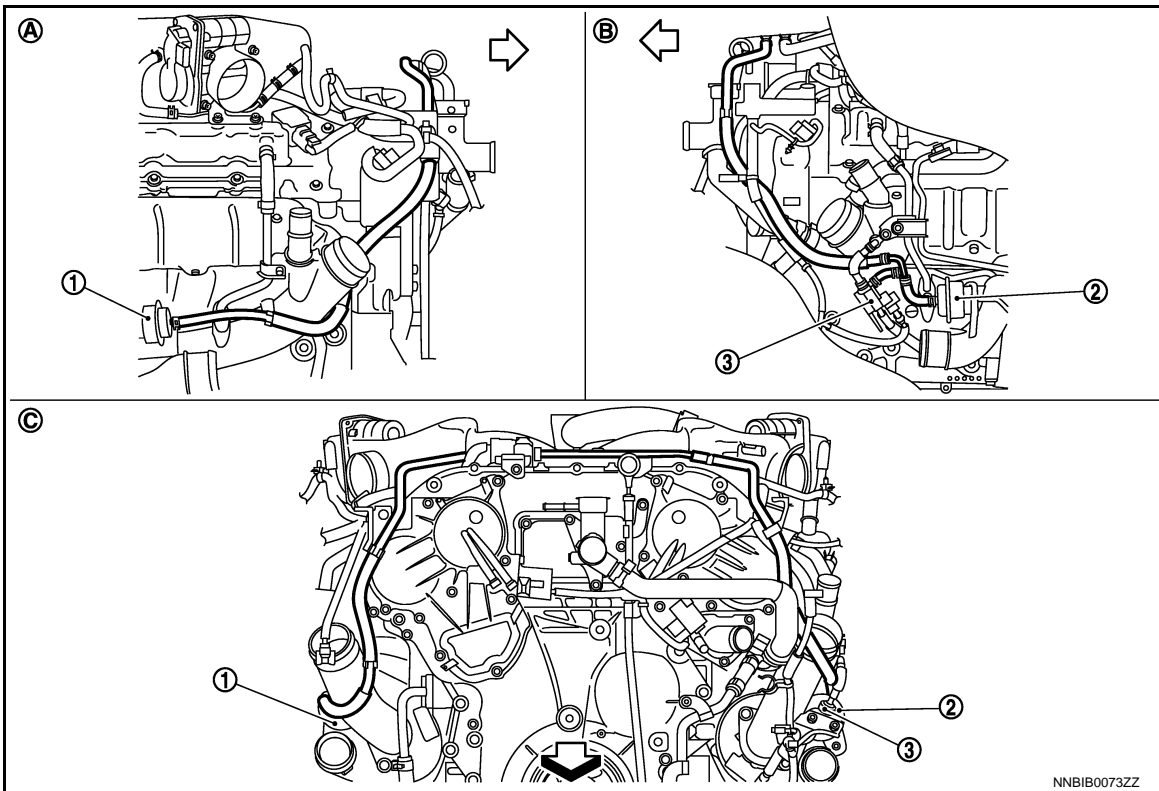
The boost varies depending on the vehicle and driving conditions.

BOOST CONTROL ACTUATOR LINE DRAWING

TURBOCHARGER BOOST CONTROL

< SYSTEM DESCRIPTION >

[VR38]



1. Boost control actuator (bank 1)

2. Boost control actuator (bank 2)

3. Turbocharger boost control solenoid valve

A. Engine right side

B. Engine left side

C. Engine front side

⇐: Vehicle front

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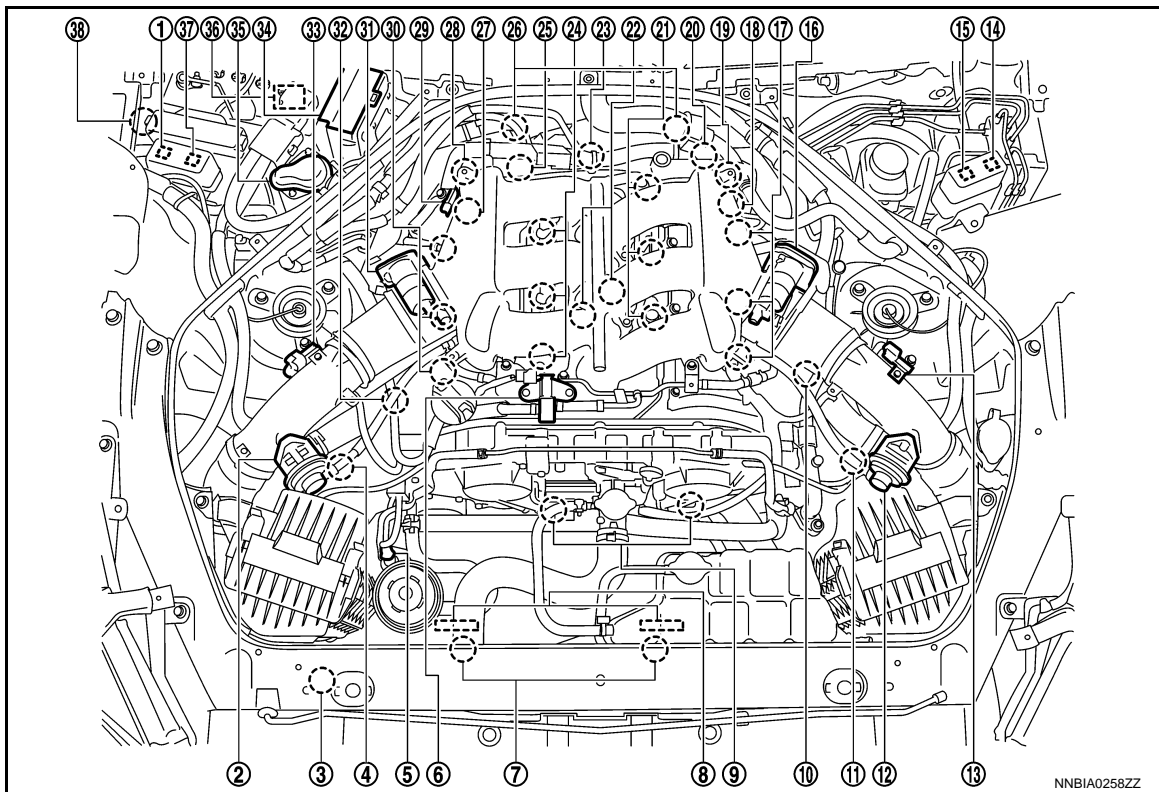
TURBOCHARGER BOOST CONTROL

< SYSTEM DESCRIPTION >

[VR38]

Component Parts Location (GT-R certified NISSAN dealer)

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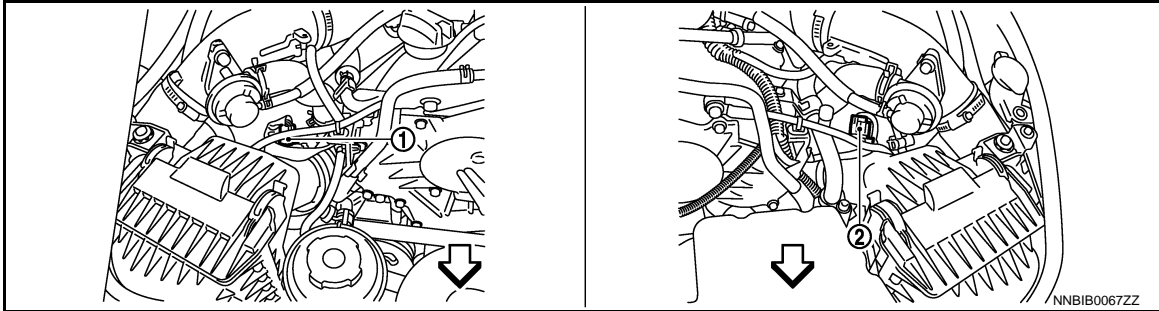


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

TURBOCHARGER BOOST CONTROL

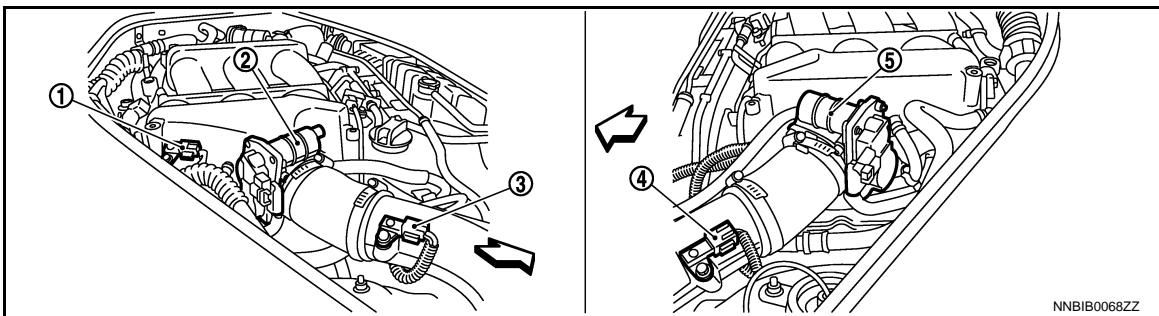
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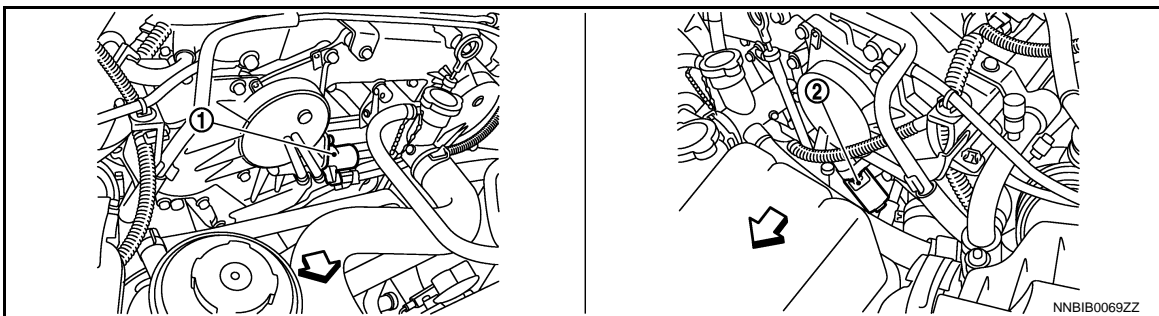
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

← :Vehicle front

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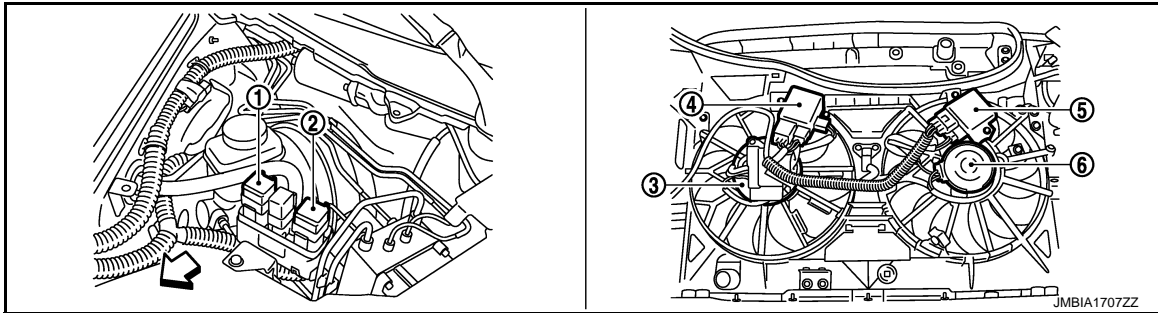
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TURBOCHARGER BOOST CONTROL

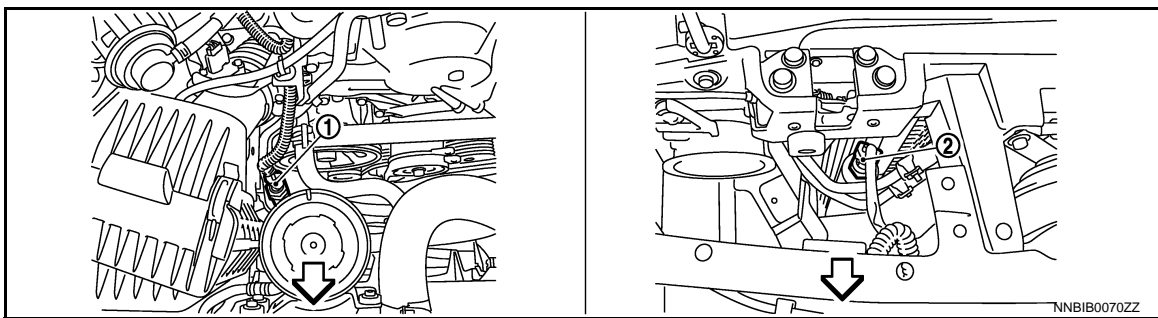
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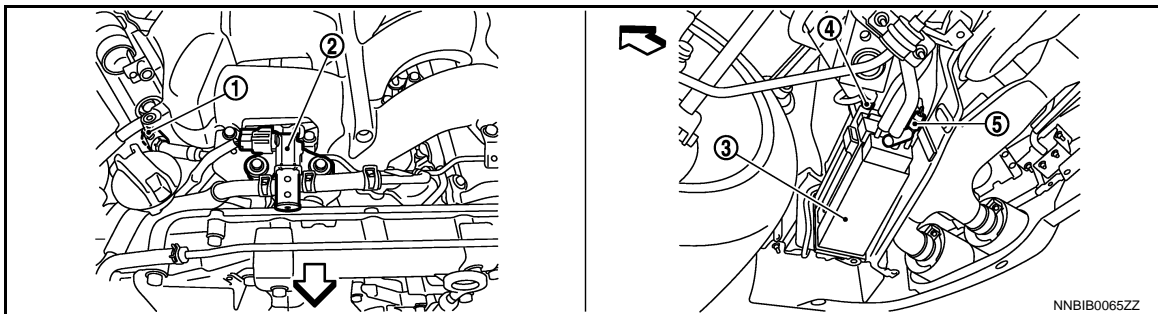
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| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



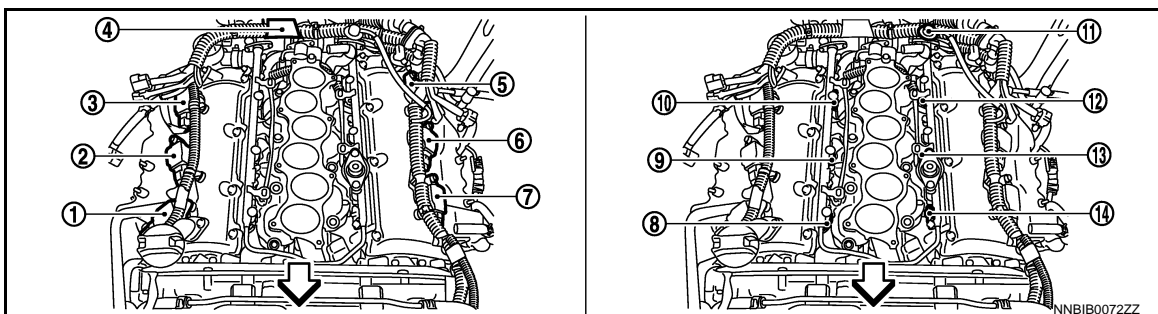
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|-----------------------------------|--------------------------------|
| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



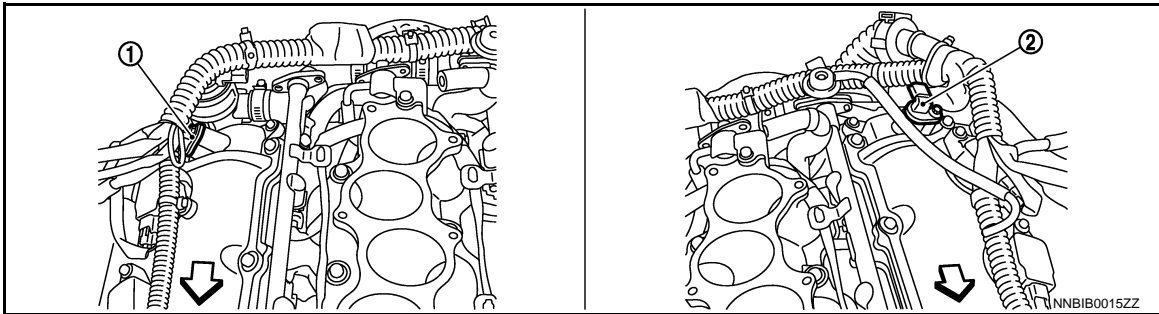
TURBOCHARGER BOOST CONTROL

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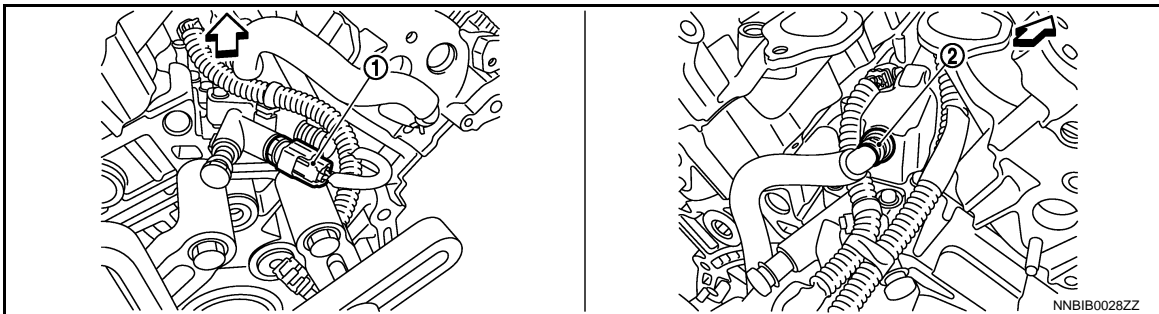
- | | | |
|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



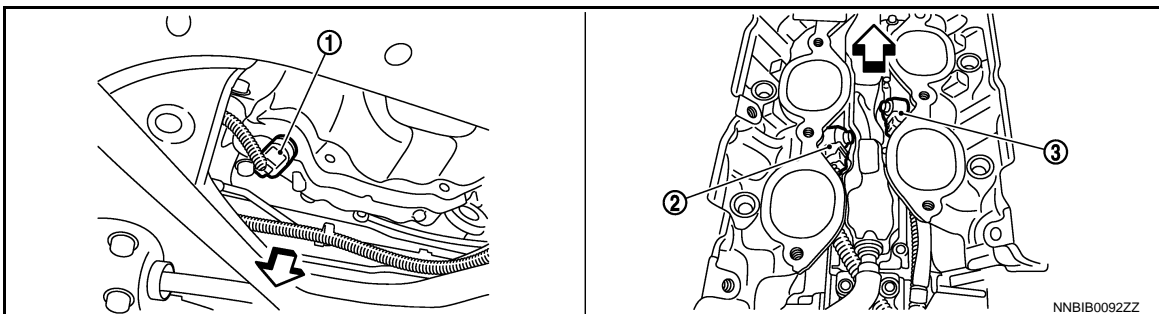
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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↶ :Vehicle front



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| 1. Engine oil temperature sensor | 2. PCV valve |
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↶ :Vehicle front



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|-------------------------------------|--------------------------|--------------------------|
| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
|-------------------------------------|--------------------------|--------------------------|

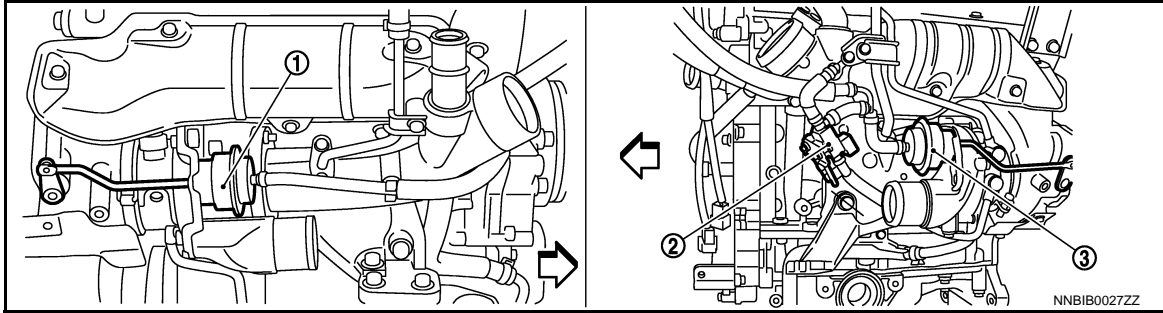
↶ :Vehicle front

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TURBOCHARGER BOOST CONTROL

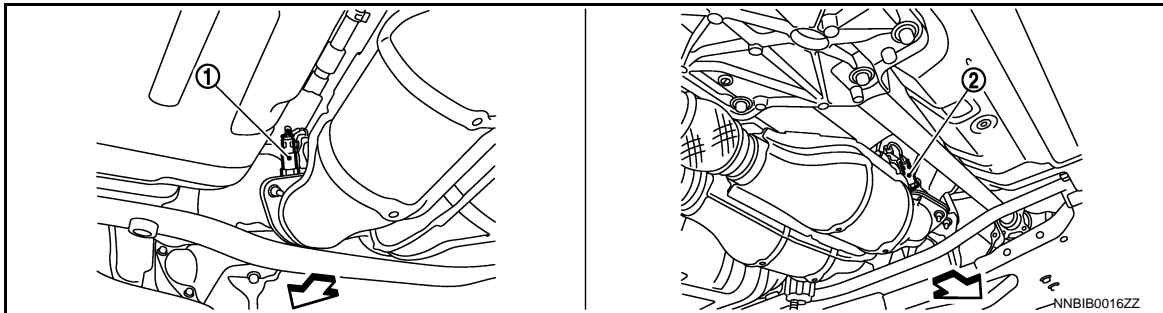
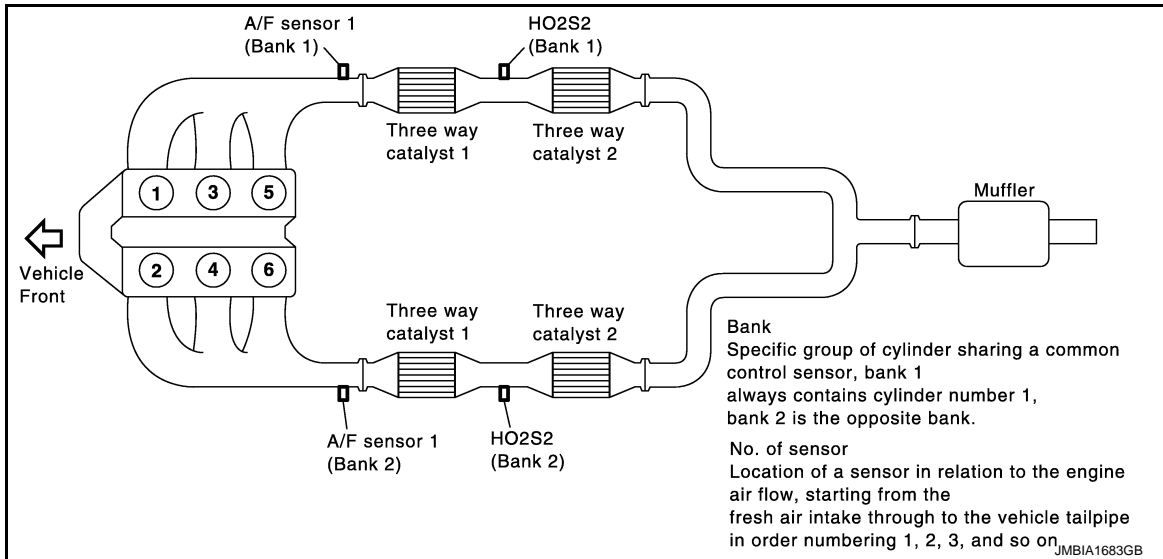
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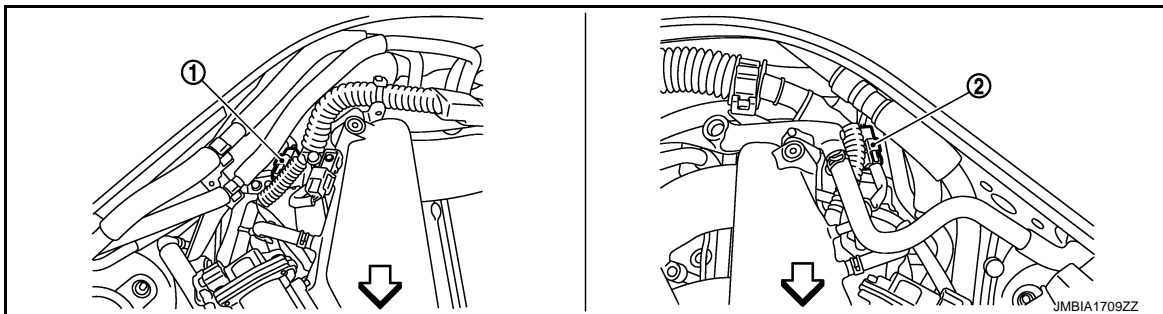
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



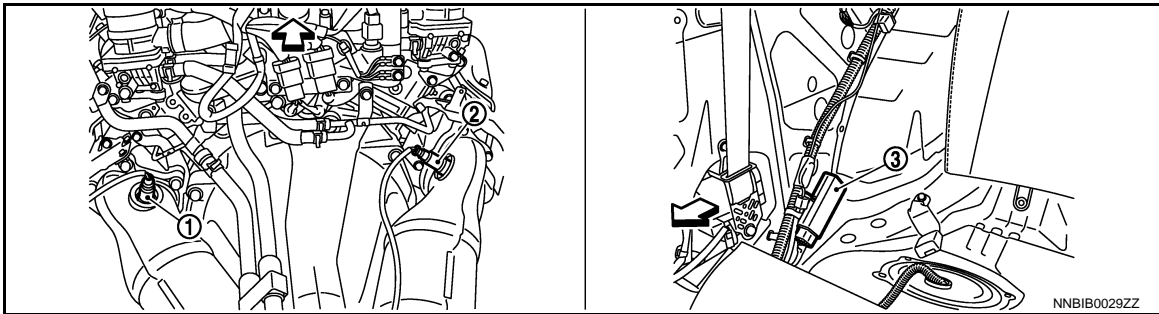
TURBOCHARGER BOOST CONTROL

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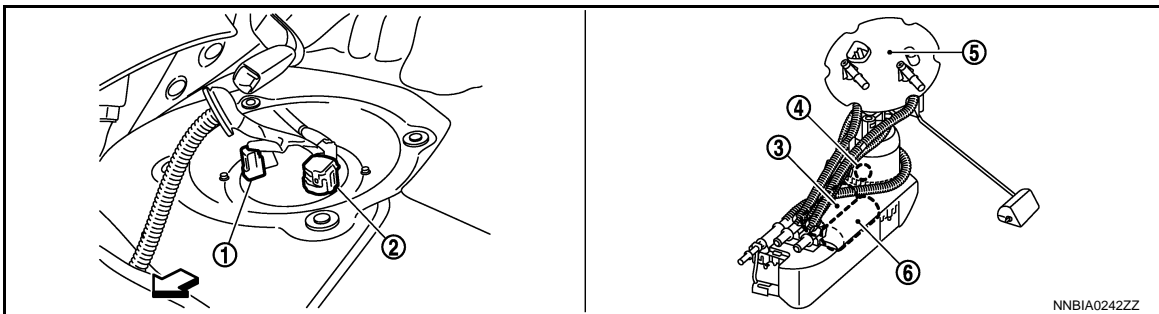
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



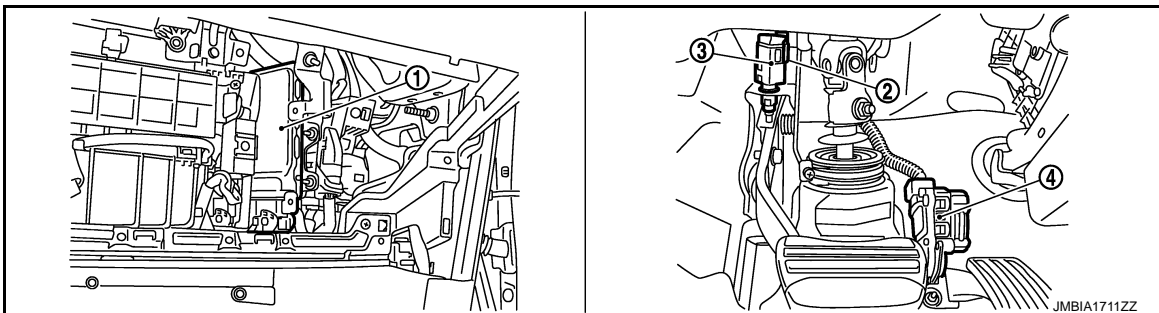
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



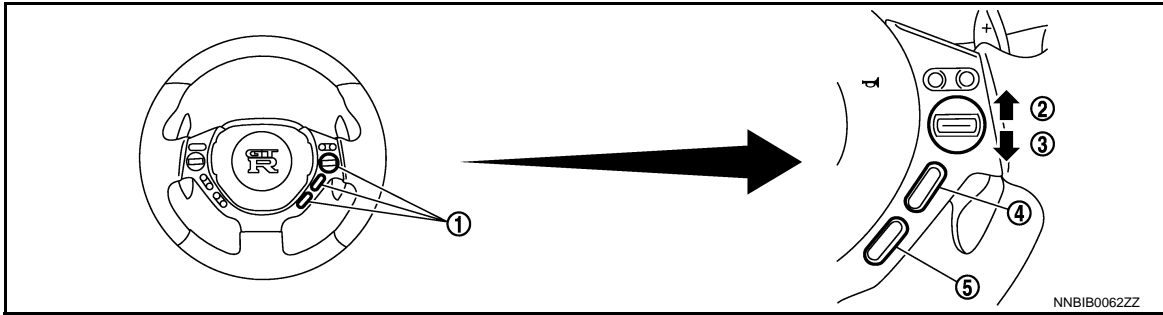
1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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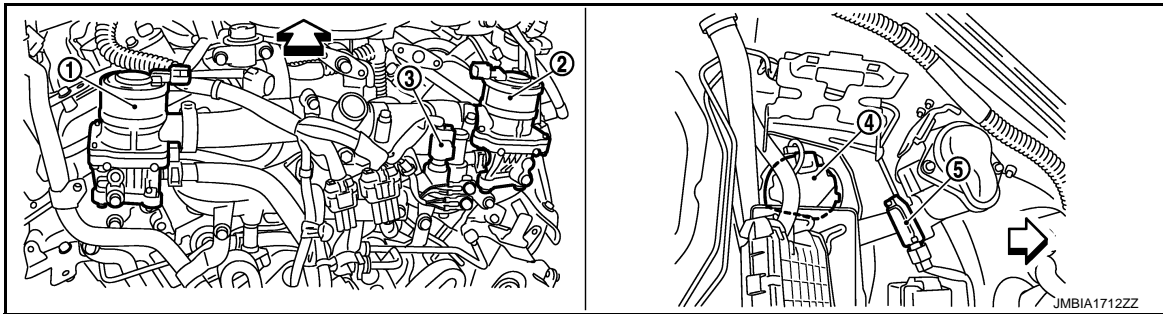
TURBOCHARGER BOOST CONTROL

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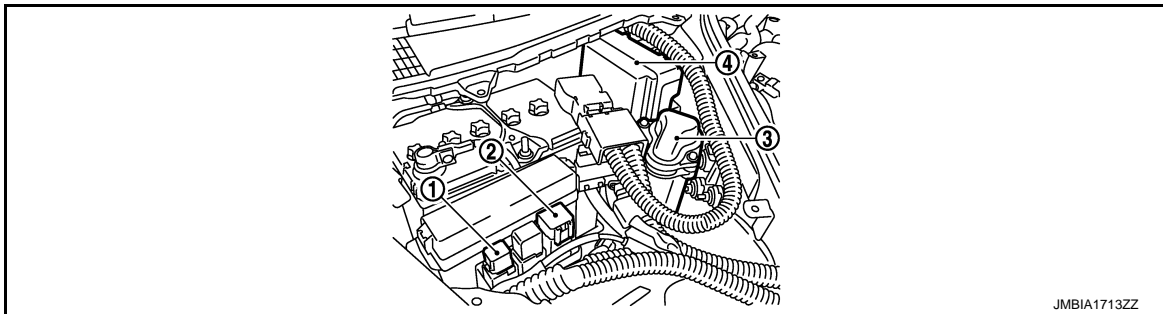


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| 1. ASCD steering switch | 2. RESUME/ACCELERATE switch | 3. SET/COAST switch |
| 4. CANCEL switch | 5. MAIN switch | |

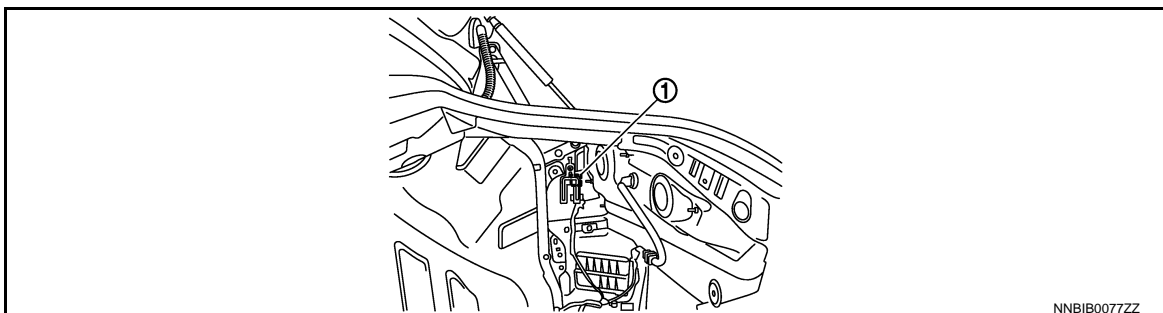


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| 1. Air cut solenoid valve (bank 2) | 2. Air cut solenoid valve (bank 1) | 3. Engine coolant temperature sensor |
| 4. Air pump | 5. Secondary air injection system mass air flow sensor | |

← :Vehicle front



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| 1. Air cut solenoid valve relay | 2. Air pump relay | 3. Air pump cleaner |
| 4. IPDM E/R | | |

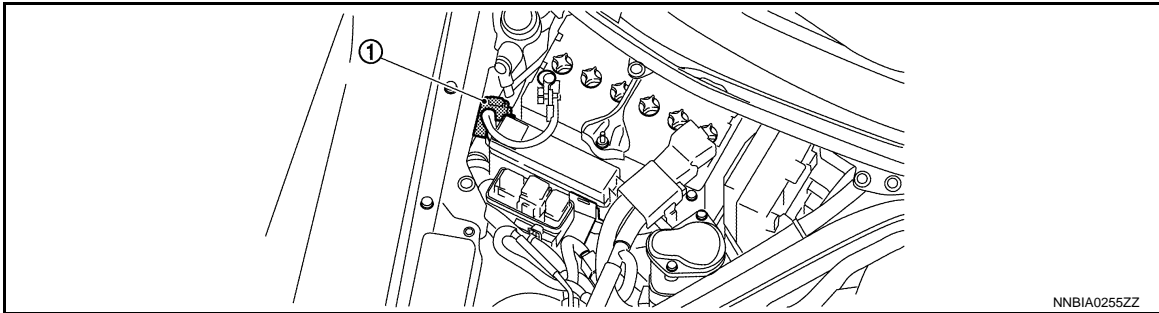


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| 1. Sub fuel pump relay |
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TURBOCHARGER BOOST CONTROL

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:0000000011486258

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

TURBOCHARGER BOOST CONTROL

< SYSTEM DESCRIPTION >

[VR38]

Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

FUEL PUMP CONTROL MODULE

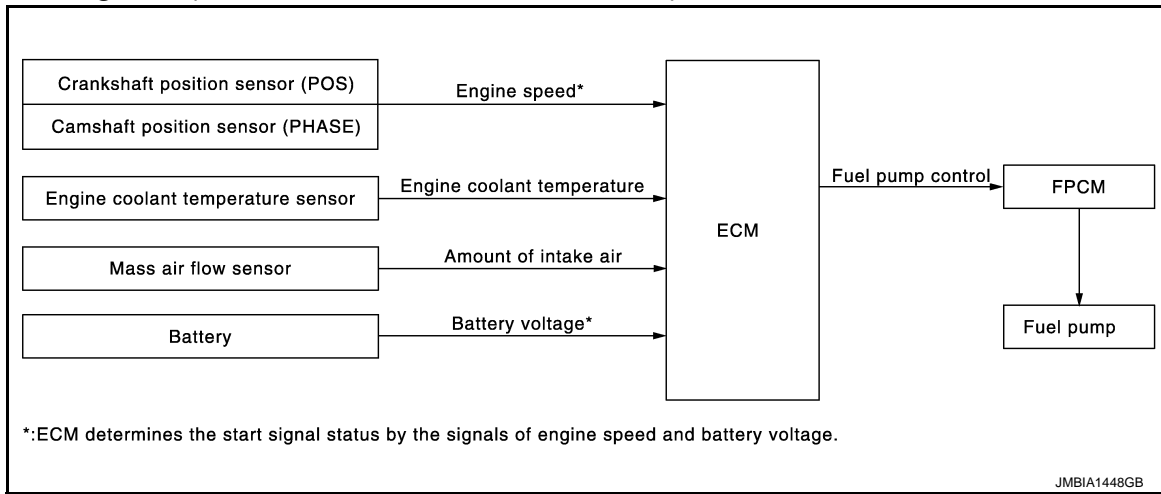
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FUEL PUMP CONTROL MODULE

System Diagram (GT-R certified NISSAN dealer)

INFOID:000000011486259



System Description (GT-R certified NISSAN dealer)

INFOID:000000011486260

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed*	Fuel pump control	FPCM ↓ Fuel pump
Engine coolant temperature sensor	Engine coolant temperature		
Mass air flow sensor	Amount of intake air		
Battery	Battery voltage*		

*: ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

The fuel pump control module (FPCM) controls the discharging volume of the fuel pump by the FPCM control signals (Low/Mid/Hi) depending on driving conditions.

Conditions	Amount of fuel flow	Supplied voltage
<ul style="list-style-type: none"> For 1 seconds after turning ignition switch Engine is running under low load and low speed conditions 	Low	Approximately 8.5 V
<ul style="list-style-type: none"> Engine cranking Engine coolant temperature is below 10°C (50°F) Engine is running under high load and high speed conditions 	High	Battery voltage (11 - 14 V)
Except the above	Mid	Approximately 10 V

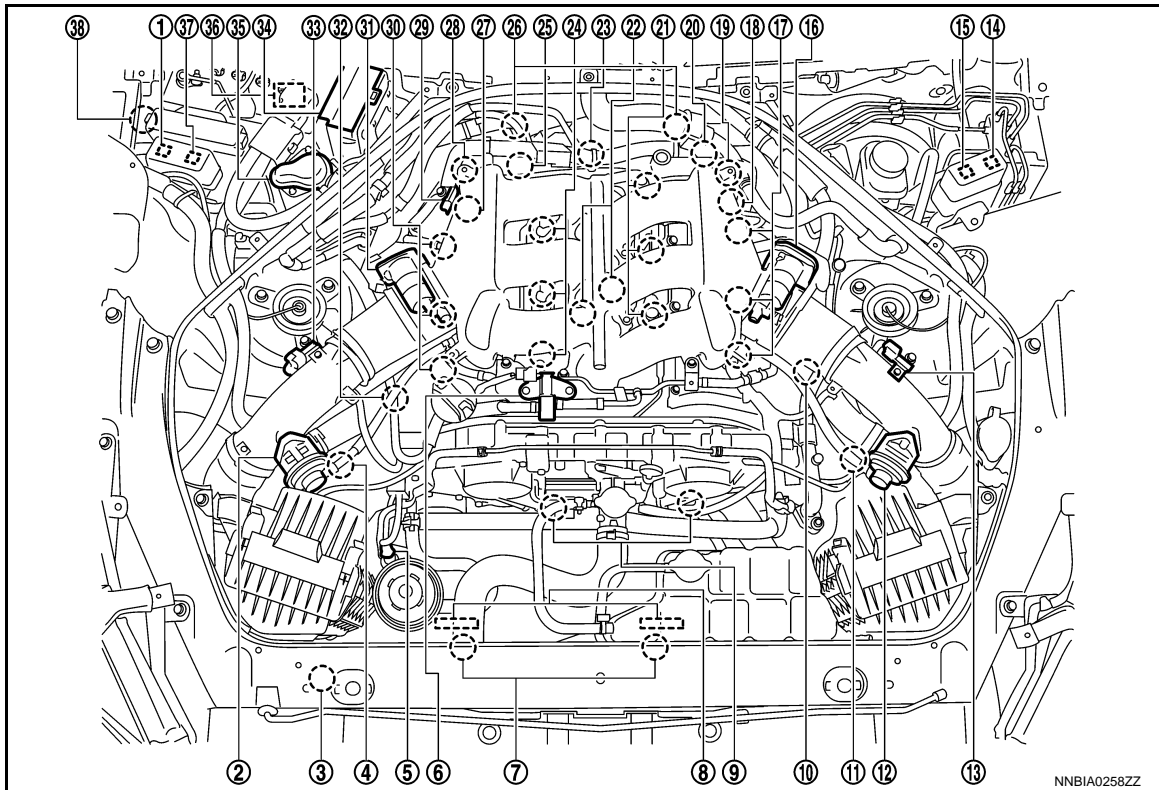
FUEL PUMP CONTROL MODULE

< SYSTEM DESCRIPTION >

[VR38]

Component Parts Location (GT-R certified NISSAN dealer)

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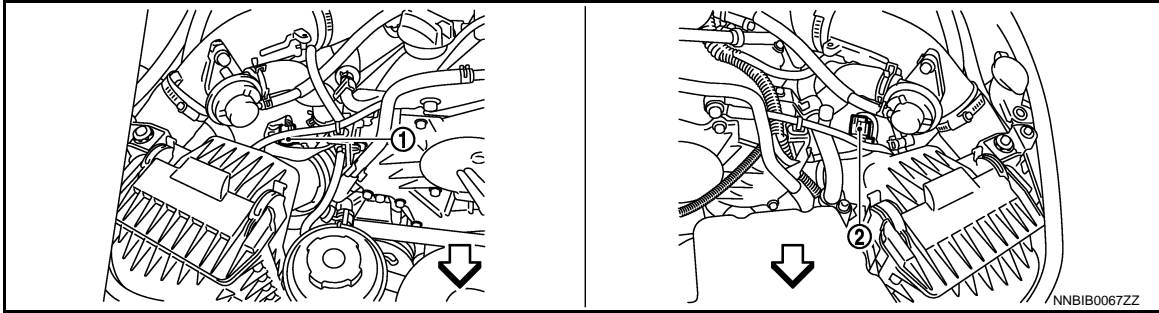


- | | | |
|---|---|---|
| 1. Air cut solenoid valve relay | 2. Recirculation valve (bank 1) | 3. Refrigerant pressure sensor |
| 4. Mass air flow sensor (with intake air temperature sensor) (bank 1) | 5. Power steering pressure sensor | 6. EVAP canister purge volume control solenoid valve |
| 7. Cooling fan motor | 8. Cooling fan control module | 9. Intake valve timing control solenoid valve |
| 10. Turbocharger boost control solenoid valve | 11. Mass air flow sensor (bank 2) | 12. Recirculation valve (bank 2) |
| 13. Turbocharger boost sensor (bank 2) | 14. Cooling fan relay-1 | 15. Cooling fan relay-2 |
| 16. Electric throttle control actuator (bank 2) | 17. Ignition coil (with power transistor) and spark plug (bank 2) | 18. Camshaft position sensor (PHASE) (bank 2) |
| 19. Air cut solenoid valve (bank 2) | 20. Crankshaft position sensor (POS) | 21. Fuel injector (bank 2) |
| 22. Knock sensor | 23. Engine oil temperature sensor | 24. Fuel injector (bank 1) |
| 25. Engine coolant temperature sensor | 26. A/F sensor 1 (bank 1) | 27. Camshaft position sensor (PHASE) (bank 1) |
| 28. Air cut solenoid valve (bank 1) | 29. Manifold absolute pressure sensor | 30. Ignition coil (with power transistor) and spark plug (bank 1) |
| 31. Electric throttle control actuator (bank 1) | 32. EVAP service port | 33. Turbocharger boost sensor (bank 1) |
| 34. IPDM E/R | 35. Air pump cleaner | 36. Air pump |
| 37. Air pump relay | 38. Battery current sensor | |

FUEL PUMP CONTROL MODULE

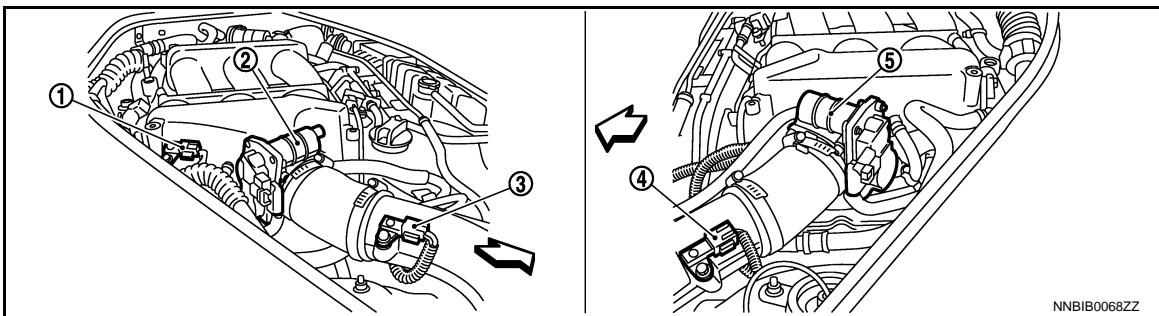
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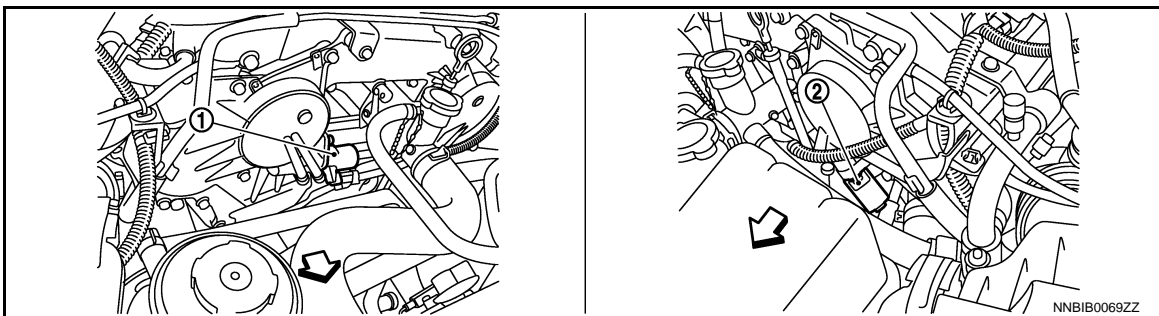
- 1. Mass air flow sensor (with intake air temperature sensor) (bank 1)
- 2. Mass air flow sensor (bank 2)

← :Vehicle front



- 1. Manifold absolute pressure sensor
- 2. Electric throttle control actuator (bank 1)
- 3. Turbocharger boost sensor (bank 1)
- 4. Turbocharger boost sensor (bank 2)
- 5. Electric throttle control actuator (bank 2)

← :Vehicle front



- 1. Intake valve timing control solenoid valve (bank 1)
- 2. Intake valve timing control solenoid valve (bank 2)

← :Vehicle front

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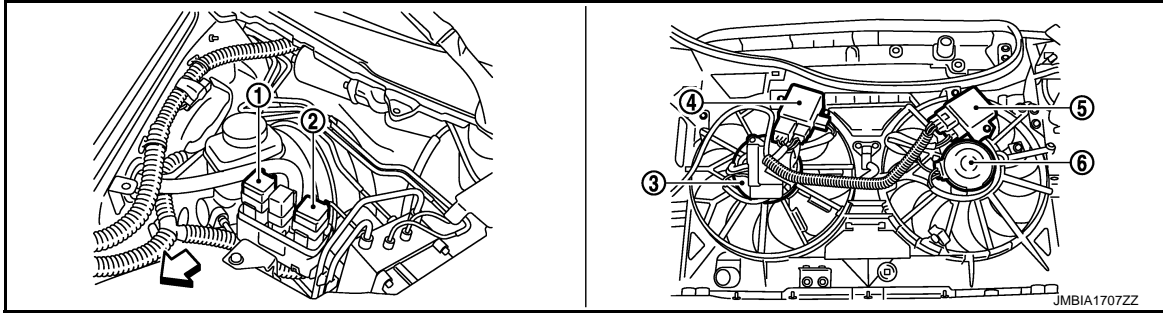
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FUEL PUMP CONTROL MODULE

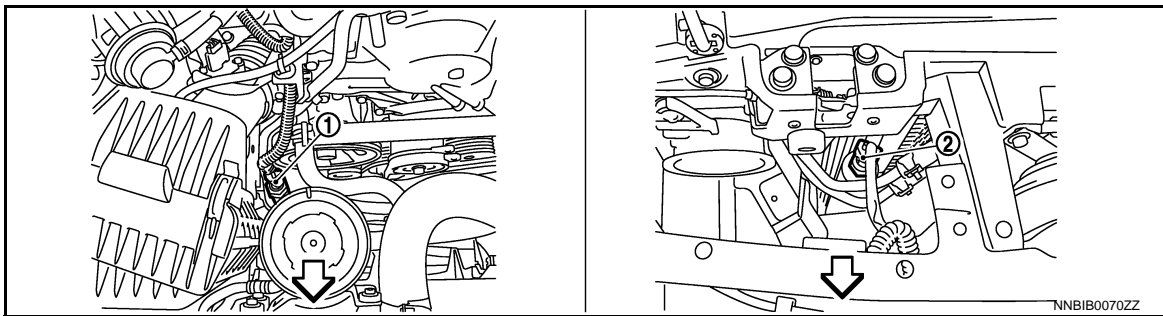
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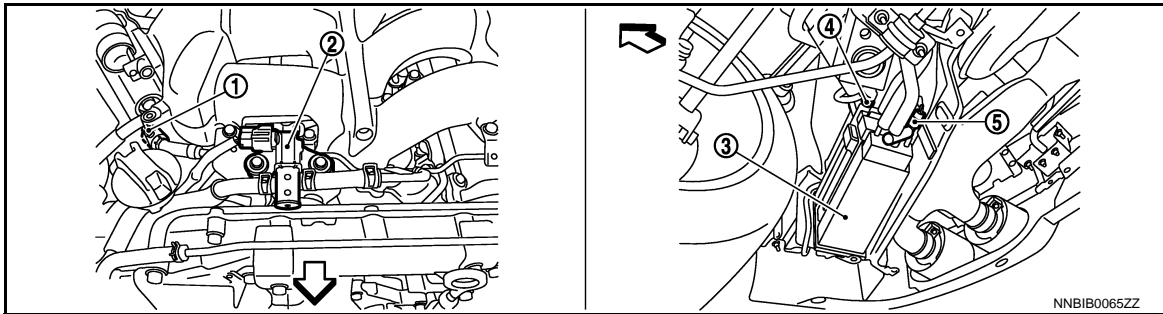
- | | | |
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| 1. Cooling fan relay-2 | 2. Cooling fan relay-1 | 3. Cooling fan motor-1 |
| 4. Cooling fan control module-1 | 5. Cooling fan control module-2 | 6. Cooling fan motor-2 |

↶ :Vehicle front



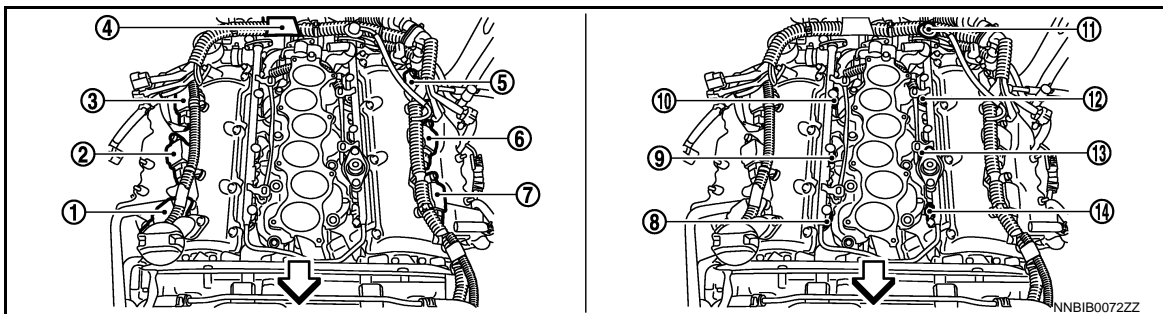
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| 1. Power steering pressure sensor | 2. Refrigerant pressure sensor |
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↶ :Vehicle front



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| 1. EVAP service port | 2. EVAP canister purge volume control | 3. EVAP canister solenoid valve |
| 4. EVAP control system pressure sensor | 5. EVAP canister vent control valve | |

↶ :Vehicle front



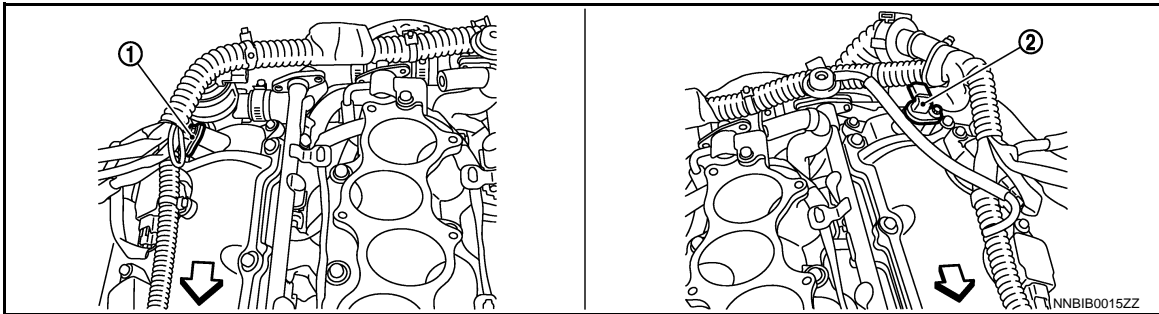
FUEL PUMP CONTROL MODULE

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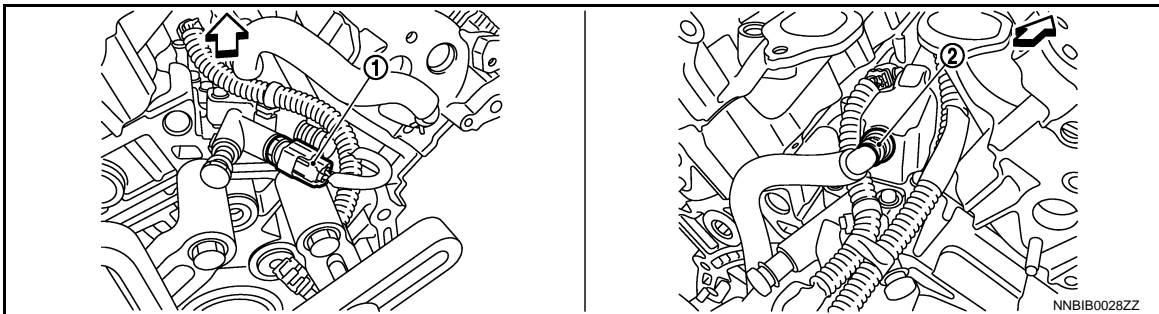
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|---|---|---|
| 1. Ignition coil No.1 (with power transistor) | 2. Ignition coil No.3 (with power transistor) | 3. Ignition coil No.5 (with power transistor) |
| 4. Condenser | 5. Ignition coil No.6 (with power transistor) | 6. Ignition coil No.4 (with power transistor) |
| 7. Ignition coil No.2 (with power transistor) | 8. Fuel injector No.1 | 9. Fuel injector No.3 |
| 10. Fuel injector No.5 | 11. Fuel pressure regulator | 12. Fuel injector No.6 |
| 13. Fuel injector No.4 | 14. Fuel injector No.2 | |

↶ :Vehicle front



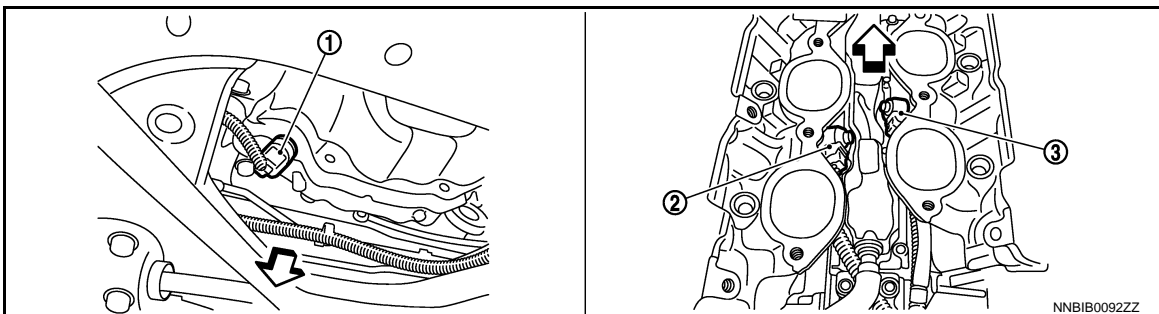
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| 1. Camshaft position sensor (PHASE) (bank 1) | 2. Camshaft position sensor (PHASE) (bank 2) |
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| 1. Engine oil temperature sensor | 2. PCV valve |
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↶ :Vehicle front



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| 1. Crankshaft position sensor (POS) | 2. Knock sensor (bank 2) | 3. Knock sensor (bank 1) |
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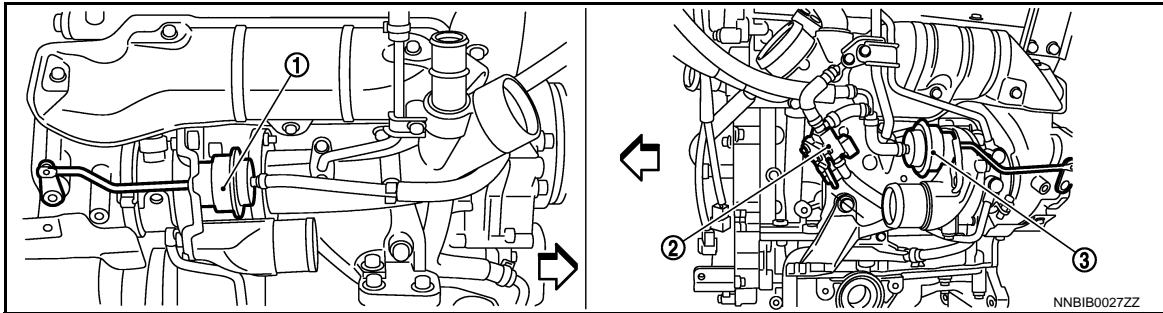
↶ :Vehicle front

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FUEL PUMP CONTROL MODULE

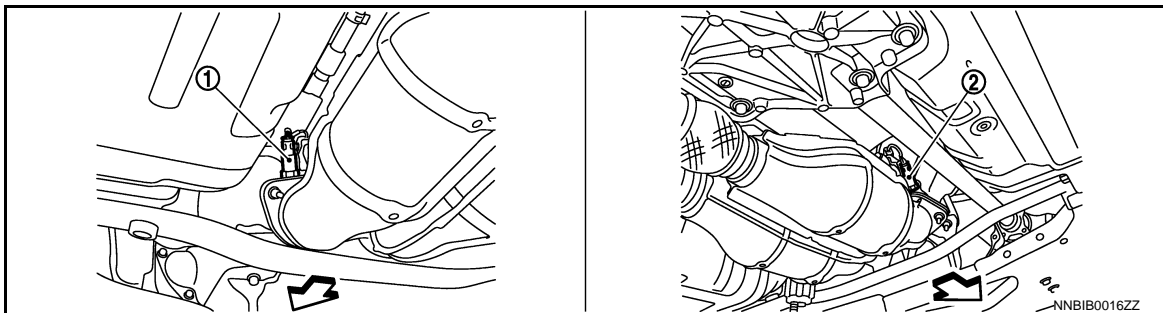
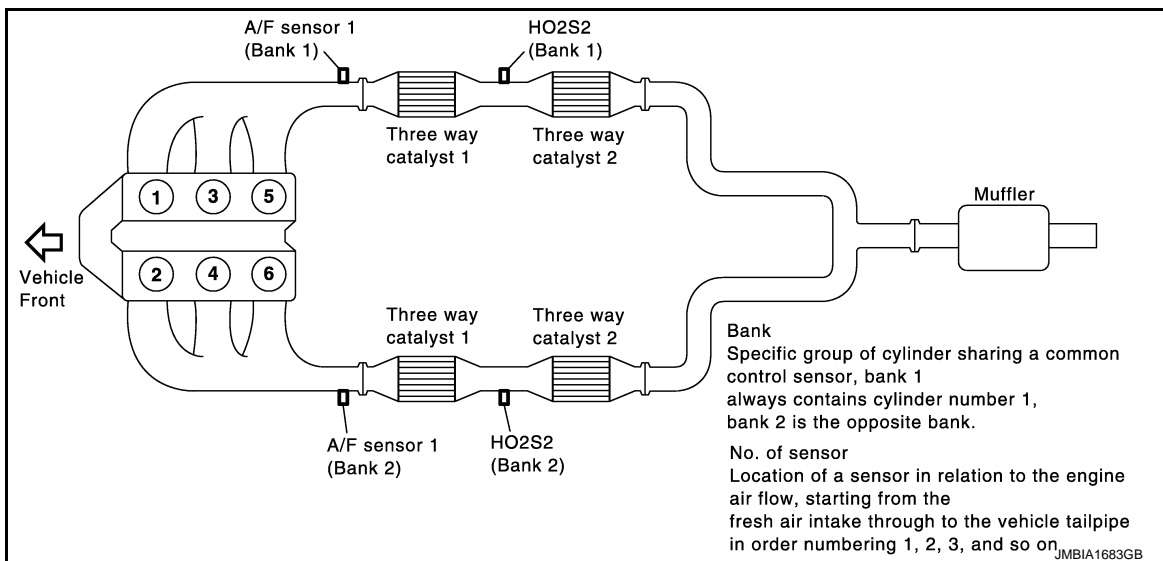
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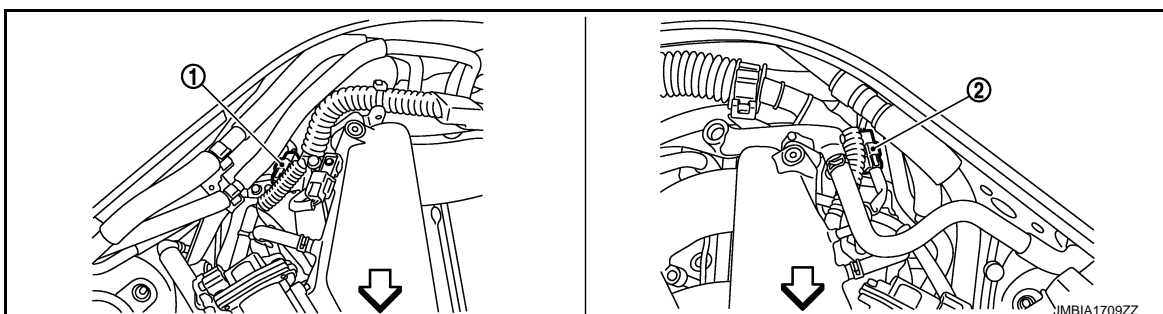
1. Boost control actuator (bank 1) 2. Turbocharger boost control solenoid 3. Boost control actuator (bank 2)

← :Vehicle front



1. Heated oxygen sensor 2 (bank 2) 2. Heated oxygen sensor 2 (bank 1)

← :Vehicle front



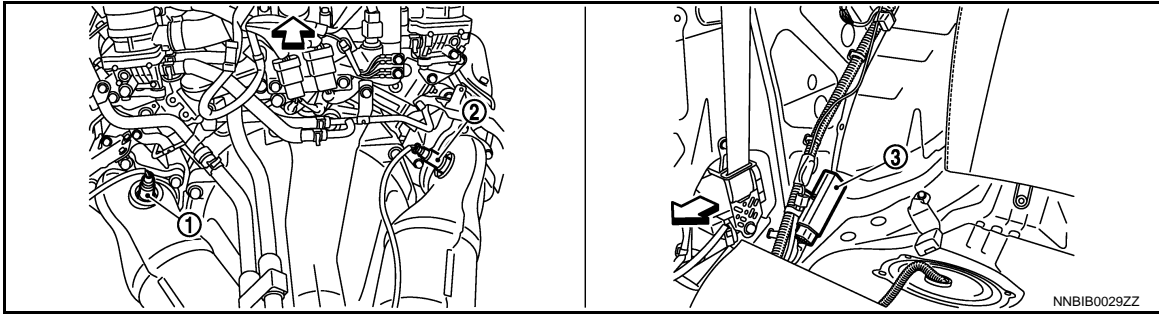
FUEL PUMP CONTROL MODULE

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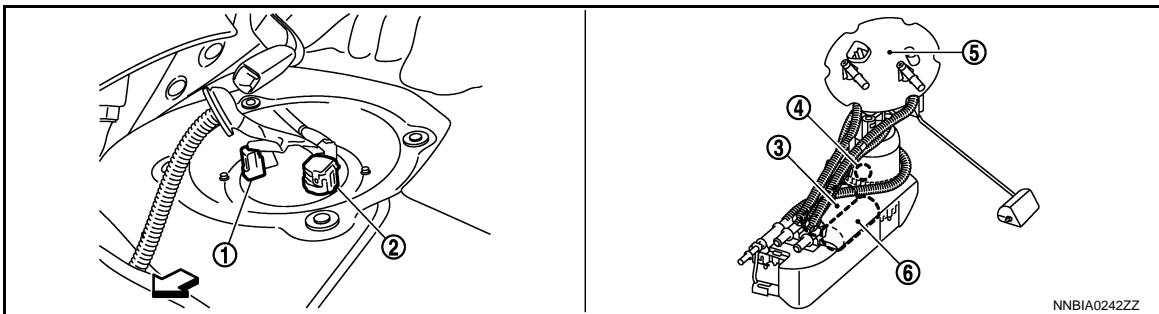
1. A/F sensor 1 (bank 1) harness connector
2. A/F sensor 1 (bank 2) harness connector

↶ :Vehicle front



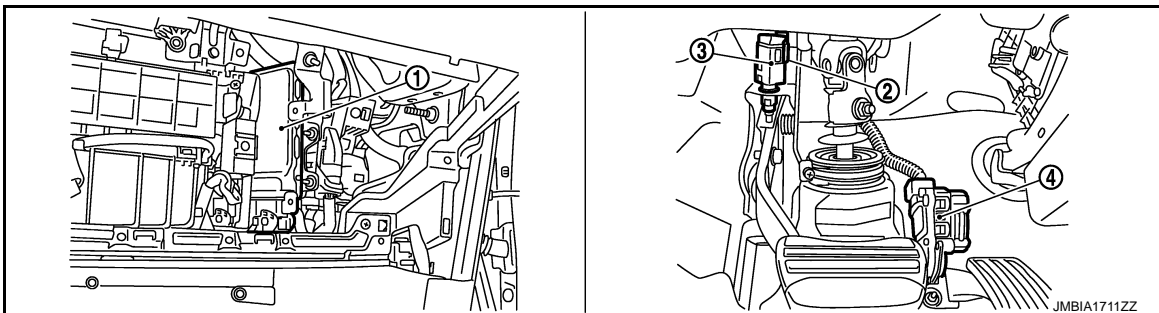
1. A/F sensor 1 (bank 2)
2. A/F sensor 1 (bank 1)
3. Fuel pump control module (FPCM)

↶ :Vehicle front



1. Fuel level sensor unit and fuel pump (sub fuel pump) harness connector
2. Fuel level sensor unit and fuel pump (main) harness connector
3. Sub fuel pump
4. Fuel tank temperature sensor
5. Main fuel level sensor unit, fuel filter
6. Fuel pump and fuel pump assembly

↶ :Vehicle front



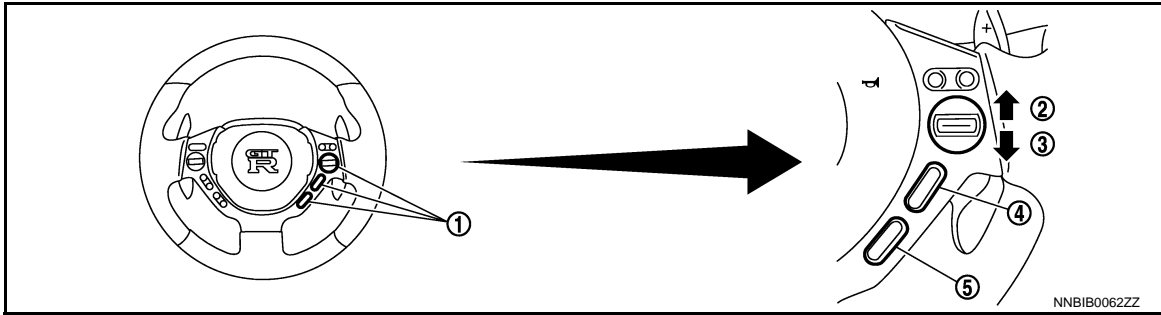
1. ECM
2. ASCD brake switch
3. Stop lamp switch
4. Accelerator pedal position sensor

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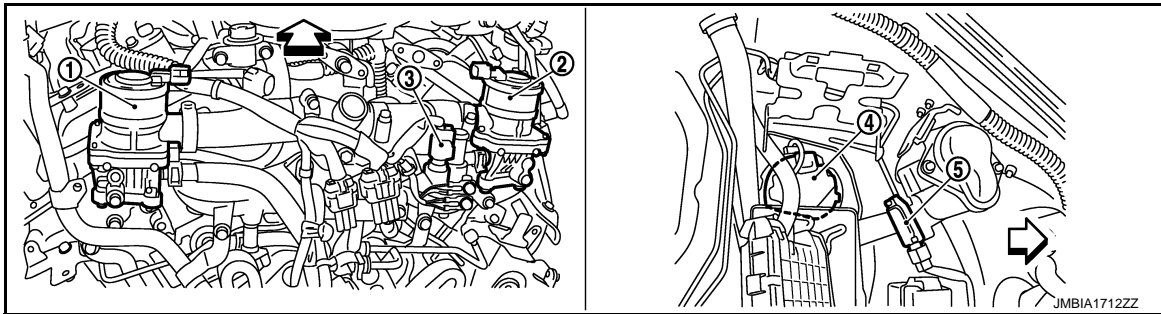
FUEL PUMP CONTROL MODULE

< SYSTEM DESCRIPTION >

[VR38]

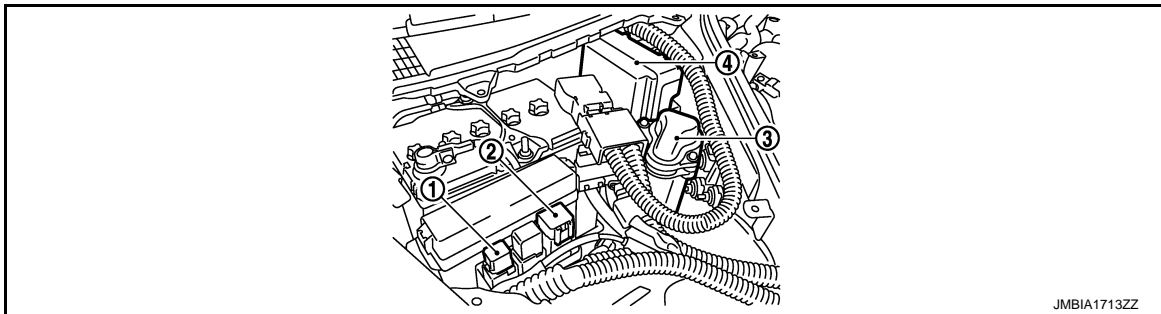


- 1. ASCD steering switch
- 2. RESUME/ACCELERATE switch
- 3. SET/COAST switch
- 4. CANCEL switch
- 5. MAIN switch

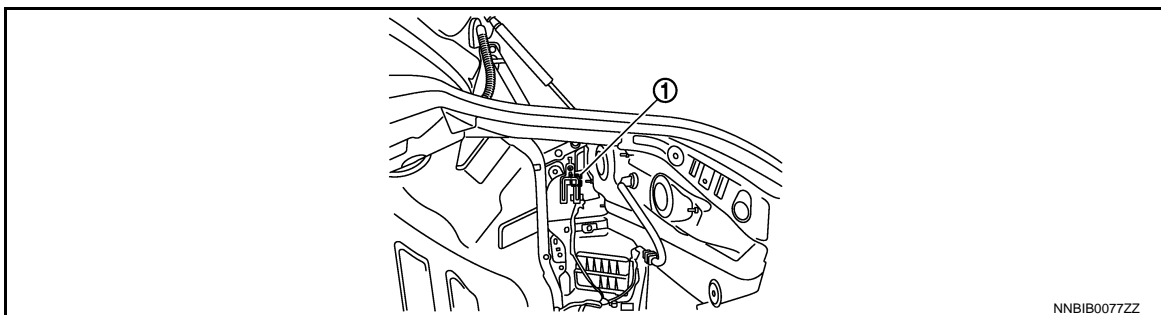


- 1. Air cut solenoid valve (bank 2)
- 2. Air cut solenoid valve (bank 1)
- 3. Engine coolant temperature sensor
- 4. Air pump
- 5. Secondary air injection system mass air flow sensor

← :Vehicle front



- 1. Air cut solenoid valve relay
- 2. Air pump relay
- 3. Air pump cleaner
- 4. IPDM E/R

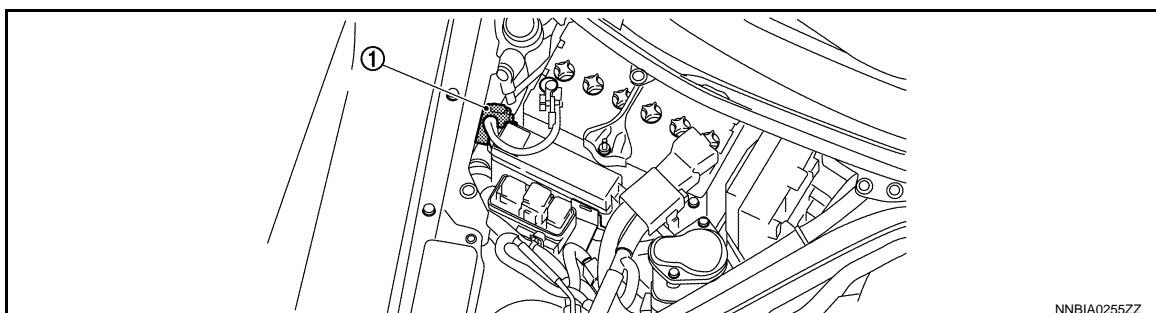


- 1. Sub fuel pump relay

FUEL PUMP CONTROL MODULE

< SYSTEM DESCRIPTION >

[VR38]



1. Battery current sensor

Component Description (GT-R certified NISSAN dealer)

INFOID:0000000011486262

Component	Reference
A/F sensor 1	EC-248, "Description (GT-R certified NISSAN dealer)"
A/F sensor 1 heater	EC-200, "Description (GT-R certified NISSAN dealer)"
Accelerator pedal position sensor	EC-501, "Description (GT-R certified NISSAN dealer)"
Air cut solenoid valve	EC-520, "Description (GT-R certified NISSAN dealer)"
ASCD brake switch	EC-487, "Description (GT-R certified NISSAN dealer)"
ASCD steering switch	EC-484, "Description (GT-R certified NISSAN dealer)"
Battery current sensor	EC-471, "Description (GT-R certified NISSAN dealer)"
Camshaft position sensor (PHASE)	EC-335, "Description (GT-R certified NISSAN dealer)"
Cooling fan control module	EC-529, "Description (GT-R certified NISSAN dealer)"
Cooling fan motor	EC-529, "Description (GT-R certified NISSAN dealer)"
Crankshaft position sensor (POS)	EC-331, "Description (GT-R certified NISSAN dealer)"
Electric throttle control actuator	EC-461, "Description (GT-R certified NISSAN dealer)"
Engine coolant temperature sensor	EC-234, "Description (GT-R certified NISSAN dealer)"
Engine oil temperature sensor	EC-301, "Description (GT-R certified NISSAN dealer)"
EVAP canister purge volume control solenoid valve	EC-361, "Description (GT-R certified NISSAN dealer)"
EVAP canister vent control valve	EC-369, "Description (GT-R certified NISSAN dealer)"
EVAP control system pressure sensor	EC-377, "Description (GT-R certified NISSAN dealer)"
Fuel injector	EC-538, "Description (GT-R certified NISSAN dealer)"
Fuel level sensor	EC-402, "Description (GT-R certified NISSAN dealer)"
Fuel pump	EC-541, "Description (GT-R certified NISSAN dealer)"
Fuel pump control module (FPCM)	EC-447, "Description (GT-R certified NISSAN dealer)"
Fuel tank temperature sensor	EC-293, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2	EC-258, "Description (GT-R certified NISSAN dealer)"
Heated oxygen sensor 2 heater	EC-203, "Description (GT-R certified NISSAN dealer)"
Ignition coil with power transistor	EC-544, "Description (GT-R certified NISSAN dealer)"
Intake air temperature sensor	EC-228, "Description (GT-R certified NISSAN dealer)"
Intake valve timing control solenoid valve	EC-209, "Description (GT-R certified NISSAN dealer)"
Knock sensor	EC-328, "Description (GT-R certified NISSAN dealer)"
Manifold absolute pressure sensor	EC-550, "Description (GT-R certified NISSAN dealer)"
Mass air flow sensor	EC-212, "Description (GT-R certified NISSAN dealer)"
PCV valve	EC-559, "Description"
Power steering pressure sensor	EC-419, "Description (GT-R certified NISSAN dealer)"

FUEL PUMP CONTROL MODULE

< SYSTEM DESCRIPTION >

[VR38]

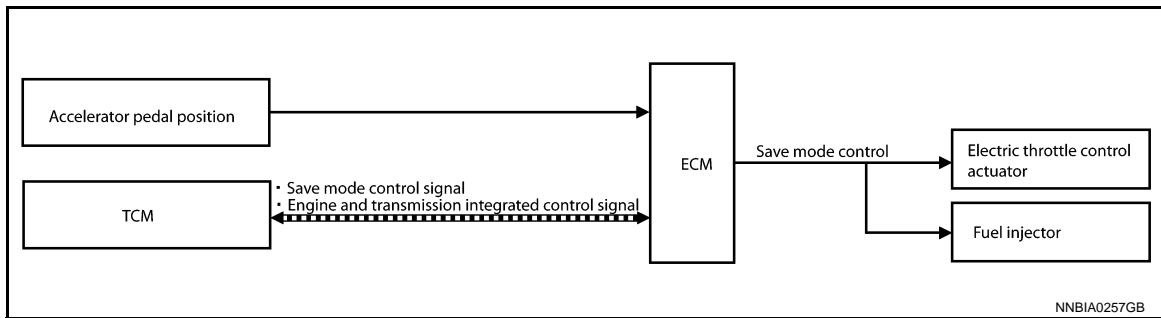
Component	Reference
Refrigerant pressure sensor	EC-560, "Description (GT-R certified NISSAN dealer)"
Secondary air injection system mass air flow sensor	EC-517, "Description (GT-R certified NISSAN dealer)"
Stop lamp switch	EC-494, "Description (GT-R certified NISSAN dealer)"
Sub fuel pump	EC-429, "Description (GT-R certified NISSAN dealer)"
Throttle control motor	EC-458, "Description (GT-R certified NISSAN dealer)"
Throttle control motor relay	EC-469, "Description (GT-R certified NISSAN dealer)"
Throttle position sensor	EC-237, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost control solenoid valve	EC-206, "Description (GT-R certified NISSAN dealer)"
Turbocharger boost sensor	EC-314, "Description (GT-R certified NISSAN dealer)"

SAVE MODE

System Description (GT-R certified NISSAN dealer)

INFOID:000000011486263

SYSTEM DIAGRAM



SYSTEM DESCRIPTION

ECM receives SAVE mode control signal via CAN communication from TCM. Then it switches engine control to SAVE mode.

During SAVE mode, ECM keeps torque output milder than normal control. It also controls that air-fuel ratio remains within theoretical range. Therefore, if the vehicle speed reduces during ASCD control on uphill road etc, it gently recovers the set speed.

NOTE:

For details of SAVE mode control the vehicle, refer to [DMS-2, "SAVE Mode"](#).

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ON BOARD DIAGNOSTIC (OBD) SYSTEM

< SYSTEM DESCRIPTION >

[VR38]

ON BOARD DIAGNOSTIC (OBD) SYSTEM

Diagnosis Description (GT-R certified NISSAN dealer)

INFOID:000000011486264

This system is an on board diagnostic system that records exhaust emission-related diagnostic information and detects a sensors/actuator-related malfunction. A malfunction is indicated by the malfunction indicator lamp (MIL) and stored in control module memory as a DTC. The diagnostic information can be obtained with the diagnostic tool (GST: Generic Scan Tool).

GST (Generic Scan Tool) (GT-R certified NISSAN dealer)

INFOID:000000011486265

When GST is connected with a data link connector equipped on the vehicle side, it will communicate with the control module equipped in the vehicle and then enable various kinds of diagnostic tests. Refer to [GI-47, "Description"](#).

DIAGNOSIS SYSTEM (ECM)

DIAGNOSIS DESCRIPTION

DIAGNOSIS DESCRIPTION : 1st Trip Detection Logic and Two Trip Detection Logic (GT-R certified NISSAN dealer)

INFOID:000000011486266

When a malfunction is detected for the first time, 1st trip DTC and 1st trip Freeze Frame data are stored in the ECM memory. The MIL will not illuminate at this stage. <1st trip>

If the same malfunction is detected again during the next drive, the DTC and Freeze Frame data are stored in the ECM memory, and the MIL illuminates. The MIL illuminates at the same time when the DTC is stored. <2nd trip> The "trip" in the "Two Trip Detection Logic" means a driving mode in which self-diagnosis is performed during vehicle operation. Specific on board diagnostic items will cause the ECM to illuminate or blink the MIL, and store DTC and Freeze Frame data, even in the 1st trip, as shown below.

×: Applicable —: Not applicable

Items	MIL				DTC		1st trip DTC	
	1st trip		2nd trip		1st trip displaying	2nd trip displaying	1st trip displaying	2nd trip displaying
	Blinking	Illuminated	Blinking	Illuminated				
Misfire (Possible three way catalyst damage) — DTC: P0300 - P0306 is being detected	×	—	—	—	—	—	×	—
Misfire (Possible three way catalyst damage) — DTC: P0300 - P0306 is being detected	—	—	×	—	—	×	—	—
One trip detection diagnoses (Refer to EC-592, "DTC Index" .)	—	×	—	—	×	—	—	—
Except above	—	—	—	×	—	×	×	—

DIAGNOSIS DESCRIPTION : DTC and Freeze Frame Data (GT-R certified NISSAN dealer)

INFOID:000000011486267

DTC AND 1ST TRIP DTC

The 1st trip DTC (whose number is the same as the DTC number) is displayed for the latest self-diagnostic result obtained. If the ECM memory was cleared previously, and the 1st trip DTC did not recur, the 1st trip DTC will not be displayed.

If a malfunction is detected during the 1st trip, the 1st trip DTC is saved in the ECM memory. The MIL will not light up (two trip detection logic). If the same malfunction is not detected in the 2nd trip (meeting the required driving pattern), the 1st trip DTC is cleared from the ECM memory. If the same malfunction is detected in the 2nd trip, both the 1st trip DTC and DTC are saved in the ECM memory and the MIL lights up. In other words, the DTC is stored in the ECM memory and the MIL lights up when the same malfunction occurs in two consecutive trips. If a 1st trip DTC is stored and a non-diagnostic operation is performed between the 1st and 2nd trips, only the 1st trip DTC will continue to be stored. For malfunctions that blink or light up the MIL during the 1st trip, the DTC and 1st trip DTC are stored in the ECM memory.

For malfunctions in which 1st trip DTCs are displayed, refer to [EC-592, "DTC Index"](#). These items are required by legal regulations to continuously monitor the system/component. In addition, the items monitored non-continuously are also displayed on CONSULT.

1st trip DTC is specified in Service \$07 of SAE J1979/ISO 15031-5. 1st trip DTC detection occurs without illuminating the MIL and therefore does not warn the driver of a malfunction.

When a 1st trip DTC is detected, check, print out or write down and erase (1st trip) DTC and Freeze Frame data as specified in Work Flow procedure Step 2, refer to [EC-12, "Work Flow \(GT-R certified NISSAN dealer\)"](#). Then perform DTC Confirmation Procedure or Component Function Check to try to duplicate the malfunction. If the malfunction is duplicated, the item requires repair.

FREEZE FRAME DATA AND 1ST TRIP FREEZE FRAME DATA

The ECM records the driving conditions such as fuel system status, calculated load value, engine coolant temperature, short term fuel trim, long term fuel trim, engine speed, vehicle speed, absolute throttle position, base fuel schedule and intake air temperature at the moment a malfunction is detected.

DIAGNOSIS SYSTEM (ECM)

[VR38]

< SYSTEM DESCRIPTION >

Data which are stored in the ECM memory, along with the 1st trip DTC, are called 1st trip freeze frame data. The data, stored together with the DTC data, are called freeze frame data and displayed on CONSULT or GST. The 1st trip freeze frame data can only be displayed on the CONSULT screen.

Only one set of freeze frame data (either 1st trip freeze frame data or freeze frame data) can be stored in the ECM. 1st trip freeze frame data is stored in the ECM memory along with the 1st trip DTC. There is no priority for 1st trip freeze frame data and it is updated each time a different 1st trip DTC is detected. However, once freeze frame data (2nd trip detection/MIL on) is stored in the ECM memory, 1st trip freeze frame data is no longer stored. Remember, only one set of freeze frame data can be stored in the ECM. The ECM has the following priorities to update the data.

Priority	Items	
1	Freeze frame data	Misfire — DTC: P0300 - P0306 Fuel Injection System Function — DTC: P0171, P0172, P0174, P0175
2		Except the above items
3	1st trip freeze frame data	

For example, the EGR malfunction (Priority: 2) was detected and the freeze frame data was saved in the 2nd trip. After that when the misfire (Priority: 1) is detected in another trip, the freeze frame data will be updated from the EGR malfunction to the misfire. The 1st trip freeze frame data is updated each time a different malfunction is detected. There is no priority for 1st trip freeze frame data. However, once freeze frame data is stored in the ECM memory, 1st trip freeze data is no longer stored (because only one freeze frame data or 1st trip freeze frame data can be stored in the ECM). If freeze frame data is stored in the ECM memory and freeze frame data with the same priority occurs later, the first (original) freeze frame data remains unchanged in the ECM memory.

Both 1st trip freeze frame data and freeze frame data (along with the DTCs) are cleared when the ECM memory is erased.

DIAGNOSIS DESCRIPTION : Counter System (GT-R certified NISSAN dealer)

INFOID:000000011486268

RELATIONSHIP BETWEEN MIL, 1ST TRIP DTC, DTC, AND DETECTABLE ITEMS

- When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data are stored in the ECM memory.
- When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data are stored in the ECM memory, and the MIL will come on.
- The MIL will turn OFF after the vehicle is driven 3 times (driving pattern B) with no malfunction. The drive is counted only when the recorded driving pattern is met (as stored in the ECM). If another malfunction occurs while counting, the counter will reset.
- The DTC and the freeze frame data will be stored until the vehicle is driven 40 times (driving pattern A) without the same malfunction recurring (except for Misfire and Fuel Injection System). For Misfire and Fuel Injection System, the DTC and freeze frame data will be stored until the vehicle is driven 80 times (driving pattern C) without the same malfunction recurring. The "TIME" in "SELF-DIAGNOSTIC RESULTS" mode of CONSULT will count the number of times the vehicle is driven.
- The 1st trip DTC is not displayed when the self-diagnosis results in OK for the 2nd trip.

COUNTER SYSTEM CHART

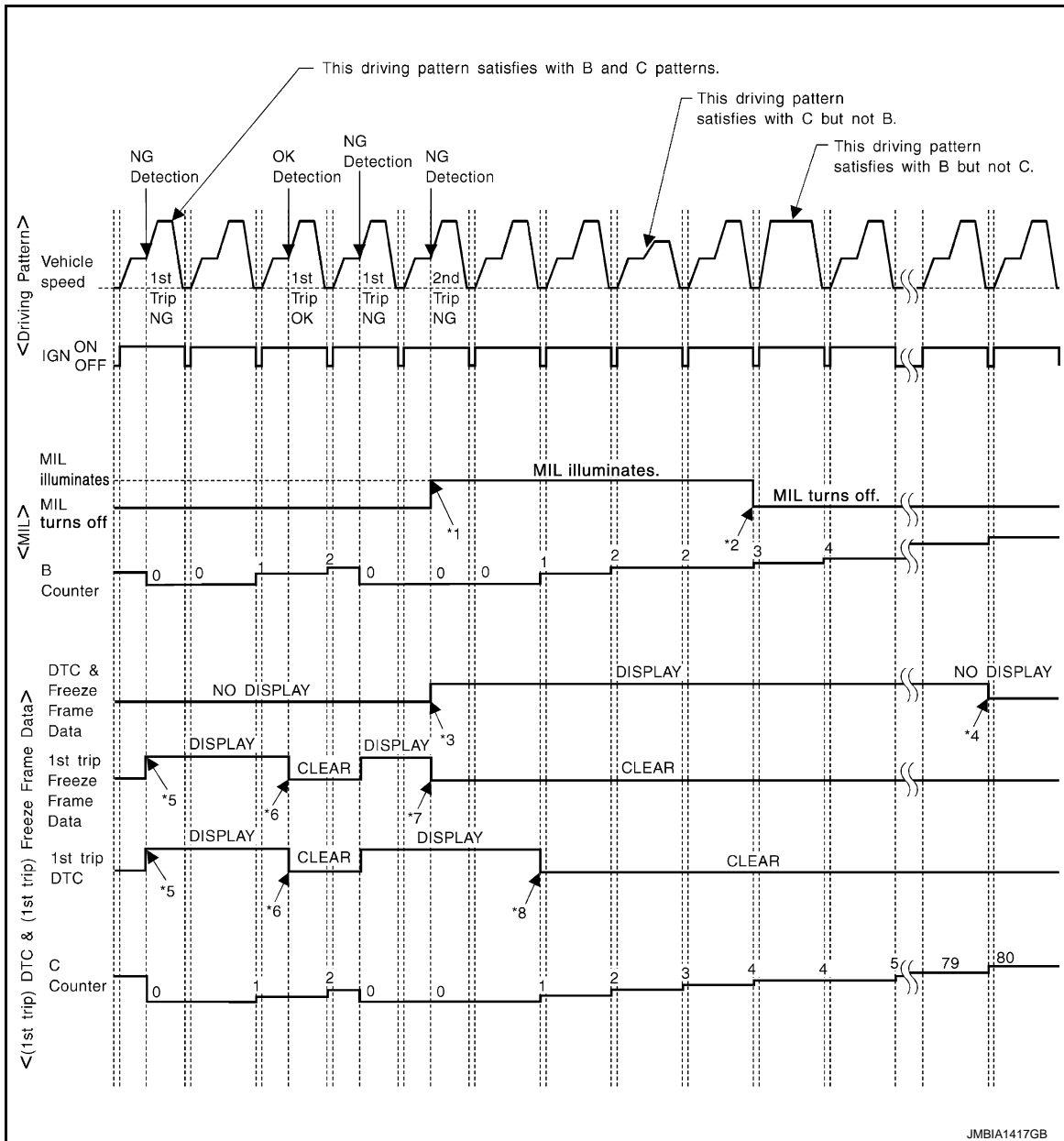
Items	Fuel Injection System	Misfire	Other
MIL (turns OFF)	3 (pattern B)	3 (pattern B)	3 (pattern B)
DTC, Freeze Frame Data (no display)	80 (pattern C)	80 (pattern C)	40 (pattern A)
1st Trip DTC (clear)	1 (pattern C), *1	1 (pattern C), *1	1 (pattern B)
1st Trip Freeze Frame Data (clear)	*1, *2	*1, *2	1 (pattern B)

For details about patterns B and C under "Fuel Injection System" and "Misfire", see "EXPLANATION FOR DRIVING PATTERNS FOR "MISFIRE <EXHAUST QUALITY DETERIORATION>", "FUEL INJECTION SYSTEM".

For details about patterns A and B under Other, see "EXPLANATION FOR DRIVING PATTERNS FOR "MISFIRE <EXHAUST QUALITY DETERIORATION>", "FUEL INJECTION SYSTEM".

- *1: Clear timing is at the moment OK is detected.
- *2: Clear timing is when the same malfunction is detected in the 2nd trip.

Relationship Between MIL, DTC, 1st Trip DTC and Driving Patterns for “Misfire <Exhaust Quality Deterioration>”, “Fuel Injection System”



*1: When the same malfunction is detected in two consecutive trips, MIL will light up.

*2: MIL will turn OFF after vehicle is driven 3 times (pattern B) without any malfunctions.

*3: When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data will be stored in ECM.

*4: The DTC and the freeze frame data will not be displayed any longer after vehicle is driven 80 times (pattern C) without the same malfunction. (The DTC and the freeze frame data still remain in ECM.)

*5: When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data will be stored in ECM.

*6: The 1st trip DTC and the 1st trip freeze frame data will be cleared at the moment OK is detected.

*7: When the same malfunction is detected in the 2nd trip, the 1st trip freeze frame data will be cleared.

*8: 1st trip DTC will be cleared when vehicle is driven once (pattern C) without the same malfunction after DTC is stored in ECM.

Explanation for Driving Patterns for “Misfire <Exhaust Quality Deterioration>”, “Fuel Injection System”

Driving Pattern B

DIAGNOSIS SYSTEM (ECM)

[VR38]

< SYSTEM DESCRIPTION >

Refer to [EC-165. "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)".](#)

Driving Pattern C

Refer to [EC-165. "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)".](#)

Example:

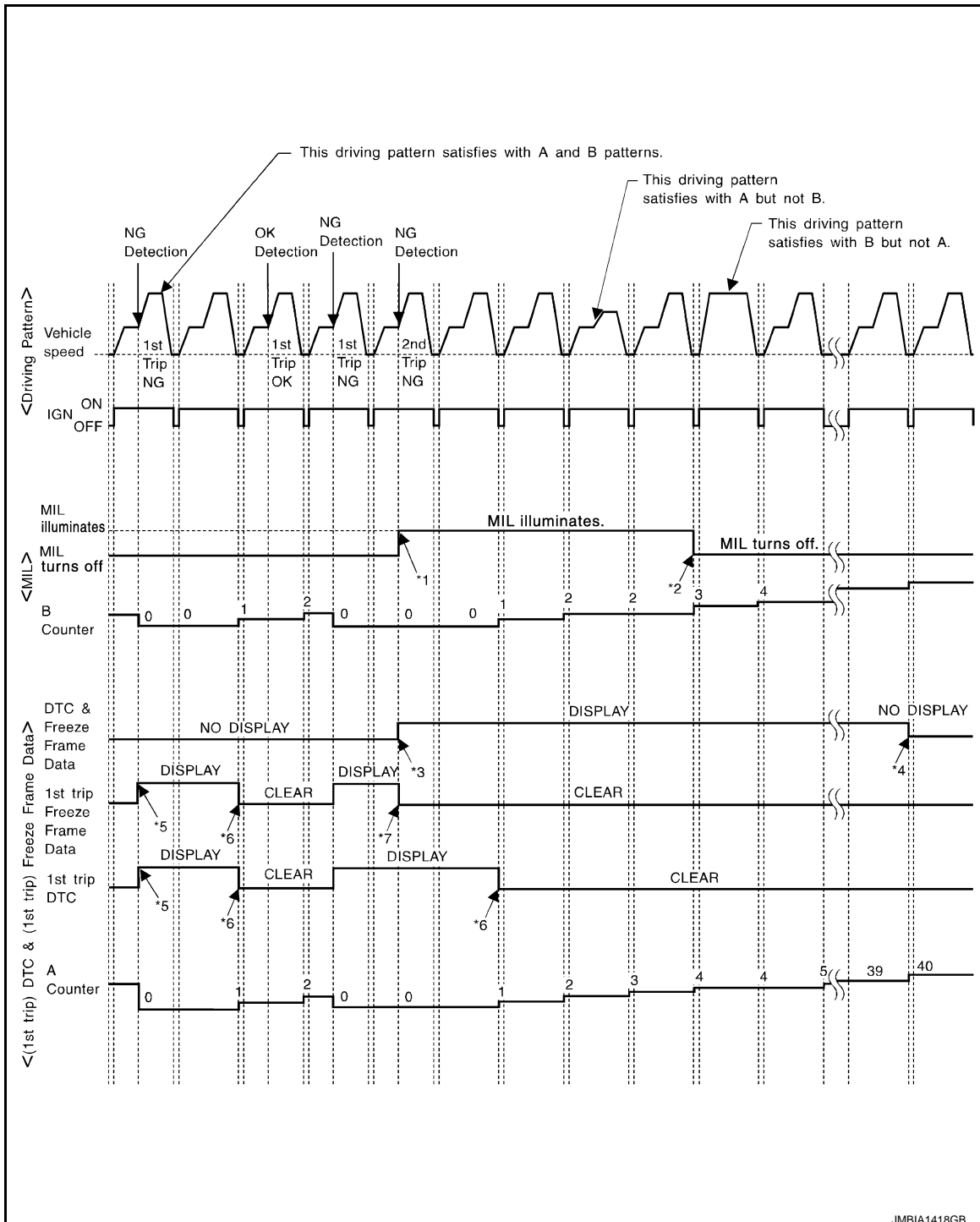
If the stored freeze frame data is as per the following:

Engine speed: 850 rpm, Calculated load value: 30%, Engine coolant temperature: 80°C (176°F)

To be satisfied with driving pattern C, the vehicle should run under the following conditions:

Engine speed: 475 – 1,225 rpm, Calculated load value: 27 – 33%, Engine coolant temperature: more than 70°C (158°F)

Relationship Between MIL, DTC, 1st Trip DTC and Driving Patterns Except For “Misfire <Exhaust Quality Deterioration>”, “Fuel Injection System”



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- | | | | |
|---|--|---|----|
| <p>*1: When the same malfunction is detected in two consecutive trips, MIL will light up.</p> | <p>*2: MIL will turn OFF after vehicle is driven 3 times (pattern B) without any malfunctions.</p> | <p>*3: When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data will be stored in ECM.</p> | A |
| <p>*4: The DTC and the freeze frame data will not be displayed any longer after vehicle is driven 40 times (pattern A) without the same malfunction.
(The DTC and the freeze frame data still remain in ECM.)</p> | <p>*5: When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data will be stored in ECM.</p> | <p>*6: 1st trip DTC will be cleared after vehicle is driven once (pattern B) without the same malfunction.</p> | EC |
| <p>*7: When the same malfunction is detected in the 2nd trip, the 1st trip freeze frame data will be cleared.</p> | | | C |

Explanation for Driving Patterns Except for “Misfire <Exhaust Quality Deterioration>”, “Fuel Injection System”

Driving Pattern A

Refer to [EC-165, "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)"](#).

Driving Pattern B

Refer to [EC-165, "DIAGNOSIS DESCRIPTION : Driving Pattern \(GT-R certified NISSAN dealer\)"](#).

DIAGNOSIS DESCRIPTION : Driving Pattern (GT-R certified NISSAN dealer)

INFOID:000000011486269

CAUTION:

Always drive at a safe speed.

DRIVING PATTERN A

Driving pattern A means a trip satisfying the following conditions.

- Engine speed reaches 400 rpm or more.
- Engine coolant temperature rises by 20°C (36°F) or more after starting the engine.
- Engine coolant temperature reaches 70°C (158°F) or more.
- The ignition switch is turned from ON to OFF.

NOTE:

- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern A.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern A.

DRIVING PATTERN B

Driving pattern B means a trip satisfying the following conditions.

- Engine speed reaches 400 rpm or more.
- Engine coolant temperature reaches 70°C (158°F) or more.
- Vehicle speed of 70 – 120 km/h (44 – 75 MPH) is maintained for 60 seconds or more under the control of closed loop.
- Vehicle speed of 30 – 60 km/h (19 – 37 MPH) is maintained for 10 seconds or more under the control of closed loop.
- Under the closed loop control condition, the following state reaches 12 seconds or more in total: Vehicle speed of 4 km/h (2 MPH) or less with idling condition.
- The state of driving at 10 km/h (7 MPH) or more reaches 10 minutes or more in total.
- A lapse of 22 minutes or more after engine start.

NOTE:

- Drive the vehicle at a constant velocity.
- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern B.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern B.

DRIVING PATTERN C

Driving pattern C means operating vehicle as per the following:
The following conditions should be satisfied at the same time:

< SYSTEM DESCRIPTION >

Engine speed: (Engine speed in the freeze frame data) ± 375 rpm

Calculated load value: (Calculated load value in the freeze frame data) $\times (1 \pm 0.1)$ [%]

Engine coolant temperature condition:

- When the freeze frame data shows lower than 70°C (158°F), engine coolant temperature should be lower than 70°C (158°F).
- When the freeze frame data shows higher than or equal to 70°C (158°F), engine coolant temperature should be higher than or equal to 70°C (158°F).

NOTE:

- When the same malfunction is detected regardless of the above vehicle conditions, reset the counter of driving pattern C.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern C.
- The 1st trip DTC will be cleared when C counter is counted once without the same malfunction after DTC is stored in ECM.

DRIVING PATTERN D

Driving pattern D means a trip satisfying the following conditions.

- The state of driving at 40 km/h (25 MPH) reaches 300 seconds or more in total.
- Idle speed lasts 30 seconds or more.
- A lapse of 600 seconds or more after engine start.

NOTE:

- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern D.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern D.

DIAGNOSIS DESCRIPTION : System Readiness Test (SRT) Code (GT-R certified NISSAN dealer)

INFOID:000000011486270

System Readiness Test (SRT) code is specified in Service \$01 of SAE J1979/ISO 15031-5.

As part of an enhanced emissions test for Inspection & Maintenance (I/M), certain states require the status of SRT be used to indicate whether the ECM has completed self-diagnosis of major emission systems and components. Completion must be verified in order for the emissions inspection to proceed.

If a vehicle is rejected for a State emissions inspection due to one or more SRT items indicating "INCMP", use the information in this Service Manual to set the SRT to "CMPLT".

In most cases the ECM will automatically complete its self-diagnosis cycle during normal usage, and the SRT status will indicate "CMPLT" for each application system. Once set as "CMPLT", the SRT status remains "CMPLT" until the self-diagnosis memory is erased.

Occasionally, certain portions of the self-diagnostic test may not be completed as a result of the customer's normal driving pattern; the SRT will indicate "INCMP" for these items.

NOTE:

The SRT will also indicate "INCMP" if the self-diagnosis memory is erased for any reason or if the ECM memory power supply is interrupted for several hours.

If, during the state emissions inspection, the SRT indicates "CMPLT" for all test items, the inspector will continue with the emissions test. However, if the SRT indicates "INCMP" for one or more of the SRT items the vehicle is returned to the customer untested.

NOTE:

If MIL is ON during the state emissions inspection, the vehicle is also returned to the customer untested even though the SRT indicates "CMPLT" for all test items. Therefore, it is important to check SRT ("CMPLT") and DTC (No DTCs) before the inspection.

SRT SET TIMING

SRT is set as "CMPLT" after self-diagnosis has been performed one or more times. Completion of SRT is done regardless of whether the result is OK or NG. The set timing is different between OK and NG results and is shown in the table below.

DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[VR38]

Self-diagnosis result		Example						
		Diagnosis	Ignition cycle					
	← ON →		OFF	← ON →	OFF	← ON →	OFF	← ON →
All OK	Case 1	P0400	OK (1)	— (1)	OK (2)	— (2)		
		P0402	OK (1)	— (1)	— (1)	OK (2)		
		P1402	OK (1)	OK (2)	— (2)	— (2)		
		SRT of EGR	“CMPLT”	“CMPLT”	“CMPLT”	“CMPLT”		
	Case 2	P0400	OK (1)	— (1)	— (1)	— (1)		
		P0402	— (0)	— (0)	OK (1)	— (1)		
		P1402	OK (1)	OK (2)	— (2)	— (2)		
		SRT of EGR	“INCMP”	“INCMP”	“CMPLT”	“CMPLT”		
NG exists	Case 3	P0400	OK	OK	—	—		
		P0402	—	—	—	—		
		P1402	NG	—	NG	NG (Consecutive NG)		
		(1st trip) DTC	1st trip DTC	—	1st trip DTC	DTC (= MIL ON)		
		SRT of EGR	“INCMP”	“INCMP”	“INCMP”	“CMPLT”		

OK: Self-diagnosis is carried out and the result is OK.

NG: Self-diagnosis is carried out and the result is NG.

—: Self-diagnosis is not carried out.

When all SRT related self-diagnoses show OK results in a single cycle (Ignition OFF-ON-OFF), the SRT will indicate “CMPLT”. → Case 1 above

When all SRT related self-diagnoses show OK results through several different cycles, the SRT will indicate “CMPLT” at the time the respective self-diagnoses have at least one OK result. → Case 2 above

If one or more SRT related self-diagnoses show NG results in 2 consecutive cycles, the SRT will also indicate “CMPLT”. → Case 3 above

The table above shows that the minimum number of cycles for setting SRT as “INCMP” is the number one (1) for each self-diagnosis (Case 1 & 2) or the number two (2) for one of self-diagnoses (Case 3). However, in preparation for the state emissions inspection, it is unnecessary for each self-diagnosis to be executed twice (Case 3) for the following reasons:

- The SRT will indicate “CMPLT” at the time the respective self-diagnoses have one (1) OK result.
- The emissions inspection requires “CMPLT” of the SRT only with OK self-diagnosis results.
- During SRT driving pattern, the 1st trip DTC (NG) is detected prior to “CMPLT” of SRT and the self-diagnosis memory must be erased from the ECM after repair.
- If the 1st trip DTC is erased, all the SRT will indicate “INCMP”.

NOTE:

SRT can be set as “CMPLT” together with the DTC(s). Therefore, DTC check must always be carried out prior to the state emission inspection even though the SRT indicates “CMPLT”.

DIAGNOSIS DESCRIPTION : Permanent Diagnostic Trouble Code (Permanent DTC) (GT-R certified NISSAN dealer)

INFOID:000000011486271

Permanent DTC is defined in SAE J1979/ISO 15031-5 Service \$0A.

Control module stores a DTC issuing a command of turning on MIL as a permanent DTC and keeps storing the DTC as a permanent DTC until control module judges that there is no presence of malfunction.

Permanent DTCs cannot be erased by using the erase function of CONSULT or Generic Scan Tool (GST) and by disconnecting the battery to shut off power to control module. This prevents a vehicle from passing the in-use inspection without repairing a malfunctioning part.

When not passing the in-use inspection due to more than one permanent DTC, permanent DTCs should be erased, referring to this manual.

NOTE:

- The important items in in-use inspection are that MIL is not ON, SRT test items are set, and permanent DTCs are not included.

< SYSTEM DESCRIPTION >

- Permanent DTCs do not apply for regions that permanent DTCs are not regulated by law.

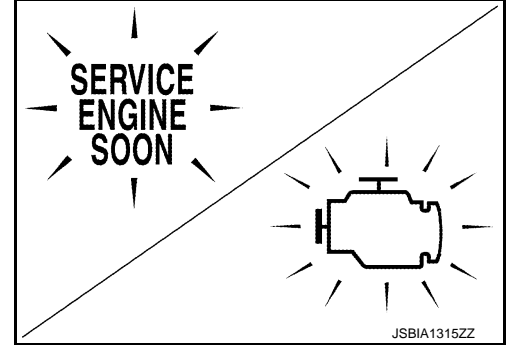
PERMANENT DTC SET TIMING

The setting timing of permanent DTC is stored in ECM with the lighting of MIL when a DTC is confirmed.

DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL) (GT-R certified NISSAN dealer)

INFOID:000000011486272

- When detecting a DTC that affects exhaust gas, the exhaust emission-related control module transmits a malfunction indicator lamp signal to ECM via CAN communication line. ECM prioritizes (MIL: ON/blink) the signal received from the exhaust emission-related control module and the ECM-stored DTC that affects exhaust gas and transmits a malfunction indicator lamp signal to the combination meter via CAN communication line. The combination meter turns ON or blinks the MIL, according to the signal transmitted from ECM, and alerts the driver of malfunction detection.
- Control modules that a DTC of MIL ON/Blink is stored (Control module varies among DTCs.):
 - ECM
 - TCM



1. The MIL illuminates when ignition switch is turned ON (engine is not running).

NOTE:

Check the MIL circuit if MIL does not illuminate. Refer to [EC-553. "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

2. When the engine is started, the MIL should go off.

NOTE:

If MIL remains ON or continues blinking, a DTC(s) that affects exhaust gas is detected. In this case, Self-diagnosis is required for performing inspection and repair.

On Board Diagnosis Function (GT-R certified NISSAN dealer)

INFOID:000000011486273

ON BOARD DIAGNOSIS ITEM

The on board diagnostic system has the following functions.

Diagnostic test mode	Function
Bulb check	MIL can be checked.
SRT status	ECM can read if SRT codes are set.
Malfunction warning	If ECM detects a malfunction, it illuminates or blinks MIL to inform the driver that a malfunction has been detected.
Self-diagnostic results	DTCs or 1st trip DTCs stored in ECM can be read.
Accelerator pedal released position learning	ECM can learn the accelerator pedal released position. Refer to EC-23. "ACCELERATOR PEDAL RELEASED POSITION LEARNING : Description (GT-R certified NISSAN dealer)" .
Throttle valve closed position learning	ECM can learn the throttle valve closed position. Refer to EC-23. "THROTTLE VALVE CLOSED POSITION LEARNING : Description (GT-R certified NISSAN dealer)" .
Idle air volume learning	ECM can learn the idle air volume. Refer to EC-24. "IDLE AIR VOLUME LEARNING : Description (GT-R certified NISSAN dealer)" .
Mixture ratio self-learning value clear	Mixture ratio self-learning value can be erased. Refer to EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Description (GT-R certified NISSAN dealer)" .

BULB CHECK MODE

Description

This function allows damage inspection in the MIL bulb (blown, open circuit, etc.).

Operation Procedure

1. Turn ignition switch ON.
2. The MIL on the instrument panel should stay ON.

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If it remains OFF, check MIL circuit. Refer to [EC-553, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

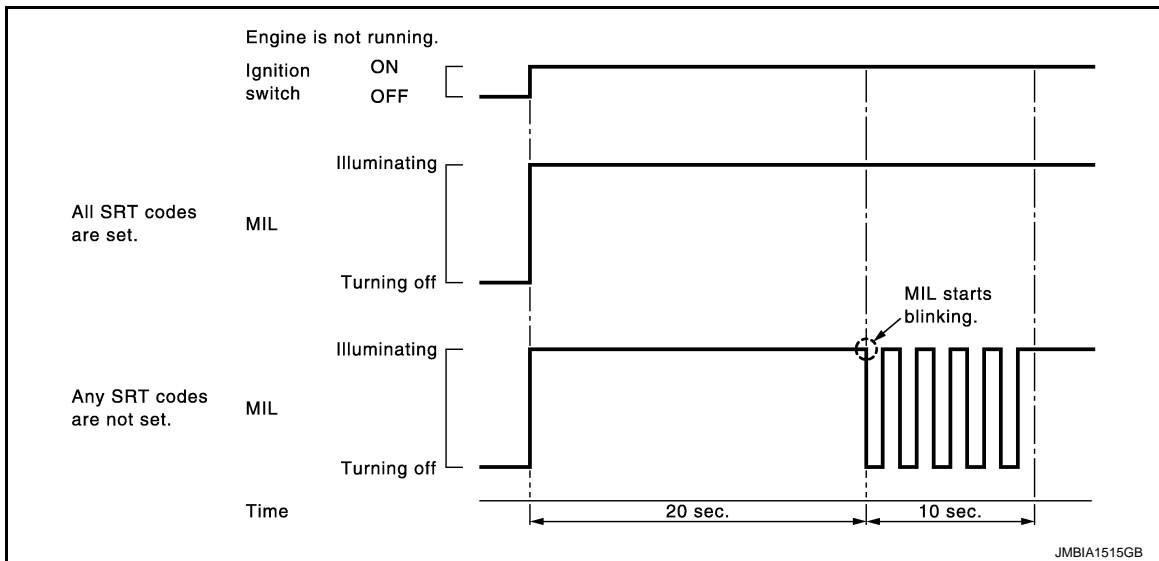
SRT STATUS MODE

Description

This function allows to read if ECM has completed the self-diagnoses of major emission control systems and components. For SRT, refer to [EC-166, "DIAGNOSIS DESCRIPTION : System Readiness Test \(SRT\) Code \(GT-R certified NISSAN dealer\)"](#).

Operation Procedure

1. Turn ignition switch ON and wait 20 seconds.
2. SRT status is indicated as shown blow.
 - ECM continues to illuminate MIL if all SRT codes are set.
 - ECM blinks MIL for about 10 seconds if all SRT codes are not set.



MALFUNCTION WARNING MODE

Description

In this function ECM turns on or blinks MIL when it detects a malfunction in the emission control system components and/or the powertrain control components (which affect vehicle emissions) to inform the driver that a malfunction has been detected.

Operation Procedure

1. Turn ignition switch ON.
2. Check that MIL illuminates.
 - If it remains OFF, check MIL circuit. Refer to [EC-553, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
3. Start engine and let it idle.
 - For two trip detection logic diagnoses, ECM turns on MIL when it detects the same malfunction twice in the two consecutive driving cycles.
 - For 1st trip detection logic diagnoses, ECM turns on MIL when it detects a malfunction in one driving cycle.
 - ECM blinks MIL when it detects a malfunction that may damage the three way catalyst (misfire).

SELF-DIAGNOSTIC RESULTS MODE

Description

This function allows to indicate DTCs or 1st trip DTCs stored in ECM according to the number of times MIL is blinking.

How to Set Self diagnostic Results Mode

NOTE:

- It is better to count the time accurately with a clock.

DIAGNOSIS SYSTEM (ECM)

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- It is impossible to switch the diagnostic mode when an accelerator pedal position sensor circuit has a malfunction.
 - After ignition switch is turned off, ECM is always released from the “Self-diagnostic results” mode.
1. Confirm that accelerator pedal is fully released, turn ignition switch ON and wait 3 seconds.
 2. Repeat the following procedure quickly five times within 5 seconds.
 - Fully depress the accelerator pedal.
 - Fully release the accelerator pedal.
 3. Wait 7 seconds, fully depress the accelerator pedal and keep it depressed for approx. 10 seconds until the MIL starts blinking.

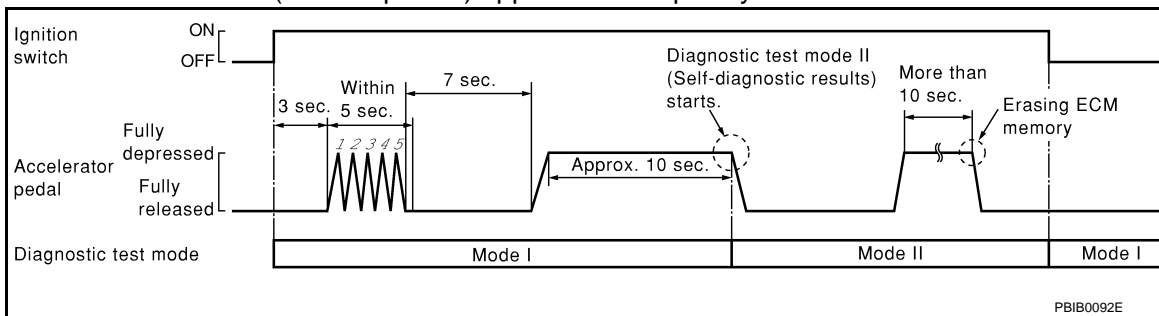
NOTE:

Do not release the accelerator pedal for 10 seconds if MIL starts blinking during this period. This blinking is displaying SRT status and is continued for another 10 seconds.

4. Fully release the accelerator pedal.
ECM has entered to SELF-DIAGNOSTIC RESULTS mode.

NOTE:

Wait until the same DTC (or 1st trip DTC) appears to completely confirm all DTCs.



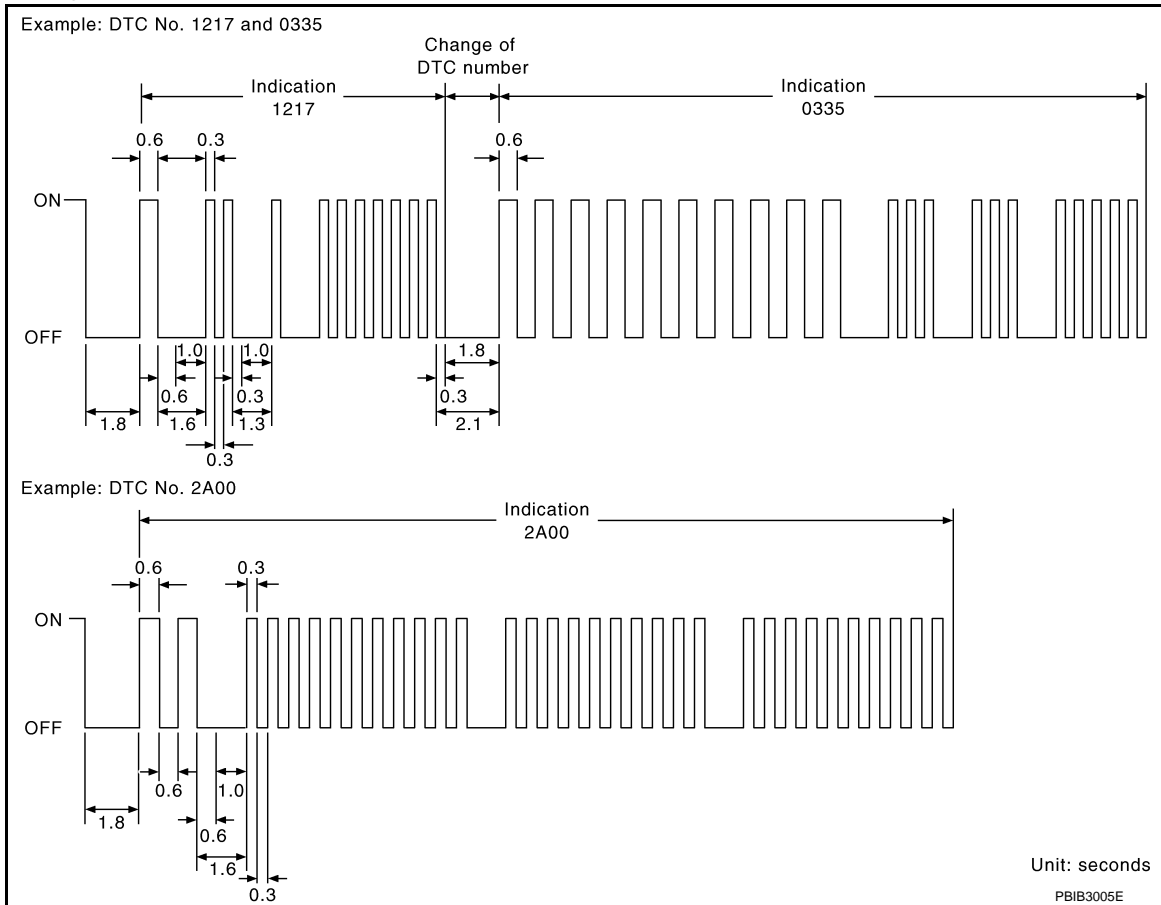
How to Read Self diagnostic Results

The DTC and 1st trip DTC are indicated by the number of blinks of the MIL as shown below.

The DTC and 1st trip DTC are displayed at the same time. If the MIL does not illuminate in diagnostic test mode I (Malfunction warning), all displayed items are 1st trip DTCs. If only one code is displayed when the MIL illuminates in “MALFUNCTION WARNING” mode, it is a DTC; if two or more codes are displayed, they may be

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either DTCs or 1st trip DTCs. DTC No. is same as that of 1st trip DTC. These unidentified codes can be identified by using the CONSULT or GST. A DTC will be used as an example for how to read a code.



A particular trouble code can be identified by the number of four-digit numeral flashes per the following.

Number	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Flashes	10	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16

The length of time the 1,000th-digit numeral flashes on and off is 1.2 seconds consisting of an ON (0.6-seconds) - OFF (0.6-seconds) cycle.

The 100th-digit numeral and lower digit numerals consist of a 0.3-seconds ON and 0.3-seconds OFF cycle.

A change from one digit numeral to another occurs at an interval of 1.0-second OFF. In other words, the later numeral appears on the display 1.3 seconds after the former numeral has disappeared.

A change from one trouble code to another occurs at an interval of 1.8-seconds OFF.

In this way, all the detected malfunctions are classified by their DTC numbers. The DTC 0000 refers to no malfunction. Refer to [EC-592, "DTC Index"](#).

How to Erase Self diagnostic Results

By performing this procedure, ECM memory is erased and the following diagnostic information is erased as well.

- Diagnostic trouble codes
- 1st trip diagnostic trouble codes
- Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values

NOTE:

Also, if a battery terminal is disconnected, ECM memory is erased and the diagnostic information as listed above is erased. (The amount of time required for erasing may vary from a few seconds to several hours.)

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

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4. Turn ignition switch ON.
5. Set ECM in Self-diagnostic results.
6. The diagnostic information has been erased from the backup memory in the ECM.
Fully depress the accelerator pedal and keep it depressed for more than 10 seconds.
7. Fully release the accelerator pedal, and confirm the DTC 0000 is displayed.

CONSULT Function (GT-R certified NISSAN dealer)

INFOID:000000011486274

FUNCTION

Diagnostic test mode	Function
Self Diagnostic Result	Self-diagnostic results such as 1st trip DTC, DTCs and 1st trip freeze frame data or freeze frame data can be read and erased quickly.*
Data Monitor	Input/Output data in the ECM can be read.
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on the CONSULT unit.
Active Test	Diagnostic Test Mode in which CONSULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.
DTC Work Support	The status of system monitoring tests and the self-diagnosis status/results can be confirmed.
ECU Identification	ECM part number can be read.

*: The following emission-related diagnostic information is cleared when the ECM memory is erased.

- Diagnostic trouble codes
- 1st trip diagnostic trouble codes
- Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values

SELF DIAGNOSTIC RESULT MODE

Self Diagnostic Item

Regarding items of DTC and 1st trip DTC, refer to [EC-592, "DTC Index"](#).

How to Read DTC and 1st Trip DTC

DTCs and 1st trip DTCs related to the malfunction are displayed in "self-diag results".

- When ECM detects a 1st trip DTC, "1t" is displayed for "TIME".
- When ECM has detected a current DTC, "0" is displayed for "TIME".
- If "TIME" is neither "0" nor "1t", the DTC occurred in the past and ECM shows the number of times the vehicle has been driven since the last detection of the DTC.

How to Erase DTC and 1st Trip DTC

NOTE:

- If the ignition switch stays ON after repair work, be sure to turn ignition switch OFF once. Wait at least 10 seconds and then turn it ON (engine stopped) again.
 - If the DTC is not for the transmission related items (see [TM-342, "DTC Index"](#)), skip step 1.
1. Erase DTC in TCM. Refer to [TM-47, "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).
 2. Select "ENGINE" with CONSULT.
 3. Select "SELF-DIAG RESULTS".
 4. Touch "ERASE". (DTC in ECM will be erased.)

Freeze Frame Data and 1st Trip Freeze Frame Data

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Freeze frame data item*	Description
DIAG TROUBLE CODE [PXXXX]	<ul style="list-style-type: none"> The engine control component part/control system has a trouble code the is displayed as PXXXX. (Refer to EC-592, "DTC Index".)
FUEL SYS-B1	<ul style="list-style-type: none"> "Fuel injection system status" at the moment a malfunction is detected is displayed. One of the following mode is displayed. Mode2: Open loop due to detected system malfunction Mode3: Open loop due to driving conditions (power enrichment, deceleration enleanment) Mode4: Closed loop - using oxygen sensor(s) as feedback for fuel control Mode5: Open loop - has not yet satisfied condition to go to closed loop
FUEL SYS-B2	
CAL/LD VALUE [%]	<ul style="list-style-type: none"> The calculated load value at the moment a malfunction is detected is displayed.
COOLANT TEMP [°C] or [°F]	<ul style="list-style-type: none"> The engine coolant temperature at the moment a malfunction is detected is displayed.
L-FUEL TRM-B1 [%]	<ul style="list-style-type: none"> "Long-term fuel trim" at the moment a malfunction is detected is displayed. The long-term fuel trim indicates much more gradual feedback compensation to the base fuel schedule than short-term fuel trim.
L-FUEL TRM-B2 [%]	
S-FUEL TRM-B1 [%]	<ul style="list-style-type: none"> "Short-term fuel trim" at the moment a malfunction is detected is displayed. The short-term fuel trim indicates dynamic or instantaneous feedback compensation to the base fuel schedule.
S-FUEL TRM-B2 [%]	
ENGINE SPEED [rpm]	<ul style="list-style-type: none"> The engine speed at the moment a malfunction is detected is displayed.
VEHICL SPEED [km/h] or [mph]	<ul style="list-style-type: none"> The vehicle speed at the moment a malfunction is detected is displayed.
ABSOL TH-P/S [%]	<ul style="list-style-type: none"> The throttle valve opening angle at the moment a malfunction is detected is displayed.
B/FUEL SCHDL [msec]	<ul style="list-style-type: none"> The base fuel schedule at the moment a malfunction is detected is displayed.
INT/A TEMP SE [°C] or [°F]	<ul style="list-style-type: none"> The intake air temperature at the moment a malfunction is detected is displayed.
INT MANI PRES [kPa]	
COMBUST CONDI-TION	<ul style="list-style-type: none"> These items are displayed but are not applicable to this model.

*: The items are the same as those of 1st trip freeze frame data.

DATA MONITOR MODE

NOTE:

- The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.
- For reference values of the following items, refer to [EC-570, "Reference Value \(GT-R certified NISSAN dealer\)"](#).

Monitored Item

x: Applicable

Monitored item	Unit	Description	Remarks
ENG SPEED	rpm	<ul style="list-style-type: none"> Indicates the engine speed computed from the signal of the crankshaft position sensor (POS) and camshaft position sensor (PHASE). 	<ul style="list-style-type: none"> Accuracy becomes poor if engine speed drops below the idle rpm. If the signal is interrupted while the engine is running, an abnormal value may be indicated.
MAS A/F SE-B1	V	<ul style="list-style-type: none"> The signal voltage of the mass air flow sensor is displayed. 	<ul style="list-style-type: none"> When the engine is stopped, a certain value is indicated. When engine is running, specification range is indicated in "SPEC".
MAS A/F SE-B2			
B/FUEL SCHDL	msec	<ul style="list-style-type: none"> "Base fuel schedule" indicates the fuel injection pulse width programmed into ECM, prior to any learned on board correction. 	<ul style="list-style-type: none"> When engine is running, specification range is indicated in "SPEC".

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Monitored item	Unit	Description	Remarks
A/F ALPHA-B1	%	<ul style="list-style-type: none"> The mean value of the air-fuel ratio feedback correction factor per cycle is indicated. 	<ul style="list-style-type: none"> When the engine is stopped, a certain value is indicated. This data also includes the data for the air-fuel ratio learning control. When engine is running, specification range is indicated in "SPEC".
A/F ALPHA-B2			
COOLANT TEMP/S	°C or °F	<ul style="list-style-type: none"> The engine coolant temperature (determined by the signal voltage of the engine coolant temperature sensor) is displayed. 	<ul style="list-style-type: none"> When the engine coolant temperature sensor is open or short-circuited, ECM enters fail-safe mode. The engine coolant temperature determined by the ECM is displayed.
A/F SEN1 (B1)	V	<ul style="list-style-type: none"> The A/F signal computed from the input signal of the air fuel ratio (A/F) sensor 1 is displayed. 	
A/F SEN1 (B2)			
HO2S2 (B1)	V	<ul style="list-style-type: none"> The signal voltage of the heated oxygen sensor 2 is displayed. 	
HO2S2 (B2)			
HO2S2 MNTR (B1)	RICH/LEAN	<ul style="list-style-type: none"> Display of heated oxygen sensor 2 signal: RICH: means the amount of oxygen after three way catalyst is relatively small. LEAN: means the amount of oxygen after three way catalyst is relatively large. 	<ul style="list-style-type: none"> When the engine is stopped, a certain value is indicated.
HO2S2 MNTR (B2)			
VHCL SPEED SE	km/h or mph	<ul style="list-style-type: none"> The vehicle speed computed from the vehicle speed signal sent from combination meter is displayed. 	
BATTERY VOLT	V	<ul style="list-style-type: none"> The power supply voltage of ECM is displayed. 	
ACCEL SEN 1	V	<ul style="list-style-type: none"> The accelerator pedal position sensor signal voltage is displayed. 	<ul style="list-style-type: none"> ACCEL SEN 2 signal is converted by ECM internally. Thus, they differs from ECM terminal voltage signal.
ACCEL SEN 2			
TP SEN 1-B1	V	<ul style="list-style-type: none"> The throttle position sensor signal voltage is displayed. 	<ul style="list-style-type: none"> TP SEN 2-B1 signal is converted by ECM internally. Thus, they differs from ECM terminal voltage signal.
TP SEN 2-B1			
FUEL T/TMP SE	°C or °F	<ul style="list-style-type: none"> The fuel temperature (determined by the signal voltage of the fuel tank temperature sensor) is displayed. 	
INT/A TEMP SE	°C or °F	<ul style="list-style-type: none"> The intake air temperature (determined by the signal voltage of the intake air temperature sensor) is indicated. 	
EVAP SYS PRES	V	<ul style="list-style-type: none"> The signal voltage of EVAP control system pressure sensor is displayed. 	
FUEL LEVEL SE	V	<ul style="list-style-type: none"> The signal voltage of the fuel level sensor is displayed. 	
START SIGNAL	ON/OFF	<ul style="list-style-type: none"> Indicates start signal status [ON/OFF] computed by the ECM according to the signals of engine speed and battery voltage. 	<ul style="list-style-type: none"> After starting the engine, [OFF] is displayed regardless of the starter signal.
CLSD THL POS	ON/OFF	<ul style="list-style-type: none"> Indicates idle position [ON/OFF] computed by ECM according to the accelerator pedal position sensor signal. 	
AIR COND SIG	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the air conditioner switch as determined by the air conditioner signal. 	
P/N POSI SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from the park/neutral position (PNP) signal. 	
PW/ST SIGNAL	ON/OFF	<ul style="list-style-type: none"> [ON/OFF] condition of the power steering system (determined by the signal voltage of the power steering pressure sensor signal) is indicated. 	

DIAGNOSIS SYSTEM (ECM)

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Monitored item	Unit	Description	Remarks
LOAD SIGNAL	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from the electrical load signal. ON: Rear window defogger switch is ON and/or lighting switch is in 2nd position. OFF: Both rear window defogger switch and lighting switch are OFF. 	
IGNITION SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from ignition switch signal. 	
HEATER FAN SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from the heater fan switch signal. 	
BRAKE SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from the stop lamp switch signal. 	
INJ PULSE-B1	msec	<ul style="list-style-type: none"> Indicates the actual fuel injection pulse width compensated by ECM according to the input signals. 	<ul style="list-style-type: none"> When the engine is stopped, a certain computed value is indicated.
INJ PULSE-B2			
IGN TIMING	BTDC	<ul style="list-style-type: none"> Indicates the ignition timing computed by ECM according to the input signals. 	<ul style="list-style-type: none"> When the engine is stopped, a certain value is indicated.
CAL/LD VALUE	%	<ul style="list-style-type: none"> "Calculated load value" indicates the value of the current air flow divided by peak air flow. 	
MASS AIRFLOW	g/s	<ul style="list-style-type: none"> Indicates the mass air flow computed by ECM according to the signal voltage of the mass air flow sensor. 	
PURG VOL C/V	%	<ul style="list-style-type: none"> Indicates the EVAP canister purge volume control solenoid valve control value computed by the ECM according to the input signals. The opening becomes larger as the value increases. 	
INT/V TIM (B1)	°CA	<ul style="list-style-type: none"> Indicates [°CA] of intake camshaft advance angle. 	
INT/V TIM (B2)			
INT/V SOL (B1)	%	<ul style="list-style-type: none"> The control value of the intake valve timing control solenoid valve (determined by ECM according to the input signals) is indicated. The advance angle becomes larger as the value increases. 	
INT/V SOL (B2)			
TP SEN 1-B2	V	<ul style="list-style-type: none"> The throttle position sensor signal voltage is displayed. 	<ul style="list-style-type: none"> TP SEN 2-B2 signal is converted by ECM internally. Thus, they differs from ECM terminal voltage signal.
TP SEN 2-B2			
AIR COND RLY	ON/OFF	<ul style="list-style-type: none"> The air conditioner relay control condition (determined by ECM according to the input signals) is indicated. 	
SUB FP RLY	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of sub fuel pump relay determined by ECM according to the input signals. 	
FPCM	LOW/MID/HI	<ul style="list-style-type: none"> The control condition of the fuel pump control module (FPCM) (determined by ECM according to the input signals) is indicated. 	
VENT CONT/V	ON/OFF	<ul style="list-style-type: none"> The control condition of the EVAP canister vent control valve (determined by ECM according to the input signals) is indicated. ON: Closed OFF: Open 	
THRTL RELAY	ON/OFF	<ul style="list-style-type: none"> Indicates the throttle control motor relay control condition determined by the ECM according to the input signals. 	
AIR/P CNT S/V	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of air cut solenoid valve determined by ECM according to the input signals. 	

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DIAGNOSIS SYSTEM (ECM)

[VR38]

< SYSTEM DESCRIPTION >

Monitored item	Unit	Description	Remarks
AIR PUMP RLY	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of air pump relay determined by ECM according to the input signals. 	
HO2S2 HTR (B1)	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of heated oxygen sensor 2 heater determined by ECM according to the input signals. 	
HO2S2 HTR (B2)			
VEHICLE SPEED	km/h or mph	<ul style="list-style-type: none"> The vehicle speed computed from the vehicle speed signal sent from TCM is displayed. 	
IDL A/V LEARN	YET/CMPLT	<ul style="list-style-type: none"> Displays the condition of Idle Air Volume Learning YET: Idle air volume learning has not been performed yet. CMPLT: Idle air volume learning has already been performed successfully. 	
ENG OIL TEMP	°C or °F	<ul style="list-style-type: none"> The engine oil temperature (determined by the signal voltage of the engine oil temperature sensor) is displayed. 	
TRVL AFTER MIL	km or mile	<ul style="list-style-type: none"> Distance traveled while MIL is activated. 	
A/F S1 HTR (B1)	%	<ul style="list-style-type: none"> Air fuel ratio (A/F) sensor 1 heater control value computed by ECM according to the input signals. The current flow to the heater becomes larger as the value increases. 	
A/F S1 HTR (B2)			
AC PRESS SEN	V	<ul style="list-style-type: none"> The signal voltage from the refrigerant pressure sensor is displayed. 	
VHCL SPEED SE	km/h or mph	<ul style="list-style-type: none"> The vehicle speed computed from the vehicle speed signal sent from combination meter is displayed. 	
SET VHCL SPD	km/h or mph	<ul style="list-style-type: none"> The preset vehicle speed is displayed. 	
MAIN SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from MAIN switch signal. 	
CANCEL SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from CANCEL switch signal. 	
RESUME/ACC SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from RESUME/ACCELERATE switch signal. 	
SET SW	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from SET/COAST switch signal. 	
BRAKE SW1	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition from ASCD brake switch signal. 	
BRAKE SW2	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of stop lamp switch signal. 	
VHCL SPD CUT	NON/CUT	<ul style="list-style-type: none"> Indicates the vehicle cruise condition. NON: Vehicle speed is maintained at the ASCD set speed. CUT: Vehicle speed decreased to excessively low compared with the ASCD set speed, and ASCD operation is cut off. 	
LO SPEED CUT	NON/CUT	<ul style="list-style-type: none"> Indicates the vehicle cruise condition. NON: Vehicle speed is maintained at the ASCD set speed. CUT: Vehicle speed decreased to excessively low, and ASCD operation is cut off. 	
AT OD MONITOR	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of A/T O/D according to the input signal from the TCM. 	
AT OD CANCEL	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of A/T O/D cancel request signal. 	

DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[VR38]

Monitored item	Unit	Description	Remarks
CRUISE LAMP	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of CRUISE lamp determined by the ECM according to the input signals. 	A
SET LAMP	ON/OFF	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of SET lamp determined by the ECM according to the input signals. 	EC
BAT CUR SEN	mV	<ul style="list-style-type: none"> The signal voltage of battery current sensor is displayed. 	C
ALT DUTY SIG	ON/OFF	<ul style="list-style-type: none"> The control condition of the power generation voltage variable control (determined by ECM according to the input signals) is indicated. ON: Power generation voltage variable control is active. OFF: Power generation voltage variable control is inactive. 	D
A/F ADJ-B1	—	<ul style="list-style-type: none"> Indicates the correction of factor stored in ECM. The factor is calculated from the difference between the target air-fuel ratio stored in ECM and the air-fuel ratio calculated from A/F sensor 1 signal. 	E
A/F ADJ-B2			
FAN DUTY	%	<ul style="list-style-type: none"> Indicates a command value for cooling fan. The value is calculated by ECM based on input signals. 	F
ALTDUTY	%	<ul style="list-style-type: none"> Indicates the duty ratio of the power generation command value. The ratio is calculated by ECM based on the battery current sensor signal. 	G
TURBO BST SEN-B1	V	<ul style="list-style-type: none"> The turbocharger boost sensor signal voltage is displayed. 	H
TURBO BST SEN-B2			
FUEL PUMP DUTY	%	<ul style="list-style-type: none"> The control condition of the fuel pump control module (FPCM) (determined by ECM according to the input signals) is indicated. 	I
SNDRY MAS A/F SE	%	<ul style="list-style-type: none"> Indicates a command value for secondary air injection system mass air flow sensor. The value is calculated by ECM based on input signals. 	J
BOOST S/V DUTY	%	<ul style="list-style-type: none"> The turbocharger boost control solenoid valve control condition (determined by ECM according to the input signals) is indicated. 	K
THRTL ANGLE B1	deg	<ul style="list-style-type: none"> Indicates [deg] of throttle control valve angle. 	L
THRTL ANGLE B2			
HO2 S2 DIAG1 (B1)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P0139 self-diagnosis (delayed response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	M
HO2 S2 DIAG1 (B2)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P0159 self-diagnosis (delayed response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	N
HO2 S2 DIAG2 (B1)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P0139 self-diagnosis (slow response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	O
HO2 S2 DIAG2 (B2)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P0159 self-diagnosis (slow response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	P

DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[VR38]

Monitored item	Unit	Description	Remarks
A/F SEN1 DIAG1 (B1)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P015A or P015B self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
A/F SEN1 DIAG1 (B2)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P015C or P015D self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
A/F SEN1 DIAG2 (B1)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P014C or P014D self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
A/F SEN1 DIAG2 (B2)	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P0114E or P014F self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
A/F SEN1 DIAG3 (B1)	ABSNT/PRSNT	<ul style="list-style-type: none"> Indicates DTC P014C, P014D, P015A or P015B self-diagnosis condition. ABSNT: The vehicle condition is not within the diagnosis range. PRSNT: The vehicle condition is within the diagnosis range. 	
A/F SEN1 DIAG3 (B1)	ABSNT/PRSNT	<ul style="list-style-type: none"> Indicates DTC P014E, P014F, P015C or P015D self-diagnosis condition. ABSNT: The vehicle condition is not within the diagnosis range. PRSNT: The vehicle condition is within the diagnosis range. 	
EVAP LEAK DIAG	YET/CMPLT	<ul style="list-style-type: none"> Indicates the condition of EVAP leak diagnosis. YET: EVAP leak diagnosis has not been performed yet. CMPLT: EVAP leak diagnosis has been performed successfully. 	
EVAP DIAG READY	ON/OFF	<ul style="list-style-type: none"> Indicates the ready condition of EVAP leak diagnosis. ON: Diagnosis has been ready condition. OFF: Diagnosis has not been ready condition. 	
SYSTEM 1 DIAGNOSIS A B1	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P219A self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
SYSTEM 1 DIAGNOSIS A B2	INCMP/CM-PLT	<ul style="list-style-type: none"> Indicates DTC P219B self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
SYSTEM 1 DIAGNOSIS B B1	ABSNT/PRSNT	<ul style="list-style-type: none"> Indicates DTC P219A self-diagnosis condition. ABSNT: Self-diagnosis standby PRSNT: Under self-diagnosis 	
SYSTEM 1 DIAGNOSIS B B2	ABSNT/PRSNT	<ul style="list-style-type: none"> Indicates DTC P219B self-diagnosis condition. ABSNT: Self-diagnosis standby PRSNT: Under self-diagnosis 	
A/F-S ATMSPHRC CRCT B1	—	<p>Displays a determined value of atmospheric correction factor necessary for correcting an A/F sensor signal input to ECM.</p> <p>The signal used for the correction is an A/F sensor signal transmitted while driving under atmospheric pressure.</p>	

DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[VR38]

Monitored item	Unit	Description	Remarks
A/F-S ATMSPHRC CRCT B2	—	Displays a determined value of atmospheric correction factor necessary for correcting an A/F sensor signal input to ECM. The signal used for the correction is an A/F sensor signal transmitted while driving under atmospheric pressure.	
A/F-S ATMSPHRC CRCT UP B1	count	Displays the number of updates of the A/F sensor atmospheric correction factor.	
A/F-S ATMSPHRC CRCT UP B2	count	Displays the number of updates of the A/F sensor atmospheric correction factor.	

NOTE:

Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.

WORK SUPPORT MODE

Work Item

Work item	Condition	Usage
FUEL PRESSURE RELEASE	<ul style="list-style-type: none"> Fuel pump will stop by touching "START" during idling. crank a few times after engine stalls. 	When releasing fuel pressure from fuel line
IDLE AIR VOL LEARN	<ul style="list-style-type: none"> The idle air volume that keeps the engine within the specified range is memorized in ECM. 	When learning the idle air volume
SELF-LEARNING CONT	<ul style="list-style-type: none"> The coefficient of self-learning control mixture ratio returns to the original coefficient. 	When clearing mixture ratio self-learning value
EVAP SYSTEM CLOSE	Close the EVAP canister vent control valve in order to make EVAP system close under the following conditions. <ul style="list-style-type: none"> Ignition switch ON Engine not running Ambient temperature is above 0°C (32°F). No vacuum and no high pressure in EVAP system Fuel tank temp. is more than 0°C (32°F). Within 10 minutes after starting "EVAP system close" When trying to execute "EVAP system close" under the condition except above, CONSULT will discontinue it and display appropriate instruction. <p>NOTE: When starting engine, CONSULT may display "Battery voltage is low. Charge battery", even when using a charged battery.</p>	When detecting EVAP vapor leak in the EVAP system
VIN REGISTRATION	<ul style="list-style-type: none"> In this mode, VIN is registered in ECM. 	When registering VIN in ECM
TARGET IDLE RPM ADJ*	<ul style="list-style-type: none"> Idle condition 	When setting target idle speed
TARGET IGN TIM ADJ*	<ul style="list-style-type: none"> Idle condition 	When adjusting target ignition timing
ECT HISTORY	Refer to "Engine coolant temperature history".	
ENG OIL TEMP HISTORY	Refer to "Engine oil temperature history".	
ECT HISTORY CLEAR	<ul style="list-style-type: none"> Ignition switch ON 	When erase engine coolant temperature history.
ENG OIL TEMP HISTORY CLEAR	<ul style="list-style-type: none"> Ignition switch ON 	When erase engine oil temperature history.
SAVING DATA FOR REPLC CPU	In this mode, save data that is in ECM.	When ECM is replaced.
WRITING DATA FOR REPLC CPU	In this mode, write data stored by "SAVING DATA FOR REPLC CPU" in work support mode to ECM.	When ECM is replaced.

*: This function is not necessary in the usual service procedure.

Engine coolant temperature history

- Since an engine coolant temperature reaching a certain temperature and a travel distance are displayed, the adequacy of LLC concentration and coolant level for high performance driving can be checked by using tem-

DIAGNOSIS SYSTEM (ECM)

[VR38]

< SYSTEM DESCRIPTION >

peratures stored in history. In addition to this, the presence or absence of malfunctions in cooling system can be checked.

Display item	Description
ECT PEAK [°C] or [°F]	ECM stores temperature and displays the highest temperature when engine coolant became the temperature more than 110°C (230°F).
ODO [km] or [mile]	Display the travel distance of highest engine coolant temperature.

NOTE:

- Engine coolant temperature history is updated when highest engine coolant temperature changed.
- Engine coolant temperature history is not stored when engine coolant temperature less than 110°C (230°F).

CAUTION:

- **Check the coolant when engine coolant temperature history is stored. Refer to [CO-9, "Inspection"](#).**
- **After the check of the coolant or repair, perform "ECT HISTORY CLEAR" with "WORK SUPPORT" mode of CONSULT, and erase engine coolant temperature history.**

Engine oil temperature history

- Since an engine oil temperature reaching a certain temperature and a travel distance are displayed, maintenance interval of engine oil can be checked by using temperature stored in history.

Display item	Description
ENG OIL TEMP PEAK [°C] or [°F]	ECM stores temperature and displays the highest temperature when engine oil became the temperature more than 110°C (230°F).
ODO [km] or [mile]	Display the travel distance of highest engine oil temperature.

NOTE:

- Engine oil temperature history is updated when highest engine oil temperature changed.
- Engine oil temperature history is not stored when engine oil temperature less than 110°C (230°F).

CAUTION:

- **Confirm the maintenance interval of engine oil when engine oil temperature history is stored, because the maintenance interval of engine oil changes by temperature. Refer to [MA-11, "Introduction of Periodic Maintenance"](#).**
- **After engine oil temperature history confirmation, perform "ENG OIL TEMP HISTORY CLEAR" with "WORK SUPPORT" mode of CONSULT, and erase engine oil temperature history.**

ACTIVE TEST MODE

Test Item

Test item	Condition	Judgment	Check item (Remedy)
FUEL INJECTION	<ul style="list-style-type: none"> • Engine: Return to the original trouble condition • Change the amount of fuel injection using CONSULT. 	If trouble symptom disappears, see CHECK ITEM.	<ul style="list-style-type: none"> • Harness and connectors • Fuel injector • Air fuel ratio (A/F) sensor 1
IGNITION TIMING	<ul style="list-style-type: none"> • Engine: Return to the original trouble condition • Timing light: Set • Retard the ignition timing using CONSULT. 	If trouble symptom disappears, see CHECK ITEM.	<ul style="list-style-type: none"> • Perform Idle Air Volume Learning.
POWER BALANCE	<ul style="list-style-type: none"> • Engine: After warming up, idle the engine. • A/C switch OFF • Shift lever: P or N • Cut off each injector signal one at a time using CONSULT. 	Engine runs rough or stops.	<ul style="list-style-type: none"> • Harness and connectors • Compression • Fuel injector • Power transistor • Spark plug • Ignition coil
ENG COOLANT TEMP	<ul style="list-style-type: none"> • Engine: Return to the original trouble condition • Change the engine coolant temperature using CONSULT. 	If trouble symptom disappears, see CHECK ITEM.	<ul style="list-style-type: none"> • Harness and connectors • Engine coolant temperature sensor • Fuel injector

DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[VR38]

Test item	Condition	Judgment	Check item (Remedy)
SUB FUEL PUMP RELAY	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) Turn the sub fuel pump relay ON and OFF using CONSULT and listen to operating sound. 	Sub fuel pump relay makes the operating sound.	<ul style="list-style-type: none"> Harness and connectors Sub fuel pump relay
PURG VOL CONT/V	<ul style="list-style-type: none"> Engine: After warming up, run engine at 1,500 rpm. Change the EVAP canister purge volume control solenoid valve opening percent using CONSULT. 	Engine speed changes according to the opening percent.	<ul style="list-style-type: none"> Harness and connectors Solenoid valve
FUEL/T TEMP SEN	<ul style="list-style-type: none"> Change the fuel tank temperature using CONSULT. 		
VENT CONTROL/V	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) Turn solenoid valve ON and OFF with the CONSULT and listen to operating sound. 	Solenoid valve makes an operating sound.	<ul style="list-style-type: none"> Harness and connectors Solenoid valve
ALTERNATOR DUTY	<ul style="list-style-type: none"> Engine: Idle Change duty ratio using CONSULT. 	Battery voltage changes.	<ul style="list-style-type: none"> Harness and connectors IPDM E/R Alternator
V/T ASSIGN ANGLE	<ul style="list-style-type: none"> Engine: Return to the original trouble condition Change intake valve timing using CONSULT. 	If trouble symptom disappears, see CHECK ITEM.	<ul style="list-style-type: none"> Harness and connectors Intake valve timing control solenoid valve
FPCM	<ul style="list-style-type: none"> Engine: Return to the original trouble condition Select "LOW", "MID" and "HI" with CONSULT. 	Fuel pump speed changes or stops.	<ul style="list-style-type: none"> Harness and connectors Fuel pump control module (FPCM)
FAN DUTY CONTROL*	<ul style="list-style-type: none"> Ignition switch: ON Change duty ratio using CONSULT. 	Cooling fan speed changes.	<ul style="list-style-type: none"> Harness and connectors Cooling fan motor Cooling fan relay Cooling fan control module IPDM E/R

*: Leaving cooling fan OFF with CONSULT while engine is running may cause the engine to overheat.

DTC WORK SUPPORT MODE

Test Item

Test mode	Test item	Corresponding DTC No.	Reference page
EVAPORATIVE SYSTEM	EVP SML LEAK P0442/P1442*	P0455	EC-389
	EVP V/S LEAK P0456/P1456*	P0442	EC-355
		P0456	EC-395
	PURG VOL CN/V P1444	P0443	EC-361
	PURG FLOW P0441	P0441	EC-350
A/F SEN1	A/F SEN1 (B1) P1278/P1279	—	—
	A/F SEN1 (B1) P1276	P0130	EC-248
	A/F SEN1 (B2) P1288/P1289	—	—
	A/F SEN1 (B2) P1286	P0150	EC-248

Test mode	Test item	Corresponding DTC No.	Reference page
HO2S2	HO2S2 (B1) P1146	P0138	EC-264
	HO2S2 (B1) P1147	P0137	EC-258
	HO2S2 (B1) P0139	P0139	EC-272
	HO2S2 (B2) P1166	P0158	EC-264
	HO2S2 (B2) P1167	P0157	EC-258
	HO2S2 (B2) P0159	P0159	EC-272

*: DTC P1442 and P1456 does not apply to R35 models but appears in DTC Work Support Mode screens.

SRT & P-DTC MODE

SRT STATUS Mode

- For items whose SRT codes are set, “CMPLT” is displayed on the CONSULT screen; for items whose SRT codes are not set, “INCMP” is displayed.
- “SRT STATUS” provides the presence or absence of permanent DTCs stored in control module memory.

PERMANENT DTC STATUS Mode

How to display permanent DTC status

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select “PERMANENT DTC STATUS” in “DTC & SRT CONFIRMATION” mode with CONSULT.

NOTE:

Permanent DTCs stored in control module memory are displayed on the CONSULT screen to show if a driving pattern required for erasing permanent DTCs is complete (CMPLT) or incomplete (INCMP).

CAUTION:

Since the “PERMANENT DTC STATUS” screen displays the previous trip information, repeat the following twice to update the information: “Ignition switch OFF”, “Wait for more than 10 seconds” and “Ignition switch ON”.

PERMANENT DTC & SRT CONFIRMATION : PERMANENT DTC STATUS																							
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>CAUTION: Turn ignition switch from ON to OFF twice to update the information on the status screen.</p> </div> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 33%;">PERMANENT DTC</th> <th style="width: 33%;">DRIVING PATTERN B</th> <th style="width: 33%;">DRIVING PATTERN D</th> </tr> </thead> <tbody> <tr><td>XXXX</td><td>INCMP</td><td>INCMP</td></tr> <tr><td>XXXX</td><td>CMPLT</td><td>INCMP</td></tr> <tr><td>XXXX</td><td>INCMP</td><td>CMPLT</td></tr> <tr><td>XXXX</td><td>CMPLT</td><td>INCMP</td></tr> <tr><td>XXXX</td><td>INCMP</td><td>INCMP</td></tr> <tr><td>XXXX</td><td>INCMP</td><td>INCMP</td></tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;"> <p>The previous trip information is displayed. </p> </div>			PERMANENT DTC	DRIVING PATTERN B	DRIVING PATTERN D	XXXX	INCMP	INCMP	XXXX	CMPLT	INCMP	XXXX	INCMP	CMPLT	XXXX	CMPLT	INCMP	XXXX	INCMP	INCMP	XXXX	INCMP	INCMP
PERMANENT DTC	DRIVING PATTERN B	DRIVING PATTERN D																					
XXXX	INCMP	INCMP																					
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XXXX	INCMP	CMPLT																					
XXXX	CMPLT	INCMP																					
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NOTE:

This mode is not used in regions that permanent DTCs are not regulated by law.

SRT WORK SUPPORT Mode

This mode enables a technician to drive a vehicle to set the SRT while monitoring the SRT status.

PERMANENT DTC WORK SUPPORT Mode

This mode enables a technician to drive a vehicle to complete the driving pattern that is required for erasing permanent DTC.

NOTE:

This mode is not used in regions that permanent DTCs are not regulated by law.

DTC/CIRCUIT DIAGNOSIS

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486275

The specification (SP) value indicates the tolerance of the value that is displayed in "SPEC" in "DATA MONITOR" mode of CONSULT during normal operation of the Engine Control System. When the value in "SPEC" in "DATA MONITOR" mode is within the SP value, the Engine Control System is confirmed OK. When the value in "SPEC" in "DATA MONITOR" mode is NOT within the SP value, the Engine Control System may have one or more malfunctions.

The SP value is used to detect malfunctions that may affect the Engine Control System, but will not light the MIL.

The SP value will be displayed for the following three items:

- B/FUEL SCHDL (The fuel injection pulse width programmed into ECM prior to any learned on board correction)
- A/F ALPHA-B1/B2 (The mean value of air-fuel ratio feedback correction factor per cycle)
- MAS A/F SE-B1/B2 (The signal voltage of the mass air flow sensor)

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486276

1. PRECONDITIONING

Check that all of the following conditions are satisfied.

TESTING CONDITION

- Vehicle driven distance: More than 5,000 km (3,107 miles)
- Barometric pressure: 98.3 - 104.3 kPa (0.983 – 1.043 bar, 1.003 - 1.064 kg/cm², 14.25 - 15.12 psi)
- Atmospheric temperature: 20 - 30°C (68 - 86°F)
- Engine coolant temperature: 75 - 95°C (167 - 203°F)
- Transmission: Warmed-up
 - After the engine is warmed up to normal operating temperature, drive vehicle until "FLUID TEMP" (Transmission fluid temperature sensor signal) indicates more than 60°C (140°F).
- Electrical load: Not applied
 - Rear window defogger switch, air conditioner switch, lighting switch are OFF. Steering wheel is straight ahead.
- Engine speed: Idle

>> GO TO 2.

2. PERFORM SPEC IN DATA MONITOR MODE

With CONSULT

NOTE:

Perform "SPEC" in "DATA MONITOR" mode in maximum scale display.

1. Perform [EC-17. "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
2. Select "B/FUEL SCHDL", "A/F ALPHA-B1", "A/F ALPHA-B2", "MAS A/F SE-B1" and "MAS A/F SE-B2" in "SPEC" of "DATA MONITOR" mode with CONSULT.
3. Check that monitor items are within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Refer to [EC-184. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

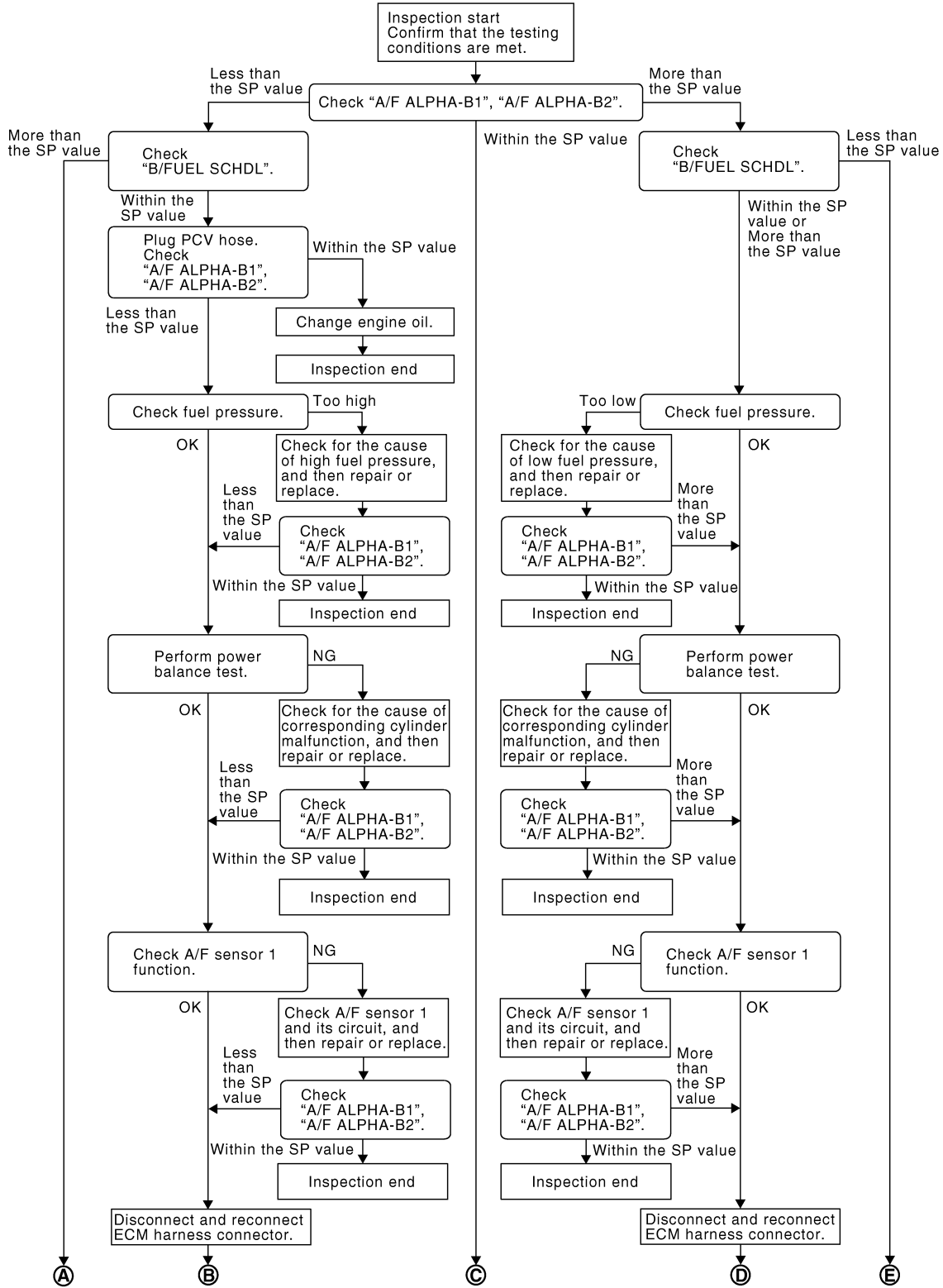
< DTC/CIRCUIT DIAGNOSIS >

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Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486277

OVERALL SEQUENCE

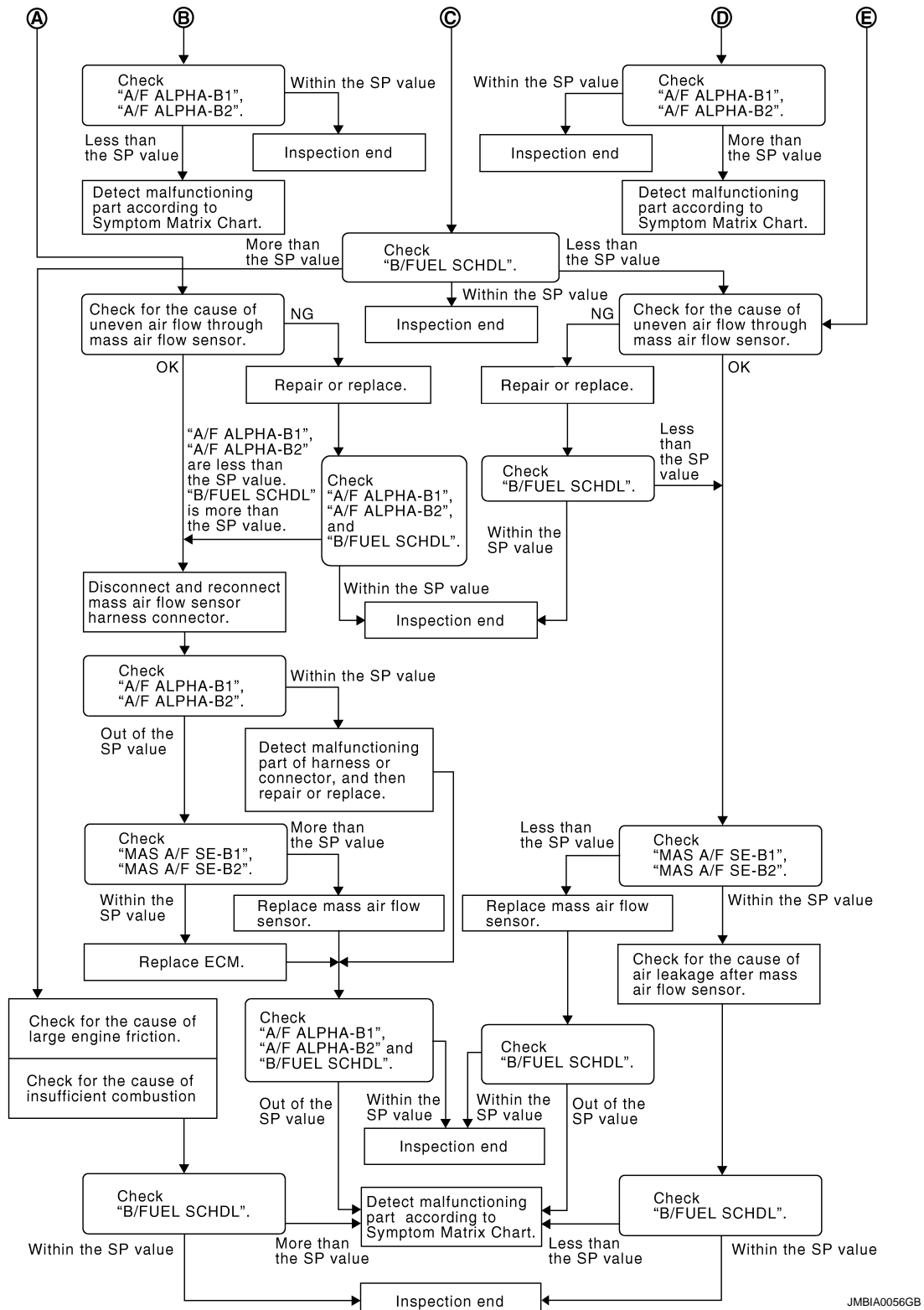


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TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]



DETAILED PROCEDURE

1. CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

With CONSULT

1. Start engine.
2. Confirm that the testing conditions are met. Refer to [EC-183, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

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TROUBLE DIAGNOSIS - SPECIFICATION VALUE

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< DTC/CIRCUIT DIAGNOSIS >

3. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

NOTE:

Check "A/F ALPHA-B1", "A/F ALPHA-B2" for approximately 1 minute because they may fluctuate. It is NG if the indication is out of the SP value even a little.

Is the measurement value within the SP value?

- YES >> GO TO 17.
- NO-1 >> Less than the SP value: GO TO 2.
- NO-2 >> More than the SP value: GO TO 3.

2.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and check that the indication is within the SP value.

Is the measurement value within the SP value?

- YES >> GO TO 4.
- NO >> More than the SP value: GO TO 19.

3.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and check that the indication is within the SP value.

Is the measurement value within the SP value?

- YES >> GO TO 6.
- NO-1 >> More than the SP value: GO TO 6.
- NO-2 >> Less than the SP value: GO TO 25.

4.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

1. Stop the engine.
2. Disconnect PCV hose, and then plug it.
3. Start engine.
4. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

- YES >> GO TO 5.
- NO >> GO TO 6.

5.CHANGE ENGINE OIL

1. Stop the engine.
2. Change engine oil.

NOTE:

This symptom may occur when a large amount of gasoline is mixed with engine oil because of driving conditions (such as when engine oil temperature does not rise enough since a journey distance is too short during winter). The symptom will not be detected after changing engine oil or changing driving condition.

>> INSPECTION END

6.CHECK FUEL PRESSURE

Check fuel pressure. (Refer to [EC-637. "Inspection \(GT-R certified NISSAN dealer\)".](#))

Is the inspection result normal?

- YES >> GO TO 9.
- NO-1 >> Fuel pressure is too high: Replace "fuel filter and fuel pump assembly", refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#) and then GO TO 8.
- NO-2 >> Fuel pressure is too low: GO TO 7.

7.DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging.

Is the inspection result normal?

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Replace "fuel filter and fuel pump assembly", refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#), and then GO TO 8.
- NO >> Repair or replace and then GO TO 8.

8.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

1. Start engine.
2. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

- YES >> INSPECTION END
- NO >> GO TO 9.

9.PERFORM POWER BALANCE TEST

1. Perform "POWER BALANCE" in "ACTIVE TEST" mode.
2. Make sure that the each cylinder produces a momentary engine speed drop.

Is the inspection result normal?

- YES >> GO TO 12.
- NO >> GO TO 10.

10.DETECT MALFUNCTIONING PART

Check the following.

- Ignition coil and its circuit (Refer to [EC-544. "Component Function Check \(GT-R certified NISSAN dealer\)"](#).)
- Fuel injector and its circuit (Refer to [EC-538. "Component Function Check \(GT-R certified NISSAN dealer\)"](#).)
- Intake air leakage
- Low compression pressure (Refer to [EM-24. "Inspection \(GT-R certified NISSAN dealer\)"](#).)

Is the inspection result normal?

- YES >> Replace fuel injector, refer to [EM-42. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#), and then GO TO 11.
- NO >> Repair or replace malfunctioning part and then GO TO 11.

11.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

1. Start engine.
2. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

- YES >> INSPECTION END
- NO >> GO TO 12.

12.CHECK A/F SENSOR 1 FUNCTION

Perform all DTC CONFIRMATION PROCEDURE related with A/F sensor 1.

- For DTC P0130, P0150, refer to [EC-248. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- For DTC P0131, P0151, refer to [EC-252. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- For DTC P0132, P0152, refer to [EC-255. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- For DTC P014C, P014D, P014E, P014F, P015A, P015B, P015C, P015D, refer to [EC-279. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- For DTC P2096, P2097, P2098, P2099, refer to [EC-497. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

Is any DTC detected?

- YES >> GO TO 13.
- NO >> GO TO 15.

13.CHECK A/F SENSOR 1 CIRCUIT

Perform Diagnosis Procedure according to corresponding DTC.

>> GO TO 14.

14.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

1. Start engine.

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

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< DTC/CIRCUIT DIAGNOSIS >

2. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END
NO >> GO TO 15.

15.DISCONNECT AND RECONNECT ECM HARNESS CONNECTOR

1. Stop the engine.
2. Disconnect ECM harness connector. Check pin terminal and connector for damage, and then reconnect it.

>> GO TO 16.

16.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

1. Start engine.
2. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END
NO >> Detect malfunctioning part according to [EC-625. "Symptom Table \(GT-R certified NISSAN dealer\)".](#)

17.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and check that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END
NO-1 >> More than the SP value: GO TO 18.
NO-2 >> Less than the SP value: GO TO 25.

18.DETECT MALFUNCTIONING PART

1. Check for the cause of large engine friction. Refer to the following.
 - Engine oil level is too high
 - Engine oil viscosity
 - Belt tension of power steering, alternator, A/C compressor, etc. is excessive
 - Noise from engine
 - Noise from transmission, etc.
2. Check for the cause of insufficient combustion. Refer to the following.
 - Valve clearance malfunction
 - Intake valve timing control function malfunction
 - Camshaft sprocket installation malfunction, etc.

>> Repair or replace malfunctioning part, and then GO TO 30.

19.CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Improper specification of intake air system

Is the inspection result normal?

YES >> GO TO 21.
NO >> Repair or replace malfunctioning part, and then GO TO 20.

20.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2", AND "B/FUEL SCHDL"

Select "A/F ALPHA-B1", "A/F ALPHA-B2", and "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NO >> "B/FUEL SCHDL" is more, "A/F ALPHA-B1", "A/F ALPHA-B2" are less than the SP value: GO TO 21.

21. DISCONNECT AND RECONNECT MASS AIR FLOW SENSOR HARNESS CONNECTOR

1. Stop the engine.
2. Disconnect mass air flow sensor harness connector. Check pin terminal and connector for damage and then reconnect it again.

>> GO TO 22.

22. CHECK "A/F ALPHA-B1", "A/F ALPHA-B2"

1. Start engine.
2. Select "A/F ALPHA-B1", "A/F ALPHA-B2" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

YES >> Detect malfunctioning part of mass air flow sensor circuit and repair it. Refer to [EC-220, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#). Then GO TO 29.

NO >> GO TO 23.

23. CHECK "MAS A/F SE-B1", "MAS A/F SE-B2"

Select "MAS A/F SE-B1", "MAS A/F SE-B2" in "SPEC" of "DATA MONITOR" mode, and check that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 24.

NO >> More than the SP value: Replace malfunctioning mass air flow sensor, refer to [EM-28, "Removal and Installation"](#), and then GO TO 29.

24. REPLACE ECM

1. Replace ECM.
2. Refer to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> GO TO 29.

25. CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Improper specification of intake air system

Is the inspection result normal?

YES >> GO TO 27.

NO >> Repair or replace malfunctioning part, and then GO TO 26.

26. CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and check that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Less than the SP value: GO TO 27.

27. CHECK "MAS A/F SE-B1", "MAS A/F SE-B2"

Select "MAS A/F SE-B1", "MAS A/F SE-B2" in "SPEC" of "DATA MONITOR" mode, and check that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 28.

NO >> Less than the SP value: Replace malfunctioning mass air flow sensor, refer to [EM-28, "Removal and Installation"](#), and then GO TO 30.

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

28.CHECK INTAKE SYSTEM

Check for the cause of air leak after the mass air flow sensor. Refer to the following.

- Disconnection, looseness, and cracks in air duct
- Looseness of oil filler cap
- Disconnection of oil level gauge
- Open stuck, breakage, hose disconnection, or cracks of PCV valve
- Disconnection or cracks of EVAP purge hose, open stuck of EVAP canister purge volume control solenoid valve
- Malfunctioning seal of rocker cover gasket
- Disconnection, looseness, or cracks of hoses, such as vacuum hose, connecting to intake air system parts
- Malfunctioning seal of intake air system, etc.

>> GO TO 30.

29.CHECK "A/F ALPHA-B1", "A/F ALPHA-B2", AND "B/FUEL SCHDL"

Select "A/F ALPHA-B1", "A/F ALPHA-B2", and "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and check that the each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to [EC-625, "Symptom Table \(GT-R certified NISSAN dealer\)"](#).

30.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and then check that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to [EC-625, "Symptom Table \(GT-R certified NISSAN dealer\)"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486278

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK ECM GROUND CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check the continuity between ECM harness connector and ground.

ECM		Ground	Continuity
Connector	Terminal		
F101	6	Ground	Existed
F102	54		
M107	124		
	128		

3. Also check harness for short to power.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open or short between ECM and ground

>> Repair open circuit or short to power in harness or connectors.

4. CHECK ECM POWER SUPPLY CIRCUIT-I

1. Reconnect ECM harness connector.
2. Turn ignition switch ON.
3. Check the voltage between ECM harness connector and ground.

Connector	ECM		Voltage
	+	-	
	Terminal	Terminal	
M107	106	128	Battery voltage

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- IPDM E/R harness connector E7
- 10A fuse (No. 44)
- Harness for open or short between ECM and fuse

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

>> Repair open circuit, short to ground or short to power in harness or connectors.

6. CHECK ECM POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Check the voltage between ECM harness connector terminals as follows.

ECM			Voltage
Connector	+	-	
	Terminal	Terminal	
M107	121	128	After turning ignition switch OFF, battery voltage will exist for a few seconds, then drop to approximately 0 V.
	122		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 9.

7. CHECK ECM POWER SUPPLY CIRCUIT-III

1. Turn ignition switch ON.
2. Check the voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Voltage
Connector	Terminal		
E7	53	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace IPDM E/R. Refer to [PCS-35. "Removal and Installation"](#).

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

9. CHECK ECM POWER SUPPLY CIRCUIT-III

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Check the voltage between ECM harness connector terminals as follows.

ECM			Voltage
Connector	+	-	
	Terminal	Terminal	
M107	105	128	Battery voltage

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 10.

10. CHECK ECM POWER SUPPLY CIRCUIT-IV

1. Disconnect ECM harness connector.
2. Disconnect IPDM E/R harness connector.
3. Check the continuity between ECM harness connector and IPDM E/R harness connector.

ECM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M107	105	E7	69	Existed

4. Also check harness for short to ground and short to power.

POWER SUPPLY AND GROUND CIRCUIT

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between ECM and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

12.CHECK 15A FUSE

1. Disconnect 15A fuse (No. 50) from IPDM E/R.
2. Check 15A fuse.

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace 15A fuse.

13.CHECK ECM POWER SUPPLY CIRCUIT-IV

1. Disconnect ECM harness connector.
2. Disconnect IPDM E/R harness connector.
3. Check the continuity between ECM harness connector and IPDM E/R harness connector.

ECM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M107	121	E7	49	Existed
	122			

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 15.

NO >> GO TO 14.

14.DETECT MALFUNCTIONING PART

Check the following.

- Harness or connectors E106, M6
- Harness for open or short between ECM and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

15.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

U0101 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

U0101 CAN COMM CIRCUIT

Description (GT-R certified NISSAN dealer)

INFOID:000000011486279

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486280

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
U0101	Lost communication with TCM	When ECM is not transmitting or receiving CAN communication signal of OBD (emission related diagnosis) with TCM for 2 seconds or more.	<ul style="list-style-type: none">CAN communication line between TCM and ECM (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 3 seconds.
- Check DTC.

Is DTC detected?

- YES >> [EC-194, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486281

Refer to [LAN-15, "Trouble Diagnosis Flow Chart"](#).

U1001 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

U1001 CAN COMM CIRCUIT

Description (GT-R certified NISSAN dealer)

INFOID:000000011486282

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486283

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
U1001	CAN communication line	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission related diagnosis) for 2 seconds or more.	<ul style="list-style-type: none">• Harness or connectors (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 3 seconds.
2. Check DTC.

Is DTC detected?

- YES >> [EC-195, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486284

Refer to [LAN-15, "Trouble Diagnosis Flow Chart"](#).

P0011, P0021 IVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0011, P0021 IVT CONTROL

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486285

DTC DETECTION LOGIC

NOTE:

If DTC P0011 or P0021 is displayed with DTC P0075 or P0081, first perform the trouble diagnosis for DTC P0075, P0081. Refer to [EC-209, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0011	Intake valve timing control performance (bank 1)	There is a gap between angle of target and phase-control angle degree.	<ul style="list-style-type: none">• Crankshaft position sensor (POS)• Camshaft position sensor (PHASE)• Intake valve timing control solenoid valve• Accumulation of debris to the signal pick-up portion of the camshaft• Timing chain installation• Foreign matter caught in the oil groove for intake valve timing control
P0021	Intake valve timing control performance (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 10 V and 16 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Maintain the following conditions for at least 6 consecutive seconds. Hold the accelerator pedal as steady as possible.

ENG SPEED	1,200 - 2,000 rpm
COOLAN TEMP/S	More than 60°C (140°F)
Shift lever	P or N position

4. Let engine idle for 10 seconds.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-197, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#)
NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-II

1. Select "DATA MONITOR" mode with CONSULT.
2. Maintain the following conditions for at least 20 consecutive seconds.

ENG SPEED	1,700 - 3,175 rpm (A constant rotation is maintained.)
COOLAN TEMP/S	More than 65°C (149°F)

P0011, P0021 IVT CONTROL

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Shift lever	M position (1st or 2nd gear)
Driving location uphill	Driving vehicle uphill (Increased engine load will help maintain the driving conditions required for this test.)

CAUTION:

Always drive at a safe speed.

3. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-197. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

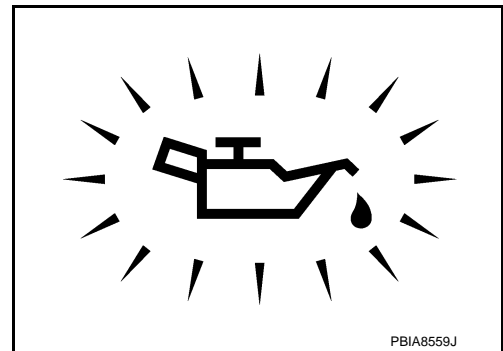
INFOID:000000011486286

1. CHECK OIL PRESSURE WARNING LAMP

1. Start engine.
2. Check oil pressure warning lamp and confirm it is not illuminated.

Is oil pressure warning lamp illuminated?

- YES >> Refer to [LU-8. "Inspection"](#).
NO >> GO TO 2.



2. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE

Refer to [EC-198. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to [EM-69. "Exploded View \(GT-R certified NISSAN dealer\)"](#).

3. CHECK CRANKSHAFT POSITION SENSOR (POS)

Refer to [EC-334. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace crankshaft position sensor (POS). Refer to [EM-97. "Exploded View \(GT-R certified NISSAN dealer\)"](#).

4. CHECK CAMSHAFT POSITION SENSOR (PHASE)

Refer to [EC-338. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace malfunctioning camshaft position sensor (PHASE). Refer to [EM-87. "Exploded View \(GT-R certified NISSAN dealer\)"](#).

5. CHECK CAMSHAFT (INTAKE)

Check the following.

P0011, P0021 IVT CONTROL

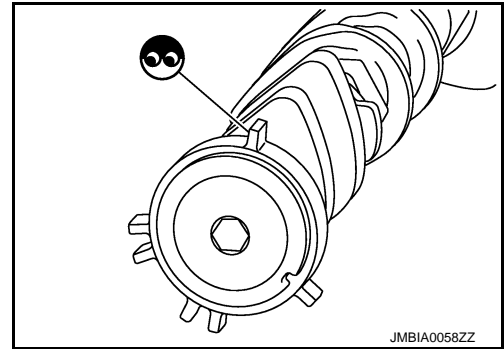
[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- Accumulation of debris on the signal plate of camshaft rear end
- Chipping signal plate of camshaft rear end

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to [EM-87, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).



6.CHECK TIMING CHAIN INSTALLATION

Check service records for any recent repairs that may cause timing chain misalignment.

Are there any service records that may cause timing chain misalignment?

- YES >> Check timing chain installation. Refer to [EM-70, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 7.

7.CHECK LUBRICATION CIRCUIT

Perform "Inspection of Camshaft Sprocket (INT) Oil Groove". Refer to [EM-91, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 8.
NO >> Clean lubrication line.

8.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486287

1.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-I

1. Turn ignition switch OFF.
2. Disconnect intake valve timing control solenoid valve harness connector.
3. Check resistance between intake valve timing control solenoid valve terminals as follows.

Terminals	Resistance
1 and 2	7.0 - 7.7 Ω [at 20°C (68°F)]
1 or 2 and ground	$\infty \Omega$ (Continuity should not exist)

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to [EM-69, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove intake valve timing control solenoid valve. Refer to [EM-69, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

P0011, P0021 IVT CONTROL

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

Never apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

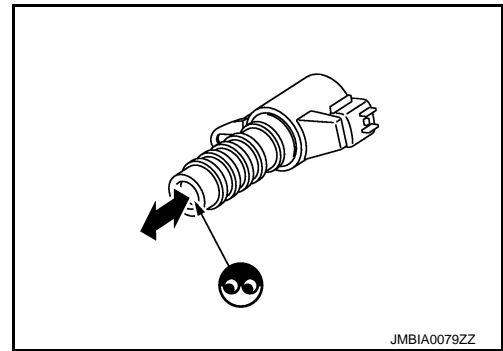
NOTE:

Always replace O-ring when intake valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to [EM-69. "Exploded View \(GT-R certified NISSAN dealer\)".](#)



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P0030, P0031, P0032, P0036, P0051, P0052 A/F SENSOR 1 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0030, P0031, P0032, P0036, P0051, P0052 A/F SENSOR 1 HEATER

Description (GT-R certified NISSAN dealer)

INFOID:000000011486288

SYSTEM DESCRIPTION

Sensor	Input signal to ECM	ECM function	Actuator
Camshaft position sensor (PHASE) Crankshaft position sensor (POS)	Engine speed	Air fuel ratio (A/F) sensor 1 heater control	Air fuel ratio (A/F) sensor 1 heater
Mass air flow sensor	Amount of intake air		

The ECM performs ON/OFF duty control of the A/F sensor 1 heater corresponding to the engine operating condition to keep the temperature of A/F sensor 1 element within the specified range.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486289

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0030	Air fuel ratio (A/F) sensor 1 heater (bank 1) performance	Deterioration in A/F sensor 1 heater performance. (Voltage signal transmitted from A/F sensor 1 heater to ECM is higher/lower than voltage in the normal range .)	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 heater circuit is open or shorted.)• A/F sensor 1 heater
P0031	Air fuel ratio (A/F) sensor 1 heater (bank 1) control circuit low	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the A/F sensor 1 heater.)	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 heater circuit is open or shorted.)• A/F sensor 1 heater
P0032	Air fuel ratio (A/F) sensor 1 heater (bank 1) control circuit high	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the A/F sensor 1 heater.)	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 heater circuit is shorted.)• A/F sensor 1 heater
P0036	Air fuel ratio (A/F) sensor 1 heater (bank 2) performance	Deterioration in A/F sensor 1 heater performance. (Voltage signal transmitted from A/F sensor 1 heater to ECM is higher/lower than voltage in the normal range .)	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 heater circuit is open or shorted.)• A/F sensor 1 heater
P0051	Air fuel ratio (A/F) sensor 1 heater (bank 2) control circuit low	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the A/F sensor 1 heater.)	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 heater circuit is open or shorted.)• A/F sensor 1 heater
P0052	Air fuel ratio (A/F) sensor 1 heater (bank 2) control circuit high	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the A/F sensor 1 heater.)	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 heater circuit is shorted.)• A/F sensor 1 heater

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 10.5 V and 16 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

P0030, P0031, P0032, P0036, P0051, P0052 A/F SENSOR 1 HEATER

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Start engine and let it idle for at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-201, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NG >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:0000000011486290

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect air fuel ratio (A/F) sensor 1 harness connector.
2. Turn ignition switch ON.
3. Check the voltage between A/F sensor 1 harness connector and ground.

DTC	A/F sensor 1			Ground	Voltage
	Bank	Connector	Terminal		
P0030, P0031, P0032	1	F8	4	Ground	Battery voltage
P0036, P0051, P0052	2	F25	4		

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- IPDM E/R harness connector E7
- 15A fuse (No. 46)
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

4. CHECK A/F SENSOR 1 HEATER OUTPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0030, P0031, P0032	1	F8	3	F101	4	Existed
P0036, P0051, P0052	2	F25	3		3	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK A/F SENSOR 1 HEATER

Refer to [EC-202, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

P0030, P0031, P0032, P0036, P0051, P0052 A/F SENSOR 1 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

- YES >> GO TO 7.
NO >> GO TO 6.

6. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to [EM-50. "Exploded View"](#).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

7. CHECK INTERMITTENT INCIDENT

Perform [GI-39. "Intermittent Incident"](#).

>> Repair or replace malfunctioning part.

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486291

1. CHECK AIR FUEL RATIO (A/F) SENSOR 1

1. Turn ignition switch OFF.
2. Disconnect A/F sensor 1 harness connector.
3. Check resistance between A/F sensor 1 terminals as follows.

Terminal	Resistance
3 and 4	1.98 - 2.66 Ω [at 25°C (77°F)]
3 and 1, 2	$\infty \Omega$
4 and 1, 2	(Continuity should not exist)

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 2.

2. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to [EM-50. "Exploded View"](#).

CAUTION:

- Discard any air fuel ratio (A/F) sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new air fuel ratio (A/F) sensor, clean exhaust system threads using Heated Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

P0037, P0038, P0057, P0058 HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0037, P0038, P0057, P0058 HO2S2 HEATER

Description (GT-R certified NISSAN dealer)

INFOID:000000011486292

SYSTEM DESCRIPTION

Sensor	Input signal to ECM	ECM function	Actuator
Camshaft position sensor (PHASE) Crankshaft position sensor (POS)	Engine speed	Heated oxygen sensor 2 heater control	Heated oxygen sensor 2 heater
Engine coolant temperature sensor	Engine coolant temperature		
Mass air flow sensor	Amount of intake air		

The ECM performs ON/OFF control of the heated oxygen sensor 2 heater corresponding to the engine speed, amount of intake air and engine coolant temperature.

OPERATION

Engine speed	Heated oxygen sensor 2 heater
Above 3,600 rpm	OFF
Below 3,600 rpm after the following conditions are met. <ul style="list-style-type: none">• Engine: After warming up• Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	ON

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486292

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0037	Heated oxygen sensor 2 heater (bank 1) control circuit low	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	<ul style="list-style-type: none">• Harness or connectors (The heated oxygen sensor 2 heater circuit is open or shorted.)• Heated oxygen sensor 2 heater
P0038	Heated oxygen sensor 2 heater (bank 1) control circuit high	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	<ul style="list-style-type: none">• Harness or connectors (The heated oxygen sensor 2 heater circuit is shorted.)• Heated oxygen sensor 2 heater
P0057	Heated oxygen sensor 2 heater (bank 2) control circuit low	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	<ul style="list-style-type: none">• Harness or connectors (The heated oxygen sensor 2 heater circuit is open or shorted.)• Heated oxygen sensor 2 heater
P0058	Heated oxygen sensor 2 heater (bank 2) control circuit high	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	<ul style="list-style-type: none">• Harness or connectors (The heated oxygen sensor 2 heater circuit is shorted.)• Heated oxygen sensor 2 heater

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 11 V and 16 V at idle.

>> GO TO 2.

P0037, P0038, P0057, P0058 HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
6. Let engine idle for 1 minute.
7. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-204, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486294

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK HO2S2 POWER SUPPLY CIRCUIT

1. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
2. Turn ignition switch ON.
3. Check the voltage between heated oxygen sensor 2 harness connector and ground.

DTC	HO2S2			Ground	Voltage
	Bank	Connector	Terminal		
P0037, P0038	1	F53	2	Ground	Battery voltage
P0057, P0058	2	F52	2		

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness connectors E106, M6
- IPDM E/R harness connector E7
- 15A fuse (No. 46)
- Harness for open or short between heated oxygen sensor 2 and fuse

>> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK HO2S2 OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0037, P0038	1	F53	3	F102	55	Existed
P0057, P0058	2	F52	3		56	

4. Also check harness for short to ground and short to power.

P0037, P0038, P0057, P0058 HO2S2 HEATER

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK HEATED OXYGEN SENSOR 2 HEATER

Refer to [EC-205, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:0000000011486295

1. CHECK HEATED OXYGEN SENSOR 2 HEATER

1. Turn ignition switch OFF.
2. Disconnect heated oxygen sensor 2 harness connector.
3. Check resistance between HO2S2 terminals as follows.

Terminal	Resistance
2 and 3	3.4 - 4.4 Ω [at 25°C (77°F)]
1 and 2, 3, 4	$\infty \Omega$ (Continuity should not exist)
4 and 1, 2, 3	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

P004A, P004C, P004D TC BOOST CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

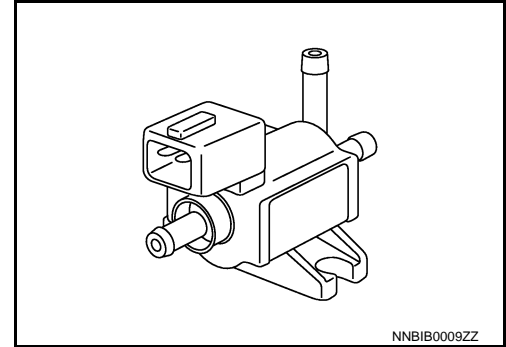
[VR38]

P004A, P004C, P004D TC BOOST CONTROL SOLENOID VALVE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486296

The turbocharger boost control solenoid valve is ON/OFF duty controlled by the ECM output signals and adjusts the pressure in the diaphragm of the boost control actuator. The longer the turbocharger boost control solenoid valve is ON, the higher the boost is increased.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486297

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P004A	Turbocharger boost control solenoid valve circuit open	ECM detected the turbocharger boost control solenoid valve circuit is open.	<ul style="list-style-type: none">• Harness or connectors (Turbocharger boost control solenoid valve circuit is open or shorted.)• Turbocharger boost control solenoid valve
P004C	Turbocharger boost control solenoid valve circuit low input	ECM detected the turbocharger boost control solenoid valve circuit is short to ground.	
P004D	Turbocharger boost control solenoid valve circuit high input	ECM detected the turbocharger boost control solenoid valve circuit is short to power.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-206, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486298

1. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect turbocharger boost control solenoid valve harness connector.
3. Turn ignition switch ON.
4. Check the voltage between turbocharger boost control solenoid valve harness connector and ground.

P004A, P004C, P004D TC BOOST CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Turbocharger boost control solenoid valve		Ground	Voltage
Connector	Terminal		
F34	1	Ground	Battery voltage

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between turbocharger boost control solenoid valve and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between turbocharger boost control solenoid valve harness connector and ECM harness connector.

Turbocharger boost control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F34	2	F102	61	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Refer to [EC-207, "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace turbocharger boost control solenoid valve. Refer to [EM-61, "Exploded View".](#)

5.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486299

1.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

1. Turn ignition switch OFF
2. Disconnect turbocharger boost control solenoid valve harness connector.
3. Disconnect hoses connected to turbocharger boost control solenoid valve.

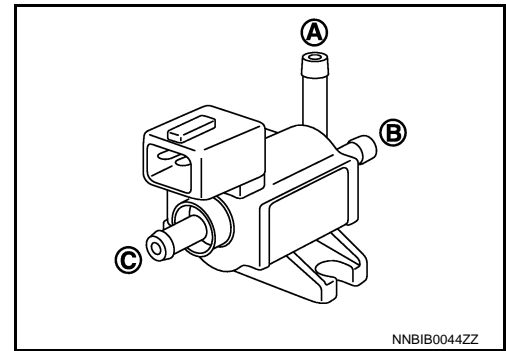
P004A, P004C, P004D TC BOOST CONTROL SOLENOID VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Check air passage continuity of turbocharger boost control solenoid valve under the following conditions.

Condition	Air passage continuity between (A) and (B)	Air passage continuity between (A) and (C)
12 V direct current supply between terminals 1 and 2	Existed	Not existed
No supply	Not existed	Existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost control solenoid valve. Refer to [EM-61, "Exploded View"](#).

P0075, P0081 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0075, P0081 IVT CONTROL SOLENOID VALVE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486300

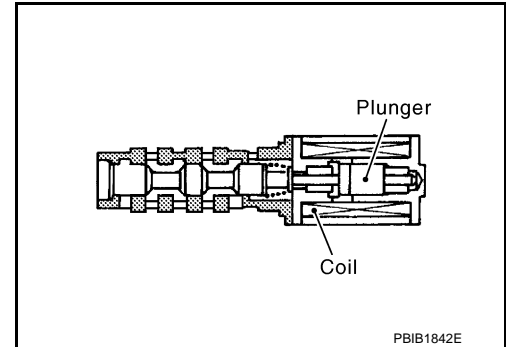
Intake valve timing control solenoid valve is activated by ON/OFF pulse duty (ratio) signals from the ECM.

The intake valve timing control solenoid valve changes the oil amount and direction of flow through intake valve timing control unit or stops oil flow.

The longer pulse width advances valve angle.

The shorter pulse width retards valve angle.

When ON and OFF pulse widths become equal, the solenoid valve stops oil pressure flow to fix the intake valve angle at the control position.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486301

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0075	Intake valve timing control solenoid valve (bank 1) circuit	An improper voltage is sent to the ECM through intake valve timing control solenoid valve.	<ul style="list-style-type: none">• Harness or connectors (Intake valve timing control solenoid valve circuit is open or shorted.)• Intake valve timing control solenoid valve
P0081	Intake valve timing control solenoid valve (bank 2) circuit		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-209. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486302

1. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect intake valve timing control solenoid valve harness connector.
3. Turn ignition switch ON.
4. Check the voltage between intake valve timing (IVT) control solenoid valve harness connector and ground.

P0075, P0081 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

DTC	IVT control solenoid valve			Ground	Voltage
	Bank	Connector	Terminal		
P0075	1	F33	2	Ground	Battery voltage
P0081	2	F32	2		

Is the inspection result normal?

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

2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between intake valve timing control solenoid valve and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between intake valve timing (IVT) control solenoid valve harness connector and ECM harness connector.

DTC	IVT control solenoid valve			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0075	1	F33	1	F101	52	Existed
P0081	2	F32	1		51	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE

Refer to [EC-210, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to [EM-69, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486303

1. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-I

1. Turn ignition switch OFF.
2. Disconnect intake valve timing control solenoid valve harness connector.
3. Check resistance between intake valve timing control solenoid valve terminals as follows.

P0075, P0081 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Terminals	Resistance
1 and 2	7.0 - 7.7 Ω [at 20°C (68°F)]
1 or 2 and ground	$\infty \Omega$ (Continuity should not exist)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to [EM-69, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

2. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove intake valve timing control solenoid valve. Refer to [EM-69, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

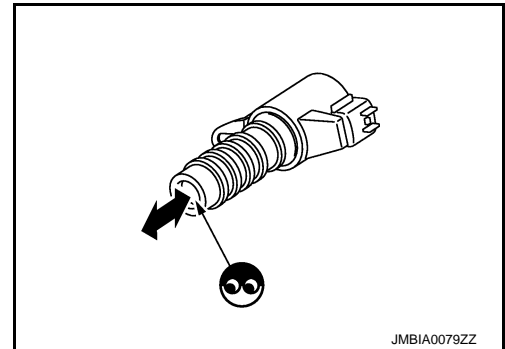
2. Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

Never apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

NOTE:

Always replace O-ring when intake valve timing control solenoid valve is removed.



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to [EM-69, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

P0101, P010B MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

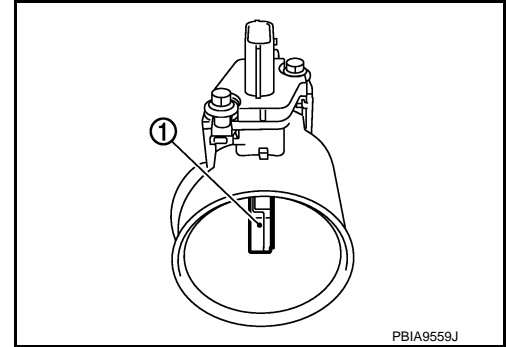
P0101, P010B MAF SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486304

The mass air flow sensor (1) is placed in the stream of intake air. It measures the intake flow rate by measuring a part of the entire intake flow. The mass air flow sensor controls the temperature of the hot wire to a certain amount. The heat generated by the hot wire is reduced as the intake air flows around it. The more air, the greater the heat loss.

Therefore, the electric current supplied to hot wire is changed to maintain the temperature of the hot wire as air flow increases. The ECM detects the air flow by means of this current change.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486305

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0101	Mass air flow sensor (bank 1) circuit range/performance	A)	A high voltage from the sensor is sent to ECM under light load driving condition.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Mass air flow sensor • EVAP control system pressure sensor
		B)	A low voltage from the sensor is sent to ECM under heavy load driving condition.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Intake air leaks • Mass air flow sensor • EVAP control system pressure sensor • Intake air temperature sensor
P010B	Mass air flow sensor (bank 2) circuit range/performance	A)	A high voltage from the sensor is sent to ECM under light load driving condition.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Mass air flow sensor • EVAP control system pressure sensor
		B)	A low voltage from the sensor is sent to ECM under heavy load driving condition.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Intake air leaks • Mass air flow sensor • EVAP control system pressure sensor • Intake air temperature sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

If engine will not start or stops soon, wait at least 10 seconds with engine stopped (Ignition switch ON) instead of running engine at idle speed.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

1. Start engine and warm it up to normal operating temperature.
2. Run engine for at least 10 seconds at idle speed.
3. Check 1st trip DTC.

Is 1st trip DTC detected?

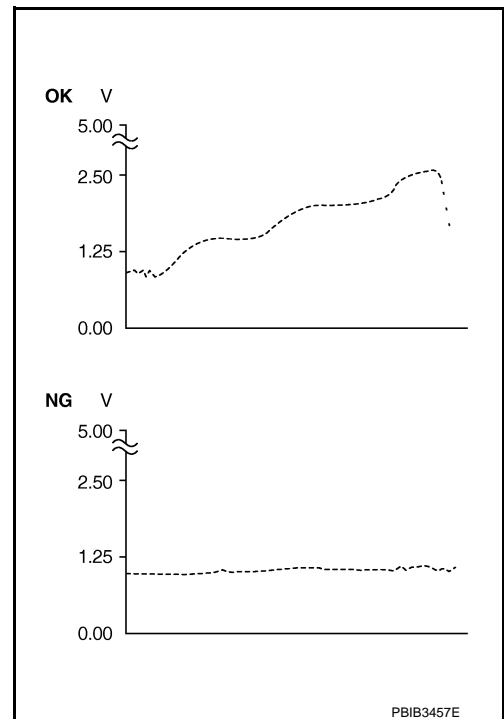
- YES >> Refer to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
- NO-1 >> With CONSULT: GO TO 3.
- NO-2 >> Without CONSULT: GO TO 5.

3. CHECK MASS AIR FLOW SENSOR FUNCTION

1. Turn ignition switch ON.
2. Start engine and warm it up to normal operating temperature.
If engine cannot be started, go to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
3. Select "MAS A/F SE-B1/B2" in "DATA MONITOR" mode with CONSULT.
4. Check the voltage of "MAS A/F SE-B1/B2".
5. Increases engine speed to about 4,000 rpm.
6. Monitor the linear voltage rise in response to engine speed increases.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Refer to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)



4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B

1. Maintain the following conditions for at least 10 consecutive seconds.

ENG SPEED	More than 1,400 rpm
TP SEN 1-B1	More than 1.0 V
TP SEN 2-B1	More than 1.0 V
TP SEN 1-B2	More than 1.0 V
TP SEN 2-B2	More than 1.0 V
Shift lever	Suitable position
Driving location	Driving vehicle uphill (Increased engine load) will help maintain the driving conditions required for this test.

CAUTION:

Always drive vehicle at a safe speed.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

P0101, P010B MAF SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NO >> INSPECTION END

5.PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B

Perform component function check. Refer to [EC-214, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the mass air flow sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486306

1.PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B

With GST

1. Start engine and warm it up to normal operating temperature.
2. Select Service \$01 with GST.
3. Check the mass air flow sensor signal with Service \$01.
4. Check for linear mass air flow sensor signal value rise in response to increases to about 4,000 rpm in engine speed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

CALC LOAD	20%
COOLANT TEMP	95°C
SHORT FT #1	2%
LONG FT #1	0%
SHORT FT #2	4%
LONG FT #2	0%
ENGINE SPD	2637RPM
VEHICLE SPD	0MPH
IGN ADVANCE	41.0°
INTAKE AIR	41°C
MAF	14.1gm/sec
THROTTLE POS	3%

SEF534P

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486307

1.INSPECTION START

Confirm the detected malfunction (A or B). Refer to [EC-212, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

Which malfunction is detected?

A >> GO TO 3.

B >> GO TO 2.

2.CHECK INTAKE SYSTEM

Check the following for connection.

- Air duct
- Vacuum hoses
- Secondary air injection system
- Intake air passage between air duct and intake manifold

Is the inspection result normal?

YES >> GO TO 3.

NO >> Reconnect the parts.

3.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace ground connection.

4.CHECK MAF SENSOR POWER SUPPLY CIRCUIT

1. Disconnect mass air flow (MAF) sensor harness connector.
2. Turn ignition switch ON.

P0101, P010B MAF SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Check the voltage between MAF sensor harness connector and ground.

DTC	MAF sensor			Ground	Voltage
	Bank	Connector	Terminal		
P0101	1	F15	5	Ground	Battery voltage
P010B	2	F31	5		

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between mass air flow sensor and ECM
- Harness for open or short between mass air flow sensor and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

6. CHECK MAF SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between MAF sensor harness connector and ECM harness connector.

DTC	MAF sensor			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0101	1	F15	4	F101	22	Existed
P010B	2	F31	4		19	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK MAF SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between MAF sensor harness connector and ECM harness connector.

DTC	MAF sensor			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0101	1	F15	3	F101	47	Existed
P010B	2	F31	3		31	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK INTAKE AIR TEMPERATURE SENSOR

Check intake air temperature sensor (bank 1).

Refer to [EC-227, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace mass air flow sensor (bank 1) (with intake air temperature sensor). Refer to [EM-28, "Removal and Installation"](#).

9. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

P0101, P010B MAF SENSOR

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< DTC/CIRCUIT DIAGNOSIS >

Refer to [EC-379, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Exploded View"](#).

10. CHECK MASS AIR FLOW SENSOR

Refer to [EC-216, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace malfunctioning mass air flow sensor. Refer to [EM-28, "Removal and Installation"](#).

11. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486308

1. CHECK MASS AIR FLOW SENSOR-I

With CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Connect CONSULT and select "DATA MONITOR" mode.
5. Select "MAS A/F SE-B1" and "MAS A/F SE-B2", and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1 MAS A/F SE-B2	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
	Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Without CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	47 [MAF sensor (bank 1) signal]	22	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*
	31 [MAF sensor (bank 2) signal]	19	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

P0101, P010B MAF SENSOR

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< DTC/CIRCUIT DIAGNOSIS >

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> GO TO 2.

2. CHECK FOR THE CAUSE OF UNEVEN AIR FLOW THROUGH MASS AIR FLOW SENSOR

1. Turn ignition switch OFF.
2. Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.
 - Crushed air ducts
 - Malfunctioning seal of air cleaner element
 - Uneven dirt of air cleaner element
 - Intake valve deposits
 - Improper specification of intake air system parts

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> GO TO 3.

3. CHECK MASS AIR FLOW SENSOR-II

With CONSULT

1. Repair or replace malfunctioning part.
2. Start engine and warm it up to normal operating temperature.
3. Connect CONSULT and select "DATA MONITOR" mode.
4. Select "MAS A/F SE-B1" and "MAS A/F SE-B2", and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1 MAS A/F SE-B2	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
	Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Without CONSULT

1. Repair or replace malfunctioning part.
2. Start engine and warm it up to normal operating temperature.
3. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	47 [MAF sensor (bank 1) signal]	22	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*
	31 [MAF sensor (bank 2) signal]	19	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

- YES >> INSPECTION END

P0101, P010B MAF SENSOR

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< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 4.

4. CHECK MASS AIR FLOW SENSOR-III

With CONSULT

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector and reconnect it again.
3. Start engine and warm it up to normal operating temperature.
4. Connect CONSULT and select "DATA MONITOR" mode.
5. Select "MAS A/F SE-B1" and "MAS A/F SE-B2", and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1 MAS A/F SE-B2	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
	Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Without CONSULT

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector and reconnect it again.
3. Start engine and warm it up to normal operating temperature.
4. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	47 [MAF sensor (bank 1) signal]	22	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*
	31 [MAF sensor (bank 2) signal]	19	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Clean or replace malfunctioning mass air flow sensor. Refer to [EM-28. "Removal and Installation"](#).

P0102, P0103, P010C, P010D MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

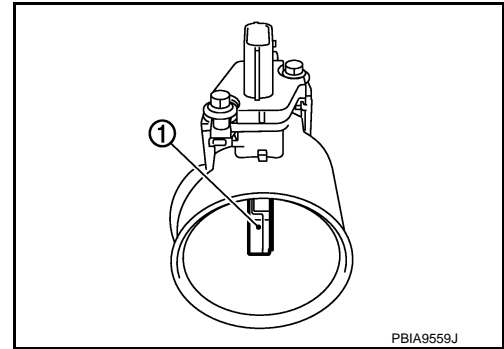
P0102, P0103, P010C, P010D MAF SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486309

The mass air flow sensor (1) is placed in the stream of intake air. It measures the intake flow rate by measuring a part of the entire intake flow. The mass air flow sensor controls the temperature of the hot wire to a certain amount. The heat generated by the hot wire is reduced as the intake air flows around it. The more air, the greater the heat loss.

Therefore, the electric current supplied to hot wire is changed to maintain the temperature of the hot wire as air flow increases. The ECM detects the air flow by means of this current change.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486310

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0102	Mass air flow sensor (bank 1) circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (The sensor circuit is open or shorted.)• Intake air leaks• Mass air flow sensor
P0103	Mass air flow sensor (bank 1) circuit high input	An excessively high voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (The sensor circuit is open or shorted.)• Mass air flow sensor
P010C	Mass air flow sensor (bank 2) circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (The sensor circuit is open or shorted.)• Intake air leaks• Mass air flow sensor
P010D	Mass air flow sensor (bank 2) circuit high input	An excessively high voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (The sensor circuit is open or shorted.)• Mass air flow sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

Which DTC is detected?

P0102, P010C>>GO TO 2.

P0103, P010D>>GO TO 3.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0102 AND P010C

1. Start engine and wait at least 5 seconds.
2. Check DTC.

Is DTC detected?

YES >> Refer to [EC-220, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

3. PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0103 AND P010D-I

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check DTC.

P0102, P0103, P010C, P010D MAF SENSOR

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC detected?

- YES >> Refer to [EC-220, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 4.

4.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0103 AND P010D-II

1. Start engine and wait at least 5 seconds.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-220, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486311

1.INSPECTION START

Confirm the detected DTC.

Which DTC is detected?

- P0102, P010C>>GO TO 2.
P0103, P010D>>GO TO 3.

2.CHECK INTAKE SYSTEM

Check the following for connection.

- Air duct
- Vacuum hoses
- Intake air passage between air duct to intake manifold

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Reconnect the parts.

3.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair or replace ground connection.

4.CHECK MAF SENSOR POWER SUPPLY CIRCUIT

1. Disconnect mass air flow (MAF) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between MAF sensor harness connector and ground.

DTC	MAF sensor			Ground	Voltage
	Bank	Connector	Terminal		
P0102, P0103	1	F15	5	Ground	Battery voltage
P010C, P010D	2	F31	5		

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between mass air flow sensor and ECM
- Harness for open or short between mass air flow sensor and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

P0102, P0103, P010C, P010D MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

6. CHECK MAF SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between MAF sensor harness connector and ECM harness connector.

DTC	MAF sensor			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0102, P0103	1	F15	4	F101	22	Existed
P010C, P010D	2	F31	4		19	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK MAF SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between MAF sensor harness connector and ECM harness connector.

DTC	MAF sensor			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0102, P0103	1	F15	3	F101	47	Existed
P010C, P010D	2	F31	3		31	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK MASS AIR FLOW SENSOR

Refer to [EC-221, "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace malfunctioning mass air flow sensor. Refer to [EM-28, "Removal and Installation".](#)

9. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:0000000011486312

1. CHECK MASS AIR FLOW SENSOR-I

With CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Connect CONSULT and select "DATA MONITOR" mode.
5. Select "MAS A/F SE-B1" and "MAS A/F SE-B2", and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1 MAS A/F SE-B2	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
	Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

P0102, P0103, P010C, P010D MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

⊗ Without CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	47 [MAF sensor (bank 1) signal]	22	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*
	31 [MAF sensor (bank 2) signal]	19	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK FOR THE CAUSE OF UNEVEN AIR FLOW THROUGH MASS AIR FLOW SENSOR

1. Turn ignition switch OFF.
2. Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.
 - Crushed air ducts
 - Malfunctioning seal of air cleaner element
 - Uneven dirt of air cleaner element
 - Intake valve deposits
 - Improper specification of intake air system parts

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3.CHECK MASS AIR FLOW SENSOR-II

Ⓜ With CONSULT

1. Repair or replace malfunctioning part.
2. Start engine and warm it up to normal operating temperature.
3. Connect CONSULT and select "DATA MONITOR" mode.
4. Select "MAS A/F SE-B1" and "MAS A/F SE-B2", and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1 MAS A/F SE-B2	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
	Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

⊗ Without CONSULT

1. Repair or replace malfunctioning part.

P0102, P0103, P010C, P010D MAF SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Start engine and warm it up to normal operating temperature.
3. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	47 [MAF sensor (bank 1) signal]	22	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*
	31 [MAF sensor (bank 2) signal]	19	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> GO TO 4.

4. CHECK MASS AIR FLOW SENSOR-III

With CONSULT

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector and reconnect it again.
3. Start engine and warm it up to normal operating temperature.
4. Connect CONSULT and select "DATA MONITOR" mode.
5. Select "MAS A/F SE-B1" and "MAS A/F SE-B2", and check the indication.

Monitor item	Condition	Indication (V)
MAS A/F SE-B1 MAS A/F SE-B2	Ignition switch ON (Engine stopped.)	Approx. 0.4
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
	Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Without CONSULT

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector and reconnect it again.
3. Start engine and warm it up to normal operating temperature.
4. Check the voltage between ECM harness connector terminals under the following conditions.

P0102, P0103, P010C, P010D MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			Condition	Voltage (V)
Connector	+ Terminal	- Terminal		
F101	47 [MAF sensor (bank 1) signal]	22	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*
	31 [MAF sensor (bank 2) signal]	19	Ignition switch ON (Engine stopped.)	Approx. 0.4
			Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.4 - 1.8
			Idle to about 4,000 rpm	0.9 - 1.2 to Approx. 2.4*

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Clean or replace malfunctioning mass air flow sensor. Refer to [EM-28, "Removal and Installation"](#).

P0111 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

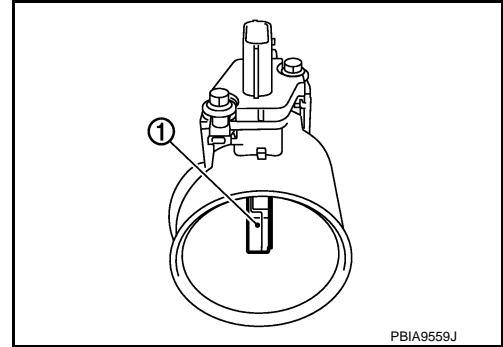
P0111 IAT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486313

The intake air temperature sensor is built-into the mass air flow sensor (1). The sensor detects intake air temperature and transmits a signal to the ECM.

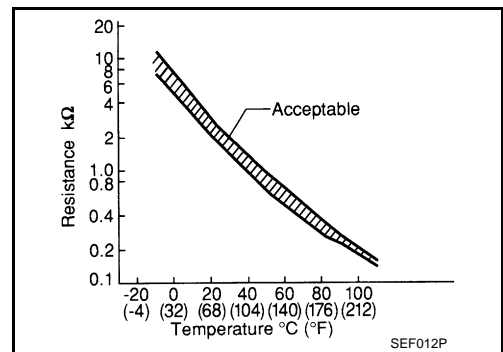
The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the rise in temperature.



<Reference data>

Intake air temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
25 (77)	3.3	1.800 - 2.200
80 (176)	1.2	0.283 - 0.359

*: These data are reference values and are measured between ECM terminals 50 (Intake air temperature sensor) and 56 (Sensor ground).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486314

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0111	IAT SENSOR 1 B1 [Intake air temperature (IAT) sensor circuit range/performance]	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, and FTT sensor) shows that the voltage signal of the IAT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	<ul style="list-style-type: none"> • Harness or connectors (High or low resistance in the IAT sensor circuit) • IAT sensor

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

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

2. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-226. "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use the component function check to check the overall function of the IAT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Proceed to [EC-226. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

P0111 IAT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 60 minutes.
2. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

4. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-226, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486315

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector.
3. Check resistance between mass air flow sensor terminals as follows.

Terminals	Condition		Resistance (k Ω)
1 and 2	Temperature [$^{\circ}\text{C}$ ($^{\circ}\text{F}$)]	25 (77)	1.800 – 2.200

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to [EC-226, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to [EC-226, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486316

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR

Check intake air temperature sensor. Refer to [EC-230, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

P0111 IAT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 2.
NO >> Replace mass air flow sensor (with intake air temperature sensor). Refer to [EM-28, "Removal and Installation"](#).

2.CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:0000000011486317

1.CHECK INTAKE AIR TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor (bank 1) harness connector.
3. Check resistance between mass air flow sensor (bank 1) terminals as follows.

Terminals	Condition	Resistance (kΩ)
1 and 2	Temperature [°C (°F)] 25 (77)	1.800 - 2.200

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace mass air flow sensor (with intake air temperature sensor) (bank 1). Refer to [EM-28, "Removal and Installation"](#).

P0112, P0113 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

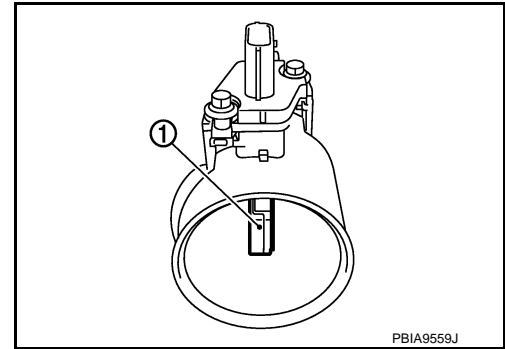
P0112, P0113 IAT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486318

The intake air temperature sensor is built-into mass air flow sensor (1). The sensor detects intake air temperature and transmits a signal to the ECM.

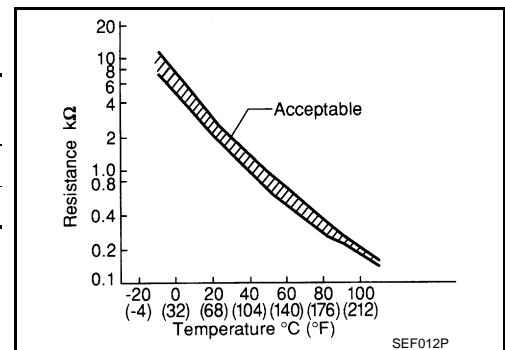
The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rise.



<Reference data>

Intake air temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
25 (77)	3.3	1.800 - 2.200
80 (176)	1.2	0.283 - 0.359

*: These data are reference values and are measured between ECM terminals 44 (Intake air temperature sensor) and 22 (Sensor ground).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486319

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0112	Intake air temperature sensor (bank 1) circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Intake air temperature sensor
P0113	Intake air temperature sensor (bank 1) circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-229, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

P0112, P0113 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486320

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK INTAKE AIR TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

1. Disconnect mass air flow sensor (bank 1) harness connector.
2. Turn ignition switch ON.
3. Check the voltage between mass air flow sensor (bank 1) harness connector and ground.

MAF sensor (bank 1)		Ground	Voltage (V)
Connector	Terminal		
F15	2	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK INTAKE AIR TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between mass air flow sensor (bank 1) harness connector and ECM harness connector.

MAF sensor (bank 1)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F15	1	F101	22	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK INTAKE AIR TEMPERATURE SENSOR

Refer to [EC-227. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace mass air flow sensor (with intake air temperature sensor) (bank 1). Refer to [EM-28. "Removal and Installation"](#).

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486321

1. CHECK INTAKE AIR TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor (bank 1) harness connector.
3. Check resistance between mass air flow sensor (bank 1) terminals as follows.

P0112, P0113 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Terminals	Condition	Resistance (kΩ)
1 and 2	Temperature [°C (°F)]	25 (77) 1.800 - 2.200

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor) (bank 1). Refer to [EM-28, "Removal and Installation"](#).

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486322

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector.
3. Check resistance between mass air flow sensor terminals as follows.

Terminals	Condition	Resistance (kΩ)
1 and 2	Temperature [°C (°F)]	25 (77) 1.800 - 2.200

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor). Refer to [EM-28, "Removal and Installation"](#).

P0116 ECT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

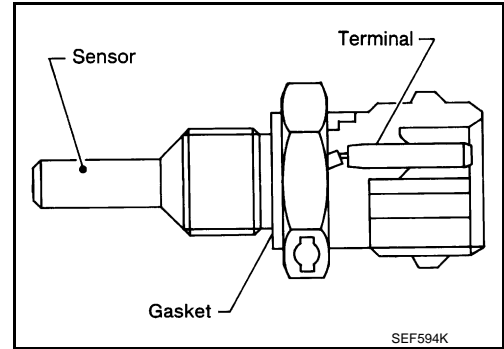
[VR38]

P0116 ECT SENSOR

Description (GT-R certified NISSAN dealer)

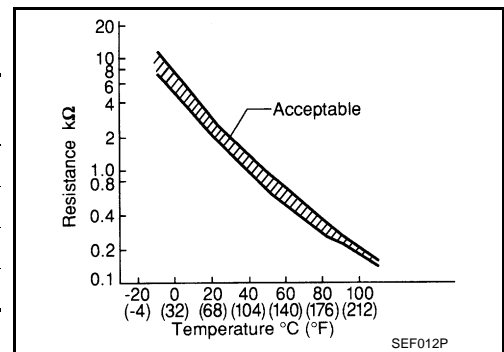
INFOID:000000011486323

The engine coolant temperature sensor is used to detect the engine coolant temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine coolant temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.1 - 2.5
50 (122)	2.3	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260



*: These data are reference values and are measured between ECM terminals 46 (Engine coolant temperature sensor) and 26 (Sensor ground).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486324

DTC DETECTION LOGIC

NOTE:

If DTC P0116 is displayed with P0117 or P0118, first perform the trouble diagnosis for DTC P0117, P0118. Refer to [EC-234, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0116	ECT SEN/CIRC [Engine coolant temperature (ECT) sensor circuit range/performance]	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the ECT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	<ul style="list-style-type: none"> Harness or connectors (High or low resistance in the ECT sensor circuit) ECT sensor

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-232, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

P0116 ECT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Use the component function check to check the overall function of the ECT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to [EC-233, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

3. PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 60 minutes.
2. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

4. Start engine and let it idle for 20 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-233, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486325

1. CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR

1. Turn ignition switch OFF.
2. Disconnect ECT sensor harness connector.
3. Remove ECT sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)
4. Check resistance between ECT sensor terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance (k Ω)	
1 and 2	Temperature [$^{\circ}\text{C}$ ($^{\circ}\text{F}$)]	20 (68)	2.1 – 2.5
		50 (122)	0.68 – 1.00
		90 (194)	0.236 – 0.260

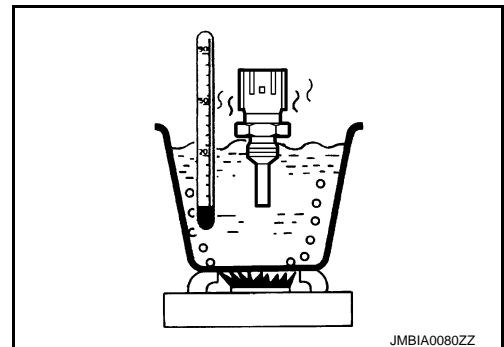
Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to [EC-233, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

2. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to [GI-39, "Intermittent Incident".](#)



P0116 ECT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to [EC-233, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486326

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Refer to [EC-233, "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

3. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486327

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR

1. Turn ignition switch OFF.

2. Disconnect engine coolant temperature sensor harness connector.

3. Remove engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

4. Check resistance between engine coolant temperature sensor terminals as follows.

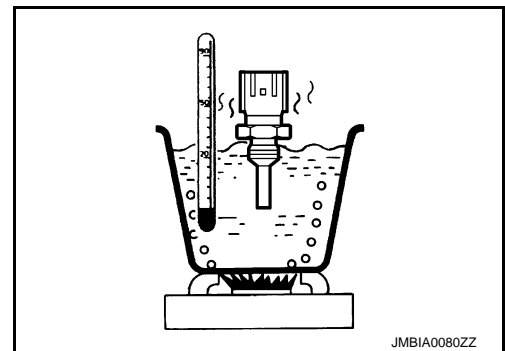
<Reference data>

Terminals	Condition	Resistance (kΩ)	
1 and 2	Temperature [°C (°F)]	20 (68)	2.1 - 2.5
		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)



P0117, P0118 ECT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

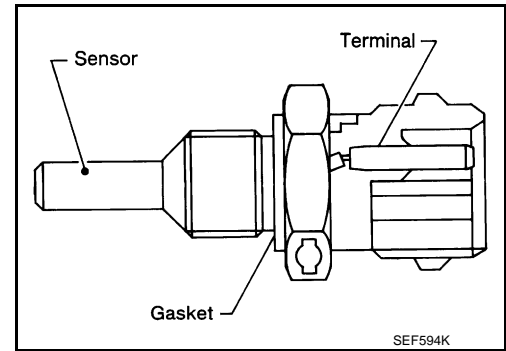
[VR38]

P0117, P0118 ECT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486328

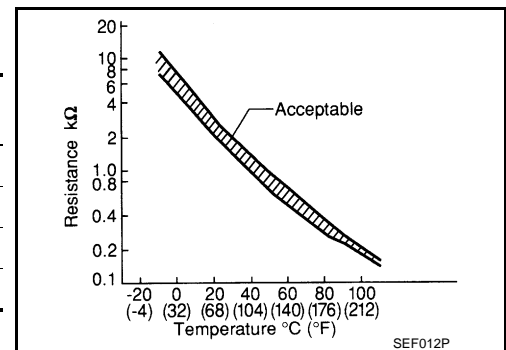
The engine coolant temperature sensor is used to detect the engine coolant temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine coolant temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.1 - 2.5
50 (122)	2.3	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260

*: These data are reference values and are measured between ECM terminals 46 (Engine coolant temperature sensor) and 26 (Sensor ground).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486329

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0117	Engine coolant temperature sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Engine coolant temperature sensor
P0118	Engine coolant temperature sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-235, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

P0117, P0118 ECT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486330

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK ECT SENSOR POWER SUPPLY CIRCUIT

1. Disconnect engine coolant temperature (ECT) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between ECT sensor harness connector and ground.

ECT sensor		Ground	Voltage (V)
Connector	Terminal		
F51	1	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK ECT SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between ECT sensor harness connector and ECM harness connector.

ECT sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F51	2	F101	26	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Refer to [EC-235. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace engine coolant temperature sensor. Refer to [CO-23. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486331

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect engine coolant temperature sensor harness connector.
3. Remove engine coolant temperature sensor. Refer to [CO-23. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

P0117, P0118 ECT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Check resistance between engine coolant temperature sensor terminals as follows.

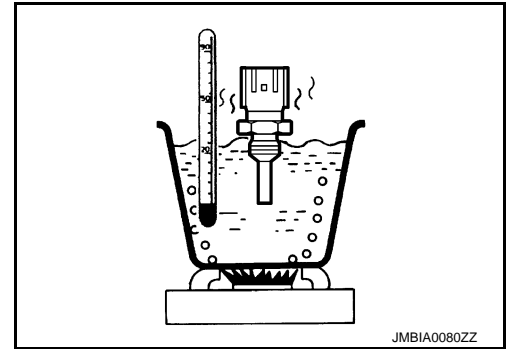
<Reference data>

Terminals	Condition	Resistance (kΩ)	
1 and 2	Temperature [°C (°F)]	20 (68)	2.1 - 2.5
		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



P0122, P0123, P0227, P0228 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

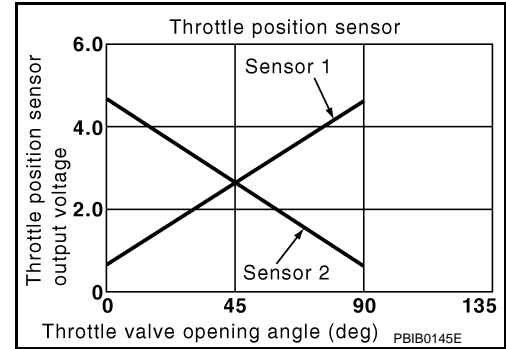
P0122, P0123, P0227, P0228 TP SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486332

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle position sensor responds to the throttle valve movement.

The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486333

DTC DETECTION LOGIC

NOTE:

If DTC P0122, P0123, P0227 or P0228 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0122	Throttle position sensor 2 (bank 1) circuit low input	An excessively low voltage from the TP sensor 2 is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (TP sensor 2 circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) • Electric throttle control actuator (TP sensor 2) • Each sensor, connected with sensor power supply 1 circuit
P0123	Throttle position sensor 2 (bank 1) circuit high input	An excessively high voltage from the TP sensor 2 is sent to ECM.	
P0227	Throttle position sensor 2 (bank 2) circuit low input	An excessively low voltage from the TP sensor 2 is sent to ECM.	
P0228	Throttle position sensor 2 (bank 2) circuit high input	An excessively high voltage from the TP sensor 2 is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 1 second.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-238, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

P0122, P0123, P0227, P0228 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486334

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK THROTTLE POSITION SENSOR 2 POWER SUPPLY CIRCUIT

1. Disconnect electric throttle control actuator harness connector.
2. Turn ignition switch ON.
3. Check the voltage between electric throttle control actuator harness connector and ground.

DTC	Electric throttle control actuator			Ground	Voltage (V)
	Bank	Connector	Terminal		
P0122, P0123	1	F9	1	Ground	Approx. 5
P0227, P0228	2	F26	6		

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair open circuit or short to ground or short to power in harness or connectors.

3. CHECK THROTTLE POSITION SENSOR 2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0122, P0123	1	F9	4	F101	20	Existed
P0227, P0228	2	F26	3		15	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK THROTTLE POSITION SENSOR 2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0122, P0123	1	F9	3	F101	36	Existed
P0227, P0228	2	F26	5		32	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK THROTTLE POSITION SENSOR

Refer to [EC-239. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

P0122, P0123, P0227, P0228 TP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> Refer to [GI-39. "Intermittent Incident"](#).
- NO >> Replace electric throttle control actuator. Refer to [EM-36. "Removal and Installation"](#).

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486335

1. CHECK THROTTLE POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Perform [EC-24. "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
4. Turn ignition switch ON.
5. Set shift lever to A position.
6. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	40 [TP sensor 1 (bank 1)]	20	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	28 [TP sensor 1 (bank 2)]	15	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	36 [TP sensor 2 (bank 1)]	20	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36
	32 [TP sensor 2 (bank 2)]	15	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace electric throttle control actuator. Refer to [EM-36. "Removal and Installation"](#).

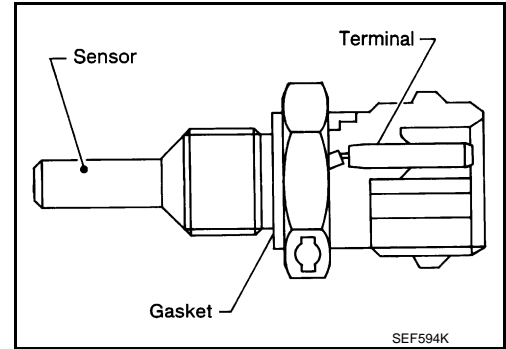
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P0125 ECT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486336

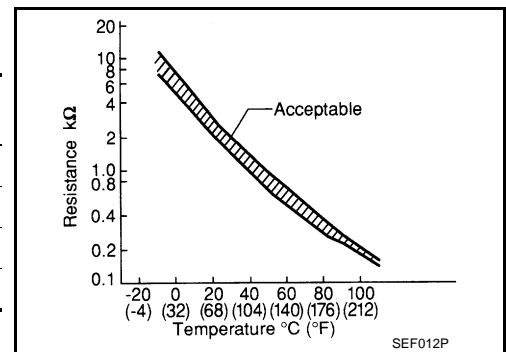
The engine coolant temperature sensor is used to detect the engine coolant temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine coolant temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.1 - 2.5
50 (122)	2.3	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260

*: These data are reference values and are measured between ECM terminals 46 (Engine coolant temperature sensor) and 26 (Sensor ground).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486337

DTC DETECTION LOGIC

NOTE:

If DTC P0125 is displayed with P0117 or P0118, first perform the trouble diagnosis for DTC P0117, P0118. Refer to [EC-234, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0125	Insufficient engine coolant temperature for closed loop fuel control	<ul style="list-style-type: none"> Voltage sent to ECM from the sensor is not practical, even when some time has passed after starting the engine. Engine coolant temperature is insufficient for closed loop fuel control. 	<ul style="list-style-type: none"> Harness or connectors (High resistance in the circuit) Engine coolant temperature sensor Thermostat

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. CHECK ENGINE COOLANT TEMPERATURE SENSOR FUNCTION

1. Turn ignition switch ON.
2. Select "DATA MONITOR" mode with CONSULT.
3. Check that "COOLAN TEMP/S" is above 3°C (37.4°F).

Is it above 3°C (37.4°F)?

P0125 ECT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> INSPECTION END
- NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and run it for 65 minutes at idle speed.
If "COOLAN TEMP/S" increases to more than 3°C (37.4°F) within 65 minutes, stop engine because the test result will be OK.

CAUTION:

Never overheat engine.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> [EC-241. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#)
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486338

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace ground connection.

2.CHECK ENGINE COOLANT TEMPERATURE SENSOR

Refer to [EC-241. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace engine coolant temperature sensor. Refer to [CO-23. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

3.CHECK THERMOSTAT OPERATION

When the engine is cold [lower than 70°C (158°F)] condition, grasp lower radiator hose and confirm that the engine coolant does not flow.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace thermostat. Refer to [CO-21. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486339

1.CHECK ENGINE COOLANT TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect engine coolant temperature sensor harness connector.
3. Remove engine coolant temperature sensor. Refer to [CO-23. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

P0125 ECT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Check resistance between engine coolant temperature sensor terminals as follows.

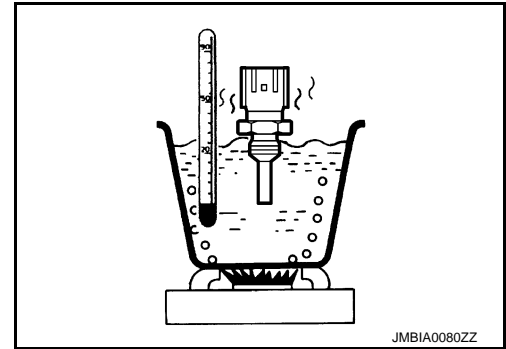
<Reference data>

Terminals	Condition	Resistance (kΩ)	
1 and 2	Temperature [°C (°F)]	20 (68)	2.1 - 2.5
		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



P0127 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

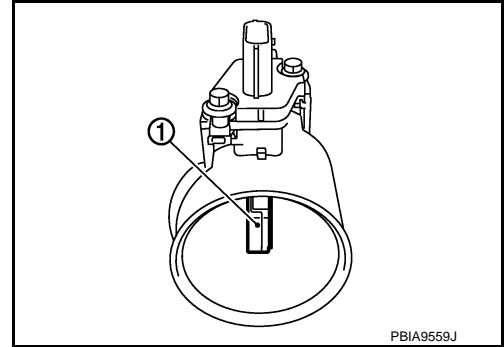
P0127 IAT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486340

The intake air temperature sensor is built-into mass air flow sensor (1). The sensor detects intake air temperature and transmits a signal to the ECM.

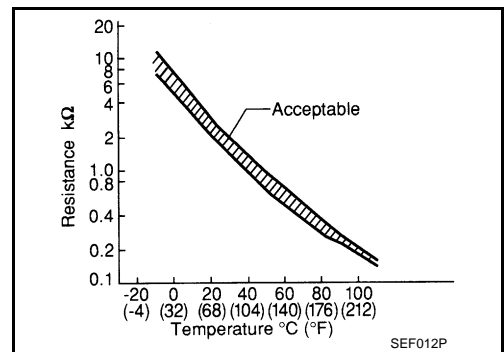
The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rise.



<Reference data>

Intake air temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
25 (77)	3.3	1.800 - 2.200
80 (176)	1.2	0.283 - 0.359

*: These data are reference values and are measured between ECM terminals 44 (Intake air temperature sensor) and 22 (Sensor ground).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486341

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0127	Intake air temperature too high	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signal from engine coolant temperature sensor.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Intake air temperature sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

This test may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Wait until engine coolant temperature is less than 96°C (204.8°F)
 - Turn ignition switch ON.
 - Select "DATA MONITOR" mode with CONSULT.
 - Check the engine coolant temperature.
 - If the engine coolant temperature is not less than 96°C (204.8°F), turn ignition switch OFF and cool down engine.

P0127 IAT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NOTE:

- Perform the following steps before engine coolant temperature is above 96°C (204.8°F).
- Turn ignition switch ON.
 - Select "DATA MONITOR" mode with CONSULT.
 - Start engine.
 - Hold vehicle speed at more than 70 km/h (43 MPH) for 100 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

- Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-244, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486342

1.CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2.CHECK INTAKE AIR TEMPERATURE SENSOR

Refer to [EC-227, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace mass air flow sensor (bank 1) (with intake air temperature sensor). Refer to [EM-28, "Removal and Installation"](#).

3.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486343

1.CHECK INTAKE AIR TEMPERATURE SENSOR

- Turn ignition switch OFF.
- Disconnect mass air flow sensor (bank 1) harness connector.
- Check resistance between mass air flow sensor (bank 1) terminals as follows.

Terminals	Condition	Resistance (kΩ)
1 and 2	Temperature [°C (°F)]	25 (77) 1.800 - 2.200

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace mass air flow sensor (with intake air temperature sensor) (bank 1). Refer to [EM-28, "Removal and Installation"](#).

P0128 THERMOSTAT FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0128 THERMOSTAT FUNCTION

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486344

DTC DETECTION LOGIC

NOTE:

If DTC P0128 is displayed with DTC P0300, P0301, P0302, P0303 or P304, first perform the trouble diagnosis for DTC P0300, P0301, P0302, P0303, P0304. Refer to [EC-322, "DTC Logic \(GT-R certified NISSAN dealer\)"](#). Engine coolant temperature has not risen enough to open the thermostat even though the engine has run long enough.

This is due to a leak in the seal or the thermostat stuck open.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0128	Thermostat function	The engine coolant temperature does not reach to specified temperature even though the engine has run long enough.	<ul style="list-style-type: none">• Thermostat• Leakage from sealing portion of thermostat• Engine coolant temperature sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PRECONDITIONING-II

 With CONSULT

1. Turn ignition switch ON.
2. Check the following conditions:

Ambient temperature	-10°C (14°F) or more
A/C switch	OFF
Blower fan switch	OFF


3. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
4. Check the following conditions:

COOLAN TEMP/S	(-10) - (+51)°C (14 - 124°F)
---------------	------------------------------

Is the condition satisfied?

- YES >> GO TO 3.
NO >> 1. Satisfy the condition.
2. GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-I

 With CONSULT

1. Start engine.
2. Drive the vehicle until the following condition is satisfied.

CAUTION:

Always drive vehicle at safe speed.

- STEP 1

Drive the vehicle under the conditions instructed below until the difference between "COOLAN TEMP/S" and "FUEL T/TMP SE" becomes at least 25°C (45°F).

P0128 THERMOSTAT FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

COOLAN TEMP/S	65°C (149°F) or less
FUEL T/TMP SE	Less than the value calculated by subtracting 25°C (45°F) from "COOLAN TEMP/S".*

*. Example

COOLAN TEMP/S	FUEL T/TMP SE
70°C (158°F)	45°C (113°F) or less
65°C (149°F)	40°C (104°F) or less
60°C (140°F)	35°C (95°F) or less

- STEP 2

Drive the vehicle at 56 km/h (35 MPH) or more with the difference between "COOLAN TEMP/S" and "FUEL T/TMP SE" maintained at 25°C (45°F) or more.

NOTE:

Keep the accelerator pedal as steady as possible during cruising.

- STEP 3

Drive the vehicle at 56 km/h (35 MPH) or more until "COOLAN TEMP/S" increases by 6°C (11°F).

NOTE:

Keep the accelerator pedal as steady as possible during cruising.

Is the condition satisfied?

YES >> GO TO 4.

NO >> GO TO 1.

4.PERFORM DTC CONFIRMATION PROCEDURE-II

 With CONSULT

1. Drive the vehicle until the following condition is satisfied.

COOLAN TEMP/S	65°C (149°F) or more
---------------	----------------------

CAUTION:

Always drive vehicle at safe speed.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-246, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486346

1.CHECK ENGINE COOLANT TEMPERATURE SENSOR

Refer to [EC-246, "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486346

1.CHECK ENGINE COOLANT TEMPERATURE SENSOR

1. Turn ignition switch OFF.

2. Disconnect engine coolant temperature sensor harness connector.

3. Remove engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

P0128 THERMOSTAT FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Check resistance between engine coolant temperature sensor terminals as follows.

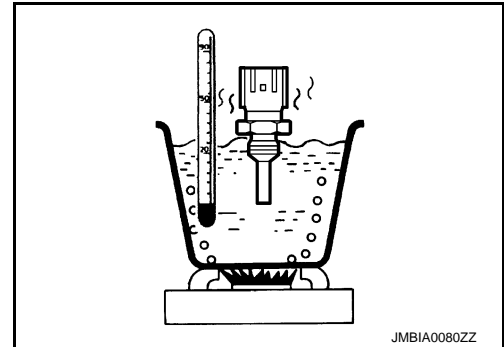
<Reference data>

Terminals	Condition	Resistance (k Ω)	
1 and 2	Temperature [$^{\circ}$ C ($^{\circ}$ F)]	20 (68)	2.1 - 2.5
		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



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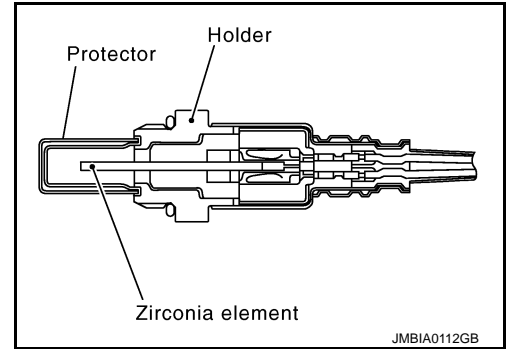
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P0130, P0150 A/F SENSOR 1

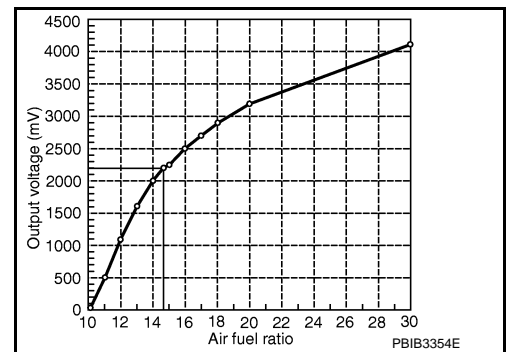
Description (GT-R certified NISSAN dealer)

INFOID:000000011486347

The air fuel ratio (A/F) sensor 1 is a planar one-cell limit current sensor. The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element. The sensor is capable of precise measurement $\lambda = 1$, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range. The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.



Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of about 800°C (1,472°F).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486348

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal fluctuates according to fuel feedback control.

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible Cause
P0130	Air fuel ratio (A/F) sensor 1 (bank 1) circuit	A)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly in the range other than approx. 2.2 V.	<ul style="list-style-type: none"> • Harness or connectors (The A/F sensor 1 circuit is open or shorted.) • A/F sensor 1
		B)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 2.2 V.	
P0150	Air fuel ratio (A/F) sensor 1 (bank 2) circuit	A)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly in the range other than approx. 2.2 V.	
		B)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 2.2 V.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

1. Start engine and warm it up to normal operating temperature.
2. Let it idle for 2 minutes.
3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-250. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO-1 >> With CONSULT: GO TO 3.

NO-2 >> Without CONSULT: GO TO 7.

3. CHECK AIR FUEL RATIO (A/F) SENSOR 1 FUNCTION

1. Start engine and warm it up to normal operating temperature.
2. Select "A/F SEN1 (B1)" or "A/F SEN1 (B2)" in "DATA MONITOR" mode with CONSULT.
3. Check "A/F SEN1 (B1)" or "A/F SEN1 (B2)" indication.

Does the indication fluctuates around 2.2 V?

YES >> GO TO 4.

NO >> Refer to [EC-250. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-I

1. Select "A/F SEN1 (B1) P1276" (for DTC P0130) or "A/F SEN1 (B2) P1286" (for DTC P0150) of "A/F SEN1" in "DTC WORK SUPPORT" mode with CONSULT.
2. Touch "START".
3. When the following conditions are met, "TESTING" will be displayed on the CONSULT screen.

ENG SPEED	1,250 - 2,900 rpm
VHCL SPEED SE	More than 64 km/h (40 MPH)
B/FUEL SCHDL	1.0 - 8.0 msec
Shift lever	A position

If "TESTING" is not displayed after 20 seconds, retry from step 2.

CAUTION:

Always drive vehicle at a safe speed.

Is "TESTING" displayed on CONSULT screen?

YES >> GO TO 5.

NO >> Check A/F sensor 1 function again. GO TO 3.

5. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-II

Release accelerator pedal fully.

NOTE:

Never apply brake during releasing the accelerator pedal.

Which does "TESTING" change to?

COMPLETED>>GO TO 6.

OUT OF CONDITION>>Retry DTC CONFIRMATION PROCEDURE. GO TO 4.

6. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-III

Touch "SELF-DIAG RESULT".

Which is displayed on CONSULT screen?

YES >> INSPECTION END

NO >> Refer to [EC-250. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

7. PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B

Perform component function check. Refer to [EC-250. "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use component function check to check the overall function of the A/F sensor 1 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

P0130, P0150 A/F SENSOR 1

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> INSPECTION END
NO >> Refer to [EC-250, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486349

1. PERFORM COMPONENT FUNCTION CHECK

With GST

1. Start engine and warm it up to normal operating temperature.
2. Drive the vehicle at a speed of 80 km/h (50 MPH) for a few minutes in the suitable gear position.
3. Shift the shift lever to A position, then release the accelerator pedal fully until the vehicle speed decreases to 50 km/h (31 MPH).

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

Never apply brake during releasing the accelerator pedal.

4. Repeat steps 2 to 3 for five times.
5. Stop the vehicle and turn ignition switch OFF.
6. Wait at least 10 seconds.
7. Turn ignition switch ON.
8. Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
9. Repeat steps 2 to 3 for five times.
10. Stop the vehicle and connect GST to the vehicle.
11. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-250, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486350

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect A/F sensor 1 harness connector.
2. Turn ignition switch ON.
3. Check the voltage between A/F sensor 1 harness connector and ground.

DTC	A/F sensor 1			Ground	Voltage
	Bank	Connector	Terminal		
P0130	1	F8	4	Ground	Battery voltage
P0150	2	F25	4		

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- IPDM E/R harness connector E7
- 15A fuse (No. 46)
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

P0130, P0150 A/F SENSOR 1

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0130	1	F8	1	F102	81	Existed
			2		82	
P0150	2	F25	1		85	
			2		86	

4. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

DTC	A/F sensor 1			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0130	1	F8	1	F102	81	Ground	Not existed
			2		82		
P0150	2	F25	1		85		
			2		86		

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK INTERMITTENT INCIDENT

Perform [GI-39. "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning part.

6. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to [EM-50. "Exploded View"](#).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

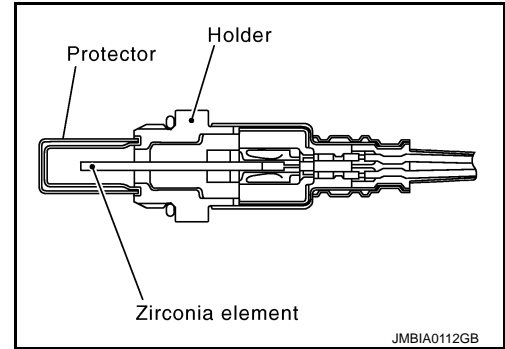
>> INSPECTION END

P0131, P0151 A/F SENSOR 1

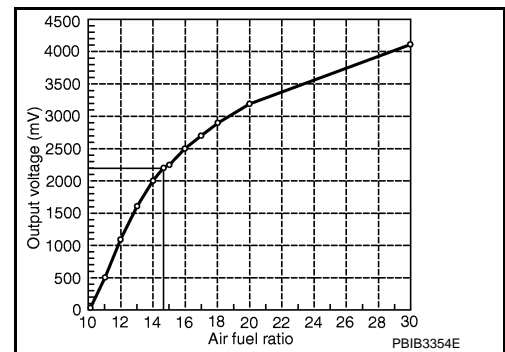
Description (GT-R certified NISSAN dealer)

INFOID:000000011486351

The air fuel ratio (A/F) sensor 1 is a planar one-cell limit current sensor. The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element. The sensor is capable of precise measurement $\lambda = 1$, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range. The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.



Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of about 800°C (1,472°F).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486352

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal is not inordinately low.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P0131	Air fuel ratio (A/F) sensor 1 (bank 1) circuit low voltage	<ul style="list-style-type: none"> The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 0V. 	<ul style="list-style-type: none"> Harness or connectors (The A/F sensor 1 circuit is open or shorted.) A/F sensor 1
P0151	Air fuel ratio (A/F) sensor 1 (bank 2) circuit low voltage		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5V at idle.

>> GO TO 2.

2. CHECK A/F SENSOR FUNCTION

With CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Select "A/F SEN1 (B1)" or "A/F SEN1 (B2)" in "DATA MONITOR" mode with CONSULT.
3. Check "A/F SEN1 (B1)" or "A/F SEN1 (B2)" indication.

P0131, P0151 A/F SENSOR 1

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

With GST

Follow the procedure "With CONSULT" above.

Is the indication constantly approx. 0V?

- YES >> Refer to [EC-253. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
4. Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine.
CAUTION:
Always drive vehicle at a safe speed.
5. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 MPH)
B/FUEL SCHDL	1.5 - 9.0 msec
Shift lever	Suitable position

NOTE:

- Keep the accelerator pedal as steady as possible during the cruising.
- If this procedure is not completed within 1 minute after restarting engine at step 1, return to step 1.

6. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-253. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486353

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect A/F sensor 1 harness connector.
2. Turn ignition switch ON.
3. Check the voltage between A/F sensor 1 harness connector and ground.

DTC	A/F sensor 1			Ground	Voltage
	Bank	Connector	Terminal		
P0131	1	F8	4	Ground	Battery voltage
P0151	2	F25	4		

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- IPDM E/R harness connector E7
- 15A fuse (No. 46)

P0131, P0151 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

4. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0131	1	F8	1	F102	81	Existed
			2		82	
P0151	2	F25	1		85	
			2		86	

4. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

DTC	A/F sensor 1			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0131	1	F8	1	F102	81	Ground	Not existed
			2		82		
P0151	2	F25	1		85		
			2		86		

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK INTERMITTENT INCIDENT

Perform [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning part.

6. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

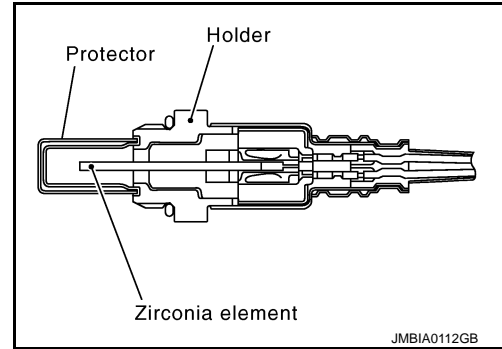
>> INSPECTION END

P0132, P0152 A/F SENSOR 1

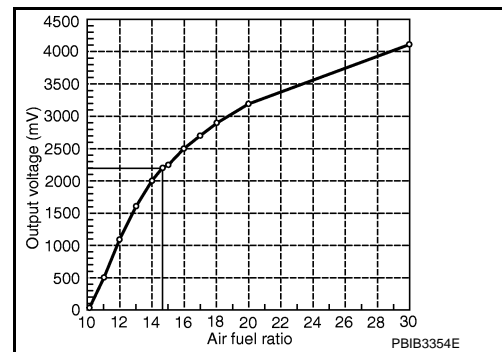
Description (GT-R certified NISSAN dealer)

INFOID:000000011486354

The air fuel ratio (A/F) sensor 1 is a planar one-cell limit current sensor. The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element. The sensor is capable of precise measurement $\lambda = 1$, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range. The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.



Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of about 800°C (1,472°F).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486355

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal is not inordinately high.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P0132	Air fuel ratio (A/F) sensor 1 (bank 1) circuit high voltage	• The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 5 V.	<ul style="list-style-type: none"> • Harness or connectors (The A/F sensor 1 circuit is open or shorted.) • A/F sensor 1
P0152	Air fuel ratio (A/F) sensor 1 (bank 2) circuit high voltage		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2. CHECK A/F SENSOR FUNCTION

1. Start engine and warm it up to normal operating temperature.
2. Select "A/F SEN1 (B1)" or "A/F SEN1 (B2)" in "DATA MONITOR" mode with CONSULT.
3. Check "A/F SEN1 (B1)" or "A/F SEN1 (B2)" indication.

Is the indication constantly approx. 5V?

P0132, P0152 A/F SENSOR 1

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Refer to [EC-256, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
4. Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine.

CAUTION:

Always drive vehicle at a safe speed.

5. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 MPH)
B/FUEL SCHDL	1.5 - 9.0 msec
Shift lever	Suitable position

NOTE:

- Keep the accelerator pedal as steady as possible during the cruising.
- If this procedure is not completed within 1 minute after restarting engine at step 1, return to step 1.

6. Check 1st trip DTC.

Is 1st trip DTC is detected?

- YES >> Refer to [EC-256, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486356

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect A/F sensor 1 harness connector.
2. Turn ignition switch ON.
3. Check the voltage between A/F sensor 1 harness connector and ground.

DTC	A/F sensor 1			Ground	Voltage
	Bank	Connector	Terminal		
P0132	1	F8	4	Ground	Battery voltage
P0152	2	F25	4		

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- IPDM E/R harness connector E7
- 15A fuse (No. 46)
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

P0132, P0152 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

4. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0132	1	F8	1	F102	81	Existed
			2		82	
P0152	2	F25	1		85	
			2		86	

4. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

DTC	A/F sensor 1			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0132	1	F8	1	F102	81	Ground	Not existed
			2		82		
P0152	2	F25	1		85		
			2		86		

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK INTERMITTENT INCIDENT

Perform [GI-39. "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning part.

6. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to [EM-50. "Exploded View"](#).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

P0137, P0157 HO2S2

Description (GT-R certified NISSAN dealer)

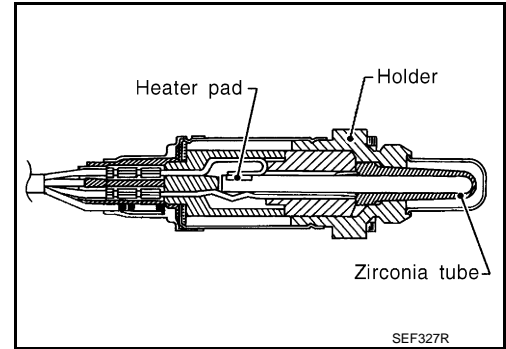
INFOID:000000011486357

The heated oxygen sensor 2, after three way catalyst 1, monitors the oxygen level in the exhaust gas on each bank.

Even if switching characteristics of the air fuel ratio (A/F) sensor 1 are shifted, the air-fuel ratio is controlled to stoichiometric, by the signal from the heated oxygen sensor 2.

This sensor is made of ceramic zirconia. The zirconia generates voltage from approximately 1 V in richer conditions to 0 V in leaner conditions.

Under normal conditions the heated oxygen sensor 2 is not used for engine control operation.

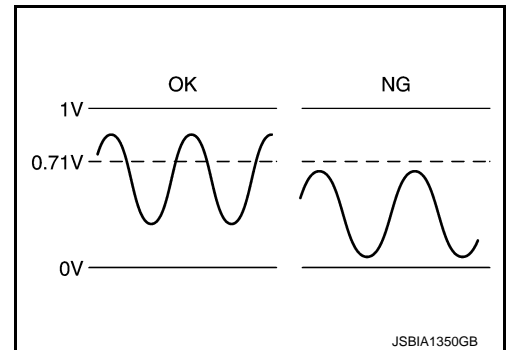


DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486358

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst 1 causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the maximum voltage of the sensor is sufficiently high during various driving conditions such as fuelcut.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0137	Heated oxygen sensor 2 (bank 1) circuit low voltage	The maximum voltage from the sensor does not reach to the specified voltage.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Heated oxygen sensor 2 • Fuel pressure • Fuel injector • Intake air leaks
P0157	Heated oxygen sensor 2 (bank 2) circuit low voltage		

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 5.

2.PRECONDITIONING

TESTING CONDITION:

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30 °C (32 to 86 °F).

>> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

 With CONSULT

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Turn ignition switch OFF and wait at least 10 seconds.
6. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
7. Let engine idle for 1 minute.
8. Check that "COOLAN TEMP/S" indicates more than 70°C (158°F).
If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F).
9. Open engine hood.
10. Select "HO2S2 (B1) P1147" (for DTC P0137) or "HO2S2 (B2) P1167" (for DTC P0157) of "HO2S2" in "DTC WORK SUPPORT" mode with CONSULT.
11. Follow the instruction of CONSULT display.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

12. Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Refer to [EC-260. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

CAN NOT BE DIAGNOSED>>GO TO 4.

4.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
2. Perform DTC confirmation procedure again.

>> GO TO 3.

5.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-259. "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-260. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486359

1.PERFORM COMPONENT FUNCTION CHECK-I

 Without CONSULT

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM Connector	ECM		Condition	Voltage
		+	-		
		Terminal	Terminal		
P0137	F102	73	70	Revsing up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.71 V at least once during this procedure.
P0157		77			

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> INSPECTION END
 NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0137	F102	73	70	Keeping engine at idle for 10 minutes	The voltage should be above 0.71 V at least once during this procedure.
P0157		77			

Is the inspection result normal?

YES >> INSPECTION END
 NO >> GO TO 3.

3.PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0137	F102	73	70	Coasting from 80 km/h (50 MPH) in A position	The voltage should be above 0.71 V at least once during this procedure.
P0157		77			

Is the inspection result normal?

YES >> INSPECTION END
 NO >> Refer to [EC-260, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486360

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.
 NO >> Repair or replace ground connection.

2.CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

1. Clear the mixture ratio self-learning value. Refer to [EC-26, "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 or P0174 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171 or P0174. Refer to [EC-285, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

NO >> GO TO 3.

3.CHECK HO2S2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between HO2S2 harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0137	1	F53	1	F102	70	Existed
P0157	2	F52	1			

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK HO2S2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0137	1	F53	4	F102	73	Existed
P0157	2	F52	4		77	

2. Check the continuity between HO2S2 harness connector or ECM harness connector and ground.

DTC	HO2S2			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0137	1	F53	4	F102	73	Ground	Not existed
P0157	2	F52	4		77		

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK HEATED OXYGEN SENSOR 2

Refer to [EC-261, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486361

1.INSPECTION START

< DTC/CIRCUIT DIAGNOSIS >

Do you have CONSULT?

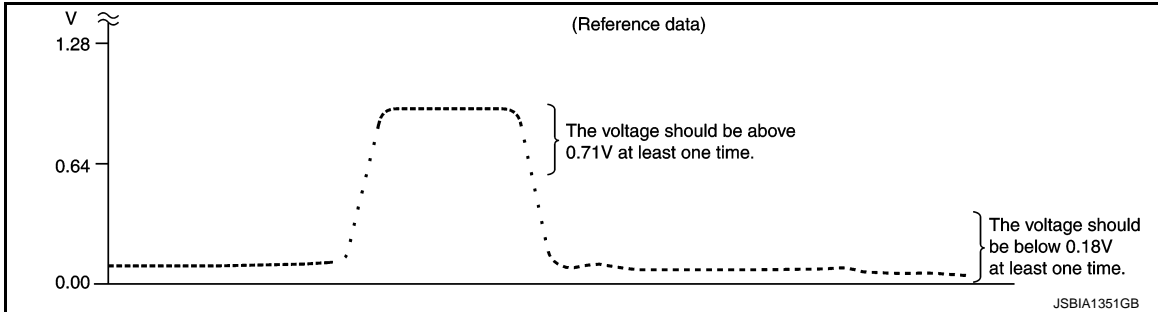
Do you have CONSULT?

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

2.CHECK HEATED OXYGEN SENSOR 2

With CONSULT

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
5. Let engine idle for 1 minute.
6. Select "FUEL INJECTION" in "ACTIVE TEST" mode, and select "HO2S2 (B1)/(B2)" as the monitor item with CONSULT.
7. Check "HO2S2 (B1)/(B2)" at idle speed when adjusting "FUEL INJECTION" to $\pm 25\%$.



"HO2S2 (B1)/(B2)" should be above 0.71 V at least once when the "FUEL INJECTION" is +25%.
"HO2S2 (B1)/(B2)" should be below 0.18 V at least once when the "FUEL INJECTION" is -25%.

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

Without CONSULT

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Check the voltage between ECM harness connector terminals under the following condition.

Connector	ECM		Condition	Voltage
	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> GO TO 4.

4.CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector terminals under the following condition.

ECM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Keeping engine at idle for 10 minutes	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

A

EC

C

Is the inspection result normal?

D

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

5. CHECK HEATED OXYGEN SENSOR 2-III

E

Check the voltage between ECM harness connector terminals under the following condition.

ECM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Coasting from 80 km/h (50 MPH) in A position	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

F

G

H

I

Is the inspection result normal?

J

YES >> INSPECTION END
NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50, "Exploded View"](#).

K

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

L

M

>> INSPECTION END

N

O

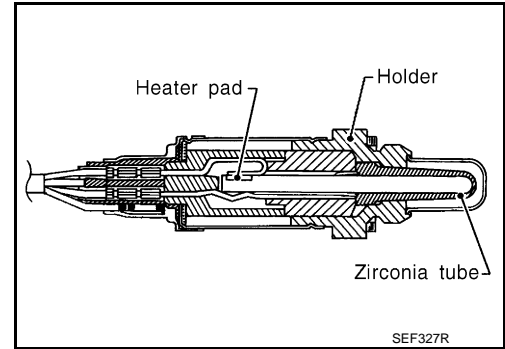
P

P0138, P0158 HO2S2

Description (GT-R certified NISSAN dealer)

INFOID:000000011486362

The heated oxygen sensor 2, after three way catalyst 1, monitors the oxygen level in the exhaust gas on each bank. Even if switching characteristics of the air fuel ratio (A/F) sensor 1 are shifted, the air-fuel ratio is controlled to stoichiometric, by the signal from the heated oxygen sensor 2. This sensor is made of ceramic zirconia. The zirconia generates voltage from approximately 1 V in richer conditions to 0 V in leaner conditions. Under normal conditions the heated oxygen sensor 2 is not used for engine control operation.



DTC Logic (GT-R certified NISSAN dealer)

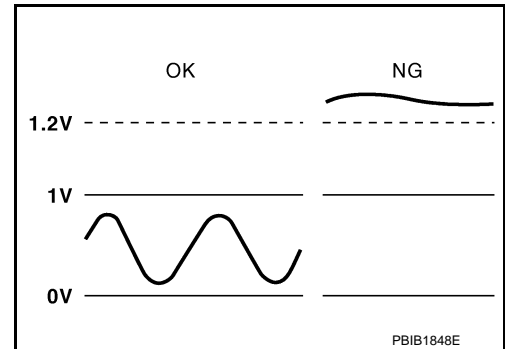
INFOID:000000011486363

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst 1 causes the longer switching time.

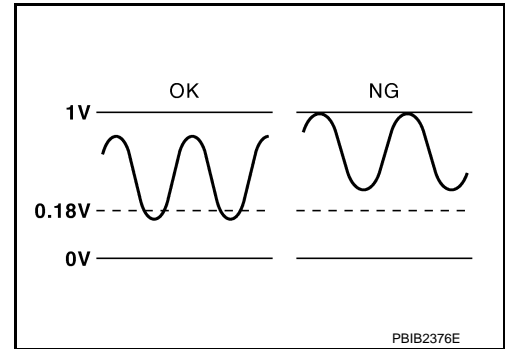
MALFUNCTION A

To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the voltage is unusually high during various driving conditions such as fuelcut.



MALFUNCTION B

To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the minimum voltage of sensor is sufficiently low during various driving conditions such as fuelcut.



DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0138	Heated oxygen sensor 2 (bank 1) circuit high voltage	A)	An excessively high voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Heated oxygen sensor 2
		B)	The minimum voltage from the sensor does not reach to the specified voltage.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Heated oxygen sensor 2 • Fuel pressure • Fuel injector

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0158	Heated oxygen sensor 2 (bank 2) circuit high voltage	A)	An excessively high voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Heated oxygen sensor 2
		B)	The minimum voltage from the sensor does not reach to the specified voltage.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Heated oxygen sensor 2 • Fuel pressure • Fuel injector

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
6. Let engine idle for 2 minutes.
7. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-267, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO-1 >> With CONSULT: GO TO 3.
- NO-2 >> Without CONSULT: GO TO 5.

3. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B

NOTE:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30 °C (32 to 86 °F).

1. Select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Turn ignition switch OFF and wait at least 10 seconds.
6. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
7. Let engine idle for 1 minute.
8. Check that "COOLAN TEMP/S" indicates more than 70°C (158°F).
If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F).
9. Open engine hood.
10. Select "HO2S2 (B1) P1146" (for DTC P0138) or "HO2S2 (B2) P1166" (for DTC P0158) of "HO2S2" in "DTC WORK SUPPORT" mode with CONSULT.
11. Follow the instruction of CONSULT display.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

12. Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

- OK >> INSPECTION END
- NG >> Refer to [EC-267, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- CON NOT BE DIAGNOSED>>GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B AGAIN

1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).

< DTC/CIRCUIT DIAGNOSIS >

2. Perform DTC confirmation procedure again.

>> GO TO 3.

5. PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B

Perform component function check. Refer to [EC-266, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-267, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:0000000011486364

1. PERFORM COMPONENT FUNCTION CHECK-I

⊗ Without CONSULT

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0138 P0158	F102	73 77	70	Reving up to 4,000 rpm under no load at least 10 times	The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0138 P0158	F102	73 77	70	Keeping engine at idle for 10 minutes	The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3. PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0138 P0158	F102	73 77	70	Coasting from 80 km/h (50 MPH) in A position	The voltage should be below 0.18 V at least once during this procedure.

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-267, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486365

1.INSPECTION START

Confirm the detected malfunction (A or B). Refer to [EC-264, "DTC Logic \(GT-R certified NISSAN dealer\)".](#)

Which malfunction is detected?

A >> GO TO 2

B >> GO TO 9.

2.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace ground connection.

3.CHECK HO2S2 CONNECTOR FOR WATER

1. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.

2. Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connectors.

4.CHECK HO2S2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.

2. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0138	1	F53	1	F102	70	Existed
P0158	2	F52	1			

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK HO2S2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0138	1	F53	4	F102	73	Existed
P0158	2	F52	4		77	

2. Check the continuity between HO2S2 harness connector or ECM harness connector and ground.

DTC	HO2S2			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0138	1	F53	4	F102	73	Ground	Not existed
P0158	2	F52	4		77		

3. Also check harness for short to power.

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK HEATED OXYGEN SENSOR 2

Refer to [EC-269. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> GO TO 7.

7.REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50. "Exploded View".](#)

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

8.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

9.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> Repair or replace ground connection.

10.CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

1. Clear the mixture ratio self-learning value. Refer to [EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0172 or P0175 detected? Is it difficult to start engine?

- YES >> Perform trouble diagnosis for DTC P0172, P0175. Refer to [EC-289. "DTC Logic \(GT-R certified NISSAN dealer\)".](#)
- NO >> GO TO 11.

11.CHECK HO2S2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect heated oxygen sensor 2 harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0138	1	F53	1	F102	70	Existed
P0158	2	F52	1			

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 12.
- NO >> Repair open circuit, short to ground or short to power in harness or connectors.

< DTC/CIRCUIT DIAGNOSIS >

12.CHECK HO2S2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0138	1	F53	4	F102	73	Existed
P0158	2	F52	4		77	

2. Check the continuity between HO2S2 harness connector or ECM harness connector and ground.

DTC	HO2S2			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0138	1	F53	4	F102	73	Ground	Not existed
P0158	2	F52	4		77		

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

13.CHECK HEATED OXYGEN SENSOR 2

Refer to [EC-269, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 15.

NO >> GO TO 14.

14.REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

15.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486366

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

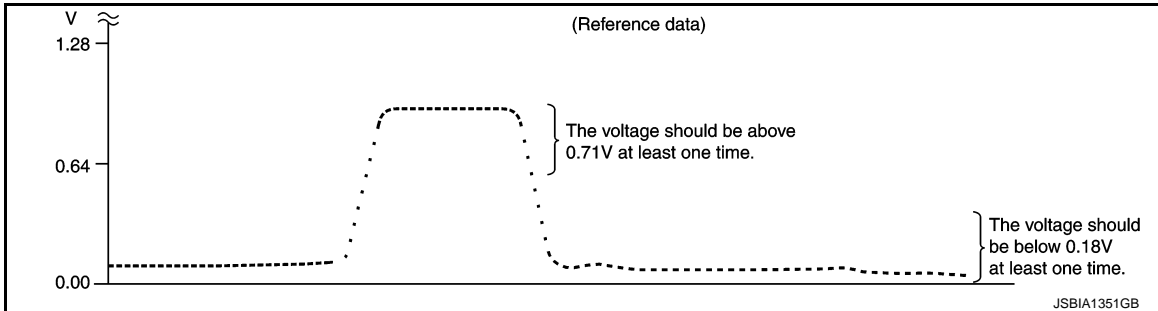
2.CHECK HEATED OXYGEN SENSOR 2

Ⓜ With CONSULT

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.

< DTC/CIRCUIT DIAGNOSIS >

4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
5. Let engine idle for 1 minute.
6. Select "FUEL INJECTION" in "ACTIVE TEST" mode, and select "HO2S2 (B1)/(B2)" as the monitor item with CONSULT.
7. Check "HO2S2 (B1)/(B2)" at idle speed when adjusting "FUEL INJECTION" to $\pm 25\%$.



"HO2S2 (B1)/(B2)" should be above 0.71 V at least once when the "FUEL INJECTION" is +25%.
 "HO2S2 (B1)/(B2)" should be below 0.18 V at least once when the "FUEL INJECTION" is -25%.

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

⊗ Without CONSULT

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Check the voltage between ECM harness connector terminals under the following condition.

Connector	ECM		Condition	Voltage
	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> GO TO 4.

4.CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector terminals under the following condition.

Connector	ECM		Condition	Voltage
	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Keeping engine at idle for 10 minutes	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

- YES >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 5.

5. CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector terminals under the following condition.

ECM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Coasting from 80 km/h (50 MPH) in A position	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

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P0139, P0159 HO2S2

Description (GT-R certified NISSAN dealer)

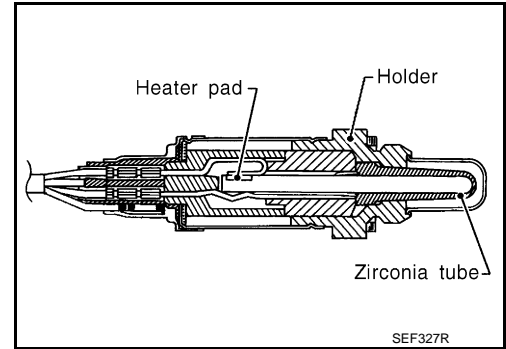
INFOID:000000011486367

The heated oxygen sensor 2, after three way catalyst 1, monitors the oxygen level in the exhaust gas on each bank.

Even if switching characteristics of the air fuel ratio (A/F) sensor 1 are shifted, the air-fuel ratio is controlled to stoichiometric, by the signal from the heated oxygen sensor 2.

This sensor is made of ceramic zirconia. The zirconia generates voltage from approximately 1 V in richer conditions to 0 V in leaner conditions.

Under normal conditions the heated oxygen sensor 2 is not used for engine control operation.

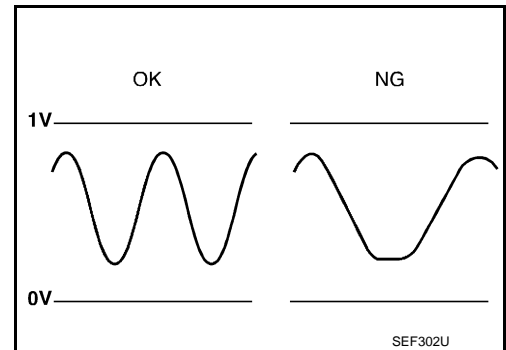


DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486368

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst 1 causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the switching response of the sensor's voltage is faster than specified during various driving conditions such as fuel cut.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0139	Heated oxygen sensor 2 (bank 1) circuit slow response	The switching time between rich and lean of a heated oxygen sensor 2 signal delays more than the specified time computed by ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Heated oxygen sensor 2 • Fuel system • EVAP system • Intake air system
P0159	Heated oxygen sensor 2 (bank 2) circuit slow response		

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 7.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30 °C (32 to 86 °F).

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select "DATA MONITOR" mode of "ENGINE" using CONSULT
3. Start engine and warm it up to the normal operating temperature.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Turn ignition switch ON.
6. Turn ignition switch OFF and wait at least 10 seconds.
7. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
8. Let engine idle for 1 minute.
9. Make sure that "COOLANT TEMP/S" indicates more than 70 °C (158 °F).
10. Drive the vehicle in a proper gear at 60 km/h (38 MPH) and maintain the speed.

CAUTION:

Always drive vehicle at a safe speed.

11. Release the accelerator pedal fully at least 5 seconds.

CAUTION:

- **Enable the engine brake.**
- **Always drive carefully.**
- **Never apply brake when releasing the accelerator pedal.**

12. Repeat step 9 and 10 at least 8 times.
13. Check the following item of "DATA MONITOR".

DTC	Data monitor item	Status
P0139	HOS2 DIAG1 (B1)	CMPLT
	HOS2 DIAG2 (B1)	
P0159	HOS2 DIAG1 (B2)	
	HOS2 DIAG12(B2)	

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 6.

NO-1: "CMPLT" is not displayed on DIAG 1>>Perform DTC confirmation procedure again.

NO-2: "CMPLT" is not displayed on DIAG 2>>GO TO 4.

4. PERFORM DTC WORK SUPPORT

With CONSULT

1. Open engine hood.
2. Select "HO2S2 (B1) P0139" or "HO2S2 (B2) P0159" of "HO2S2" in "DTC WORK SUPPORT" mode of ENGINE using CONSULT.
3. Start engine and follow the instruction of CONSULT display.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 6.

NG >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
2. Perform DTC confirmation procedure again.

>> GO TO 3.

6. PERFORM SELF-DIAGNOSIS

With CONSULT

Perform ECM self-diagnosis.

Is DTC "P0139" or "P0159" detected?

YES >> Proceed to [EC-275, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

7. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-274. "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to [EC-275. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486369

1. PERFORM COMPONENT FUNCTION CHECK-I

⊗ Without CONSULT

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0139 P0159	F102	73 77	70	Revving up to 4,000 rpm under no load at least 10 times	A change of voltage should be more than 0.96 V for 1 second during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0139 P0159	F102	73 77	70	Keeping engine at idle for 10 minutes	A change of voltage should be more than 0.96 V for 1 second during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3. PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector terminals under the following condition.

DTC	ECM			Condition	Voltage
	Connector	+	-		
		Terminal	Terminal		
P0139 P0159	F102	73 77	70	Coasting from 80 km/h (50 MPH) in A position	A change of voltage should be more than 0.96 V for 1 second during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-275. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486370

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace ground connection.

2. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

1. Clear the mixture ratio self-learning value. Refer to [EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171, P0172, P0174 or P0175 detected? Is it difficult to start engine?

- YES >> Perform trouble diagnosis for DTC P0171, P0174 or P0172, P0175. Refer to [EC-285. "DTC Logic \(GT-R certified NISSAN dealer\)"](#) or [EC-289. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
 NO >> GO TO 3.

3. CHECK HO2S2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect heated oxygen sensor 2 (HO2S2)harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0139	1	F53	1	F102	70	Existed
P0159	2	F52	1			

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK HO2S2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

DTC	HO2S2			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0139	1	F53	4	F102	73	Existed
P0159	2	F52	4		77	

2. Check the continuity between HO2S2 harness connector or ECM harness connector and ground.

DTC	HO2S2			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0139	1	F53	4	F102	73	Ground	Not existed
P0159	2	F52	4		77		

3. Also check harness for short to power.

Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK HEATED OXYGEN SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

Refer to [EC-276. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50. "Exploded View".](#)

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:0000000011486371

1.INSPECTION START

Do you have CONSULT?

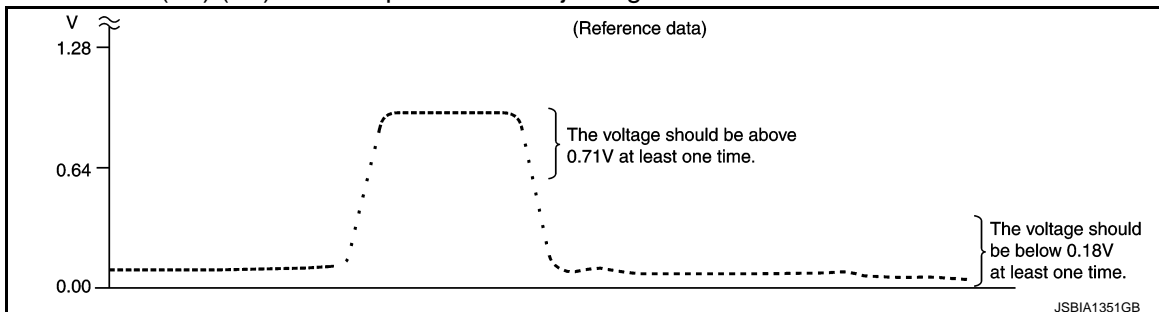
Do you have CONSULT?

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

2.CHECK HEATED OXYGEN SENSOR 2

ⓈWith CONSULT

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
5. Let engine idle for 1 minute.
6. Select "FUEL INJECTION" in "ACTIVE TEST" mode, and select "HO2S2 (B1)/(B2)" as the monitor item with CONSULT.
7. Check "HO2S2 (B1)/(B2)" at idle speed when adjusting "FUEL INJECTION" to $\pm 25\%$.



"HO2S2 (B1)/(B2)" should be above 0.71 V at least once when the "FUEL INJECTION" is +25%.
 "HO2S2 (B1)/(B2)" should be below 0.18 V at least once when the "FUEL INJECTION" is -25%.

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

ⓧWithout CONSULT

1. Start engine and warm it up to the normal operating temperature.

< DTC/CIRCUIT DIAGNOSIS >

2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Check the voltage between ECM harness connector terminals under the following condition.

ECM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 4.

4.CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector terminals under the following condition.

ECM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Keeping engine at idle for 10 minutes	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

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

5.CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector terminals under the following condition.

ECM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
F102	73 [HO2S2 (bank 1)]	70	Coasting from 80 km/h (50 MPH) in A position	The voltage should be above 0.71 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.
	77 [HO2S2 (bank 2)]			

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace malfunctioning heated oxygen sensor 2. Refer to [EM-50. "Exploded View"](#).

CAUTION:

- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.

P0139, P0159 HO2S2

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

- Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

>> INSPECTION END

P014C, P014D, P014E, P014F, P015A, P015B, P015C, P015D A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P014C, P014D, P014E, P014F, P015A, P015B, P015C, P015D A/F SENSOR 1

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486372

A

EC

DTC DETECTION LOGIC

To judge malfunctions, this diagnosis measures response time of the A/F signal computed by ECM from the A/F sensor 1 signal. The time is compensated by engine operating (speed and load), fuel feedback control constant, and the A/F sensor 1 temperature index. Judgment is based on whether the compensated time (the A/F signal cycling time index) is inordinately long or not.

C

D

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P014C	Air fuel ratio (A/F) sensor 1 (bank 1) circuit slow response	• The response time of a A/F sensor 1 signal delays more than the specified time computed by ECM.	• Harness or connectors (The A/F sensor 1 circuit is open or shorted.) • A/F sensor 1
P014D			
P015A	Air fuel ratio (A/F) sensor 1 (bank 1) circuit delayed response		
P015B			
P014E	Air fuel ratio (A/F) sensor 1 (bank 2) circuit slow response		
P014F			
P015C	Air fuel ratio (A/F) sensor 1 (bank 2) circuit delayed response		
P015D			

E

F

G

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

H

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

I

J

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

Do you have CONSULT?

K

- YES >> GO TO 2.
NO >> GO TO 6.

2. PERFORM DTC CONFIRMATION PROCEDURE-1

L

With CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
6. Let engine idle for 1 minute.
7. Increase the engine speed up to about 3,600 rpm and keep it for 10 seconds.
8. Fully release accelerator pedal and then let engine idle for about 1 minute.
9. Check the items status of "DATA MONITOR" as follows.

M

N

O

NOTE:

If "PRSENT" changed to "ABSNT", refer to [EC-250, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

P

DTC	Data monitor item	Status
<ul style="list-style-type: none"> • P014C • P014D • P015A • P015B 	A/F SEN1 DIAG3 (B1)	PRSNT
<ul style="list-style-type: none"> • P014E • P014F • P015C • P015D 	A/F SEN1 DIAG3 (B2)	

Is “PRSNT” displayed on CONSULT screen?

- YES >> GO TO 4.
- NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-2

Ⓜ With CONSULT

Perform DTC confirmation procedure-1 again.

Is “PRSNT” displayed on CONSULT screen?

- YES >> GO TO 4.
- NO >> Refer to [EC-250, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

4.PERFORM DTC CONFIRMATION PROCEDURE-2

Ⓜ With CONSULT

1. Wait for about 20 seconds at idle.
2. Check the items status of “DATA MONITOR” as follows.

NOTE:

If “CMPLT” changed to “INCMP”, refer to [EC-250, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

DTC	Data monitor item	Status
<ul style="list-style-type: none"> • P014C • P014D • P015A • P015B 	A/F SEN1 DIAG1 (B1)	CMPLT
<ul style="list-style-type: none"> • P014E • P014F • P015C • P015D 	A/F SEN1 DIAG2 (B1)	
<ul style="list-style-type: none"> • P014C • P014D • P015A • P015B 	A/F SEN1 DIAG1 (B2)	
<ul style="list-style-type: none"> • P014E • P014F • P015C • P015D 	A/F SEN1 DIAG2 (B2)	

Is “CMPLT” displayed on CONSULT screen?

- YES >> GO TO 5.
- NO >> Refer to [EC-250, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

5.PERFORM SELF-DIAGNOSIS

Ⓜ With CONSULT

Check the “SELF-DIAG RESULT”.

Is any DTC detected?

- YES >> Proceed to [EC-281, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

6.CHECK AIR-FUEL RATIO SELF-LEARNING VALUE

Ⓜ With GST

1. Start engine and warm it up to normal operating temperature.
2. Select Service \$01 with GST.
3. Calculate the total value of “Short term fuel trim” and “Long term fuel trim” indications.

Is the total percentage within $\pm 15\%$?

- YES >> GO TO 8.
- NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Intake air leaks
- Exhaust gas leaks
- Incorrect fuel pressure
- Lack of fuel
- Fuel injector
- Incorrect PCV hose connection
- PCV valve
- Mass air flow sensor

>> Repair or replace malfunctioning part.

8. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
5. Let engine idle for 1 minute.
6. Increase the engine speed up to about 3,600 rpm and keep it for 10 seconds.
7. Fully release accelerator pedal and then let engine idle for about 1 minute.
8. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-281. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486373

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace ground connection.

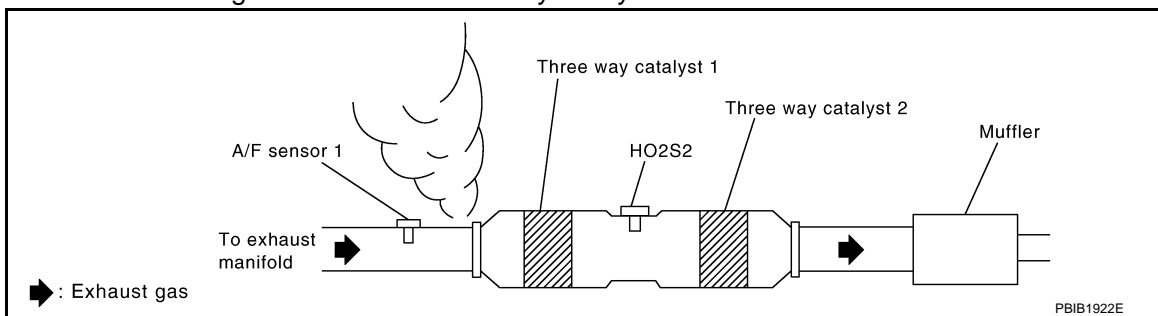
2. RETIGHTEN A/F SENSOR 1

Loosen and retighten the A/F sensor 1. Refer to [EM-50. "Exploded View".](#)

>> GO TO 3.

3. CHECK EXHAUST GAS LEAK

1. Start engine and run it at idle.
2. Listen for an exhaust gas leak before three way catalyst 1.



Is exhaust gas leak detected?

- YES >> Repair or replace.
 NO >> GO TO 4.

P014C, P014D, P014E, P014F, P015A, P015B, P015C, P015D A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

4. CHECK FOR INTAKE AIR LEAK

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

Is intake air leak detected?

YES >> Repair or replace.

NO >> GO TO 5.

5. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

1. Clear the mixture ratio self-learning value. Refer to [EC-26, "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171, P0172, P0174 or P0175 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171, P0174 or P0172, P0175. Refer to [EC-285, "DTC Logic \(GT-R certified NISSAN dealer\)"](#) or [EC-289, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

NO >> GO TO 6.

6. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect A/F sensor 1 harness connector.

2. Turn ignition switch ON.

3. Check the voltage between A/F sensor 1 harness connector and ground.

DTC	A/F sensor 1			Ground	Voltage
	Bank	Connector	Terminal		
<ul style="list-style-type: none">• P014C• P014D• P015A• P015B	1	F8	4	Ground	Battery voltage
<ul style="list-style-type: none">• P014E• P014F• P015C• P015D	2	F25	4		

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- IPDM E/R harness connector E7
- 15 A fuse (No. 46)
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

8. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.

2. Disconnect ECM harness connector.

3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
<ul style="list-style-type: none"> • P014C • P014D • P015A • P015B 	1	F8	1	F102	81	Existed
			2		82	
<ul style="list-style-type: none"> • P014E • P014F • P015C • P015D 	2	F25	1		85	
			2		86	

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

DTC	A/F sensor 1			Ground	Continuity
	Bank	Connector	Terminal		
<ul style="list-style-type: none"> • P014C • P014D • P015A • P015B 	1	F8	1	Ground	Not existed
			2		
<ul style="list-style-type: none"> • P014E • P014F • P015C • P015D 	2	F25	1		
			2		

DTC	ECM			Ground	Continuity
	Bank	Connector	Terminal		
<ul style="list-style-type: none"> • P014C • P014D • P015A • P015B 	1	F102	81	Ground	Not existed
			82		
<ul style="list-style-type: none"> • P014E • P014F • P015C • P015D 	2		85		
			86		

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

9. CHECK AIR FUEL RATIO (A/F) SENSOR 1 HEATER

Refer to [EC-202, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 13.

10. CHECK MASS AIR FLOW SENSOR

Check both mass air flow sensor (bank 1 and bank 2).

Refer to [EC-216, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace malfunctioning mass air flow sensor. Refer to [EM-28, "Exploded View"](#).

11. CHECK PCV VALVE

Refer to [EC-559, "Component Inspection"](#).

Is the inspection result normal?

A
EC
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 P

P014C, P014D, P014E, P014F, P015A, P015B, P015C, P015D A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

YES >> GO TO 12.

NO >> Repair or replace PCV valve. Refer to [EM-47, "Exploded View"](#).

12. CHECK INTERMITTENT INCIDENT

Perform [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace.

13. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

P0171, P0174 FUEL INJECTION SYSTEM FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0171, P0174 FUEL INJECTION SYSTEM FUNCTION

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486374

DTC DETECTION LOGIC

With the Air/Fuel Mixture Ratio Self-Learning Control, the actual mixture ratio can be brought closely to the theoretical mixture ratio based on the mixture ratio feedback signal from the A/F sensor 1. The ECM calculates the necessary compensation to correct the offset between the actual and theoretical ratios.

In case the amount of the compensation value is extremely large (the actual mixture ratio is too lean), the ECM judges the condition as the fuel injection system malfunction and illuminates the MIL (2 trip detection logic).

Sensor	Input signal to ECM	ECM function	Actuator
A/F sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)	Fuel injection control	Fuel injector

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0171	Fuel injection system too lean (bank 1)	• Fuel injection system does not operate properly. • The amount of mixture ratio compensation is too large. (The mixture ratio is too lean.)	• Intake air leaks • A/F sensor 1 • Fuel injector • Exhaust gas leaks • Incorrect fuel pressure • Lack of fuel • Mass air flow sensor • Incorrect PCV hose connection
P0174	Fuel injection system too lean (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

1. Clear the mixture ratio self-learning value. Refer to [EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
2. Start engine.

Is it difficult to start engine?

YES >> GO TO 3.

NO >> GO TO 4.

3. RESTART ENGINE

If it is difficult to start engine, the fuel injection system has a malfunction, too.

Crank engine while depressing accelerator pedal.

NOTE:

When depressing accelerator pedal three fourths (3/4) or more, the control system does not start the engine. Do not depress accelerator pedal too much.

Does engine start?

YES >> Refer to [EC-286. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> Check exhaust and intake air leak visually.

4. PERFORM DTC CONFIRMATION PROCEDURE-II

1. Keep engine idle for at least 5 minutes.
2. Check 1st trip DTC.

P0171, P0174 FUEL INJECTION SYSTEM FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is 1st trip DTC detected?

- YES >> Refer to [EC-286, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> GO TO 5.

5.PERFORM DTC CONFIRMATION PROCEDURE-III

- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine.
- Maintain the following conditions for at least 10 consecutive minutes.
Hold the accelerator pedal as steady as possible.

VHCL SPEED SE	50 - 120 km/h (31 - 75 MPH)
---------------	-----------------------------

CAUTION:

Always drive vehicle at safe speed.

- Check 1st trip DTC.

Is 1st trip DTC detected?

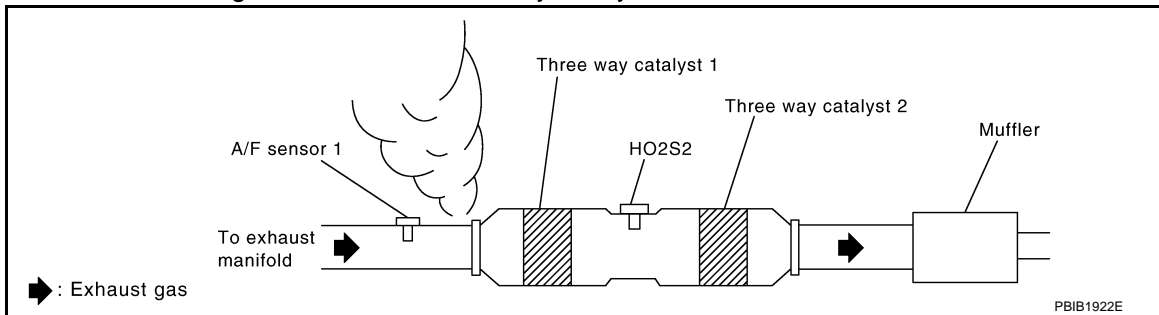
- YES >> Refer to [EC-286, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486375

1.CHECK EXHAUST GAS LEAK

- Start engine and run it at idle.
- Listen for an exhaust gas leak before three way catalyst 1.



Is exhaust gas leak detected?

- YES >> Repair or replace malfunctioning part.
 NO >> GO TO 2.

2.CHECK FOR INTAKE AIR LEAK

- Listen for an intake air leak after the mass air flow sensor.
- Check PCV hose connection.

Is intake air leak detected?

- YES >> Repair or replace malfunctioning part.
 NO >> GO TO 3.

3.CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect corresponding A/F sensor 1 harness connector.
- Disconnect ECM harness connector.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0171	1	F8	1	F102	81	Existed
			2		82	
P0174	2	F25	1		85	
			2		86	

P0171, P0174 FUEL INJECTION SYSTEM FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

5. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

DTC	A/F sensor 1			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0171	1	F8	1	F102	81	Ground	Not existed
			2		82		
P0174	2	F25	1		85		
			2		86		

6. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK FUEL PRESSURE

Check fuel pressure. Refer to [EC-637. "Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging.

Is the inspection result normal?

YES >> Replace "fuel filter and fuel pump assembly". Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

NO >> Repair or replace malfunctioning part.

6.CHECK MASS AIR FLOW SENSOR

With CONSULT

1. Install all removed parts.
2. Check "MASS AIR FLOW" in "DATA MONITOR" mode with CONSULT.
For specification, refer to [EC-640. "Mass Air Flow Sensor".](#)

With GST

1. Install all removed parts.
2. Check mass air flow sensor signal in Service \$01 with GST.
For specification, refer to [EC-640. "Mass Air Flow Sensor".](#)

Is the measurement value within the specification?

YES >> GO TO 7.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or grounds. Refer to [EC-220. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

7.CHECK FUNCTION OF FUEL INJECTOR

With CONSULT

1. Start engine.
2. Perform "POWER BALANCE" in "ACTIVE TEST" mode with CONSULT.
3. Check that each circuit produces a momentary engine speed drop.

Without CONSULT

1. Start engine and let it idle.

P0171, P0174 FUEL INJECTION SYSTEM FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

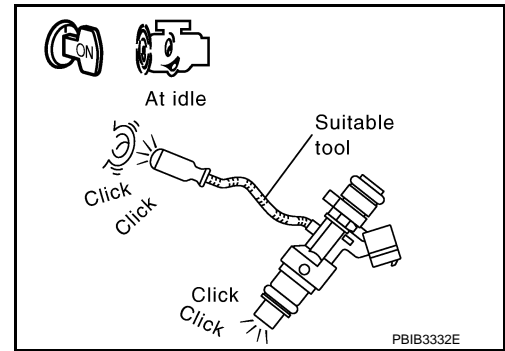
2. Listen to each fuel injector operating sound.

Clicking sound should be heard.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Perform trouble diagnosis for FUEL INJECTOR, refer to [EC-538. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)



8. CHECK FUEL INJECTOR

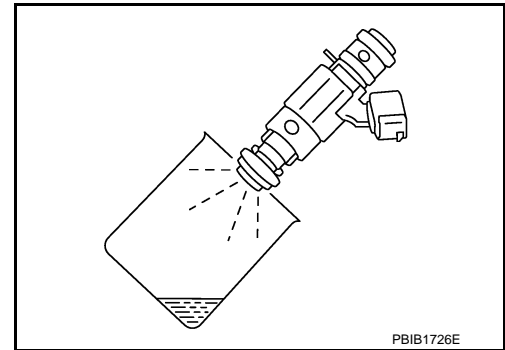
1. Turn ignition switch OFF.
2. Confirm that the engine is cooled down and there are no fire hazards near the vehicle.
3. Disconnect all fuel injector harness connectors.
4. Remove fuel tube assembly. Refer to [EM-42. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#) Keep fuel hose and all fuel injectors connected to fuel tube.
5. For DTC P0171, reconnect fuel injector harness connectors on bank 1.
For DTC P0174, reconnect fuel injector harness connectors on bank 2.
6. Disconnect all ignition coil harness connectors.
7. Prepare pans or saucers under each fuel injector.
8. Crank engine for about 3 seconds.
For DTC P0171, check that fuel sprays out from fuel injectors on bank 1.
For DTC P0174, check that fuel sprays out from fuel injectors on bank 2.

Fuel should be sprayed evenly for each fuel injector.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace fuel injectors from which fuel does not spray out. Refer to [EM-42. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#) Always replace O-ring with new ones.



9. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

P0172, P0175 FUEL INJECTION SYSTEM FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0172, P0175 FUEL INJECTION SYSTEM FUNCTION

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486376

DTC DETECTION LOGIC

With the Air/Fuel Mixture Ratio Self-Learning Control, the actual mixture ratio can be brought closely to the theoretical mixture ratio based on the mixture ratio feedback signal from A/F sensor 1. The ECM calculates the necessary compensation to correct the offset between the actual and the theoretical ratios.

In case the amount of the compensation value is extremely large (the actual mixture ratio is too rich), the ECM judges the condition as the fuel injection system malfunction and illuminates the MIL (2 trip detection logic).

Sensor	Input signal to ECM	ECM function	Actuator
A/F sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)	Fuel injection control	Fuel injector

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0172	Fuel injection system too rich (bank 1)	• Fuel injection system does not operate properly. • The amount of mixture ratio compensation is too large. (The mixture ratio is too rich.)	• A/F sensor 1 • Fuel injector • Exhaust gas leaks • Incorrect fuel pressure • Mass air flow sensor
P0175	Fuel injection system too rich (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

1. Clear the mixture ratio self-learning value. Refer to [EC-26, "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
2. Start engine.

Is it difficult to start engine?

- YES >> GO TO 3.
NO >> GO TO 4.

3. RESTART ENGINE

If it is difficult to start engine, the fuel injection system has a malfunction, too.
Crank engine while depressing accelerator pedal.

NOTE:

When depressing accelerator pedal three fourths (3/4) or more, the control system does not start the engine. Do not depress accelerator pedal too much.

Does engine start?

- YES >> Refer to [EC-290, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> Remove spark plugs and check for fouling, etc.

4. PERFORM DTC CONFIRMATION PROCEDURE-II

1. Keep engine idle for at least 5 minutes.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-290, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 5.

P0172, P0175 FUEL INJECTION SYSTEM FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

5. PERFORM DTC CONFIRMATION PROCEDURE-III

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Start engine.
3. Maintain the following conditions for at least 10 consecutive minutes.
Hold the accelerator pedal as steady as possible.

VHCL SPEED SE	50 - 120 km/h (31 - 75 MPH)
---------------	-----------------------------

CAUTION:

Always drive vehicle at safe speed.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

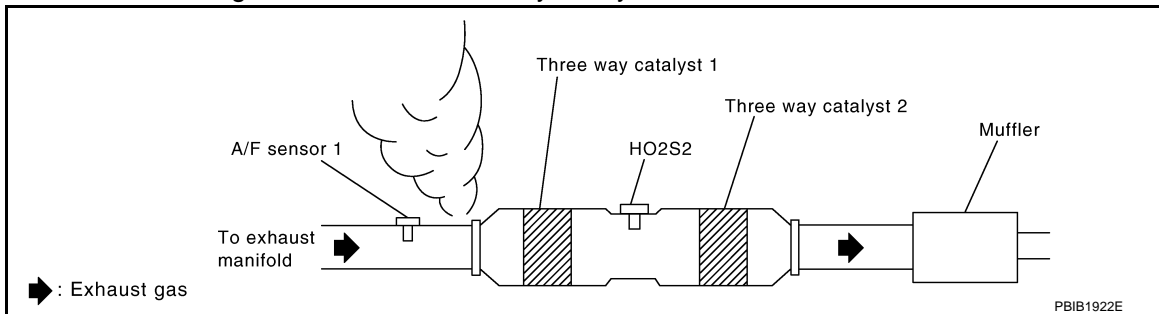
- YES >> Refer to [EC-290, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486377

1. CHECK EXHAUST GAS LEAK

1. Start engine and run it at idle.
2. Listen for an exhaust gas leak before three way catalyst 1.



Is exhaust gas leak detected?

- YES >> Repair or replace malfunctioning part.
NO >> GO TO 2.

2. CHECK FOR INTAKE AIR LEAK

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

Is intake air leak detected?

- YES >> Repair or replace malfunctioning part.
NO >> GO TO 3.

3. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect corresponding A/F sensor 1 harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0172	1	F8	1	F102	81	Existed
			2		82	
P0175	2	F25	1		85	
			2		86	

5. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

P0172, P0175 FUEL INJECTION SYSTEM FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

DTC	A/F sensor 1			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P0172	1	F8	1	F102	81	Ground	Not existed
			2		82		
P0175	2	F25	1		85		
			2		86		

6. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK FUEL PRESSURE

Check fuel pressure. Refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace "fuel filter and fuel pump assembly".

5.CHECK MASS AIR FLOW SENSOR

 **With CONSULT**

1. Install all removed parts.
2. Check "MASS AIR FLOW" in "DATA MONITOR" mode with CONSULT.
For specification, refer to [EC-640, "Mass Air Flow Sensor".](#)

 **With GST**


1. Install all removed parts.
2. Check mass air flow sensor signal in "Service \$01" with GST.
For specification, refer to [EC-640, "Mass Air Flow Sensor".](#)

Is the measurement value within the specification?

YES >> GO TO 6.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or grounds. Refer to [EC-220, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

6.CHECK FUNCTION OF FUEL INJECTOR

 **With CONSULT**

1. Start engine.
2. Perform "POWER BALANCE" in "ACTIVE TEST" mode with CONSULT.
3. Check that each circuit produces a momentary engine speed drop.

 **Without CONSULT**

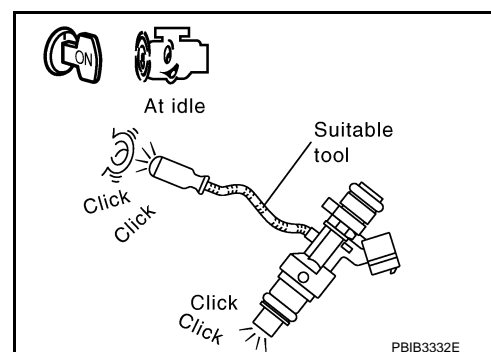
1. Start engine and let it idle.
2. Listen to each fuel injector operating sound.

Clicking sound should be heard.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Perform trouble diagnosis for FUEL INJECTOR, refer to [EC-538, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)



7.CHECK FUEL INJECTOR

1. Remove fuel injector assembly. Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)
Keep fuel hose and all fuel injectors connected to fuel tube.
2. Confirm that the engine is cooled down and there are no fire hazards near the vehicle.

P0172, P0175 FUEL INJECTION SYSTEM FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Disconnect all fuel injector harness connectors.
4. Disconnect all ignition coil harness connectors.
5. Prepare pans or saucers under each fuel injector.
6. Crank engine for about 3 seconds.
Check that fuel does not drip from fuel injector.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace the fuel injectors from which fuel is dripping. Always replace O-ring with new one.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

P0181 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0181 FTT SENSOR

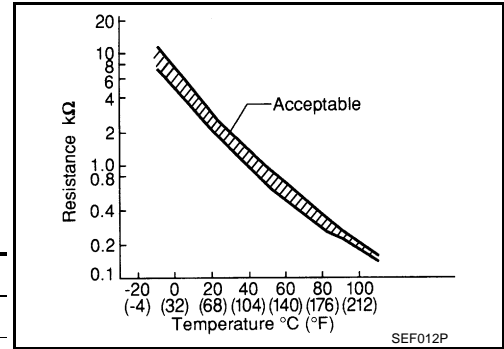
Description (GT-R certified NISSAN dealer)

INFOID:000000011486378

The fuel tank temperature sensor is used to detect the fuel temperature inside the fuel tank. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the fuel temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.

<Reference data>

Fuel temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
20 (68)	3.5	2.3 - 2.7
50 (122)	2.2	0.79 - 0.90



*: These data are reference values and are measured between ECM terminals 42 (Fuel tank temperature sensor) and 128 (sensor ground).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486379

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0181	Fuel tank temperature sensor circuit range/performance	A) Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signals from engine coolant temperature sensor and intake air temperature sensor.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted) • Fuel tank temperature sensor
		B) The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the FTT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	<ul style="list-style-type: none"> • Harness or connectors (High or low resistance in the FTT sensor circuit) • FTT sensor

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

- YES >> GO TO 7.
NO >> GO TO 2.

2. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE A-I

1. Turn ignition switch ON and wait at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

P0181 FTT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Refer to [EC-295, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 4.

4. CHECK ENGINE COOLANT TEMPERATURE

1. Select "COOLAN TEMP/S" in "DATA MONITOR" with CONSULT.
2. Check "COOLAN TEMP/S" value.

"COOLAN TEMP/S" less than 60°C (140°F)?

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

5. PERFORM DTC CONFIRMATION PROCEDURE A-II

1. Cool engine down until "COOLAN TEMP/S" is less than 60°C (140°F).
2. Wait at least 10 seconds.
3. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-295, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 6.

6. PERFORM COMPONENT FUNCTION CHECK (FOR MALFUNCTION B)

Perform component function check. Refer to [EC-295, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use the component function check to check the overall function of the FTT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Proceed to [EC-295, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

7. PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 8.

8. PERFORM DTC CONFIRMATION PROCEDURE B

1. Start engine and let it idle for 60 minutes.
2. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

4. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-295, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

P0181 FTT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

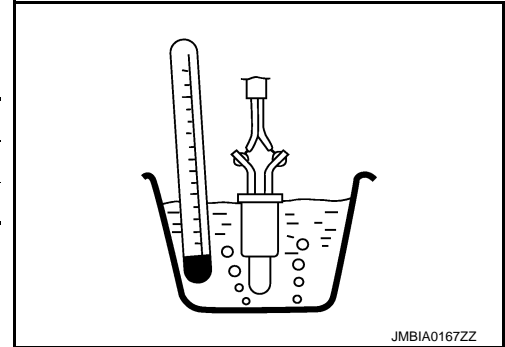
Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486380

1. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR

1. Turn ignition switch OFF.
2. Disconnect fuel level sensor unit and fuel pump harness connector.
3. Remove fuel level sensor unit. Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
4. Check resistance between fuel level sensor unit and fuel pump terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance (kΩ)
1 and 3	Temperature [°C (°F)]	20 (68)
		50 (122)
		2.3 – 2.7
		0.79 – 0.90



Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Proceed to [EC-295, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Proceed to [EC-295, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486381

1. INSPECTION START

Confirm the detected malfunction (A or B). Refer to [EC-293, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

Which malfunction is detected?

- A >> GO TO 2.
 B >> GO TO 7.

2. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Repair or replace ground connection.

3. CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Refer to [MWI-69, "Component Function Check"](#).

4. CHECK FUEL TANK TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect "fuel level sensor unit and fuel pump" harness connector.
3. Turn ignition switch ON.
4. Check the voltage between "fuel level sensor unit and fuel pump (main)" harness connector and ground.

Fuel level sensor unit and fuel pump (main)		Ground	Voltage (V)
Connector	Terminal		
B225	1	Ground	Approx. 5

Is the inspection result normal?

P0181 FTT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
- NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness connectors B201, M117
- Harness for open or short between ECM and “fuel level sensor unit and fuel pump (main)”

>> Repair open circuit, short to ground or short to power in harness or connector.

6. CHECK FUEL TANK TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect “combination meter” harness connector.
3. Check the continuity between “fuel level sensor unit and fuel pump (main)” harness connector and “combination meter” harness connector.

Fuel level sensor unit and fuel pump (main)		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B225	3	M53	18	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B201, M117
- Harness for open or short between “fuel level sensor unit and fuel pump (main)” and “combination meter”

>> Repair open circuit, short to ground or short to power in harness or connector.

8. CHECK FUEL TANK TEMPERATURE SENSOR

Refer to [EC-296, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> Replace “fuel level sensor unit and fuel pump (main)”. Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

9. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486382

1. CHECK FUEL TANK TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect “fuel level sensor unit and fuel pump (main)” harness connector.
3. Remove fuel level sensor unit. Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

P0181 FTT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Check resistance between “fuel level sensor unit and fuel pump (main)” terminals by heating with hot water as shown in the figure.

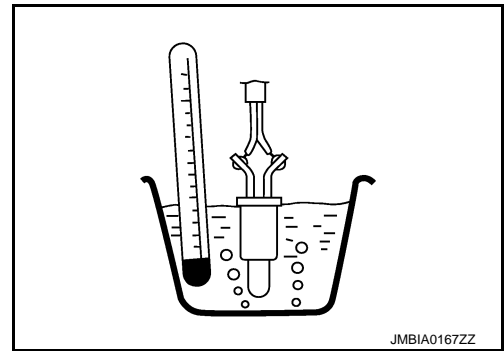
Terminals	Condition		Resistance (kΩ)
1 and 3	Temperature [°C (°F)]	20 (68)	2.3 - 2.7
		50 (122)	0.79 - 0.90

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace “fuel level sensor unit and fuel pump (main)”.

Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



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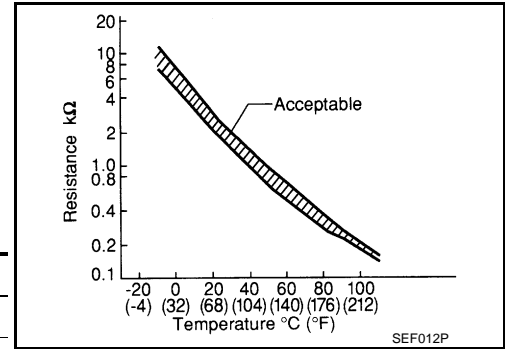
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P0182, P0183 FTT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486383

The fuel tank temperature sensor is used to detect the fuel temperature inside the fuel tank. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the fuel temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Fuel temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
20 (68)	3.5	2.3 - 2.7
50 (122)	2.2	0.79 - 0.90

*: These data are reference values and are measured between ECM terminals 42 (Fuel tank temperature sensor) and 128 (sensor ground).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486384

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0182	Fuel tank temperature sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Fuel tank temperature sensor
P0183	Fuel tank temperature sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-298. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486385

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace ground connection.

2. CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55. "CONSULT Function \(METER/M&A\)".](#)

P0182, P0183 FTT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 3.

NO >> Refer to [MWI-69, "Component Function Check"](#).

3.CHECK FUEL TANK TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect "fuel level sensor unit and fuel pump" harness connector.
3. Turn ignition switch ON.
4. Check the voltage between "fuel level sensor unit and fuel pump (main)" harness connector and ground.

Fuel level sensor unit and fuel pump (main)		Ground	Voltage (V)
Connector	Terminal		
B225	1	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness connectors B201, M117
- Harness for open or short between ECM and "fuel level sensor unit and fuel pump (main)"

>> Repair open circuit, short to ground or short to power in harness or connector.

5.CHECK FUEL TANK TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect "combination meter" harness connector.
3. Check the continuity between "fuel level sensor unit and fuel pump (main)" harness connector and "combination meter" harness connector.

Fuel level sensor unit and fuel pump (main)		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B225	3	M53	18	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B201, M117
- Harness for open or short between "fuel level sensor unit and fuel pump (main)" and "combination meter"

>> Repair open circuit, short to ground or short to power in harness or connector.

7.CHECK FUEL TANK TEMPERATURE SENSOR

Refer to [EC-300, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace "fuel level sensor unit and fuel pump (main)". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

8.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

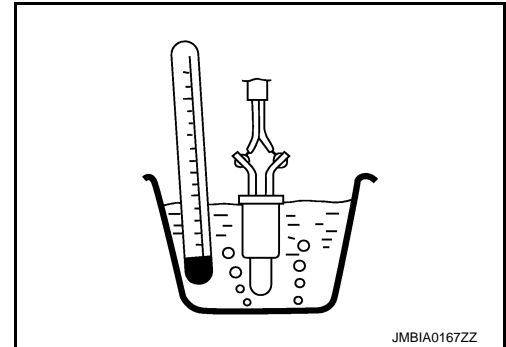
Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486386

1. CHECK FUEL TANK TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect "fuel level sensor unit and fuel pump (main)" harness connector.
3. Remove fuel level sensor unit. Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
4. Check resistance between "fuel level sensor unit and fuel pump (main)" terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance (kΩ)	
1 and 3	Temperature [°C (°F)]	20 (68)	2.3 - 2.7
		50 (122)	0.79 - 0.90



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace "fuel level sensor unit and fuel pump (main)".
Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

P0196 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

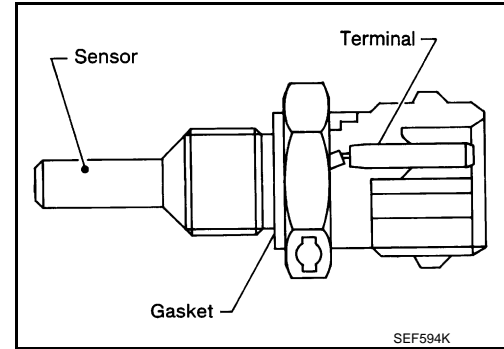
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P0196 EOT SENSOR

Description (GT-R certified NISSAN dealer)

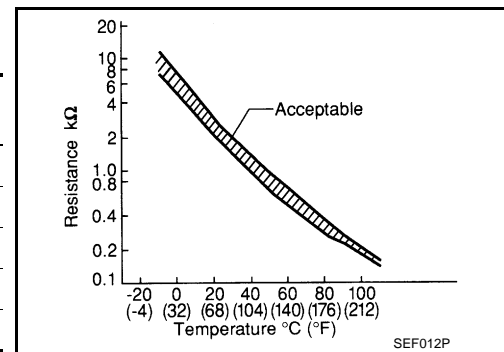
INFOID:000000011486387

The engine oil temperature sensor is used to detect the engine oil temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine oil temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine oil temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.1 - 2.5
50 (122)	2.2	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260
110 (230)	0.6	0.143 - 0.153



*: These data are reference values and are measured between ECM terminals 27 (Engine oil temperature sensor) and 26 (Sensor ground).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486388

DTC DETECTION LOGIC

NOTE:

If DTC P0196 is displayed with P0197 or P0198, first perform the trouble diagnosis for DTC P0197, P0198. Refer to [EC-305, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition		Possible cause
P0196	EOT SENSOR [Engine oil temperature (EOT) sensor circuit range/perfor- mance]	A)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signals from EOT sensor and intake air temperature sensor.	<ul style="list-style-type: none"> Harness or connectors (The EOT sensor circuit is open or shorted) EOT sensor
		B)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, FTT sensor, and EOT sensor) shows that the signal voltage of the EOT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	<ul style="list-style-type: none"> Harness or connectors (High or low resistance in the EOT sensor circuit) EOT sensor

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

- YES >> GO TO 6.
- NO >> GO TO 2.

< DTC/CIRCUIT DIAGNOSIS >

2. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-I

1. Start the engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start the engine and let it idle for 5 minutes and 10 seconds.
6. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> [EC-304, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
 NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE-II

1. Select "DATA MONITOR" mode with CONSULT.
2. Check that "COOLAN TEMP/S" indicates above 65°C (149°F).
 If it is above 65°C (149°F), go to the following steps.
 If it is below 65°C (149°F), warm engine up until "COOLAN TEMP/S" indicates more than 65°C (149°F).
 Then perform the following steps.
3. Turn ignition switch OFF and soak the vehicle in a cool place.
4. Turn ignition switch ON.
NOTE:
Do not turn ignition switch OFF until step 8.
5. Select "DATA MONITOR" mode with CONSULT.
6. Check the following.

COOLAN TEMP/S	Below 40°C (104°F)
INT/A TEMP SE	Below 40°C (104°F)
Difference between "COOLAN TEMP/S" and "INT/A TEMP SE"	Within 6°C (11°F)

If they are within the specified range, perform the following steps.

If they are out of the specified range, soak the vehicle to meet the above conditions. Then perform the following steps.

NOTE:

- Do not turn ignition switch OFF.
- If it is supposed to need a long period of time, do not deplete the battery.

7. Start the engine and let it idle for 5 minutes.
8. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> [EC-304, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
 NO >> GO TO 5.

5. PERFORM COMPONENT FUNCTION CHECK (FOR MALFUNCTION B)

Perform component function check. Refer to [EC-303, "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use the component function check to check the overall function of the EOT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

P0196 EOT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> INSPECTION END
NO >> Proceed to [EC-304, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

6. PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 7.

7. PERFORM DTC CONFIRMATION PROCEDURE B

1. Start the engine and let it idle for 60 minutes.
2. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

4. Start the engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-304, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486389

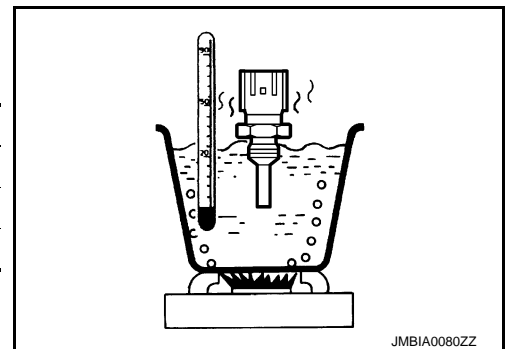
1. CHECK ENGINE OIL TEMPERATURE (EOT) SENSOR

1. Turn ignition switch OFF.
2. Disconnect EOT sensor harness connector.
3. Remove EOT sensor. Refer to [EM-61, "Exploded View"](#).
4. Check resistance between EOT sensor terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance (k Ω)	
1 and 2	Temperature [$^{\circ}\text{C}$ ($^{\circ}\text{F}$)]	20 (68)	2.1 – 2.5
		50 (122)	0.68 – 1.00
		90 (194)	0.236 – 0.260

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Proceed to [EC-304, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)



2. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Proceed to [EC-304, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

P0196 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486390

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK ENGINE OIL TEMPERATURE SENSOR

Refer to [EC-304. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace engine oil temperature sensor. Refer to [EM-61. "Exploded View"](#).

3. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486391

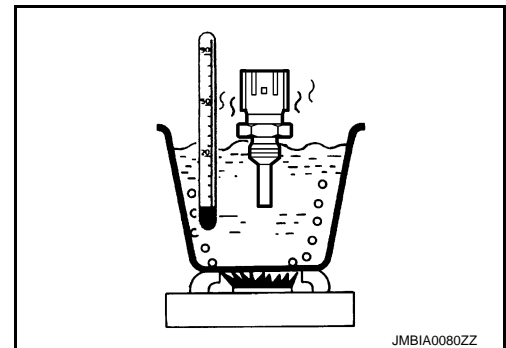
1. CHECK ENGINE OIL TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect engine oil temperature sensor harness connector.
3. Remove engine oil temperature sensor. Refer to [EM-61. "Exploded View"](#).
4. Check resistance between engine oil temperature sensor terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance (kΩ)	
1 and 2	Temperature [°C (°F)]	20 (68)	2.1 - 2.5
		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace engine oil temperature sensor. Refer to [EM-61. "Exploded View"](#).



P0197, P0198 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

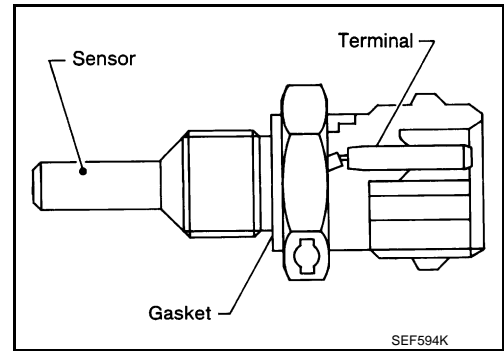
[VR38]

P0197, P0198 EOT SENSOR

Description (GT-R certified NISSAN dealer)

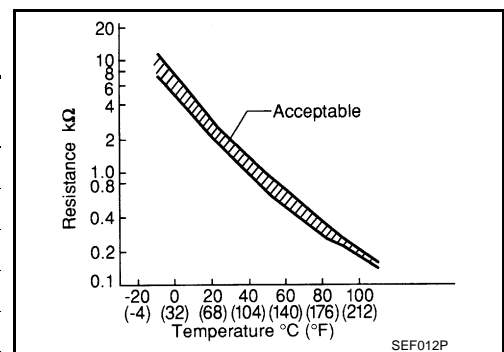
INFOID:000000011486392

The engine oil temperature sensor is used to detect the engine oil temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine oil temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine oil temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.1 - 2.5
50 (122)	2.2	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260
110 (230)	0.6	0.143 - 0.153



*: These data are reference values and are measured between ECM terminals 27 (Engine oil temperature sensor) and 26 (Sensor ground).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486393

DTC DETECTION LOGIC

DTC No.	Trouble Diagnosis Name	DTC detecting condition	Possible Cause
P0197	Engine oil temperature sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Engine oil temperature sensor
P0198	Engine oil temperature sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

P0197, P0198 EOT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Refer to [EC-306. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486394

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK EOT SENSOR POWER SUPPLY CIRCUIT

1. Disconnect engine oil temperature (EOT) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between EOT sensor harness connector and ground.

EOT sensor		Ground	Voltage (V)
Connector	Terminal		
F204	1	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F47, F201
- Harness for open or short between EOT sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK EOT SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between EOT sensor harness connector and ECM harness connector.

EOT sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F204	2	F101	26	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F47, F201
- Harness for open or short between EOT sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

6. CHECK ENGINE OIL TEMPERATURE SENSOR

Refer to [EC-307. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 7.

P0197, P0198 EOT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace engine oil temperature sensor. Refer to [EM-61, "Exploded View"](#).

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486395

1. CHECK ENGINE OIL TEMPERATURE SENSOR

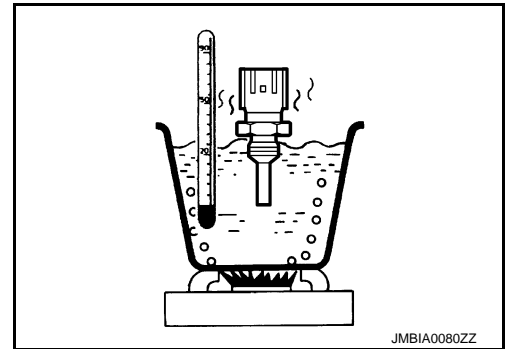
1. Turn ignition switch OFF.
2. Disconnect engine oil temperature sensor harness connector.
3. Remove engine oil temperature sensor. Refer to [EM-61, "Exploded View"](#).
4. Check resistance between engine oil temperature sensor terminals by heating with hot water as shown in the figure.

Terminals	Condition		Resistance (kΩ)
1 and 2	Temperature [°C (°F)]	20 (68)	2.1 - 2.5
		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine oil temperature sensor. Refer to [EM-61, "Exploded View"](#).



P0222, P0223, P2132, P2133 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

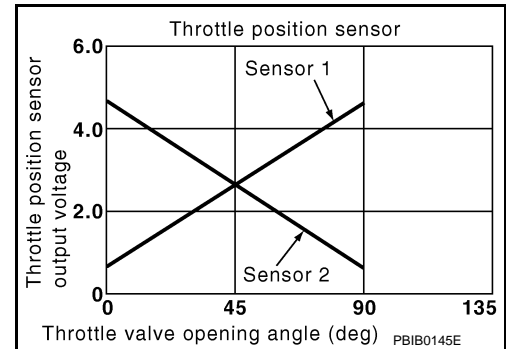
P0222, P0223, P2132, P2133 TP SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486396

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle position sensor responds to the throttle valve movement.

The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486397

DTC DETECTION LOGIC

NOTE:

If DTC P0222, P0223, P2132 or P2133 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0222	Throttle position sensor 1 (bank 1) circuit low input	An excessively low voltage from the TP sensor 1 is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (TP sensor 1 circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) • Electric throttle control actuator (TP sensor 1) • Each sensor, connected with sensor power supply 1 circuit
P0223	Throttle position sensor 1 (bank 1) circuit high input	An excessively high voltage from the TP sensor 1 is sent to ECM.	
P2132	Throttle position sensor 1 (bank 2) circuit low input	An excessively low voltage from the TP sensor 1 is sent to ECM.	
P2133	Throttle position sensor 1 (bank 2) circuit high input	An excessively high voltage from the TP sensor 1 is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 1 second.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-309, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

P0222, P0223, P2132, P2133 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486398

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK THROTTLE POSITION SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect electric throttle control actuator harness connector.
2. Turn ignition switch ON.
3. Check the voltage between electric throttle control actuator harness connector and ground.

DTC	Electric throttle control actuator			Ground	Voltage (V)
	Bank	Connector	Terminal		
P0222, P0223	1	F9	1	Ground	Approx. 5
P2132, P2133	2	F26	6		

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK THROTTLE POSITION SENSOR 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0222, P0223	1	F9	4	F101	20	Existed
P2132, P2133	2	F26	3		15	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK THROTTLE POSITION SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0222, P0223	1	F9	2	F101	40	Existed
P2132, P2133	2	F26	4		28	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK THROTTLE POSITION SENSOR

Refer to [EC-310. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

P0222, P0223, P2132, P2133 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Is the inspection result normal?

YES >> Refer to [GI-39, "Intermittent Incident"](#).

NO >> Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486399

1. CHECK THROTTLE POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Perform [EC-24, "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
4. Turn ignition switch ON.
5. Set shift lever to A position.
6. Check the voltage between ECM harness connector terminals under the following conditions.

ECM			Condition	Voltage (V)
Connector	+	-		
	Terminal	Terminal		
F101	40 [TP sensor 1 (bank 1)]	20	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	28 [TP sensor 1 (bank 2)]	15	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	36 [TP sensor 2 (bank 1)]	20	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36
	32 [TP sensor 2 (bank 2)]	15	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

P0234, P1334 TC SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486400

DTC DETECTION LOGIC

NOTE:

If DTC P0234 or P1334 is displayed with DTC P0237, P0238, P0241 or P0242, first perform the trouble diagnosis for DTC P0237, P0238, P0241 or P0242. Refer to [EC-319. "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0234	Turbocharger overboost condition (bank 1)	Turbocharger boost is higher than the target value.	<ul style="list-style-type: none"> • Turbocharger boost sensor • Turbocharger boost control solenoid valve • Exhaust manifold and turbocharger assembly • Disconnection, looseness or improper connection of boost control actuator hose
P1334	Turbocharger overboost condition (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-311. "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-312. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486401

1. CHECK BOOST CONTROL ACTUATOR HOSE

Check disconnection, looseness or improper connection of hose between turbocharger boost control solenoid valve and boost control actuator.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to [EC-312. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

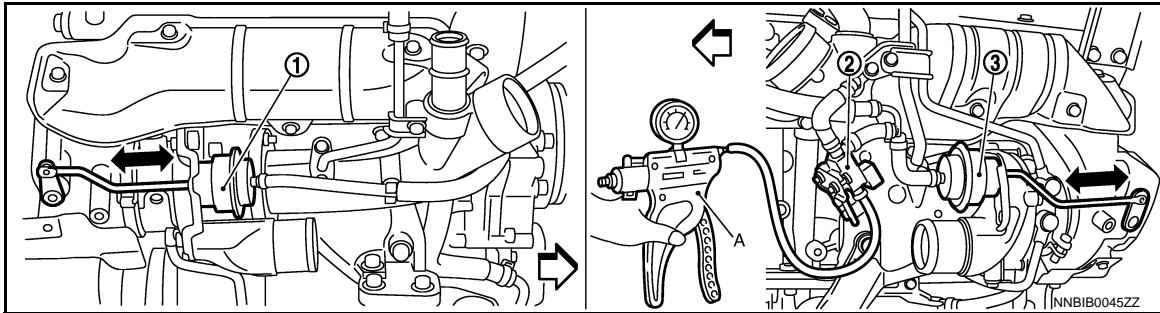
2. PERFORM COMPONENT FUNCTION CHECK

1. Turn ignition switch OFF.
2. Disconnect turbocharger boost control solenoid valve harness connector.
3. Disconnect of hose between turbocharger boost control solenoid valve and compressor wheel.
4. Install pressure pump to turbocharger boost control solenoid valve.
5. Check that the rod of the boost control actuator activates when supplying pressure and battery voltage to the turbocharger boost control solenoid valve as per the following conditions.

Condition		Operation
Turbocharger boost control solenoid valve	Supply pressure	
Battery voltage direct current supply between terminals 1 and 2	<ul style="list-style-type: none"> • Bank 1 [68.0 kPa (680mbar, 510 mmHg, 20.08 inHg)] • Bank 2 [63.1 kPa (631 mbar, 473 mmHg, 18.63 inHg)] 	Boost control actuator rod operates
No current supply between terminals 1 and 2		Boost control actuator rod not operates

CAUTION:

Do not supply pressure over 75 kPa (750 mbar, 562 mmHg, 22.14 inHg)



1. Boost control actuator (bank1)
2. Turbocharger boost control solenoid
3. Boost control actuator (bank2) valve

A. Pressure pump

↶ :Vehicle front

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-312. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486402

1. CHECK BOOST CONTROL ACTUATOR HOSE

Check disconnection, looseness or improper connection of hose between turbocharger boost control solenoid valve and boost control actuator.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace.

2. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect turbocharger boost control solenoid valve harness connector.
3. Turn ignition switch ON.
4. Check the voltage between turbocharger boost control solenoid valve harness connector and ground.

Turbocharger boost control solenoid valve		Ground	Voltage
Connector	Terminal		
F34	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between turbocharger boost control solenoid valve and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between turbocharger boost control solenoid valve harness connector and ECM harness connector.

P0234, P1334 TC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Turbocharger boost control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F34	2	F102	61	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Refer to [EC-207, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace turbocharger boost control solenoid valve. Refer to [EM-61, "Exploded View"](#).

6. CHECK BOOST CONTROL ACTUATOR

Refer to [EM-64, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace exhaust manifold and turbocharger assembly. Refer to [EM-62, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).

7. CHECK TURBOCHARGER BOOST SENSOR

Refer to [EC-317, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace turbocharger boost sensor. Refer to [EM-30, "Exploded View"](#).

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

A
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P0236, P0240 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

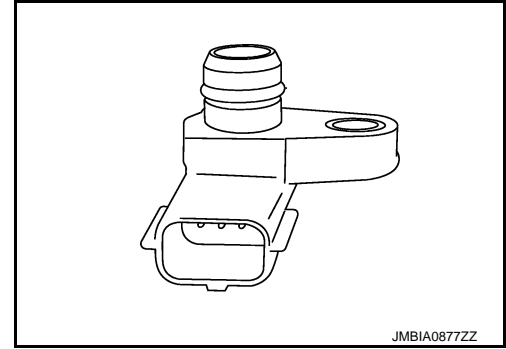
[VR38]

P0236, P0240 TC BOOST SENSOR

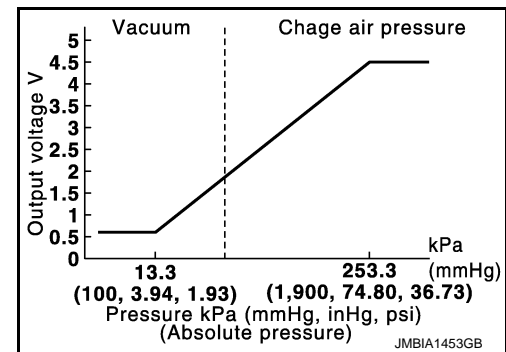
Description (GT-R certified NISSAN dealer)

INFOID:000000011486403

The turbocharger boost sensor detects the pressure of the outlet side of the intercooler. When increasing the pressure, the output voltage of the sensor to the ECM increases.



JMBIA0877ZZ



JMBIA1453GB

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486404

DTC DETECTION LOGIC

NOTE:

If DTC P0236 or P0240 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0236	Turbocharger boost sensor circuit range/performance (bank 1)	A	In spite of the low boost, the signal voltage of the turbocharger boost sensor to the ECM is too high.	<ul style="list-style-type: none"> Harness or connectors (Sensor power supply 1 circuit is open or shorted.) (The sensor circuit is shorted.) Turbocharger boost sensor Boost control actuator stuck closed Each sensor, connected with sensor power supply 1 circuit
		B	In spite of the high boost, the signal voltage of the turbocharger boost sensor to the ECM is too low.	<ul style="list-style-type: none"> Harness or connectors (The sensor circuit is open.) Intake air leaks Exhaust gas leaks Recirculation valve Exhaust manifold and Turbocharger assembly Turbocharger boost sensor Boost control actuator

P0236, P0240 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

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DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0240	Turbocharger boost sensor circuit range/performance (bank 2)	A	In spite of the low boost, the signal voltage of the turbocharger boost sensor to the ECM is too high.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is shorted.) (Sensor power supply 1 circuit is open or shorted.) • Turbocharger boost sensor • Boost control actuator stuck closed • Each sensor, connected with sensor power supply 1 circuit
		B	In spite of the high boost, the signal voltage of the turbocharger boost sensor to the ECM is too low.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open.) • Intake air leaks • Exhaust gas leaks • Recirculation valve • Exhaust manifold and Turbocharger assembly • Turbocharger boost sensor • Boost control actuator

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-316. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> GO TO 3.

3. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-315. "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-316. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Component Function Check (GT-R certified NISSAN dealer)

INFOID:0000000011486405

1. PERFORM COMPONENT FUNCTION CHECK

Check the following.

- Disconnection of air duct or hose between electric throttle control actuator and compressor wheel.
- Exhaust gas leaks of exhaust manifold
- Open stuck of recirculation valve
- Stuck of turbocharger
- Stuck of boost control valve
- Break or dropout of the boost control actuator rod

Is the inspection result normal?

YES >> INSPECTION END

P0236, P0240 TC BOOST SENSOR

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< DTC/CIRCUIT DIAGNOSIS >

NO >> Refer to [EC-316, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486406

1. CHECK FOR EXHAUST GAS LEAK

1. Start engine and run it at idle.
2. Listen for an exhaust gas leak of exhaust manifold.

Is exhaust gas leak detected?

- YES >> GO TO 2.
NO >> Repair or replace.

2. CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak between electric throttle control actuator and compressor wheel.

Is intake air leak detected?

- YES >> GO TO 3.
NO >> Repair or replace.

3. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair or replace ground connection.

4. CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY CIRCUIT

1. Disconnect turbocharger boost sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between turbocharger boost sensor harness connector and ground.

Turbocharger boost sensor			Ground	Voltage
Bank	Connector	Terminal		
1	F14	1	Ground	Approx. 5 V
2	F30	1		

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK TURBOCHARGER BOOST SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

Turbocharger boost sensor			ECM		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F14	3	F102	75	Existed
2	F30	3			

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6. CHECK TURBOCHARGER BOOST SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

P0236, P0240 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

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Turbocharger boost sensor			ECM		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F14	2	F102	80	Existed
2	F30	2		79	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK TURBOCHARGER BOOST SENSOR

Refer to [EC-317, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace turbocharger boost sensor. Refer to [EM-30, "Exploded View"](#).

8. CHECK RECIRCULATION VALVE

Refer to [EM-32, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace recirculation valve. Refer to [EM-30, "Exploded View"](#).

9. CHECK EXHAUST MANIFOLD AND TURBOCHARGER ASSEMBLY

Refer to [EM-64, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace exhaust manifold and turbocharger assembly. Refer to [EM-62, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).

10. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

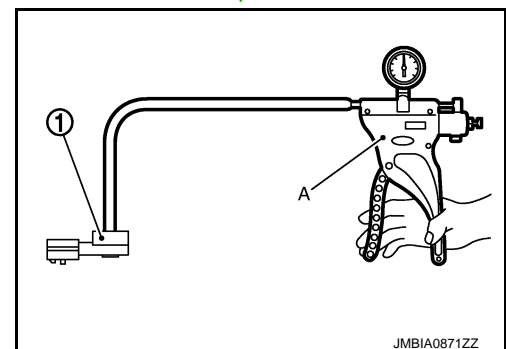
>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486407

1. CHECK TURBOCHARGER BOOST SENSOR

1. Turn ignition switch OFF.
2. Remove turbocharger boost sensor with its harness connector. Refer to [EM-30, "Exploded View"](#).
3. Install pressure pump (A) to turbocharger boost sensor (1).
4. Turn ignition switch ON.
5. Check the voltage between ECM harness connector terminals under the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 - 30°C (50 - 86°F)].

P0236, P0240 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

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ECM			Condition [Pressure (Relative to atmospheric pressure)]	Voltage
Connector	+ Terminal	- Terminal		
F102	80 [turbocharger boost sensor (bank 1)]	75	0 kPa (0 mbar, 0 mmHg, 0 inHg)	Approx. 2.03 V
			+40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	Approx. 2.67 V
	79 [turbocharger boost sensor (bank 2)]		0 kPa (0 mbar, 0 mmHg, 0 inHg)	Approx. 2.03 V
			+40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	Approx. 2.67 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to [EM-30. "Exploded View"](#).

P0237, P0238, P0241, P0242 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

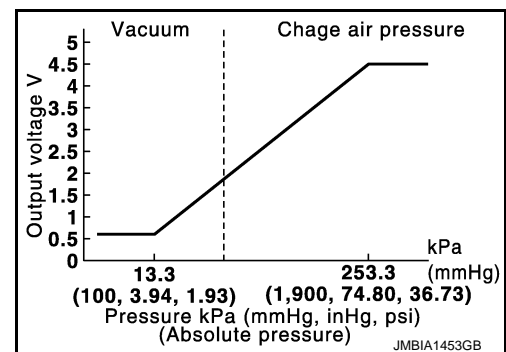
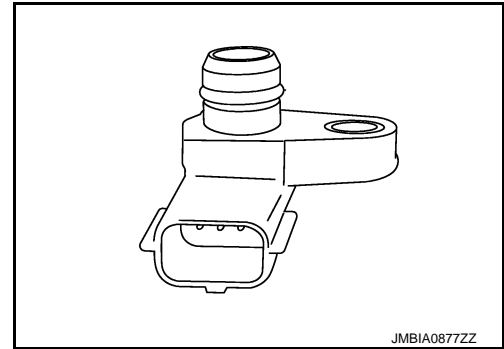
[VR38]

P0237, P0238, P0241, P0242 TC BOOST SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486408

The turbocharger boost sensor detects the pressure of the outlet side of the intercooler. When increasing the pressure, the output voltage of the sensor to the ECM increases.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486409

DTC DETECTION LOGIC

NOTE:

If DTC P0237, P0238, P0241 or P0242 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0237	Turbocharger boost sensor (bank 1) circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> Harness or connectors (The sensor circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) Turbocharger boost sensor Each sensor, connected with sensor power supply 1 circuit
P0238	Turbocharger boost sensor (bank 1) circuit high input	An excessively high voltage from the sensor is sent to ECM.	
P0241	Turbocharger boost sensor (bank 2) circuit low input	An excessively low voltage from the sensor is sent to ECM.	
P0242	Turbocharger boost sensor (bank 2) circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

P0237, P0238, P0241, P0242 TC BOOST SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-320, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486410

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY CIRCUIT

1. Disconnect turbocharger boost sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between turbocharger boost sensor harness connector and ground.

Turbocharger boost sensor			Ground	Voltage
Bank	Connector	Terminal		
1	F14	1	Ground	Approx. 5 V
2	F30	1		

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK TURBOCHARGER BOOST SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

Turbocharger boost sensor			ECM		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F14	3	F102	75	Existed
2	F30	3			

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK TURBOCHARGER BOOST SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

Turbocharger boost sensor			ECM		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F14	2	F102	80	Existed
2	F30	2		79	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

P0237, P0238, P0241, P0242 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

5. CHECK TURBOCHARGER BOOST SENSOR

Refer to [EC-321, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace turbocharger boost sensor. Refer to [EM-30, "Exploded View"](#).

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

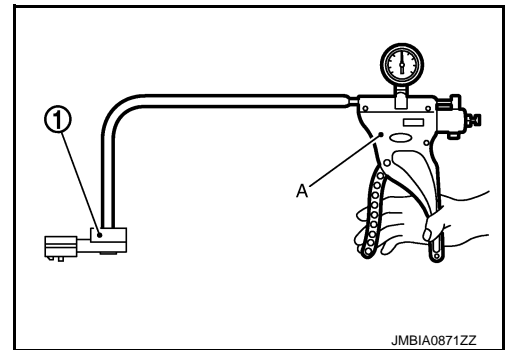
>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486411

1. CHECK TURBOCHARGER BOOST SENSOR

1. Turn ignition switch OFF.
2. Remove turbocharger boost sensor with its harness connector. Refer to [EM-30, "Exploded View"](#).
3. Install pressure pump (A) to turbocharger boost sensor (1).
4. Turn ignition switch ON.
5. Check the voltage between ECM harness connector terminals under the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 - 30°C (50 - 86°F)].

Connector	ECM		Condition [Pressure (Relative to atmospheric pressure)]	Voltage
	+	-		
	Terminal	Terminal		
F102	80 [turbocharger boost sensor (bank 1)]	75	0 kPa (0 mbar, 0 mmHg, 0 inHg)	Approx. 2.03 V
			+40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	Approx. 2.67 V
	79 [turbocharger boost sensor (bank 2)]		0 kPa (0 mbar, 0 mmHg, 0 inHg)	Approx. 2.03 V
			+40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	Approx. 2.67 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to [EM-30, "Exploded View"](#).

P0300, P0301, P0302, P0303, P0304, P0305, P0306 MISFIRE

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486412

DTC DETECTION LOGIC

When a misfire occurs, engine speed will fluctuate. If the engine speed fluctuates enough to cause the crankshaft position (CKP) sensor (POS) signal to vary, ECM can determine that a misfire is occurring.

Sensor	Input signal to ECM	ECM function
Crankshaft position sensor (POS)	Engine speed	On board diagnosis of misfire

The misfire detection logic consists of the following two conditions.

- One Trip Detection Logic (Three Way Catalyst Damage)**
 On the 1st trip, when a misfire condition occurs that can damage the three way catalyst (TWC) due to overheating, the MIL will blink.
 When a misfire condition occurs, the ECM monitors the CKP sensor signal every 200 engine revolutions for a change.
 When the misfire condition decreases to a level that will not damage the TWC, the MIL will turn off.
 If another misfire condition occurs that can damage the TWC on a second trip, the MIL will blink.
 When the misfire condition decreases to a level that will not damage the TWC, the MIL will remain on.
 If another misfire condition occurs that can damage the TWC, the MIL will begin to blink again.
- Two Trip Detection Logic (Exhaust quality deterioration)**
 For misfire conditions that will not damage the TWC (but will affect vehicle emissions), the MIL will only light when the misfire is detected on a second trip. During this condition, the ECM monitors the CKP sensor signal every 1,000 engine revolutions.
 A misfire malfunction can be detected in any one cylinder or in multiple cylinders.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0300	Multiple cylinder misfires detected	Multiple cylinder misfire.	<ul style="list-style-type: none"> • Improper spark plug • Insufficient compression • Incorrect fuel pressure • The fuel injector circuit is open or shorted • Fuel injector • Intake air leak • The ignition signal circuit is open or shorted • Lack of fuel • Signal plate • A/F sensor 1 • Incorrect PCV hose connection
P0301	No.1 cylinder misfire detected	No. 1 cylinder misfires.	
P0302	No. 2 cylinder misfire detected	No. 2 cylinder misfires.	
P0303	No. 3 cylinder misfire detected	No. 3 cylinder misfires.	
P0304	No. 4 cylinder misfire detected	No. 4 cylinder misfires.	
P0305	No. 5 cylinder misfire detected	No. 5 cylinder misfires.	
P0306	No. 6 cylinder misfire detected	No. 6 cylinder misfires.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Restart engine and let it idle for about 15 minutes.
6. Check 1st trip DTC.

P0300, P0301, P0302, P0303, P0304, P0305, P0306 MISFIRE

< DTC/CIRCUIT DIAGNOSIS >

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Is 1st trip DTC detected?

- YES >> Refer to [EC-323, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Start engine and drive the vehicle under similar conditions to (1st trip) Freeze Frame Data for a certain time. Refer to the table below.

Hold the accelerator pedal as steady as possible.

Similar conditions to (1st trip) Freeze Frame Data mean that the following conditions should be satisfied at the same time.

CAUTION:

Always drive vehicle in safe manner according to traffic conditions and obey all traffic laws when driving.

Engine speed	Engine speed in the freeze frame data \pm 400 rpm
Vehicle speed	Vehicle speed in the freeze frame data \pm 10 km/h (6 MPH)
Basic fuel schedule	Basic fuel schedule in freeze frame data \times (1 \pm 0.1)
Engine coolant temperature (T) condition	When the freeze frame data shows lower than 70 °C (158 °F), T should be lower than 70 °C (158 °F).
	When the freeze frame data shows higher than or equal to 70 °C (158 °F), T should be higher than or equal to 70 °C (158 °F).

Driving time varies according to the engine speed in the freeze frame data.

Engine speed	Time
Around 1,000 rpm	Approximately 10 minutes
Around 2,000 rpm	Approximately 5 minutes
More than 3,000 rpm	Approximately 3.5 minutes

5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-323, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486413

1.CHECK FOR INTAKE AIR LEAK AND PCV HOSE

1. Start engine and run it at idle speed.
2. Listen for the sound of the intake air leak.
3. Check PCV hose connection.

Is intake air leak detected?

- YES >> Discover air leak location and repair.
- NO >> GO TO 2.

2.CHECK FOR EXHAUST SYSTEM CLOGGING

Stop engine and visually check exhaust tube, three way catalyst and muffler for dents.

Is the inspection result normal?

- YES-1 >> With CONSULT: GO TO 3.
- YES-2 >> Without CONSULT: GO TO 4.
- NO >> Repair or replace malfunctioning part.

3.PERFORM POWER BALANCE TEST

 **With CONSULT**

1. Start engine.

P0300, P0301, P0302, P0303, P0304, P0305, P0306 MISFIRE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Perform "POWER BALANCE" in "ACTIVE TEST" mode with CONSULT.
3. Check that each circuit produces a momentary engine speed drop.

Is the inspection result normal?

- YES >> GO TO 9.
NO >> GO TO 4.

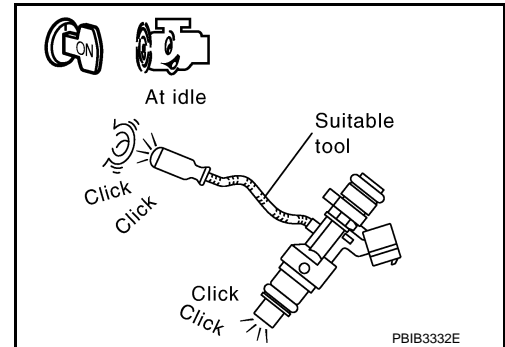
4.CHECK FUNCTION OF FUEL INJECTOR-I

1. Start engine and let it idle.
2. Listen to each fuel injector operation.

Clicking sound should be heard.

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Perform trouble diagnosis for FUEL INJECTOR, refer to [EC-538. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).



5.CHECK FUNCTION OF IGNITION COIL-I

CAUTION:

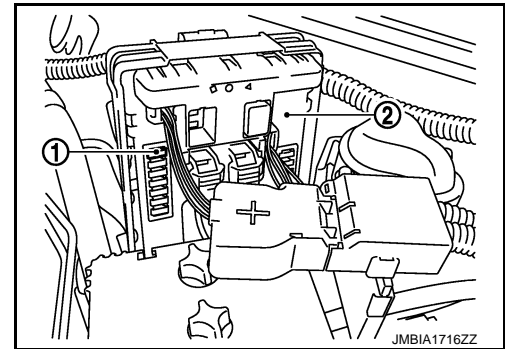
Perform the following procedure in a place with no combustible objects and good ventilation.

1. Turn ignition switch OFF.
2. Remove fuel pump fuse (1) in IPDM E/R (2) to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

3. Start engine.
4. After engine stalls, crank it two or three times to release all fuel pressure.
5. Turn ignition switch OFF.
6. Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.
7. Remove ignition coil and spark plug of the cylinder to be checked.
8. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
9. Connect spark plug and harness connector to ignition coil.
10. Fix ignition coil using a rope etc. with gap of 13 - 17 mm (0.52 - 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
11. Crank engine for about 3 seconds, and check whether spark is generated between the spark plug and the grounded metal portion.



Spark should be generated.

CAUTION:

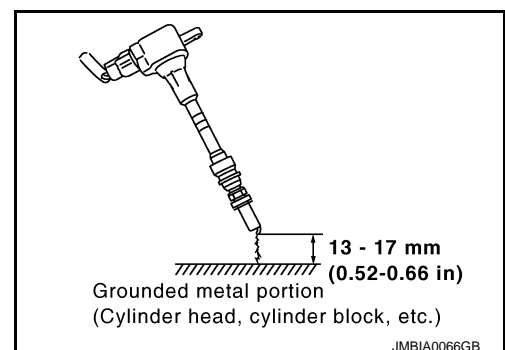
- During the operation, always stay 0.5 m (1.6 ft) or more away from the spark plug and the ignition coil. Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might cause to damage the ignition coil if the gap of more than 17 mm (0.66 in) is made.

NOTE:

When the gap is less than 13 mm (0.52 in), a spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

- YES >> GO TO 9.
NO >> GO TO 6.



6. CHECK FUNCTION OF IGNITION COIL-II

1. Turn ignition switch OFF.
2. Disconnect spark plug and connect a non-malfunctioning spark plug.
3. Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Check ignition coil, power transistor and their circuits. Refer to [EC-544, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

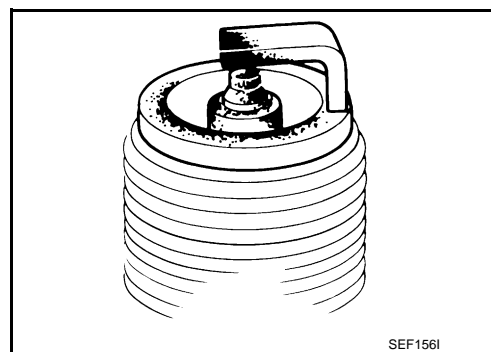
7. CHECK SPARK PLUG

Check the initial spark plug for fouling, etc.

Is the inspection result normal?

YES >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to [EM-141, "Spark Plug"](#).

NO >> Repair or clean spark plug. Refer to [EM-18, "Removal and Installation"](#). Then GO TO 8.



8. CHECK FUNCTION OF IGNITION COIL-III

1. Reconnect the initial spark plugs.
2. Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace spark plug(s) with standard type one(s). Refer to [EM-18, "Removal and Installation"](#). For spark plug type, refer to [EM-141, "Spark Plug"](#).

9. CHECK COMPRESSION PRESSURE

Check compression pressure. Refer to [EM-24, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Check pistons, piston rings, valves, valve seats and cylinder head gaskets.

10. CHECK FUEL PRESSURE

1. Install all removed parts.
2. Check fuel pressure. Refer to [FL-5, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging.

Is the inspection result normal?

YES >> Replace "fuel filter and fuel pump assembly". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

NO >> Repair or replace malfunctioning part.

12. CHECK IDLE SPEED AND IGNITION TIMING

P0300, P0301, P0302, P0303, P0304, P0305, P0306 MISFIRE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Check idle speed and ignition timing.

For procedure, refer to [EC-17, "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

For specification, refer to [EC-640, "Idle Speed"](#) and [EC-640, "Ignition Timing"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Follow the [EC-17, "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

13. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect corresponding A/F sensor 1 harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

A/F sensor 1			ECM		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F8	1	F102	81	Existed
		2		82	
2	F25	1		85	
		2		86	

5. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

A/F sensor 1			ECM		Ground	Continuity
Bank	Connector	Terminal	Connector	Terminal		
1	F8	1	F102	81	Ground	Not existed
		2		82		
2	F25	1		85		
		2		86		

6. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

14. CHECK A/F SENSOR 1 HEATER

Refer to [EC-202, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace (malfunctioning) A/F sensor 1. Refer to [EM-50, "Exploded View"](#).

15. CHECK MASS AIR FLOW SENSOR

With CONSULT

Check mass air flow sensor signal in "DATA MONITOR" mode with CONSULT.

For specification, refer to [EC-640, "Mass Air Flow Sensor"](#).

With GST

Check mass air flow sensor signal in Service \$01 with GST.

For specification, refer to [EC-640, "Mass Air Flow Sensor"](#).

Is the measurement value within the specification?

YES >> GO TO 16.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or ground. Refer to [EC-220, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

16. CHECK SYMPTOM MATRIX CHART

Check items on the rough idle symptom in [EC-625, "Symptom Table \(GT-R certified NISSAN dealer\)"](#).

P0300, P0301, P0302, P0303, P0304, P0305, P0306 MISFIRE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace malfunctioning part.

17.ERASE THE 1ST TRIP DTC

Some tests may cause a 1st trip DTC to be set.

Erase the 1st trip DTC from the ECM memory after performing the tests.

>> GO TO 18.

18.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

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P

P0327, P0328, P0332, P0333 KS

Description (GT-R certified NISSAN dealer)

INFOID:000000011486414

The knock sensor is attached to the cylinder block. It senses engine knocking using a piezoelectric element. A knocking vibration from the cylinder block is sensed as vibrational pressure. This pressure is converted into a voltage signal and sent to the ECM.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486415

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detected condition	Possible cause
P0327	Knock sensor (bank 1) circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (The sensor circuit is open or shorted.) • Knock sensor
P0328	Knock sensor (bank 1) circuit high input	An excessively high voltage from the sensor is sent to ECM.	
P0332	Knock sensor (bank 2) circuit low input	An excessively low voltage from the sensor is sent to ECM.	
P0333	Knock sensor (bank 2) circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and run it for at least 5 seconds at idle speed.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-328, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486416

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace ground connection.

2.CHECK KNOCK SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Disconnect knock sensor harness connector and ECM harness connector.
2. Check the continuity between knock sensor harness connector and ECM harness connector.

DTC	Knock sensor			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0327, P0328	1	F202	2	F102	71	Existed
P0332, P0333	2	F203	2			

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> GO TO 3.

3.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F47, F201
- Harness for open or short between knock sensor and ECM

>> Repair open circuit or short to power in harness or connectors.

4.CHECK KNOCK SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between knock sensor harness connector and ECM harness connector.

DTC	Knock sensor			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0327, P0328	1	F202	1	F102	72	Existed
P0332, P0333	2	F203	1		76	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F47, F201
- Harness for open or short between ECM and knock sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK KNOCK SENSOR

Refer to [EC-329. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Replace malfunctioning knock sensor. Refer to [EM-113. "Exploded View \(GT-R certified NISSAN dealer\)".](#)

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486417

1.CHECK KNOCK SENSOR

1. Turn ignition switch OFF.
2. Disconnect knock sensor harness connector.
3. Check resistance between knock sensor terminals as follows.

P0327, P0328, P0332, P0333 KS

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

NOTE:

It is necessary to use an ohmmeter which can measure more than 10 M Ω .

Terminals	Resistance
1 and 2	Approx. 532 - 588 k Ω [at 20°C (68°F)]

CAUTION:

Never use any knock sensors that have been dropped or physically damaged. Use only new ones.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning knock sensor. Refer to [EM-113, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

P0335 CKP SENSOR (POS)

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

P0335 CKP SENSOR (POS)

Description (GT-R certified NISSAN dealer)

INFOID:000000011486418

The crankshaft position sensor (POS) is located on the cylinder block facing the gear teeth (cogs) of the signal plate. It detects the fluctuation of the engine revolution.

The sensor consists of a permanent magnet and Hall IC.

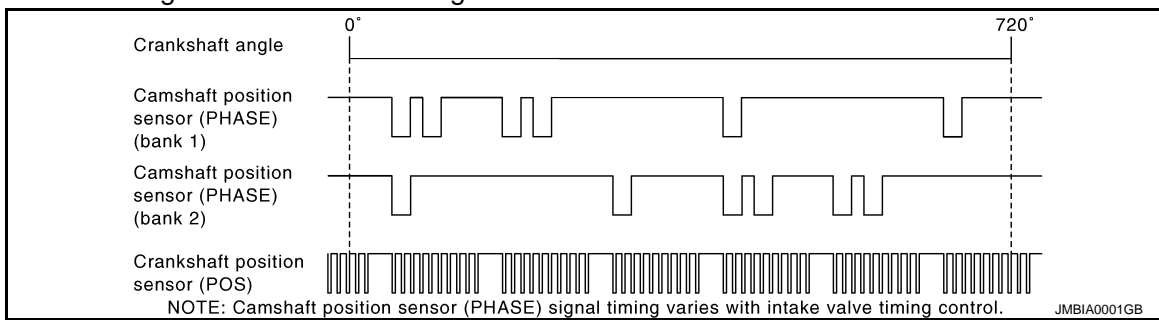
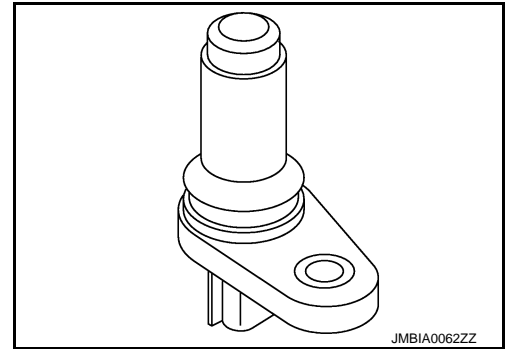
When the engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.

The ECM receives the voltage signal and detects the fluctuation of the engine revolution.

ECM receives the signals as shown in the figure.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486419

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0335	Crankshaft position sensor (POS) circuit	<ul style="list-style-type: none"> The crankshaft position sensor (POS) signal is not detected by the ECM during the first few seconds of engine cranking. The proper pulse signal from the crankshaft position sensor (POS) is not sent to ECM while the engine is running. The crankshaft position sensor (POS) signal is not in the normal pattern during engine running. 	<ul style="list-style-type: none"> Harness or connectors [CKP sensor (POS) circuit is open or shorted.] (Sensor power supply 2 circuit is open or shorted.) Crankshaft position sensor (POS) Each sensor, connected with sensor power supply 2 circuit Signal plate

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 5 seconds.
If engine does not start, crank engine for at least 2 seconds.

P0335 CKP SENSOR (POS)

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-332. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486420

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK CRANKSHAFT POSITION (CKP) SENSOR (POS) POWER SUPPLY CIRCUIT-I

1. Disconnect crankshaft position (CKP) sensor (POS) harness connector.
2. Turn ignition switch ON.
3. Check the voltage between CKP sensor (POS) harness connector and ground.

CKP sensor (POS)		Ground	Voltage (V)
Connector	Terminal		
E204	1	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 3.

3. CHECK CRANKSHAFT POSITION (CKP) SENSOR (POS) POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E204	1	F102	87	Existed

Is the inspection result normal?

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

4. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E203, F37
- Harness for open or short between CKP sensor and ECM

>> Repair open circuit.

5. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 12.
NO >> Repair short to ground or short to power in harness or connectors.

6. CHECK CKP SENSOR (POS) GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

P0335 CKP SENSOR (POS)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E204	2	F102	68	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E203, F37
- Harness for open or short between CKP sensor (POS) and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK CKP SENSOR (POS) INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E204	3	F102	64	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E203, F37
- Harness for open or short between CKP sensor (POS) and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

10. CHECK CRANKSHAFT POSITION SENSOR (POS)

Refer to [EC-334, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace crankshaft position sensor (POS). Refer to [EM-97, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

11. CHECK GEAR TOOTH

Visually check for chipping signal plate gear tooth.

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace the signal plate. Refer to [EM-113, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

12. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

P0335 CKP SENSOR (POS)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Component Inspection (GT-R certified NISSAN dealer)

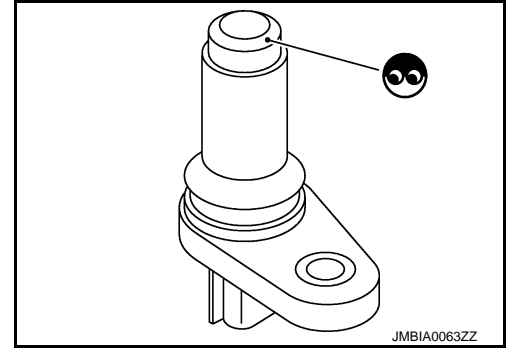
INFOID:000000011486421

1. CHECK CRANKSHAFT POSITION SENSOR (POS)-I

1. Turn ignition switch OFF.
2. Loosen the fixing bolt of the sensor.
3. Disconnect crankshaft position sensor (POS) harness connector.
4. Remove the sensor. Refer to [EM-97, "Exploded View \(GT-R certified NISSAN dealer\)"](#).
5. Visually check the sensor for chipping.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace crankshaft position sensor (POS).



2. CHECK CRANKSHAFT POSITION SENSOR (POS)-II

Check resistance between crankshaft position sensor (POS) terminals as follows.

Terminals (Polarity)	Resistance
1 (+) - 2 (-)	Except 0 or ∞ Ω [at 25°C (77°F)]
1 (+) - 3 (-)	
2 (+) - 3 (-)	

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace crankshaft position sensor (POS).

P0340, P0345 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0340, P0345 CMP SENSOR (PHASE)

Description (GT-R certified NISSAN dealer)

INFOID:000000011486422

The camshaft position sensor (PHASE) senses the retraction of camshaft (INT) to identify a particular cylinder. The camshaft position sensor (PHASE) senses the piston position.

When the crankshaft position sensor (POS) system becomes inoperative, the camshaft position sensor (PHASE) provides various controls of engine parts instead, utilizing timing of cylinder identification signals.

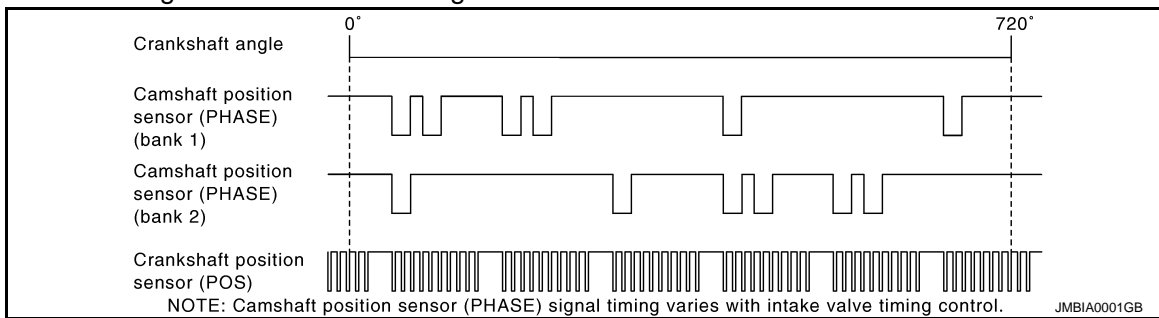
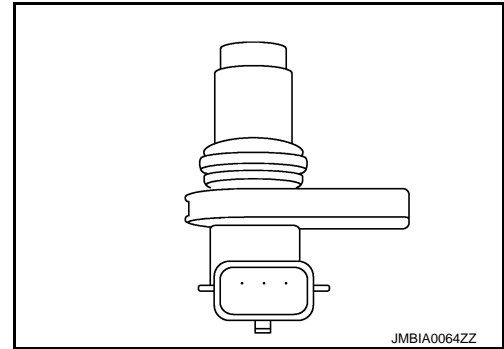
The sensor consists of a permanent magnet and Hall IC.

When engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.

ECM receives the signals as shown in the figure.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486423

DTC DETECTION LOGIC

NOTE:

If DTC P0340 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

P0340, P0345 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0340	Camshaft position sensor (PHASE) (bank 1) circuit	<ul style="list-style-type: none"> The cylinder No. signal is not sent to ECM for the first few seconds during engine cranking. The cylinder No. signal is not sent to ECM during engine running. The cylinder No. signal is not in the normal pattern during engine running. 	<ul style="list-style-type: none"> Harness or connectors [CMP sensor (PHASE) (bank 1) circuit is open or shorted.] (Sensor power supply 1 circuit is open or shorted.) Camshaft position sensor (PHASE) (bank 1) Camshaft (INT) Starter motor Starting system circuit Dead (Weak) battery Each sensor, connected with sensor power supply 1 circuit
P0345	Camshaft position sensor (PHASE) (bank 2) circuit		<ul style="list-style-type: none"> Harness or connectors [CMP sensor (PHASE) (bank 2) circuit is open or shorted.] (Sensor power supply 2 circuit is open or shorted.) Camshaft position sensor (PHASE) (bank 2) Camshaft (INT) Starter motor Starting system circuit Dead (Weak) battery Each sensor, connected with sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

- Start engine and let it idle for at least 5 seconds.
If engine does not start, crank engine for at least 2 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-336, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-II

- Maintaining engine speed at more than 800 rpm for at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-336, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486424

1. CHECK STARTING SYSTEM

P0340, P0345 CMP SENSOR (PHASE)

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Turn ignition switch to START position.

Does the engine turn over? Does the starter motor operate?

YES >> GO TO 2.

NO >> Check starting system. Refer to [STR-2, "Work Flow \(GT-R certified NISSAN dealer\)\(With GR8-1200 NI\)"](#) (with GR8-1200 NI), [STR-5, "Work Flow \(GT-R certified NISSAN dealer\)\(Without GR8-1200 NI\)"](#) (without GR8-1200 NI). For outline of GR8-1200 NI, refer to [STR-18, "Special Service Tools"](#).

2.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace ground connection.

3.CHECK CAMSHAFT POSITION (CMP) SENSOR (PHASE) POWER SUPPLY CIRCUIT-I

1. Disconnect camshaft position (CMP) sensor (PHASE) harness connector.
2. Turn ignition switch ON.
3. Check the voltage between CMP sensor (PHASE) harness connector and ground.

DTC	CMP sensor (PHASE)			Ground	Voltage (V)
	Bank	Connector	Terminal		
P0340	1	F5	1	Ground	Approx. 5
P0345	2	F45	1		

Is the inspection result normal?

YES >> GO TO 6.

NO-1 >> P0340: Repair open circuit, short to ground or short to power in harness or connectors.

NO-2 >> P0345: GO TO 4.

4.CHECK CAMSHAFT POSITION (CMP) SENSOR (PHASE) POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

CMP sensor (PHASE)			ECM		Continuity
Bank	Connector	Terminal	Connector	Terminal	
2	F45	1	F102	91	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit.

5.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair short to ground or short to power in harness or connectors.

6.CHECK CMP SENSOR (PHASE) GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

P0340, P0345 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

DTC	CMP sensor (PHASE)			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0340	1	F5	2	F102	62	Existed
P0345	2	F45	2		66	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK CMP SENSOR (PHASE) INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

DTC	CMP sensor (PHASE)			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P0340	1	F5	3	F102	63	Existed
P0345	2	F45	3		67	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8.CHECK CAMSHAFT POSITION SENSOR (PHASE)

Refer to [EC-338, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace malfunctioning camshaft position sensor (PHASE). Refer to [EM-87, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

9.CHECK CAMSHAFT (INT)

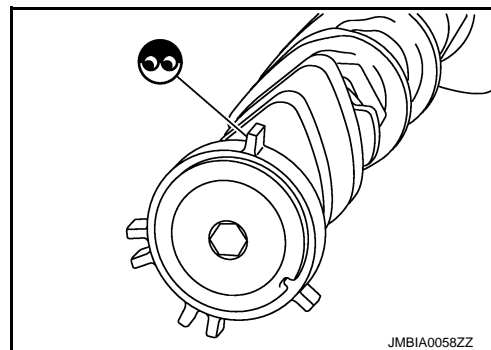
Check the following.

- Accumulation of debris on the signal plate of camshaft rear end
- Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> GO TO 10.

NO >> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to [EM-87, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).



10.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486425

1.CHECK CAMSHAFT POSITION SENSOR (PHASE)-I

1. Turn ignition switch OFF.
2. Loosen the fixing bolt of the sensor.
3. Disconnect camshaft position sensor (PHASE) harness connector.
4. Remove the sensor. Refer to [EM-87, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

P0340, P0345 CMP SENSOR (PHASE)

[VR38]

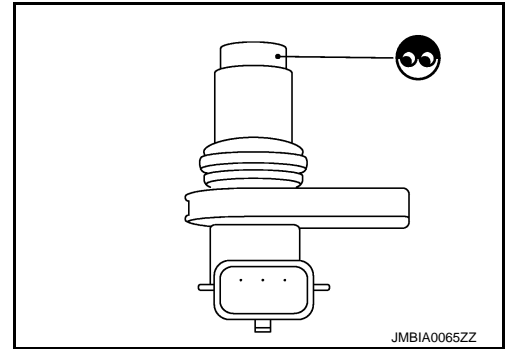
< DTC/CIRCUIT DIAGNOSIS >

5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace malfunctioning camshaft position sensor (PHASE).



2. CHECK CAMSHAFT POSITION SENSOR (PHASE)-II

Check resistance camshaft position sensor (PHASE) terminals as follows.

Terminals (Polarity)	Resistance
1 (+) - 2 (-)	Except 0 or ∞ Ω [at 25°C (77°F)]
1 (+) - 3 (-)	
2 (+) - 3 (-)	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning camshaft position sensor (PHASE).

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P0411 SECONDARY AIR INJECTION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0411 SECONDARY AIR INJECTION SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486426

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0411	Secondary air injection system incorrect flow detected	Though the secondary air injection system is operating, the signal voltage from the secondary air injection system mass air flow sensor to the ECM is too low or high.	<ul style="list-style-type: none">• Harness or connectors (Air pump circuit is open or shorted) (Air pump relay circuit is open or shorted) (Air cut solenoid valve circuit is open or shorted) (Air cut solenoid valve relay circuit is open or shorted)• Air cut solenoid valve• Air cut solenoid valve relay• Air pump assembly• Air pump relay• Disconnection, clogging, collapsing and damage of hose or piping

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Before performing the following procedure, check that the atmospheric pressure is 87 kPa (870 mbar, 653 mmHg, 25.71 inHg) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and warm it up to the normal operating temperature.
2. Stop the engine and turn ignition switch OFF.
3. Cool down the engine so that the coolant temperature lowers between 15 - 35° (59 - 95°F).

CAUTION:

Never turn the ignition switch ON while cooling down the engine.

NOTE:

The engine cooling down time varies depending on the ambient temperature. Putting the vehicle in an indoor place where the temperature is moderate may shorten the cooling down time.

4. Start engine and let it idle for at least 40 seconds.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-340, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486427

1. CHECK HOSE AND PIPING

Check the following.

- Disconnection, clogging, collapsing and damage of hose or piping between secondary air injection system mass air flow sensor and air pump.
- Disconnection, clogging, collapsing and damage of hose or piping between air pump and air cut solenoid valve.
- Clogging of hose or piping between air cut solenoid valve and cylinder head.

P0411 SECONDARY AIR INJECTION SYSTEM

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace malfunctioning part.

2.CHECK AIR PUMP RELAY POWER SUPPLY CIRCUIT-I

1. Disconnect air pump relay harness connector.
2. Turn ignition switch ON.
3. Check the voltage between air pump relay harness connector and ground.

Air pump relay		Ground	Voltage
Connector	Terminal		
E51	1	Ground	Battery voltage
	3		

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3.DETECT MALFUNCTIONING PART

Check the following.

- 40A fusible link (letter K)
- Harness for open or short between air pump relay and IPDM E/R
- Harness for open or short between air pump relay and battery

>> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK AIR PUMP RELAY POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between air pump relay harness connector and ECM harness connector.

Air pump relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E51	2	M107	120	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

- Harness or connectors E106, M6
- Harness for open or short between air pump relay and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK AIR PUMP RELAY

Refer to [EC-344, "Component Inspection \(AIR PUMP RELAY\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 7.
NO >> Replace air pump relay.

7.CHECK AIR PUMP POWER SUPPLY CIRCUIT

1. Disconnect air pump harness connector.
2. Check the continuity between air pump relay harness connector and air pump harness connector.

P0411 SECONDARY AIR INJECTION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Air pump relay		Air pump		Continuity
Connector	Terminal	Connector	Terminal	
E51	5	E14	2	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK AIR PUMP GROUND CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between air pump harness connector and ground.

Air pump		Ground	Continuity
Connector	Terminal		
E14	1	Ground	Existed

2. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair open circuit or short to power in harness or connectors.

9. CHECK AIR PUMP

Refer to [EC-344. "Component Inspection \(AIR PUMP\) \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace air pump assembly. Refer to [EM-33. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

10. CHECK AIR CUT SOLENOID VALVE RELAY POWER SUPPLY CIRCUIT-I

1. Reconnect all harness connectors disconnected.
2. Disconnect air cut solenoid valve relay harness connector.
3. Turn ignition switch ON.
4. Check the voltage between air cut solenoid valve relay harness connector and ground.

Air cut solenoid valve relay		Ground	Voltage
Connector	Terminal		
E52	1	Ground	Battery voltage
	5		

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check the following.

- 10A fuse (No. 12)
- Harness for open or short between air cut solenoid valve relay and IPDM E/R
- Harness for open or short between air cut solenoid valve relay and fuse block (J/B)

>> Repair open circuit, short to ground or short to power in harness or connectors.

12. CHECK AIR CUT SOLENOID VALVE RELAY POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between air cut solenoid valve relay harness connector and ECM harness connector.

P0411 SECONDARY AIR INJECTION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Air cut solenoid valve relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E52	2	M107	109	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> GO TO 13.

13. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between air cut solenoid valve relay and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

14. CHECK AIR CUT SOLENOID VALVE RELAY

Refer to [EC-523, "Component Inspection \(AIR CUT SOLENOID VALVE RELAY\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 15.
- NO >> Replace air cut solenoid valve relay. For the relay layout, refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

15. CHECK AIR CUT SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Disconnect air cut solenoid valve harness connector.
2. Check the continuity between air cut solenoid valve relay harness connector and air cut solenoid valve harness connector.

Air cut solenoid valve			Air cut solenoid valve relay		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F6	1	E52	3	Existed
2	F46	1			

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 17.
- NO >> GO TO 16.

16. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness connectors F103, M116
- Harness for open or short between air cut solenoid valve relay and air cut solenoid valve

>> Repair open circuit, short to ground or short to power in harness or connectors.

17. CHECK AIR CUT SOLENOID VALVE GROUND CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between air cut solenoid valve harness connector and ground.

Air cut solenoid valve			Ground	Continuity
Bank	Connector	Terminal		
1	F6	2	Ground	Existed
2	F46	2		

P0411 SECONDARY AIR INJECTION SYSTEM

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair open circuit or short to power in harness or connectors.

18.CHECK AIR CUT SOLENOID VALVE

Refer to [EC-523, "Component Inspection \(AIR CUT SOLENOID VALVE\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace malfunctioning air cut solenoid valve. Refer to [EM-33, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

19.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (AIR PUMP RELAY) (GT-R certified NISSAN dealer)

INFOID:000000011486428

1.CHECK AIR PUMP RELAY

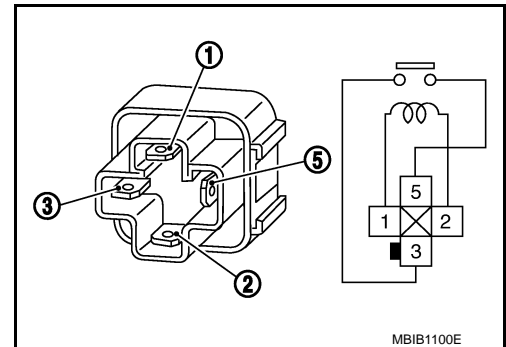
1. Turn ignition switch OFF.
2. Remove air pump relay. For the relay layout, refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).
3. Check the continuity between air pump relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12 V direct current supply between terminals 1 and 2	Existed
	No supply	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace air pump relay.



MBIB1100E

Component Inspection (AIR PUMP) (GT-R certified NISSAN dealer)

INFOID:000000011486429

1.CHECK AIR PUMP

1. Turn ignition switch OFF.
2. Disconnect air pump harness connector.
3. Supply air pump terminals with battery voltage and check operation.

AIR PUMP			Operation
Connector	Terminals		
	+	-	
E14	2	1	Air pump operates

CAUTION:

- The brush of the air pump may burn out. Be careful to perform the inspection taking a two- hour or more break from the latest activation of the air pump.
- Never apply the battery voltage to the air pump for 30 seconds or more continuously.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace air pump assembly. Refer to [EM-33, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

P0420, P0430 THREE WAY CATALYST FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0420, P0430 THREE WAY CATALYST FUNCTION

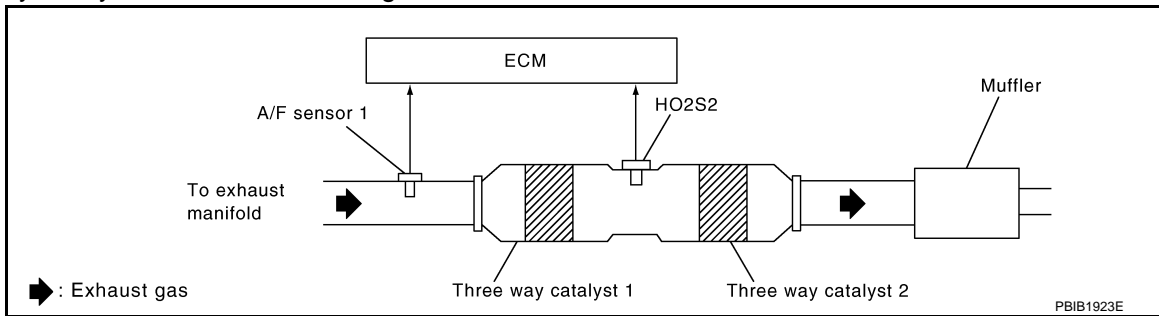
DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486430

DTC DETECTION LOGIC

The ECM monitors the switching frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2. A three way catalyst 1 with high oxygen storage capacity will indicate a low switching frequency of heated oxygen sensor 2. As oxygen storage capacity decreases, the heated oxygen sensor 2 switching frequency will increase.

When the frequency ratio of A/F sensor 1 and heated oxygen sensor 2 approaches a specified limit value, the three way catalyst 1 malfunction is diagnosed.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0420	Catalyst system efficiency below threshold (bank 1)	<ul style="list-style-type: none"> • Three way catalyst (manifold) does not operate properly. • Three way catalyst (manifold) does not have enough oxygen storage capacity. 	<ul style="list-style-type: none"> • Three way catalyst (manifold) • Exhaust tube • Intake air leaks • Fuel injector • Fuel injector leaks • Spark plug • Improper ignition timing
P0430	Catalyst system efficiency below threshold (bank 2)		

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 7.

2. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Do not maintain engine speed for more than the specified minutes below.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-I

With CONSULT

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Turn ignition switch OFF and wait at least 10 seconds.
6. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
7. Let engine idle for 1 minute.

P0420, P0430 THREE WAY CATALYST FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

8. Check that "COOLAN TEMP/S" indicates more than 70°C (158°F).
If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F).
9. Open engine hood.
10. Select "DTC & SRT CONFIRMATION" then "SRT WORK SUPPORT" mode with CONSULT.
11. Rev engine between 2,000 and 3,000 rpm and hold it for 3 consecutive minutes then release the accelerator pedal completely.
12. Check the indication of "CATALYST".

Which is displayed on CONSULT screen?

- CMPLT >> GO TO 6.
- INCMP >> GO TO 4.

4.PERFORM DTC CONFIRMATION PROCEDURE-II

1. Wait 5 seconds at idle.
2. Rev engine between 2,000 and 3,000 rpm and maintain it until "INCMP" of "CATALYST" changes to "CMPLT" (It will take approximately 5 minutes).

Does the indication change to "CMPLT"?

- YES >> GO TO 6.
- NO >> GO TO 5.

5.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Stop engine and cool it down to less than 70°C (158°F).
2. Perform DTC CONFIRMATION PROCEDURE again.

>> GO TO 3.

6.PERFORM DTC CONFIRMATION PROCEDURE-III

Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-347, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

7.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-346, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the three way catalyst (manifold). During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Refer to [EC-347, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486431

1.PERFORM COMPONENT FUNCTION CHECK

⊗ Without CONSULT

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Open engine hood.
6. Check the voltage between ECM harness connector terminals under the following condition.

P0420, P0430 THREE WAY CATALYST FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

DTC	ECM		Condition	Voltage	
	Connector	+			-
		Terminal			Terminal
P0420	F102	73 [HO2S2 (bank 1)]	70	Keeping engine speed at 2,500 rpm constant under no load	The voltage fluctuation cycle takes more than 5 seconds. • 1 cycle: 0.6 - 1.0 → 0 - 0.3 → 0.6 - 1.0
P0430		77 [HO2S2 (bank 2)]			

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-347. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486432

1. CHECK EXHAUST SYSTEM

Visually check exhaust tubes and muffler for dents.

Is the inspection result normal?

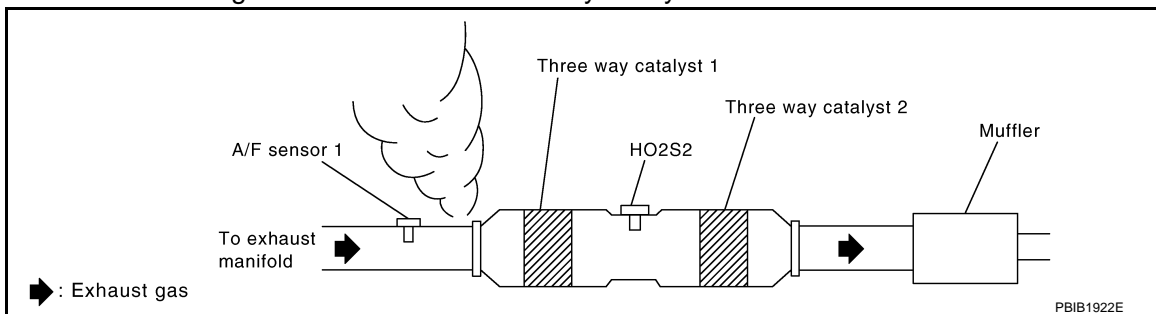
YES >> GO TO 2.

NO >> Repair or replace malfunctioning part.

2. CHECK EXHAUST GAS LEAK

1. Start engine and run it at idle.

2. Listen for an exhaust gas leak before the three way catalyst 1.



Is exhaust gas leak detected?

YES >> Repair or replace malfunctioning part.

NO >> GO TO 3.

3. CHECK INTAKE AIR LEAK

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

Is intake air leak detected?

YES >> Repair or replace malfunctioning part.

NO >> GO TO 4.

4. CHECK IDLE SPEED AND IGNITION TIMING

Check idle speed and ignition timing.

For procedure, refer to [EC-17. "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

For specification, refer to [EC-640. "Idle Speed"](#) and [EC-640. "Ignition Timing"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Follow the [EC-17. "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

5. CHECK FUEL INJECTORS

1. Stop engine and then turn ignition switch ON.

P0420, P0430 THREE WAY CATALYST FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2. Check the voltage between ECM harness connector terminals as follows.

ECM				Voltage
+		-		
Connector	Terminal	Connector	Terminal	
F101	17	M107	128	Battery voltage
	21			
	25			
	37			
	41			
	45			

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform [EC-538, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

6. CHECK FUNCTION OF IGNITION COIL-I

CAUTION:

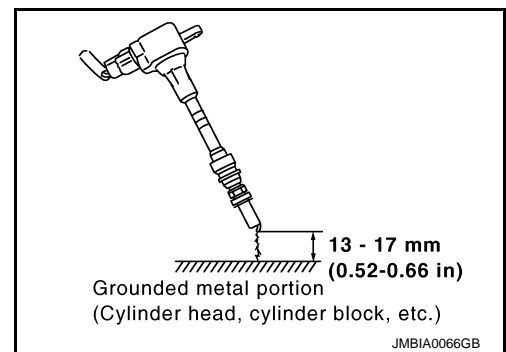
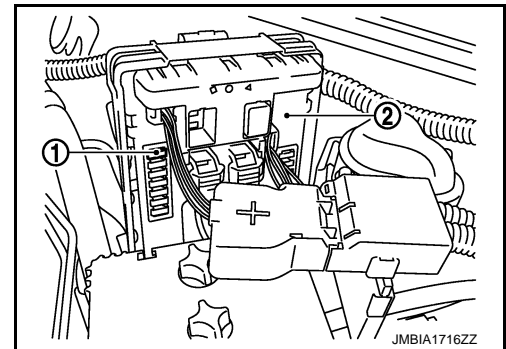
Perform the following procedure in a place with no combustible objects and good ventilation.

1. Turn ignition switch OFF.
2. Remove fuel pump fuse (1) in IPDM E/R (2) to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

3. Start engine.
4. After engine stalls, crank it two or three times to release all fuel pressure.
5. Turn ignition switch OFF.
6. Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.
7. Remove ignition coil and spark plug of the cylinder to be checked.
8. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
9. Connect spark plug and harness connector to ignition coil.
10. Fix ignition coil using a rope etc. with gap of 13 - 17 mm (0.52 - 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
11. Crank engine for about 3 seconds, and check whether spark is generated between the spark plug and the grounded metal portion.



Spark should be generated.

CAUTION:

- During the operation, always stay 0.5 m (1.6 ft) or more away from the spark plug and the ignition coil. Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might to damage the ignition coil if the gap of more than 17 mm (0.66 in) is made.

NOTE:

When the gap is less than 13 mm (0.52 in), a spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 7.

7. CHECK FUNCTION OF IGNITION COIL-II

P0420, P0430 THREE WAY CATALYST FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect spark plug and connect a non-malfunctioning spark plug.
3. Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Check ignition coil, power transistor and their circuits. Refer to [EC-544, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

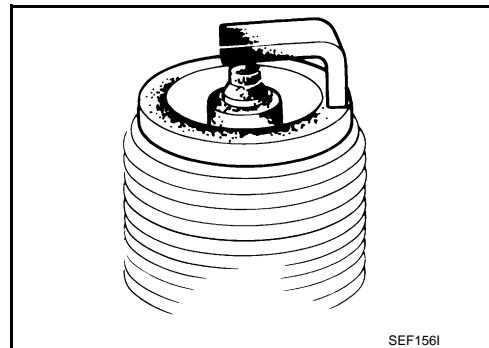
8.CHECK SPARK PLUG

Check the initial spark plug for fouling, etc.

Is the inspection result normal?

YES >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to [EM-141, "Spark Plug"](#).

NO >> Repair or clean spark plug. Refer to [EM-18, "Removal and Installation"](#). Then GO TO 9.



9.CHECK FUNCTION OF IGNITION COIL-III

1. Reconnect the initial spark plugs.
2. Crank engine for about three seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to [EM-141, "Spark Plug"](#).

10.CHECK FUEL INJECTOR

1. Turn ignition switch OFF.
2. Remove fuel injector assembly.
Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
Keep fuel hose and all fuel injectors connected to fuel tube.
3. Disconnect all ignition coil harness connectors.
4. Reconnect all fuel injector harness connectors disconnected.
5. Turn ignition switch ON.

Does fuel drip from fuel injector?

YES >> Replace the fuel injector(s) from which fuel is dripping.

NO >> GO TO 11.

11.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace three way catalyst assembly. Refer to [EM-50, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

NO >> Repair or replace harness or connector.

P0441 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0441 EVAP CONTROL SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486433

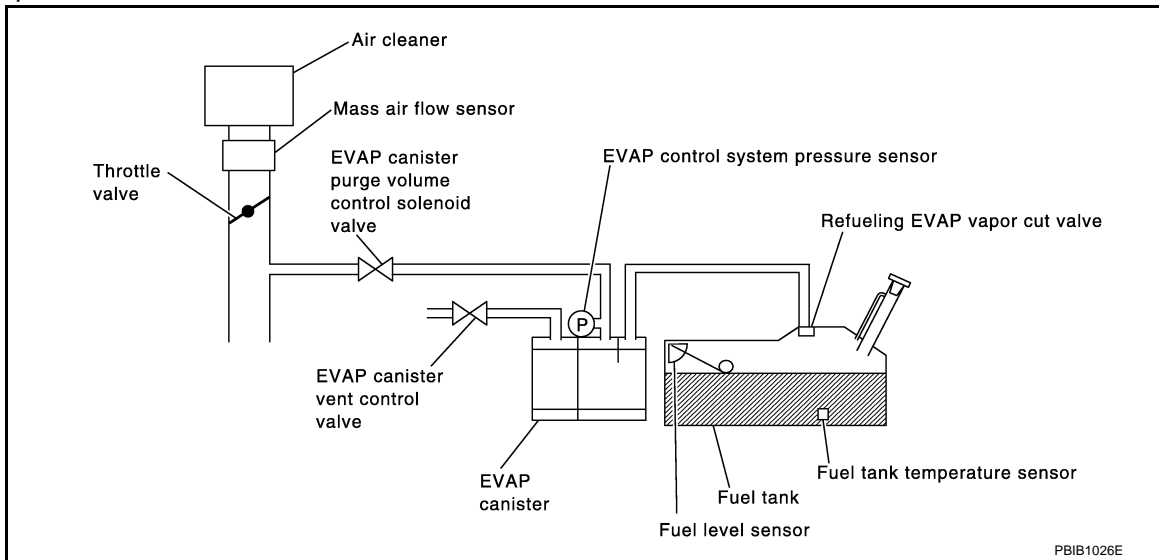
DTC DETECTION LOGIC

NOTE:

If DTC P0441 is displayed with other DTC such as P2122, P2123, P2127, P2128 or P2138, first perform trouble diagnosis for other DTC.

In this evaporative emission (EVAP) control system, purge flow occurs during non-closed throttle conditions. Purge volume is related to air intake volume. Under normal purge conditions (non-closed throttle), the EVAP canister purge volume control solenoid valve is open to admit purge flow. Purge flow exposes the EVAP control system pressure sensor to intake manifold vacuum.

Under normal conditions (non-closed throttle), sensor output voltage indicates if pressure drop and purge flow are adequate. If not, a malfunction is determined.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0441	EVAP control system incorrect purge flow	EVAP control system does not operate properly, EVAP control system has a leak between intake manifold and EVAP control system pressure sensor.	<ul style="list-style-type: none"> • EVAP canister purge volume control solenoid valve stuck closed • EVAP control system pressure sensor and the circuit • Loose, disconnected or improper connection of rubber tube • Blocked rubber tube • Cracked EVAP canister • EVAP canister purge volume control solenoid valve circuit • Accelerator pedal position sensor • Blocked purge port • EVAP canister vent control valve

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 6.

2. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.

P0441 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-I

With CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and let it idle for at least 70 seconds.
6. Select "PURG FLOW P0441" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT.
7. Touch "START".

Is "COMPLETED" displayed on CONSULT screen?

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

4.PERFORM DTC CONFIRMATION PROCEDURE-II

When the following conditions are met, "TESTING" will be displayed on the CONSULT screen. Maintain the conditions continuously until "TESTING" changes to "COMPLETED". (It will take at least 35 seconds.)

Shift lever	Suitable position
VHCL SPEED SE	32 - 120 km/h (20 - 75 mph)
ENG SPEED	500 - 3,000 rpm
B/FUEL SCHDL	1.3 - 9.0 msec
COOLAN TEMP/S	More than 0°C (32°F)

CAUTION:

Always drive vehicle at a safe speed.

Is "COMPLETED" displayed on CONSULT screen?

- YES >> GO TO 5.
NO >> Perform DTC CONFIRMATION PROCEDURE again. GO TO 3.

5.PERFORM DTC CONFIRMATION PROCEDURE-III

Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

- OK >> INSPECTION END
NG >> Refer to [EC-352. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

6.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-351. "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use component function check to check the overall monitoring function of the EVAP control system purge flow monitoring. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Refer to [EC-352. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486434

1.PERFORM COMPONENT FUNCTION CHECK

Without CONSULT

P0441 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

1. Lift up drive wheels.
2. Start engine (VDC switch OFF) and warm it up to normal operating temperature.
3. Turn ignition switch OFF, wait at least 10 seconds.
4. Start engine and wait at least 70 seconds.
5. Set voltmeter probes to ECM harness connector terminals under the following condition.

ECM		
Connector	+	-
	Terminal	Terminal
M107	78 (EVAP control system pressure sensor signal)	75

6. Check EVAP control system pressure sensor value at idle speed and note it.
7. Establish and maintain the following conditions for at least 1 minute.

Air conditioner switch	ON
Headlamp switch	ON
Rear window defogger switch	ON
Engine speed	Approx. 3,000 rpm
Gear position	Any position other than P, N or R

8. Verify that EVAP control system pressure sensor value stays 0.1 V less than the value at idle speed (measured at step 6) for at least 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-352, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486435

1.CHECK EVAP CANISTER

1. Turn ignition switch OFF.
2. Check EVAP canister for cracks.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 2.

YES-2 >> Without CONSULT: GO TO 3.

NO >> Replace EVAP canister. Refer to [FL-16, "Removal and Installation"](#).

2.CHECK PURGE FLOW

With CONSULT

1. Disconnect vacuum hose connected to EVAP canister purge volume control solenoid valve at EVAP service port.
2. Start engine and let it idle.
3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT.
4. Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL CONT/V" opening and check vacuum existence.

PURG VOL CONT/V	Vacuum
100%	Existed
0%	Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

3.CHECK PURGE FLOW

Without CONSULT

1. Start engine and warm it up to normal operating temperature.

P0441 EVAP CONTROL SYSTEM

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< DTC/CIRCUIT DIAGNOSIS >

2. Stop engine.
3. Disconnect vacuum hose connected to EVAP canister purge volume control solenoid valve at EVAP service port and install vacuum gauge. For the location of EVAP service port, refer to [EC-104. "System Diagram \(GT-R certified NISSAN dealer\)"](#).
4. Start engine and let it idle.
Do not depress accelerator pedal even slightly.
5. Check vacuum gauge indication before 60 seconds pass after starting engine.

Vacuum should not exist.

6. Rev engine up to 2,000rpm after 100 seconds pass after starting engine.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4.CHECK EVAP PURGE LINE

1. Turn ignition switch OFF.
2. Check EVAP purge line for improper connection or disconnection.
Refer to [EC-104. "System Diagram \(GT-R certified NISSAN dealer\)"](#).

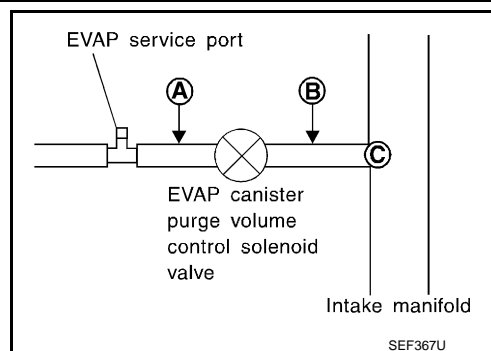
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair EVAP purge line.

5.CHECK EVAP PURGE HOSE AND PURGE PORT

1. Disconnect purge hoses connected to EVAP service port **A** and EVAP canister purge volume control solenoid valve **B**.
2. Blow air into each hose and EVAP purge port **C**.



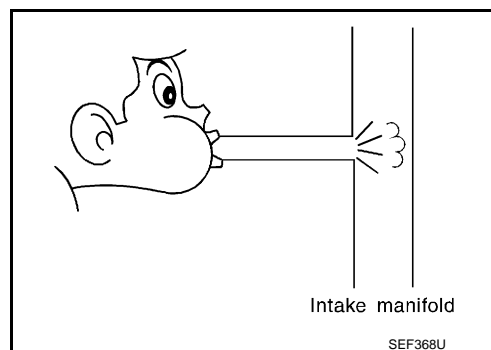
3. Check that air flows freely.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 6.

YES-2 >> Without CONSULT: GO TO 7.

NO >> Repair or clean hoses and/or purge port.



6.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

With CONSULT

1. Start engine.
2. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> GO TO 8.

NO >> GO TO 7.

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< DTC/CIRCUIT DIAGNOSIS >

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7. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to [EC-364, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35, "Exploded View"](#).

8. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

1. Disconnect EVAP control system pressure sensor harness connector.

2. Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

9. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR FUNCTION

Refer to [EC-380, "DTC Logic \(GT-R certified NISSAN dealer\)"](#) for DTC P0452, [EC-384, "DTC Logic \(GT-R certified NISSAN dealer\)"](#) for DTC P0453.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

10. CHECK RUBBER TUBE FOR CLOGGING

1. Disconnect rubber tube connected to EVAP canister vent control valve.

2. Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Clean the rubber tube using an air blower.

11. CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to [EC-371, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace EVAP canister vent control valve. Refer to [FL-16, "Removal and Installation"](#).

12. CHECK EVAP PURGE LINE

Inspect EVAP purge line (pipe and rubber tube). Check for evidence of leaks.

Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace malfunctioning part.

13. CLEAN EVAP PURGE LINE

Clean EVAP purge line (pipe and rubber tube) using air blower.

>> GO TO 14.

14. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

P0442 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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P0442 EVAP CONTROL SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486436

DTC DETECTION LOGIC

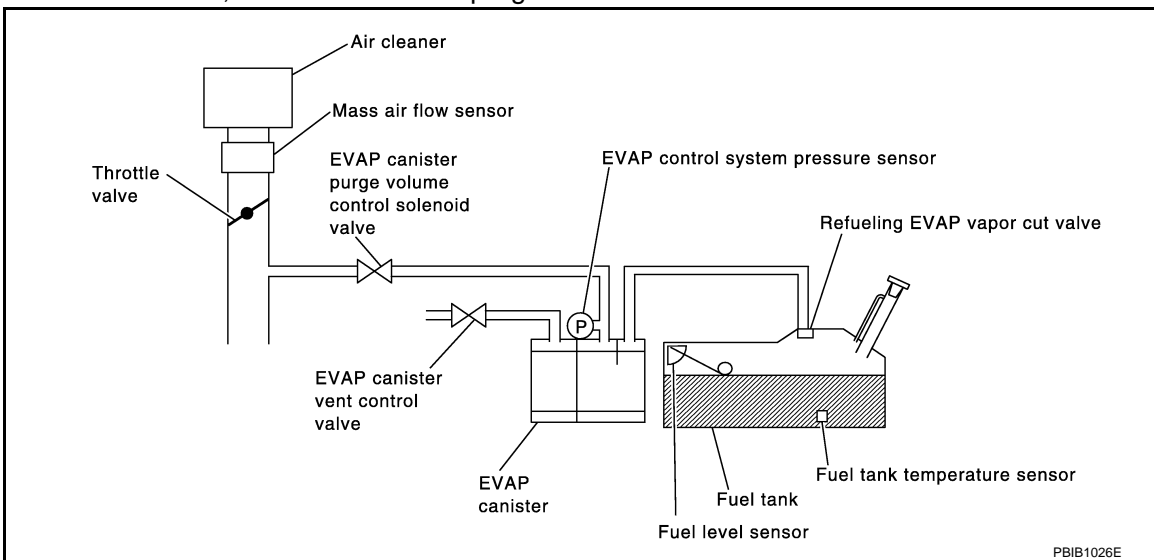
NOTE:

If DTC P0442 is displayed with DTC P0456, first perform the trouble diagnosis for DTC P0456. Refer to [EC-395, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

This diagnosis detects leaks in the EVAP purge line using engine intake manifold vacuum.

If pressure does not increase, the ECM will check for leaks in the line between the fuel tank and EVAP canister purge volume control solenoid valve, under the following "Vacuum test" conditions.

The EVAP canister vent control valve is closed to shut the EVAP purge line off. The EVAP canister purge volume control solenoid valve will then be opened to depressurize the EVAP purge line using intake manifold vacuum. After this occurs, the EVAP canister purge volume control solenoid valve will be closed.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0442	EVAP control system small leak detected (negative pressure)	EVAP control system has a leak, EVAP control system does not operate properly.	<ul style="list-style-type: none"> • Incorrect fuel tank vacuum relief valve • Incorrect fuel filler cap used • Fuel filler cap remains open or fails to close. • Foreign matter caught in fuel filler cap. • Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve. • Foreign matter caught in EVAP canister vent control valve. • EVAP canister or fuel tank leaks • EVAP purge line (pipe and rubber tube) leaks • EVAP purge line rubber tube bent • Loose or disconnected rubber tube • EVAP canister vent control valve and the circuit • EVAP canister purge volume control solenoid valve and the circuit • Fuel tank temperature sensor • O-ring of EVAP canister vent control valve is missing or damaged • EVAP canister is saturated with water • EVAP control system pressure sensor • Fuel level sensor and the circuit • Refueling EVAP vapor cut valve • ORVR system leaks

CAUTION:

- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.
- If the fuel filler cap is not tightened properly, the MIL may illuminate.

P0442 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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- Use only a genuine NISSAN rubber tube as a replacement.

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Perform "DTC WORK SUPPORT" when the fuel level is between 1/4 and 3/4 full, and vehicle is placed on flat level surface.
- Always perform test at a temperature of 0 to 30°C (32 to 86°F).

NOTE:

Check that EVAP hoses are connected to EVAP canister purge volume control solenoid valve properly.

Do you have CONSULT?

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

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
4. Check that the following conditions are met.
COOLANT TEMP/S: 0 - 70°C (32 - 158°F)
INT/A TEMP SE: 0 - 30°C (32 - 86°F)
5. Select "EVP V/S LEAK P0456/P1456" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT.

Follow the instructions displayed.

NOTE:

If the engine speed cannot be maintained within the range displayed on the CONSULT screen, go to [EC-17. "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

Which is displayed on CONSULT screen?

- OK >> INSPECTION END
NG >> Refer to [EC-356. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

3. PERFORM DTC CONFIRMATION PROCEDURE

With GST

NOTE:

Be sure to read the explanation of Driving Pattern in [EC-28. "SRT Set Driving Pattern \(GT-R certified NISSAN dealer\)".](#) before driving vehicle.

1. Start engine.
2. Drive vehicle according to Driving Pattern.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Turn ignition switch OFF, wait at least 10 seconds and then turn ON.
6. Check 1st trip DTC.

Is 1st trip DTC displayed?

- YES-1 >> P0441: Refer to [EC-352. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
YES-2 >> P0442: Refer to [EC-356. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486437

1. CHECK FUEL FILLER CAP DESIGN

1. Turn ignition switch OFF.

P0442 EVAP CONTROL SYSTEM

[VR38]

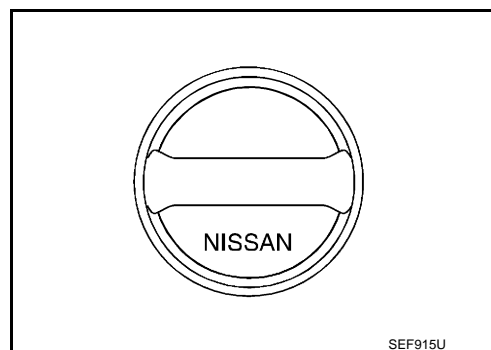
< DTC/CIRCUIT DIAGNOSIS >

2. Check for genuine NISSAN fuel filler cap design.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace with genuine NISSAN fuel filler cap.



2. CHECK FUEL FILLER CAP INSTALLATION

Check that the cap is tightened properly by rotating the cap clockwise.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Open fuel filler cap, then clean cap and fuel filler neck threads using air blower. Retighten until ratcheting sound is heard.

3. CHECK FUEL FILLER CAP FUNCTION

Check for air releasing sound while opening the fuel filler cap.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK FUEL TANK VACUUM RELIEF VALVE

Refer to [EC-360. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace fuel filler cap with a genuine one.

5. CHECK FOR EVAP LEAK

Refer to [EC-638. "Inspection"](#).

Is there any leak in EVAP line?

YES >> Repair or replace malfunctioning part.

NO >> GO TO 6.

6. CHECK EVAP CANISTER VENT CONTROL VALVE

Check the following.

- EVAP canister vent control valve is installed properly.

Refer to [FL-16. "Removal and Installation"](#).

- EVAP canister vent control valve.

Refer to [EC-371. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace EVAP canister vent control valve and O-ring. Refer to [FL-16. "Removal and Installation"](#).

7. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

P0442 EVAP CONTROL SYSTEM

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< DTC/CIRCUIT DIAGNOSIS >

2. Check if water will drain from EVAP canister (1).

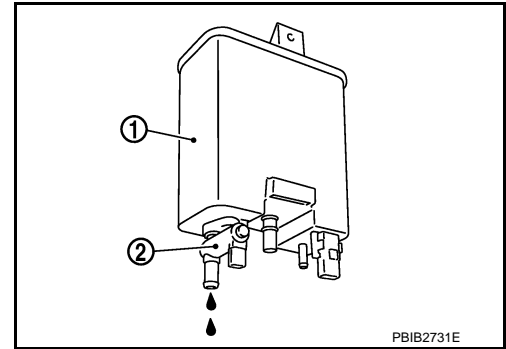
2 : EVAP canister vent control valve

Does water drain from the EVAP canister?

YES >> GO TO 8.

NO-1 >> With CONSULT: GO TO 10.

NO-2 >> Without CONSULT: GO TO 11.



8. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 10.

YES-2 >> Without CONSULT: GO TO 11.

NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to [FL-16, "Removal and Installation"](#).

10. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

With CONSULT

1. Disconnect vacuum hose connected from EVAP canister purge volume control solenoid valve at EVAP service port.
2. Start engine and let it idle.
3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode.
4. Touch "Qu" on CONSULT screen to increase "PURG VOL CONT/V" opening to 100%.
5. Check vacuum hose for vacuum.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

11. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

Without CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Stop engine.
3. Disconnect vacuum hose connected from EVAP canister purge volume control solenoid valve at EVAP service port.
4. Start engine and let it idle for at least 80 seconds.
5. Check vacuum hose for vacuum when revving engine up to 2,000 rpm.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

12. CHECK VACUUM HOSE

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< DTC/CIRCUIT DIAGNOSIS >

Check vacuum hoses for clogging or disconnection. Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or reconnect the hose.

13.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to [EC-364, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35, "Exploded View"](#).

14.CHECK FUEL TANK TEMPERATURE SENSOR

Refer to [EC-296, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace "fuel level sensor unit and fuel pump". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

15.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-379, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

16.CHECK EVAP PURGE LINE

Check EVAP purge line (pipe, rubber tube, fuel tank and EVAP canister) for cracks or improper connection.

Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or reconnect the hose.

17.CLEAN EVAP PURGE LINE

Clean EVAP purge line (pipe and rubber tube) using air blower.

>> GO TO 18.

18.CHECK EVAP/ORVR LINE

Check EVAP/ORVR line between EVAP canister and fuel tank for clogging, kinks, looseness and improper connection. For location, refer to [EC-554, "Description \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 19.

NO >> Repair or replace hoses and tubes.

19.CHECK RECIRCULATION LINE

Check recirculation line between fuel filler tube and fuel tank for clogging, kinks, cracks, looseness and improper connection.

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair or replace hose, tube or fuel filler tube.

20.CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to [EC-557, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 21.

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

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21. CHECK FUEL LEVEL SENSOR

Refer to [MWI-71. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 22.

NO >> Replace "fuel level sensor unit and fuel pump (main)". Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

22. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

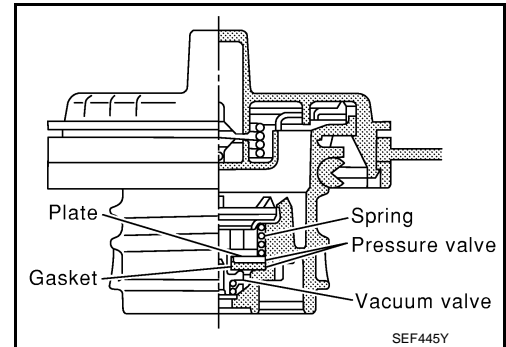
>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486438

1. CHECK FUEL FILLER CAP

1. Turn ignition switch OFF.
2. Remove fuel filler cap.
3. Wipe clean valve housing.



4. Install fuel filler cap adapter (commercial service tool) to fuel filler cap.
5. Check valve opening pressure and vacuum.

Pressure: 15.3 - 20.0 kPa (0.153 – 0.200 bar, 0.156 - 0.204 kg/cm², 2.22 - 2.90 psi)

Vacuum: -6.0 to -3.3 kPa (-0.06 to -0.034 bar, -0.061 to -0.034 kg/cm², -0.87 to -0.48 psi)

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

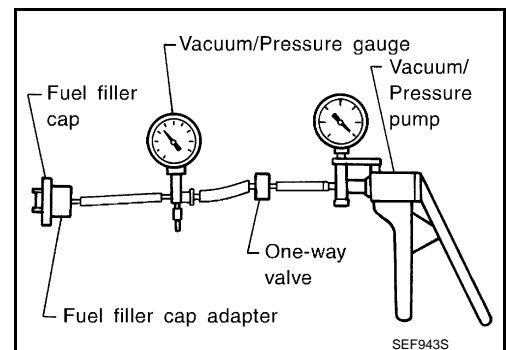
2. REPLACE FUEL FILLER CAP

Replace fuel filler cap.

CAUTION:

Use only a genuine fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.

>> INSPECTION END



P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

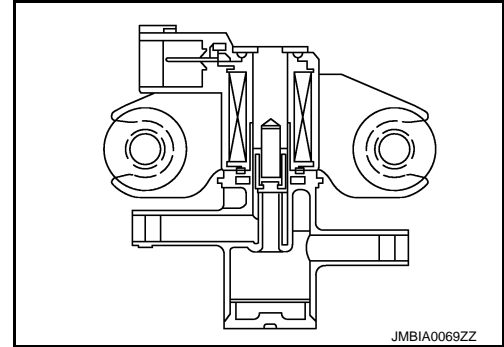
[VR38]

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486439

The EVAP canister purge volume control solenoid valve is used duty to control the flow rate of fuel vapor from the EVAP canister. The EVAP canister purge volume control solenoid valve is moved by ON/OFF pulses from the ECM. The longer the ON pulse, the greater the amount of fuel vapor that will flow through the valve.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486440

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0443	EVAP canister purge volume control solenoid valve	A	The canister purge flow is detected during the vehicle is stopped while the engine is running, even when EVAP canister purge volume control solenoid valve is completely closed.	<ul style="list-style-type: none"> • EVAP control system pressure sensor • EVAP canister purge volume control solenoid valve (The valve is stuck open.)
		B	The canister purge flow is detected during the specified driving conditions, even when EVAP canister purge volume control solenoid valve is completely closed.	<ul style="list-style-type: none"> • EVAP canister vent control valve • EVAP canister • Hoses (Hoses are connected incorrectly or clogged.)

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Perform "DTC CONFIRMATION PROCEDURE" when the fuel level is between 1/4 and 3/4 full, and vehicle is placed on flat level surface.
- Always perform test at a temperature of 5°C (41°F) to 60°C (140°F).
- Cool the vehicle so that engine coolant temperature becomes same level as ambient temperature.

Do you have CONSULT?

- YES >> GO TO 2.
NO >> GO TO 4.

2. PERFORM DTC CONFIRMATION PROCEDURE A

Ⓜ With CONSULT

1. Turn ignition switch ON.
2. Check that the following condition are met.
FUEL T/TMP SE: 0 - 35°C (32 - 95°F)
3. Start the engine and wait at least 60 seconds.
4. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-362. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE B

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Ⓟ With CONSULT

1. Start the engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Turn ignition switch ON and select "PURG VOL CN/V P1444" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT.
6. Touch "START".
7. Start the engine and let it idle until "TESTING" on CONSULT changes to "COMPLETED". (It will take approximately 10 seconds.)
If "TESTING" is not displayed after 5 minutes, retry from step 2.
8. Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Refer to [EC-362, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

4. PERFORM DTC CONFIRMATION PROCEDURE A

Ⓟ With GST

1. Turn ignition switch ON.
2. Set voltmeter probes to ECM harness connector terminals.

ECM			Voltage (V)
Connector	+	-	
	Terminal	Terminal	
F101	42 (Fuel tank temperature sensor signal)	128 (Sensor ground)	3.1 - 4.0

3. Start the engine and wait at least 60 seconds.
4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-362, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE B

Ⓟ With GST

1. Start the engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start the engine and let it idle for at least 20 seconds.
6. Check 1st trip DTC.

Is 1st trip DTC displayed?

YES >> Refer to [EC-362, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486441

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
3. Turn ignition switch ON.
4. Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

EVAP canister purge volume control solenoid valve		Ground	Voltage
Connector	Terminal		
F13	1	Ground	Battery voltage

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Is the inspection result normal?

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

2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness connectors M116, F103
- Harness for open or short between EVAP canister purge volume control solenoid valve and IPDM E/R
- Harness for open or short between EVAP canister purge volume control solenoid valve and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between EVAP canister purge volume control solenoid valve harness connector and ECM harness connector.

EVAP canister purge volume control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F13	2	F101	8	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

1. Disconnect EVAP control system pressure sensor harness connector.
2. Check that water is not inside connectors.

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

5. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-379, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES-1 >> With CONSULT: GO TO 6.
- YES-2 >> Without CONSULT: GO TO 7.
- NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

6. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

 **With CONSULT**

1. Turn ignition switch OFF.
2. Reconnect harness connectors disconnected.
3. Start the engine.
4. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

- YES >> GO TO 8.
- NO >> GO TO 7.

7. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to [EC-364, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

YES >> GO TO 8.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35, "Exploded View"](#).

8. CHECK RUBBER TUBE FOR CLOGGING

1. Disconnect rubber tube connected to EVAP canister vent control valve.
2. Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Clean the rubber tube using an air blower.

9. CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to [EC-371, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace EVAP canister vent control valve. Refer to [FL-16, "Removal and Installation"](#).

10. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

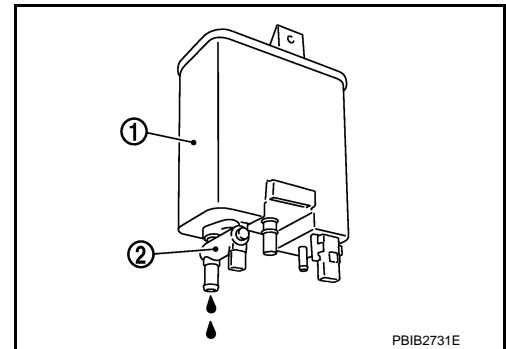
1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Check if water will drain from EVAP canister (1).

2 : EVAP canister vent control valve

Does water drain from the EVAP canister?

YES >> GO TO 11.

NO >> GO TO 13.



11. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

12. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to [FL-16, "Removal and Installation"](#).

13. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486442

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Ⓟ **With CONSULT**

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.

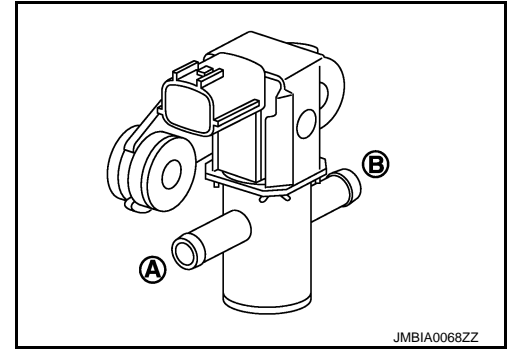
P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Start the engine.
5. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT.
6. Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL CONT/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

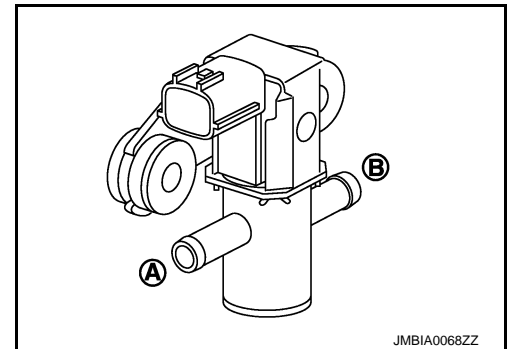
Condition (PURG VOL CONT/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed



⊗ Without CONSULT

1. Turn ignition switch OFF.
2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
4. Check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

Condition	Air passage continuity between (A) and (B)
12V direct current supply between terminals 1 and 2	Existed
No supply	Not existed



Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35, "Exploded View"](#).

A
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P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

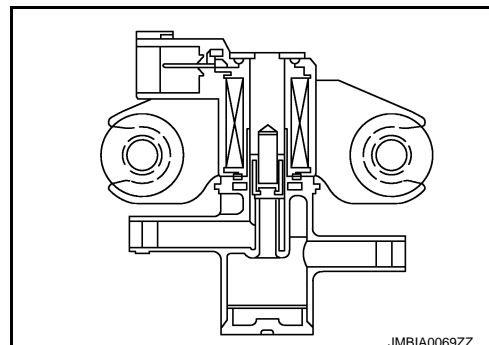
[VR38]

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486443

The EVAP canister purge volume control solenoid valve is used duty to control the flow rate of fuel vapor from the EVAP canister. The EVAP canister purge volume control solenoid valve is moved by ON/OFF pulses from the ECM. The longer the ON pulse, the greater the amount of fuel vapor that will flow through the valve.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486444

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0444	EVAP canister purge volume control solenoid valve circuit open	An excessively low voltage signal is sent to ECM through the valve	<ul style="list-style-type: none">• Harness or connectors (The solenoid valve circuit is open or shorted.)• EVAP canister purge volume control solenoid valve
P0445	EVAP canister purge volume control solenoid valve circuit shorted	An excessively high voltage signal is sent to ECM through the valve	<ul style="list-style-type: none">• Harness or connectors (The solenoid valve circuit is shorted.)• EVAP canister purge volume control solenoid valve

DTC CONFIRMATION PROCEDURE

1.CONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine and let it idle for at least 13 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-366, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486445

1.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
3. Turn ignition switch ON.

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

4. Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

EVAP canister purge volume control solenoid valve		Ground	Voltage
Connector	Terminal		
F13	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness connectors M116, F103
- Harness for open or short between EVAP canister purge volume control solenoid valve and IPDM E/R
- Harness for open or short between EVAP canister purge volume control solenoid valve and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

3. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between EVAP canister purge volume control solenoid valve harness connector and ECM harness connector.

EVAP canister purge volume control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F13	2	F101	8	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 4.

YES-2 >> Without CONSULT: GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

Ⓜ With CONSULT

1. Reconnect all harness connectors disconnected.
2. Start the engine.
3. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> GO TO 6.

NO >> GO TO 5.

5. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to [EC-368. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35. "Exploded View".](#)

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

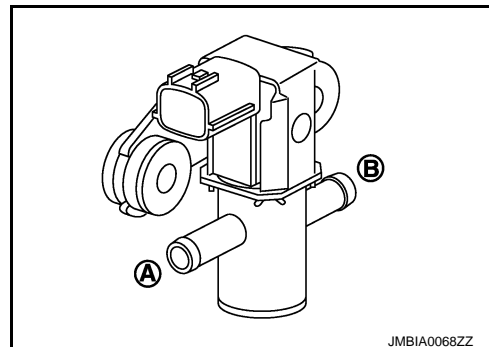
INFOID:000000011486446

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

With CONSULT

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
4. Start the engine.
5. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT.
6. Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL CONT/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

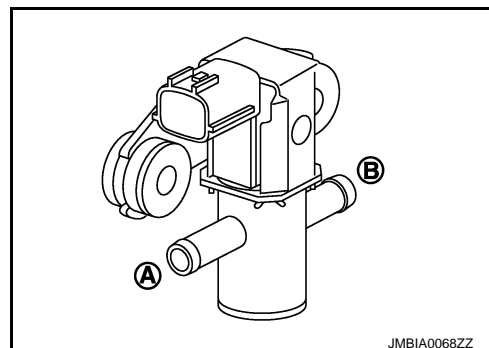
Condition (PURG VOL CONT/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed



Without CONSULT

1. Turn ignition switch OFF.
2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
4. Check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

Condition	Air passage continuity between (A) and (B)
12V direct current supply between terminals 1 and 2	Existed
No supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35. "Exploded View"](#).

P0447 EVAP CANISTER VENT CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0447 EVAP CANISTER VENT CONTROL VALVE

Description (GT-R certified NISSAN dealer)

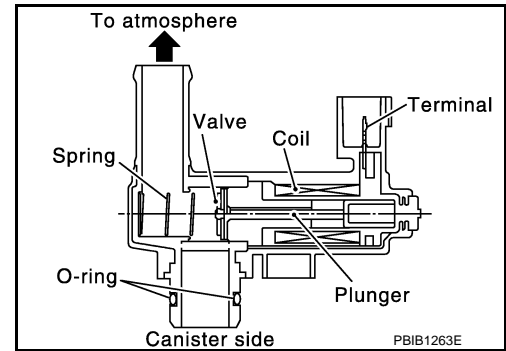
INFOID:000000011486447

The EVAP canister vent control valve is located on the EVAP canister and is used to seal the canister vent.

This solenoid valve responds to signals from the ECM. When the ECM sends an ON signal, the coil in the solenoid valve is energized. A plunger will then move to seal the canister vent. The ability to seal the vent is necessary for the on board diagnosis of other evaporative emission control system components.

This solenoid valve is used only for diagnosis, and usually remains opened.

When the vent is closed, under normal purge conditions, the evaporative emission control system is depressurized and allows "EVAP Control System" diagnosis.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486448

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0447	EVAP canister vent control valve circuit open	An improper voltage signal is sent to ECM through EVAP canister vent control valve.	<ul style="list-style-type: none">• Harness or connectors (The valve circuit is open or shorted.)• EVAP canister vent control valve

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait at least 8 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-369. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486449

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

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

2. CHECK EVAP CANISTER VENT CONTROL VALVE CIRCUIT

With CONSULT

1. Turn ignition switch OFF and then turn ON.
2. Select "VENT CONTROL/V" in "ACTIVE TEST" mode with CONSULT.

P0447 EVAP CANISTER VENT CONTROL VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Touch "ON/OFF" on CONSULT screen.
4. Check for operating sound of the valve.

Clicking sound should be heard.

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 3.

3.CHECK EVAP CANISTER VENT CONTROL VALVE POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect EVAP canister vent control valve harness connector.
3. Turn ignition switch ON.
4. Check the voltage between EVAP canister vent control valve harness connector and ground.

EVAP canister vent control valve		Ground	Voltage
Connector	Terminal		
B250	1	Ground	Battery voltage

Is the inspection result normal?

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

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness connectors F103, M116
- Harness connectors B201, M117
- Harness for open or short between EVAP canister vent control valve and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK EVAP CANISTER VENT CONTROL VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between EVAP canister vent control valve harness connector and ECM harness connector.

EVAP canister vent control valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B250	2	F101	7	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 6.

6.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B201, M117
- Harness connectors F103, M116
- Harness for open or short between EVAP canister vent control valve and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK RUBBER TUBE FOR CLOGGING

1. Disconnect rubber tube connected to EVAP canister vent control valve.

P0447 EVAP CANISTER VENT CONTROL VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Clean the rubber tube using an air blower.

8.CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to [EC-371, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace EVAP canister vent control valve. Refer to [FL-16, "Removal and Installation"](#).

9.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486450

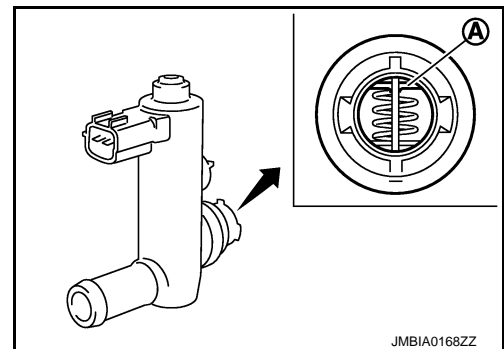
1.CHECK EVAP CANISTER VENT CONTROL VALVE-I

1. Turn ignition switch OFF.
2. Remove EVAP canister vent control valve from EVAP canister.
3. Check portion (A) of EVAP canister vent control valve for rust.

Is it rusted?

YES >> Replace EVAP canister vent control valve. Refer to [FL-16, "Removal and Installation"](#).

NO >> GO TO 2.



2.CHECK EVAP CANISTER VENT CONTROL VALVE-II

With CONSULT

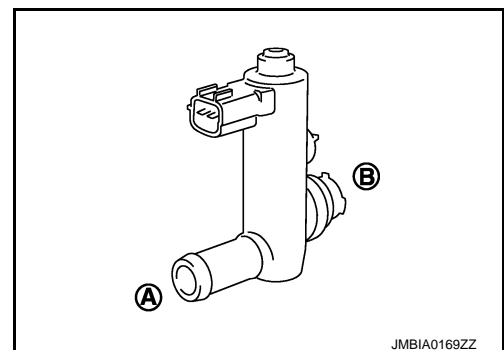
1. Reconnect harness connectors disconnected.
2. Turn ignition switch ON.
3. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
4. Check air passage continuity and operation delay time.
Check that new O-ring is installed properly.

VENT CONTROL/V Condition	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

Without CONSULT

1. Disconnect EVAP canister vent control valve harness connector.
2. Check air passage continuity and operation delay time under the following conditions.
Check that new O-ring is installed properly.



Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Not existed
OFF	Existed

Operation takes less than 1 second.

P0447 EVAP CANISTER VENT CONTROL VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3. CHECK EVAP CANISTER VENT CONTROL VALVE-III

Ⓟ With CONSULT

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
2. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
3. Check air passage continuity and operation delay time.
Check that new O-ring is installed properly.

VENT CONTROL/V Condition	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

ⓧ Without CONSULT

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
2. Check air passage continuity and operation delay time under the following conditions.
Check that new O-ring is installed properly.

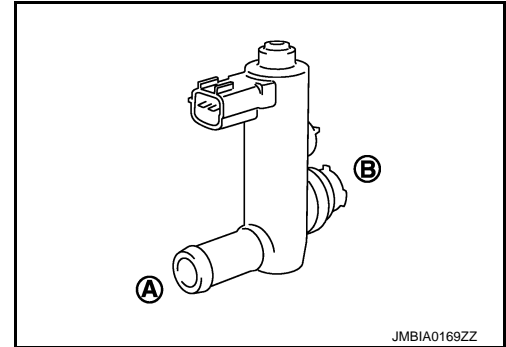
Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister vent control valve. Refer to [FL-16, "Removal and Installation"](#).



P0448 EVAP CANISTER VENT CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0448 EVAP CANISTER VENT CONTROL VALVE

Description (GT-R certified NISSAN dealer)

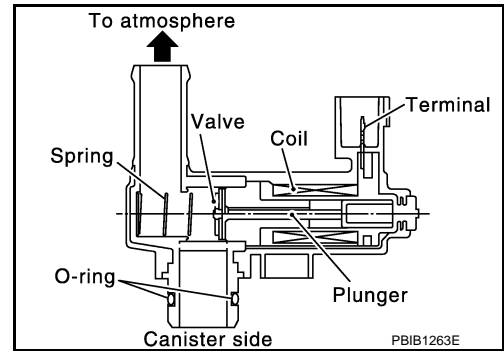
INFOID:000000011486451

The EVAP canister vent control valve is located on the EVAP canister and is used to seal the canister vent.

This solenoid valve responds to signals from the ECM. When the ECM sends an ON signal, the coil in the solenoid valve is energized. A plunger will then move to seal the canister vent. The ability to seal the vent is necessary for the on board diagnosis of other evaporative emission control system components.

This solenoid valve is used only for diagnosis, and usually remains opened.

When the vent is closed, under normal purge conditions, the evaporative emission control system is depressurized and allows "EVAP Control System" diagnosis.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486452

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0448	EVAP canister vent control valve close	EVAP canister vent control valve remains closed under specified driving conditions.	<ul style="list-style-type: none">• EVAP canister vent control valve• EVAP control system pressure sensor and the circuit• Blocked rubber tube to EVAP canister vent control valve• EVAP canister is saturated with water

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

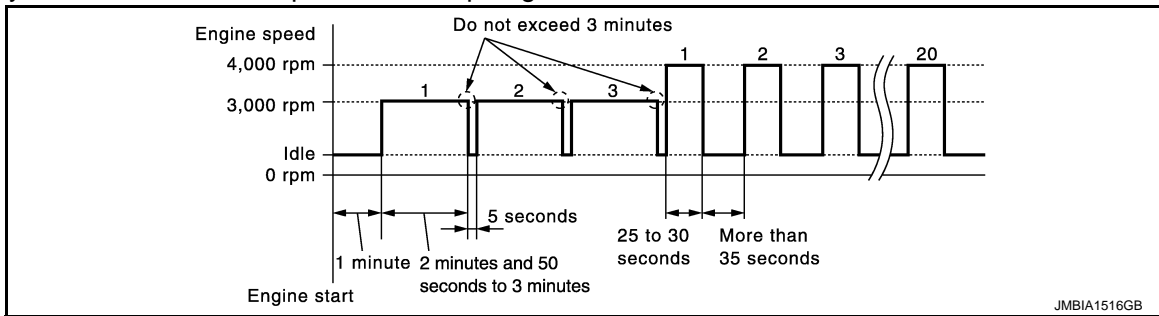
1. Turn ignition switch ON and wait at least 5 seconds.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
4. Start engine and let it idle for at least 1 minute.
5. Repeat next procedures three times.
 - Increase the engine speed up to between 3,000 and 3,500 rpm maintain that speed it for 2 minutes and 50 seconds to 3 minutes.
Never exceed 3 minutes.
 - Fully released accelerator pedal and keep engine idle for about 5 seconds.
6. Repeat next procedure 20 times.
 - Quickly increase the engine speed up to between 4,000 and 4,500 rpm and maintain that speed it for 25 to 30 seconds.

P0448 EVAP CANISTER VENT CONTROL VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- Fully released accelerator pedal and keep engine idle for at least 35 seconds.



7. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-374, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486453

1.CHECK RUBBER TUBE

1. Turn ignition switch OFF.
2. Disconnect rubber tube connected to EVAP canister vent control valve.
3. Check the rubber tube for clogging.

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Clean rubber tube using an air blower.

2.CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to [EC-375, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace EVAP canister vent control valve. Refer to [FL-16, "Removal and Installation"](#).

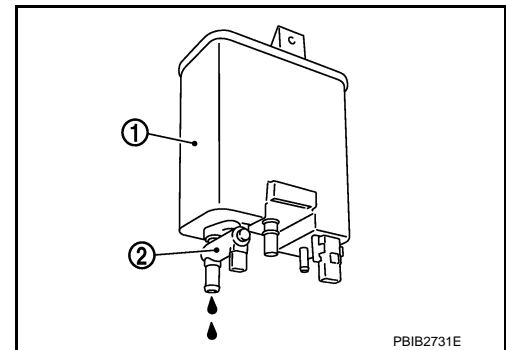
3.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Check if water will drain from the EVAP canister (1).

2 : EVAP canister vent control valve

Does water drain from EVAP canister?

- YES >> GO TO 4.
- NO >> GO TO 6.



4.CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

P0448 EVAP CANISTER VENT CONTROL VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to [FL-16. "Removal and Installation"](#).

6. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

1. Disconnect EVAP control system pressure sensor harness connector.
2. Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16. "Removal and Installation"](#).

7. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-379. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16. "Removal and Installation"](#).

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486454

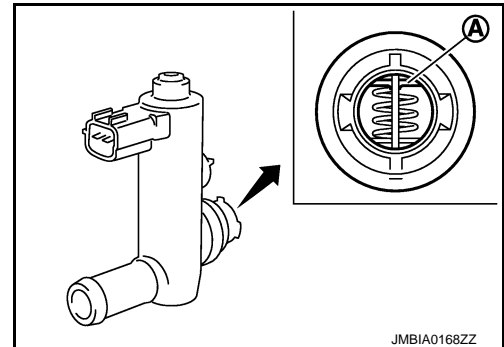
1. CHECK EVAP CANISTER VENT CONTROL VALVE-I

1. Turn ignition switch OFF.
2. Remove EVAP canister vent control valve from EVAP canister.
3. Check portion (A) of EVAP canister vent control valve for rust.

Is it rusted?

YES >> Replace EVAP canister vent control valve. Refer to [FL-16. "Removal and Installation"](#).

NO >> GO TO 2.



2. CHECK EVAP CANISTER VENT CONTROL VALVE-II

With CONSULT

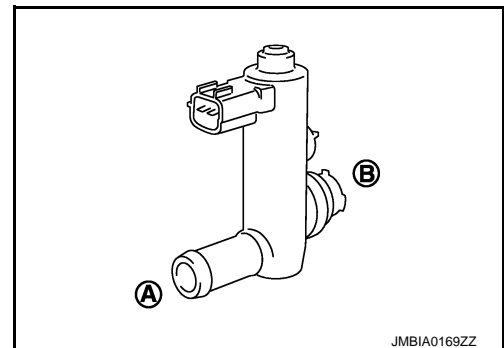
1. Reconnect harness connectors disconnected.
2. Turn ignition switch ON.
3. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
4. Check air passage continuity and operation delay time.
Check that new O-ring is installed properly.

VENT CONTROL/V Condition	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

Without CONSULT

1. Disconnect EVAP canister vent control valve harness connector.
2. Check air passage continuity and operation delay time under the following conditions.
Check that new O-ring is installed properly.



P0448 EVAP CANISTER VENT CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3. CHECK EVAP CANISTER VENT CONTROL VALVE-III

④ With CONSULT

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
2. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
3. Check air passage continuity and operation delay time.

Check that new O-ring is installed properly.

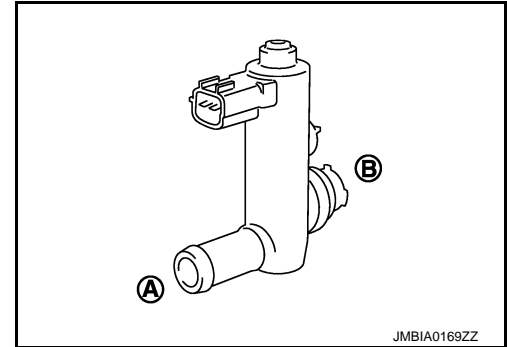
VENT CONTROL/V Condition	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

⊗ Without CONSULT

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
2. Check air passage continuity and operation delay time under the following conditions.

Check that new O-ring is installed properly.



Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister vent control valve. Refer to [FL-16. "Removal and Installation"](#).

P0451 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

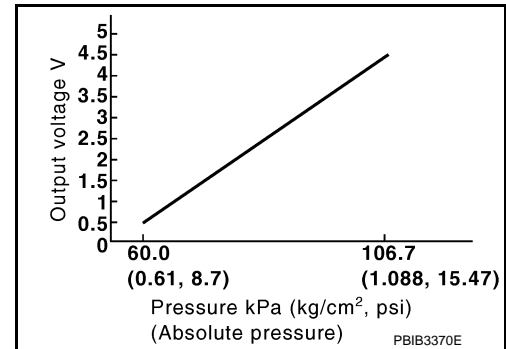
[VR38]

P0451 EVAP CONTROL SYSTEM PRESSURE SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486455

The EVAP control system pressure sensor detects pressure in the purge line. The sensor output voltage to the ECM increases as pressure increases.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486456

DTC DETECTION LOGIC

If DTC P0451 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0451	EVAP control system pressure sensor performance	ECM detects a sloshing signal from the EVAP control system pressure sensor	<ul style="list-style-type: none"> Harness or connectors (EVAP control system pressure sensor circuit is shorted.) EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

NOTE:

Never remove fuel filler cap during DTC confirmation procedure.

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

With CONSULT>>GO TO 2.

Without CONSULT>>GO TO 5.

2. PERFORM DTC CONFIRMATION PROCEDURE-1

With CONSULT

- Start engine and wait at least 40 seconds.

NOTE:

Do not depress accelerator pedal even slightly.

- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-378, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-2

With CONSULT

- Select "EVAP DIAG READY" in "DATA MONITOR" mode of "ENGINE".
- Let it idle until OFF of EVAP DIAG READY changes to "ON".

NOTE:

It will take at most 2 hours until "OFF" of "EVAP DIAG READY" changes to "ON".

- Turn ignition switch OFF and wait at least 90 minutes.

P0451 EVAP CONTROL SYSTEM PRESSURE SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- Select "EVAP LEAK DIAG" in "DATA MONITOR" mode of "ENGINE".
- Check that "EVAP LEAK DIAG" indication.

Which is displayed on CONSULT?

CMPLT >> GO TO 4.

YET >> Perform DTC CONFIRMATION PROCEDURE again. GO TO 1.

4.PERFORM DTC CONFIRMATION PROCEDURE-3

Ⓟ With CONSULT

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-378, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

5.PERFORM DTC CONFIRMATION PROCEDURE-4

Ⓟ With GST (Without CONSULT)

- Start engine and let it idle for at least 40 seconds.

NOTE:

Do not depress accelerator pedal even slightly.

- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-378, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> GO TO 6.

6.PERFORM DTC CONFIRMATION PROCEDURE-5

Ⓟ With GST (Without CONSULT)

- Let it idle for at least 2 hours.
- Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to [EC-378, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486457

1.CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR FOR WATER

- Disconnect EVAP control system pressure sensor harness connector.
- Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness connector.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-379, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

P0451 EVAP CONTROL SYSTEM PRESSURE SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 4.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486458

1.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

1. Turn ignition switch OFF.
2. Remove EVAP control system pressure sensor with its harness connector. Refer to [FL-16, "Removal and Installation"](#).
Always replace O-ring with a new one.
3. Install a vacuum pump to EVAP control system pressure sensor.
4. Turn ignition switch ON and check output voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition [Applied vacuum kPa (bar, kg/cm ² , psi)]	Voltage (V)
	+	-		
	Terminal	Terminal		
F102	78	75	Not applied	1.8 - 4.8
			-26.7 (-0.267, -0.272, -3.87)	2.1 to 2.5 lower than above value

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Never apply below -93.3 kPa (-0.933 bar, -0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.013 bar, 1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

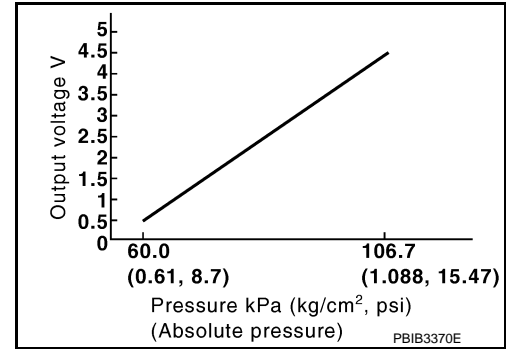
[VR38]

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486459

The EVAP control system pressure sensor detects pressure in the purge line. The sensor output voltage to the ECM increases as pressure increases.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486460

DTC DETECTION LOGIC

If DTC P0452 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0452	EVAP control system pressure sensor low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> Harness or connectors (EVAP control system pressure sensor circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) EVAP control system pressure sensor Each sensor, connected with sensor power supply 1 circuit

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
- Check that "FUEL T/TMP SE" is more than 0°C (32°F).
- Start engine and wait at least 20 seconds.
- Check 1st trip DTC.

With GST

- Start engine and warm it up to normal operating temperature.
- Set voltmeter probes to ECM harness connector terminals under the following conditions.

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			
+		-	
Connector	Terminal	Connector	Terminal
F101	42 (Fuel tank temperature sensor signal)	M107	128

3. Check that the voltage is less than 4.2 V.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Turn ignition switch ON.
6. Turn ignition switch OFF and wait at least 10 seconds.
7. Start engine and wait at least 20 seconds.
8. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-381, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486461

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2.CHECK CONNECTOR

1. Disconnect EVAP control system pressure sensor harness connector.
2. Check that water is not inside connectors.

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace harness connector.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT-I

1. Turn ignition switch ON.
2. Check the voltage between EVAP control system pressure sensor harness connector and ground.

EVAP control system pressure sensor		Ground	Voltage (V)
Connector	Terminal		
B251	3	Ground	Approx. 5

Is the inspection result normal?

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

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open between ECM and EVAP control system pressure sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B251	1	F102	75	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open or short between EVAP control system pressure sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B251	2	F102	78	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open or short between EVAP control system pressure sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

9. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-382, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

10. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486462

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

1. Turn ignition switch OFF.

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Remove EVAP control system pressure sensor with its harness connector. Refer to [FL-16, "Removal and Installation"](#).
Always replace O-ring with a new one.
3. Install a vacuum pump to EVAP control system pressure sensor.
4. Turn ignition switch ON and check output voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition [Applied vacuum kPa (bar, kg/cm ² , psi)]	Voltage (V)
	+	-		
	Terminal	Terminal		
F102	78	75	Not applied	1.8 - 4.8
			-26.7 (-0.267, -0.272, -3.87)	2.1 to 2.5 lower than above value

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Never apply below -93.3 kPa (-0.933 bar, -0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.013 bar, 1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16, "Removal and Installation"](#).

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P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

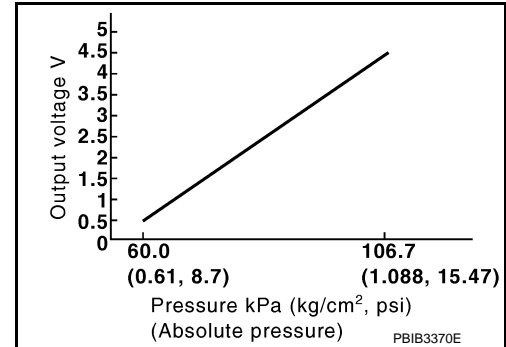
[VR38]

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486463

The EVAP control system pressure sensor detects pressure in the purge line. The sensor output voltage to the ECM increases as pressure increases.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486464

DTC DETECTION LOGIC

If DTC P0453 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0453	EVAP control system pressure sensor high input	An excessively high voltage from the sensor is sent to ECM.	<ul style="list-style-type: none"> Harness or connectors (EVAP control system pressure sensor circuit is open or shorted.) EVAP control system pressure sensor EVAP canister vent control valve EVAP canister Rubber hose from EVAP canister vent control valve to vehicle frame

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
- Check that "FUEL T/TMP SE" is more than 0°C (32°F).
- Start engine and wait at least 20 seconds.
- Check 1st trip DTC.

With GST

- Start engine and warm it up to normal operating temperature.
- Set voltmeter probes to ECM harness connector terminals under the following conditions.

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			
Connector		-	
Connector	Terminal	Connector	Terminal
F101	42 (Fuel tank temperature sensor signal)	M107	128

3. Check that the voltage is less than 4.2 V.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Turn ignition switch ON.
6. Turn ignition switch OFF and wait at least 10 seconds.
7. Start engine and wait at least 20 seconds.
8. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-385, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486465

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace ground connection.

2.CHECK CONNECTOR

1. Disconnect EVAP control system pressure sensor harness connector.
2. Check that water is not inside connectors.

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Repair or replace harness connector.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check the voltage between EVAP control system pressure sensor harness connector and ground.

EVAP control system pressure sensor		Ground	Voltage (V)
Connector	Terminal		
B251	3	Ground	Approx. 5

Is the inspection result normal?

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

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open between ECM and EVAP control system pressure sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B251	1	F102	75	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open or short between EVAP control system pressure sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B251	2	F102	78	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> GO TO 8.

8. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness for open or short between EVAP control system pressure sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

9. CHECK RUBBER TUBE

1. Disconnect rubber tube connected to EVAP canister vent control valve.
2. Check the rubber tube for clogging.

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> Clean the rubber tube using an air blower, repair or replace rubber tube.

10. CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to [EC-371. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 11.
- NO >> Replace EVAP canister vent control valve. Refer to [FL-16. "Removal and Installation".](#)

11. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-382. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 12.
- NO >> Replace EVAP control system pressure sensor. Refer to [FL-16. "Removal and Installation".](#)

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

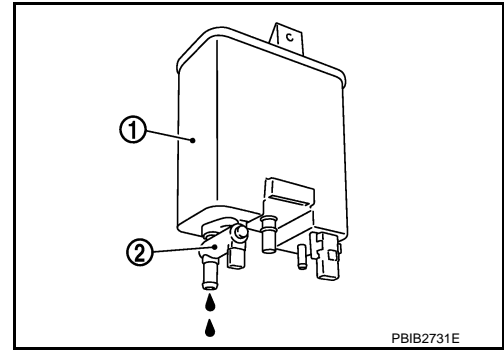
12. CHECK IF EVAP CANISTER SATURATED WITH WATER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Check if water will drain from the EVAP canister (1).

2 : EVAP canister vent control valve

Does water drain from EVAP canister?

- YES >> GO TO 13.
NO >> GO TO 15.



13. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

- YES >> GO TO 15.
NO >> GO TO 14.

14. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to [FL-16. "Removal and Installation"](#).

15. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486466

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

1. Turn ignition switch OFF.
2. Remove EVAP control system pressure sensor with its harness connector. Refer to [FL-16. "Removal and Installation"](#).
Always replace O-ring with a new one.
3. Install a vacuum pump to EVAP control system pressure sensor.
4. Turn ignition switch ON and check output voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition [Applied vacuum kPa (bar, kg/cm ² , psi)]	Voltage (V)
	+	-		
	Terminal	Terminal		
F102	78	75	Not applied	1.8 - 4.8
			-26.7 (-0.267, -0.272, -3.87)	2.1 to 2.5 lower than above value

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Never apply below -93.3 kPa (-0.933 bar, -0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.013 bar, 1.033 kg/cm², 14.69 psi).

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16. "Removal and Installation"](#).

P0455 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

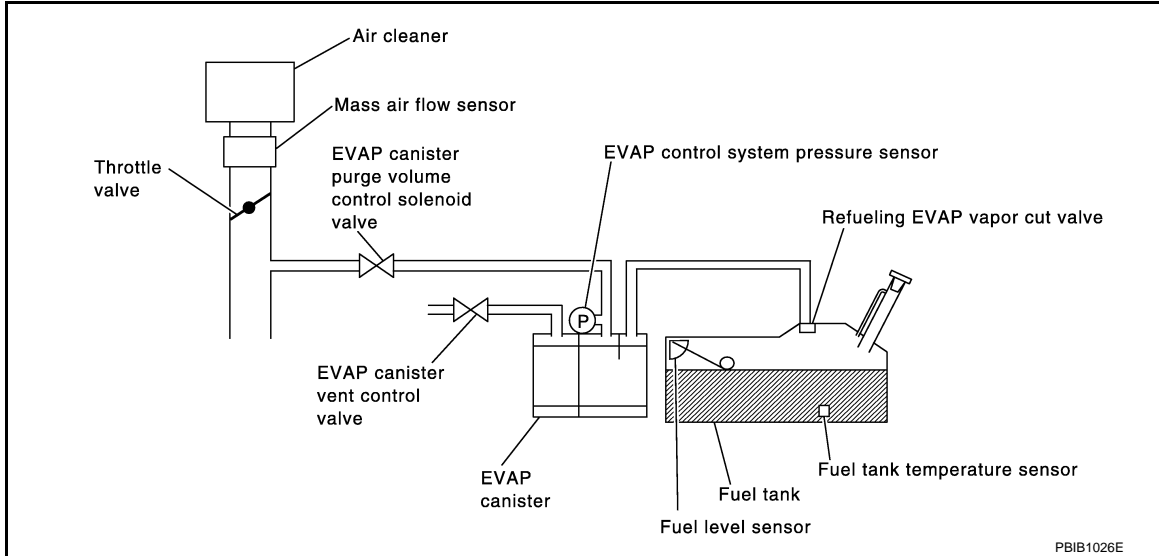
P0455 EVAP CONTROL SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486467

DTC DETECTION LOGIC

This diagnosis detects a very large leak (fuel filler cap fell off etc.) in EVAP system between the fuel tank and EVAP canister purge volume control solenoid valve.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0455	EVAP control system gross leak detected	EVAP control system has a very large leak such as fuel filler cap fell off, EVAP control system does not operate properly.	<ul style="list-style-type: none"> Fuel filler cap remains open or fails to close. Incorrect fuel tank vacuum relief valve Incorrect fuel filler cap used Foreign matter caught in fuel filler cap. Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve. Foreign matter caught in EVAP canister vent control valve. EVAP canister or fuel tank leaks EVAP purge line (pipe and rubber tube) leaks EVAP purge line rubber tube bent. Loose or disconnected rubber tube EVAP canister vent control valve and the circuit EVAP canister purge volume control solenoid valve and the circuit Fuel tank temperature sensor O-ring of EVAP canister vent control valve is missing or damaged. EVAP control system pressure sensor Refueling EVAP vapor cut valve ORVR system leaks

CAUTION:

- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.
- If the fuel filler cap is not tightened properly, the MIL may illuminate.
- Use only a genuine NISSAN rubber tube as a replacement.

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

CAUTION:

P0455 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Never remove fuel filler cap during the DTC Confirmation Procedure.

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

Check that EVAP hoses are connected to EVAP canister purge volume control solenoid valve properly.

TESTING CONDITION:

- Perform "DTC WORK SUPPORT" when the fuel level is between 1/4 and 3/4 full, and vehicle is placed on flat level surface.
- Open engine hood before conducting the following procedures.

Do you have CONSULT?

- YES >> GO TO 2.
NO >> GO TO 4.

2.PERFORM DTC CONFIRMATION PROCEDURE

 **With CONSULT**

1. Tighten fuel filler cap securely until ratcheting sound is heard.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
5. Check that the following conditions are met.
COOLAN TEMP/S: 0 - 70°C (32 - 158°F)
INT/A TEMP SE: 0 - 60°C (32 - 140°F)
6. Select "EVP SML LEAK P0442/P1442" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT.

Follow the instructions displayed.

NOTE:

If the engine speed cannot be maintained within the range displayed on the CONSULT screen, go to [EC-17. "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

Which is displayed on CONSULT screen?

- OK >> INSPECTION END
NG >> GO TO 3.

3.CHECK DTC

Check DTC.

Which DTC is detected?

- P0455 >> Refer to [EC-391. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
P0442 >> Refer to [EC-356. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

4.PERFORM DTC CONFIRMATION PROCEDURE

 **With GST**

NOTE:

Be sure to read the explanation of Driving Pattern in [EC-28. "SRT Set Driving Pattern \(GT-R certified NISSAN dealer\)"](#) before driving vehicle.

1. Start engine.
2. Drive vehicle according to Driving Pattern.
3. Stop vehicle.
4. Turn ignition switch OFF, wait at least 10 seconds and then turn ON.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES-1 >> P0455: Refer to [EC-391. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
YES-2 >> P0442: Refer to [EC-356. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
YES-3 >> P0441: Refer to [EC-352. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

P0455 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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Diagnosis Procedure (GT-R certified NISSAN dealer)

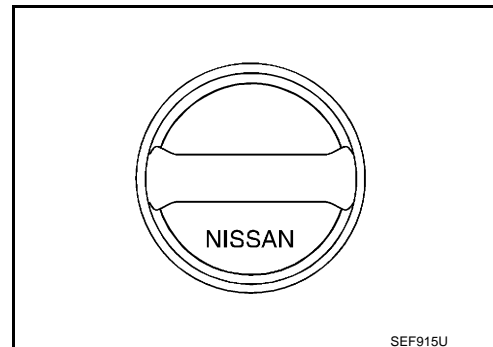
INFOID:000000011486468

1. CHECK FUEL FILLER CAP DESIGN

1. Turn ignition switch OFF.
2. Check for genuine NISSAN fuel filler cap design.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace with genuine NISSAN fuel filler cap.



2. CHECK FUEL FILLER CAP INSTALLATION

Check that the cap is tightened properly by rotating the cap clockwise.

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Open fuel filler cap, then clean cap and fuel filler neck threads using air blower. Retighten until ratcheting sound is heard.

3. CHECK FUEL FILLER CAP FUNCTION

Check for air releasing sound while opening the fuel filler cap.

Is the inspection result normal?

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

4. CHECK FUEL TANK VACUUM RELIEF VALVE

Refer to [EC-393, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace fuel filler cap with a genuine one.

5. CHECK EVAP PURGE LINE

Check EVAP purge line (pipe, rubber tube, fuel tank and EVAP canister) for cracks, improper connection or disconnection.

Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Repair or reconnect the hose.

6. CLEAN EVAP PURGE LINE

Clean EVAP purge line (pipe and rubber tube) using air blower.

>> GO TO 7.

7. CHECK EVAP CANISTER VENT CONTROL VALVE

Check the following.

- EVAP canister vent control valve is installed properly.
Refer to [FL-16, "Removal and Installation"](#).
- EVAP canister vent control valve.
Refer to [EC-371, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 8.

P0455 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

NO >> Repair or replace EVAP canister vent control valve and O-ring. Refer to [FL-16, "Removal and Installation"](#).

8. CHECK FOR EVAP LEAK

Refer to [EC-638, "Inspection"](#).

Is there any leak in EVAP line?

YES >> Repair or replace malfunctioning part.

NO-1 >> With CONSULT: GO TO 9.

NO-2 >> Without CONSULT: GO TO 10.

9. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

With CONSULT

1. Disconnect vacuum hose connected from EVAP canister purge volume control solenoid valve at EVAP service port.
2. Start engine and let it idle.
3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode.
4. Touch "Qu" on CONSULT screen to increase "PURG VOL CONT/V" opening to 100%.
5. Check vacuum hose for vacuum.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

10. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

Without CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Stop engine.
3. Disconnect vacuum hose connected from EVAP canister purge volume control solenoid valve at EVAP service port.
4. Start engine and let it idle for at least 80 seconds.
5. Check vacuum hose for vacuum when revving engine up to 2,000 rpm.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 11.

11. CHECK VACUUM HOSE

Check vacuum hoses for clogging or disconnection. Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 12.

YES-2 >> Without CONSULT: GO TO 13.

NO >> Repair or reconnect the hose.

12. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

With CONSULT

1. Start engine.
2. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> GO TO 14.

NO >> GO TO 13.

13. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to [EC-364, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

P0455 EVAP CONTROL SYSTEM

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35. "Exploded View"](#).

14.CHECK FUEL TANK TEMPERATURE SENSOR

Refer to [EC-296. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace "fuel level sensor unit and fuel pump". Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

15.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-379. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16. "Removal and Installation"](#).

16.CHECK EVAP/ORVR LINE

Check EVAP/ORVR line between EVAP canister and fuel tank for clogging, kinks, looseness and improper connection. For location, refer to [EC-554. "Description \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace hoses and tubes.

17.CHECK RECIRCULATION LINE

Check recirculation line between fuel filler tube and fuel tank for clogging, kinks, cracks, looseness and improper connection.

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace hose, tube or fuel filler tube.

18.CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to [EC-557. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to [FL-14. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

19.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486469

1.CHECK FUEL FILLER CAP

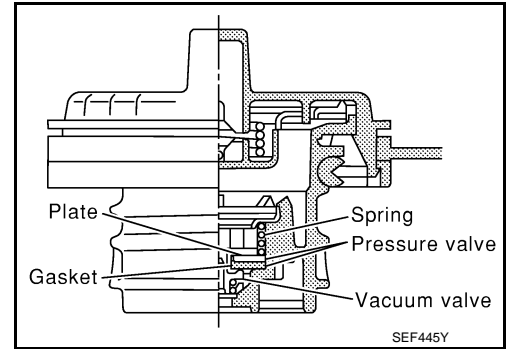
1. Turn ignition switch OFF.
2. Remove fuel filler cap.

P0455 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

3. Wipe clean valve housing.



4. Install fuel filler cap adapter (commercial service tool) to fuel filler cap.

5. Check valve opening pressure and vacuum.

Pressure: 15.3 - 20.0 kPa (0.153 – 0.200 bar, 0.156 - 0.204 kg/cm², 2.22 - 2.90 psi)

Vacuum: -6.0 to -3.3 kPa (-0.06 to -0.034 bar, - 0.061 to -0.034 kg/cm², -0.87 to -0.48 psi)

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

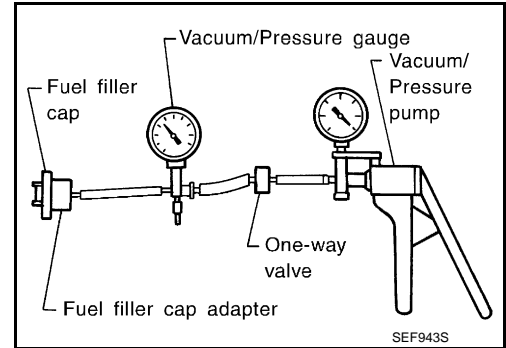
2. REPLACE FUEL FILLER CAP

Replace fuel filler cap.

CAUTION:

Use only a genuine fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.

>> INSPECTION END



P0456 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0456 EVAP CONTROL SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486470

DTC DETECTION LOGIC

NOTE:

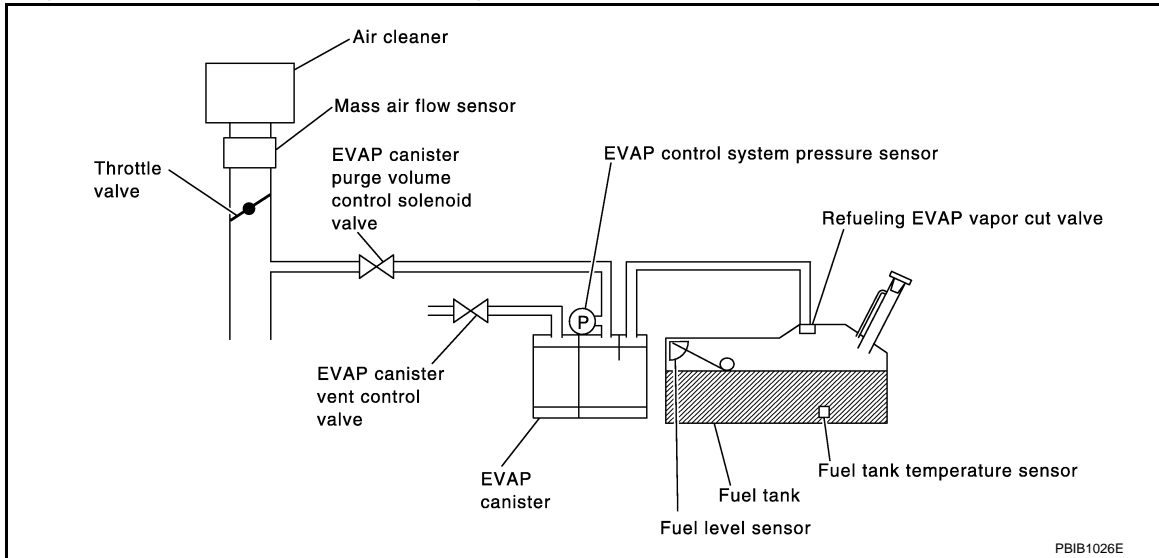
If DTC P0456 is displayed with DTC P0442, first perform the trouble diagnosis for DTC P0456.

This diagnosis detects very small leaks in the EVAP line between fuel tank and EVAP canister purge volume control solenoid valve, using the negative pressure.

If ECM judges a leak which corresponds to a very small leak, the very small leak P0456 will be detected.

If ECM judges a leak equivalent to a small leak, EVAP small leak P0442 will be detected.

If ECM judges that there are no leaks, the diagnosis will be OK.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0456	Evaporative emission control system very small leak (negative pressure check)	<ul style="list-style-type: none"> EVAP system has a very small leak. EVAP system does not operate properly. 	<ul style="list-style-type: none"> Incorrect fuel tank vacuum relief valve Incorrect fuel filler cap used Fuel filler cap remains open or fails to close. Foreign matter caught in fuel filler cap. Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve. Foreign matter caught in EVAP canister vent control valve. EVAP canister or fuel tank leaks EVAP purge line (pipe and rubber tube) leaks EVAP purge line rubber tube bent Loose or disconnected rubber tube EVAP canister vent control valve and the circuit EVAP canister purge volume control solenoid valve and the circuit Fuel tank temperature sensor O-ring of EVAP canister vent control valve is missing or damaged EVAP canister is saturated with water EVAP control system pressure sensor Refueling EVAP vapor cut valve ORVR system leaks Fuel level sensor and the circuit Foreign matter caught in EVAP canister purge volume control solenoid valve

CAUTION:

- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.
- If the fuel filler cap is not tightened properly, the MIL may illuminate.

P0456 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

- Use only a genuine NISSAN rubber tube as a replacement.

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 4.

2. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

After repair, check that the hoses and clips are installed properly.

TESTING CONDITION:

- Open engine hood before conducting the following procedure.
- If any of following conditions are met just before the DTC confirmation procedure, leave the vehicle for more than 1 hour.
 - Fuel filler cap is removed.
 - Fuel is refilled or drained.
 - EVAP component part/parts are removed.
- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Check that EVAP hoses are connected to EVAP canister purge volume control solenoid valve properly.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
2. Check that the following conditions are met.

FUEL LEVEL SE: 0.25 - 1.4 V

COOLAN TEMP/S: 0 - 32°C (32 - 90°F)

FUEL T/TMP SE: 0 - 35°C (32 - 95°F)

INT A/TEMP SE: More than 0°C (32°F)

If NG, turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle), or refill/drain fuel until the output voltage of the "FUEL LEVEL SE" meets within the range above and leave the vehicle for more than 1 hour. Then start from step 1.

3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Select "EVP V/S LEAK P0456/P1456" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT.

Follow the instructions displayed.

NOTE:

If the engine speed cannot be maintained within the range displayed on CONSULT screen, go to [EC-17, "BASIC INSPECTION : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Refer to [EC-397, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

4. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-397, "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

NOTE:

Use component function check to check the overall function of the EVAP very small leak function. During this check, a 1st trip DTC might not be confirmed.

P0456 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-397, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:0000000011836520

EC

1. PERFORM COMPONENT FUNCTION CHECK

 With GST

CAUTION:

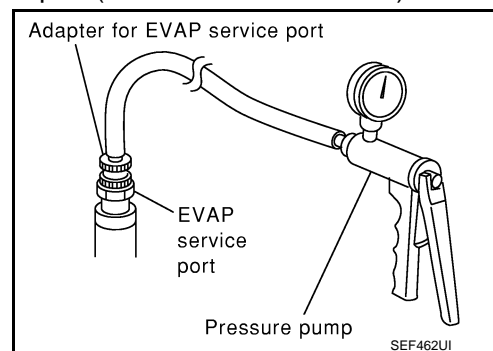
- Never use compressed air, doing so may damage the EVAP system.
- Never start engine.

- Never exceeded 4.12 kPa (0.041 bar 0.042 kg/cm², 0.6 psi).

1. Attach the EVAP service port adapter securely to the EVAP service port (commercial service tool).
2. Set the pressure pump and a hose.
3. Also set a vacuum gauge via 3-way connector and a hose.
4. Turn ignition switch ON.
5. Connect GST and select Service \$08.
6. Using Service \$08 control the EVAP canister vent control valve (close).
7. Apply pressure and check the following conditions are satisfied.

Pressure to be applied: 2.7 kPa (0.027 bar 0.028 kg/cm², 0.39 psi)

Time to be waited after the pressure drawn in to the EVAP system and the pressure to be dropped: 60 seconds and the pressure should not be dropped more than 0.4 kPa (0.004 bar 0.004 kg/cm², 0.06 psi).



Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to [EC-397, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2. RELEASE PRESSURE

1. Disconnect GST.
2. Start engine and warm it up to normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Restart engine and let it idle for 90 seconds.
5. Keep engine speed at 2,000 rpm for 30 seconds.
6. Turn ignition switch OFF.

NOTE:

For more information, refer to GST Instruction Manual.

>> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:0000000011486472

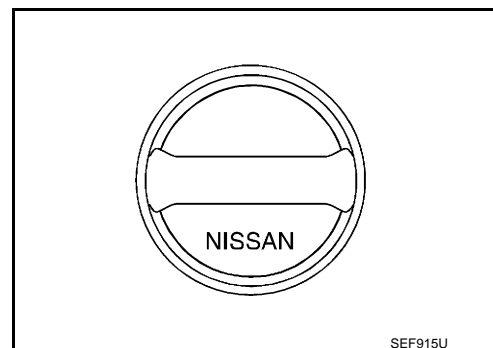
1. CHECK FUEL FILLER CAP DESIGN

1. Turn ignition switch OFF.
2. Check for genuine NISSAN fuel filler cap design.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace with genuine NISSAN fuel filler cap.



P0456 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2. CHECK FUEL FILLER CAP INSTALLATION

Check that the cap is tightened properly by rotating the cap clockwise.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Open fuel filler cap, then clean cap and fuel filler neck threads using air blower. Retighten until ratcheting sound is heard.

3. CHECK FUEL FILLER CAP FUNCTION

Check for air releasing sound while opening the fuel filler cap.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK FUEL TANK VACUUM RELIEF VALVE

Refer to [EC-400, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace fuel filler cap with a genuine one.

5. CHECK FOR EVAP LEAK

Refer to [EC-638, "Inspection"](#).

Is there any leak in EVAP line?

YES >> Repair or replace malfunctioning part.

NO >> GO TO 6.

6. CHECK EVAP CANISTER VENT CONTROL VALVE

Check the following.

- EVAP canister vent control valve is installed properly.

Refer to [FL-16, "Removal and Installation"](#).

- EVAP canister vent control valve.

Refer to [EC-371, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace EVAP canister vent control valve and O-ring. Refer to [FL-16, "Removal and Installation"](#).

7. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

2. Check if water will drain from EVAP canister (1).

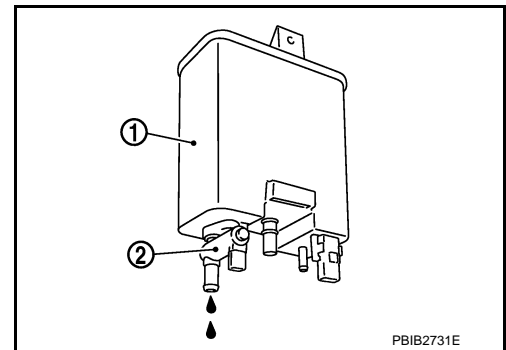
2 : EVAP canister vent control valve

Does water drain from the EVAP canister?

YES >> GO TO 8.

NO-1 >> With CONSULT: GO TO 10.

NO-2 >> Without CONSULT: GO TO 11.



8. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 10.

P0456 EVAP CONTROL SYSTEM

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES-2 >> Without CONSULT: GO TO 11.
- NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to [FL-16. "Removal and Installation"](#).

10. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

With CONSULT

1. Disconnect vacuum hose connected to EVAP service port and EVAP canister purge volume control solenoid valve from EVAP canister purge volume control solenoid valve.
2. Start engine and let it idle.
3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode.
4. Touch "Qu" on CONSULT screen to increase "PURG VOL CONT/V" opening to 100%.
5. Check vacuum hose for vacuum.

Vacuum should exist.

Is the inspection result normal?

- YES >> GO TO 13.
- NO >> GO TO 12.

11. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

Without CONSULT

1. Start engine and warm it up to normal operating temperature.
2. Stop engine.
3. Disconnect vacuum hose connected to EVAP service port and EVAP canister purge volume control solenoid valve from EVAP canister purge volume control solenoid valve.
4. Start engine and let it idle for at least 80 seconds.
5. Check vacuum hose for vacuum when revving engine up to 2,000 rpm.

Vacuum should exist.

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> GO TO 12.

12. CHECK VACUUM HOSE

Check vacuum hoses for clogging or disconnection. Refer to [EC-104. "System Diagram \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 13.
- NO >> Repair or reconnect the hose.

13. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Refer to [EC-364. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> Replace EVAP canister purge volume control solenoid valve. Refer to [EM-35. "Exploded View"](#).

14. CHECK FUEL TANK TEMPERATURE SENSOR

Refer to [EC-296. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 15.
- NO >> Replace "fuel level sensor unit and fuel pump". Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

P0456 EVAP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

15.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to [EC-379. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace EVAP control system pressure sensor. Refer to [FL-16. "Removal and Installation".](#)

16.CHECK EVAP PURGE LINE

Check EVAP purge line (pipe, rubber tube, fuel tank and EVAP canister) for cracks or improper connection.

Refer to [EC-104. "System Diagram \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or reconnect the hose.

17.CLEAN EVAP PURGE LINE

Clean EVAP purge line (pipe and rubber tube) using air blower.

>> GO TO 18.

18.CHECK EVAP/ORVR LINE

Check EVAP/ORVR line between EVAP canister and fuel tank for clogging, kinks, looseness and improper connection. For location, refer to [EC-554. "Description \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 19.

NO >> Repair or replace hoses and tubes.

19.CHECK RECIRCULATION LINE

Check recirculation line between fuel filler tube and fuel tank for clogging, kinks, cracks, looseness and improper connection.

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair or replace hose, tube or fuel filler tube.

20.CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to [EC-557. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 21.

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to [FL-14. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

21.CHECK FUEL LEVEL SENSOR

Refer to [MWI-71. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 22.

NO >> Replace "fuel level sensor unit and fuel pump (main)". Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

22.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486473

1.CHECK FUEL FILLER CAP

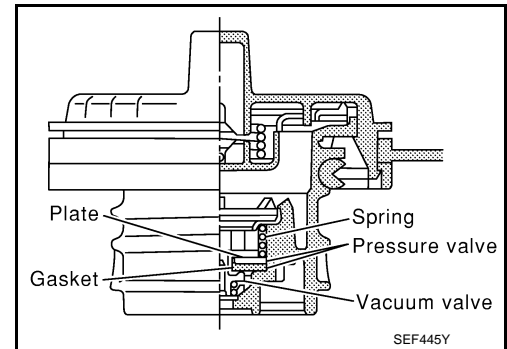
1. Turn ignition switch OFF.
2. Remove fuel filler cap.

P0456 EVAP CONTROL SYSTEM

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Wipe clean valve housing.

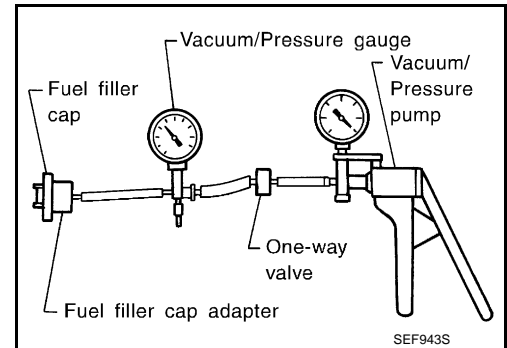


4. Install fuel filler cap adapter (commercial service tool) to fuel filler cap.

5. Check valve opening pressure and vacuum.

Pressure: 15.3 - 20.0 kPa (0.153 – 0.200 bar, 0.156 - 0.204 kg/cm², 2.22 - 2.90 psi)

Vacuum: -6.0 to -3.3 kPa (-0.06 to -0.034 bar, -0.061 to -0.034 kg/cm², -0.87 to -0.48 psi)



Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. REPLACE FUEL FILLER CAP

Replace fuel filler cap.

CAUTION:

Use only a genuine fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.

>> INSPECTION END

A
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P0460 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0460 FUEL LEVEL SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486474

The fuel level sensor is mounted in the fuel level sensor unit. The sensor detects a fuel level in the fuel tank and transmits a signal to the combination meter. The combination meter sends the fuel level sensor signal to the ECM through the CAN communication line. It consists of two parts, one is mechanical float and the other is variable resistor. Fuel level sensor output voltage changes depending on the movement of the fuel mechanical float.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486475

DTC DETECTION LOGIC

NOTE:

- If DTC P0460 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0460 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

When the vehicle is parked, naturally the fuel level in the fuel tank is naturally stable. It means that output signal of the fuel level sensor does not change. If ECM senses sloshing signal from the sensor, fuel level sensor malfunction is detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0460	Fuel level sensor circuit noise	Even though the vehicle is parked, a signal being varied is sent from the fuel level sensor to ECM.	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or shorted)• Harness or connectors (The sensor circuit is open or shorted)• Combination meter• Fuel level sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait maximum of 2 consecutive minutes.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-402, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486476

1. CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Refer to [MWI-69, "Diagnosis Procedure"](#).

2. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

P0460 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

>> INSPECTION END

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P0461 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0461 FUEL LEVEL SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486477

The fuel level sensor is mounted in the fuel level sensor unit. The sensor detects a fuel level in the fuel tank and transmits a signal to the combination meter. The combination meter sends the fuel level sensor signal to the ECM through the CAN communication line. It consists of two parts, one is mechanical float and the other is variable resistor. Fuel level sensor output voltage changes depending on the movement of the fuel mechanical float.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486478

DTC DETECTION LOGIC

NOTE:

- If DTC P0461 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0461 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

Driving long distances naturally affect fuel gauge level. This diagnosis detects the fuel gauge malfunction of the gauge not moving even after a long distance has been driven.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0461	Fuel level sensor circuit range/performance	The output signal of the fuel level sensor does not change within the specified range even though the vehicle has been driven a long distance.	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or shorted)• Harness or connectors (The sensor circuit is open or shorted)• Combination meter• Fuel level sensor

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-404, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

Use component function check to check the overall function of the fuel level sensor. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-405, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486479

1. PRECONDITIONING

WARNING:

When performing the following procedure, always observe the handling of the fuel. Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

TESTING CONDITION:

Before starting component function check, preparation of draining fuel and refilling fuel is required.

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2. PERFORM COMPONENT FUNCTION CHECK

Ⓜ With CONSULT

NOTE:

Start from step 10, if it is possible to confirm that the fuel cannot be drained by 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) in advance.

P0461 FUEL LEVEL SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Prepare a fuel container and a spare hose.
2. Release fuel pressure from fuel line, refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)"](#).
3. Remove the fuel feed hose on the fuel level sensor unit.
4. Connect a spare fuel hose where the fuel feed hose was removed.
5. Turn ignition switch OFF and wait at least 10 seconds then turn ON.
6. Select "FUEL LEVEL SE" in "DATA MONITOR" mode with CONSULT.
7. Check "FUEL LEVEL SE" output voltage and note it.
8. Select "FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.
9. Touch "ON" and drain fuel approximately 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) and stop it.
10. Check "FUEL LEVEL SE" output voltage and note it.
11. Fill fuel into the fuel tank for 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal).
12. Check "FUEL LEVEL SE" output voltage and note it.
13. Confirm whether the voltage changes more than 0.03V during step 7 to 10 and 10 to 12.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-405, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

3.PERFORM COMPONENT FUNCTION CHECK

Without CONSULT

NOTE:

Start from step 8, if it is possible to confirm that the fuel cannot be drained by 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) in advance.

1. Prepare a fuel container and a spare hose.
2. Release fuel pressure from fuel line. Refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)"](#).
3. Remove the fuel feed hose on the fuel level sensor unit.
4. Connect a spare fuel hose where the fuel feed hose was removed.
5. Turn ignition switch ON.
6. Drain fuel by 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) from the fuel tank using proper equipment.
7. Confirm that the fuel gauge indication varies.
8. Fill fuel into the fuel tank for 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal).
9. Confirm that the fuel gauge indication varies.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-405, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486480

1.CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to [MWI-69, "Diagnosis Procedure"](#).

2.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

P0462, P0463 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0462, P0463 FUEL LEVEL SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486481

The fuel level sensor is mounted in the fuel level sensor unit. The sensor detects a fuel level in the fuel tank and transmits a signal to the combination meter. The combination meter sends the fuel level sensor signal to the ECM through the CAN communication line. It consists of two parts, one is mechanical float and the other is variable resistor. Fuel level sensor output voltage changes depending on the movement of the fuel mechanical float.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486482

DTC DETECTION LOGIC

NOTE:

- If DTC P0462 or P0463 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0462 or P0463 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0462	Fuel level sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or shorted)• Harness or connectors (The sensor circuit is open or shorted)• Combination meter• Fuel level sensor
P0463	Fuel level sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-406, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486483

1. CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Refer to [MWI-69, "Diagnosis Procedure"](#).

2. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

P0462, P0463 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

>> INSPECTION END

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P0491, P0492 SECONDARY AIR INJECTION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0491, P0492 SECONDARY AIR INJECTION SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486484

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0491	Secondary air injection system insufficient flow (bank 1)	Though the secondary air injection system is operating, the secondary airflow to the exhaust port is too small.	<ul style="list-style-type: none">• Harness or connectors (Air cut solenoid valve circuit is open or shorted) (Air cut solenoid valve relay circuit is open or shorted)• Air cut solenoid valve• Air cut solenoid valve relay• Disconnection, clogging, collapsing and damage of hose or piping
P0492	Secondary air injection system insufficient flow (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Before performing the following procedure, check that the atmospheric pressure is 87 kPa (870 mbar, 653 mmHg, 25.71 inHg) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and warm it up to the normal operating temperature.
2. Stop the engine and turn ignition switch OFF.
3. Cool down the engine so that the coolant temperature lowers between 15 - 35°C (59 - 95°F).

CAUTION:

Never turn the ignition switch ON while cooling down the engine.

NOTE:

The engine cooling down time varies depending on the ambient temperature. Putting the vehicle in an indoor place where the temperature is moderate may shorten the cooling down time.

4. Start engine and let it idle for at least 40 seconds.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-408, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486485

1. CHECK HOSE AND PIPING

Check the following.

- Disconnection, clogging, collapsing and damage of hose or piping between air pump and air cut solenoid valve.
- Clogging of hose or piping between air cut solenoid valve and cylinder head.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning part.

2. CHECK AIR CUT SOLENOID VALVE RELAY POWER SUPPLY CIRCUIT-I

1. Disconnect air cut solenoid valve relay harness connector.
2. Turn ignition switch ON.

P0491, P0492 SECONDARY AIR INJECTION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

3. Check the voltage between air cut solenoid valve relay harness connector and ground.

Air cut solenoid valve relay		Ground	Voltage
Connector	Terminal		
E52	1	Ground	Battery voltage
	5		

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.DETECT MALFUNCTIONING PART

Check the following.

- 10A fuse (No. 12)
- Harness for open or short between air cut solenoid valve relay and IPDM E/R
- Harness for open or short between air cut solenoid valve relay and fuse block (J/B)

>> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK AIR CUT SOLENOID VALVE RELAY POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between air cut solenoid valve relay harness connector and ECM harness connector.

Air cut solenoid valve relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E52	2	M107	109	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between air cut solenoid valve relay and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK AIR CUT SOLENOID VALVE RELAY

Refer to [EC-523. "Component Inspection \(AIR CUT SOLENOID VALVE RELAY\) \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace air cut solenoid valve relay.

7.CHECK AIR CUT SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Disconnect air cut solenoid valve harness connector.
2. Check the continuity between air cut solenoid valve relay harness connector and air cut solenoid valve harness connector.

P0491, P0492 SECONDARY AIR INJECTION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Air cut solenoid valve			Air cut solenoid valve relay		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F6	1	E52	3	Existed
2	F46	1			

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness connectors F103, M116
- Harness for open or short between air cut solenoid valve relay and air cut solenoid valve

>> Repair open circuit, short to ground or short to power in harness or connectors.

9. CHECK AIR CUT SOLENOID VALVE GROUND CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between air cut solenoid valve harness connector and ground.

Air cut solenoid valve			Ground	Continuity
Bank	Connector	Terminal		
1	F6	2	Ground	Existed
2	F46	2		

2. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair open circuit or short to power in harness or connectors.

10. CHECK AIR CUT SOLENOID VALVE

Refer to [EC-523, "Component Inspection \(AIR CUT SOLENOID VALVE\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace malfunctioning air cut solenoid valve. Refer to [EM-33, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

11. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

P0500 VSS

Description (GT-R certified NISSAN dealer)

INFOID:000000011486486

The vehicle speed signal is sent to the “combination meter” from the “ABS actuator and electric unit (control unit)” by CAN communication line. The “combination meter” then sends a signal to the ECM by CAN communication line.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486487

DTC DETECTION LOGIC

NOTE:

- If DTC P0500 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0500 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0500	Vehicle speed sensor	At 20 km/h (13 MPH), ECM detects the following status continuously for 5 seconds or more: The difference between a vehicle speed calculated by a output speed sensor transmitted from TCM to ECM via CAN communication and the vehicle speed indicated on the combination meter exceeds 15km/h (10 MPH).	<ul style="list-style-type: none"> • Harness or connector (CAN communication line is open or shorted.) • Combination meter • ABS actuator and electric unit (control unit) • Wheel sensor • TCM • Output speed sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine.
2. Shift the selector lever to D range and wait at least for 2 seconds.
3. Drive the vehicle at least 5 seconds at 20 km/h (13 MPH) or more.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-411, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#)
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486488

1. CHECK DTC WITH TCM

Check DTC with TCM. Refer to [TM-342, "DTC Index"](#).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Perform trouble shooting relevant to DTC indicated.

< DTC/CIRCUIT DIAGNOSIS >

2.CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check DTC with ABS actuator and electric unit (control unit). Refer to [BRC-133. "DTC No. Index \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Perform trouble shooting relevant to DTC indicated.

3.CHECK DTC WITH COMBINATION METER

Check DTC with combination meter. Refer to [MWI-100. "DTC Index".](#)

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Perform trouble shooting relevant to DTC indicated.

4.CHECK OUTPUT SPEED SENSOR

Check output speed sensor. Refer to [TM-101. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace or replace error-detected parts.

5.CHECK WHEEL SENSOR

Check wheel sensor. Refer to [BRC-62. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-39. "Intermittent Incident".](#)
- NO >> Replace or replace error-detected parts.

P0506 ISC SYSTEM

Description (GT-R certified NISSAN dealer)

INFOID:000000011486489

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.).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486490

DTC DETECTION LOGIC

NOTE:

If DTC P0506 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0506	Idle speed control system RPM lower than expected	The idle speed is less than the target idle speed by 100 rpm or more.	<ul style="list-style-type: none"> • Electric throttle control actuator • Intake air leak

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

If the target idle speed is out of the specified value, perform [EC-24, "IDLE AIR VOLUME LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#), before conducting DTC Confirmation Procedure.

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).

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Restart engine and run it for at least 1 minute at idle speed.
6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-413, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486491

1. CHECK INTAKE AIR LEAK

1. Start engine and let it idle.
2. Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

P0506 ISC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

YES >> Discover air leak location and repair.

NO >> GO TO 2.

2.REPLACE ECM

1. Stop engine.

2. Replace ECM.

3. Refer to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

P0507 ISC SYSTEM

Description (GT-R certified NISSAN dealer)

INFOID:000000011486492

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.).

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486493

DTC DETECTION LOGIC

NOTE:

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

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0507	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

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

If the target idle speed is out of the specified value, perform [EC-24, "IDLE AIR VOLUME LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#), before conducting DTC Confirmation Procedure.

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).

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and run it for at least 1 minute at idle speed.
6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-415, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486494

1. CHECK PCV HOSE CONNECTION

Confirm that PCV hose is connected correctly.

Is the inspection result normal?

P0507 ISC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

-
- YES >> GO TO 2.
NO >> Repair or replace malfunctioning part.

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.

Is intake air leak detected?

- YES >> Discover air leak location and repair.
NO >> GO TO 3.

3.REPLACE ECM

1. Stop engine.
2. Replace ECM.
3. Refer to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

P050A, P050B, P050E COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P050A, P050B, P050E COLD START CONTROL

Description

INFOID:000000011486495

ECM controls ignition timing and engine idle speed when engine is started with pre-warming up condition. This control promotes the activation of three way catalyst by heating the catalyst and reduces emissions.

DTC Logic

INFOID:000000011486496

DTC DETECTION LOGIC

NOTE:

If DTC P050A, P050B or P050E is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P050A	Cold start idle air control system performance	ECM does not control engine idle speed properly when engine is started with pre-warming up condition.	<ul style="list-style-type: none">• Lack of intake air volume• Fuel injection system• ECM
P050B	Cold start ignition timing performance	ECM does not control ignition timing properly when engine is started with pre-warming up condition.	
P050E	Cold start engine exhaust temperature too low	The temperature of the catalyst inlet does not rise to the proper temperature when the engine is started with pre-warming up condition.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

With CONSULT

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Select "DATA MONITOR" mode with CONSULT.
4. Check the indication of "COOLAN TEMP/S".

With GST

Follow the procedure "With CONSULT" above.

Is the value of "COOLAN TEMP/S" between 20°C (68°F) and 35°C (95°F)?

YES >> GO TO 3.

NO-1 [If it is below 20°C (68°F)]>>Warm up the engine until the value of "COOLAN TEMP/S" reaches 20°C (68°F) or more. Retry from step 1.

NO-2 [If it is above 35°C (95°F)]>>Cool engine down to less than 35°C (95°F). Retry from step 1.

3. PERFORM DTC CONFIRMATION PROCEDURE-II

With CONSULT

1. Set the select lever in N range.
2. Start the engine and warm up in idle with the value of "COOLAN TEMP/S" between 20°C (68°F) and 40°C (104°F) for more than 15 seconds.
3. Check 1st trip DTC.

P050A, P050B, P050E COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

- YES >> Go to [EC-418, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000011486497

1. PERFORM IDLE AIR VOLUME LEARNING

Perform [EC-24, "IDLE AIR VOLUME LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

Is Idle Air Volume Learning carried out successfully?

- YES >> GO TO 2.
- NO >> Follow the instruction of Idle Air Volume Learning.

2. CHECK INTAKE SYSTEM

Check for the cause of intake air volume lacking. Refer to the following.

- Crushed intake air passage
- Intake air passage clogging
- Clogging of throttle body

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair or replace malfunctioning part

3. CHECK FUEL INJECTION SYSTEM FUNCTION

Perform DTC Confirmation Procedure for DTC P0171, P0174. Refer to [EC-285, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Go to [EC-286, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#) for DTC P0171, P0174.

4. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC Confirmation Procedure.
See [EC-417, "DTC Logic"](#).

Is the 1st trip DTC P050A, P050B or P050E displayed again?

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

5. REPLACE ECM

1. Replace ECM.
2. Go to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

P0550 PSP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0550 PSP SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486498

Power steering pressure (PSP) sensor is installed to the power steering high-pressure tube and detects a power steering load.

This sensor is a potentiometer which transforms the power steering load into output voltage, and emits the voltage signal to the ECM. The ECM controls the electric throttle control actuator and adjusts the throttle valve opening angle to increase the engine speed and adjusts the idle speed for the increased load.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486499

DTC DETECTION LOGIC

NOTE:

If DTC P0550 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0550	Power steering pressure sensor circuit	An excessively low or high voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors [Power steering pressure sensor circuit is shorted.] (Sensor power supply 2 circuit is open or shorted.)• Power steering pressure sensor• Each sensor, connected with sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 5 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-419, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486500

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2. CHECK PSP SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect power steering pressure (PSP) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between PSP sensor harness connector and ground.

P0550 PSP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

PSP sensor		Ground	Voltage (V)
Connector	Terminal		
F16	3	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

3.CHECK PSP SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between PSP sensor harness connector and ECM harness connector.

PSP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E16	3	F102	95	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit.

4.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair short to ground or short to power in harness or connectors.

5.CHECK PSP SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between PSP sensor harness connector and ECM harness connector.

PSP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F16	1	F102	74	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK PSP SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between PSP sensor harness connector and ECM harness connector.

PSP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F16	2	F102	83	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK PSP SENSOR

Refer to [EC-421. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

P0550 PSP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 8.
NO >> Replace PSP sensor. Refer to [ST-33, "Exploded View"](#).

8.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486501

1.CHECK POWER STEERING PRESSURE SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and let it idle.
4. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)	
	+	-			
	Terminal	Terminal			
F102	83	74	Steering wheel	Being turned	0.5 - 4.5
				Not being turned	0.4 - 0.8

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace power steering pressure sensor. Refer to [ST-33, "Exploded View"](#).

P0603 ECM POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

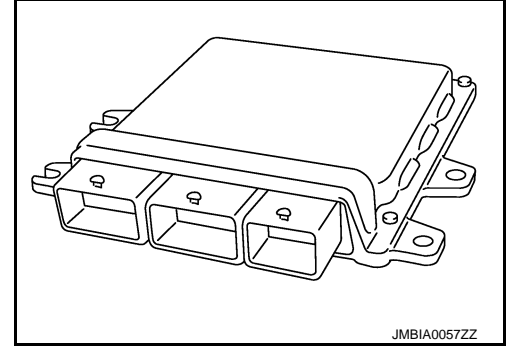
[VR38]

P0603 ECM POWER SUPPLY

Description (GT-R certified NISSAN dealer)

INFOID:000000011486502

Battery voltage is supplied to the ECM even when the ignition switch is turned OFF for the ECM memory function of the DTC memory, the air-fuel ratio feedback compensation value memory, the idle air volume learning value memory, etc.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486503

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0603	ECM power supply circuit	ECM backup RAM system does not function properly.	<ul style="list-style-type: none">• Harness or connectors [ECM power supply (backup) circuit is open or shorted.]• ECM

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, wait at least 10 second.
2. Turn ignition switch OFF and wait at least 5 minutes.
3. Turn ignition switch ON, wait at least 10 second.
4. Repeat steps 2 and 3 for five times.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-422. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486504

1. CHECK ECM POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the voltage between ECM harness connector terminals under the following conditions.

P0603 ECM POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			Voltage
Connector	+	-	
	Terminal	Terminal	
F102	118	128	Battery voltage

A

EC

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

C

2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- 15A fuse (No. 50)
- IPDM E/R harness connector E7
- Harness for open or short between ECM and battery

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>> Repair or replace harness or connectors.

F

3. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connectors.

G

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4. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC Confirmation Procedure.
See [EC-422, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

I

Is the 1st trip DTC P0603 displayed again?

YES >> GO TO 5.

NO >> INSPECTION END

J

5. REPLACE ECM

K

1. Replace ECM.
2. Refer to [EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

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>> INSPECTION END

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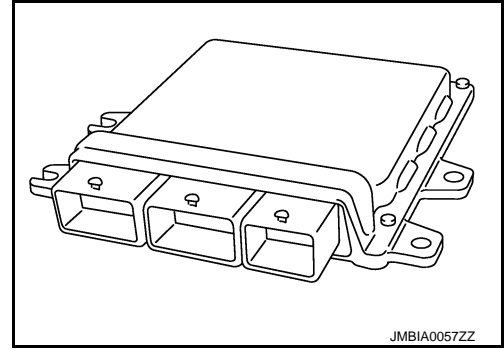
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P0605 ECM

Description (GT-R certified NISSAN dealer)

INFOID:000000011486505

The ECM consists of a microcomputer and connectors for signal input and output and for power supply. The ECM controls the engine.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486506

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P0605	Engine control module	A)	ECM calculation function is malfunctioning.	• ECM
		B)	ECM EEPROM system is malfunctioning.	
		C)	ECM self shut-off function is malfunctioning.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

1. Turn ignition switch ON.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-425, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B

1. Turn ignition switch ON and wait at least 1 second.
2. Turn ignition switch OFF, wait at least 10 seconds, and then turn it ON.
3. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-425, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION C

1. Turn ignition switch ON and wait at least 1 second.
2. Turn ignition switch OFF, wait at least 10 seconds, and then turn it ON.
3. Repeat step 2 for 32 times.
4. Check 1st trip DTC.

Is 1st trip DTC detected?

P0605 ECM

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Refer to [EC-425. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

A

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486507

1.INSPECTION START

EC

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC Confirmation Procedure.
See [EC-424. "DTC Logic \(GT-R certified NISSAN dealer\)".](#)

C

Is the 1st trip DTC P0605 displayed again?

D

- YES >> GO TO 2.
NO >> INSPECTION END

2.REPLACE ECM

E

1. Replace ECM.
2. Refer to [EC-20. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

F

>> INSPECTION END

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P0607 ECM

Description (GT-R certified NISSAN dealer)

INFOID:000000011486508

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486509

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0607	CAN communication bus	When detecting error during the initial diagnosis of CAN controller of ECM.	<ul style="list-style-type: none"> ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-426. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486510

1.INSPECTION START

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC Confirmation Procedure.
See [EC-426. "DTC Logic \(GT-R certified NISSAN dealer\)".](#)
4. Check DTC.

Is the DTC P0607 displayed again?

- YES >> GO TO 2.
- NO >> INSPECTION END

2.REPLACE ECM

1. Replace ECM.
2. Refer to [EC-20. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)

>> INSPECTION END

P0627 SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0627 SUB FUEL PUMP

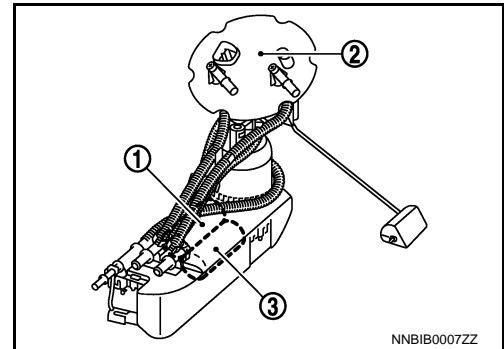
Description (GT-R certified NISSAN dealer)

INFOID:000000011486511

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Sensor	Input signal to ECM	ECM Function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed	Fuel pump control	Sub fuel pump relay ↓
Mass air flow sensor	Amount of intake air		Sub fuel pump

The sub fuel pump (1) is installed on the main fuel level sensor unit, fuel filter and fuel pump assembly (2) in line with the fuel pump (3). The ECM activates the sub fuel pump for covering the fuel supply in high engine speed and high load areas. The ECM does not activate the sub fuel pump directly. The ECM controls the fuel pump by turning the sub fuel pump relay ON/OFF.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486512

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0627	Sub fuel pump control circuit open	ECM detects the sub fuel pump circuit is open.	<ul style="list-style-type: none"> • Harness or connectors (Sub fuel pump circuit is open.) • Sub fuel pump

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select "SUB FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.
3. Touch "ON" and wait 5 seconds.
4. Check DTC.

Is DTC detected?

YES >> Refer to [EC-427, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486513

1. CHECK SUB FUEL PUMP POWER SUPPLY CIRCUIT

1. Disconnect sub fuel pump relay.
2. Disconnect "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector.
3. Check the continuity between sub fuel pump relay harness connector and "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector.

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P0627 SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Sub fuel pump relay		Fuel level sensor unit and fuel pump (sub fuel pump)		Continuity
Connector	Terminal	Connector	Terminal	
B242	5	B226	1	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair open circuit.

2. CHECK SUB FUEL PUMP GROUND CIRCUIT FOR OPEN

Check the continuity between "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector and ground.

Fuel level sensor unit and fuel pump (sub fuel pump)		Ground	Continuity
Connector	Terminal		
B226	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit.

3. CHECK SUB FUEL PUMP

Refer to [EC-428, "Component Inspection \(SUB FUEL PUMP RELAY\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace "main fuel level sensor unit, fuel filter and fuel pump assembly". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

4. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (SUB FUEL PUMP RELAY) (GT-R certified NISSAN dealer)

INFOID:000000011486514

1. CHECK SUB FUEL PUMP RELAY

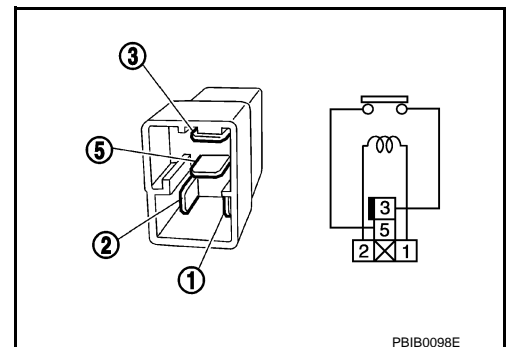
- Turn ignition switch OFF.
- Remove sub fuel pump relay. For the relay number, refer to [EC-604, "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#). For the relay layout, refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).
- Check the continuity between sub fuel pump relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12 V direct current supply between terminals 1 and 2	Existed
	No supply	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace sub fuel pump relay.



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P0629 SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0629 SUB FUEL PUMP

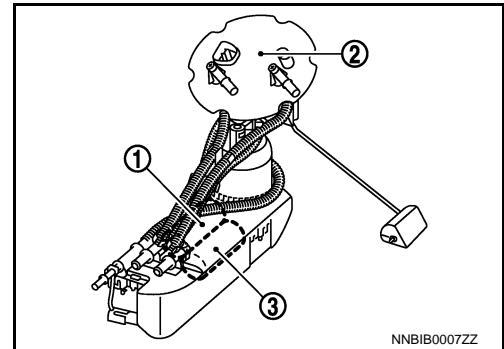
Description (GT-R certified NISSAN dealer)

INFOID:000000011486515

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Sensor	Input signal to ECM	ECM Function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed	Fuel pump control	Sub fuel pump relay ↓
Mass air flow sensor	Amount of intake air		Sub fuel pump

The sub fuel pump (1) is installed on the main fuel level sensor unit, fuel filter and fuel pump assembly (2) in line with the fuel pump (3). The ECM activates the sub fuel pump for covering the fuel supply in high engine speed and high load areas. The ECM does not activate the sub fuel pump directly. The ECM controls the fuel pump by turning the sub fuel pump relay ON/OFF.



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DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486516

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0629	Sub fuel pump control circuit High	The sub fuel pump always operates.	<ul style="list-style-type: none"> Harness or connectors (Sub fuel pump circuit is shorted.) Sub fuel pump relay stuck ON

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DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-429, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

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Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486517

1. CHECK SUB FUEL PUMP RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sub fuel pump relay.
3. Disconnect ECM harness connector.
4. Check harness for short to ground between sub fuel pump relay harness connector and ECM harness connector.

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P0629 SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Sub fuel pump relay		ECM	
Connector	Terminal	Connector	Terminal
B242	2	M107	126

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B201, M117
- Harness for short between sub fuel pump relay and ECM

>> Repair short to ground in harness or connectors.

3.CHECK SUB FUEL PUMP POWER SUPPLY CIRCUIT

1. Disconnect sub fuel pump harness connector.
2. Check harness for short to power between sub fuel pump relay harness connector and “fuel level sensor unit and fuel pump (sub fuel pump)” harness connector.

Sub fuel pump relay		Fuel level sensor unit and fuel pump (sub fuel pump)	
Connector	Terminal	Connector	Terminal
B242	5	B226	1

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair short to power in harness or connectors.

4.CHECK SUB FUEL PUMP RELAY

Refer to [EC-430, "Component Inspection \(SUB FUEL PUMP RELAY\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace sub fuel pump relay.

5.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (SUB FUEL PUMP RELAY) (GT-R certified NISSAN dealer)

INFOID:000000011486518

1.CHECK SUB FUEL PUMP RELAY

1. Turn ignition switch OFF.
2. Remove sub fuel pump relay. For the relay number, refer to [EC-604, "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#). For the relay layout, refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

P0629 SUB FUEL PUMP

[VR38]

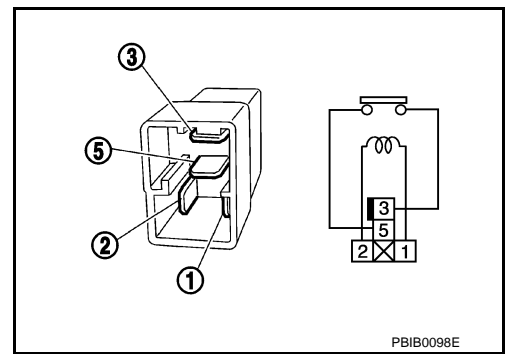
< DTC/CIRCUIT DIAGNOSIS >

- Check the continuity between sub fuel pump relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12 V direct current supply between terminals 1 and 2	Existed
	No supply	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace sub fuel pump relay.



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P062A SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

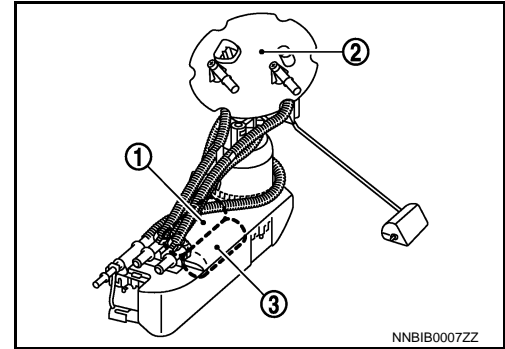
P062A SUB FUEL PUMP

Description (GT-R certified NISSAN dealer)

INFOID:000000011486519

Sensor	Input signal to ECM	ECM Function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed	Fuel pump control	Sub fuel pump relay ↓ Sub fuel pump
Mass air flow sensor	Amount of intake air		

The sub fuel pump (1) is installed on the main fuel level sensor unit, fuel filter and fuel pump assembly (2) in line with the fuel pump (3). The ECM activates the sub fuel pump for covering the fuel supply in high engine speed and high load areas. The ECM does not activate the sub fuel pump directly. The ECM controls the fuel pump by turning the sub fuel pump relay ON/OFF.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486520

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P062A	Sub fuel pump control circuit range/performance	The sub fuel pump does not activate in the high engine speed and high load areas.	<ul style="list-style-type: none"> Sub fuel pump

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

Ⓜ With CONSULT

- Turn ignition switch ON.
- Select "SUB FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.
- Touch "ON" and wait at least 10 seconds.
- Check DTC.

Is DTC detected?

YES >> Refer to [EC-432, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486521

1. CHECK FUEL PRESSURE-I

Check fuel pressure. (Refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)".](#))

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace.

P062A SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2.CHECK FUEL PRESSURE-II

1. Start engine.
2. Select "SUB FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.
3. Touch "ON".
4. Read the indication of fuel pressure gauge.

At idling : Approximately 350 kPa (3.50 bar, 3.57 kg/cm², 51 psi)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace "main fuel level sensor unit, fuel filter and fuel pump assembly". Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

3.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

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P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P0643 SENSOR POWER SUPPLY

Description (GT-R certified NISSAN dealer)

INFOID:000000011486522

ECM supplies a voltage of 5 V to some of the sensors systematically divided into 2 groups, respectively. Accordingly, when a short circuit develops in a sensor power source, a malfunction may occur simultaneously in the sensors belonging to the same group as the short-circuited sensor.

Sensor power supply 1

- APP sensor 1
- CMP sensor (PHASE) (bank 1)
- Electric throttle control actuator (bank 1)
- Electric throttle control actuator (bank 2)
- EVAP control system pressure sensor
- Turbocharger boost sensor (bank 1)
- Turbocharger boost sensor (bank 2)

NOTE:

If sensor power supply 1 circuit is malfunctioning, DTC P0643 is displayed.

Sensor power supply 2

- APP sensor 2
- CKP sensor (POS)
- CMP sensor (PHASE) (bank 2)
- Manifold absolute pressure sensor
- Power steering pressure sensor
- Refrigerant pressure sensor
- Battery current sensor

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486523

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0643	Sensor power supply circuit short	ECM detects that the voltage of sensor power supply 1 is excessively low or high.	<ul style="list-style-type: none">• Harness or connectors (APP sensor 1 circuit is shorted.) (TP sensor circuit is shorted.) [CMP sensor (PHASE) (bank 1) circuit is shorted.] (Turbocharger boost sensor circuit is shorted.) (EVAP control system pressure sensor circuit is shorted.)• Accelerator pedal position sensor• Throttle position sensor• Camshaft position sensor (PHASE) (bank 1)• Turbocharger boost sensor• EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 1 second.

P0643 SENSOR POWER SUPPLY

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-435. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486524

EC

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace ground connection.

2.CHECK ACCELERATOR PEDAL POSITION SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect accelerator pedal position (APP) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between APP sensor harness connector and ground.

APP sensor		Ground	Voltage (V)
Connector	Terminal		
E111	5	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> GO TO 3.

3.CHECK SENSOR POWER SUPPLY CIRCUITS

Check harness for short to power and short to ground, between the following terminals.

ECM		Sensor		
Connector	Terminal	Name	Connector	Terminal
F102	84	Electric throttle control actuator (bank 2)	F26	6
	88	CMP sensor (PHASE) (bank 1)	F5	1
	92	Turbocharger boost sensor (bank 1)	F14	1
		Turbocharger boost sensor (bank 2)	F30	1
		EVAP control system pressure sensor	B251	3
96	Electric throttle control actuator (bank 1)	F9	1	
M107	100	APP sensor 1	E111	5

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair short to ground or short to power in harness or connectors.

4.CHECK COMPONENTS

Check the following.

- Camshaft position sensor (PHASE) (bank 1) (Refer to [EC-338. "Component Inspection \(GT-R certified NISSAN dealer\)".](#))
- Turbocharger boost sensor (Refer to [EC-317. "Component Inspection \(GT-R certified NISSAN dealer\)".](#))
- EVAP control system pressure sensor (Refer to [EC-379. "Component Inspection \(GT-R certified NISSAN dealer\)".](#))

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace malfunctioning component.

5.CHECK TP SENSOR

P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Refer to [EC-239. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 6.

6.REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Refer to [EM-36. "Removal and Installation"](#).

>> INSPECTION END

7.CHECK APP SENSOR

Refer to [EC-503. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8.REPLACE ACCELERATOR PEDAL ASSEMBLY

Refer to [ACC-3. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

9.CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

P0850 PNP SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

P0850 PNP SWITCH

Description (GT-R certified NISSAN dealer)

INFOID:000000011486525

When the shift lever position is P or N, park/neutral position (PNP) signal from the TCM is sent to ECM.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486526

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0850	Park/neutral position switch	The signal of the park/neutral position (PNP) signal dose not change during driving after the engine is started.	<ul style="list-style-type: none">• Harness or connectors [The park/neutral position (PNP) signal circuit is open or shorted.]• TCM

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 5.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3.CHECK PNP SIGNAL

 **With CONSULT**

1. Turn ignition switch ON.
2. Select "P/N POSI SW" in "DATA MONITOR" mode with CONSULT. Then check the "P/N POSI SW" signal under the following conditions.

Position (Shift lever)	Known-good signal
N or P position	ON
Except above position	OFF

Is the inspection result normal?

YES >> GO TO 4.

NO >> Refer to [EC-438, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

4.PERFORM DTC CONFIRMATION PROCEDURE

1. Select "DATA MONITOR" mode with CONSULT.
2. Start engine and warm it up to normal operating temperature.
3. Maintain the following conditions for at least 50 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

ENG SPEED	1,400 - 6,375 rpm
COOLAN TEMP/S	More than 65 °C (149 °F)
B/FUEL SCHDL	2.0 - 31.8 msec

P0850 PNP SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

VHCL SPEED SE	More than 64 km/h (40 MPH)
Shift lever	Suitable position

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-438, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

5.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-438, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the park/neutral position (PNP) signal circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-438, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486527

1.PERFORM COMPONENT FUNCTION CHECK

1. Turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals under the following conditions.

ECM			Condition	Voltage (V)	
Connector	+	-			
	Terminal	Terminal			
M107	111	128	Shift lever	P or N	Battery voltage
				Except above	Approx. 0

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-438, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486528

1.CHECK DTC WITH TCM

Refer to [TM-47, "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning part.

2.CHECK STARTING SYSTEM

Turn ignition switch OFF, then turn it to START.

Does starter motor operate?

YES >> GO TO 3.

NO >> Check DTC with BCM. Refer to [BCS-84, "DTC Index"](#).

3.CHECK PNP SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between TCM harness connector and ECM harness connector.

P0850 PNP SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

TCM		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B45	19	M107	111	Existed

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

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

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B1, M7
- Harness for open or short between TCM and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

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P1148, P1168 CLOSED LOOP CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1148, P1168 CLOSED LOOP CONTROL

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486529

DTC DETECTION LOGIC

NOTE:

DTC P1148 or P1168 is displayed with DTC for A/F sensor 1.

When the DTC is detected, perform the trouble diagnosis of DTC corresponding to A/F sensor 1.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1148	Closed loop control function (bank 1)	The closed loop control function for bank 1 does not operate even when vehicle is being driven in the specified condition.	<ul style="list-style-type: none">• Harness or connectors (The A/F sensor 1 circuit is open or shorted.)• A/F sensor 1• A/F sensor 1 heater
P1168	Closed loop control function (bank 2)	The closed loop control function for bank 2 does not operate even when vehicle is being driven in the specified condition.	

P1211 TCS CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1211 TCS CONTROL UNIT

Description (GT-R certified NISSAN dealer)

INFOID:000000011486530

The malfunction information related to TCS is transferred through the CAN communication line from “ABS actuator and electric unit (control unit)” to ECM.

Be sure to erase the malfunction information such as DTC not only for “ABS actuator and electric unit (control unit)” but also for ECM after TCS related repair.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486531

DTC DETECTION LOGIC

Freeze frame data is not stored in the ECM for this self-diagnosis.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1211	TCS control unit	ECM receives malfunction information from “ABS actuator and electric unit (control unit)”.	<ul style="list-style-type: none">• ABS actuator and electric unit (control unit)• TCS related parts

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 60 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> [EC-441, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486532

Refer to [BRC-6, "Work Flow \(GT-R certified NISSAN dealer\)"](#).

P1212 TCS COMMUNICATION LINE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1212 TCS COMMUNICATION LINE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486533

This CAN communication line is used to control the smooth engine operation during the TCS operation. Pulse signals are exchanged between ECM and “ABS actuator and electric unit (control unit)”.

Be sure to erase the malfunction information such as DTC not only for “ABS actuator and electric unit (control unit)” but also for ECM after TCS related repair.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486534

DTC DETECTION LOGIC

NOTE:

- If DTC P1212 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P1212 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

Freeze frame data is not stored in the ECM for this self-diagnosis.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1212	TCS communication line	ECM cannot receive the information from “ABS actuator and electric unit (control unit)” continuously.	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or shorted.)• ABS actuator and electric unit (control unit)• Dead (Weak) battery

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-442, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486535

Refer to [BRC-6, "Work Flow \(GT-R certified NISSAN dealer\)"](#).

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1217 ENGINE OVER TEMPERATURE

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486536

DTC DETECTION LOGIC

NOTE:

- If DTC P1217 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P1217 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

If the cooling fan or another component in the cooling system malfunctions, engine coolant temperature will rise.

When the engine coolant temperature reaches an abnormally high temperature condition, a malfunction is indicated.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1217	Engine over temperature (Overheat)	<ul style="list-style-type: none">• Cooling fan does not operate properly (Overheat).• Cooling fan system does not operate properly (Overheat).• Engine coolant was not added to the system using the proper filling method.• Engine coolant is not within the specified range.	<ul style="list-style-type: none">• Harness or connectors (The cooling fan circuit is open or shorted.)• IPDM E/R• Cooling fan control module• Cooling fan motor• Radiator hose• Radiator• Radiator cap• Reservoir tank cap• Water pump• Thermostat

CAUTION:

When a malfunction is indicated, always replace the coolant. Refer to [CO-10, "Draining"](#) and [CO-10, "Refilling"](#). Also, replace the engine oil. Refer to [LU-11, "Draining"](#) and [LU-11, "Refilling"](#).

1. Fill radiator with coolant up to specified level with a filling speed of 2 liters per minute. Always use coolant with the proper mixture ratio. Refer to [MA-22, "Anti-Freeze Coolant Mixture Ratio"](#).
2. After refilling coolant, run engine to ensure that no water-flow noise is emitted.

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-443, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the cooling fan. During this check, a DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-444, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486537

1. PERFORM COMPONENT FUNCTION CHECK-I

WARNING:

Never remove the reservoir tank cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the reservoir tank.

Wrap a thick cloth around cap. Carefully remove the cap by turning it a quarter turn to allow built-up pressure to escape. Then turn the cap all the way off.

P1217 ENGINE OVER TEMPERATURE

[VR38]

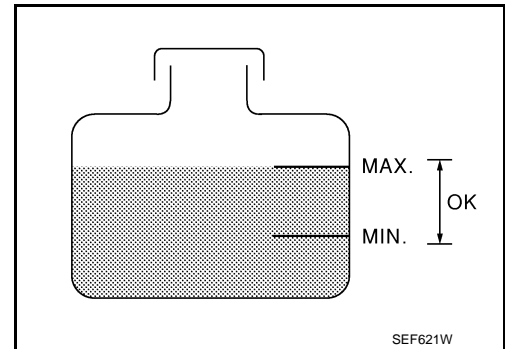
< DTC/CIRCUIT DIAGNOSIS >

Check the coolant level in the reservoir tank and radiator.

Allow engine to cool before checking coolant level.

Is the coolant level in the reservoir tank and/or radiator below the proper range?

- YES >> Refer to [EC-444, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 2.



2.PERFORM COMPONENT FUNCTION CHECK-II

Confirm whether customer filled the coolant or not.

Did customer fill the coolant?

- YES >> Refer to [EC-444, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> GO TO 3.

3.PERFORM COMPONENT FUNCTION CHECK-III

With CONSULT

1. Turn ignition switch ON.
2. Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode with CONSULT.
3. Check that cooling fan speed varies according to the percentage.

Without CONSULT

Perform IPDM E/R auto active test and check cooling fan motors operation, refer to [PCS-9, "Diagnosis Description"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Refer to [EC-444, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486538

1.CHECK COOLING FAN OPERATION

With CONSULT

1. Turn ignition switch ON.
2. Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode with CONSULT.
3. Check that cooling fan speed varies according to the percentage.

Without CONSULT

1. Perform IPDM E/R auto active test and check cooling fan motors operation, refer to [PCS-9, "Diagnosis Description"](#).
2. Check that cooling fan operates.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Refer to [EC-529, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2.CHECK COOLING SYSTEM FOR LEAK-I

Check cooling system for leak. Refer to [CO-9, "Inspection"](#).

Is leakage detected?

- YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK COOLING SYSTEM FOR LEAK-II

Check the following for leak.

- Hose
- Radiator
- Radiator cap
- Water pump

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

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>> Repair or replace malfunctioning part.

4. CHECK RESERVOIR TANK CAP

Check reservoir tank cap. Refer to [CO-13, "RESERVOIR TANK CAP : Inspection"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace reservoir tank cap.

5. CHECK THERMOSTAT

Check thermostat. Refer to [CO-22, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace thermostat. Refer to [CO-21, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

6. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Refer to [EC-233, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace engine coolant temperature sensor. Refer to [CO-23, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

7. CHECK MAIN 12 CAUSES

If the cause cannot be isolated, check the following.

Engine	Step	Inspection item	Equipment	Standard	Reference page
OFF	1	<ul style="list-style-type: none"> Blocked radiator Blocked condenser Blocked radiator grille Blocked bumper 	<ul style="list-style-type: none"> Visual 	No blocking	—
	2	<ul style="list-style-type: none"> Coolant mixture 	<ul style="list-style-type: none"> Coolant tester 	MA-22, "Anti-Freeze Coolant Mixture Ratio"	
	3	<ul style="list-style-type: none"> Coolant level 	<ul style="list-style-type: none"> Visual 	Coolant up to MAX level in reservoir tank and radiator filler neck	CO-9, "Inspection"
	4	<ul style="list-style-type: none"> Reservoir tank cap 	<ul style="list-style-type: none"> Pressure tester 	CO-13, "RESERVOIR TANK CAP : Inspection"	
ON*2	5	<ul style="list-style-type: none"> Coolant leaks 	<ul style="list-style-type: none"> Visual 	No leaks	CO-9, "Inspection"
ON*2	6	<ul style="list-style-type: none"> Thermostat 	<ul style="list-style-type: none"> Touch the upper and lower radiator hoses 	Both hoses should be hot	CO-22, "Inspection (GT-R certified NISSAN dealer)"
ON*1	7	<ul style="list-style-type: none"> Cooling fan 	<ul style="list-style-type: none"> CONSULT 	Operating	EC-529, "Component Function Check (GT-R certified NISSAN dealer)"
OFF	8	<ul style="list-style-type: none"> Combustion gas leak 	<ul style="list-style-type: none"> Color checker chemical tester 4 Gas analyzer 	Negative	—
ON*3	9	<ul style="list-style-type: none"> Coolant temperature gauge 	<ul style="list-style-type: none"> Visual 	Gauge less than 3/4 when driving	—
		<ul style="list-style-type: none"> Coolant overflow to reservoir tank 	<ul style="list-style-type: none"> Visual 	No overflow during driving and idling	CO-9, "Inspection"
OFF*4	10	<ul style="list-style-type: none"> Coolant return from reservoir tank to radiator 	<ul style="list-style-type: none"> Visual 	Should be initial level in reservoir tank	CO-9, "Inspection"
OFF	11	<ul style="list-style-type: none"> Cylinder head 	<ul style="list-style-type: none"> Straight gauge feeler gauge 	0.1 mm (0.004 in) Maximum distortion (warping)	EM-110, "Inspection (GT-R certified NISSAN dealer)"
	12	<ul style="list-style-type: none"> Cylinder block and pistons 	<ul style="list-style-type: none"> Visual 	No scuffing on cylinder walls or piston	EM-124, "Inspection (GT-R certified NISSAN dealer)"

*1: Turn the ignition switch ON.

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

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*2: Engine running at 3,000 rpm for 10 minutes.

*3: Drive at 90 km/h (56 MPH) for 30 minutes and then let idle for 10 minutes.

*4: After 60 minutes of cool down time.

For more information, refer to [CO-5. "Troubleshooting Chart \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

P1220 FUEL PUMP CONTROL MODULE (FPCM)

< DTC/CIRCUIT DIAGNOSIS >

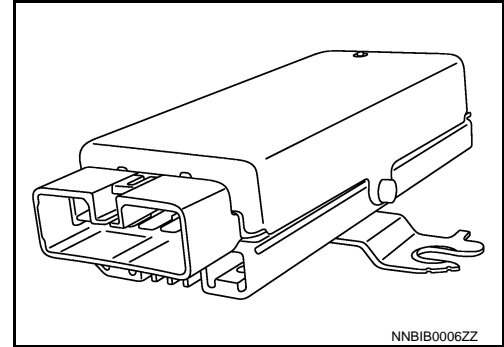
[VR38]

P1220 FUEL PUMP CONTROL MODULE (FPCM)

Description (GT-R certified NISSAN dealer)

INFOID:000000011486539

When driving conditions demand a decrease in fuel supply, the fuel pump control module (FPCM) reduces the supply voltage to the fuel pump. When driving conditions demand an increase in fuel supply (during engine start, low engine coolant temperature or high load), the supply voltage to the fuel pump is increased.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486540

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1220	Fuel pump control module (FPCM)	During engine cranking, the signal voltage of the FPCM to the ECM is too low.	<ul style="list-style-type: none">• Harness or connectors (FPCM circuit is open or shorted)• Fuel pump circuit is open or shorted• FPCM

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.
- Before performing the following procedure, check that the engine coolant temperature is -10°C (14°F) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 5 seconds.
If engine does not start, crank engine for at least 5 seconds.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-447, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486541

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

P1220 FUEL PUMP CONTROL MODULE (FPCM)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2. CHECK FPCM POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect fuel pump control module (FPCM) harness connector.
3. Turn ignition switch ON.
4. Check the voltage between FPCM harness connector and ground.

FPCM		Ground	Voltage
Connector	Terminal		
B230	10	Ground	Battery voltage

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- 15A fuse (No.41)
- Harness connectors E106, M6
- Harness connectors B201, M117
- Harness for open or short between FPCM and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK FPCM GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between FPCM harness connector and ground.

FPCM		Ground	Continuity
Connector	Terminal		
B230	5	Ground	Existed
	1		

3. Also check harness for short to power.

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair open circuit or short to power in harness or connectors.

5. CHECK FPCM INPUT CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check the continuity between FPCM harness connector and ECM harness connector.

FPCM		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B230	8	F101	29	Existed
	9		30	

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness connectors B201, M117
- Harness for open or short between FPCM and ECM

P1220 FUEL PUMP CONTROL MODULE (FPCM)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK FPCM OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect "fuel level sensor unit and fuel pump (main)" harness connector.
2. Check the continuity between FPCM harness connector and "fuel level sensor unit and fuel pump (main)" harness connector.

FPCM		Fuel level sensor unit and fuel pump (main)		Continuity
Connector	Terminal	Connector	Terminal	
B230	6	B225	5	Existed
	7		4	

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK FPCM

Refer to [EC-449, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace FPCM. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

9. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486542

1. CHECK FUEL PUMP CONTROL MODULE (FPCM)

1. Check the voltage between FPCM terminals under the following conditions.

FPCM			Condition	Voltage
Connector	+	-		
	Terminal	Terminal		
B230	7	6	For 1 second after turning ignition switch ON	Approx. 8.5 V
			More than 1 second after turning ignition switch ON	Approx. 0 V
			Idle speed	Approx. 8.5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace FPCM. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

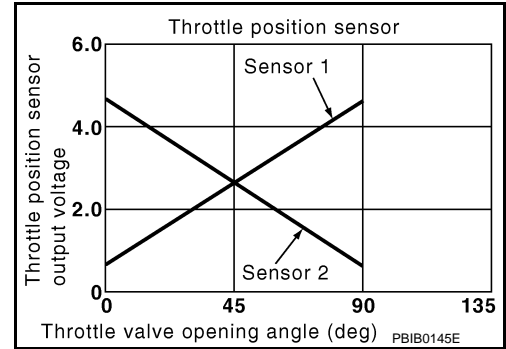
P1225, P1234 TP SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486543

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle position sensor responds to the throttle valve movement.

The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486544

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1225	Closed throttle position learning performance (bank 1)	Closed throttle position learning value is excessively low.	<ul style="list-style-type: none"> Electric throttle control actuator (TP sensor 1 and 2)
P1234	Closed throttle position learning performance (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-450, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486545

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Turn ignition switch OFF.
2. Remove the intake air duct. Refer to [EM-28, "Removal and Installation"](#).

P1225, P1234 TP SENSOR

[VR38]

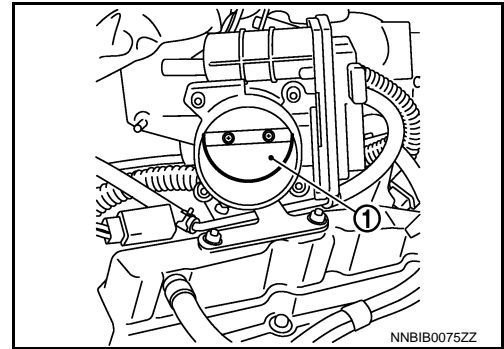
< DTC/CIRCUIT DIAGNOSIS >

3. Check if foreign matter is caught between the throttle valve (1) and the housing.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Remove the foreign matter and clean the electric throttle control actuator inside.



2. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

>> INSPECTION END

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P1226, P1235 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

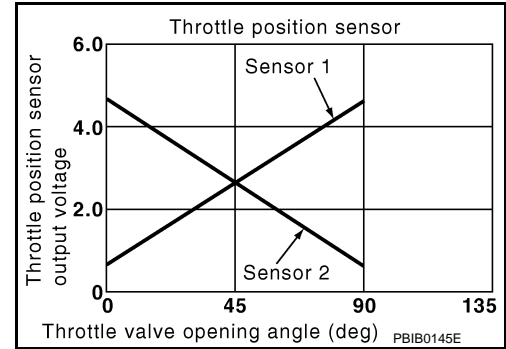
P1226, P1235 TP SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486546

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle position sensor responds to the throttle valve movement.

The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486547

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1226	Closed throttle position learning performance (bank 1)	Closed throttle position learning is not performed successfully, repeatedly.	<ul style="list-style-type: none"> Electric throttle control actuator (TP sensor 1 and 2)
P1235	Closed throttle position learning performance (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Repeat steps 2 and 3 for 32 times.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-452, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486548

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Turn ignition switch OFF.
2. Remove the intake air duct. Refer to [EM-28, "Removal and Installation"](#).

P1226, P1235 TP SENSOR

[VR38]

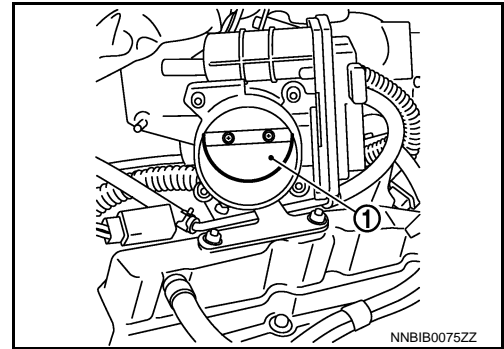
< DTC/CIRCUIT DIAGNOSIS >

3. Check if foreign matter is caught between the throttle valve (1) and the housing.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Remove the foreign matter and clean the electric throttle control actuator inside.



2. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

>> INSPECTION END

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P1233, P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1233, P2101 ELECTRIC THROTTLE CONTROL FUNCTION

Description (GT-R certified NISSAN dealer)

INFOID:000000011486549

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle control motor is operated by the ECM and it opens and closes the throttle valve. The current opening angle of the throttle valve is detected by the throttle position sensor and it provides feedback to the ECM to control the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486550

DTC DETECTION LOGIC

NOTE:

If DTC P1233 or P2101 is displayed with DTC P1238, P1290, first perform the trouble diagnosis for DTC P1238, P2119. Refer to [EC-461, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

If DTC P1233 or P2101 is displayed with DTC P2100, P2119, first perform the trouble diagnosis for DTC P1290, P2100. Refer to [EC-469, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1233	Electric throttle control performance (bank 2)	Electric throttle control function does not operate properly.	<ul style="list-style-type: none">• Harness or connectors (Throttle control motor circuit is open or shorted)• Throttle control motor relay circuit is open or shorted)• Electric throttle control actuator• Throttle control motor relay
P2101	Electric throttle control performance (bank 1)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V when engine is running.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 2 seconds.
2. Start engine and let it idle for 5 seconds.
3. Check DTC.

Is DTC detected?

YES >> Refer to [EC-454, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486551

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

P1233, P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

2. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT-I

Check the voltage between ECM harness connector terminals as follows.

DTC	ECM				Condition	Voltage (V)
	+		-			
	Connector	Terminal	Connector	Terminal		
P1233	F101	1	M107	128	Ignition switch OFF	Approx. 0
					Ignition switch ON	Battery voltage
P2101	F102	49			Ignition switch OFF	Approx. 0
					Ignition switch ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 3.

3. CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector.
- Check the continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E7	70	M107	127	Existed

- Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between ECM and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT-II

- Check the continuity between IPDM E/R harness connector and ECM harness connector.

DTC	IPDM E/R		ECM		Continuity
	Connector	Terminal	Connector	Terminal	
P1233	E7	54	F101	1	Existed
P2101			F102	49	

- Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between ECM and IPDM E/R

P1233, P2101 ELECTRIC THROTTLE CONTROL FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK FUSE

1. Disconnect 15A fuse (No. 51) from IPDM E/R.
2. Check 15A fuse for blown.

Is the inspection result normal?

- YES >> GO TO 8.
NO >> Replace 15A fuse.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-35. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

9. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT FOR OPEN OR SHORT

1. Turn ignition switch OFF.
2. Disconnect electric throttle control actuator harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P1233	2	F26	1	F102	2	Existed
			2		5	Not existed
					2	Not existed
					5	Existed
P2101	1	F9	5	F101	50	Not existed
			6		53	Existed
					50	Existed
					53	Not existed

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

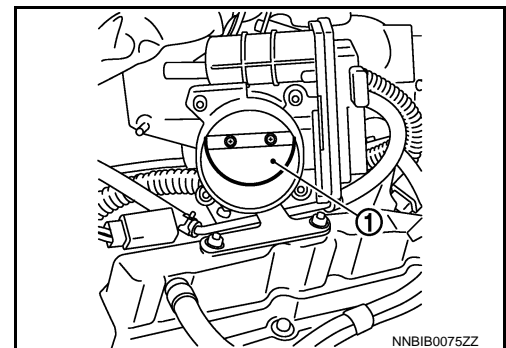
- YES >> GO TO 10.
NO >> Repair or replace malfunctioning part.

10. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Remove the intake air duct.
2. Check if foreign matter is caught between the throttle valve (1) and the housing.

Is the inspection result normal?

- YES >> GO TO 11.
NO >> Remove the foreign matter and clean the electric throttle control actuator inside.



11. CHECK THROTTLE CONTROL MOTOR

Refer to [EC-457. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 12.

P1233, P2101 ELECTRIC THROTTLE CONTROL FUNCTION

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 13.

12.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace harness or connectors.

13.REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486552

1.CHECK THROTTLE CONTROL MOTOR

1. Turn ignition switch OFF.
2. Disconnect electric throttle control actuator harness connector.
3. Check resistance between electric throttle control actuator terminals as follows.

Electric throttle control actuator		Resistance
Bank	Terminals	
1	5 and 6	Approx. 1 - 15 Ω [at 25°C (77°F)]
2	1 and 2	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

>> INSPECTION END

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P1236, P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1236, P2118 THROTTLE CONTROL MOTOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486553

The throttle control motor is operated by the ECM and it opens and closes the throttle valve. The current opening angle of the throttle valve is detected by the throttle position sensor and it provides feedback to the ECM to control the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486554

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1236	Throttle control motor (bank 2) circuit short	ECM detects short in both circuits between ECM and throttle control motor.	<ul style="list-style-type: none">• Harness or connectors (Throttle control motor circuit is shorted.)• Electric throttle control actuator (Throttle control motor)
P2118	Throttle control motor (bank 1) circuit short		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 2 seconds.
2. Start engine and let it idle for 5 seconds.
3. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-458. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486555

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect electric throttle control actuator harness connector.
2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

P1236, P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P1236	2	F26	1	F102	2	Existed
			2		5	Not existed
					2	Not existed
			5		Existed	
P2118	1	F9	5	F101	50	Not existed
			6		53	Existed
					50	Existed
			53		Not existed	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part.

3.CHECK THROTTLE CONTROL MOTOR

Refer to [EC-459, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness or connectors.

5.REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486556

1.CHECK THROTTLE POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Perform [EC-24, "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
4. Turn ignition switch ON.
5. Set shift lever to A position.
6. Check the voltage between ECM harness connector terminals under the following conditions.

P1236, P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			Condition	Voltage (V)
Connector	+	-		
	Terminal	Terminal		
F101	40 [TP sensor 1 (bank 1)]	20	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	28 [TP sensor 1 (bank 2)]	15	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	36 [TP sensor 2 (bank 1)]	20	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36
	32 [TP sensor 2 (bank 2)]	15	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to [EM-36. "Removal and Installation"](#).

P1238, P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1238, P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486557

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle control motor is operated by the ECM and it opens and closes the throttle valve. The throttle position sensor detects the throttle valve position, and the opening and closing speed of the throttle valve and feeds the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486558

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P1238	Electric throttle control actuator (bank 2)	A)	Electric throttle control actuator does not function properly due to the return spring malfunction.	• Electric throttle control actuator
		B)	Throttle valve opening angle in fail-safe mode is not in specified range.	
		C)	ECM detect the throttle valve is stuck open.	
P2119	Electric throttle control actuator (bank 1)	A)	Electric throttle control actuator does not function properly due to the return spring malfunction.	
		B)	Throttle valve opening angle in fail-safe mode is not in specified range.	
		C)	ECM detect the throttle valve is stuck open.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A AND B

1. Turn ignition switch ON and wait at least 1 second.
2. Shift shift lever to A position and wait at least 3 seconds.
3. Shift shift lever to P position.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Turn ignition switch ON and wait at least 1 second.
6. Shift shift lever to A position and wait at least 3 seconds.
7. Shift shift lever to P position.
8. Turn ignition switch OFF, wait at least 10 seconds, and then turn ON.
9. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-462, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION C

1. Turn ignition switch ON and wait at least 1 second.
2. Shift shift lever to A position and wait at least 3 seconds.
3. Shift shift lever to P position.

P1238, P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

4. Start engine and let it idle for 3 seconds.
5. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-462, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

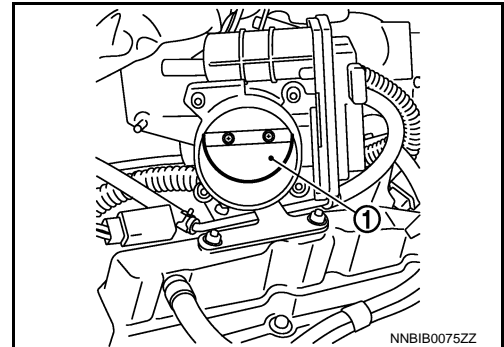
INFOID:000000011486559

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Turn ignition switch OFF.
2. Remove the intake air duct. Refer to [EM-28, "Removal and Installation"](#).
3. Check if foreign matter is caught between the throttle valve (1) and the housing.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Remove the foreign matter and clean the electric throttle control actuator inside.



2. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36, "Removal and Installation"](#).

>> INSPECTION END

P1239, P2135 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

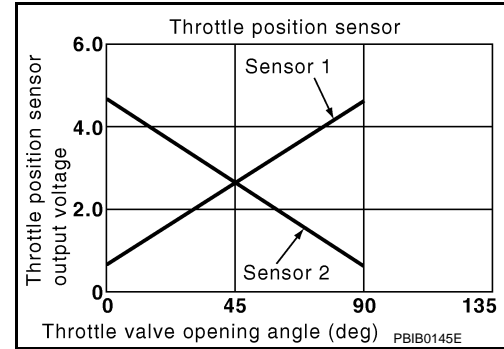
P1239, P2135 TP SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486560

Electric throttle control actuator consists of throttle control motor, throttle position sensor, etc. The throttle position sensor responds to the throttle valve movement.

The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486561

DTC DETECTION LOGIC

NOTE:

If DTC P1239 or P2135 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1239	Throttle position sensor (bank 2) circuit range/performance	Rationally incorrect voltage is sent to ECM compared with the signals from TP sensor 1 and TP sensor 2.	<ul style="list-style-type: none"> Harness or connector (TP sensor 1 and 2 circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) Electric throttle control actuator (TP sensor 1 and 2) Each sensor, connected with sensor power supply 1 circuit
P2135	Throttle position sensor (bank 1) circuit range/performance		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 1 second.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-463, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486562

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

P1239, P2135 TP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2.CHECK THROTTLE POSITION SENSOR POWER SUPPLY CIRCUIT

1. Disconnect electric throttle control actuator harness connector.
2. Turn ignition switch ON.
3. Check the voltage between electric throttle control actuator harness connector and ground.

DTC	Electric throttle control actuator			Ground	Voltage (V)
	Bank	Connector	Terminal		
P1239	2	F26	6	Ground	Approx. 5
P2135	1	F9	1		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK THROTTLE POSITION SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P1239	2	F26	3	F101	15	Existed
P2135	1	F9	4		20	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK THROTTLE POSITION SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

DTC	Electric throttle control actuator			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P1239	2	F26	4	F101	28	Existed
			5		32	
P2135	1	F9	2		40	
			3		36	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK THROTTLE POSITION SENSOR

Refer to [EC-465, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

P1239, P2135 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

6. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

Replace electric throttle control actuator. Refer to [EM-36. "Removal and Installation"](#).

>> INSPECTION END

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486563

1. CHECK THROTTLE POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Perform [EC-24. "THROTTLE VALVE CLOSED POSITION LEARNING : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).
4. Turn ignition switch ON.
5. Set shift lever to A position.
6. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)
	+	-		
	Terminal	Terminal		
F101	40 [TP sensor 1 (bank 1)]	20	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	28 [TP sensor 1 (bank 2)]	15	Accelerator pedal : Fully released	More than 0.36
			Accelerator pedal : Fully depressed	Less than 4.75
	36 [TP sensor 2 (bank 1)]	20	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36
	32 [TP sensor 2 (bank 2)]	15	Accelerator pedal : Fully released	Less than 4.75
			Accelerator pedal : Fully depressed	More than 0.36

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to [EM-36. "Removal and Installation"](#).

P1263, P2263 TC SYSTEM

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486564

DTC DETECTION LOGIC

NOTE:

If DTC P1263 or P2263 is displayed with DTC P0237, P0238, P0241 or P0242, first perform the trouble diagnosis for DTC P0237, P0238, P0241 or P0242. Refer to [EC-319, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P2263	Turbocharger boost system performance (bank 1)	In spite of the boosting area, the boost does not increase.	<ul style="list-style-type: none"> • Intake air leaks • Exhaust gas leaks • Turbocharger boost sensor • Turbocharger boost control solenoid valve • Recirculation valve • Exhaust manifold and turbocharger assembly
P1263	Turbocharger boost system performance (bank 2)		

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-466, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-467, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486565

1. CHECK BOOST CONTROL ACTUATOR HOSE

Check disconnection, looseness or improper connection of hose between turbocharger boost control solenoid valve and boost control actuator.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to [EC-467, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

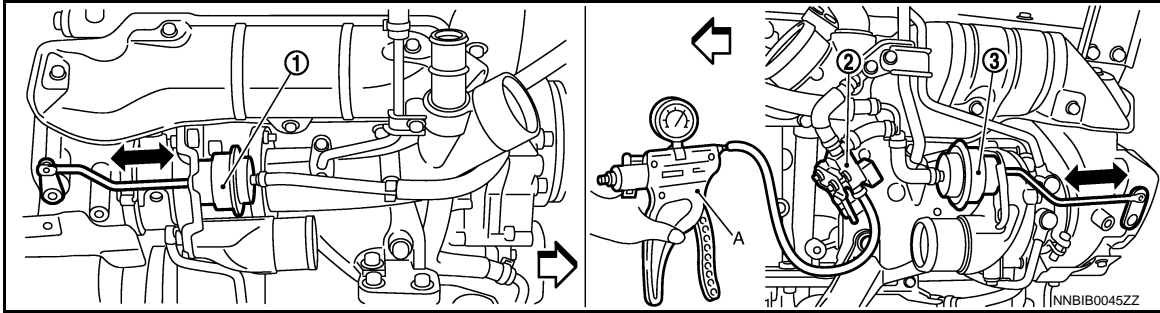
2. PERFORM COMPONENT FUNCTION CHECK

1. Turn ignition switch OFF.
2. Disconnect turbocharger boost control solenoid valve harness connector.
3. Disconnect of hose between turbocharger boost control solenoid valve and compressor wheel.
4. Install pressure pump to turbocharger boost control solenoid valve.
5. Check that the rod of the boost control actuator activates when supplying pressure and battery voltage to the turbocharger boost control solenoid valve as per the following conditions.

Condition		Operation
Turbocharger boost control solenoid valve	Supply pressure	
Battery voltage direct current supply between terminals 1 and 2	<ul style="list-style-type: none"> • Bank 1 [68.0 kPa (680mbar, 510 mmHg, 20.08 inHg)] • Bank 2 [63.1 kPa (631 mbar, 473 mmHg, 18.63 inHg)] 	Boost control actuator rod operates
No current supply between terminals 1 and 2		Boost control actuator rod not operates

CAUTION:

Do not supply pressure over 75 kPa (750 mbar, 562 mmHg, 22.14 inHg)



- 1. Boost control actuator (bank1)
- 2. Turbocharger boost control solenoid valve
- 3. Boost control actuator (bank2)

A. Pressure pump

← :Vehicle front

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-467. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486566

1.CHECK FOR EXHAUST GAS LEAK

- 1. Start engine and run it at idle.
- 2. Listen for an exhaust gas leak of exhaust manifold.

Is exhaust gas leak detected?

YES >> Repair or replace malfunction parts.

NO >> GO TO 2.

2.CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak between electric throttle control actuator and compressor wheel.

Is intake air leak detected?

YES >> Repair or replace malfunction parts.

NO >> GO TO 3.

3.CHECK RECIRCULATION VALVE

- 1. Turn ignition switch OFF.
- 2. Check recirculation valve. Refer to [EM-32. "Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace recirculation valve. Refer to [EM-31. "Removal and Installation".](#)

4.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- 1. Disconnect turbocharger boost control solenoid valve harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between turbocharger boost control solenoid valve harness connector and ground.

Turbocharger boost control solenoid valve		Ground	Voltage
Connector	Terminal		
F34	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

< DTC/CIRCUIT DIAGNOSIS >

- Harness connectors E3, F1
- Harness for open or short between turbocharger boost control solenoid valve and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between turbocharger boost control solenoid valve harness connector and ECM harness connector.

Turbocharger boost control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F34	2	F102	61	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Refer to [EC-207, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace turbocharger boost control solenoid valve. Refer to [EM-61, "Exploded View"](#).

8.CHECK BOOST CONTROL ACTUATOR

Refer to [EM-64, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace exhaust manifold and turbocharger assembly. Refer to [EM-62, "Disassembly and Assembly \(GT-R certified NISSAN dealer\)"](#).

9.CHECK TURBOCHARGER BOOST SENSOR

Refer to [EC-317, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace turbocharger boost sensor. Refer to [EM-31, "Removal and Installation"](#).

10.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

P1290, P2100, P2103 THROTTLE CONTROL MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1290, P2100, P2103 THROTTLE CONTROL MOTOR RELAY

Description (GT-R certified NISSAN dealer)

INFOID:000000011486567

Power supply for the throttle control motor is provided to the ECM via throttle control motor relay. The throttle control motor relay is ON/OFF controlled by the ECM. When the ignition switch is turned ON, the ECM sends an ON signal to throttle control motor relay and battery voltage is provided to the ECM. When the ignition switch is turned OFF, the ECM sends an OFF signal to throttle control motor relay and battery voltage is not provided to the ECM.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486568

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1290	Throttle control motor relay circuit open (bank 2)	ECM detects a voltage of power source for throttle control motor is excessively low.	<ul style="list-style-type: none">• Harness or connectors (Throttle control motor relay circuit is open)• Throttle control motor relay
P2100	Throttle control motor relay circuit open (bank 1)		
P2103	Throttle control motor relay circuit short	ECM detect the throttle control motor relay is stuck ON.	<ul style="list-style-type: none">• Harness or connectors (Throttle control motor relay circuit is shorted)• Throttle control motor relay

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V.

Which DTC is detected?

P1290, P2100 >> GO TO 2.

P2103 >> GO TO 3.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P1290 AND P2100

1. Turn ignition switch ON and wait at least 2 seconds.
2. Start engine and let it idle for 5 seconds.
3. Check DTC.

Is DTC detected?

YES >> Refer to [EC-469. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

3. PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P2103

1. Turn ignition switch ON and wait at least 1 second.
2. Check DTC.

Is DTC detected?

YES >> Refer to [EC-469. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486569

1. CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.

P1290, P2100, P2103 THROTTLE CONTROL MOTOR RELAY

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Disconnect IPDM E/R harness connector.
4. Check the continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E7	70	M107	127	Existed

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between ECM and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT

1. Check the continuity between IPDM E/R sensor harness connector and ECM harness connector.

DTC	IPDM E/R		ECM		Continuity
	Connector	Terminal	Connector	Terminal	
P1290	E7	54	F101	1	Existed
P2100			F102	49	
P2103			F102	49	
			F101	1	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

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

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between ECM and IPDM E/R

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK FUSE

1. Disconnect 15A fuse (No. 51) from IPDM E/R.
2. Check 15A fuse for blown.

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Replace 15A fuse.

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

P1550 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1550 BATTERY CURRENT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486570

The power generation voltage variable control enables fuel consumption to be decreased by reducing the engine load which is caused by the power generation of the generator. The battery current sensor is installed to the battery cable at the negative terminal. The sensor measures the charging/discharging current of the battery. Based on the sensor signal, ECM judges whether or not the power generation voltage variable control is performed. When performing the power generation voltage variable control, ECM calculates the target power generation voltage based on the sensor signal. And ECM sends the calculated value as the power generation command value to IPDM E/R. For the details of the power generation voltage variable control, refer to [CHG-10. "System Description"](#).

CAUTION:

Do not connect the electrical component or the ground wire directly to the battery terminal. The connection causes the malfunction of the power generation voltage variable control, and then the battery discharge may occur.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486571

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1550	Battery current sensor circuit range/performance	The output voltage of the battery current sensor remains within the specified range while engine is running.	<ul style="list-style-type: none">• Harness or connectors (Battery current sensor circuit is open or shorted.)• Sensor power supply 2 circuit is open or shorted.)• Battery current sensor• Each sensor, connected with sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-471. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486572

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect battery current sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between battery current sensor harness connector and ground.

P1550 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Battery current sensor		Ground	Voltage (V)
Connector	Terminal		
F39	1	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	1	F102	90	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair short to ground or short to power in harness or connectors.

3.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair short to ground or short to power in harness or connectors.

4.CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	3	F102	58	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair short to ground or short to power in harness or connectors.

5.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	4	F102	35	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair short to ground or short to power in harness or connectors.

6.CHECK BATTERY CURRENT SENSOR

Refer to [EC-473. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

P1550 BATTERY CURRENT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 7.
NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

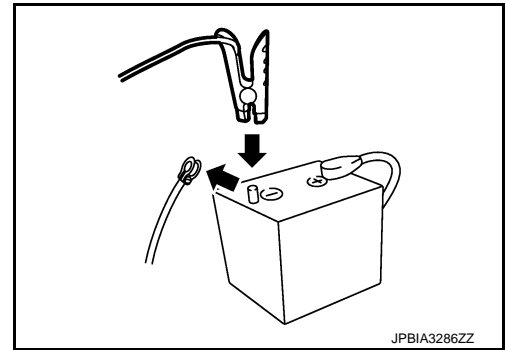
INFOID:000000011486573

1.CHECK BATTERY CURRENT SENSOR

1. Turn ignition switch OFF.
2. Reconnect harness connectors disconnected.
3. Disconnect battery negative cable (1).

←: To body ground

4. Install jumper cable (A) between battery negative terminal and body ground.
5. Turn ignition switch ON.
6. Check the voltage between ECM harness connector terminals under the following conditions.



ECM				Voltage (V)
+		-		
Connector	Terminal	Connector	Terminal	
F101	35 (Battery current sensor signal)	F102	58	Approx. 2.5

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to [PG-3, "How to Handle Battery"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1551, P1552 BATTERY CURRENT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486574

The power generation voltage variable control enables fuel consumption to be decreased by reducing the engine load which is caused by the power generation of the generator. The battery current sensor is installed to the battery cable at the negative terminal. The sensor measures the charging/discharging current of the battery. Based on the sensor signal, ECM judges whether or not the power generation voltage variable control is performed. When performing the power generation voltage variable control, ECM calculates the target power generation voltage based on the sensor signal. And ECM sends the calculated value as the power generation command value to IPDM E/R. For the details of the power generation voltage variable control, refer to [CHG-10. "System Description"](#).

CAUTION:

Do not connect the electrical component or the ground wire directly to the battery terminal. The connection causes the malfunction of the power generation voltage variable control, and then the battery discharge may occur.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486575

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1551	Battery current sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (Battery current sensor circuit is open or shorted.) (Sensor power supply 2 circuit is open or shorted.)• Battery current sensor• Each sensor, connected with sensor power supply 2 circuit
P1552	Battery current sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V with ignition switch ON

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-474, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486576

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect battery current sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between battery current sensor harness connector and ground.

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Battery current sensor		Ground	Voltage (V)
Connector	Terminal		
F39	1	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	1	F102	90	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair short to ground or short to power in harness or connectors.

3.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair short to ground or short to power in harness or connectors.

4.CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	3	F102	58	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair short to ground or short to power in harness or connectors.

5.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	4	F102	35	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair short to ground or short to power in harness or connectors.

6.CHECK BATTERY CURRENT SENSOR

Refer to [EC-482. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

P1551, P1552 BATTERY CURRENT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 7.
NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

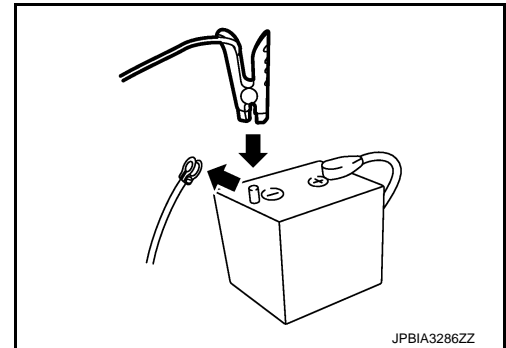
INFOID:000000011486577

1.CHECK BATTERY CURRENT SENSOR

1. Turn ignition switch OFF.
2. Reconnect harness connectors disconnected.
3. Disconnect battery negative cable (1).

←: To body ground

4. Install jumper cable (A) between battery negative terminal and body ground.
5. Turn ignition switch ON.
6. Check the voltage between ECM harness connector terminals under the following conditions.



ECM				Voltage (V)
+		-		
Connector	Terminal	Connector	Terminal	
F101	35 (Battery current sensor signal)	F102	58	Approx. 2.5

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to [PG-3, "How to Handle Battery"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

P1553 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1553 BATTERY CURRENT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486578

The power generation voltage variable control enables fuel consumption to be decreased by reducing the engine load which is caused by the power generation of the generator. The battery current sensor is installed to the battery cable at the negative terminal. The sensor measures the charging/discharging current of the battery. Based on the sensor signal, ECM judges whether or not the power generation voltage variable control is performed. When performing the power generation voltage variable control, ECM calculates the target power generation voltage based on the sensor signal. And ECM sends the calculated value as the power generation command value to IPDM E/R. For the details of the power generation voltage variable control, refer to [CHG-10. "System Description"](#).

CAUTION:

Do not connect the electrical component or the ground wire directly to the battery terminal. The connection causes the malfunction of the power generation voltage variable control, and then the battery discharge may occur.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486579

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1553	Battery current sensor performance	The signal voltage transmitted from the sensor to ECM is higher than the amount of the maximum power generation.	<ul style="list-style-type: none">• Harness or connectors (Battery current sensor circuit is open or shorted.) (Sensor power supply 2 circuit is open or shorted.)• Battery current sensor• Each sensor, connected with sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait at least 10 seconds.
2. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-477. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486580

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect battery current sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between battery current sensor harness connector and ground.

P1553 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Battery current sensor		Ground	Voltage (V)
Connector	Terminal		
F39	1	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	1	F102	90	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair short to ground or short to power in harness or connectors.

3.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair short to ground or short to power in harness or connectors.

4.CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	3	F102	58	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair short to ground or short to power in harness or connectors.

5.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	4	F102	35	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair short to ground or short to power in harness or connectors.

6.CHECK BATTERY CURRENT SENSOR

Refer to [EC-482. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

P1553 BATTERY CURRENT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 7.
 NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

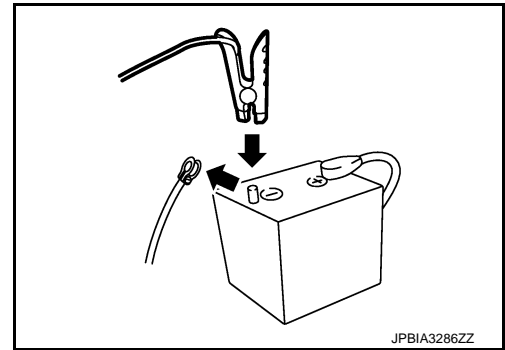
INFOID:000000011486581

1.CHECK BATTERY CURRENT SENSOR

1. Turn ignition switch OFF.
2. Reconnect harness connectors disconnected.
3. Disconnect battery negative cable (1).

←: To body ground

4. Install jumper cable (A) between battery negative terminal and body ground.
5. Turn ignition switch ON.
6. Check the voltage between ECM harness connector terminals under the following conditions.



ECM				Voltage (V)
+		-		
Connector	Terminal	Connector	Terminal	
F101	35 (Battery current sensor signal)	F102	58	Approx. 2.5

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to [PG-3, "How to Handle Battery"](#).

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

P1554 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1554 BATTERY CURRENT SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486582

The power generation voltage variable control enables fuel consumption to be decreased by reducing the engine load which is caused by the power generation of the generator. The battery current sensor is installed to the battery cable at the negative terminal. The sensor measures the charging/discharging current of the battery. Based on the sensor signal, ECM judges whether or not the power generation voltage variable control is performed. When performing the power generation voltage variable control, ECM calculates the target power generation voltage based on the sensor signal. And ECM sends the calculated value as the power generation command value to IPDM E/R. For the details of the power generation voltage variable control, refer to [CHG-10. "System Description"](#).

CAUTION:

Do not connect the electrical component or the ground wire directly to the battery terminal. The connection causes the malfunction of the power generation voltage variable control, and then the battery discharge may occur.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486583

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1554	Battery current sensor performance	The output voltage of the battery current sensor is lower than the specified value while the battery voltage is high enough.	<ul style="list-style-type: none">• Harness or connectors (Battery current sensor circuit is open or shorted.) (Sensor power supply 2 circuit is open or shorted.)• Battery current sensor• Each sensor, connected with sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to [EC-480. "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

NOTE:

Use component function check to check the overall function of the battery current sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-481. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486584

1. PRECONDITIONING

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 12.8 V at idle.
- Before performing the following procedure, confirm that all load switches and A/C switch are turned OFF.

>> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK

With CONSULT

1. Start engine and let it idle.
2. Select "BAT CUR SEN" in "DATA MONITOR" mode with CONSULT.
3. Check "BAT CUR SEN" indication for 10 seconds.
"BAT CUR SEN" should be above 2,300 mV at least once.

P1554 BATTERY CURRENT SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

⊗ Without CONSULT

1. Start engine and let it idle.
2. Check the voltage between ECM harness connector terminals as follows.

ECM				Voltage (V)
+		-		
Connector	Terminal	Connector	Terminal	
F101	35 (Battery current sensor signal)	F102	58	Above 2.3 at least once

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-481, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486585

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect battery current sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between battery current sensor harness connector and ground.

Battery current sensor		Ground	Voltage (V)
Connector	Terminal		
F39	1	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2. CHECK BATTERY CURRENT SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	1	F102	90	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair short to ground or short to power in harness or connectors.

3. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair short to ground or short to power in harness or connectors.

4. CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between battery current sensor harness connector and ECM harness connector.

P1554 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	3	F102	58	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair short to ground or short to power in harness or connectors.

5. CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F39	4	F102	35	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair short to ground or short to power in harness or connectors.

6. CHECK BATTERY CURRENT SENSOR

Refer to [EC-482. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace battery current sensor. Refer to [EC-42. "Component Parts Location \(GT-R certified NISSAN dealer\)".](#)

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

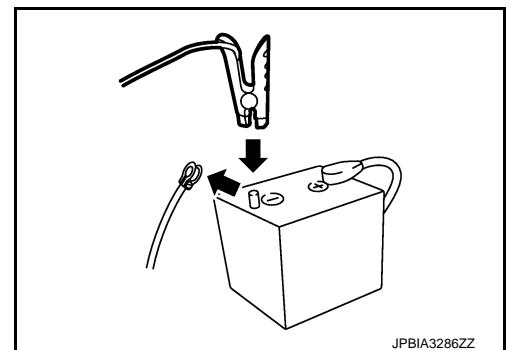
INFOID:000000011486586

1. CHECK BATTERY CURRENT SENSOR

1. Turn ignition switch OFF.
2. Reconnect harness connectors disconnected.
3. Disconnect battery negative cable (1).

←: To body ground

4. Install jumper cable (A) between battery negative terminal and body ground.
5. Turn ignition switch ON.
6. Check the voltage between ECM harness connector terminals under the following conditions.



JPBIA3286ZZ

ECM				Voltage (V)
+		-		
Connector	Terminal	Connector	Terminal	
F101	35 (Battery current sensor signal)	F102	58	Approx. 2.5

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to [PG-3. "How to Handle Battery".](#)

P1554 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery current sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NIS-SAN dealer\)"](#).

A

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P

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1564 ASCD STEERING SWITCH

Description (GT-R certified NISSAN dealer)

INFOID:000000011486587

ASCD steering switch has variant values of electrical resistance for each button. ECM reads voltage variation of switch, and determines which button is operated.

Refer to [EC-83, "System Description \(GT-R certified NISSAN dealer\)"](#) for the ASCD function.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486588

DTC DETECTION LOGIC

NOTE:

If DTC P1564 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to [EC-424, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1564	ASCD steering switch	<ul style="list-style-type: none">An excessively high voltage signal from the ASCD steering switch is sent to ECM.ECM detects that input signal from the ASCD steering switch is out of the specified range.ECM detects that the ASCD steering switch is stuck ON.	<ul style="list-style-type: none">Harness or connectors (The switch circuit is open or shorted.)ASCD steering switchECM

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 10 seconds.
- Press MAIN switch for at least 10 seconds, then release it and wait at least 10 seconds.
- Press CANCEL switch for at least 10 seconds, then release it and wait at least 10 seconds.
- Press RESUME/ACCELERATE switch for at least 10 seconds, then release it and wait at least 10 seconds.
- Press SET/COAST switch for at least 10 seconds, then release it and wait at least 10 seconds.
- Check DTC.

Is DTC detected?

- YES >> Refer to [EC-484, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486589

1. CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK ASCD STEERING SWITCH CIRCUIT

 With CONSULT

P1564 ASCD STEERING SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch ON.
2. Select "MAIN SW", "CANCEL SW", "RESUME/ACC SW" and "SET SW" in "DATA MONITOR" mode with CONSULT.
3. Check each item indication under the following conditions.

Monitor item	Condition		Indication
MAIN SW	MAIN switch	Pressed	ON
		Released	OFF
CANCEL SW	CANCEL switch	Pressed	ON
		Released	OFF
RESUME/ACC SW	RESUME/ACCELERATE switch	Pressed	ON
		Released	OFF
SET SW	SET/COAST switch	Pressed	ON
		Released	OFF

Without CONSULT

1. Turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals under the following conditions.

ECM			Condition	Voltage (V)
Connector	+	-		
	Terminal	Terminal		
M107	102 (ASCD steering switch signal)	74	MAIN switch: Pressed	Approx. 0
			CANCEL switch: Pressed	0.9 - 1.5
			SET/COAST switch: Pressed	1.9 - 2.4
			RESUME/ACCELERATE switch: Pressed	3.0 - 3.3
			All ASCD steering switches: Released	4.0 - 4.2

Is the inspection result normal?

- YES >> GO TO 8.
NO >> GO TO 3.

3. CHECK ASCD STEERING SWITCH GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Disconnect combination switch (spiral cable) harness connector.
4. Check the continuity between combination switch (spiral cable) and ECM harness connector.

Combination switch (spiral cable)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M303	16	M107	74	Existed

5. Also check harness for short to ground and short to power.

Is the inspection result normal?

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

4. DETECT MALFUNCTIONING PART

Check the following.

- Combination switch (spiral cable)
- Harness for open and short between ECM and combination switch (spiral cable)

>> Repair open circuit, short to ground or short to power in harness or connectors.

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

5. CHECK ASCD STEERING SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between combination switch (spiral cable) and ECM harness connector.

Combination switch (spiral cable)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M303	13	M107	102	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Combination switch (spiral cable)
- Harness for open and short between ECM and combination switch (spiral cable)

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK ASCD STEERING SWITCH

Refer to [EC-486, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace ASCD steering switch. Refer to [ST-14, "Removal and Installation"](#).

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486590

1. CHECK ASCD STEERING SWITCH

1. Turn ignition switch OFF.
2. Disconnect combination switch (spiral cable) harness connector.
3. Check resistance between combination switch (spiral cable) harness connector terminals under the following conditions.

Combination switch (spiral cable)		Condition	Resistance (Ω)
Connector	Terminals		
M303	13 and 16	MAIN switch: Pressed	Approx. 0
		CANCEL switch: Pressed	Approx. 250
		SET/COAST switch: Pressed	Approx. 660
		RESUME/ACCELERATE switch: Pressed	Approx. 1,500
		All ASCD steering switches: Released	Approx. 4,000

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ASCD steering switch. Refer to [ST-14, "Removal and Installation"](#).

P1572 ASCD BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1572 ASCD BRAKE SWITCH

Description (GT-R certified NISSAN dealer)

INFOID:000000011486591

When the brake pedal is depressed, ASCD brake switch is turned OFF and stop lamp switch is turned ON. ECM detects the state of the brake pedal by those two types of input (ON/OFF signal). Refer to [EC-83, "System Description \(GT-R certified NISSAN dealer\)"](#) for the ASCD function.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486592

DTC DETECTION LOGIC

NOTE:

- If DTC P1572 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to [EC-424, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- This self-diagnosis has the one trip detection logic. When malfunction A is detected, DTC is not stored in ECM memory. And in that case, 1st trip DTC and 1st trip freeze frame data are displayed. 1st trip DTC is erased when ignition switch is turned OFF. And even when malfunction A is detected in two consecutive trips, DTC is not stored in ECM memory.

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible cause
P1572	ASCD brake switch	A)	When the vehicle speed is above 30 km/h (19 MPH), ON signals from the stop lamp switch and the ASCD brake switch are sent to the ECM at the same time.	<ul style="list-style-type: none">• Harness or connectors (The stop lamp switch circuit is shorted.)• Harness or connectors (The ASCD brake switch circuit is shorted.)• Stop lamp switch• ASCD brake switch• Incorrect stop lamp switch installation• Incorrect ASCD brake switch installation• ECM
		B)	ASCD brake switch signal is not sent to ECM for extremely long time while the vehicle is being driven.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

The procedure for malfunction B is not described. It takes an extremely long time to complete the procedure for malfunction B. By performing the procedure for malfunction A, the condition that causes malfunction B can be detected.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

1. Start engine (VDC switch OFF).
2. Select "DATA MONITOR" mode with CONSULT.
3. Press MAIN switch and make sure that CRUISE lamp illuminates.
4. Drive the vehicle for at least 5 consecutive seconds under the following conditions.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

VHCL SPEED SE	More than 30 km/h (19 MPH)
Shift lever	Suitable position

5. Check 1st trip DTC.

P1572 ASCD BRAKE SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is 1st trip DTC detected?

YES >> Refer to [EC-488, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

1. Drive the vehicle for at least 5 consecutive seconds under the following conditions.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

VHCL SPEED SE	More than 30 km/h (19 MPH)
Shift lever	Suitable position
Driving location	Depress the brake pedal for more than five seconds so as not to come off from the above-mentioned vehicle speed.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-488, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486593

1. CHECK OVERALL FUNCTION-I

 **With CONSULT**

1. Turn ignition switch ON.
2. Select "BRAKE SW1" in "DATA MONITOR" mode with CONSULT.
3. Check "BRAKE SW1" indication under the following conditions.

Monitor item	Condition		Indication
BRAKE SW1	Brake pedal	Slightly depressed	OFF
		Fully released	ON

 **Without CONSULT**

1. Turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals as follows.

Connector	ECM		Condition	Voltage (V)	
	+	-			
	Terminal	Terminal			
M107	117 (ASCD brake switch signal)	128	Brake pedal	Slightly depressed	Approx. 0
			Fully released	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

2. CHECK OVERALL FUNCTION-II

 **With CONSULT**

Select "BRAKE SW2" and check indication under the following conditions.

Monitor item	Condition		Indication
BRAKE SW2	Brake pedal	Slightly depressed	ON
		Fully released	OFF

P1572 ASCD BRAKE SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

⊗ Without CONSULT

Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage (V)	
	+	-			
	Terminal	Terminal			
M107	110 (Stop lamp switch signal)	128	Brake pedal	Slightly depressed	Battery voltage
			Fully released	Approx. 0	

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 8.

3. CHECK ASCD BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ASCD brake switch harness connector.
3. Turn ignition switch ON.
4. Check the voltage between ASCD brake switch harness connector and ground.

ASCD brake switch		Ground	Voltage
Connector	Terminal		
E109	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connector E103
- 10A fuse (No. 3)
- Harness for open or short between ASCD brake switch and fuse

>> Repair open circuit or short to ground in harness or connectors.

5. CHECK ASCD BRAKE SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between ASCD brake switch harness connector and ECM harness connector.

ASCD brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E109	2	M107	117	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between ECM and ASCD brake switch

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK ASCD BRAKE SWITCH

P1572 ASCD BRAKE SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Refer to [EC-491. "Component Inspection \(ASCD Brake Switch\) \(GT-R certified NISSAN dealer\)"](#)

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace ASCD brake switch. Refer to [BR-21. "Exploded View"](#).

8. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch harness connector.
3. Check the voltage between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Voltage
Connector	Terminal		
E110	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connector E103
- 10A fuse (No. 7)
- Harness for open or short between stop lamp switch and battery

>> Repair open circuit, short to ground or short to power in harness or connectors.

10. CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check the continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E110	2	M107	110	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connectors E103, M2
- Harness for open or short between ECM and stop lamp switch

>> Repair open circuit, short to ground or short to power in harness or connectors.

12. CHECK STOP LAMP SWITCH

Refer to [EC-491. "Component Inspection \(Stop Lamp Switch\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace stop lamp switch. Refer to [BR-21. "Exploded View"](#).

13. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

P1572 ASCD BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Component Inspection (ASCD Brake Switch) (GT-R certified NISSAN dealer)

INFOID:000000011486594

A

1.CHECK ASCD BRAKE SWITCH-I

1. Turn ignition switch OFF.
2. Disconnect ASCD brake switch harness connector.
3. Check the continuity between ASCD brake switch terminals under the following conditions.

EC

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Existed
		Slightly depressed	Not existed

C

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 2.

D

E

2.CHECK ASCD BRAKE SWITCH-II

1. Adjust ASCD brake switch installation. Refer to [BR-21, "Inspection and Adjustment \(GT-R certified NISSAN dealer\)"](#).
2. Check the continuity between ASCD brake switch terminals under the following conditions.

F

G

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Existed
		Slightly depressed	Not existed

H

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace ASCD brake switch. Refer to [BR-21, "Exploded View"](#).

I

Component Inspection (Stop Lamp Switch) (GT-R certified NISSAN dealer)

INFOID:000000011486595

J

1.CHECK STOP LAMP SWITCH-I

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch harness connector.
3. Check the continuity between stop lamp switch terminals under the following conditions.

K

L

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Not existed
		Slightly depressed	Existed

M

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 2.

N

2.CHECK STOP LAMP SWITCH-II

1. Adjust stop lamp switch installation. Refer to [BR-21, "Inspection and Adjustment \(GT-R certified NISSAN dealer\)"](#).
2. Check the continuity between stop lamp switch terminals under the following conditions.

O

P

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Not existed
		Slightly depressed	Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace stop lamp switch. Refer to [BR-21, "Exploded View"](#).

P1574 ASCD VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1574 ASCD VEHICLE SPEED SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486596

The ECM receives two vehicle speed signals via CAN communication line. One is sent from combination meter, and the other is from TCM (Transmission control module). The ECM uses these signals for ASCD control. Refer to [EC-83, "System Description \(GT-R certified NISSAN dealer\)"](#) for ASCD functions.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486597

DTC DETECTION LOGIC

NOTE:

- If DTC P1574 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P1574 is displayed with DTC P0500, first perform the trouble diagnosis for DTC P0500. Refer to [EC-411, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- If DTC P1574 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to [EC-424, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).
- If DTC P1574 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to [EC-426, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1574	ASCD vehicle speed sensor	The difference between the two vehicle speed signals is out of the specified range.	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or shorted.)• Combination meter• ABS actuator and electric unit (control unit)• Wheel sensor• TCM• ECM

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine (VDC switch OFF).
2. Drive the vehicle at more than 40 km/h (25 MPH).

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle.

If a road test is expected to be easier, it is unnecessary to lift the vehicle.

3. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-492, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486598

1. CHECK DTC WITH TCM

Check DTC with TCM. Refer to [TM-47, "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

P1574 ASCD VEHICLE SPEED SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 2.
- NO >> Perform trouble shooting relevant to DTC indicated.

A

2.CHECK DTC WITH “ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)”

Refer to [BRC-34. "CONSULT Function \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair or replace malfunctioning part.

C

3.CHECK DTC WITH “COMBINATION METER”

Refer to [MWI-55. "CONSULT Function \(METER/M&A\)".](#)

D

>> INSPECTION END

E

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EC

P1805 BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P1805 BRAKE SWITCH

Description (GT-R certified NISSAN dealer)

INFOID:000000011486599

Brake switch signal is applied to the ECM through the stop lamp switch when the brake pedal is depressed. This signal is used mainly to decrease the engine speed when the vehicle being driven.

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486600

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1805	Brake switch	A brake switch signal is not sent to ECM for extremely long time while the vehicle is driving.	<ul style="list-style-type: none">• Harness or connectors (Stop lamp switch circuit is open or shorted.)• Stop lamp switch

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Fully depress the brake pedal for at least 5 seconds.
3. Erase the DTC.
4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-494, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486601

1. CHECK STOP LAMP SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Check the stop lamp when depressing and releasing the brake pedal.

Brake pedal	Stop lamp
Fully released	Not illuminated
Slightly depressed	Illuminated

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Disconnect stop lamp switch harness connector.
2. Check the voltage between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Voltage
Connector	Terminal		
E110	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connector E103
- 10A fuse (No. 7)

P1805 BRAKE SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- Harness for open or short between stop lamp switch and battery

>> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect stop lamp switch harness connector.
2. Disconnect ECM harness connector.
3. Check the continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E110	2	M107	110	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connector E103, M2
- Harness for open or short between ECM and stop lamp switch

>> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK STOP LAMP SWITCH

Refer to [EC-495, "Component Inspection \(Stop Lamp Switch\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace stop lamp switch. Refer to [BR-21, "Exploded View"](#).

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Stop Lamp Switch) (GT-R certified NISSAN dealer)INFOID:000000011486602

1.CHECK STOP LAMP SWITCH-I

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch harness connector.
3. Check the continuity between stop lamp switch terminals under the following conditions.

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Not existed
		Slightly depressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH-II

1. Adjust stop lamp switch installation. Refer to [BR-21, "Inspection and Adjustment \(GT-R certified NISSAN dealer\)"](#).
2. Check the continuity between stop lamp switch terminals under the following conditions.

P1805 BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Not existed
		Slightly depressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to [BR-21, "Exploded View"](#).

P2096, P2097, P2098, P2099 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

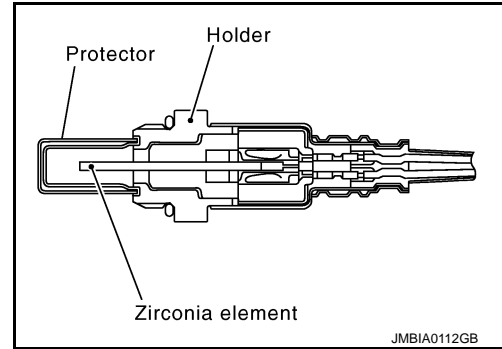
[VR38]

P2096, P2097, P2098, P2099 A/F SENSOR 1

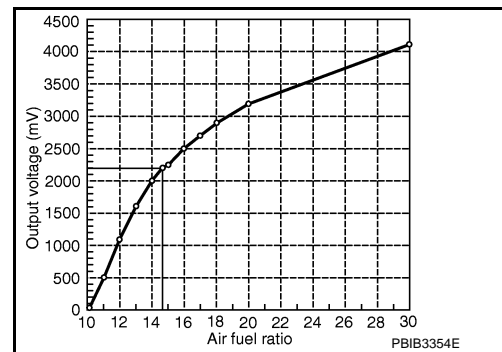
Description (GT-R certified NISSAN dealer)

INFOID:0000000011486603

The air fuel ratio (A/F) sensor 1 is a planar one-cell limit current sensor. The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element. The sensor is capable of precise measurement $\lambda = 1$, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range. The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.



Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of about 800°C (1,472°F).



DTC Logic (GT-R certified NISSAN dealer)

INFOID:0000000011486604

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P2096	POST CAT FUEL TRIM SYS B1 (Post catalyst fuel trim system too lean bank 1)	The output voltage computed by ECM from the A/F sensor 1 signal is shifts to the lean side for a specified period.	<ul style="list-style-type: none"> A/F sensor 1 (bank 1) A/F sensor 1 heater Heated oxygen sensor 2 (bank 1) Fuel pressure Fuel injector Intake air leaks Exhaust gas leaks
P2097	POST CAT FUEL TRIM SYS B1 (Post catalyst fuel trim system too rich bank 1)	The A/F signal computed by ECM from the A/F sensor 1 signal is shifts to the rich side for a specified period.	<ul style="list-style-type: none"> Fuel pressure Fuel injector Intake air leaks Exhaust gas leaks
P2098	POST CAT FUEL TRIM SYS B2 (Post catalyst fuel trim system too lean bank 2)	The output voltage computed by ECM from the A/F sensor 1 signal is shifts to the lean side for a specified period.	<ul style="list-style-type: none"> A/F sensor 1 (bank 2) A/F sensor 1 heater Heated oxygen sensor 2 (bank 2) Fuel pressure Fuel injector Intake air leaks Exhaust gas leaks
P2099	POST CAT FUEL TRIM SYS B2 (Post catalyst fuel trim system too rich bank 2)	The A/F signal computed by ECM from the A/F sensor 1 signal is shifts to the rich side for a specified period.	<ul style="list-style-type: none"> Fuel pressure Fuel injector Intake air leaks Exhaust gas leaks

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

P2096, P2097, P2098, P2099 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Clear the mixture ratio self-learning value. Refer to [EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 10 seconds.
5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for 1 minute under no load.
6. Let engine idle for 1 minute.
7. Keep engine speed between 2,500 and 3,000 rpm for 20 minutes.
8. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Refer to [EC-498. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:0000000011486605

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2. RETIGHTEN A/F SENSOR 1 AND HEATED OXYGEN SENSOR 2

1. Loosen and retighten the A/F sensor 1 and heated oxygen sensor 2. Refer to [EM-50. "Exploded View".](#)

>> GO TO 3.

3. CHECK FOR EXHAUST GAS LEAK

1. Start engine and run it at idle.
2. Listen for an exhaust gas leak before the three way catalyst 2.

Is exhaust gas leak detected?

YES >> Repair or replace malfunctioning part.

NO >> GO TO 4.

4. CHECK FOR INTAKE AIR LEAK

1. Start engine and run it at idle.
2. Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Repair or replace malfunctioning part.

NO >> GO TO 5.

5. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

1. Clear the mixture ratio self-learning value. Refer to [EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)".](#)
2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171, P0172, P0174 or P0175 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171, P0174 or P0172, P0175. Refer to [EC-286. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#) or [EC-290. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO >> GO TO 6.

6. CHECK HARNESS CONNECTOR

P2096, P2097, P2098, P2099 A/F SENSOR 1

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect A/F sensor 1 harness connector.
3. Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace harness connector.

7. CHECK A/F SENSOR 1 POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check the voltage between A/F sensor 1 harness connector and ground.

DTC	A/F sensor 1			Ground	Voltage
	Bank	Connector	Terminal		
P2096 P2097	1	F8	4	Ground	Battery voltage
P2098 P2099	2	F25	4		

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- IPDM E/R harness connector E7
- 15A fuse (No. 46)
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

9. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

DTC	A/F sensor 1			ECM		Continuity
	Bank	Connector	Terminal	Connector	Terminal	
P2096 P2097	1	F8	1	F102	81	Existed
			2		82	
P2098 P2099	2	F25	1		85	
			2		86	

4. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

DTC	A/F sensor 1			ECM		Ground	Continuity
	Bank	Connector	Terminal	Connector	Terminal		
P2096 P2097	1	F8	1	F102	81	Ground	Not existed
			2		82		
P2098 P2099	2	F25	1		85		
			2		86		

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

P2096, P2097, P2098, P2099 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

10. CHECK A/F SENSOR 1 HEATER

Refer to [EC-202, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 13.

11. CHECK HEATED OXYGEN SENSOR

Check heated oxygen sensor 2. Refer to [EC-276, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace malfunctioning heated oxygen sensor 2.

12. CHECK INTERMITTENT INCIDENT

Perform [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace malfunctioning part.

13. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1 Refer to [EM-50, "Exploded View"](#).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (1.6 ft) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved anti-seize lubricant (commercial service tool).

Do you have CONSULT?

YES >> GO TO 14.

NO >> GO TO 15.

14. CONFIRM A/F ADJUSTMENT DATA

Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Select "A/F ADJ-B1" and "A/F ADJ-B2" in "DATA MONITOR" mode with CONSULT.
3. Make sure that "0.000" is displayed on CONSULT screen.

Is "0.000" displayed?

YES >> INSPECTION END

NO >> GO TO 15.

15. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

Clear the mixture ratio self-learning value. Refer to [EC-26, "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

Do you have CONSULT?

YES >> GO TO 16.

NO >> INSPECTION END

16. CONFIRM A/F ADJUSTMENT DATA

Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Select "A/F ADJ-B1" and "A/F ADJ-B2" in "DATA MONITOR" mode with CONSULT.
3. Make sure that "0.000" is displayed on CONSULT screen.

>> INSPECTION END

P2122, P2123 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P2122, P2123 APP SENSOR

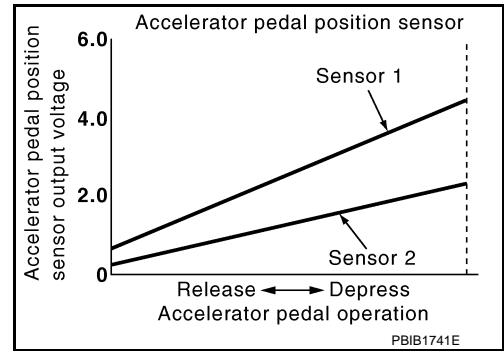
Description (GT-R certified NISSAN dealer)

INFOID:000000011486606

The accelerator pedal position sensor is installed on the upper end of the accelerator pedal assembly. The sensor detects the accelerator position and sends a signal to the ECM.

Accelerator pedal position sensor has two sensors. These sensors are a kind of potentiometer which transform the accelerator pedal position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the accelerator pedal and sends voltage signals to the ECM. The ECM judges the current opening angle of the accelerator pedal from these signals and controls the throttle control motor based on these signals.

Idle position of the accelerator pedal is determined by the ECM receiving the signal from the accelerator pedal position sensor. The ECM uses this signal for engine operations such as fuel cut.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486607

DTC DETECTION LOGIC

NOTE:

If DTC P2122 or P2123 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P2122	Accelerator pedal position sensor 1 circuit low input	An excessively low voltage from the APP sensor 1 is sent to ECM.	<ul style="list-style-type: none"> Harness or connectors (APP sensor 1 circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) Accelerator pedal position sensor (APP sensor 1) Each sensor, connected with sensor power supply 1 circuit
P2123	Accelerator pedal position sensor 1 circuit high input	An excessively high voltage from the APP sensor 1 is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 1 second.
- Check DTC.

Is DTC detected?

- YES >> Refer to [EC-501, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
 NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486608

1. CHECK GROUND CONNECTION

P2122, P2123 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2.CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect accelerator pedal position (APP) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between APP sensor harness connector and ground.

APP sensor		Ground	Voltage (V)
Connector	Terminal		
E111	5	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK APP SENSOR 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	3	M107	103	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK APP SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	4	M107	104	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 8.

P2122, P2123 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK APP SENSOR

Refer to [EC-503. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 9.

9. REPLACE ACCELERATOR PEDAL ASSEMBLY

Replace accelerator pedal assembly. Refer to [ACC-3. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

>> INSPECTION END

10. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486609

1. CHECK ACCELERATOR PEDAL POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Turn ignition switch ON.
4. Check the voltage ECM harness connector terminals under the following conditions.

ECM			Condition	Voltage (V)
Connector	+	-		
	Terminal	Terminal		
M107	104 (APP sensor 1)	103	Fully released	0.5 - 1.0
			Fully depressed	4.2 - 4.8
	108 (APP sensor 2)	107	Fully released	0.25 - 0.50
			Fully depressed	2.0 - 2.5

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

Replace accelerator pedal assembly. Refer to [ACC-3. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

>> INSPECTION END

P2127, P2128 APP SENSOR

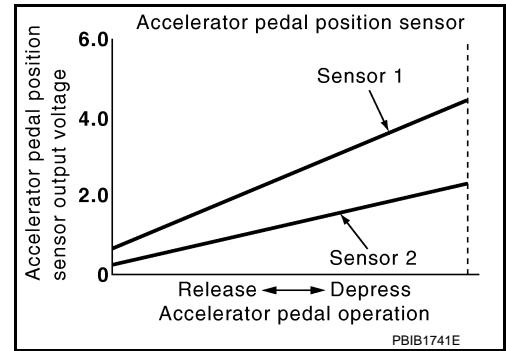
Description (GT-R certified NISSAN dealer)

INFOID:000000011486610

The accelerator pedal position sensor is installed on the upper end of the accelerator pedal assembly. The sensor detects the accelerator position and sends a signal to the ECM.

Accelerator pedal position sensor has two sensors. These sensors are a kind of potentiometer which transform the accelerator pedal position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the accelerator pedal and sends voltage signals to the ECM. The ECM judges the current opening angle of the accelerator pedal from these signals and controls the throttle control motor based on these signals.

Idle position of the accelerator pedal is determined by the ECM receiving the signal from the accelerator pedal position sensor. The ECM uses this signal for engine operations such as fuel cut.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486611

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P2127	Accelerator pedal position sensor 2 circuit low input	An excessively low voltage from the APP sensor 2 is sent to ECM.	<ul style="list-style-type: none"> • Harness or connectors (APP sensor 2 circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) • Accelerator pedal position sensor (APP sensor 2) • Each sensor, connected with sensor power supply 2 circuit
P2128	Accelerator pedal position sensor 2 circuit high input	An excessively high voltage from the APP sensor 2 is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 1 second.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-504, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486612

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

P2127, P2128 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2.CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-I

1. Disconnect accelerator pedal position (APP) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between APP sensor harness connector and ground.

APP sensor		Ground	Voltage
Connector	Terminal		
E111	6	Ground	Approx. 5V

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 3.

3.CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	6	M107	99	Existed

Is the inspection result normal?

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

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit.

5.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 12.
NO >> Repair short to ground or short to power in harness or connectors.

6.CHECK APP SENSOR 2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	2	M107	107	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 8.
NO >> GO TO 7.

7.DETECT MALFUNCTIONING PART

P2127, P2128 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

8.CHECK APP SENSOR 2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	1	M107	108	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 9.

9.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

10.CHECK APP SENSOR

Refer to [EC-506, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11.REPLACE ACCELERATOR PEDAL ASSEMBLY

Replace accelerator pedal assembly. Refer to [ACC-3, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

12.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486613

1.CHECK ACCELERATOR PEDAL POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Turn ignition switch ON.
4. Check the voltage ECM harness connector terminals under the following conditions.

P2127, P2128 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			Condition	Voltage (V)
Connector	+	-		
	Terminal	Terminal		
M107	104 (APP sensor 1)	103	Accelerator pedal	Fully released 0.5 - 1.0
				Fully depressed 4.2 - 4.8
	108 (APP sensor 2)	107		Fully released 0.25 - 0.50
				Fully depressed 2.0 - 2.5

Is the inspection result normal?

YES >> INSPECTION END
 NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

Replace accelerator pedal assembly. Refer to [ACC-3. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

>> INSPECTION END

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P2138 APP SENSOR

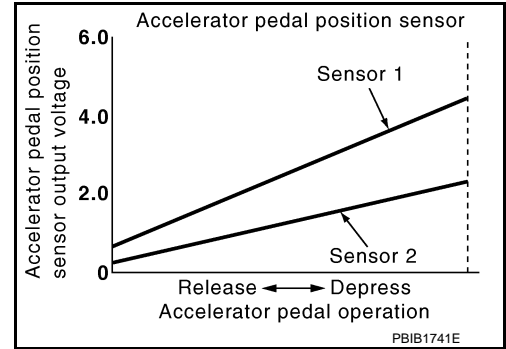
Description (GT-R certified NISSAN dealer)

INFOID:000000011486614

The accelerator pedal position sensor is installed on the upper end of the accelerator pedal assembly. The sensor detects the accelerator position and sends a signal to the ECM.

Accelerator pedal position sensor has two sensors. These sensors are a kind of potentiometer which transform the accelerator pedal position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the accelerator pedal and sends voltage signals to the ECM. The ECM judges the current opening angle of the accelerator pedal from these signals and controls the throttle control motor based on these signals.

Idle position of the accelerator pedal is determined by the ECM receiving the signal from the accelerator pedal position sensor. The ECM uses this signal for engine operations such as fuel cut.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486615

DTC DETECTION LOGIC

NOTE:

If DTC P2138 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to [EC-434, "DTC Logic \(GT-R certified NISSAN dealer\)"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P2138	Accelerator pedal position sensor circuit range/performance	Rationally incorrect voltage is sent to ECM compared with the signals from APP sensor 1 and APP sensor 2.	<ul style="list-style-type: none"> • Harness or connectors (APP sensor 2 circuit is open or shorted.) (Sensor power supply 1 circuit is open or shorted.) (Sensor power supply 2 circuit is open or shorted.) • Accelerator pedal position sensor (APP sensor 2) • Each sensor, connected with sensor power supply 1 circuit • Each sensor, connected with sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for 1 second.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-509, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

P2138 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486616

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect accelerator pedal position (APP) sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between APP sensor harness connector and ground.

APP sensor		Ground	Voltage (V)
Connector	Terminal		
E111	5	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 4.
NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-I

1. Turn ignition switch ON.
2. Check the voltage between APP sensor harness connector and ground.

APP sensor		Ground	Voltage (V)
Connector	Terminal		
E111	6	Ground	Approx. 5

Is the inspection result normal?

- YES >> GO TO 8.
NO >> GO TO 5.

5. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	6	M107	99	Existed

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106

P2138 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit.

7. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair short to ground or short to power in harness or connectors.

8. CHECK APP SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	3	M107	103	Existed
	2		107	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

10. CHECK APP SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	4	M107	104	Existed
	1		108	

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

12. CHECK APP SENSOR

Refer to [EC-511, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 14.

P2138 APP SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 13.

13.REPLACE ACCELERATOR PEDAL ASSEMBLY

Replace accelerator pedal assembly. Refer to [ACC-3, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

14.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:0000000011486617

1.CHECK ACCELERATOR PEDAL POSITION SENSOR

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Turn ignition switch ON.
4. Check the voltage ECM harness connector terminals under the following conditions.

ECM			Condition	Voltage (V)
Connector	+	-		
	Terminal	Terminal		
M107	104 (APP sensor 1)	103	Fully released	0.5 - 1.0
			Fully depressed	4.2 - 4.8
	108 (APP sensor 2)	107	Fully released	0.25 - 0.50
			Fully depressed	2.0 - 2.5

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE ACCELERATOR PEDAL ASSEMBLY

Replace accelerator pedal assembly. Refer to [ACC-3, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

>> INSPECTION END

P219A, P219B AIR FUEL RATIO

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

P219A, P219B AIR FUEL RATIO

DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486618

DTC DETECTION LOGIC

NOTE:

If DTC P219A or P219B is displayed with other DTC, first perform the trouble diagnosis for the other DTC. Refer to [EC-592. "DTC Index"](#).

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P219A	AIR FUEL RATIO IMBALANCE B1 (Air-fuel ratio imbalance bank 1)	ECM detects a lean/rich air fuel ratio state in any cylinder for a specified length of time.	<ul style="list-style-type: none">• Fuel injector• Exhaust gas leaks• Incorrect fuel pressure• Mass air flow sensor• Intake air leaks• Lack of fuel• Incorrect PCV hose connection• Improper spark plug• Insufficient compression• The fuel injector circuit is open or shorted• ignition coil• The ignition signal circuit is open or shorted
P219B	AIR FUEL RATIO IMBALANCE B2 (Air-fuel ratio imbalance bank 2)		

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2. PRECONDITIONING-2

1. Turn ignition switch ON.
2. Clear the mixture ratio self-learning value. Refer to [EC-26. "MIXTURE RATIO SELF-LEARNING VALUE CLEAR : Special Repair Requirement \(GT-R certified NISSAN dealer\)"](#).

Will CONSULT be used?

- YES >> GO TO 3.
NO >> GO TO 6.

3. PERFORM DTC CONFIRMATION PROCEDURE-1

1. Turn ignition switch ON.
2. Select "COOLANT TEMP/S" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
3. Start engine.
4. Make sure that "COOLANT TEMP/S" indicates more than 60°C (140°F).

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE-2

With CONSULT

1. Select "SYSTEM 1 DIAGNOSIS B B1" and "SYSTEM 1 DIAGNOSIS A B1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
2. Drive vehicle under the following conditions for at least 5 consecutive seconds.

P219A, P219B AIR FUEL RATIO

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

CAUTION:

- Always drive vehicle at a safe speed.

ENG SPEED	1,000 – 1,800rpm
COOLANT TEMP/S	More than 60°C (140°F)
B/FUEL SCHDL	4 – 8 msec
Selector lever	D position
SYSTEM 1 DIAGNOSIS B B1	PRSENT

NOTE:

- Drive the vehicle at approximately 88 km/h (55MPH) allows easy diagnosis.
- Keep the accelerator pedal as possible during crusing.

3. Check "SYSTEM 1 DIAGNOSIS A B1" indication.

Is "CMPLT" displayed?

- YES >> GO TO 5.
NO >> GO TO 2.

5.PERFORM DTC CONFIRMATION PROCEDURE-3

Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-513, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

6.PERFORM DTC CONFIRMATION PROCEDURE-4

 Without CONSULT

1. Start the engine and warm it up to normal operating temperature.
2. Drive vehicle under the following conditions for at least 5 consecutive seconds.

CAUTION:

- Always drive vehicle at a safe speed.

Engine speed	1,000 – 1,250 rpm
Calculated load value	26 – 46 %
Selector lever	D position

NOTE:

- Drive the vehicle at approximately 88 km/h (55MPH) allows easy diagnosis.
- Keep the accelerator pedal as possible during crusing.

3. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Proceed to [EC-513, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486619

1.CHECK FOR INTAKE AIR LEAK

1. Stop the engine and check the following for connection.
 - Air duct
 - Vacuum hoses
 - PCV hose
 - Intake air passage between air duct to intake manifold
2. Start the engine and let it idle.
3. Listen for an intake air leak after the mass air flow sensor.

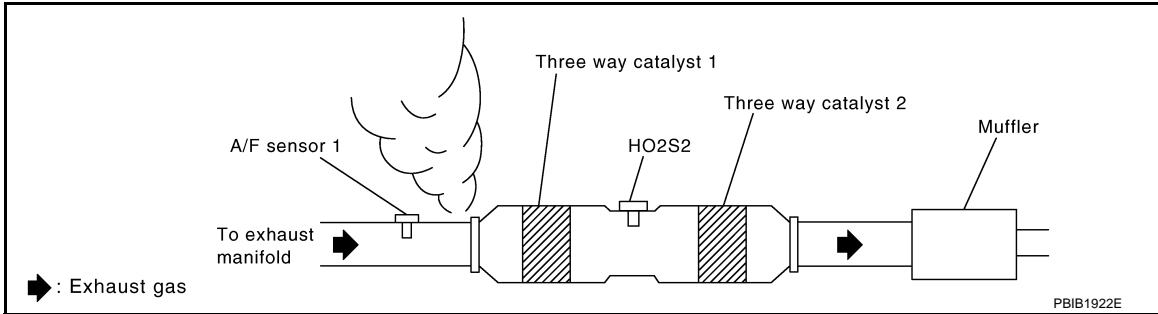
Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace error-detected parts.

< DTC/CIRCUIT DIAGNOSIS >

2. CHECK EXHAUST GAS LEAK

1. Stop the engine and visually check exhaust tube, three way catalyst and muffler for dents connection.
2. Start the engine and let it idle.
3. Listen for an exhaust gas leak before three way catalyst (manifold).



Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair or replace error-detected parts.

3. CHECK FUEL PRESSURE

1. Release fuel pressure to zero. Refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)"](#).
2. Check fuel pressure. Refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> GO TO 9.

4. CHECK MASS AIR FLOW SENSOR

Ⓟ With CONSULT

Check "MASS AIR FLOW" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
For specification, refer to [EC-640, "Mass Air Flow Sensor"](#).

Ⓢ With GST

Check mass air flow sensor signal in Service \$01 using GST.
For specification, refer to [EC-640, "Mass Air Flow Sensor"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or grounds. Refer to [EC-214, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

5. CHECK FUNCTION OF FUEL INJECTOR-1

Ⓟ With CONSULT

1. Start the engine.
2. Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
3. Check that each circuit produces a momentary engine speed drop.

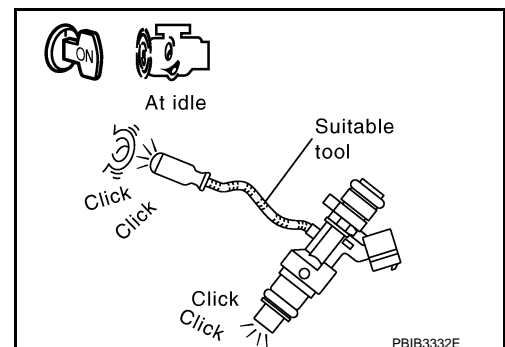
ⓧ Without CONSULT

1. Let the engine idle.
2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Perform trouble diagnosis for fuel injector, refer to [EC-538, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).



P219A, P219B AIR FUEL RATIO

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

6. CHECK FUNCTION OF FUEL INJECTOR-2

CAUTION:

Perform the following procedure in a place with no combustible objects and good ventilation.

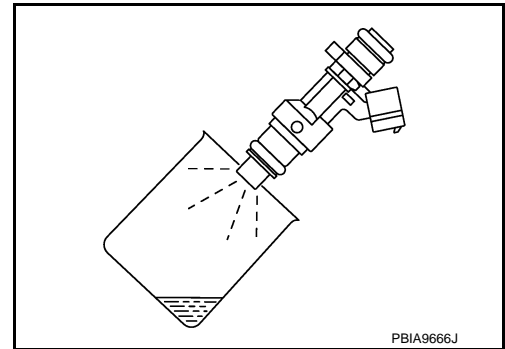
1. Turn ignition switch OFF.
2. Confirm that the engine is cooled down and there are no fire hazards near the vehicle.
3. Disconnect all fuel injector harness connectors.
4. Remove fuel tube assembly. Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#). Keep fuel hose and all fuel injectors connected to fuel tube.
5. Disconnect all ignition coil harness connectors.
6. Prepare pans or saucers under each fuel injector.
7. Crank the engine for approximately 3 seconds.

- Fuel should be sprayed evenly for each fuel injector.
- Fuel must not drip from the tip of fuel injector.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace fuel injector. Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



7. CHECK FUNCTION OF IGNITION COIL-1

CAUTION:

Perform the following steps in a well-ventilated area with no combustibles.

1. Turn ignition switch OFF.
2. Remove fuel pump fuse from IPDM E/R to release fuel pressure.
NOTE:
CONSULT must not be used to release fuel pressure. It develops again during the following steps, if released by using CONSULT.
3. Start the engine.
4. After an engine stall, crank the engine two or three times to release all the fuel pressure.
5. Turn ignition switch OFF.
6. Disconnect all the harness connectors of ignition coil to prevent electric discharge from occurring in ignition coil.
7. Remove ignition coil assembly and spark plug of cylinder. Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
8. Crank the engine for 5 seconds or more to remove combustion gas in the cylinder.
9. Connect spark plug and harness connector to ignition coil.
10. Allow a 13-17mm (0.52-0.66 in) spacing between spark plug and grounded metal portion as shown in the figure to fix the ignition coil with a rope or an equivalent.
11. Crank the engine for approximately 3 seconds to see if sparking occurs between spark plug and the grounded metal portion.

Spark should be generated.

CAUTION:

- The discharge voltage becomes 20 kV or higher. Therefore, always stay away from the spark plug and ignition coil at least 50 cm (19.7 in) during the inspection.
- Leaving a space of more than 17mm (0.66 in) may damage the ignition coil.

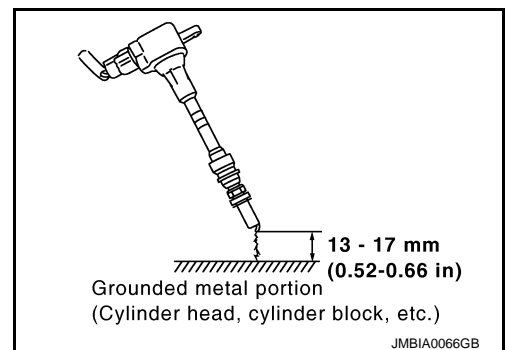
NOTE:

When the gap is less than 13 mm (0.52 in), a the spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 10.



8. CHECK COMPRESSION PRESSURE

Check compression pressure. Refer to [EM-24. "Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-39. "Intermittent Incident".](#)

NO >> Check pistons, piston rings, valves, valve seats and cylinder head gaskets.

9. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging.

Is the inspection result normal?

YES >> Replace fuel filter and fuel pump assembly. Refer to [FL-6. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

NO >> Repair or replace error-detected parts.

10. CHECK FUNCTION OF IGNITION COIL-2

1. Turn ignition switch OFF.
2. Disconnect spark plug and connect a non-malfunctioning spark plug.
3. Crank the engine for approximately 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Check ignition coil, power transistor and their circuits. Refer to [EC-544. "Component Function Check \(GT-R certified NISSAN dealer\)".](#)

11. CHECK SPARK PLUG

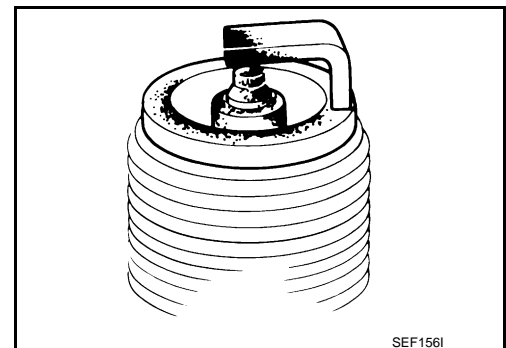
Check the initial spark plug for fouling, etc.

Is the inspection result normal?

YES >> 1. Repair or clean spark plug. Refer to [EM-47. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)

2. GO TO 12.

NO >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to [EM-141. "Spark Plug".](#)



12. CHECK FUNCTION OF IGNITION COIL-3

1. Reconnect the initial spark plugs.
2. Crank the engine for approximately 3 seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-39. "Intermittent Incident".](#)

NO >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to [EM-141. "Spark Plug".](#)

P2432, P2433 SECONDARY AIR INJECTION SYSTEM MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

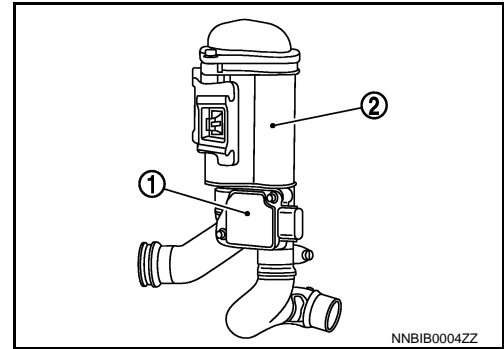
[VR38]

P2432, P2433 SECONDARY AIR INJECTION SYSTEM MAF SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486620

The secondary air injection system mass air flow sensor (1) is installed on the lower side of the air pump cleaner assembly (2) and measures the secondary air flow. The secondary air injection system mass air flow sensor controls the temperature of the hot wire to a certain amount. The heat generated by the hot wire is reduced as the secondary air flows around it. The greater the air flow, the greater the heat loss. Therefore, the electric current supplied to hot wire is changed to maintain the temperature of the hot wire as secondary air flow increases. The ECM detects the secondary air flow by means of this current change.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486621

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P2432	Secondary air injection system mass air flow sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	<ul style="list-style-type: none">• Harness or connectors (The sensor circuit is open or shorted.)• Secondary air injection system mass air flow sensor
P2433	Secondary air injection system mass air flow sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 5 seconds.
2. Check DTC.

Is DTC detected?

- YES >> Refer to [EC-517, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486622

1.1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace ground connection.

2. CHECK SECONDARY AIR INJECTION SYSTEM MAF SENSOR POWER SUPPLY CIRCUIT

1. Disconnect secondary air injection system mass air flow (MAF) sensor harness connector.
2. Turn ignition switch ON.

P2432, P2433 SECONDARY AIR INJECTION SYSTEM MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

3. Check the voltage between secondary air injection system MAF sensor harness connector and ground.

Secondary air injection system MAF sensor		Ground	Voltage
Connector	Terminal		
E22	2	Ground	Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK SECONDARY AIR INJECTION SYSTEM MAF SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between secondary air injection system MAF sensor harness connector and ECM harness connector.

Secondary air injection system MAF sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E22	3	F101	23	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between secondary air injection system MAF sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK SECONDARY AIR INJECTION SYSTEM MAF SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between secondary air injection system MAF sensor harness connector and ECM harness connector.

Secondary air injection system MAF sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E22	4	F101	24	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between secondary air injection system MAF sensor and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK SECONDARY AIR INJECTION SYSTEM MAF SENSOR

P2432, P2433 SECONDARY AIR INJECTION SYSTEM MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Refer to [EC-519, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace secondary air injection system MAF sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

8.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486623

1.CHECK SECONDARY AIR INJECTION SYSTEM MASS AIR FLOW SENSOR

1. Start engine and warm it up to the normal operating temperature.
2. Stop the engine and turn ignition switch OFF.
3. Cool down the engine so that the coolant temperature lowers between 15 - 35°C (59 - 95°F).

CAUTION:

Never turn the ignition switch ON while cooling down the engine.

NOTE:

The engine cooling down time varies depending on the ambient temperature. Putting the vehicle in an indoor place where the temperature is moderate may shorten the cooling down time.

4. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage
	+	-		
	Terminal	Terminal		
F22	24 (Secondary air injection system mass air flow sensor)	23	Turning ignition switch ON (Engine stopped)	0.15 - 0.4 V
			Idle speed (Secondary air injection system operates.)	3 - 3.8 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace secondary air injection system mass air flow sensor. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

P2440, P2442 AIR CUT SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

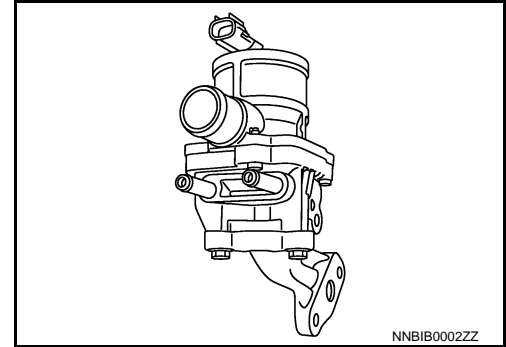
[VR38]

P2440, P2442 AIR CUT SOLENOID VALVE

Description (GT-R certified NISSAN dealer)

INFOID:000000011486624

The air cut solenoid valve is installed in the rear of the cylinder head and opens or closes the passage of the secondary air to the engine exhaust port. When activating the air pump, the ECM turns the air cut solenoid valve ON and opens the valve so that the air is supplied to the exhaust port. The ECM turns the air cut solenoid valve OFF and closes the valve to prevent air blow back. Then the ECM deactivates the air pump. The ECM does not activate the air cut solenoid valve directly. The ECM controls the air cut solenoid valve by turning the air cut solenoid valve relay ON/OFF.



DTC Logic (GT-R certified NISSAN dealer)

INFOID:000000011486625

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P2440	Air cut solenoid valve (bnak1) stuck open	<ul style="list-style-type: none"> ECM detects that the air cut solenoid valve (bank 1) is stuck open. ECM detects that the air cut solenoid valve (bank 1, bank 2 or both bank) is stuck open. 	<ul style="list-style-type: none"> Harness or connectors (Air cut solenoid valve circuit is open or shorted.) (Air cut solenoid valve relay circuit is open or shorted.) Air cut solenoid valve Air cut solenoid valve relay
P2442	Air cut solenoid valve (bnak2) stuck open	<ul style="list-style-type: none"> ECM detects that the air cut solenoid valve (bank 2) is stuck open. 	

DTC CONFIRMATION PROCEDURE

1. CHECK SECONDARY AIR INJECTION SYSTEM MASS AIR FLOW SENSOR

- Start engine and warm it up to the normal operating temperature.
- Stop the engine and turn ignition switch OFF.
- Cool down the engine so that the coolant temperature lowers between 15 - 35°C (59 - 95°F).

CAUTION:

Never turn the ignition switch ON while cooling down the engine.

NOTE:

The engine cooling down time varies depending on the ambient temperature. Putting the vehicle in an indoor place where the temperature is moderate may shorten the cooling down time.

- Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Condition	Voltage
	+	-		
	Terminal	Terminal		
F22	24 (Secondary air injection system mass air flow sensor)	23	Turning ignition switch ON (Engine stopped)	0.15 - 0.4 V
			Idle speed (Secondary air injection system operates.)	3 - 3.8 V

Is DTC detected?

YES >> GO TO 2.

NO >> Refer to [EC-521, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

2. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

P2440, P2442 AIR CUT SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Before performing the following procedure, check that the atmospheric pressure is 87 kPa (870 mbar, 653 mmHg, 25.71 inHg) or more.

>> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and warm it up to the normal operating temperature.
2. Stop the engine and turn ignition switch OFF.
3. Cool down the engine so that the coolant temperature lowers between 15 - 35°C (59 - 95°F).

CAUTION:

Never turn the ignition switch ON while cooling down the engine.

NOTE:

The engine cooling down time varies depending on the ambient temperature. Putting the vehicle in an indoor place where the temperature is moderate may shorten the cooling down time.

4. Start engine and let it idle for at least 40 seconds.
5. Check 1st trip DTC.

Is 1st trip DTC detected?

- YES >> Refer to [EC-521. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486626

1.CHECK AIR CUT SOLENOID VALVE RELAY POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect air cut solenoid valve relay harness connector.
3. Turn ignition switch ON.
4. Check the voltage between air cut solenoid valve relay harness connector and ground.

Air cut solenoid valve relay		Ground	Voltage
Connector	Terminal		
E52	1	Ground	Battery voltage
	5		

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING PART

Check the following.

- 10A fuse (No. 12)
- Harness for open or short between air cut solenoid valve relay and IPDM E/R
- Harness for open or short between air cut solenoid valve relay and fuse block (J/B)

>> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK AIR CUT SOLENOID VALVE RELAY POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between air cut solenoid valve relay harness connector and ECM harness connector.

Air cut solenoid valve relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E52	2	M107	109	Existed

4. Also check harness for short to ground and short to power.

P2440, P2442 AIR CUT SOLENOID VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

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

4. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between air cut solenoid valve relay and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK AIR CUT SOLENOID VALVE RELAY

Refer to [EC-523. "Component Inspection \(AIR CUT SOLENOID VALVE RELAY\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Replace air cut solenoid valve relay. For the relay number, refer to [EC-604. "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#). For the relay layout, refer to [EC-42. "Component Parts Location \(GT-R certified NISSAN dealer\)"](#). Then GO TO 10.

6. CHECK AIR CUT SOLENOID VALVE POWER SUPPLY CIRCUIT

1. Disconnect air cut solenoid valve harness connector.
2. Check the continuity between air cut solenoid valve relay harness connector and air cut solenoid valve harness connector.

Air cut solenoid valve			Air cut solenoid valve relay		Continuity
Bank	Connector	Terminal	Connector	Terminal	
1	F6	1	E52	3	Existed
2	F46	1			

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness connectors F103, M116
- Harness for open or short between air cut solenoid valve relay and air cut solenoid valve

>> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK AIR CUT SOLENOID VALVE GROUND CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between air cut solenoid valve harness connector and ground.

Air cut solenoid valve			Ground	Continuity
Bank	Connector	Terminal		
1	F6	2	Ground	Existed
2	F46	2		

2. Also check harness for short to power.

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> Repair open circuit or short to power in harness or connectors.

P2440, P2442 AIR CUT SOLENOID VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

9. CHECK AIR CUT SOLENOID VALVE

Refer to [EC-523. "Component Inspection \(AIR CUT SOLENOID VALVE\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace malfunctioning air cut solenoid valve. Refer to [EM-33. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#). Then GO TO 10.

10. REPLACE COMPONENTS

Replace secondary air injection system mass air flow sensor, refer to [EC-42. "Component Parts Location \(GT-R certified NISSAN dealer\)"](#), and air pump cleaner filter, refer to [EM-33. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

CAUTION:

- Always replace the parts, because the secondary air injection system mass air flow sensor and air pump cleaner filter become dirty due to the blow back of the exhaust gas.
- Never clean up the secondary air injection system mass air flow sensor and air pump cleaner filter.

>> GO TO 11.

11. CHECK COMPONENTS

Check the following.

- Collapsing and damage of hose or piping between air pump cleaner and air pump.
- Collapsing and damage of hose or piping between air pump and air cut solenoid valve.
- Air pump (Refer to [EC-344. "Component Inspection \(AIR PUMP\) \(GT-R certified NISSAN dealer\)"](#).)

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning part.

12. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (AIR CUT SOLENOID VALVE RELAY) (GT-R certified NISSAN dealer)

INFOID:000000011486627

1. CHECK AIR CUT SOLENOID VALVE RELAY

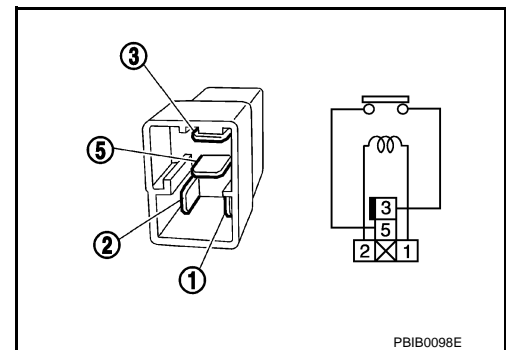
1. Turn ignition switch OFF.
2. Remove air cut solenoid valve relay. For the relay number, refer to [EC-604. "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#). For the relay layout, refer to [EC-42. "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).
3. Check the continuity between air cut solenoid valve relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12 V direct current supply between terminals 1 and 2	Existed
	No supply	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace air cut solenoid valve relay.



Component Inspection (AIR CUT SOLENOID VALVE) (GT-R certified NISSAN dealer)

INFOID:000000011486628

1. CHECK AIR CUT SOLENOID VALVE

P2440, P2442 AIR CUT SOLENOID VALVE

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect air cut solenoid valve harness connector.
3. Disconnect hoses connected to air cut solenoid valve.
4. Check air passage continuity of air cut solenoid valve under the following conditions.

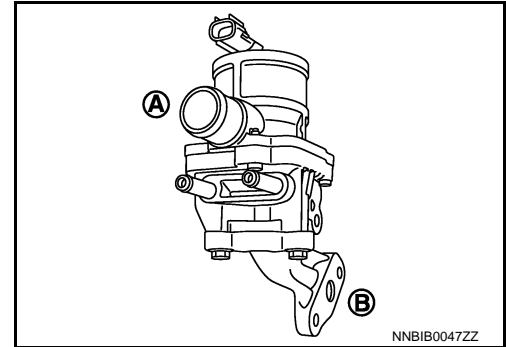
Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Existed
No supply	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning air cut solenoid valve. Refer to

[EM-33. "Removal and Installation \(GT-R certified NISSAN dealer\)".](#)



ASCD BRAKE SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

ASCD BRAKE SWITCH

Description (GT-R certified NISSAN dealer)

INFOID:000000011486629

When the brake pedal is depressed, ASCD brake switch is turned OFF and stop lamp switch is turned ON. ECM detects the state of the brake pedal by those two types of input (ON/OFF signal). Refer to [EC-83, "System Description \(GT-R certified NISSAN dealer\)"](#) for the ASCD function.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486630

1. CHECK ASCD BRAKE SWITCH FUNCTION

With CONSULT

1. Turn ignition switch ON.
2. Select "BRAKE SW1" in "DATA MONITOR" mode with CONSULT.
3. Check "BRAKE SW1" indication under the following conditions.

Monitor item	Condition		Indication
BRAKE SW1	Brake pedal	Slightly depressed	OFF
		Fully released	ON

Without CONSULT

1. Turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals as follows.

Connector	ECM		Condition	Voltage (V)	
	+	-			
	Terminal	Terminal			
M107	117 (ASCD brake switch signal)	128	Brake pedal	Slightly depressed	Approx. 0
			Fully released	Battery voltage	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-525, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486631

1. CHECK ASCD BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ASCD brake switch harness connector.
3. Turn ignition switch ON.
4. Check the voltage between ASCD brake switch harness connector and ground.

ASCD brake switch		Ground	Voltage
Connector	Terminal		
E109	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connector E103
- 10A fuse (No. 3)
- Harness for open or short between ASCD brake switch and fuse

ASCD BRAKE SWITCH

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

>> Repair open circuit or short to ground in harness or connectors.

3.CHECK ASCD BRAKE SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between ASCD brake switch harness connector and ECM harness connector.

ASCD brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E109	2	M107	117	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E106, M6
- Harness for open or short between ECM and ASCD brake switch

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK ASCD BRAKE SWITCH

Refer to [EC-526, "Component Inspection \(ASCD Brake Switch\) \(GT-R certified NISSAN dealer\)"](#)

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace ASCD brake switch. Refer to [BR-21, "Exploded View"](#).

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (ASCD Brake Switch) (GT-R certified NISSAN dealer)

INFOID:000000011486632

1.CHECK ASCD BRAKE SWITCH-I

1. Turn ignition switch OFF.
2. Disconnect ASCD brake switch harness connector.
3. Check the continuity between ASCD brake switch terminals under the following conditions.

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Existed
		Slightly depressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK ASCD BRAKE SWITCH-II

1. Adjust ASCD brake switch installation. Refer to [BR-21, "Inspection and Adjustment \(GT-R certified NISSAN dealer\)"](#).
2. Check the continuity between ASCD brake switch terminals under the following conditions.

ASCD BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Terminals	Condition		Continuity
1 and 2	Brake pedal	Fully released	Existed
		Slightly depressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ASCD brake switch. Refer to [BR-21. "Exploded View"](#).

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ASC D INDICATOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486633

ASC D indicator lamp illuminates to indicate ASC D operation status. Lamp has two indicators, CRUISE and SET, and is integrated in combination meter.

CRUISE lamp illuminates when MAIN switch on ASC D steering switch is turned ON to indicated that ASC D system is ready for operation.

SET lamp illuminates when the following conditions are met.

- CRUISE lamp is illuminated.
- SET/COAST switch on ASC D steering switch is turned ON while vehicle speed is within the range of the ASC D setting.

SET lamp remains lit during ASC D control.

Refer to [EC-83, "System Description \(GT-R certified NISSAN dealer\)"](#) for the ASC D function.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486634

1.CHECK ASC D INDICATOR FUNCTION

Check ASC D indicator under the following conditions.

ASC D INDICATOR	CONDITION		SPECIFICATION
CRUISE LAMP	<ul style="list-style-type: none"> • Ignition switch: ON 	<ul style="list-style-type: none"> • MAIN switch: Pressed at the 1st time → at the 2nd time 	ON → OFF
SET LAMP	<ul style="list-style-type: none"> • MAIN switch: ON • When vehicle speed is between 40 km/h (25 MPH) and 250 km/h (155 MPH) 	<ul style="list-style-type: none"> • ASC D: Operating 	ON
		<ul style="list-style-type: none"> • ASC D: Not operating 	OFF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-528, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486635

1.CHECK DTC

Check that DTC UXXXX is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform trouble diagnosis for DTC UXXXX.

2.CHECK DTC WITH COMBINATION METER

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part.

3.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-114, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning part.

COOLING FAN

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

COOLING FAN

Description (GT-R certified NISSAN dealer)

INFOID:000000011486636

COOLING FAN CONTROL MODULE

Cooling fan control module receives ON/OFF pulse duty signal from IPDM E/R. Corresponding to this ON/OFF pulse duty signal, cooling fan control module sends cooling fan motor operating voltage to cooling fan motor. The revolution speed of cooling fan motor is controlled by duty cycle of the voltage.

COOLING FAN MOTOR

Cooling fan motor receives cooling fan motor operating voltage from cooling fan control module. The revolution speed of cooling fan motor is controlled by duty cycle of the voltage.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486637

1. CHECK COOLING FAN FUNCTION

With CONSULT

1. Turn ignition switch ON.
2. Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode with CONSULT.
3. Check that cooling fan speed varies according to the percentage.

Without CONSULT

1. Perform IPDM E/R auto active test and check cooling fan motors operation, refer to [PCS-9, "Diagnosis Description"](#).
2. Check that cooling fan operates.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-529, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486638

1. START

Check cooling fan function. Refer to [EC-529, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

Which cooling fan does not operate?

Cooling fan 1 >> GO TO 2.

Cooling fan 2 >> GO TO 8.

Cooling fan 1 and 2 >> GO TO 19.

2. CHECK COOLING FAN CONTROL MODULE 1 POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect cooling fan control module 1 harness connector.
3. Turn ignition switch ON.
4. Check the voltage between cooling fan control module 1 harness connector and ground.

Cooling fan control module 1		Ground	Voltage
Connector	Terminal		
E35	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3. CHECK COOLING FAN CONTROL MODULE 1 POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect cooling fan relay 1.
3. Check the continuity between cooling fan control module 1 harness connector and cooling fan relay 1 harness connector.

COOLING FAN

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Cooling fan control module 1		Cooling fan relay 1		Continuity
Connector	Terminal	Connector	Terminal	
E35	3	E17	5	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK COOLING FAN CONTROL MODULE 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between cooling fan control module 1 harness connector and ground.

Cooling fan control module 1		Ground	Continuity
Connector	Terminal		
E35	1	Ground	Existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to power in harness or connectors.

5.CHECK COOLING FAN CONTROL MODULE 1 CIRCUIT FOR OPEN AND SHORT

1. Disconnect IPDM E/R harness connector.
2. Check the continuity between cooling fan control module 1 harness connector and IPDM E/R harness connector.

Cooling fan control module 1		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E35	2	E9	97	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK COOLING FAN CONTROL MODULE 1 OUTPUT SIGNAL CIRCUIT

1. Reconnect all harness connectors disconnected.
2. Disconnect cooling fan control module 1 harness connectors.
3. Turn ignition switch ON.
4. Check the voltage between cooling fan control module 1 terminals and ground.

Cooling fan control module 1		Ground	Voltage
Connector	Terminal		
E301	4	Ground	Battery voltage
E302	6		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace cooling fan control module 1. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

7.CHECK COOLING FAN MOTOR 1

Refer to [EC-534, "Component Inspection \(Cooling Fan Motor\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

COOLING FAN

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 18.

NO >> Replace cooling fan motor 1. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

8. CHECK COOLING FAN CONTROL MODULE 2 POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect cooling fan control module 2 harness connector.
3. Turn ignition switch ON.
4. Check the voltage between cooling fan control module 2 harness connector and ground.

Cooling fan control module 2		Ground	Voltage
Connector	Terminal		
E37	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 13.

9. CHECK COOLING FAN CONTROL MODULE 2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between cooling fan control module 2 harness connector and ground.

Cooling fan control module 2		Ground	Continuity
Connector	Terminal		
E37	1	Ground	Existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair open circuit or short to power in harness or connectors.

10. CHECK COOLING FAN CONTROL MODULE 2 CIRCUIT FOR OPEN AND SHORT

1. Disconnect IPDM E/R harness connector.
2. Check the continuity between cooling fan control module 2 harness connector and IPDM E/R harness connector.

Cooling fan control module 2		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E37	2	E9	97	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

11. CHECK COOLING FAN CONTROL MODULE 2 OUTPUT SIGNAL CIRCUIT

1. Reconnect all harness connectors disconnected.
2. Disconnect cooling fan control module 2 harness connectors.
3. Turn ignition switch ON.
4. Check the voltage between cooling fan control module 2 terminals and ground.

Cooling fan control module 2		Ground	Voltage
Connector	Terminal		
E303	4	Ground	Battery voltage
E304	6		

Is the inspection result normal?

COOLING FAN

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 12.

NO >> Replace cooling fan control module 2. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

12.CHECK COOLING FAN MOTOR 2

Refer to [EC-534, "Component Inspection \(Cooling Fan Motor\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 18.

NO >> Replace cooling fan motor 2. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

13.CHECK COOLING FAN RELAY 2 POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect cooling fan relay 2.
3. Turn ignition switch ON.
4. Check the voltage between cooling fan relay 2 harness connector and ground.

Cooling fan relay 2		Ground	Voltage
Connector	Terminal		
E19	2	Ground	Battery voltage
	3		

Is the inspection result normal?

YES >> GO TO 15.

NO >> GO TO 14.

14.DETECT MALFUNCTIONING PART

Check the following.

- 50A fusible link (letter M)
- Harness for open or short between cooling fan relay 2 and battery
- Harness for open or short between cooling fan relay 1 and cooling fan relay 2

>> Repair open circuit, short to ground or short to power in harness or connectors.

15.CHECK COOLING FAN RELAY 2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between cooling fan relay 2 harness connector and ground.

Cooling fan relay 2		Ground	Continuity
Connector	Terminal		
E17	1	Ground	Existed

3. Also check harness for short power.

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair open circuit or short to power in harness or connectors.

16.CHECK COOLING FAN CONTROL MODULE 2 POWER SUPPLY CIRCUIT-II

1. Check the voltage between cooling fan relay 2 harness connector and cooling fan control module 2 harness connector.

Cooling fan relay 2		Cooling fan control module 2		Continuity
Connector	Terminal	Connector	Terminal	
E19	5	E37	3	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

COOLING FAN

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 17.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

17.CHECK COOLING FAN RELAY 2

Refer to [EC-535. "Component Inspection \(Cooling Fan Relay\) \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

- YES >> GO TO 18.
NO >> Replace cooling fan relay 2.

18.CHECK INTERMITTENT INCIDENT

Perform [GI-39. "Intermittent Incident"](#).

>> INSPECTION END

19.CHECK COOLING FAN RELAY 1 POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect cooling fan relay 1.
3. Check the voltage between cooling fan relay 1 harness connector and ground.

Cooling fan relay 1		Ground	Voltage
Connector	Terminal		
E17	2	Ground	Battery voltage
	3		

Is the inspection result normal?

- YES >> GO TO 21.
NO >> GO TO 20.

20.DETECT MALFUNCTIONING PART

Check the following.

- 50A fusible link (letter F)
- Harness for open or short between cooling fan relay 1 and battery

>> Repair open circuit, short to ground or short to power in harness or connectors.

21.CHECK COOLING FAN RELAY 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Disconnect IPDM E/R harness connector.
2. Check the continuity between cooling fan relay 1 harness connector and IPDM E/R harness connector.

Cooling fan relay 1		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E17	1	E6	42	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

- YES >> GO TO 22.
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

22.CHECK COOLING FAN CONTROL MODULE 1 POWER SUPPLY CIRCUIT-II

1. Disconnect cooling fan control module 1 harness connector.
2. Check the continuity between cooling fan relay 1 harness connector and control module 1 harness connector.

Cooling fan relay 1		Cooling fan control module 1		Continuity
Connector	Terminal	Connector	Terminal	
E17	5	E35	3	Existed

COOLING FAN

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 23.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

23.CHECK IPDM E/R GROUND CIRCUIT FOR OPEN AND SHORT

1. Disconnect IPDM E/R harness connector.
2. Check the continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	12	Ground	Existed
E6	41		

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair open circuit or short to power in harness or connectors.

24.CHECK COOLING FAN CONTROL MODULE 1 CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between IPDM E/R harness connector and cooling fan control module 1 harness connector.

IPDM E/R		Cooling fan control module 1		Continuity
Connector	Terminal	Connector	Terminal	
E9	97	E35	2	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 25.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

25.CHECK COOLING FAN RELAY 1

Refer to [EC-535, "Component Inspection \(Cooling Fan Relay\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 26.

NO >> Replace cooling fan relay 1.

26.CHECK INTERMITTENT INCIDENT

Perform [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

Component Inspection (Cooling Fan Motor) (GT-R certified NISSAN dealer)

INFOID:000000011486639

1.CHECK COOLING FAN MOTOR

1. Turn ignition switch OFF.
2. Disconnect cooling fan control module 1 and 2 harness connectors.
3. Supply cooling fan control module 1 and 2 harness connector terminals with battery voltage as per the following, and check operation.

COOLING FAN

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Cooling fan control module 1 and 2				Operation
Motor	Connector	Terminal		
		(+)	(-)	
1	E301	4 and 6	5 and 7	Cooling fan operates.
	E302			
2	E303	4 and 6	5 and 7	
	E304			

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning cooling fan motor. Refer to [EC-42. "Component Parts Location \(GT-R certified NISSAN dealer\)"](#) and [CO-19. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

Component Inspection (Cooling Fan Relay) (GT-R certified NISSAN dealer)

INFOID:000000011486640

1. CHECK COOLING FAN RELAY

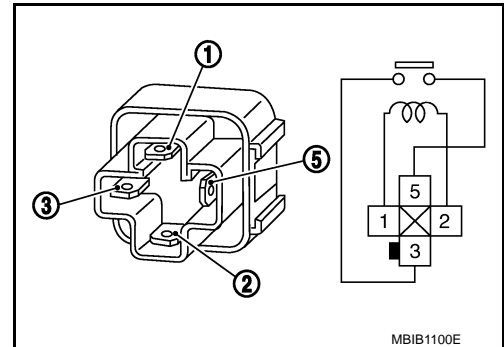
- Turn ignition switch OFF.
- Remove cooling fan relay. For the relay number, refer to [EC-604. "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#). For the relay layout, refer to [EC-42. "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).
- Check the continuity between cooling fan relay terminals under the following conditions.

Terminals	Conditions	Continuity
3 and 5	12 V direct current supply between terminals 1 and 2	Existed
	No current supply	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace cooling fan relay.



MBIB1100E

ELECTRICAL LOAD SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ELECTRICAL LOAD SIGNAL

Description (GT-R certified NISSAN dealer)

INFOID:000000011486641

The electrical load signal (Headlamp switch signal, rear window defogger switch signal, etc.) is transferred through the CAN communication line.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486642

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

1. Turn ignition switch ON.
2. Connect CONSULT and select "DATA MONITOR" mode.
3. Select "LOAD SIGNAL" and check indication under the following conditions.

Monitor item	Condition	Indication	
LOAD SIGNAL	Rear window defogger switch	ON	ON
		OFF	OFF

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to [EC-536, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2. CHECK LIGHTING SWITCH FUNCTION

Check "LOAD SIGNAL" indication under the following conditions.

Monitor item	Condition	Indication	
LOAD SIGNAL	Lighting switch	ON at 2nd position	ON
		OFF	OFF

Is the inspection result normal?

YES >> GO TO 3.

NO >> Refer to [EC-536, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

3. CHECK HEATER FAN CONTROL SWITCH FUNCTION

Select "HEATER FAN SW" and check indication under the following conditions.

Monitor item	Condition	Indication	
HEATER FAN SW	Heater fan control switch	ON	ON
		OFF	OFF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-536, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486643

1. INSPECTION START

Confirm the malfunctioning circuit (rear window defogger, headlamp or heater fan). Refer to [EC-536, "Component Function Check \(GT-R certified NISSAN dealer\)"](#).

Which circuit is related to the incident?

Rear window defogger>>GO TO 2.

Headlamp>>GO TO 3.

Heater fan>>GO TO 4.

2. CHECK REAR WINDOW DEFOGGER SYSTEM

Refer to [DEF-3, "Work Flow"](#)

ELECTRICAL LOAD SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

>> INSPECTION END

3.CHECK HEADLAMP SYSTEM

Refer to [EXL-7, "Work Procedure"](#).

>> INSPECTION END

4.CHECK HEATER FAN CONTROL SYSTEM

Refer to [HAC-4, "Work Flow"](#).

>> INSPECTION END

A

EC

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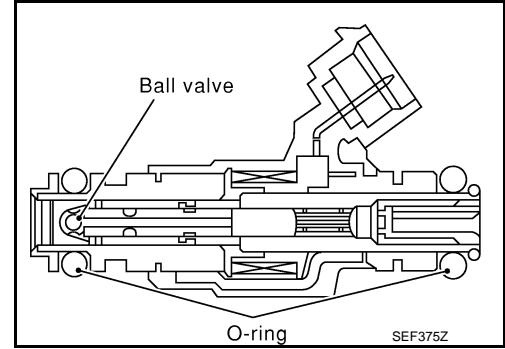
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FUEL INJECTOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486644

The fuel injector is a small, precise solenoid valve. When the ECM supplies a ground to the fuel injector circuit, the coil in the fuel injector is energized. The energized coil pulls the ball valve back and allows fuel to flow through the fuel injector into the intake manifold. The amount of fuel injected depends upon the injection pulse duration. Pulse duration is the length of time the fuel injector remains open. The ECM controls the injection pulse duration based on engine fuel needs.



Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486645

1. INSPECTION START

Turn ignition switch to START.

Are any cylinders ignited?

YES >> GO TO 2.

NO >> Refer to [EC-538, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

2. CHECK FUEL INJECTOR FUNCTION

With CONSULT

1. Start engine.
2. Perform "POWER BALANCE" in "ACTIVE TEST" mode with CONSULT.
3. Check that each circuit produces a momentary engine speed drop.

Without CONSULT

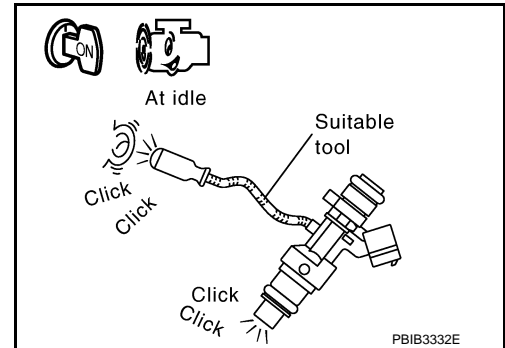
1. Start engine.
2. Listen to each fuel injector operating sound.

Clicking sound should be heard.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-538, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)



Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486646

1. CHECK FUEL INJECTOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect fuel injector harness connector.
3. Turn ignition switch ON.
4. Check the voltage between fuel injector harness connector and ground.

FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

Fuel injector			Ground	Voltage
Cylinder	Connector	Terminal		
1	F121	1	Ground	Battery voltage
2	F122	1		
3	F123	1		
4	F124	1		
5	F125	1		
6	F126	1		

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F48, F120
- Harness connectors F103, M116
- Harness connectors E106, M6
- IPDM E/R harness connector E7
- 10A fuse (No. 44)
- Harness for open or short between fuel injector and fuse

>> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK FUEL INJECTOR OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between fuel injector harness connector and ECM harness connector.

Fuel injector			ECM		Continuity
Cylinder	Connector	Terminal	Connector	Terminal	
1	F121	2	F102	25	Existed
2	F122	2		21	
3	F123	2		17	
4	F124	2		37	
5	F125	2		41	
6	F126	2		45	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F48, F120
- Harness for open or short between fuel injector and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK FUEL INJECTOR

Refer to [EC-540. "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

Is the inspection result normal?

FUEL INJECTOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
NO >> Replace malfunctioning fuel injector. Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation"](#).
NO >> Repair open circuit, short to ground or short to power in harness or connectors.

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486647

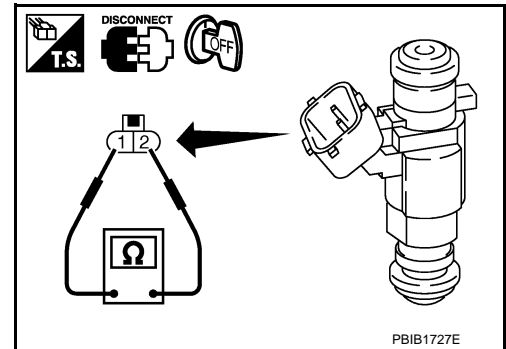
1.CHECK FUEL INJECTOR

1. Turn ignition switch OFF.
2. Disconnect fuel injector harness connector.
3. Check resistance between fuel injector terminals as follows.

Terminals	Resistance
1 and 2	11.1 - 14.5 Ω [at 10 - 60°C (60 - 140°F)]

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace malfunctioning fuel injector. Refer to [EM-42, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

FUEL PUMP

Description (GT-R certified NISSAN dealer)

INFOID:000000011486648

Sensor	Input signal to ECM	ECM Function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed*	Fuel pump control	Fuel pump relay ↓ Fuel pump
Battery	Battery voltage*		

*: ECM determines the start signal status by the signals of engine speed and battery voltage.

The ECM activates the fuel pump for several seconds after the ignition switch is turned ON to improve engine start ability. If the ECM receives a engine speed signal from the camshaft position sensor (PHASE), it knows that the engine is rotating, and causes the pump to operate. If the engine speed signal is not received when the ignition switch is ON, the engine stalls. The ECM stops pump operation and prevents battery discharging, thereby improving safety. The ECM does not directly drive the fuel pump. It controls the ON/OFF fuel pump relay, which in turn controls the fuel pump.

Condition	Fuel pump operation
Ignition switch is turned to ON.	Operates for 1 second.
Engine running and cranking	Operates.
When engine is stopped	Stops in 1.5 seconds.
Except as shown above	Stops.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486649

1.CHECK FUEL PUMP FUNCTION

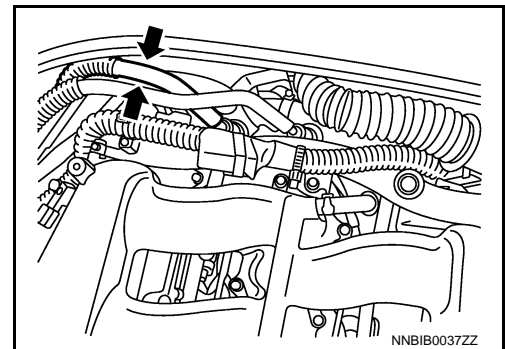
1. Turn ignition switch ON.
2. Pinch fuel feed hose (1) with two fingers.

Fuel pressure pulsation should be felt on the fuel feed hose for 1 second after ignition switch is turned ON.

Is the inspection result normal?

YES >> INSPECTION END

NO >> [EC-541, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)



Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486650

1.CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2.CHECK FPCM POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect fuel pump control module (FPCM) harness connector.
3. Turn ignition switch ON.
4. Check the voltage between FPCM harness connector and ground.

FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

FPCM		Ground	Voltage
Connector	Terminal		
B230	10	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.DETECT MALFUNCTIONING PART

Check the following.

- 15A fuse (No.41)
- Harness connectors B201, M117
- Harness for open or short between IPDM E/R and FPCM

>> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK FPCM GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between FPCM harness connector and ground.

FPCM		Ground	Continuity
Connector	Terminal		
B230	1	Ground	Existed
	5		

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to power in harness or connectors.

5.CHECK FPCM CONTROL SIGNAL CIRCUIT FOR OPEN OR SHORT

1. Disconnect ECM harness connector.
2. Check the continuity between FPCM harness connector and ECM harness connector.

FPCM		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B230	8	F101	29	Existed
	9		30	

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E103, M116
- Harness connectors B201, M117
- Harness for open or short between FPCM and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK FPCM OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect "fuel level sensor unit and fuel pump (main)" harness connector.
2. Check the continuity between FPCM harness connector and "fuel level sensor unit and fuel pump (main)" harness connector.

FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

FPCM		Fuel level sensor unit and fuel pump (main)		Ground	Continuity
Connector	Terminal	Connector	Terminal		
B230	6	B225	5	Ground	Existed
	7		4		

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8.CHECK FUEL PUMP

Refer to [EC-543, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace "main fuel level sensor unit, fuel filter and fuel pump assembly". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

9.CHECK FPCM

Refer to [EC-449, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace FPCM. Refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

10.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486651

1.CHECK FUEL PUMP

1. Turn ignition switch OFF.
2. Disconnect "fuel level sensor unit and fuel pump (main)" harness connector.
3. Check resistance between fuel pump terminals as follows.

Terminals	Resistance
4 and 5	0.2 - 5.0 Ω [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace "fuel level sensor unit, fuel filter and fuel pump assembly". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

IGNITION SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

IGNITION SIGNAL

Description (GT-R certified NISSAN dealer)

INFOID:000000011486652

The ignition signal from the ECM is sent to and amplified by the power transistor. The power transistor turns ON and OFF the ignition coil primary circuit. This ON/OFF operation induces the proper high voltage in the coil secondary circuit.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486653

1. INSPECTION START

Turn ignition switch OFF, and restart engine.

Does the engine start?

YES-1 >> With CONSULT: GO TO 2.

YES-2 >> Without CONSULT: GO TO 3.

NO >> Refer to [EC-544, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2. CHECK IGNITION SIGNAL FUNCTION

With CONSULT

1. Perform "POWER BALANCE" in "ACTIVE TEST" mode with CONSULT.
2. Check that each circuit produces a momentary engine speed drop.

Is the inspection result normal?

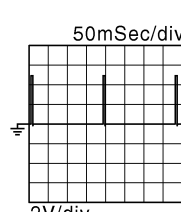
YES >> INSPECTION END

NO >> Refer to [EC-544, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

3. CHECK IGNITION SIGNAL FUNCTION

Without CONSULT

1. Let engine idle.
2. Read the voltage signal between ECM harness connector terminals under the following conditions with an oscilloscope.

ECM				Voltage signal
+		-		
Connector	Terminal	Connector	Terminal	
F101	9	M107	128	
	10			
	13			
	33			
	34			
38				

NOTE:

The pulse cycle changes depending on rpm at idle.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-544, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486654

1. CHECK IGNITION COIL POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF, wait at least 10 seconds and then turn ON.
2. Check the voltage between ECM harness connector terminals under the following conditions.

IGNITION SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM			Voltage
Connector	+	-	
	Terminal	Terminal	
M107	121	128	Battery voltage
	122		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to [EC-191, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2.CHECK IGNITION COIL POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect condenser harness connector.
3. Turn ignition switch ON.
4. Check the voltage between condenser harness connector and ground.

Condenser		Ground	Voltage
Connector	Terminal		
F4	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

3.CHECK IGNITION COIL POWER SUPPLY CIRCUIT-III

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector.
3. Check the continuity between IPDM E/R harness connector and condenser harness connector.

IPDM E/R		Condenser		Continuity
Connector	Terminal	Connector	Terminal	
E7	53	F4	1	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Refer to [EC-191, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

NO >> GO TO 4.

4.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E3, F1
- Harness for open or short between IPDM E/R and condenser

>> Repair open circuit short to ground or short to power in harness or connectors.

5.CHECK CONDENSER GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between condenser harness connector and ground.

Condenser		Ground	Continuity
Connector	Terminal		
F4	2	Ground	Existed

3. Also check harness for short to power.

Is the inspection result normal?

IGNITION SIGNAL

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
NO >> Repair open circuit or short to power in harness or connectors.

6.CHECK CONDENSER

Refer to [EC-548. "Component Inspection \(Condenser\) \(GT-R certified NISSAN dealer\)"](#)

Is the inspection result normal?

- YES >> GO TO 7.
NO >> Replace condenser.

7.CHECK IGNITION COIL POWER SUPPLY CIRCUIT-IV

1. Reconnect all harness connectors disconnected.
2. Disconnect ignition coil harness connector.
3. Turn ignition switch ON.
4. Check the voltage between ignition coil harness connector and ground.

Ignition coil			Ground	Voltage
Cylinder	Connector	Terminal		
1	F10	3	Ground	Battery voltage
2	F27	3		
3	F11	3		
4	F28	3		
5	F12	3		
6	F29	3		

Is the inspection result normal?

- YES >> GO TO 9.
NO >> GO TO 8.

8.DETECT MALFUNCTIONING PART

Check the following.

- Harness connector F1
- Harness for open or short between ignition coil and harness connector F1

>> Repair or replace harness or connectors.

9.CHECK IGNITION COIL GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between ignition coil harness connector and ground.

Ignition coil			Ground	Continuity
Cylinder	Connector	Terminal		
1	F10	2	Ground	Existed
2	F27	2		
3	F11	2		
4	F28	2		
5	F12	2		
6	F29	2		

3. Also check harness for short to power.

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Repair open circuit or short to power in harness or connectors.

10.CHECK IGNITION COIL OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.

IGNITION SIGNAL

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

2. Check the continuity between ignition coil harness connector and ECM harness connector.

Ignition coil			ECM		Continuity
Cylinder	Connector	Terminal	Connector	Terminal	
1	F10	1	F101	10	Existed
2	F27	1		9	
3	F11	1		13	
4	F28	1		33	
5	F12	1		34	
6	F29	1		38	

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair open circuit short to ground or short to power in harness or connectors.

11.CHECK IGNITION COIL WITH POWER TRANSISTOR

Refer to [EC-547, "Component Inspection \(Ignition Coil with Power Transistor\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace malfunctioning ignition coil with power transistor. Refer to [EM-47, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

12.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Ignition Coil with Power Transistor) (GT-R certified NISSAN dealer)

INFOID:000000011486655

1.CHECK IGNITION COIL WITH POWER TRANSISTOR-I

1. Turn ignition switch OFF.
2. Disconnect ignition coil harness connector.
3. Check resistance between ignition coil terminals as follows.

Terminals	Resistance [at 25°C (77°F)]
1 and 2	Except 0 or ∞ Ω
1 and 3	Except 0 Ω
2 and 3	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace malfunctioning ignition coil with power transistor. Refer to [EM-47, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

2.CHECK IGNITION COIL WITH POWER TRANSISTOR-II

CAUTION:

Perform the following procedure in a place with no combustible objects and good ventilation.

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.

IGNITION SIGNAL

[VR38]

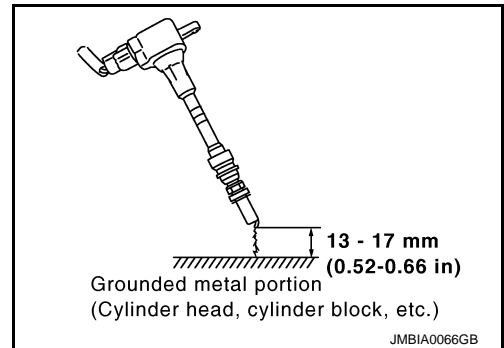
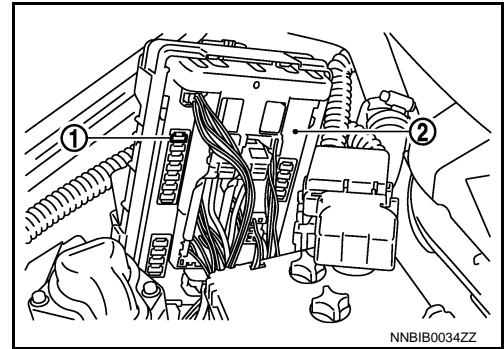
< DTC/CIRCUIT DIAGNOSIS >

3. Remove fuel pump fuse (1) in IPDM E/R (2) to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

4. Start engine.
5. After engine stalls, crank it two or three times to release all fuel pressure.
6. Turn ignition switch OFF.
7. Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.
8. Remove ignition coil and spark plug of the cylinder to be checked.
9. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
10. Connect spark plug and harness connector to ignition coil.
11. Fix ignition coil using a rope etc. with gap of 13 - 17 mm (0.52 - 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
12. Crank engine for about three seconds, and check whether spark is generated between the spark plug and the grounded metal portion.



Spark should be generated.

CAUTION:

- During the operation, always stay 0.5 m (1.6 ft) or more away from the spark plug and the ignition coil. Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might to damage the ignition coil if the gap of more than 17 mm (0.66 in) is made.

NOTE:

When the gap is less than 13 mm (0.52 in), a spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning ignition coil with power transistor. Refer to [EM-47, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

Component Inspection (Condenser) (GT-R certified NISSAN dealer)

INFOID:000000011486656

1. CHECK CONDENSER

1. Turn ignition switch OFF.
2. Disconnect condenser harness connector. For the condenser number, refer to [EC-604, "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#).
3. Check resistance between condenser terminals as follows.

Terminals	Resistance
1 and 2	Above 1 MΩ [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

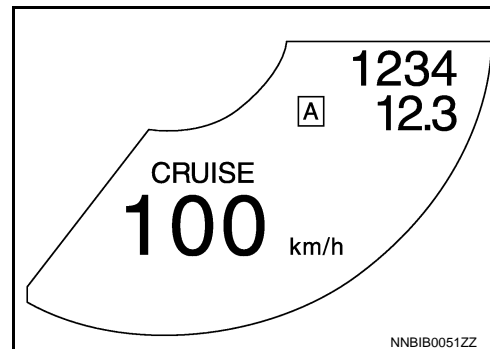
NO >> Replace condenser.

INFORMATION DISPLAY (ASCD)

Description (GT-R certified NISSAN dealer)

INFOID:000000011486657

The operation mode of the ASCD is indicated on the information display in the combination meter. When turning ON the MAIN switch of the ASCD steering switch, the CRUISE lamp turns ON, CRUISE is indicated on the information display and the operation mode turns to standby mode. When turning ON the SET/COAST switch while the vehicle is driven at the ASCD setting condition speed range, the SET lamp turns ON and the set speed is indicated on the information display. When the canceling conditions come into effect, CANCEL is indicated on the information display.



Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486658

1. CHECK INFORMATION DISPLAY

1. Start engine.
 2. Press MAIN switch on ASCD steering switch.
 3. Drive the vehicle at more than 40 km/h (25 MPH)
- CAUTION:**
Always drive vehicle at a safe speed.
4. Press SET/COAST switch.
 5. Check that the readings of the speedometer show the same values as the set speed indicated in the information display while driving the vehicle on a flat road.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-549, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486659

1. CHECK DTC

Check that DTC UXXXX, P0500 or P1574 is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO-1 >> Perform trouble diagnosis for DTC UXXXX.

NO-2 >> Perform trouble diagnosis for DTC P0500. Refer to [EC-411, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

NO-3 >> Perform trouble diagnosis for DTC P1574. Refer to [EC-492, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

2. CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform trouble diagnosis relevant to DTC indicated.

3. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident".](#)

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-114, "Removal and Installation".](#)

NO >> Repair or replace.

MANIFOLD ABSOLUTE PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

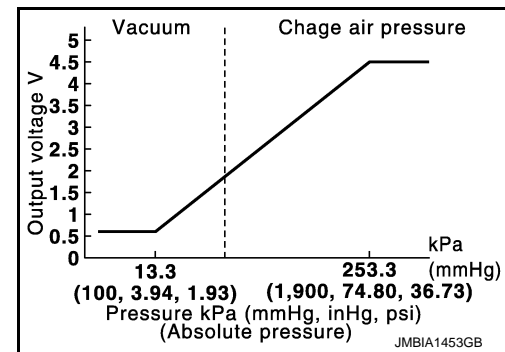
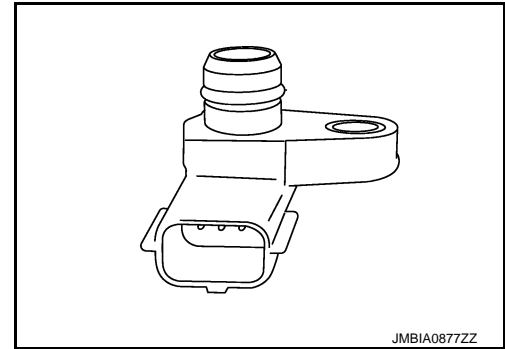
MANIFOLD ABSOLUTE PRESSURE SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486660

The manifold absolute pressure (MAP) sensor is placed at intake manifold collector. It detects intake manifold pressure and sends the voltage signal to the ECM.

The sensor uses a silicon diaphragm which is sensitive to the change in pressure. As the pressure increases, the voltage rises.



Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486661

1. CHECK MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR FUNCTION

1. Start engine.
2. Read the value indicated on boost meter in multifunction meter. Check that the value goes to negative pressure side while the engine is in idle speed, and goes to positive pressure side while the vehicle is being driven.

CAUTION:

Always drive vehicle at a safe speed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to [EC-550. "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486662

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection M95. Refer to Ground Inspection in [GI-42. "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2. CHECK MAP SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect MAP sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between MAP sensor harness connector and ground.

MANIFOLD ABSOLUTE PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

MAP sensor		Ground	Voltage
Connector	Terminal		
F7	1	Ground	Approx. 5 V

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

3.CHECK MAP SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between MAP sensor harness connector and ECM harness connector.

MAP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	1	F102	95	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK MAP SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between MAP sensor harness connector and ECM harness connector.

MAP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	3	F102	74	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK MAP SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between MAP sensor harness connector and ECM harness connector.

MAP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	2	F101	48	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

7.CHECK MAP SENSOR

Refer to [EC-552, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

MANIFOLD ABSOLUTE PRESSURE SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace MAP sensor. Refer to [EM-35. "Exploded View"](#).

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

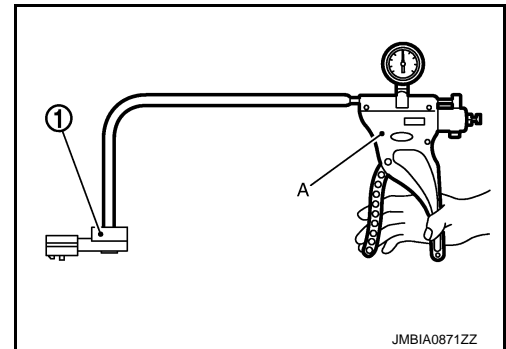
>> INSPECTION END

Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486663

1. CHECK MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR

1. Turn ignition switch OFF.
2. Remove MAP sensor with its harness connector. Refer to [EM-35. "Exploded View"](#).
3. Install pressure pump (A) to MAP sensor (1).
4. Turn ignition switch ON.
5. Check the voltage between ECM harness connector terminals under the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 - 30°C (50 - 86°F)].

Connector	ECM		Condition [Pressure (Relative to atmospheric pressure)]	Voltage
	+	-		
	Terminal	Terminal		
F101	48 [MAP sensor]	74	0 kPa (0 mbar, 0 mmHg, 0 inHg)	Approx. 2.03 V
			40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	Approx. 2.67 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace MAP sensor.

MALFUNCTION INDICATOR LAMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

MALFUNCTION INDICATOR LAMP

Description (GT-R certified NISSAN dealer)

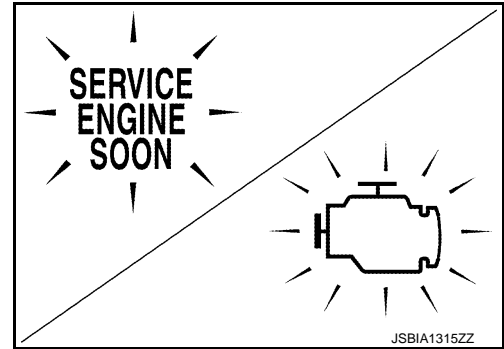
INFOID:000000011486664

The Malfunction Indicator lamp (MIL) is located on the combination meter.

The MIL will illuminate when the ignition switch is turned ON without the engine running. This is a bulb check.

When the engine is started, the MIL should turn OFF. If the MIL remains illuminated, the on board diagnostic system has detected an engine system malfunction.

For details, refer to [EC-168, "DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp \(MIL\) \(GT-R certified NISSAN dealer\)"](#).



Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486665

1.CHECK MIL FUNCTION

1. Turn ignition switch ON.
2. Check that MIL illuminates.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-553, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486666

1.CHECK DTC

Check that DTC UXXXX is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform trouble diagnosis for DTC UXXXX. Refer to [EC-194, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

2.CHECK DTC WITH "COMBINATION METER"

Refer to [MWI-55, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part.

3.CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-114, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning part.

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

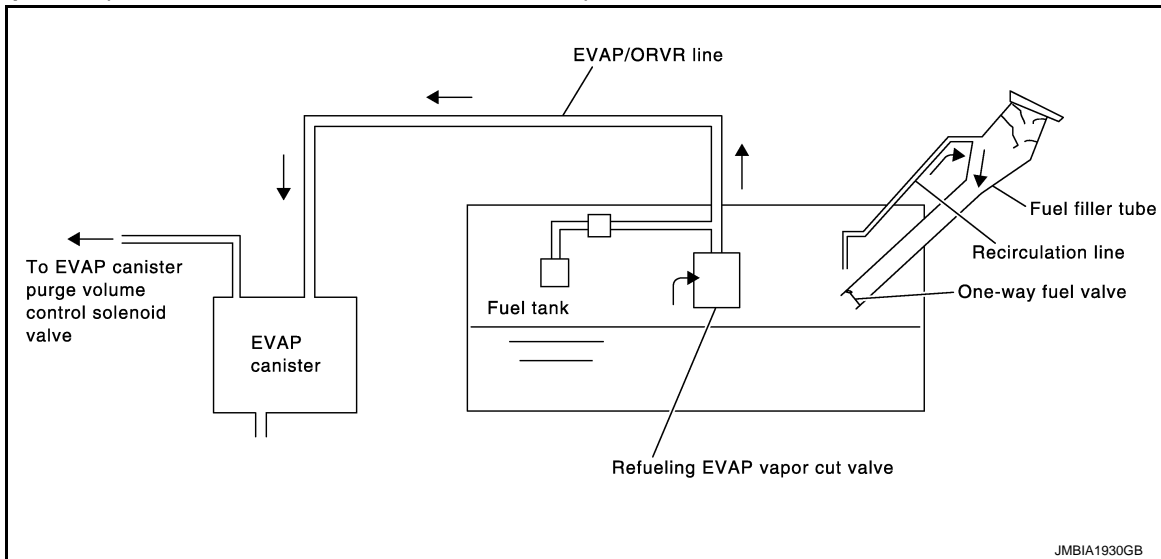
< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

Description (GT-R certified NISSAN dealer)

INFOID:000000011486667



From the beginning of refueling, the air and vapor inside the fuel tank go through refueling EVAP vapor cut valve and EVAP/ORVR line to the EVAP canister. The vapor is absorbed by the EVAP canister and the air is released to the atmosphere.

When the refueling has reached the full level of the fuel tank, the refueling EVAP vapor cut valve is closed and refueling is stopped because of auto shut-off. The vapor which was absorbed by the EVAP canister is purged during driving.

WARNING:

When conducting inspections below, be sure to observe the following:

- Put a "CAUTION: FLAMMABLE" sign in workshop.
- Never smoke while servicing fuel system. Keep open flames and sparks away from work area.
- Always furnish the workshop with a CO2 fire extinguisher.

CAUTION:

- Before removing fuel line parts, carry out the following procedures:
 - Put drained fuel in an explosion-proof container and put lid on securely.
 - Release fuel pressure from fuel line. Refer to [EC-637, "Inspection \(GT-R certified NISSAN dealer\)"](#).
 - Disconnect battery ground cable.
- Always replace O-ring when the fuel gauge retainer is removed.
- Never kink or twist hose and tube when they are installed.
- Never tighten hose and clamps excessively to avoid damaging hoses.
- After installation, run engine and check for fuel leaks at connections.
- Never attempt to top off the fuel tank after the fuel pump nozzle shuts off automatically. Continued refueling may cause fuel overflow, resulting in fuel spray and possibly a fire.

Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486668

1. CHECK ORVR FUNCTION

Check whether the following symptoms are present.

- Fuel odor from EVAP canister is strong.
- Cannot refuel/Fuel odor from the fuel filler opening is strong while refueling.

Are any symptoms present?

- YES >> Refer to [EC-554, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).
- NO >> INSPECTION END

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486669

1. INSPECTION START

Check whether the following symptoms are present.

A: Fuel odor from EVAP canister is strong.

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

B: Cannot refuel/Fuel odor from the fuel filler opening is strong while refueling.

Which symptom is present?

- A >> GO TO 2.
- B >> GO TO 7.

2.CHECK EVAP CANISTER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Weigh the EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> GO TO 4.

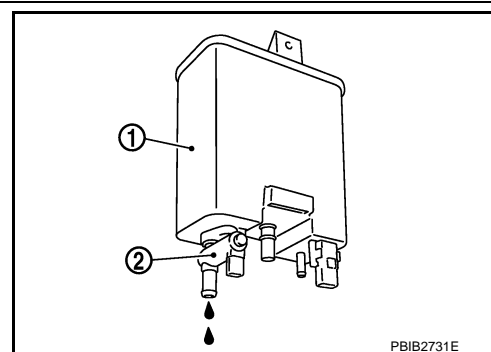
3.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

Check if water will drain from EVAP canister (1).

2 : EVAP canister vent control valve

Does water drain from the EVAP canister?

- YES >> GO TO 4.
- NO >> GO TO 6.



4.REPLACE EVAP CANISTER

Replace EVAP canister with a new one. Refer to [FL-16. "Exploded View"](#).

>> GO TO 5.

5.DETECT MALFUNCTIONING PART

Check the EVAP hose between EVAP canister and vehicle frame for clogging or poor connection.

>> Repair or replace EVAP hose.

6.CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to [EC-557. "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to [FL-14. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

7.CHECK EVAP CANISTER

1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
2. Weigh the EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 2.1 kg (4.6 lb).

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> GO TO 9.

8.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

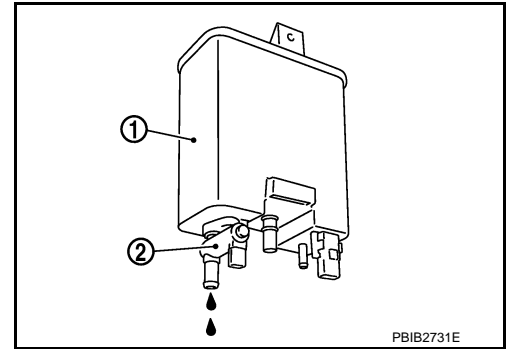
Check if water will drain from EVAP canister (1).

2 : EVAP canister vent control valve

Does water drain from the EVAP canister?

YES >> GO TO 9.

NO >> GO TO 11.



9. REPLACE EVAP CANISTER

Replace EVAP canister with a new one. Refer to [FL-16, "Exploded View"](#).

>> GO TO 10.

10. DETECT MALFUNCTIONING PART

Check the EVAP hose between EVAP canister and vehicle frame for clogging or poor connection.

>> Repair or replace EVAP hose.

11. CHECK VENT HOSES AND VENT TUBES

Check hoses and tubes between EVAP canister and refueling control valve for clogging, kinks, looseness and improper connection.

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace hoses and tubes.

12. CHECK RECIRCULATION LINE

Check recirculation line for clogging, dents and cracks.

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace fuel filler tube.

13. CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to [EC-557, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

14. CHECK FUEL FILLER TUBE

Check fuel filler tube and hose connected to the fuel tank for clogging, dents and cracks.

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace fuel filler tube.

15. CHECK ONE-WAY FUEL VALVE-I

Check one-way valve for clogging.

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace one-way fuel valve with fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

16. CHECK ONE-WAY FUEL VALVE-II

1. Check that fuel is drained from the tank.

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

[VR38]

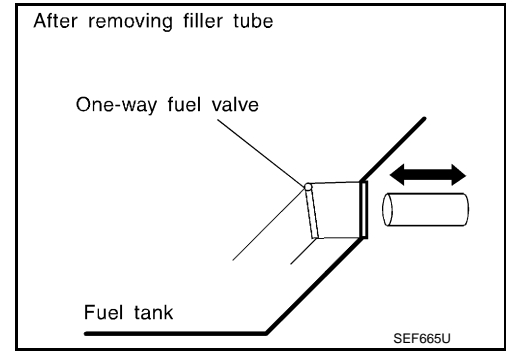
< DTC/CIRCUIT DIAGNOSIS >

- Remove fuel filler tube and hose.
- Check one-way fuel valve for operation as follows.
When a stick is inserted, the valve should open, when removing stick it should close.

Do not drop any material into the tank.

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace fuel filler tube or replace one-way fuel valve with fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).



Component Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486670

1.INSPECTION START

Do you have CONSULT?

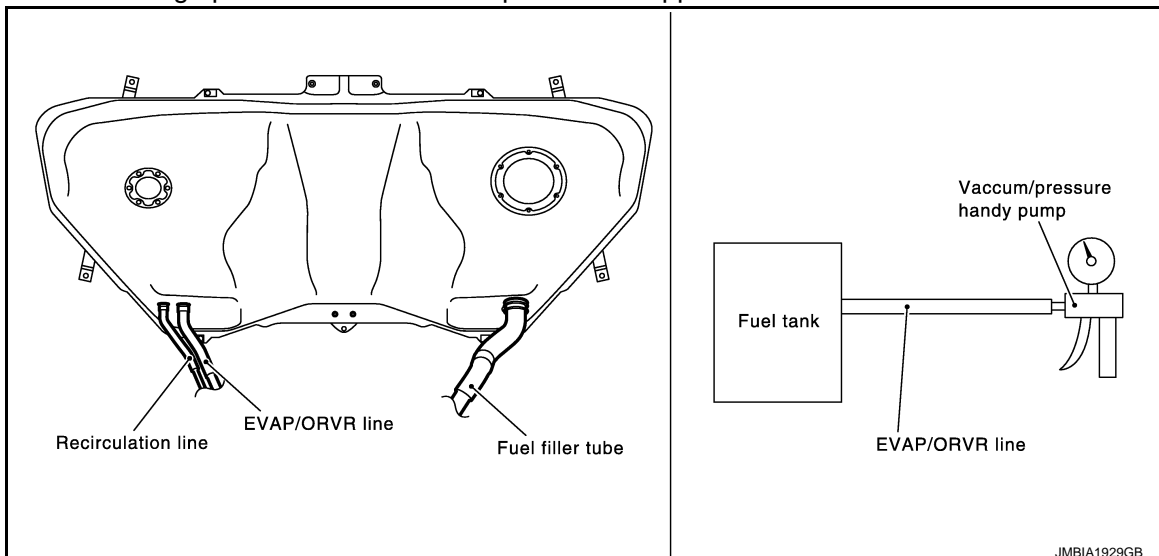
Do you have CONSULT?

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

2.CHECK REFUELING EVAP VAPOR CUT VALVE

With CONSULT

- Turn ignition switch OFF.
 - Remove fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
 - Drain fuel from the tank as follows:
 - Remove fuel feed hose located on the fuel gauge retainer.
 - Connect a spare fuel hose, one side to fuel gauge retainer where the hose was removed and the other side to a fuel container.
 - Drain fuel using "FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.
 - Check refueling EVAP vapor cut valve for being stuck to close as follows.
Blow air into the refueling EVAP vapor cut valve (from the end of EVAP/ORVR line hose), and check that the air flows freely into the tank.
 - Check refueling EVAP vapor cut valve for being stuck to open as follows.
 - Connect vacuum pump to hose end.
 - Remove fuel gauge retainer with fuel gauge unit.
- Always replace O-ring with new one.**
- Turn fuel tank upside down.
 - Apply vacuum pressure to hose end [-13.3 kPa (0.133 bar, -0.136 kg/cm³, -1.93 psi)] with fuel gauge retainer remaining open and check that the pressure is applicable.



Is the inspection result normal?

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

[VR38]

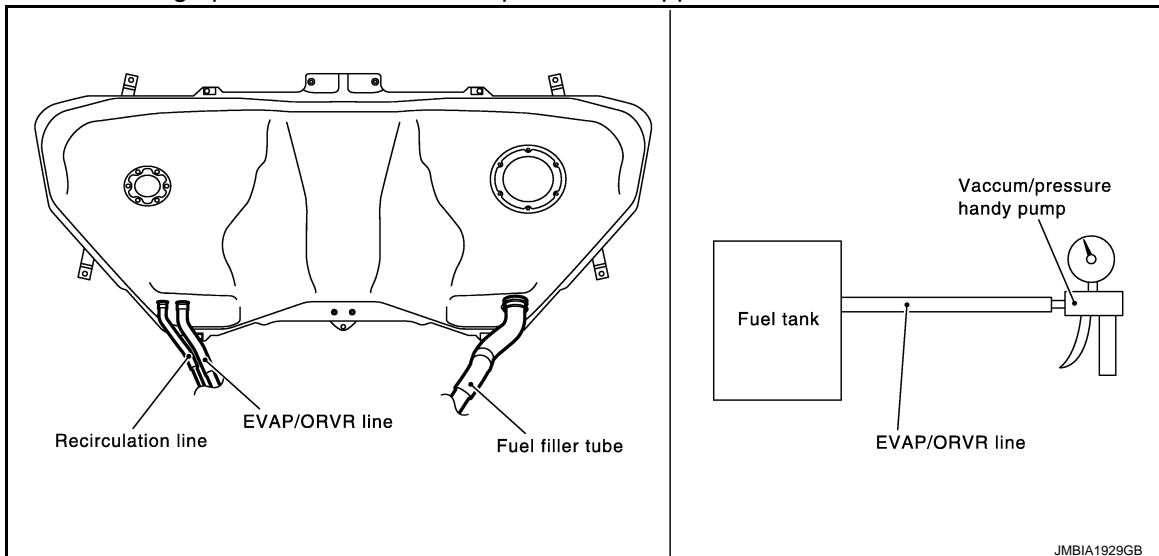
< DTC/CIRCUIT DIAGNOSIS >

- YES >> INSPECTION END
NO >> Replace refueling EVAP vapor cut valve with fuel tank.

3. CHECK REFUELING EVAP VAPOR CUT VALVE

⊗ Without CONSULT

1. Turn ignition switch OFF.
 2. Remove fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
 3. Drain fuel from the tank as follows:
 - Remove fuel gauge retainer.
 - Drain fuel from the tank using a handy pump into a fuel container.
 4. Check refueling EVAP vapor cut valve for being stuck to close as follows.
Blow air into the refueling EVAP vapor cut valve (from the end of EVAP/ORVR line hose), and check that the air flows freely into the tank.
 5. Check refueling EVAP vapor cut valve for being stuck to open as follows.
 - Connect vacuum pump to hose end.
 - Remove fuel gauge retainer with fuel gauge unit.
- Always replace O-ring with new one.**
- Turn fuel tank upside down.
 - Apply vacuum pressure to hose end [-13.3 kPa (0.133 bar, -0.136 kg/cm³, -1.93 psi)] with fuel gauge retainer remaining open and check that the pressure is applicable.



Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to [FL-14, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

POSITIVE CRANKCASE VENTILATION

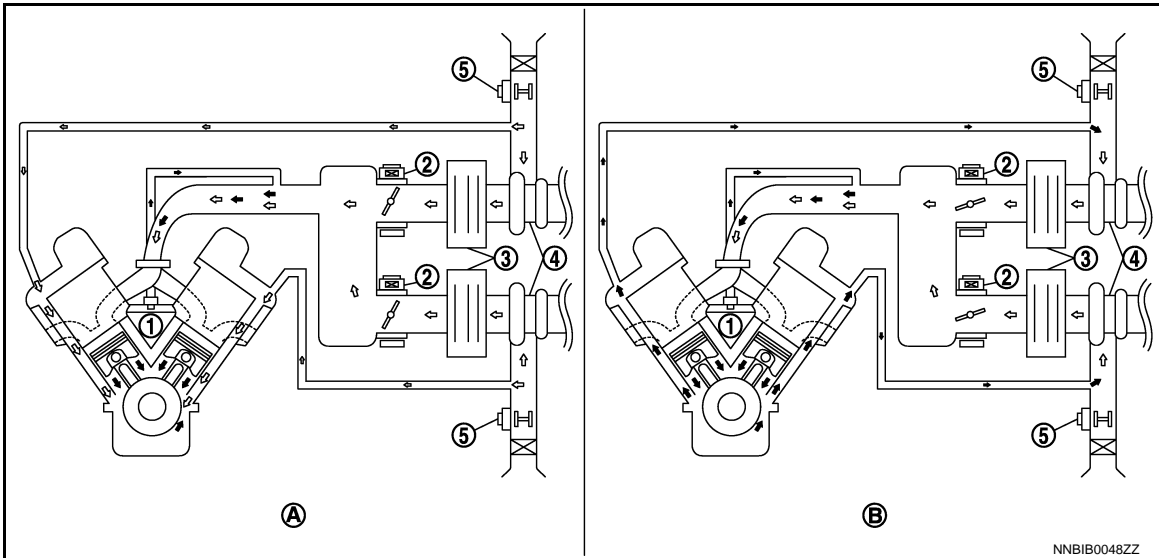
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[VR38]

POSITIVE CRANKCASE VENTILATION

Description

INFOID:000000011486671

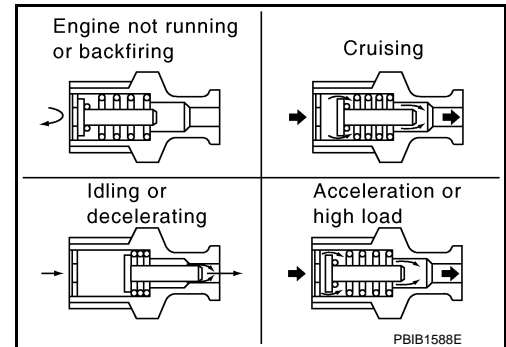


- | | | |
|------------------------------|---------------------------------------|----------------------|
| 1. PCV valve | 2. Electric throttle control actuator | 3. Charge air cooler |
| 4. Turbocharger | 5. Mass air flow sensor | |
| A. low-middle load condition | B. Hi-load condition | |

- ↶: Fresh air
 ↷: Blow-by air

The positive crankcase ventilation (PCV) system returns the crankcase blow-by gas to the intake manifold via the PCV valve installed on the breather separator.

When the engine is in the low-middle load condition as shown in the figure (A), the blow-by gas goes to the intake manifold via the PCV valve. In the general driving conditions, the capacity of the PCV valve is sufficient for treating the blow-by gas and a little amount of the fresh air. The fresh air enters to the rocker cover from the air duct via a hose, and is guided to the crankcase. When the engine is in the high load condition as shown in the figure (B), the fresh air blows back in the hose and is drawn into the air duct.



Component Inspection

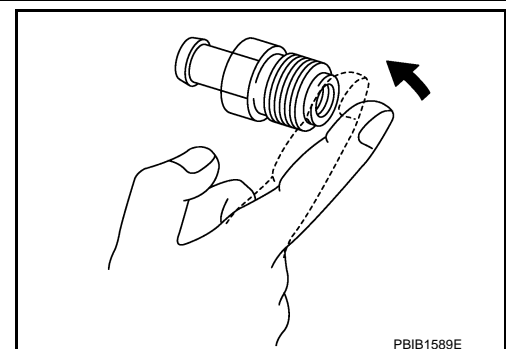
INFOID:000000011486672

1. CHECK PCV VALVE

With engine running at idle, remove PCV valve from rocker cover. A properly working valve makes a hissing noise as air passes through it. A strong vacuum should be felt immediately when a finger is placed over valve inlet.

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace PCV valve. Refer to [EM-113. "Exploded View \(GT-R certified NISSAN dealer\)"](#).



REFRIGERANT PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

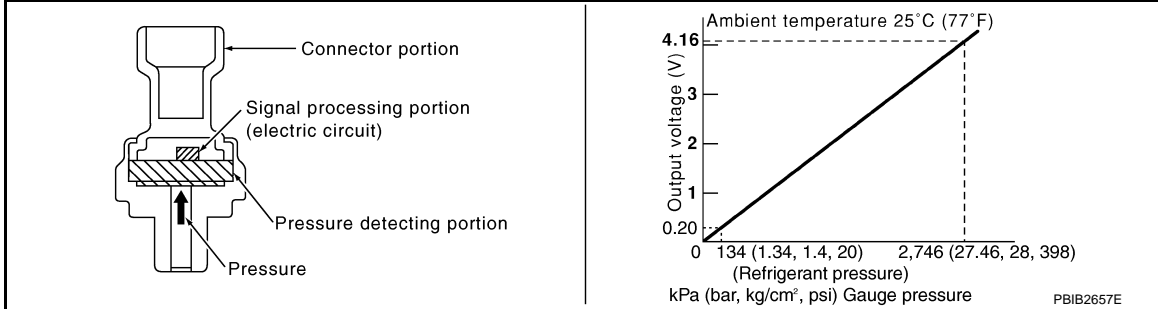
[VR38]

REFRIGERANT PRESSURE SENSOR

Description (GT-R certified NISSAN dealer)

INFOID:000000011486673

The refrigerant pressure sensor is installed at the condenser of the air conditioner system. The sensor uses an electrostatic volume pressure transducer to convert refrigerant pressure to voltage. The voltage signal is sent to ECM, and ECM controls cooling fan system.



Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486674

1. CHECK REFRIGERANT PRESSURE SENSOR FUNCTION

1. Start engine and warm it up to normal operating temperature.
2. Turn A/C switch and blower fan switch ON.
3. Check the voltage between ECM harness connector terminals under the following conditions.

Connector	ECM		Voltage (V)
	+	-	
	Terminal	Terminal	
F102	89 (Refrigerant pressure sensor signal)	74	1.0 - 4.0

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [EC-560, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486675

1. CHECK GROUND CONNECTION

1. Turn A/C switch and blower fan switch OFF.
2. Turn ignition switch OFF.
3. Check ground connection M95. Refer to Ground Inspection in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY CIRCUIT-I

1. Disconnect refrigerant pressure sensor harness connector.
2. Turn ignition switch ON.
3. Check the voltage between refrigerant pressure sensor harness connector and ground.

Refrigerant pressure sensor		Ground	Voltage (V)
Connector	Terminal		
E77	3	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

REFRIGERANT PRESSURE SENSOR

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

3. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

Refrigerant pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E77	3	F102	95	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Check sensor power supply 2 circuit. Refer to [EC-563, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK REFRIGERANT PRESSURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

Refrigerant pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E77	1	F102	74	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness connectors F103, M116
- Harness for open or short between ECM and refrigerant pressure sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

7. CHECK REFRIGERANT PRESSURE SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

Refrigerant pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E77	2	F102	89	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

REFRIGERANT PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

8. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M6, E106
- Harness connectors F103, M116
- Harness for open or short between ECM and refrigerant pressure sensor

>> Repair open circuit, short to ground or short to power in harness or connectors.

9. CHECK INTERMITTENT INCIDENT

Refer to [GI-39. "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace refrigerant pressure sensor. Refer to [HAC-102. "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).
- NO >> Repair or replace malfunctioning part.

SENSOR POWER SUPPLY2 CIRCUIT

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

SENSOR POWER SUPPLY2 CIRCUIT

Description (GT-R certified NISSAN dealer)

INFOID:000000011486676

ECM supplies a voltage of 5 V to some of the sensors systematically divided into 2 groups, respectively. Accordingly, when a short circuit develops in a sensor power source, a malfunction may occur simultaneously in the sensors belonging to the same group as the short-circuited sensor.

Sensor power supply 1

- APP sensor 1
- CMP sensor (PHASE) (bank 1)
- Electric throttle control actuator (bank 1)
- Electric throttle control actuator (bank 2)
- EVAP control system pressure sensor
- Turbocharger boost sensor (bank 1)
- Turbocharger boost sensor (bank 2)

NOTE:

If sensor power supply 1 circuit is malfunctioning, DTC P0643 is displayed.

Sensor power supply 2

- APP sensor 2
- CKP sensor (POS)
- CMP sensor (PHASE) (bank 2)
- Manifold absolute pressure sensor
- Power steering pressure sensor
- Refrigerant pressure sensor
- Battery current sensor

Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486677

1. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect accelerator pedal position (APP) sensor harness connector.
3. Turn ignition switch ON.
4. Check the voltage between APP sensor harness connector and ground.

APP sensor		Ground	Voltage
Connector	Terminal		
E111	6	Ground	Approx. 5V

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 2.

2. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between APP sensor harness connector and ECM harness connector.

APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E111	6	M107	99	Existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair open circuit.

3. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

1. Disconnect following sensors harness connector.
2. Check harness for short to power and short to ground, between the following terminals.

SENSOR POWER SUPPLY2 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

ECM		Sensor		
Connector	Terminal	Name	Connector	Terminal
F102	87	CKP sensor (POS)	E204	1
	90	Battery current sensor	F39	1
	91	CMP sensor (PHASE) (bank 2)	F45	1
	95	Power steering pressure sensor	F16	3
		Manifold absolute pressure sensor	F7	1
		Refrigerant pressure sensor	E77	3
M107	99	APP sensor 2	E111	6

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair short to ground or short to power in harness or connectors.

4. CHECK COMPONENTS

Check the following.

- APP sensor 2 (Refer to [EC-503, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).)
- Crankshaft position sensor (POS) (Refer to [EC-334, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).)
- Camshaft position sensor (PHASE) (bank 2) (Refer to [EC-338, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).)
- Power steering pressure sensor (Refer to [EC-421, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).)
- Manifold absolute pressure sensor (Refer to [EC-552, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).)
- Refrigerant pressure sensor (Refer to [EC-560, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)"](#).)
- Battery current sensor (Refer to [EC-473, "Component Inspection \(GT-R certified NISSAN dealer\)"](#).)

Is the inspection result normal?

YES >> Refer to [GI-39, "Intermittent Incident"](#).

NO >> Replace malfunctioning component.

SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

SUB FUEL PUMP

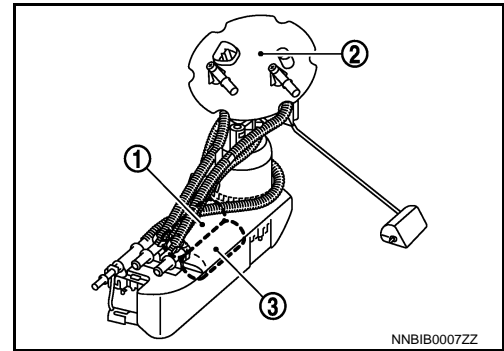
Description (GT-R certified NISSAN dealer)

INFOID:000000011486678

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Sensor	Input signal to ECM	ECM Function	Actuator
Crankshaft position sensor (POS) Camshaft position sensor (PHASE)	Engine speed	Fuel pump control	Sub fuel pump relay ↓ Sub fuel pump
Mass air flow sensor	Amount of intake air		

The sub fuel pump (1) is installed on the main fuel level sensor unit, fuel filter and fuel pump assembly (2) in line with the fuel pump (3). The ECM activates the sub fuel pump for covering the fuel supply in high engine speed and high load areas. The ECM does not activate the sub fuel pump directly. The ECM controls the fuel pump by turning the sub fuel pump relay ON/OFF.



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Component Function Check (GT-R certified NISSAN dealer)

INFOID:000000011486679

1. CHECK SUB FUEL PUMP

With CONSULT

1. Turn ignition switch ON.
2. Select "SUB FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.
3. Touch "ON" and start engine.

Does engine start?

- YES >> INSPECTION END
 NO >> Refer to [EC-565, "Diagnosis Procedure \(GT-R certified NISSAN dealer\)".](#)

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Diagnosis Procedure (GT-R certified NISSAN dealer)

INFOID:000000011486680

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection B214. Refer to Ground Inspection in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace ground connection.

2. CHECK SUB FUEL PUMP RELAY POWER SUPPLY CIRCUIT-I

1. Disconnect sub fuel pump relay.
2. Turn ignition switch ON.
3. Check the voltage between sub fuel pump relay harness connector and ground.

Sub fuel pump relay		Ground	Voltage
Connector	Terminal		
B242	1	Ground	Battery voltage
	3		

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> GO TO 3.

3. DETECT MALFUNCTIONING PART

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SUB FUEL PUMP

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Check the following.

- 10A fuse (No.42)
- 15A fuse (No.16)
- Harness connectors E106, M6
- Harness connectors B201, M117
- Harness for open or short between sub fuel pump relay and IPDM E/R
- Harness for open or short between sub fuel pump relay and fuse block (J/B)

>> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK SUB FUEL PUMP RELAY POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check the continuity between sub fuel pump relay harness connector and ECM harness connector.

Sub fuel pump relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B242	2	M107	126	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B201, M117
- Harness for open or short between sub fuel pump relay and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

6. CHECK SUB FUEL PUMP RELAY

Refer to [EC-568, "Component Inspection \(SUB FUEL PUMP RELAY\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace sub fuel pump relay.

7. CHECK SUB FUEL PUMP POWER SUPPLY CIRCUIT

1. Disconnect sub fuel pump harness connector.
2. Check the continuity between sub fuel pump relay harness connector and "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector.

Sub fuel pump relay		Fuel level sensor unit and fuel pump (sub fuel pump)		Continuity
Connector	Terminal	Connector	Terminal	
B242	5	B226	1	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

8. CHECK SUB FUEL PUMP GROUND CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector and ground.

SUB FUEL PUMP

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

Fuel level sensor unit and fuel pump (sub fuel pump)		Ground	Continuity
Connector	Terminal		
B226	2	Ground	Existed

2. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair open circuit or short to power in harness or connectors.

9. CHECK SUB FUEL PUMP INPUT CIRCUIT FOR OPEN AND SHORT-I

1. Check the continuity between sub fuel pump relay harness connector and ECM harness connector.

Sub fuel pump relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B242	5	F102	93	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 10.

10. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness connectors B201, M117
- Harness for open or short between sub fuel pump relay and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

11. CHECK SUB FUEL PUMP INPUT CIRCUIT FOR OPEN AND SHORT-II

1. Disconnect condenser harness connector.

2. Check the continuity between sub fuel pump relay harness connector and condenser harness connector.

Sub fuel pump relay		Condenser		Continuity
Connector	Terminal	Connector	Terminal	
B242	5	B229	1	Existed

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 12.

>> Repair open circuit, short to ground or short to power in harness or connectors.

12. CHECK SUB FUEL PUMP INPUT CIRCUIT FOR OPEN AND SHORT-III

1. Check the continuity between "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector and ECM harness connector.

Fuel level sensor unit and fuel pump (sub fuel pump)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B226	2	F102	94	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 14.

NO >> GO TO 13.

SUB FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[VR38]

13. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F103, M116
- Harness connectors B201, M117
- Harness for open or short between sub fuel pump and ECM

>> Repair open circuit, short to ground or short to power in harness or connectors.

14. CHECK SUB FUEL PUMP INPUT CIRCUIT FOR OPEN AND SHORT-IV

1. Check the continuity between “fuel level sensor unit and fuel pump (sub fuel pump)” harness connector and condenser harness connector.

Fuel level sensor unit and fuel pump (sub fuel pump)		Condenser		Continuity
Connector	Terminal	Connector	Terminal	
B226	2	B229	2	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 15.

>> Repair open circuit, short to ground or short to power in harness or connectors.

15. CHECK CONDENSER

Refer to [EC-569, "Component Inspection \(Condenser\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace condenser.

16. CHECK SUB FUEL PUMP

Refer to [EC-569, "Component Inspection \(SUB FUEL PUMP\) \(GT-R certified NISSAN dealer\)"](#).

Is the inspection result normal?

YES >> GO TO 17.

NO >> Replace “main fuel level sensor unit, fuel filter and fuel pump assembly”. Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

17. CHECK INTERMITTENT INCIDENT

Refer to [GI-39, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (SUB FUEL PUMP RELAY) (GT-R certified NISSAN dealer)

INFOID:000000011486681

1. CHECK SUB FUEL PUMP RELAY

1. Turn ignition switch OFF.
2. Remove sub fuel pump relay. For the relay number, refer to [EC-604, "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#). For the relay layout, refer to [EC-42, "Component Parts Location \(GT-R certified NISSAN dealer\)"](#).

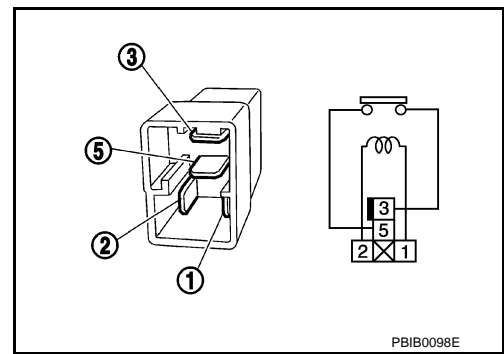
SUB FUEL PUMP

[VR38]

< DTC/CIRCUIT DIAGNOSIS >

- Check the continuity between sub fuel pump relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12 V direct current supply between terminals 1 and 2	Existed
	No supply	Not existed



Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace sub fuel pump relay.

Component Inspection (Condenser) (GT-R certified NISSAN dealer)

INFOID:000000011486682

1. CHECK CONDENSER

- Turn ignition switch OFF.
- Disconnect condenser harness connector. For the condenser number, refer to [EC-604, "Wiring Diagram \(GT-R certified NISSAN dealer\)"](#).
- Check resistance between condenser terminals as follows.

Terminals	Resistance
1 and 2	Above 1 MΩ [at 25°C (77°F)]

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace condenser.

Component Inspection (SUB FUEL PUMP) (GT-R certified NISSAN dealer)

INFOID:000000011486683

1. CHECK SUB FUEL PUMP

- Turn ignition switch OFF.
- Disconnect "fuel level sensor unit and fuel pump (sub fuel pump)" harness connector.
- Check resistance between sub fuel pump terminals as follows.

Terminals	Resistance
1 and 2	0.2 - 0.5 Ω [at 25°C (77°F)]

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace "main fuel level sensor unit, fuel filter and fuel pump assembly". Refer to [FL-6, "Removal and Installation \(GT-R certified NISSAN dealer\)"](#).

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Reference Value (GT-R certified NISSAN dealer)

INFOID:000000011486684

VALUES ON THE DIAGNOSIS TOOL

NOTE:

- The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.
- Numerical values in the following table are reference values.
- These values are input/output values that ECM receives/transmits and may differ from actual operations.
Example: The ignition timing shown by the timing light may differ from the ignition timing displayed on the data monitor. This occurs because the timing light shows a value calculated by ECM according to signals received from the camshaft position sensor and other sensors related to ignition timing.
- For outlines of following items, refer to [EC-172, "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).

CONSULT MONITOR ITEM

Monitor Item	Condition		Values/Status
ENG SPEED	• Run engine and compare CONSULT value with the tachometer indication.		Almost the same speed as the tachometer indication
MAS A/F SE-B1	See EC-183, "Description (GT-R certified NISSAN dealer)" .		
MAS A/F SE-B2	See EC-183, "Description (GT-R certified NISSAN dealer)" .		
B/FUEL SCHDL	See EC-183, "Description (GT-R certified NISSAN dealer)" .		
A/F ALPHA-B1	See EC-183, "Description (GT-R certified NISSAN dealer)" .		
A/F ALPHA-B2	See EC-183, "Description (GT-R certified NISSAN dealer)" .		
COOLANT TEMP/S	• Ignition switch: ON		Indicates engine coolant temperature
A/F SEN1 (B1)	• Engine: After warming up	Maintaining engine speed at 2,000 rpm	Fluctuates around 2.2 V
A/F SEN1 (B2)	• Engine: After warming up	Maintaining engine speed at 2,000 rpm	Fluctuates around 2.2 V
HO2S2 (B1)	<ul style="list-style-type: none"> • Revving engine from idle to 3,000 rpm quickly after the following conditions are met. - Engine: After warming up - After keeping engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 		0 - 0.3 V ↔ Approx. 0.6 - 1.0 V
HO2S2 (B2)	<ul style="list-style-type: none"> • Revving engine from idle to 3,000 rpm quickly after the following conditions are met. - Engine: After warming up - After keeping engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 		0 - 0.3 V ↔ Approx. 0.6 - 1.0 V
HO2S2 MNTR (B1)	<ul style="list-style-type: none"> • Revving engine from idle to 3,000 rpm quickly after the following conditions are met. - Engine: After warming up - After keeping engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 		LEAN ↔ RICH
HO2S2 MNTR (B2)	<ul style="list-style-type: none"> • Revving engine from idle to 3,000 rpm quickly after the following conditions are met. - Engine: After warming up - After keeping engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 		LEAN ↔ RICH
VHCL SPEED SE	• Turn drive wheels and compare CONSULT value with the speedometer indication.		Almost the same speed as speedometer indication
BATTERY VOLT	• Ignition switch: ON (Engine stopped)		11 - 14 V
ACCEL SEN 1	• Ignition switch: ON (Engine stopped)	Accelerator pedal: Fully released	0.5 - 1.0 V
		Accelerator pedal: Fully depressed	4.2 - 4.8 V

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Monitor Item	Condition	Values/Status	
ACCEL SEN 2*	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) 	Accelerator pedal: Fully released	0.5 - 1.0 V
		Accelerator pedal: Fully depressed	4.2 - 4.8 V
TP SEN 1-B1	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) Shift lever: A 	Accelerator pedal: Fully released	More than 0.36 V
		Accelerator pedal: Fully depressed	Less than 4.75 V
TP SEN 2-B1*	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) Shift lever: A 	Accelerator pedal: Fully released	More than 0.36 V
		Accelerator pedal: Fully depressed	Less than 4.75 V
FUEL T/TMP SE	<ul style="list-style-type: none"> Ignition switch: ON 	Indicates fuel tank temperature	
INT/A TEMP SE	<ul style="list-style-type: none"> Ignition switch: ON 	Indicates intake air temperature	
EVAP SYS PRES	<ul style="list-style-type: none"> Ignition switch: ON 	Approx. 1.8 - 4.8 V	
FUEL LEVEL SE	<ul style="list-style-type: none"> Ignition switch: ON 	Depending on fuel level of fuel tank	
START SIGNAL	<ul style="list-style-type: none"> Ignition switch: ON → START → ON 	OFF → ON → OFF	
CLSD THL POS	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) 	Accelerator pedal: Fully released	ON
		Accelerator pedal: Slightly depressed	OFF
AIR COND SIG	<ul style="list-style-type: none"> Engine: After warming up, idle the engine 	Air conditioner switch: OFF	OFF
		Air conditioner switch: ON (Compressor operates.)	ON
P/N POSI SW	<ul style="list-style-type: none"> Ignition switch: ON 	Shift lever: P or N	ON
		Shift lever: Except above	OFF
PW/ST SIGNAL	<ul style="list-style-type: none"> Engine: After warming up, idle the engine 	Steering wheel: Not being turned	OFF
		Steering wheel: Being turned	ON
LOAD SIGNAL	<ul style="list-style-type: none"> Ignition switch: ON 	Rear window defogger switch: ON and/or Lighting switch: 2nd position	ON
		Rear window defogger switch and lighting switch: OFF	OFF
IGNITION SW	<ul style="list-style-type: none"> Ignition switch: ON → OFF → ON 	ON → OFF → ON	
HEATER FAN SW	<ul style="list-style-type: none"> Engine: After warming up, idle the engine 	Heater fan switch: ON	ON
		Heater fan switch: OFF	OFF
BRAKE SW	<ul style="list-style-type: none"> Ignition switch: ON 	Brake pedal: Fully released	OFF
		Brake pedal: Slightly depressed	ON
INJ PULSE-B1	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Idle	1.4 - 2.4 msec
		2,000 rpm	1.4 - 2.4 msec
INJ PULSE-B2	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Idle	1.4 - 2.4 msec
		2,000 rpm	1.4 - 2.4 msec
IGN TIMING	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Idle	7° - 11° BTDC
		2,000 rpm	7° - 11° BTDC
CAL/LD VALUE	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Idle	5% - 35%
		2,500 rpm	5% - 35%

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[VR38]

Monitor Item	Condition	Values/Status
MASS AIRFLOW	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load Idle	2.0 - 6.0 g/s
	2,500 rpm	7.0 - 20.0 g/s
PURG VOL C/V	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load Idle (Accelerator pedal: Not depressed even slightly, after engine starting.)	0%
	2,000 rpm	—
INT/V TIM (B1)	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load Idle	-5° - 5°C
	2,000 rpm	Approx. 0° - 30°C
INT/V TIM (B2)	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load Idle	-5° - 5°C
	2,000 rpm	Approx. 0° - 30°C
INT/V SOL (B1)	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load Idle	0% - 2%
	2,000 rpm	Approx. 0% - 50%
INT/V SOL (B2)	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load Idle	0% - 2%
	2,000 rpm	Approx. 0% - 50%
TP SEN 1-B2	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) Shift lever: A Accelerator pedal: Fully released	More than 0.36 V
	Accelerator pedal: Fully depressed	Less than 4.75 V
TP SEN 2-B2*	<ul style="list-style-type: none"> Ignition switch: ON (Engine stopped) Shift lever: A Accelerator pedal: Fully released	More than 0.36 V
	Accelerator pedal: Fully depressed	Less than 4.75 V
AIR COND RLY	<ul style="list-style-type: none"> Engine: After warming up, idle the engine Air conditioner switch: OFF	OFF
	Air conditioner switch: ON (Compressor operates)	ON
VENT CONT/V	<ul style="list-style-type: none"> Ignition switch: ON 	OFF
SUB FP RLY	<ul style="list-style-type: none"> Engine: After warming up Shift lever: A Sub fuel pump not operates	OFF
	Sub fuel pump operates	ON
FPCM	<ul style="list-style-type: none"> Engine: Cranking 	HI
	<ul style="list-style-type: none"> Engine speed: Idle Engine coolant temperature: More than 10°C (50°F) 	LOW
THRTL RELAY	<ul style="list-style-type: none"> Ignition switch: ON 	ON
AIR/P CNT S/V	<ul style="list-style-type: none"> Engine: Cold start Shift lever: P or N Idle (Secondary air injection system not operates)	OFF
	Idle (Secondary air injection system operates)	ON
AIR PUMP RLY	<ul style="list-style-type: none"> Engine: Cold start Shift lever: P or N Idle (Secondary air injection system not operates)	OFF
	Idle (Secondary air injection system operates)	ON
HO2S2 HTR (B1)	<ul style="list-style-type: none"> Engine speed: Below 3,600 rpm after the following conditions are met. - Engine: After warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 	ON
	<ul style="list-style-type: none"> Engine speed: Above 3,600 rpm 	OFF

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< ECU DIAGNOSIS INFORMATION >

[VR38]

Monitor Item	Condition		Values/Status
HO2S2 HTR (B2)	<ul style="list-style-type: none"> Engine speed: Below 3,600 rpm after the following conditions are met. <ul style="list-style-type: none"> Engine: After warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 		ON
	<ul style="list-style-type: none"> Engine speed: Above 3,600 rpm 		OFF
VEHICLE SPEED	<ul style="list-style-type: none"> Turn drive wheels and compare CONSULT value with the speedometer indication. 		Almost the same speed as the speedometer indication
IDL A/V LEARN	<ul style="list-style-type: none"> Engine: Running 	Idle air volume learning has not been performed yet.	YET
		Idle air volume learning has already been performed successfully.	CMPLT
ENG OIL TEMP	<ul style="list-style-type: none"> Engine: After warming up 		More than 70°C (158°F)
TRVL AFTER MIL	<ul style="list-style-type: none"> Ignition switch: ON 	Vehicle has traveled after MIL has illuminated.	0 - 65,535 km (0 - 40,723 miles)
A/F S1 HTR (B1)	<ul style="list-style-type: none"> Engine: After warming up, idle the engine (More than 140 seconds after starting engine) 		4 - 100%
A/F S1 HTR (B2)	<ul style="list-style-type: none"> Engine: After warming up, idle the engine (More than 140 seconds after starting engine) 		4 - 100%
AC PRESS SEN	<ul style="list-style-type: none"> Engine: Idle Both A/C switch and blower fan switch: ON (Compressor operates) 		1.0 - 4.0 V
VHCL SPEED SE	<ul style="list-style-type: none"> Turn drive wheels and compare CONSULT value with the speedometer indication. 		Almost the same speed as the speedometer indication
SET VHCL SPD	<ul style="list-style-type: none"> Engine: Running 	ASCD: Operating	The preset vehicle speed is displayed
MAIN SW	<ul style="list-style-type: none"> Ignition switch: ON 	MAIN switch: Pressed	ON
		MAIN switch: Released	OFF
CANCEL SW	<ul style="list-style-type: none"> Ignition switch: ON 	CANCEL switch: Pressed	ON
		CANCEL switch: Released	OFF
RESUME/ACC SW	<ul style="list-style-type: none"> Ignition switch: ON 	RESUME/ACCELERATE switch: Pressed	ON
		RESUME/ACCELERATE switch: Released	OFF
SET SW	<ul style="list-style-type: none"> Ignition switch: ON 	SET/COAST switch: Pressed	ON
		SET/COAST switch: Released	OFF
BRAKE SW1 (ASCD brake switch)	<ul style="list-style-type: none"> Ignition switch: ON 	Brake pedal: Fully released	ON
		Brake pedal: Slightly depressed	OFF
BRAKE SW2 (Stop lamp switch)	<ul style="list-style-type: none"> Ignition switch: ON 	Brake pedal: Fully released	OFF
		Brake pedal: Slightly depressed	ON
VHCL SPD CUT	<ul style="list-style-type: none"> Ignition switch: ON 		NON
LO SPEED CUT	<ul style="list-style-type: none"> Ignition switch: ON 		NON
AT OD MONITOR	<ul style="list-style-type: none"> Ignition switch: ON 		OFF
AT OD CANCEL	<ul style="list-style-type: none"> Ignition switch: ON 		OFF
CRUISE LAMP	<ul style="list-style-type: none"> Ignition switch: ON 	MAIN switch: Pressed at the 1st time → at the 2nd time	ON → OFF
SET LAMP	<ul style="list-style-type: none"> MAIN switch: ON When vehicle speed is between 40 km/h (25 MPH) and 250 km/h (156 MPH) 	ASCD: Operating	ON
		ASCD: Not operating	OFF

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[VR38]

Monitor Item	Condition		Values/Status
BAT CUR SEN	<ul style="list-style-type: none"> Engine speed: Idle Battery: Fully charged Selector lever: P or N A/C switch: OFF No load 		Approx. 2,600 – 3,500 mV
ALT DUTY SIG	• Power generation voltage variable control: Operating		ON
	• Power generation voltage variable control: Not operating		OFF
A/F ADJ-B1	• Engine: Running		-0.330 - 0.330
A/F ADJ-B2	• Engine: Running		-0.330 - 0.330
ALT DUTY	• Engine: Idle		0 – 80%
FAN DUTY	• Engine: Running		0 - 100%
TURBO BST SEN B1	• Engine: After warming up, idle the engine		Same as the atmospheric pressure
	<ul style="list-style-type: none"> Engine: After warming up Shift lever: A Fuel: Premium gasoline 	<ul style="list-style-type: none"> The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	3.07 - 3.15 V
	<ul style="list-style-type: none"> Engine: After warming up Shift lever: A Fuel: Regular gasoline 	<ul style="list-style-type: none"> The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	2.91 - 2.99 V
TURBO BST SEN-B2	• Engine: After warming up, idle the engine		Same as the ambient pressure
	<ul style="list-style-type: none"> Engine: After warming up Shift lever: A Fuel: Premium gasoline 	<ul style="list-style-type: none"> The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	3.07 - 3.15 V
	<ul style="list-style-type: none"> Engine: After warming up Shift lever: A Fuel: Regular gasoline 	<ul style="list-style-type: none"> The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	2.91 - 2.99 V
FUEL PUMP DUTY	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Engine speed: Idle	30 - 40%
SNDRY MAS A/F SE	<ul style="list-style-type: none"> Engine: Cold start Shift lever: P or N 	Idle (Secondary air injection system not operates)	1 L/min
		Idle (Secondary air injection system operates)	400 - 550 L/min

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< ECU DIAGNOSIS INFORMATION >

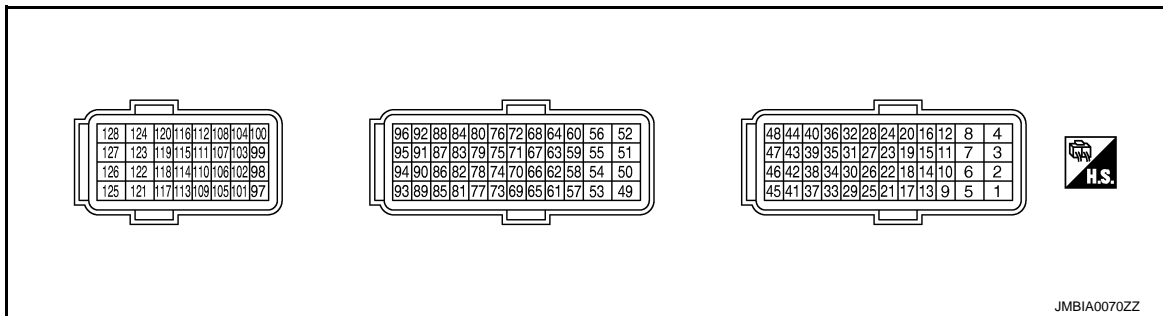
[VR38]

Monitor Item	Condition	Values/Status	
BOOST S/V DUTY	<ul style="list-style-type: none"> Engine: After warming up, idle the engine 	0%	A
	<ul style="list-style-type: none"> Engine: After warming up Shift lever: A Fuel: Premium gasoline 	<ul style="list-style-type: none"> The accelerator pedal is depressed to a half stroke position or more. Engine speed: Below 3,000 rpm 	100%
		<ul style="list-style-type: none"> The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	30 - 60%
THRTL ANGLE B1	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Engine speed: Idle	1.5 - 3.0 deg
THRTL ANGLE B2	<ul style="list-style-type: none"> Engine: After warming up Shift lever: P or N Air conditioner switch: OFF No load 	Engine speed: Idle	1.5 - 3.0 deg
HO2 S2 DIAG1 (B1)	<ul style="list-style-type: none"> DTC P0139 self-diagnosis (delayed response) has not been performed yet. DTC P0139 self-diagnosis (delayed response) has already been performed successfully. 	INCMP	
		CMPLT	G
HO2 S2 DIAG1 (B2)	<ul style="list-style-type: none"> DTC P0159 self-diagnosis (delayed response) has not been performed yet. DTC P0159 self-diagnosis (delayed response) has already been performed successfully. 	INCMP	
		CMPLT	H
HO2 S2 DIAG2 (B1)	<ul style="list-style-type: none"> DTC P0139 self-diagnosis (slow response) has not been performed yet. DTC P0139 self-diagnosis (slow response) has already been performed successfully. 	INCMP	
		CMPLT	I
HO2 S2 DIAG2 (B2)	<ul style="list-style-type: none"> DTC P0159 self-diagnosis (slow response) has not been performed yet. DTC P0159 self-diagnosis (slow response) has already been performed successfully. 	INCMP	
		CMPLT	J
SYSTEM 1 DIAG-NOSIS A B1	DTC P219A self-diagnosis is incomplete.	INCMP	
		CMPLT	K
SYSTEM 1 DIAG-NOSIS A B2	DTC P219B self-diagnosis is incomplete.	INCMP	
		CMPLT	L
SYSTEM 1 DIAG-NOSIS B B1	DTC P219A self-diagnosis is on standby.	ABSENT	
		PRSENT	
SYSTEM 1 DIAG-NOSIS B B2	DTC P219B self-diagnosis is on standby.	ABSENT	M
		PRSENT	
A/F SEN1 DIAG1 (B1)	DTC P015A and P015B self-diagnosis incomplete.	INCMP	
		CMPLT	N
A/F SEN1 DIAG1 (B2)	DTC P015C and P015D self-diagnosis incomplete.	INCMP	
		CMPLT	O
A/F SEN1 DIAG2 (B1)	DTC P014C and P014D self-diagnosis incomplete.	INCMP	
		CMPLT	
A/F SEN1 DIAG2 (B2)	DTC P014E and P014F self-diagnosis incomplete.	INCMP	P
		CMPLT	
A/F SEN1 DIAG3 (B1)	The vehicle condition is not within the diagnosis range of DTC P014C, P014D, P015A or P015B.	ABSNT	
	The vehicle condition is within the diagnosis range of DTC P014C, P014D, P015A or P015B.	PRSNT	

Monitor Item	Condition	Values/Status
A/F SEN1 DIAG3 (B2)	The vehicle condition is not within the diagnosis range of DTC P014E, P014F, P015C or P015D.	ABSNT
	The vehicle condition is within the diagnosis range of DTC P014E, P014F, P015C or P015D.	PRSNT
EVAP LEAK DIAG	<ul style="list-style-type: none"> Ignition switch: ON 	Indicates the condition of EVAP leak diagnosis.
EVAP DIAG READY	<ul style="list-style-type: none"> Ignition switch: ON 	Indicates the ready condition of EVAP leak diagnosis.
A/F-S ATMSPHRC CRCT B1	Engine: After warming up, idle the engine	Varies depending on vehicle environment.
A/F-S ATMSPHRC CRCT B2	Engine: After warming up, idle the engine	Varies depending on vehicle environment.
A/F-S ATMSPHRC CRCT UP B1	Engine: Running	Varies depending on the number of updates.
A/F-S ATMSPHRC CRCT UP B2	Engine: Running	Varies depending on the number of updates.

*: Accelerator pedal position sensor 2 signal and throttle position sensor 2 signal are converted by ECM internally. Thus, they differ from ECM terminals voltage signal.

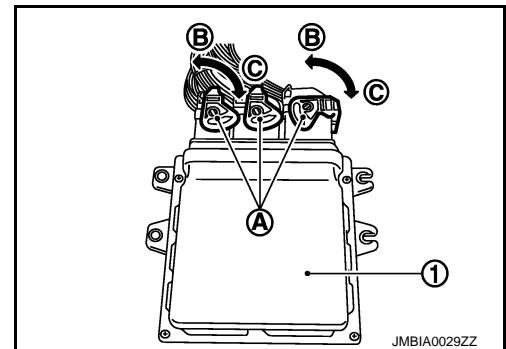
TERMINAL LAYOUT



PHYSICAL VALUES

NOTE:

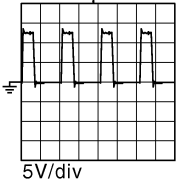
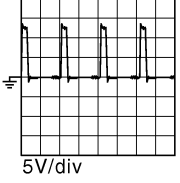
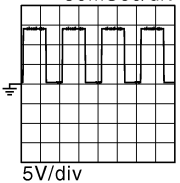
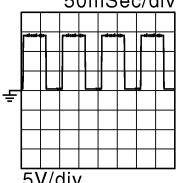
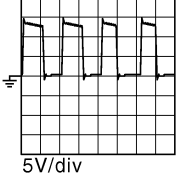
- ECM is located behind the instrument assist lower panel. For this inspection, remove passenger side instrument lower panel.
- When disconnecting ECM harness connector (A), loosen (C) it with levers as far as they will go as shown in the figure.
- 1: ECM
- B: Fasten
- Connect a break-out box [SST: (EG17550000)] and harness adapter [SST: (EG17550400)] between the ECM and ECM harness connector.
- Use extreme care not to 2 pins at one time.
- Data is for comparison and may not be exact.
- Specification data are reference values and are measured between each terminals.
- Pulse signal is measured by CONSULT.



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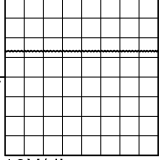
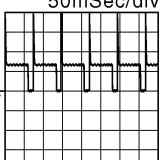
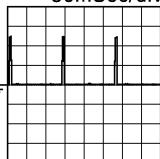
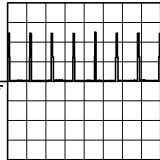
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (Y)	128 (B)	Throttle control motor relay power supply (bank 2)	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
2 (G)	128 (B)	Throttle control motor (Open) (bank 2)	Output	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully depressed	0 - 14 V★ 500μSec/div  5V/div JMBIA0031GB
				[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully released	0 - 14 V★ 500μSec/div  5V/div JMBIA0032GB
3 (O)	128 (B)	A/F sensor 1 heater (bank 2)	Output	[Engine is running] • Warm-up condition • Idle speed (More than 140 seconds after start- ing engine)	2.9 - 8.8 V★ 50mSec/div  5V/div JMBIA0030GB
4 (LG)	128 (B)	A/F sensor 1 heater (bank 1)	Output	[Engine is running] • Warm-up condition • Idle speed (More than 140 seconds after start- ing engine)	2.9 - 8.8 V★ 50mSec/div  5V/div JMBIA0030GB
5 (L)	128 (B)	Throttle control motor (Close) (bank 2)	Output	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: In the middle of releasing operation	0 - 14 V★ 500μSec/div  5V/div JMBIA0033GB
6 (B)	—	ECM ground	—	—	—
7 (L)	128 (B)	EVAP canister vent control valve	Output	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)

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< ECU DIAGNOSIS INFORMATION >

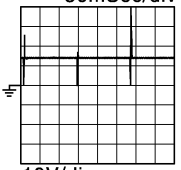
[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
8 (V)	128 (B)	EVAP canister purge volume control solenoid valve	Output	[Engine is running] <ul style="list-style-type: none"> • Idle speed • Accelerator pedal: Not depressed even slightly, after engine starting 	BATTERY VOLTAGE (11 - 14 V)★ 50mSec/div  10V/div <small>JMBIA0039GB</small>
				[Engine is running] <ul style="list-style-type: none"> • Engine speed: About 2,000 rpm (More than 100 seconds after starting engine) 	BATTERY VOLTAGE (11 - 14 V)★ 50mSec/div  10V/div <small>JMBIA0040GB</small>
9 (G) 10 (Y) 13 (L) 33 (R) 34 (V) 38 (GR)	128 (B)	Ignition signal No. 2	Output	[Engine is running] <ul style="list-style-type: none"> • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	0 - 0.2 V★ 50mSec/div  2V/div <small>NNBIB0081GB</small>
		Ignition signal No. 1			
		Ignition signal No. 3			
		Ignition signal No. 4			
Ignition signal No. 5	0.1 - 0.4 V★ 50mSec/div  2V/div <small>NNBIB0082GB</small>				
Ignition signal No. 6					
15 (B)	—	Sensor ground [Throttle position sensor (bank 2)]	—	—	—

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< ECU DIAGNOSIS INFORMATION >

[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
17 (LG)	128 (B)	Fuel injector No. 3	Output	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	BATTERY VOLTAGE (11 - 14 V)★ 50mSec/div  10V/div NNBIB0083GB
21 (Y)		Fuel injector No. 2			
25 (P)		Fuel injector No. 1			
37 (SB)		Fuel injector No. 4			
41 (G)		Fuel injector No. 5			
45 (R)		Fuel injector No. 6			
19 (GR)	—	Sensor ground [Mass air flow sensor (bank 2)]	—	—	—
20 (G)	—	Sensor ground [Throttle position sensor (bank 1)]	—	—	—
22 (W)	—	Sensor ground [Mass air flow sensor (bank 1), Intake air temperature sensor (bank 1)]	—	—	—
23 (V)	—	Sensor ground (Secondary air injection system mass air flow sensor)	—	—	—
24 (LG)	23 (V)	Secondary air injection system mass air flow sensor	Input	[Ignition switch: ON] • Engine stopped	0.15 - 0.4 V
				[Engine is running] • Engine: Cold start • Engine speed: Idle • Secondary air injection system operates	3 - 3.8 V
26 (O)	—	Sensor ground (Engine coolant temperature sensor, Engine oil temperature sensor)	—	—	—
27 (L)	26 (O)	Engine oil temperature sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engine oil temperature.
28 (W)	15 (B)	Throttle position sensor 1 (bank 2)	Input	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully released	More than 0.36 V
				[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully depressed	Less than 4.75 V

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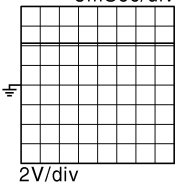
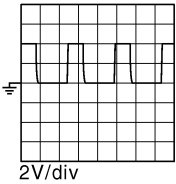
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< ECU DIAGNOSIS INFORMATION >

[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
29 (LG)	128 (B)	Fuel pump control module (FPCM)	Output	[When cranking engine]	4.1 V★ 5mSec/div  2V/div NNBIB0056ZZ
				[Engine is running] • Idle speed	1.4 V★ 5mSec/div  2V/div NNBIB0057ZZ
30 (G)	128 (B)	Fuel pump control module (FPCM) check	Input	[Engine is running] • Idle speed	BATTERY VOLTAGE (11 - 14 V)
31 (BR)	19 (GR)	Mass air flow sensor (bank 2)	Input	[Engine is running] • Warm-up condition • Idle speed	0.9 - 1.2 V
				[Engine is running] • Warm-up condition • Engine speed: 2,500 rpm	1.4 - 1.8 V
32 (R)	15 (B)	Throttle position sensor 2 (bank 2)	Input	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully released	Less than 4.75 V
				[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully depressed	More than 0.36 V
35 (W)	58 (G)	Battery current sensor	Input	[Engine is running]	2.5 - 3.5 V
36 (Y)	20 (G)	Throttle position sensor 2 (bank 1)	Input	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully released	Less than 4.75 V
				[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully depressed	More than 0.36 V
40 (L)	20 (G)	Throttle position sensor 1 (bank 1)	Input	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully released	More than 0.36 V
				[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully depressed	Less than 4.75 V
42 (W)	128 (B)	Fuel tank temperature sen- sor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with fuel tank temperature.

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< ECU DIAGNOSIS INFORMATION >

[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
44 (P)	22 (W)	Intake air temperature sensor (bank 1)	Input	[Engine is running]	0 - 4.8 V Output voltage varies with intake air temperature.
46 (Y)	26 (O)	Engine coolant temperature sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engine coolant temperature.
47 (O)	22 (W)	Mass air flow sensor (bank 1)	Input	[Engine is running] • Warm-up condition • Idle speed	0.9 - 1.2 V
				[Engine is running] • Warm-up condition • Engine speed: 2,500 rpm	1.4 - 1.8 V
48 (G)	74 (R)	Manifold absolute pressure (MAP) sensor	Input	[Engine is running] • Warm-up condition • Idle speed	0.9V
				[Engine is running] • Warm-up condition • Engine is revving from idle to about 4,000 rpm.	1.6 - 2.0 V
49 (Y)	128 (B)	Throttle control motor relay power supply (bank 1)	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
50 (SB)	128 (B)	Throttle control motor (Open) (bank 1)	Output	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully depressed	0 - 14 V★ 500μSec/div 5V/div JMBIA0031GB
				[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: Fully released	0 - 14 V★ 500μSec/div 5V/div JMBIA0032GB
51 (G)	128 (B)	Intake valve timing control solenoid valve (bank 2)	Output	[Engine is running] • Warm-up condition • Idle speed	BATTERY VOLTAGE (11 - 14V)
				[Engine is running] • Warm-up condition • Engine speed: 2,000rpm	7 - 12 V★ 5V/div JMBIA0038GB

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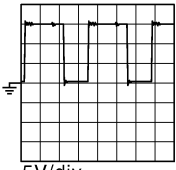
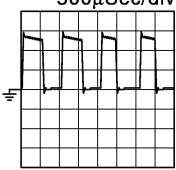
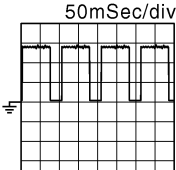
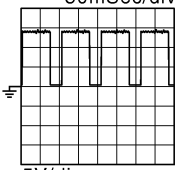
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< ECU DIAGNOSIS INFORMATION >

[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
52 (L)	128 (B)	Intake valve timing control solenoid valve (bank 1)	Output	[Engine is running] • Warm-up condition • Idle speed	BATTERY VOLTAGE (11 - 14 V)
				[Engine is running] • Warm-up condition • Engine speed: 2,000rpm	7 - 12 V★  5V/div JMBIA0038GB
53 (BR)	128 (B)	Throttle control motor (Close) (bank 1)	Output	[Ignition switch: ON] • Engine stopped • Shift lever: A • Accelerator pedal: In the middle of releasing operation	0 - 14 V★ 500µSec/div  5V/div JMBIA0033GB
54 (B)	—	ECM ground	—	—	—
55 (R)	128 (B)	Heated oxygen sensor 2 heater (bank 1)	Output	[Engine is running] • Engine speed: Below 3,600 rpm after the following conditions are met - Engine: after warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - 14 V★ 50mSec/div  5V/div JMBIA0037GB
				[Ignition switch: ON] • Engine stopped [Engine is running] • Engine speed: Above 3,600 rpm	BATTERY VOLTAGE (11 - 14 V)
56 (W)	128 (B)	Heated oxygen sensor 2 heater (bank 2)	Output	[Engine is running] • Engine speed: Below 3,600 rpm after the following conditions are met - Engine: after warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - 14 V★ 50mSec/div  5V/div JMBIA0037GB
				[Ignition switch: ON] • Engine stopped [Engine is running] • Engine speed: Above 3,600 rpm	BATTERY VOLTAGE (11 - 14 V)
58 (G)	—	Sensor ground (Battery current sensor)	—	—	—
61 (GR)	128 (B)	Turbocharger boost control solenoid valve	Output	[Engine is running] • Warm-up condition • Idle speed	BATTERY VOLTAGE (11 - 14 V)
				[Engine is running] • Warm-up condition • Engine speed: 2,000 rpm	0.35 V

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
62 (B)	—	Sensor ground [Camshaft position sensor (PHASE) (bank 1)]	—	—	—
63 (O)	128 (B)	Camshaft position sensor (PHASE) (bank 1)	Input	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	<p>3.0 - 5.0 V★ 20mSec/div</p> <p>2V/div NNBIB0085GB</p>
				[Engine is running] • Engine speed: 2,000 rpm	<p>3.0 - 5.0 V★ 20mSec/div</p> <p>2V/div NNBIB0086GB</p>
64 (BR)	128 (B)	Crankshaft position sensor (POS)	Input	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	<p>4.0 - 5.0 V★ 1mSec/div</p> <p>2V/div NNBIB0087GB</p>
				[Engine is running] • Engine speed: 2,000 rpm	<p>4.0 - 5.0 V★ 1mSec/div</p> <p>2V/div NNBIB0088GB</p>
66 (V)	—	Sensor ground [Camshaft position sensor (PHASE) (bank 2)]	—	—	—

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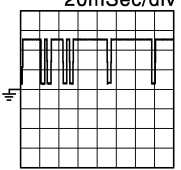
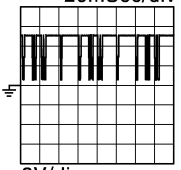
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Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
67 (Y)	128 (B)	Camshaft position sensor (PHASE) (bank 2)	Input	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	3.0 - 5.0 V★ 20mSec/div  2V/div NNBIB0085GB
				[Engine is running] • Engine speed: 2,000 rpm	3.0 - 5.0 V★ 20mSec/div  2V/div NNBIB0086GB
68 (B)	—	Sensor ground [Crankshaft position sensor (POS)]	—	—	—
70 (SB)	—	Sensor ground [Heated oxygen sensor 2]	—	—	—
71 (—)	—	Sensor ground (Knock sensor)	—	—	—
72 (W)	71 (—)	Knock sensor (bank 1)	Input	[Engine is running] • Idle speed	2.5 V*
73 (W)	70 (SB)	Heated oxygen sensor 2 (bank 1)	Input	[Engine is running] • Revving engine from idle to 3,000 rpm quickly after the following condi- tions are met - Engine: after warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - 1.0 V
74 (R)	—	Sensor ground (Refrigerant pressure sen- sor, Power steering pres- sure sensor, Manifold absolute pressure sensor, ASCD steering switch)	—	—	—
75 (P)	—	Sensor ground (Turbocharger boost sen- sor, EVAP control system pressure sensor)	—	—	—
76 (W)	71 (—)	Knock sensor (bank 2)	Input	[Engine is running] • Idle speed	2.5 V*
77 (GR)	70 (SB)	Heated oxygen sensor 2 (bank 2)	Input	[Engine is running] • Revving engine from idle to 3,000 rpm quickly after the following condi- tions are met - Engine: after warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - 1.0 V
78 (LG)	75 (P)	EVAP control system pres- sure sensor	Input	[Ignition switch: ON]	1.8 - 4.8 V

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[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
79 (L)	75 (P)	Turbocharger boost sensor (bank 2)	Input	[Engine is running] • Warm-up condition • Idle speed	1.98 V
				[Engine is running] • Warm-up condition • Engine speed: 2,000 rpm	2.0 V
80 (L)	75 (P)	Turbocharger boost sensor (bank 1)	Input	[Engine is running] • Warm-up condition • Idle speed	1.98 V
				[Engine is running] • Warm-up condition • Engine speed: 2,000 rpm	2.0 V
81 (O)	128 (B)	A/F sensor 1 (bank 1)	Input	[Ignition switch: ON]	2.2 V
82 (V)	128 (B)	A/F sensor 1 (bank 1)	Input	[Engine is running] • Warm-up condition • Engine speed: 2,000 rpm	1.8 V Output voltage varies with air fuel ratio.
83 (G)	74 (R)	Power steering pressure sensor	Output	[Engine is running] • Steering wheel: Being turned	0.5 - 4.5 V
				[Engine is running] • Steering wheel: Not being turned	0.4 - 0.8 V
84 (SB)	15 (B)	Sensor power supply [Throttle position sensor (bank 2)]	—	[Ignition switch: ON]	5 V
85 (BR)	128 (B)	A/F sensor 1 (bank 2)	Input	[Ignition switch: ON]	2.2 V
86 (Y)	128 (B)	A/F sensor 1 (bank 2)	Input	[Engine is running] • Warm-up condition • Engine speed: 2,000 rpm	1.8 V Output voltage varies with air fuel ratio.
87 (W)	128 (B)	Sensor power supply [Crankshaft position sensor (POS)]	—	[Ignition switch: ON]	5 V
88 (L)	128 (B)	Sensor power supply [Camshaft position sensor (PHASE) (bank 1)]	—	[Ignition switch: ON]	5 V
89 (L)	74 (R)	Refrigerant pressure sensor	Input	[Engine is running] • Warm-up condition • Both A/C switch and blower fan motor switch: ON (Compressor operates)	1.0 - 4.0 V
90 (O)	58 (G)	Sensor power supply [Battery current sensor]	—	[Ignition switch: ON]	5 V
91 (P)	128 (B)	Sensor power supply [Camshaft position sensor (PHASE) (bank 2)]	—	[Ignition switch: ON]	5 V
92 (R)	75 (P)	Sensor power supply [Turbocharger boost sensor, EVAP control system pressure sensor]	—	[Ignition switch: ON]	5 V

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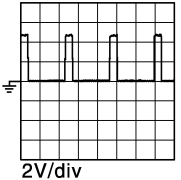
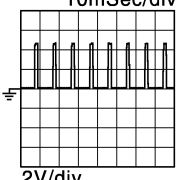
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Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
93 (GR)	128 (B)	Sub fuel pump (+)	Input	[Engine is running] • Warm-up condition • Idle speed	0 V
				[Engine is running] • Warm-up condition • Sub fuel pump operates	BATTERY VOLTAGE (11 - 14 V)
94 (SB)	128 (B)	Sub fuel pump (-)	Input	[Engine is running] • Warm-up condition • Idle speed	0 V
				[Engine is running] • Warm-up condition • Sub fuel pump operates	0 V
95 (Y)	74 (R)	Sensor power supply (Refrigerant pressure sensor, Power steering pressure sensor, Manifold absolute pressure sensor)	—	[Ignition switch: ON]	5 V
96 (V)	20 (G)	Sensor power supply [Throttle position sensor (bank 1)]	—	[Ignition switch: ON]	5 V
97 (P)	—	CAN communication line (CAN - L)	Input/ Output	—	—
99 (SB)	107 (O)	Sensor power supply (Accelerator pedal position sensor 2)	—	[Ignition switch: ON]	5 V
100 (BR)	103 (GR)	Sensor power supply (Accelerator pedal position sensor 1)	—	[Ignition switch: ON]	5 V
101 (L)	—	CAN communication line (CAN - H)	Input/ Output	—	—
102 (G)	74 (R)	ASC D steering switch	Input	[Ignition switch: ON] • ASC D steering switch: OFF	4.0 - 4.2 V
				[Ignition switch: ON] • MAIN switch: Pressed	0 V
				[Ignition switch: ON] • CANCEL switch: Pressed	0.9 - 1.5 V
				[Ignition switch: ON] • RESUME/ACCELERATE switch: Pressed	3.0 - 3.3 V
				[Ignition switch: ON] • SET/COAST switch: Pressed	1.9 - 2.4 V
103 (GR)	—	Sensor ground (Accelerator pedal position sensor 1)	—	—	—
104 (P)	103 (GR)	Accelerator pedal position sensor 1	Input	[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully released	0.5 - 1.0 V
				[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully depressed	4.2 - 4.8 V

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< ECU DIAGNOSIS INFORMATION >

[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
105 (W)	128 (B)	ECM relay (Self shut-off)	Output	[Engine is running] [Ignition switch: OFF] • A few seconds after turning ignition switch OFF	0 - 1.5 V
				[Ignition switch: OFF] • More than a few seconds after turning ignition switch OFF	BATTERY VOLTAGE (11 - 14 V)
106 (LG)	128 (B)	Ignition switch	Input	[Ignition switch: OFF]	0V
				[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
107 (O)	—	Sensor ground (Accelerator pedal position sensor 2)	—	—	—
108 (L)	107 (O)	Accelerator pedal position sensor 2	Input	[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully released	0.25 - 0.50 V
				[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully depressed	2.0 - 2.5 V
109 (L)	128 (B)	Air cut solenoid valve relay	Output	[Engine is running] • Cold start • Idle speed • Secondary air injection system does not operates	BATTERY VOLTAGE (11 - 14 V)
				[Engine is running] • Cold start • Idle speed • Secondary air injection system operates	0 V
110 (P)	128 (B)	Stop lamp switch	Input	[Ignition switch: OFF] • Brake pedal: Fully released	0 V
				[Ignition switch: OFF] • Brake pedal: Slightly depressed	BATTERY VOLTAGE (11 - 14 V)
111 (GR)	128 (B)	PNP signal	Input	[Ignition switch: ON] • Shift lever: P or N	BATTERY VOLTAGE (11 - 14 V)
				[Ignition switch: ON] • Shift lever: Except above	0 V
113 (SB)	128 (B)	Engine speed signal output	Output	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	<p>1 V★</p> <p>10mSec/div</p>  <p>2V/div</p> <p>NNBIB0089GB</p>
				[Engine is running] • Engine speed is 2,000 rpm	<p>1 V★</p> <p>10mSec/div</p>  <p>2V/div</p> <p>NNBIB0090GB</p>

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[VR38]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
114 (V)	—	Data link connector	Input/ Output	—	—
117 (R)	128 (B)	ASCD brake switch	Input	[Ignition switch: ON] • Brake pedal: Slightly depressed	0 V
				[Ignition switch: ON] • Brake pedal: Fully released	BATTERY VOLTAGE (11 - 14 V)
118 (W)	128 (B)	Power supply for ECM (Back-up)	Input	[Ignition switch: OFF]	BATTERY VOLTAGE (11 - 14 V)
120 (BR)	128 (B)	Air pump relay	Output	[Engine is running] • Cold start • Idle speed • Secondary air injection system not operates	BATTERY VOLTAGE (11 - 14 V)
				[Engine is running] • Cold start • Idle speed • Secondary air injection system oper- ates	0 V
121 (P) 122 (V)	128 (B)	Power supply for ECM	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
124 (B)	—	ECM ground	—	—	—
126 (L)	128 (B)	Sub fuel pump relay	Output	[Engine is running] • Sub fuel pump not operates	BATTERY VOLTAGE (11 - 14 V)
				[Engine is running] • Sub fuel pump operates	0 V
127 (G)	128 (B)	Throttle control motor relay	Output	[Ignition switch: ON → OFF]	0 - 1.0 V ↓ BATTERY VOLTAGE (11 - 14 V) ↓ 0 V
				[Ignition switch: ON]	0 - 1.0 V
128 (B)	—	ECM ground	—	—	—

★: Average voltage for pulse signal (Actual pulse signal can be confirmed by oscilloscope.)

*: This may vary depending on internal resistance of the tester.

Fail Safe (GT-R certified NISSAN dealer)

INFOID:0000000011486685

NON DTC RELATED ITEM

Engine operating condition in fail-safe mode	Detected items	Remarks	Reference page
Engine speed will not rise more than 2,500 rpm due to the fuel cut	Malfunction indicator lamp circuit	When there is an open circuit on MIL circuit, the ECM cannot warn the driver by lighting up MIL when there is malfunction on engine control system. Therefore, when electrical controlled throttle and part of ECM related diagnoses are continuously detected as NG for 5 trips, ECM warns the driver that engine control system malfunctions and MIL circuit is open by means of operating fail-safe function. The fail-safe function also operates when above diagnoses except MIL circuit are detected and demands the driver to repair the malfunction.	EC-553

DTC RELATED ITEM

DTC No.	Detected items	Engine operating condition in fail-safe mode	
P0011 P0021	Intake valve timing control	The signal is not energized to the intake valve timing control solenoid valve and the valve control does not function.	
P004A P004D	Turbocharger boost control solenoid valve	Sets the duty ratio of the turbocharger boost control solenoid valve to 0%, and decreases the boost to the lower limit.	
P004C		The ECM controls the electric throttle control actuator and restricts the torque.	
P0101 P0102 P0103 P010B P010C P010D	Mass air flow sensor circuit	Engine speed will not rise more than 2,400 rpm due to the fuel cut.	
P0117 P0118	Engine coolant temperature sensor circuit	Engine coolant temperature will be determined by ECM based on the following condition. CONSULT displays the engine coolant temperature decided by ECM.	
		Condition	Engine coolant temperature decided (CONSULT display)
		Just as ignition switch is turned ON or START	40°C (104°F)
		Approx. 4 minutes or more after engine starting	80°C (176°F)
		Except as shown above	40 - 80°C (104 - 176°F) (Depends on the time)
		When the fail-safe system for engine coolant temperature sensor is activated, the cooling fan operates while engine is running.	
P0122 P0123 P0222 P0223 P0227 P0228 P1239 P2132 P2133 P2135	Throttle position sensor	The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. Therefore, the acceleration will be poor.	
P0234 P1334	Turbocharger system	The ECM controls the electric throttle control actuator and restricts the torque.	
P0236 P0237 P0238 P0240 P0241 P0242	Turbocharger boost sensor	Sets the duty ratio of the turbocharger boost control solenoid valve to 0%, and decreases the boost to the lower limit.	
P0500	Vehicle speed sensor	The cooling fan operates (Highest) while engine is running.	

ECM

< ECU DIAGNOSIS INFORMATION >

[VR38]

DTC No.	Detected items	Engine operating condition in fail-safe mode	
P0605	ECM	(When ECM calculation function is malfunctioning: ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring. ECM deactivates ASCD operation.	
P062A	Sub fuel pump	The ECM controls the electric throttle control actuator and restricts the torque.	
P0643	Sensor power supply	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.	
P1233 P2101	Electric throttle control function	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.	
P1236 P2118	Throttle control motor	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.	
P1238 P2119	Electric throttle control actuator	(When electric throttle control actuator does not function properly due to the return spring malfunction:) ECM controls the electric throttle actuator by regulating the throttle opening around the idle position. The engine speed will not rise more than 2,000 rpm.	
		(When throttle valve opening angle in fail-safe mode is not in specified range:) ECM controls the electric throttle control actuator by regulating the throttle opening to 20 degrees or less.	
		(When ECM detects the throttle valve is stuck open:) While the vehicle is driving, it slows down gradually by fuel cut. After the vehicle stops, the engine stalls. The engine can restart in N or P position, and engine speed will not exceed 1,000 rpm or more.	
P1290 P2100 P2103	Throttle control motor relay	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.	
P1805	Brake switch	ECM controls the electric throttle control actuator by regulating the throttle opening to a small range. Therefore, acceleration will be poor.	
		Vehicle condition	Driving condition
		When engine is idling	Normal
	When accelerating	Poor acceleration	
P2122 P2123 P2127 P2128 P2138	Accelerator pedal position sensor	The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. Therefore, the acceleration will be poor.	
P2440 P2442	Air cut solenoid valve	Engine speed will not rise more than 2,400 rpm due to the fuel cut.	

DTC Inspection Priority Chart (GT-R certified NISSAN dealer)

INFOID:000000011486686

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)	
1	<ul style="list-style-type: none"> • U0101 U1001 CAN communication line • P0101 P0102 P0103 P010B P010C P010D Mass air flow sensor • P0112 P0113 P0127 Intake air temperature sensor • P0116 P0117 P0118 P0125 Engine coolant temperature sensor • P0122 P0123 P0222 P0223 P0227 P0228 P1225 P1226 P1234 P1235 P1239 P2132 P2133 P2135 Throttle position sensor • P0128 Thermostat function • P0181 P0182 P0183 Fuel tank temperature sensor • P0196 P0197 P0198 Engine oil temperature sensor • P0327 P0328 P0332 P0333 Knock sensor • P0335 Crankshaft position sensor (POS) • P0340 P0345 Camshaft position sensor (PHASE) • P0460 P0461 P0462 P0463 Fuel level sensor • P0500 Vehicle speed sensor • P0605 P0607 ECM • P0643 Sensor power supply • P0850 Park/neutral position (PNP) switch • P1610 - P1615 NATS • P2122 P2123 P2127 P2128 P2138 Accelerator pedal position sensor 	<p>A</p> <p>EC</p> <p>C</p> <p>D</p> <p>E</p>
2	<ul style="list-style-type: none"> • P0030 P0031 P0032 P0036 P0051 P0052 Air fuel ratio (A/F) sensor 1 heater • P0037 P0038 P0057 P0058 Heated oxygen sensor 2 heater • P004A P004C P004D Turbocharger boost control solenoid valve • P0075 P0081 Intake valve timing control solenoid valve • P0130 P0131 P0132 P014C P014D P014E P014F P0150 P0151 P0152 P015A P015B P015C P015D P2096 P2097 P2098 P2099 Air fuel ratio (A/F) sensor 1 • P0137 P0138 P0139 P0157 P0158 P0159 Heated oxygen sensor 2 • P0236 P0237 P0238 P0240 P0241 P0242 Turbocharger boost sensor • P0441 EVAP control system purge flow monitoring • P0443 P0444 P0445 EVAP canister purge volume control solenoid valve • P0447 P0448 EVAP canister vent control valve • P0451 P0452 P0453 EVAP control system pressure sensor • P0550 Power steering pressure sensor • P0603 ECM power supply • P0627 P0629 P062A Sub fuel pump • P1217 Engine over temperature (OVERHEAT) • P1220 Fuel pump control module (FPCM) • P1233 P2101 Electric throttle control function • P1236 P2118 Throttle control motor • P1290 P2100 P2103 Throttle control motor relay • P1805 Brake switch • P1550 P1551 P1552 P1553 P1554 Battery current sensor • P2432 P2433 Secondary air injection system mass air flow sensor • P2440 P2442 Air cut solenoid valve 	<p>F</p> <p>G</p> <p>H</p> <p>I</p> <p>J</p> <p>K</p> <p>L</p>
3	<ul style="list-style-type: none"> • P0011 P0021 Intake valve timing control • P0171 P0172 P0174 P0175 Fuel injection system function • P0234 P1263 P1334 P2263 Turbocharger system • P0300 - P0306 Misfire • P0411 P0491 P0492 Secondary air injection system • P0420 P0430 Three way catalyst function • P0442 P0456 EVAP control system (SMALL LEAK, VERY SMALL LEAK) • P0455 EVAP control system (GROSS LEAK) • P0506 P0507 Idle speed control system • P050A P050B P050E Cold start control • P1148 P1168 Closed loop control • P1211 TCS control unit • P1212 TCS communication line • P1238 P2119 Electric throttle control actuator • P1564 ASCD steering switch • P1572 ASCD brake switch • P1574 ASCD vehicle speed sensor • P219A P219B Air fuel ratio (A/F) sensor 1 	<p>M</p> <p>N</p> <p>O</p> <p>P</p>

DTC Index

x:Applicable —: Not applicable

DTC*1		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group*4	Refer- ence page
CONSULT GST*2	ECM*3						
U0101	0101	LOST COMM (TCM)	—	1	×	B	EC-194
U1001	1001*5	CAN COMM CIRCUIT	—	2	—	—	EC-195
P0000	0000	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	—	—	Flash- ing*6	—	—
P0011	0011	INT/V TIM CONT-B1	×	2	×	B	EC-196
P0021	0021	INT/V TIM CONT-B2	×	2	×	B	EC-196
P0030	0030	A/F SEN1 HTR (B1)	—	2	×	B	EC-200
P0031	0031	A/F SEN1 HTR (B1)	—	2	×	B	EC-200
P0032	0032	A/F SEN1 HTR (B1)	—	2	×	B	EC-200
P0036	0036	A/F SEN1 HTR (B2)	—	2	×	B	EC-200
P0037	0037	HO2S2 HTR (B1)	—	2	×	B	EC-203
P0038	0038	HO2S2 HTR (B1)	—	2	×	B	EC-203
P004A	004A	TC BOOST SOL/CIRC-B2	—	2	×	B	EC-206
P004C	004C	TC BOOST SOL/CIRC-B2	—	1	×	B	EC-206
P004D	004D	TC BOOST SOL/CIRC-B2	—	1	×	B	EC-206
P0051	0051	A/F SEN1 HTR (B2)	—	2	×	B	EC-200
P0052	0052	A/F SEN1 HTR (B2)	—	2	×	B	EC-200
P0057	0057	HO2S2 HTR (B2)	—	2	×	B	EC-203
P0058	0058	HO2S2 HTR (B2)	—	2	×	B	EC-203
P0075	0075	INT/V TIM V/CIR-B1	—	2	×	B	EC-209
P0081	0081	INT/V TIM V/CIR-B2	—	2	×	B	EC-209
P0101	0101	MAF SEN/CIRCUIT-B1	—	2	×	B	EC-212
P0102	0102	MAF SEN/CIRCUIT-B1	—	1	×	B	EC-219
P0103	0103	MAF SEN/CIRCUIT-B1	—	1	×	B	EC-219
P010B	010B	MAF SEN/CIRCUIT-B2	—	2	×	B	EC-212
P010C	010C	MAF SEN/CIRCUIT-B2	—	1	×	B	EC-219
P010D	010D	MAF SEN/CIRCUIT-B2	—	1	×	B	EC-219
P0111	0111	IAT SENSOR 1 B1	—	2	×	A	EC-225
P0112	0112	IAT SEN/CIRCUIT-B1	—	2	×	B	EC-228
P0113	0113	IAT SEN/CIRCUIT-B1	—	2	×	B	EC-228
P0116	0116	ECT SEN/CIRC	—	2	×	A	EC-231
P0117	0117	ECT SEN/CIRC	—	1	×	B	EC-234
P0118	0118	ECT SEN/CIRC	—	1	×	B	EC-234
P0122	0122	TP SEN 2/CIRC-B1	—	1	×	B	EC-237
P0123	0123	TP SEN 2/CIRC-B1	—	1	×	B	EC-237
P0125	0125	ECT SENSOR	—	2	×	B	EC-240
P0127	0127	IAT SENSOR-B1	—	2	×	B	EC-243
P0128	0128	THERMSTAT FNCTN	—	2	×	A	EC-245
P0130	0130	A/F SENSOR1 (B1)	—	2	×	A	EC-248
P0131	0131	A/F SENSOR1 (B1)	—	2	×	B	EC-252

ECM

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DTC*1		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group*4	Refer- ence page
CONSULT GST*2	ECM*3						
P0132	0132	A/F SENSOR1 (B1)	—	2	×	B	EC-255
P0137	0137	HO2S2 (B1)	×	2	×	A	EC-258
P0138	0138	HO2S2 (B1)	×	2	×	A	EC-264
P0139	0139	HO2S2 (B1)	×	2	×	A	EC-272
P014C	014C	A/F SENSOR1 (B1)	×	2	×	A	EC-279
P014D	014D	A/F SENSOR1 (B1)	×	2	×	A	EC-279
P014E	014E	A/F SENSOR1 (B2)	×	2	×	A	EC-279
P014F	014F	A/F SENSOR1 (B2)	×	2	×	A	EC-279
P0150	0150	A/F SENSOR1 (B2)	—	2	×	A	EC-248
P0151	0151	A/F SENSOR1 (B2)	—	2	×	B	EC-252
P0152	0152	A/F SENSOR1 (B2)	—	2	×	B	EC-255
P0157	0157	HO2S2 (B2)	×	2	×	A	EC-258
P0158	0158	HO2S2 (B2)	×	2	×	A	EC-264
P0159	0159	HO2S2 (B2)	×	2	×	A	EC-272
P015A	015A	A/F SENSOR1 (B1)	×	2	×	A	EC-279
P015B	015B	A/F SENSOR1 (B1)	×	2	×	A	EC-279
P015C	015C	A/F SENSOR1 (B2)	×	2	×	A	EC-279
P015D	015D	A/F SENSOR1 (B2)	×	2	×	A	EC-279
P0171	0171	FUEL SYS-LEAN-B1	—	2	×	B	EC-285
P0172	0172	FUEL SYS-RICH-B1	—	2	×	B	EC-289
P0174	0174	FUEL SYS-LEAN-B2	—	2	×	B	EC-285
P0175	0175	FUEL SYS-RICH-B2	—	2	×	B	EC-289
P0181	0181	FTT SENSOR	—	2	×	A and B	EC-293
P0182	0182	FTT SEN/CIRCUIT	—	2	×	B	EC-298
P0183	0183	FTT SEN/CIRCUIT	—	2	×	B	EC-298
P0196	0196	EOT SENSOR	—	2	×	B	EC-301
P0197	0197	EOT SEN/CIRC	—	2	×	B	EC-305
P0198	0198	EOT SEN/CIRC	—	2	×	B	EC-305
P0222	0222	TP SEN 1/CIRC-B1	—	1	×	B	EC-308
P0223	0223	TP SEN 1/CIRC-B1	—	1	×	B	EC-308
P0227	0227	TP SEN 2/CIRC-B2	—	1	×	B	EC-237
P0228	0228	TP SEN 2/CIRC-B2	—	1	×	B	EC-237
P0234	0234	TC SYSTEM-B1	—	1	×	B	EC-311
P0236	0236	TC BOOST SEN/CIRC-B1	—	2	×	B	EC-314
P0237	0237	TC BOOST SEN/CIRC-B1	—	2	×	B	EC-319
P0238	0238	TC BOOST SEN/CIRC-B1	—	2	×	B	EC-319
P0240	0240	TC BOOST SEN/CIRC-B2	—	2	×	B	EC-314
P0241	0241	TC BOOST SEN/CIRC-B2	—	2	×	B	EC-319
P0242	0242	TC BOOST SEN/CIRC-B2	—	2	×	B	EC-319
P0300	0300	MULTI CYL MISFIRE	—	1 or 2	×	B	EC-322
P0301	0301	CYL 1 MISFIRE	—	1 or 2	×	B	EC-322
P0302	0302	CYL 2 MISFIRE	—	1 or 2	×	B	EC-322

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< ECU DIAGNOSIS INFORMATION >

[VR38]

DTC*1		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group*4	Refer- ence page
CONSULT GST*2	ECM*3						
P0303	0303	CYL 3 MISFIRE	—	1 or 2	×	B	EC-322
P0304	0304	CYL 4 MISFIRE	—	1 or 2	×	B	EC-322
P0305	0305	CYL 5 MISFIRE	—	1 or 2	×	B	EC-322
P0306	0306	CYL 6 MISFIRE	—	1 or 2	×	B	EC-322
P0327	0327	KNOCK SEN/CIRC-B1	—	2	—	—	EC-328
P0328	0328	KNOCK SEN/CIRC-B1	—	2	—	—	EC-328
P0332	0332	KNOCK SEN/CIRC-B2	—	2	—	—	EC-328
P0333	0333	KNOCK SEN/CIRC-B2	—	2	—	—	EC-328
P0335	0335	CKP SEN/CIRCUIT	—	2	×	B	EC-331
P0340	0340	CMP SEN/CIRC-B1	—	2	×	B	EC-335
P0345	0345	CMP SEN/CIRC-B2	—	2	×	B	EC-335
P0411	0411	SCNDRY AIR SYSEM	×	2	×	A	EC-340
P0420	0420	TW CATALYST SYS-B1	×	2	×	A	EC-345
P0430	0430	TW CATALYST SYS-B2	×	2	×	A	EC-345
P0441	0441	EVAP PURG FLOW/MON	×	2	×	A	EC-350
P0442	0442	EVAP SMALL LEAK	×	2	×	A	EC-355
P0443	0443	PURG VOLUME CONT/V	—	2	×	A	EC-361
P0444	0444	PURG VOLUME CONT/V	—	2	×	B	EC-366
P0445	0445	PURG VOLUME CONT/V	—	2	×	B	EC-366
P0447	0447	VENT CONTROL VALVE	—	2	×	B	EC-369
P0448	0448	VENT CONTROL VALVE	—	2	×	B	EC-373
P0451	0451	EVAP SYS PRES SEN	—	2	×	A	EC-377
P0452	0452	EVAP SYS PRES SEN	—	2	×	B	EC-380
P0453	0453	EVAP SYS PRES SEN	—	2	×	B	EC-384
P0455	0455	EVAP GROSS LEAK	—	2	×	A	EC-389
P0456	0456	EVAP VERY SML LEAK	×*7	2	×	A	EC-395
P0460	0460	FUEL LEV SEN SLOSH	—	2	×	A	EC-402
P0461	0461	FUEL LEVEL SENSOR	—	2	×	B	EC-404
P0462	0462	FUEL LEVL SEN/CIRC	—	2	×	B	EC-406
P0463	0463	FUEL LEVL SEN/CIRC	—	2	×	B	EC-406
P0491	0491	SCNDY AIR SYS-B1	×	2	×	A	EC-408
P0492	0492	SCNDY AIR SYS-B2	×	2	×	A	EC-408
P0500	0500	VEH SPEED SEN/CIRC*8	—	2	×	B	EC-411
P0506	0506	ISC SYSTEM	—	2	×	B	EC-413
P0507	0507	ISC SYSTEM	—	2	×	B	EC-415
P050A	050A	COLD START CONTROL	—	2	×	A	EC-417
P050B	050B	COLD START CONTROL	—	2	×	A	
P050E	050E	COLD START CONTROL	—	2	×	A	
P0550	0550	PW ST P SEN/CIRC	—	2	—	—	EC-419
P0603	0603	ECM BACK UP/CIRCUIT	—	2	×	B	EC-422
P0605	0605	ECM	—	1 or 2	× or —	B	EC-424
P0607	0607	ECM	—	1 or 2	× or —	B	EC-426

ECM

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[VR38]

DTC*1		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group*4	Refer- ence page
CONSULT GST*2	ECM*3						
P0627	0627	SUB FUEL PUMP CIRC	—	1	×	B	EC-427
P0629	0629	SUB FUEL PUMP CIRC	—	2	×	B	EC-429
P062A	062A	SUB FUEL PUMP CIRC	—	1	×	B	EC-432
P0643	0643	SENSOR POWER/CIRC	—	1	×	B	EC-434
P0850	0850	P-N POS SW/CIRCUIT	—	2	×	B	EC-437
P1148	1148	CLOSED LOOP-B1	—	1	×	A	EC-440
P1168	1168	CLOSED LOOP-B2	—	1	×	A	EC-440
P1211	1211	TCS C/U FUNCTN	—	2	—	—	EC-441
P1212	1212	TCS/CIRC	—	2	—	—	EC-442
P1217	1217	ENG OVER TEMP	—	1	×	B	EC-443
P1220	1220	FPCM	—	1	—	—	EC-447
P1225	1225	CTP LEARNING-B1	—	2	—	—	EC-450
P1226	1226	CTP LEARNING-B1	—	2	—	—	EC-452
P1233	1233	ETC FNCTN/CIRC-B2	—	1	×	B	EC-454
P1234	1234	CTP LEARNING-B2	—	2	—	—	EC-450
P1235	1235	CTP LEARNING-B2	—	2	—	—	EC-452
P1236	1236	ETC MOT-B2	—	1	×	B	EC-458
P1238	1238	ETC ACTR-B2	—	1	×	B	EC-461
P1239	1239	TP SENSOR-B2	—	1	×	B	EC-463
P1263	1263	TC SYSTEM-B2	—	2	—	—	EC-466
P1290	1290	ETC MOT PWR-B2	—	1	×	B	EC-469
P1334	1334	TC SYSTEM-B2	—	1	×	B	EC-311
P1550	1550	BAT CURRENT SENSOR	—	2	—	—	EC-471
P1551	1551	BAT CURRENT SENSOR	—	2	—	—	EC-474
P1552	1552	BAT CURRENT SENSOR	—	2	—	—	EC-474
P1553	1553	BAT CURRENT SENSOR	—	2	—	—	EC-477
P1554	1554	BAT CURRENT SENSOR	—	2	—	—	EC-480
P1564	1564	ASCD SW	—	1	—	—	EC-484
P1572	1572	ASCD BRAKE SW	—	1	—	—	EC-487
P1574	1574	ASCD VHL SPD SEN	—	1	—	—	EC-492
P1610	1610	LOCK MODE	—	2	—	—	SEC-32
P1611	1611	ID DISCORD,IMMU-ECM	—	2	—	—	SEC-33
P1612	1612	CHAIN OF ECM-IMMU	—	2	—	—	SEC-35
P1614	1614	CHAIN OF IMMU-KEY	—	2	—	—	SEC-36
P1615	1615	DIFFERENCE OF KEY	—	2	—	—	SEC-39
P1805	1805	BRAKE SW/CIRCUIT	—	2	× or —	—	EC-494
P2096	2096	POST CAT FUEL TRIM SYS B1	—	2	×	A	EC-497
P2097	2097	POST CAT FUEL TRIM SYS B1	—	2	×	A	
P2098	2098	POST CAT FUEL TRIM SYS B2	—	2	×	A	
P2099	2099	POST CAT FUEL TRIM SYS B2	—	2	×	A	
P2100	2100	ETC MOT PWR-B1	—	1	×	B	EC-469
P2101	2101	ETC FNCTN/CIRC-B1	—	1	×	B	EC-454

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DTC*1		Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group*4	Refer- ence page
CONSULT GST*2	ECM*3						
P2103	2103	ETC MOT PWR	—	1	×	B	EC-469
P2118	2118	ETC MOT-B1	—	1	×	B	EC-458
P2119	2119	ETC ACTR-B1	—	1	×	B	EC-461
P2122	2122	APP SEN 1/CIRC	—	1	×	B	EC-501
P2123	2123	APP SEN 1/CIRC	—	1	×	B	EC-501
P2127	2127	APP SEN 2/CIRC	—	1	×	B	EC-504
P2128	2128	APP SEN 2/CIRC	—	1	×	B	EC-504
P2132	2132	TP SEN 1/CIRC-B2	—	1	×	B	EC-308
P2133	2133	TP SEN 1/CIRC-B2	—	1	×	B	EC-308
P2135	2135	TP SENSOR-B1	—	1	×	B	EC-463
P2138	2138	APP SENSOR	—	1	×	B	EC-508
P219A	219A	AIR FUEL RATIO IMBALANCE B1	—	2	×	A	EC-512
P219B	219B	AIR FUEL RATIO IMBALANCE B2	—	2	×	A	EC-512
P2263	2263	TC SYSTEM-B1	—	2	—	—	EC-466
P2432	2432	SNDRY MAS A/F SE	—	2	×	B	EC-517
P2433	2433	SNDRY MAS A/F SE	—	2	×	B	EC-517
P2440	2440	AIR CUT S/V-B1	×	1 or 2	×	B	EC-520
P2442	2442	AIR CUT S/V-B2	×	2	×	B	EC-520

*1: 1st trip DTC No. is the same as DTC No.

*2: This number is prescribed by SAE J2012/ISO 15031-6.

*3: In Diagnostic Test Mode II (Self-diagnostic results), this number is controlled by NISSAN.

*4: Refer to [EC-33. "Description \(GT-R certified NISSAN dealer\)"](#), "HOW TO ERASE PERMANENT DTC".

*5: The troubleshooting for this DTC needs CONSULT.

*6: When the ECM is in the mode that displays SRT status, MIL may blink. For the details, refer to "How to Display SRT Status".

*7: SRT code will not be set if the self-diagnostic result is NG.

*8: When the fail-safe operations for both self-diagnoses occur, the MIL illuminates.

Test Value and Test Limit

INFOID:000000011486688

The following is the information specified in Service \$06 of SAE J1979/ISO 15031-5.

The test value is a parameter used to determine whether a system/circuit diagnostic test is OK or NG while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.

These data (test value and test limit) are specified by On Board Monitor ID (OBDMID), Test ID (TID), Unit and Scaling ID and can be displayed on the GST screen.

The items of the test value and test limit will be displayed with GST screen which items are provided by the ECM. (e.g., if bank 2 is not applied on this vehicle, only the items of bank 1 are displayed)

ECM

< ECU DIAGNOSIS INFORMATION >

[VR38]

Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description
				TID	Unit and Scaling ID	
HO2S	01H	Air fuel ratio (A/F) sensor 1 (Bank 1)	P0131	83H	0BH	Minimum sensor output voltage for test cycle
			P0131	84H	0BH	Maximum sensor output voltage for test cycle
			P0130	85H	0BH	Minimum sensor output voltage for test cycle
			P0130	86H	0BH	Maximum sensor output voltage for test cycle
			P0133	87H	04H	Response rate: Response ratio (lean to rich)
			P0133	88H	04H	Response rate: Response ratio (rich to lean)
			P2A00 or P2096	89H	84H	The amount of shift in air fuel ratio (too lean)
			P2A00 or P2097	8AH	84H	The amount of shift in air fuel ratio (too rich)
			P0130	8BH	0BH	Difference in sensor output voltage
			P0133	8CH	83H	Response gain at the limited frequency
			P014C	8DH	04H	O2 sensor slow response - Rich to lean bank 1 sensor 1
			P014C	8EH	04H	O2 sensor slow response - Rich to lean bank 1 sensor 1
			P014D	8FH	84H	O2 sensor slow response - Lean to rich bank 1 sensor 1
			P014D	90H	84H	O2 sensor slow response - Lean to rich bank 1 sensor 1
			P015A	91H	01H	O2 sensor delayed response - Rich to lean bank 1 sensor 1
			P015A	92H	01H	O2 sensor delayed response - Rich to lean bank 1 sensor 1
			P015B	93H	01H	O2 sensor delayed response - Lean to rich bank 1 sensor 1
			P015B	94H	01H	O2 sensor delayed response - Lean to rich bank 1 sensor 1
			P0133	95H	04H	Response rate: Response ratio (lean to rich)
			P0133	96H	84H	Response rate: Response ratio (rich to lean)

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< ECU DIAGNOSIS INFORMATION >

[VR38]

Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description
				TID	Unit and Scaling ID	
HO2S	02H	Heated oxygen sensor 2 (Bank 1)	P0138	07H	0CH	Minimum sensor output voltage for test cycle
			P0137	08H	0CH	Maximum sensor output voltage for test cycle
			P0138	80H	0CH	Sensor output voltage
			P0139	81H	0CH	Difference in sensor output voltage
			P0139	82H	11H	Rear O2 sensor delay response diagnosis
	03H	Heated oxygen sensor 3 (Bank 1)	P0143	07H	0CH	Minimum sensor output voltage for test cycle
			P0144	08H	0CH	Maximum sensor output voltage for test cycle
			P0146	80H	0CH	Sensor output voltage
			P0145	81H	0CH	Difference in sensor output voltage
	05H	Air fuel ratio (A/F) sensor 1 (Bank 2)	P0151	83H	0BH	Minimum sensor output voltage for test cycle
			P0151	84H	0BH	Maximum sensor output voltage for test cycle
			P0150	85H	0BH	Minimum sensor output voltage for test cycle
			P0150	86H	0BH	Maximum sensor output voltage for test cycle
			P0153	87H	04H	Response rate: Response ratio (lean to rich)
			P0153	88H	04H	Response rate: Response ratio (rich to lean)
			P2A03 or P2098	89H	84H	The amount of shift in air fuel ratio (too lean)
			P2A03 or P2099	8AH	84H	The amount of shift in air fuel ratio (too rich)
			P0150	8BH	0BH	Difference in sensor output voltage
			P0153	8CH	83H	Response gain at the limited frequency
			P014E	8DH	04H	O2 sensor slow response - Rich to lean bank 2 sensor 1
P014E	8EH	04H	O2 sensor slow response - Rich to lean bank 2 sensor 1			
P014F	8FH	84H	O2 sensor slow response - Lean to rich bank 2 sensor 1			
P014F	90H	84H	O2 sensor slow response - Lean to rich bank 2 sensor 1			
P015C	91H	01H	O2 sensor delayed response - Rich to lean bank 2 sensor 1			
P015C	92H	01H	O2 sensor delayed response - Rich to lean bank 2 sensor 1			
P015D	93H	01H	O2 sensor delayed response - Lean to rich bank 2 sensor 1			

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< ECU DIAGNOSIS INFORMATION >

[VR38]

Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description	
				TID	Unit and Scaling ID		
HO2S	05H	Air fuel ratio (A/F) sensor 1 (Bank 2)	P015D	94H	01H	O2 sensor delayed response - Lean to rich bank 2 sensor 1	
			P0153	95H	04H	Response rate: Response ratio (lean to rich)	
			P0153	96H	84H	Response rate: Response ratio (rich to lean)	
	06H	Heated oxygen sensor 2 (Bank 2)	P0158	07H	0CH	Minimum sensor output voltage for test cycle	
			P0157	08H	0CH	Maximum sensor output voltage for test cycle	
			P0158	80H	0CH	Sensor output voltage	
			P0159	81H	0CH	Difference in sensor output voltage	
			P0159	82H	11H	Rear O2 sensor delay response diagnosis	
	07H	Heated oxygen sensor 3 (Bank2)	P0163	07H	0CH	Minimum sensor output voltage for test cycle	
			P0164	08H	0CH	Maximum sensor output voltage for test cycle	
			P0166	80H	0CH	Sensor output voltage	
			P0165	81H	0CH	Difference in sensor output voltage	
	CATA- LYST	21H	Three way catalyst function (Bank1)	P0420	80H	01H	O2 storage index
				P0420	82H	01H	Switching time lag engine exhaust index value
				P2423	83H	0CH	Difference in 3rd O2 sensor output voltage
P2423				84H	84H	O2 storage index in HC trap catalyst	
22H		Three way catalyst function (Bank2)	P0430	80H	01H	O2 storage index	
			P0430	82H	01H	Switching time lag engine exhaust index value	
			P2424	83H	0CH	Difference in 3rd O2 sensor output voltage	
			P2424	84H	84H	O2 storage index in HC trap catalyst	
EGR SYSTEM	31H	EGR function	P0400	80H	96H	Low flow faults: EGR temp change rate (short term)	
			P0400	81H	96H	Low flow faults: EGR temp change rate (long term)	
			P0400	82H	96H	Low flow faults: Difference between max EGR temp and EGR temp under idling condition	
			P0400	83H	96H	Low flow faults: Max EGR temp	
			P1402	84H	96H	High Flow Faults: EGR temp increase rate	
			P0402	85H	FCH	EGR differential pressure high flow	
			P0401	86H	37H	EGR differential pressure low flow	
			P2457	87H	96H	EGR temperature	

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[VR38]

Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description
				TID	Unit and Scaling ID	
VVT SYSTEM	35H	VVT Monitor (Bank1)	P0011	80H	9DH	VTC intake function diagnosis (VTC alignment check diagnosis)
			P0014	81H	9DH	VTC exhaust function diagnosis (VTC alignment check diagnosis)
			P0011	82H	9DH	VTC intake function diagnosis (VTC drive failure diagnosis)
			P0014	83H	9DH	VTC exhaust function diagnosis (VTC drive failure diagnosis)
			P100A	84H	10H	VEL slow response diagnosis
			P1090	85H	10H	VEL servo system diagnosis
			P0011	86H	9DH	VTC intake intermediate lock function diagnosis (VTC intermediate position alignment check diagnosis)
			Advanced: P052A Retarded: P052B	87H	9DH	VTC intake intermediate lock system diagnosis (VTC intermediate lock position check diagnosis)
	36H	VVT Monitor (Bank2)	P0021	80H	9DH	VTC intake function diagnosis (VTC alignment check diagnosis)
			P0024	81H	9DH	VTC exhaust function diagnosis (VTC alignment check diagnosis)
			P0021	82H	9DH	VTC intake function diagnosis (VTC drive failure diagnosis)
			P0024	83H	9DH	VTC exhaust function diagnosis (VTC drive failure diagnosis)
			P100B	84H	10H	VEL slow response diagnosis
			P1093	85H	10H	VEL servo system diagnosis
P0021			86H	9DH	VTC intake intermediate lock function diagnosis (VTC intermediate position alignment check diagnosis)	
		Advanced: P052C Retarded: P052D	87H	9DH	VTC intake intermediate lock system diagnosis (VTC intermediate lock position check diagnosis)	
EVAP SYSTEM	39H	EVAP control system leak (Cap Off)	P0455	80H	0CH	Difference in pressure sensor output voltage before and after pull down
	3BH	EVAP control system leak (Small leak)	P0442	80H	05H	Leak area index (for more than 0.04 inch)
	3CH	EVAP control system leak (Very small leak)	P0456	80H	05H	Leak area index (for more than 0.02 inch)
			P0456	81H	FDH	Maximum internal pressure of EVAP system during monitoring
			P0456	82H	FDH	Internal pressure of EVAP system at the end of monitoring
3DH	Purge flow system	P0441	83H	0CH	Difference in pressure sensor output voltage before and after vent control valve close	

Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description	
				TID	Unit and Scaling ID		
O2 SENSOR HEATER	41H	A/F sensor 1 heater (Bank 1)	Low Input: P0031 High Input: P0032	81H	0BH	Converted value of heater electric current to voltage	
			P0030	83H	0BH	A/F sensor heater circuit malfunction	
	42H	Heated oxygen sensor 2 heater (Bank 1)	Low Input: P0037 High Input: P0038	80H	0CH	Converted value of heater electric current to voltage	
			P0141	81H	14H	Rear O2 sensor internal impedance	
	43H	Heated oxygen sensor 3 heater (Bank 1)	P0043	80H	0CH	Converted value of heater electric current to voltage	
	45H	A/F sensor 1 heater (Bank 2)	Low Input: P0051 High Input: P0052	81H	0BH	Converted value of heater electric current to voltage	
			P0036	83H	0BH	A/F sensor heater circuit malfunction	
	46H	Heated oxygen sensor 2 heater (Bank 2)	Low Input: P0057 High Input: P0058	80H	0CH	Converted value of heater electric current to voltage	
			P0161	81H	14CH	Rear O2 sensor internal impedance	
	47H	Heated oxygen sensor 3 heater (Bank 2)	P0063	80H	0CH	Converted value of heater electric current to voltage	
	SECONDARY AIR	71H	Secondary air system	P0411	80H	01H	Secondary air injection system incorrect flow detected
				Bank1: P0491 Bank2: P0492	81H	01H	Secondary air injection system insufficient flow
P2445				82H	01H	Secondary air injection system pump stuck off	
P2448				83H	01H	Secondary air injection system high airflow	
Bank1: P2440 Bank2: P2442				84H	01H	Secondary air injection system switching valve stuck open	
P2440				85H	01H	Secondary air injection system switching valve stuck open	
P2444				86H	01H	Secondary air injection system pump stuck on	
FUEL SYSTEM	81H	Fuel injection system function (Bank 1)	P0171 or P0172	80H	2FH	Long term fuel trim	
			P0171 or P0172	81H	24H	The number of lambda control clamped	
			P117A / P219A	82H	03H	Cylinder A/F imbalance monitoring	
	82H	Fuel injection system function (Bank 2)	P0174 or P0175	80H	2FH	Long term fuel trim	
			P0174 or P0175	81H	24H	The number of lambda control clamped	
			P117B / P219B	82H	03H	Cylinder A/F imbalance monitoring	

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Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description
				TID	Unit and Scaling ID	
MISFIRE	A1H	Multiple cylinder misfires	P0301	80H	24H	Misfiring counter at 1000 revolution of the first cylinder
			P0302	81H	24H	Misfiring counter at 1000 revolution of the second cylinder
			P0303	82H	24H	Misfiring counter at 1000 revolution of the third cylinder
			P0304	83H	24H	Misfiring counter at 1000 revolution of the fourth cylinder
			P0305	84H	24H	Misfiring counter at 1000 revolution of the fifth cylinder
			P0306	85H	24H	Misfiring counter at 1000 revolution of the sixth cylinder
			P0307	86H	24H	Misfiring counter at 1000 revolution of the seventh cylinder
			P0308	87H	24H	Misfiring counter at 1000 revolution of the eighth cylinder
			P0300	88H	24H	Misfiring counter at 1000 revolution of the multiple cylinders
			P0301	89H	24H	Misfiring counter at 200 revolution of the first cylinder
			P0302	8AH	24H	Misfiring counter at 200 revolution of the second cylinder
			P0303	8BH	24H	Misfiring counter at 200 revolution of the third cylinder
			P0304	8CH	24H	Misfiring counter at 200 revolution of the fourth cylinder
			P0305	8DH	24H	Misfiring counter at 200 revolution of the fifth cylinder
			P0306	8EH	24H	Misfiring counter at 200 revolution of the sixth cylinder
			P0307	8FH	24H	Misfiring counter at 200 revolution of the seventh cylinder
			P0308	90H	24H	Misfiring counter at 200 revolution of the eighth cylinder
			P0300	91H	24H	Misfiring counter at 1000 revolution of the single cylinder
			P0300	92H	24H	Misfiring counter at 200 revolution of the single cylinder
			P0300	93H	24H	Misfiring counter at 200 revolution of the multiple cylinders

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[VR38]

Item	OBD-MID	Self-diagnostic test item	DTC	Test value and Test limit (GST display)		Description
				TID	Unit and Scaling ID	
MISFIRE	A2H	No. 1 cylinder misfire	P0301	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0301	0CH	24H	Misfire counts for last/current driving cycles
	A3H	No. 2 cylinder misfire	P0302	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0302	0CH	24H	Misfire counts for last/current driving cycles
	A4H	No. 3 cylinder misfire	P0303	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0303	0CH	24H	Misfire counts for last/current driving cycles
	A5H	No. 4 cylinder misfire	P0304	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0304	0CH	24H	Misfire counts for last/current driving cycles
	A6H	No. 5 cylinder misfire	P0305	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0305	0CH	24H	Misfire counts for last/current driving cycles
	A7H	No. 6 cylinder misfire	P0306	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0306	0CH	24H	Misfire counts for last/current driving cycles
	A8H	No. 7 cylinder misfire	P0307	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0307	0CH	24H	Misfire counts for last/current driving cycles
	A9H	No. 8 cylinder misfire	P0308	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0308	0CH	24H	Misfire counts for last/current driving cycles

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[VR38]

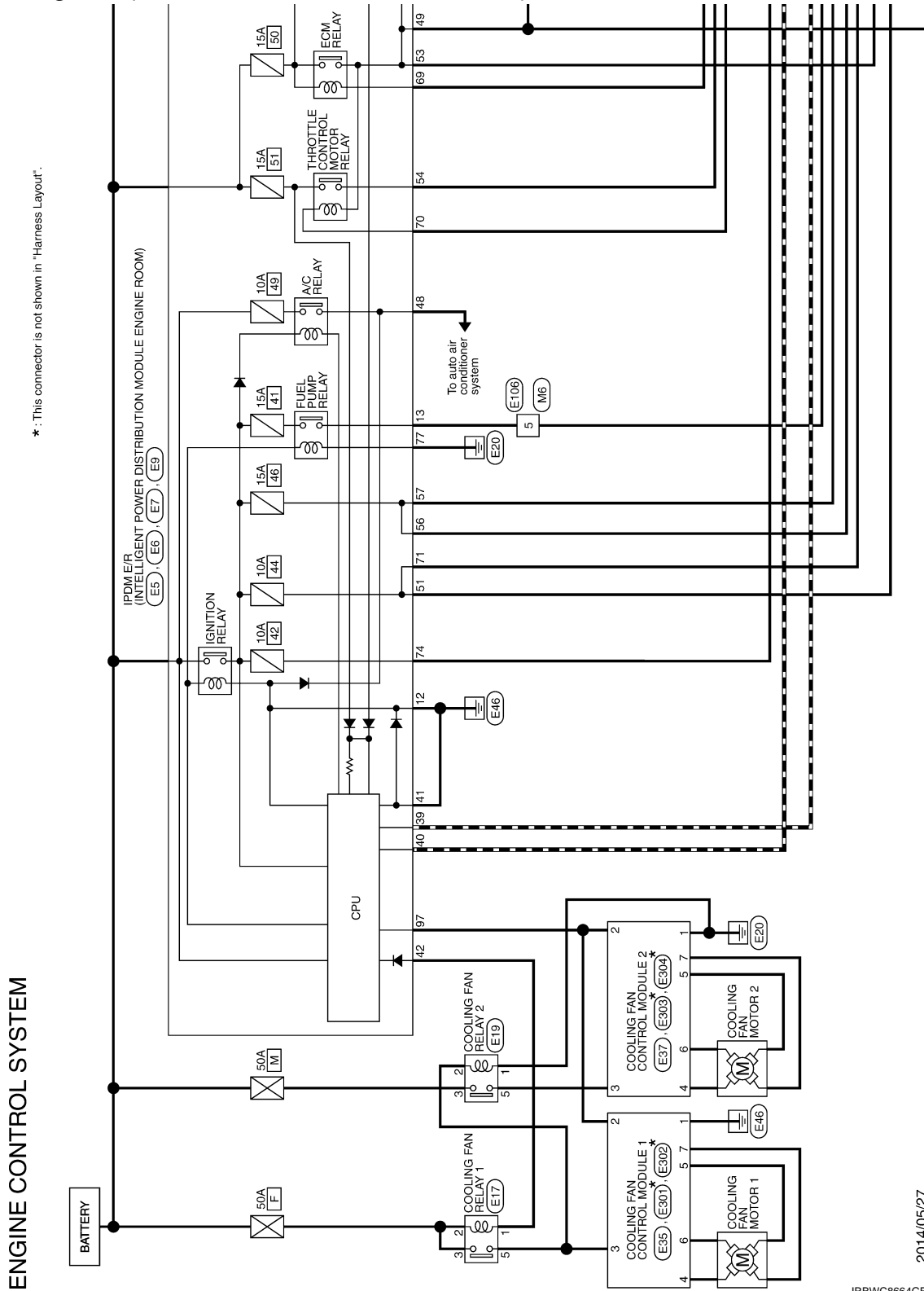
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ENGINE CONTROL SYSTEM

Wiring Diagram (GT-R certified NISSAN dealer)

INFOID:0000000011486689



*: This connector is not shown in "Harness Layout".

ENGINE CONTROL SYSTEM

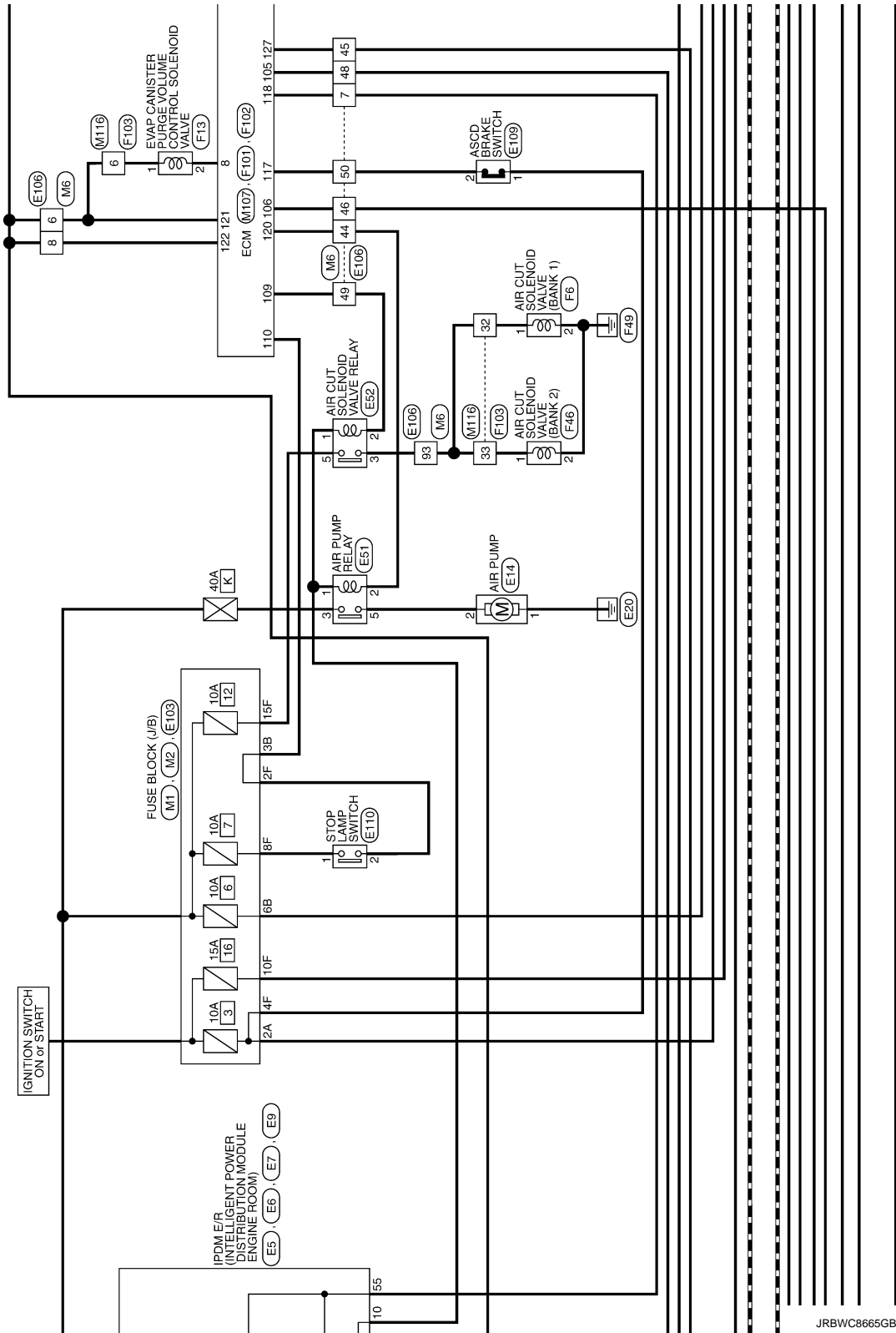
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ENGINE CONTROL SYSTEM

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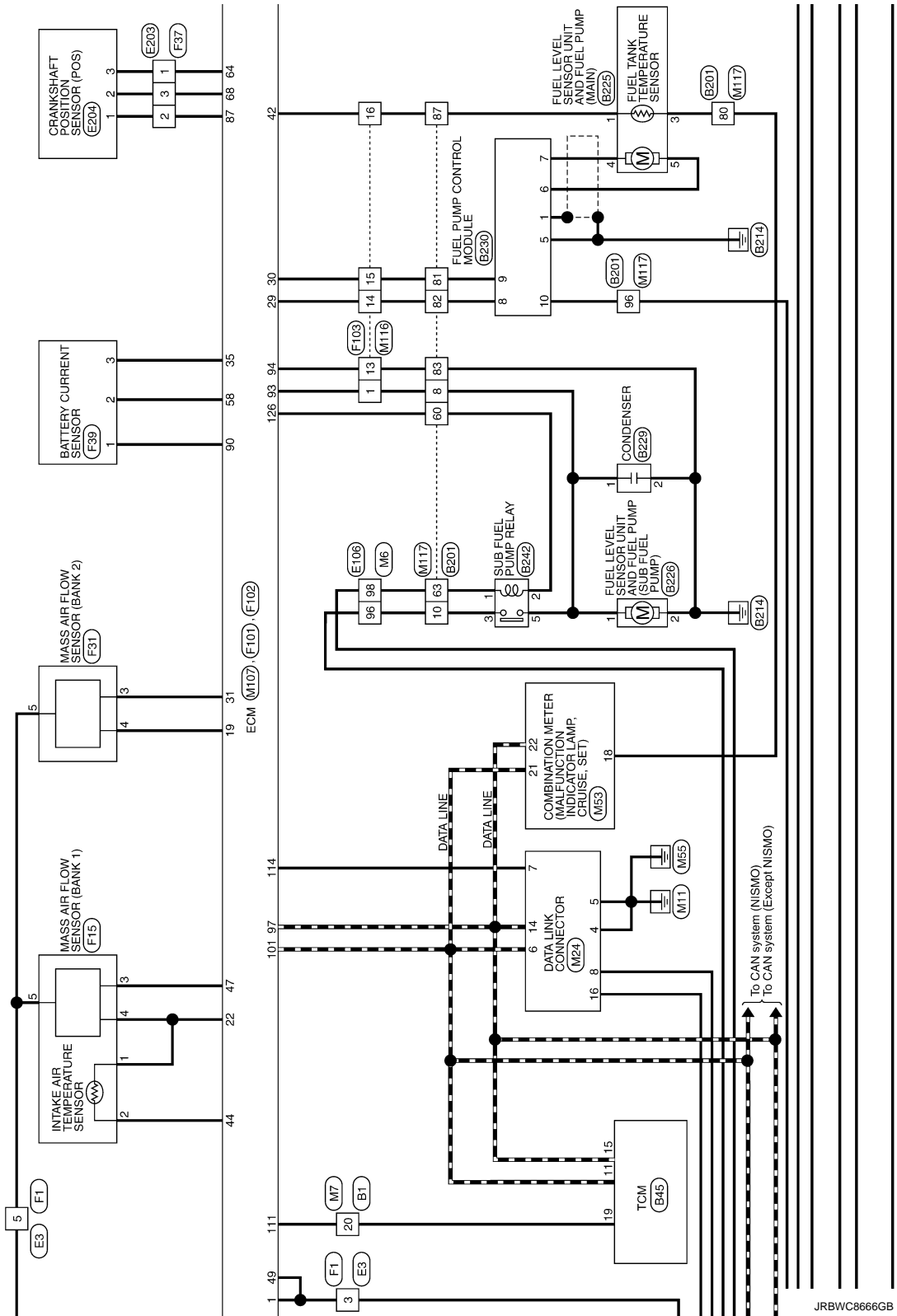
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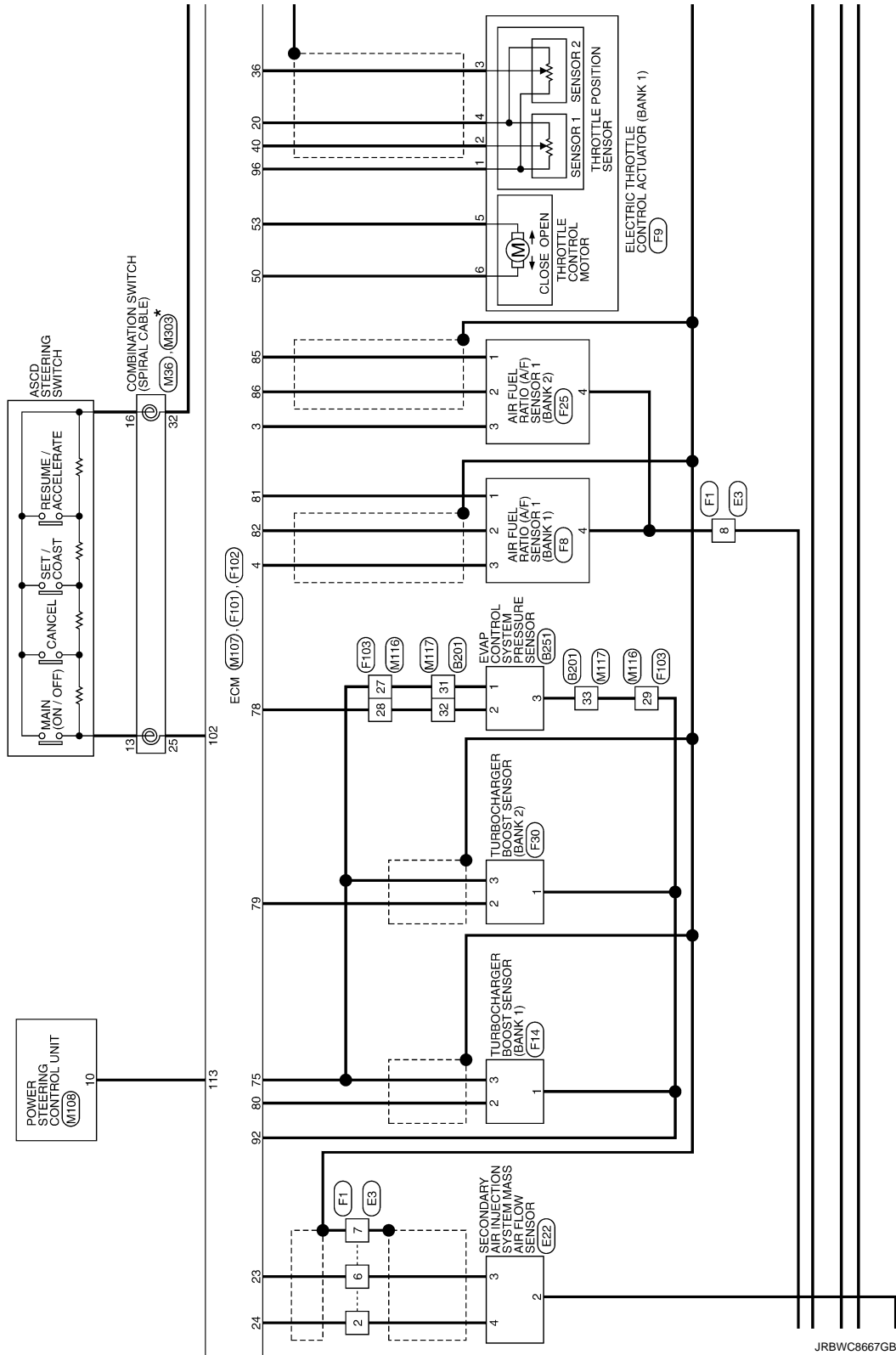
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* : This connector is not shown in "Harness Layout".



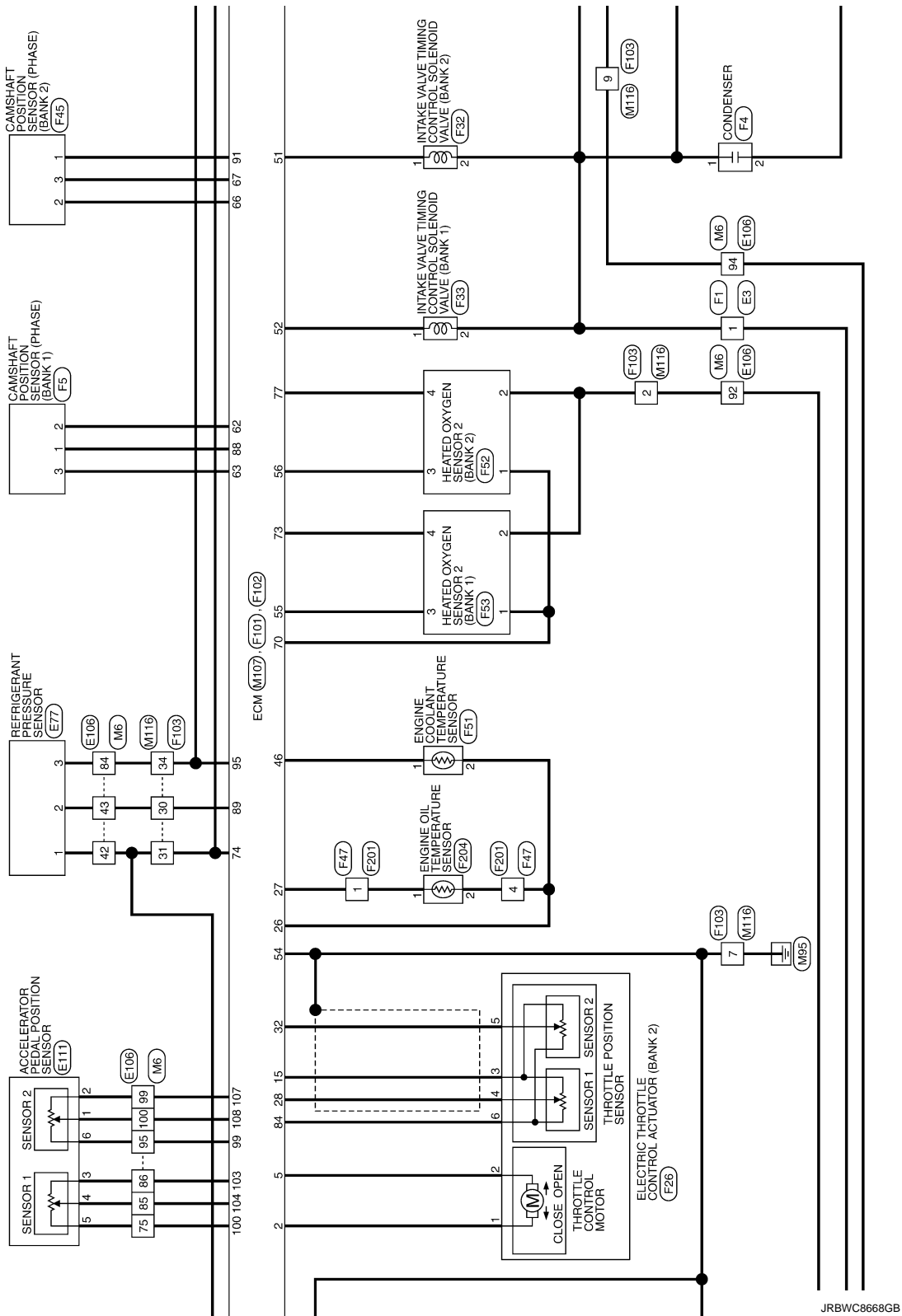
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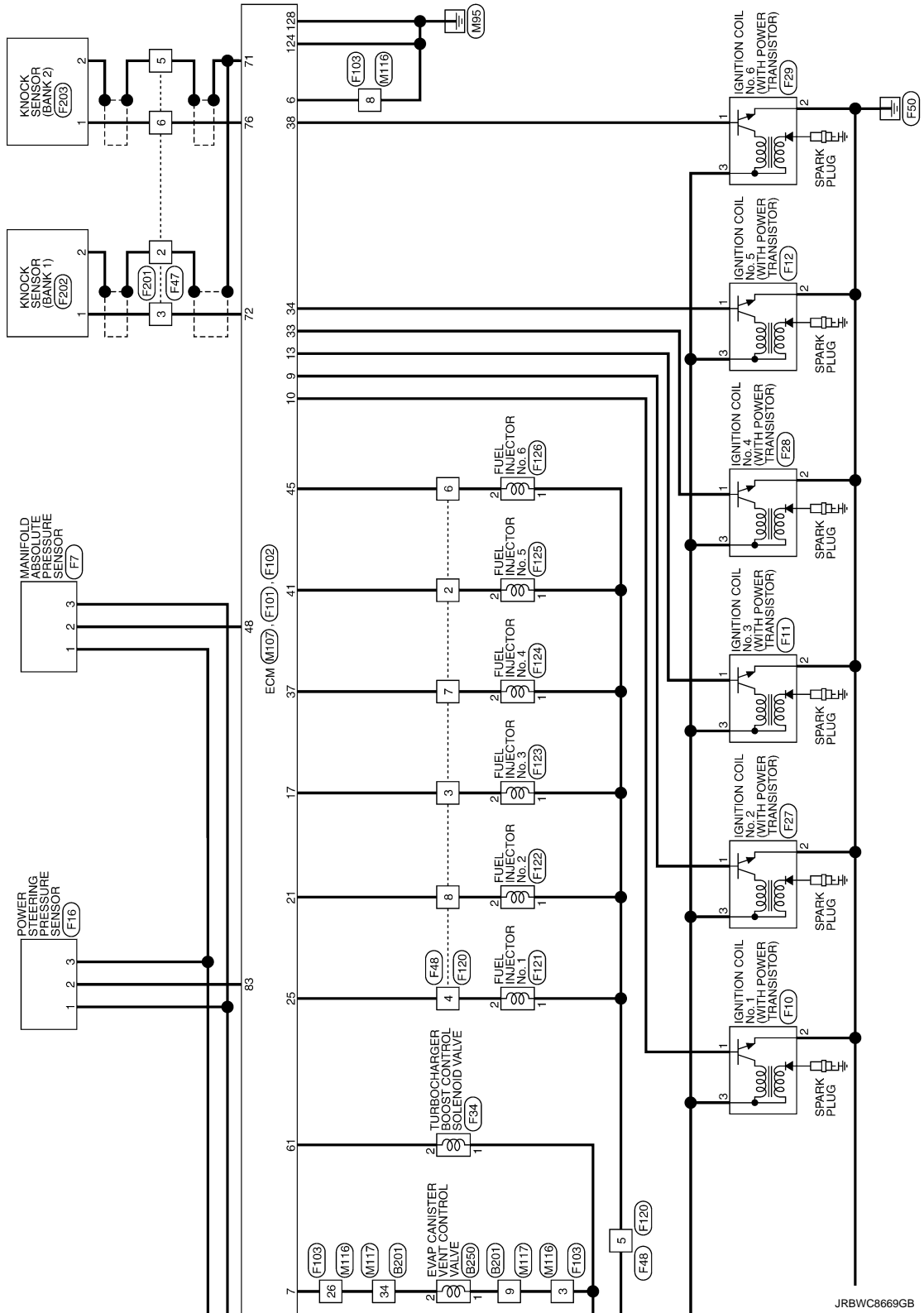


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ENGINE CONTROL SYSTEM

ENGINE CONTROL SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

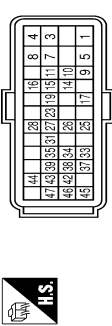


Terminal No.	Color Of Wire	Signal Name [Specification]
49	W	-
50	SHIELD	-
51	SB	-
52	B	-
53	R	-
54	B	-
56	R	-
57	G	-
58	G	-
59	R	-
60	BR	-
61	Y	-
62	SHIELD	-
63	LG	-
64	R	-
65	G	-
66	BR	-
67	EG	-
69	P	-
70	L	-
71	SHIELD	-
72	SHIELD	- [Without active noise control unit]
73	V	- [With active noise control unit]
74	SB	-
76	R	-
77	SB	-
78	G	-
79	Y	-
80	R	-
81	G	-
82	BR	- [Without active noise control unit]
83	R	- [With active noise control unit]
84	Y	- [Without active noise control unit]
85	SHIELD	-
86	V	-
88	SB	- [Without active noise control unit]
89	W	- [With active noise control unit]
87	L	-
88	P	-
89	SHIELD	-
90	V	-
92	BR	-
93	SB	-
94	GR	-
95	EG	-
96	Y	-
97	Y	-
98	LG	-

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	P	-
6	V	-
7	W	-
8	W	-
9	Y	-
10	R	-
11	Y	-
12	GR	-
13	EG	-
14	Y	-
15	BR	-
16	R	-
17	W	-
18	BR	-
20	GR	-
21	SB	-
22	W	-
23	G	-
24	EG	-
25	L	-
26	P	-
27	GR	-
28	EG	-
31	GR	-
32	L	-
33	V	-
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39	G	-
40	LG	-
41	Y	-
42	SB	-
43	P	-
47	R	-
48	B	-

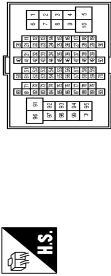
99	R	-
100	G	-

Connector No.	B45
Connector Name	TCM
Connector Type	RH40FB-RZ8-L-LH-Z



47	G	SAVE MODE LAMP SIGNAL
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Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
5	G	-
6	G	-
7	V	-
8	RG	-
9	W	-
10	R	-
31	V	-
32	LG	-
33	BR	-
34	L	-
40	P	-
41	GR	-
42	Y	-
43	Y	-
44	V	-
45	W	-
51	SB	-
52	G	-
53	BR	-
54	V	-
60	R	-
61	P	-
62	L	-
63	LG	-
64	GR	-
69	P	-
70	L	-
71	R	-
80	L	-
81	SB	-
82	V	-
83	B	-
84	Y	-

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	POWER SUPPLY (MEMORY BACK-UP)2
3	B	GROUND
4	B	GROUND
5	W	POWER SUPPLY (MEMORY BACK-UP)3
7	B	GROUND
8	B	GROUND
9	P	POWER SUPPLY (MEMORY BACK-UP)-1
10	LG	BACK-UP LAMP SIGNAL
11	L	CANH
14	V	POWER OFF
15	P	CANL
16	W	STOP LAMP SWITCH SIGNAL
17	Y	IGNITION SWITCH SIGNAL
19	GR	STARTER RELAY SIGNAL
23	BR	AUTOMANUAL RANGE CHANGE SWITCH 1 SIGNAL
25	L	RANGE SENSOR POWER SOURCE 1
26	LG	RANGE SENSOR POWER SOURCE 2
27	G	RANGE SENSOR NO. 1 SIGNAL
28	V	AUTOMANUAL RANGE CHANGE SWITCH 2 SIGNAL
31	SB	ENGINE SPEED SIGNAL
33	V	RANGE SENSOR NO. 1 SIGNAL
34	EG	SAVE MODE SWITCH SIGNAL
35	G	RANGE SENSOR NO. 3 SIGNAL
37	GR	R MODE SWITCH SIGNAL
38	R	RANGE SENSOR NO. 2 SIGNAL
39	W	PADDLE SHIFTER (SHIFT DOWN) SWITCH SIGNAL
42	L	PADDLE SHIFTER (SHIFT UP) SWITCH SIGNAL
43	P	RANGE SENSOR NO. 1 SIGNAL
44	GR	RANGE SENSOR NO. 1 SIGNAL
45	EG	R MODE LAMP SIGNAL
46	W	SHIFT LOCK SOLENOID CONTROL SIGNAL

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< WIRING DIAGRAM >

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ENGINE CONTROL SYSTEM

85	BR	-	-
86	SHIELD	-	-
87	W	-	-
96	Y	-	-
98	EG	-	-
99	BR	-	-
100	W	-	-

Connector No.	B225
Connector Name	FUEL LEVEL SENSOR UNIT AND FUEL PUMP (MAIN)
Connector Type	SGZ02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	SB	-
3	L	-
4	BR	-
5	G	-

Connector No.	B226
Connector Name	FUEL LEVEL SENSOR UNIT AND FUEL PUMP (SUB FUEL PUMP)
Connector Type	SGZ02FGY



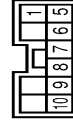
Terminal No.	Color Of Wire	Signal Name [Specification]
1	EG	-
2	B	-

Connector No.	B229
Connector Name	CONDENSER
Connector Type	M02FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	EG	-
2	B	-

Connector No.	B230
Connector Name	FUEL PUMP CONTROL MODULE
Connector Type	TM10FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	SHIELD
5	B	GROUND
6	G	FUEL PUMP(-)
7	BR	FUEL PUMP(+)
8	V	FPC INPUT SIGNAL
9	SB	DIAG OUTPUT SIGNAL
10	Y	BATTERY

Connector No.	B242
Connector Name	SUB FUEL PUMP RELAY
Connector Type	M502FL-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	R	-
3	R	-
5	BG	-

Connector No.	B250
Connector Name	EVAP CANISTER VENT CONTROL VALVE
Connector Type	E02FB-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-

Connector No.	B251
Connector Name	EVAP CONTROL SYSTEM PRESSURE SENSOR
Connector Type	E03FCGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	LG	-
3	BR	-

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Type	RS08FB-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	LG	-
3	W	-
4	L	-
5	P	-
6	V	-
7	SHIELD	-
8	G	-

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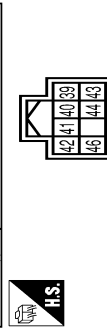
ENGINE CONTROL SYSTEM

Connector No.	E5
Connector Name	IPDM/ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V



Terminal No.	Color Of Wire	Signal Name [Specification]
4	V	-
5	L	-
6	Y	-
7	R	-
10	W	-
11	SB	-
12	BW	-
13	R	-
16	LG	-
25	BG	-
27	Y	-
28	G	-
30	GR	-
32	L	-
33	P	-
36	LG	-

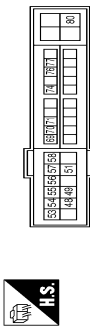
Connector No.	E6
Connector Name	IPDM/ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	BY	-
42	G	-

43	SB	-
44	W	-
46	BG	-

Connector No.	E7
Connector Name	IPDM/ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4



Terminal No.	Color Of Wire	Signal Name [Specification]
48	L	-
49	P	-
51	LG	-
53	SB	-
54	W	-
55	BG	-
56	R	-
57	G	-
58	Y	-
69	BG	-
70	G	-
71	SB	-
74	LG	-
76	P	-
77	BY	-
80	W	-

Connector No.	E9
Connector Name	IPDM/ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH16FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
97	Y	-
104	LG	-
105	GR	-

Connector No.	E14
Connector Name	AIR PUMP
Connector Type	SM20ZFGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	-
2	R	-

Connector No.	E17
Connector Name	COOLING FAN RELAY 1
Connector Type	24347-9F900



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	BG	-
5	R	-

Connector No.	E19
Connector Name	COOLING FAN RELAY 2
Connector Type	24347-9F900



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	P	-
5	W	-

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Connector No.	E22
Connector Name	SECONDARY AIR INJECTION SYSTEM MASS AIR FLOW SENSOR
Connector Type	EQ4FBR-RS-LGY



Terminal No.	Color Of Wire	Signal Name [Specification]
2	P	-
3	V	-
4	LG	-

Connector No.	E35
Connector Name	COOLING FAN CONTROL MODULE 1
Connector Type	SJZ01FGY-SNZ2



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/W	-
2	Y	-
3	R	-

Connector No.	E37
Connector Name	COOLING FAN CONTROL MODULE 2
Connector Type	SJZ01FGY-SNZ2



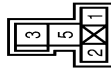
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/W	-
2	Y	-
3	W	-

Connector No.	E51
Connector Name	AIR PUMP RELAY
Connector Type	Z4347-9F900



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	BR	-
3	W	-
5	R	-

Connector No.	E52
Connector Name	AIR CUT SOLENOID VALVE RELAY
Connector Type	MS02FL-MZ



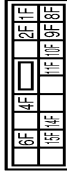
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-
3	R	-
5	P	-

Connector No.	E77
Connector Name	REFRIGERANT PRESSURE SENSOR
Connector Type	RK03FB



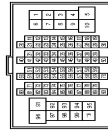
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	P	-

Connector No.	E103
Connector Name	FUSE BLOCK (JB)
Connector Type	NS16FM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10F	GR	-
11F	Y	-
14F	LG	-
15F	P	-
1F	W	-
2F	W	-
4F	G	-
6F	BG	-
8F	L	-
9F	R	-

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FM-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
3	BG	-
4	BG	-
5	B	-
6	B	-
7	BG	-
8	P	-
9	W	-
10	Y	-
11	SB	-

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12	EG	-	-	-	-
13	P	-	-	-	-
14	L	-	-	-	-
15	SB	-	-	-	-
16	EG	-	-	-	-
17	SHIELD	-	-	-	-
18	L	-	-	-	-
19	P	-	-	-	-
20	B	-	-	-	-
21	Y	-	-	-	-
22	V	-	-	-	-
23	Y	-	-	-	-
24	V	-	-	-	-
25	BR	-	-	-	-
26	L	-	-	-	-
27	SHIELD	-	-	-	-
28	G	-	-	-	-
29	W	-	-	-	-
30	W	-	-	-	-
31	V	-	-	-	-
32	G	-	-	-	-
33	GR	-	-	-	-
34	P	-	-	-	-
35	LG	-	-	-	-
36	G	-	-	-	-
37	Y	-	-	-	-
38	SB	-	-	-	-
39	GR	-	-	-	-
40	G	-	-	-	-
41	V	-	-	-	-
42	V	-	-	-	-
43	L	-	-	-	-
44	BR	-	-	-	-
45	G	-	-	-	-
46	SB	-	-	-	-
48	EG	-	-	-	-
49	L	-	-	-	-
50	R	-	-	-	-
51	SHIELD	-	-	-	-
60	P	-	-	-	-
61	L	-	-	-	-
71	LG	-	-	-	-
72	SB	-	-	-	-
74	P	-	-	-	-
75	BR	-	-	-	-
76	LG	-	-	-	-
77	V	-	-	-	-
78	BR	-	-	-	-
79	W	-	-	-	-
80	Y	-	-	-	-

81	GR	-	-	-	-
82	EG	-	-	-	-
84	P	-	-	-	-
85	P	-	-	-	-
86	GR	-	-	-	-
87	R	-	-	-	-
88	L	-	-	-	-
89	EG	-	-	-	-
90	G	-	-	-	-
91	GR	-	-	-	-
92	R	-	-	-	-
93	R	-	-	-	-
94	LG	-	-	-	-
95	G	-	-	-	-
96	GR	-	-	-	-
97	L	-	-	-	-
98	LG	-	-	-	-
99	EG	-	-	-	-
100	L	-	-	-	-

Connector No.	E109
Connector Name	ASC D BRAKE SWITCH
Connector Type	M02FBR-LC



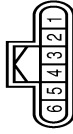
Terminal Color Of No.	Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	E110
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC



Terminal Color Of No.	Wire	Signal Name [Specification]
1	L	-
2	W	-

Connector No.	E111
Connector Name	ACCELERATOR PEDAL POSITION SENSOR
Connector Type	RH06FB



Terminal Color Of No.	Wire	Signal Name [Specification]
1	L	-
2	BG	-
3	GR	-
4	P	-
5	BR	-
6	G	-

Connector No.	E203
Connector Name	WIRE TO WIRE
Connector Type	RH06MB



Terminal Color Of No.	Wire	Signal Name [Specification]
1	BR	-
2	P	-
3	B	-
4	LG	-
5	B	-

Connector No.	E204
Connector Name	CRANKSHAFT POSITION SENSOR (POS)
Connector Type	RH06FB



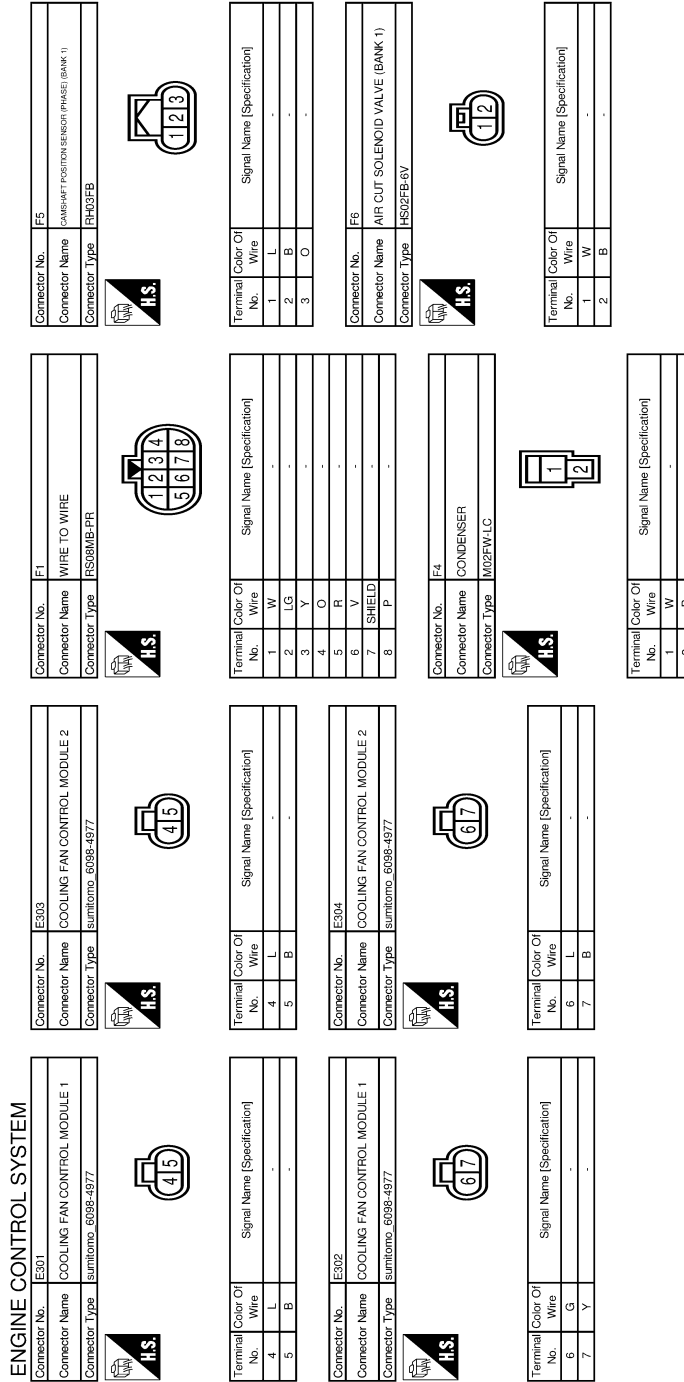
Terminal Color Of No.	Wire	Signal Name [Specification]
1	P	-
2	B	-
3	BR	-

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Connector No.	F7
Connector Name	MANIFOLD ABSOLUTE PRESSURE SENSOR
Connector Type	RH43FB



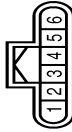
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	G	-
3	V	-

Connector No.	F8
Connector Name	AIR FUEL RATIO (A/F) SENSOR 1 (BANK 1)
Connector Type	AFZ04FDGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V	-
3	LG	-
4	P	-

Connector No.	F9
Connector Name	ELECTRIC THROTTLE CONTROL ACTUATOR (BANK 1)
Connector Type	RH46FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	L	-
3	Y	-
4	G	-
5	BR	-
6	SB	-

Connector No.	F10
Connector Name	IGNITION COIL No. 1 (WITH POWER TRANSISTOR)
Connector Type	E03FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	B	-
3	W	-

Connector No.	F11
Connector Name	IGNITION COIL No. 3 (WITH POWER TRANSISTOR)
Connector Type	E03FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	W	-

Connector No.	F12
Connector Name	IGNITION COIL No. 5 (WITH POWER TRANSISTOR)
Connector Type	E03FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	B	-
3	W	-

Connector No.	F13
Connector Name	EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
Connector Type	E02FL-RS-LGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V	-

Connector No.	F14
Connector Name	TURBOCHARGER BOOST SENSOR (BANK 1)
Connector Type	RH03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	L	-
3	P	-

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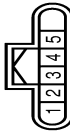
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ENGINE CONTROL SYSTEM

Connector No.	F15
Connector Name	MASS AIR FLOW SENSOR (BANK 1)
Connector Type	RH03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	P	-
3	W	-
4	W	-
5	R	-

Connector No.	F16
Connector Name	POWER STEERING PRESSURE SENSOR
Connector Type	RK03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	G	-
3	Y	-

Connector No.	F25
Connector Name	AIR FUEL RATIO (A/F) SENSOR 1 (BANK 2)
Connector Type	AFZ04FDGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	Y	-
3	O	-
4	P	-

Connector No.	F26
Connector Name	ELECTRIC THROTTLE CONTROL ACTUATOR (BANK 2)
Connector Type	RH06FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	B	-
4	W	-
5	R	-
6	SB	-

Connector No.	F27
Connector Name	IGNITION COIL No. 2 (WITH POWER TRANSISTOR)
Connector Type	E03FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	B	-
3	W	-

Connector No.	F28
Connector Name	IGNITION COIL No. 4 (WITH POWER TRANSISTOR)
Connector Type	E03FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	W	-

Connector No.	F29
Connector Name	IGNITION COIL No. 4 (WITH POWER TRANSISTOR)
Connector Type	E03FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	B	-
3	W	-

Connector No.	F30
Connector Name	TURBOCHARGER BOOST SENSOR (BANK 2)
Connector Type	RH03FB



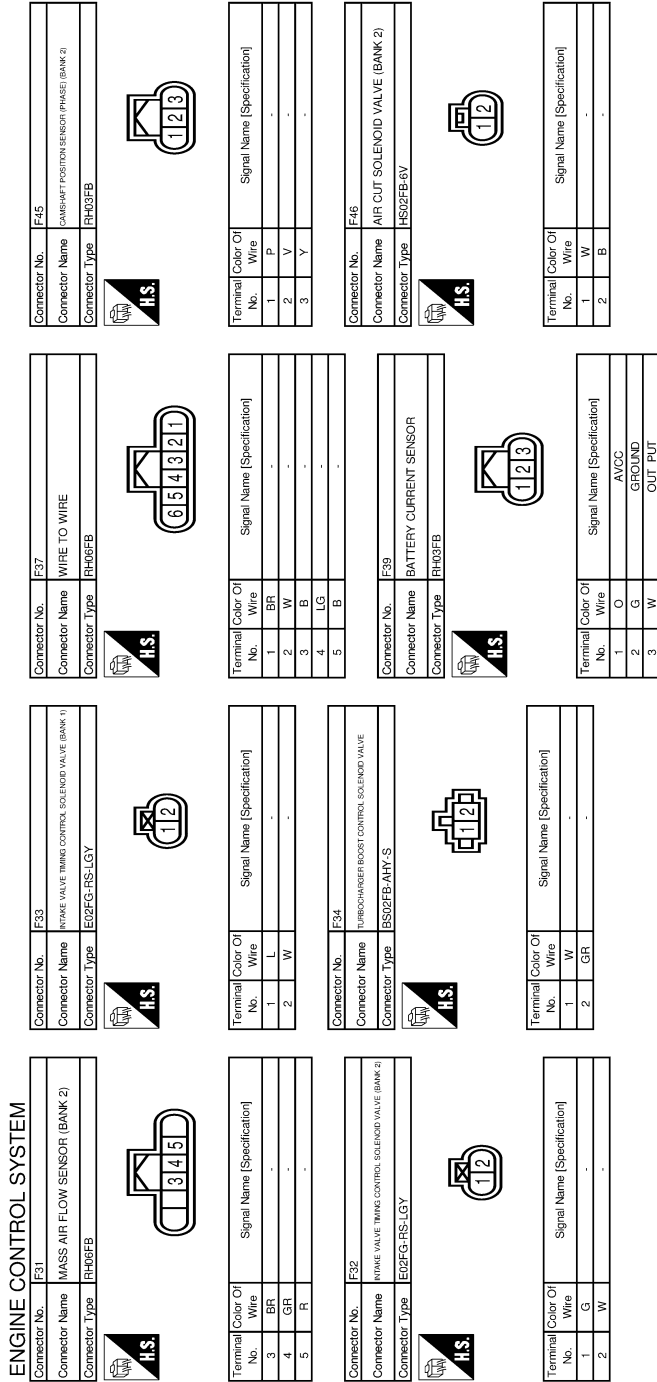
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	L	-
3	P	-

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Connector No.	F-47
Connector Name	WIRE TO WIRE
Connector Type	RS08FB-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	SHIELD	-
3	W	-
4	O	-
5	SHIELD	-
6	W	-

Connector No.	F-48
Connector Name	WIRE TO WIRE
Connector Type	RS08FGY-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	LG	-
4	P	-
5	W	-
6	R	-
7	SB	-
8	Y	-

Connector No.	F-51
Connector Name	ENGINE COOLANT TEMPERATURE SENSOR
Connector Type	EC2FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	O	-

Connector No.	F-52
Connector Name	HEATED OXYGEN SENSOR 2 (BANK 2)
Connector Type	AF204FB



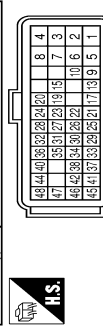
Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	R	-
3	W	-
4	GR	-

Connector No.	F-53
Connector Name	HEATED OXYGEN SENSOR 2 (BANK 1)
Connector Type	AF204FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	W	-
3	R	-
4	W	-

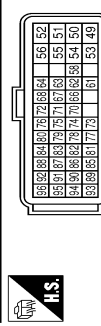
Connector No.	F-101
Connector Name	ECM
Connector Type	RH40FB-RZ8-L-LHZ



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	THROTTLE CONTROL RELAY POWER SUPPLY (BANK 2)
2	G	THROTTLE CONTROL MOTOR (OPEN) (BANK 2)
3	O	A/F SENSOR 1 HEATER (BANK 2)
4	LG	A/F SENSOR 1 HEATER (BANK 1)
5	L	THROTTLE CONTROL MOTOR (CLOSE) ECM GROUND
6	B	EVAP CANISTER VENT CONTROL VALVE
7	L	EVAP CANISTER VENT CONTROL VALVE
8	V	EVAP CANISTER VENT CONTROL VALVE
9	G	IGNITION SIGNAL No. 2
10	Y	IGNITION SIGNAL No. 1
12	L	IGNITION SIGNAL No. 3
13	B	SENSOR GROUND
17	LG	FUEL INJECTOR NO. 3
19	GR	SENSOR GROUND
20	G	SENSOR GROUND
21	Y	FUEL INJECTOR NO. 2

22	W	SENSOR GROUND
23	V	SENSOR GROUND
24	LG	SAARM
25	P	FUEL INJECTOR NO. 1
26	O	SENSOR GROUND
27	L	ENGINE OIL TEMPERATURE SENSOR
28	W	THROTTLE POSITION SENSOR 1 (BANK 2)
29	LG	FUEL PUMP CONTROL
30	G	FUEL PUMP CONTROL MODULE (FPC/M) CHECK
31	BR	MASS AIR FLOW SENSOR
32	R	THROTTLE POSITION SENSOR 2 (BANK 2)
33	R	IGNITION SIGNAL No. 4
34	V	IGNITION SIGNAL No. 5
35	W	BATTERY CURRENT SENSOR
36	Y	THROTTLE POSITION SENSOR 2 (BANK 1)
37	SB	FUEL INJECTOR NO. 4
38	GR	IGNITION SIGNAL No. 6
40	L	THROTTLE POSITION SENSOR 1 (BANK 1)
41	G	FUEL INJECTOR NO. 5
42	W	FUEL TANK TEMPERATURE SENSOR
44	P	INTAKE AIR TEMPERATURE SENSOR
45	R	FUEL INJECTOR NO. 6
46	Y	ENGINE COOLANT TEMPERATURE SENSOR
47	O	MASS AIR FLOW SENSOR
48	G	THRESHOLD

Connector No.	F-102
Connector Name	ECM
Connector Type	RH40FB-RZ8-L-LHZ



Terminal No.	Color Of Wire	Signal Name [Specification]
49	Y	THROTTLE CONTROL MOTOR RELAY POWER SUPPLY (BANK 1)
50	SB	THROTTLE CONTROL MOTOR (OPEN) (BANK 1)
51	G	EVAP CANISTER VENT CONTROL VALVE (BANK 2)
52	L	EVAP CANISTER VENT CONTROL VALVE (BANK 1)
53	BR	THROTTLE CONTROL MOTOR (CLOSE) (BANK 1)
54	B	ECM GROUND
55	R	HEATED OXYGEN SEN2 HEATER
56	W	HEATED OXYGEN SEN2 HEATER B2
58	G	SENSOR GROUND

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61	GR		
62	B	SENSOR GROUND	
63	O	CAMSHAFT POSITION SENSOR (PHASE) (BANK 1)	
64	BR	CAMSHAFT POSITION SENSOR (POS)	
66	Y	SENSOR GROUND	
67	Y	CAMSHAFT POSITION SENSOR (PHASE) (BANK 2)	
68	B	SENSOR GROUND	
70	SB	SENSOR GROUND	
71	SHIELD	SENSOR GROUND	
72	W	KNOCK SENSOR (GAIN)	
73	W	HEATED OXYGEN SENSOR 2	
74	R	SENSOR GROUND	
75	P	SENSOR GROUND	
76	W	KNOCK SENSOR (GAIN)	
77	GR	HEATED OXYGEN SEN 2-B2	
78	LG	SENSOR GROUND	
79	L	TPRES#2	
80	L	TPRES#1	
81	O	A/F SENSOR 1	
82	V	A/F SENT 1B1	
83	G	POWER STEERING PRESSURE SENSOR	
84	SB	SENSOR POWER SUPPLY	
85	BR	SENSOR POWER SUPPLY	
86	Y	A/F SENT 1B2	
87	W	SENSOR POWER SUPPLY	
88	L	SENSOR POWER SUPPLY	
89	L	REFRIGERANT PRESSURE SENSOR	
90	O	SENSOR POWER SUPPLY	
91	P	SENSOR POWER SUPPLY	
92	R	SENSOR POWER SUPPLY	
93	GR	SUBPUMPV+	
94	SB	SUBPUMPV-	
95	Y	SENSOR POWER SUPPLY	
96	V	SENSOR POWER SUPPLY	

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK36FW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	R	-
3	W	-
4	O	-
5	B	-
6	B	-
7	W	-
8	W	-
9	W	-
10	B	-
11	B	-
12	LG	-
13	SB	-
14	LG	-
15	G	-
16	W	-
17	W	-
18	GR	-
19	R	-
20	R	-
21	O	-
22	L	-
23	L	-
24	LG	-
25	R	-
26	R	-
27	P	-
28	LG	-
29	R	-
30	L	-
31	R	-
32	W	-
33	W	-
34	Y	-
35	Y	-

Connector No.	F120
Connector Name	WIRE TO WIRE
Connector Type	RS08MGV-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
2	P	-
3	R	-
4	V	-
5	W	-
6	LG	-
7	GR	-
8	G	-

Connector No.	F121
Connector Name	FUEL INJECTOR No. 1
Connector Type	HS02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-

Connector No.	F122
Connector Name	FUEL INJECTOR No. 2
Connector Type	HS02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	G	-

Connector No.	F123
Connector Name	FUEL INJECTOR No. 3
Connector Type	HS02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-

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ENGINE CONTROL SYSTEM

< WIRING DIAGRAM >

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ENGINE CONTROL SYSTEM

Connector No.	F124
Connector Name	FUEL INJECTOR No. 4
Connector Type	HS02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	GR	-

Connector No.	F125
Connector Name	FUEL INJECTOR No. 5
Connector Type	HS02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	P	-

Connector No.	F126
Connector Name	FUEL INJECTOR No. 6
Connector Type	HS02FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	LG	-

Connector No.	F201
Connector Name	WIRE TO WIRE
Connector Type	HS06MB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	SHIELD	-
3	W	-
4	R	-
5	SHIELD	-
6	W	-

Connector No.	F202
Connector Name	KNOCK SENSOR (BANK 1)
Connector Type	E02FG-RS-LGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	SHIELD	-

Connector No.	F203
Connector Name	KNOCK SENSOR (BANK 2)
Connector Type	E02FG-RS-LGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	SHIELD	-

Connector No.	F204
Connector Name	ENGINE OIL TEMPERATURE SENSOR
Connector Type	E02FGY-RS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	V	-
2A	G	-
3A	L	-
4A	LG	-
5A	SB	-
6A	Y	-
7A	R	-
8A	L	-

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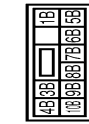
ENGINE CONTROL SYSTEM

< WIRING DIAGRAM >

[VR38]

ENGINE CONTROL SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10B	Y	-
11B	R	-
12B	P	-
13B	G	-
14B	EG	-
15B	Y	-
16B	R	-
17B	R	-
18B	SB	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
3	R	-
4	G	-
5	Y	-
6	P	-
7	W	-
8	Y	-
9	Y	-
10	Y	-
11	G	-
12	BG	-

13	R	-
14	L	-
15	BR	-
16	R	-
17	SHIELD	-
18	L	-
19	P	-
20	B	-
21	W	-
22	GR	-
23	L	-
24	V	-
25	BR	-
26	G	-
27	SHIELD	-
28	G	-
29	R	-
30	W	-
31	V	-
32	G	-
33	GR	-
34	LG	-
35	P	-
36	L	-
37	W	-
38	Y	-
39	GR	-
40	BG	-
41	W	-
42	R	-
43	Y	-
44	BR	-
45	G	-
46	LG	-
48	W	-
49	L	-
50	R	-
51	SHIELD	-
60	SB	-
61	V	-
71	W	-
72	LG	-
74	R	-
75	BR	-
76	LG	-
77	R	-
78	BR	-
79	W	-
80	Y	-
81	BG	-

82	SB	-
84	Y	-
85	P	-
86	GR	-
87	R	-
88	L	-
89	G	-
90	P	-
91	W	-
92	R	-
93	LG	-
94	W	-
95	SB	-
96	L	-
97	L	-
98	Y	-
99	BG	-
100	L	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	P	-
6	L	-
7	W	-
8	W	-
9	G	-
10	R	-
11	W	-
12	SB	-
13	G	-
14	W	-
15	BR	-
16	R	-
17	BG	-
18	SB	-
20	GR	-

21	L	-
22	R	-
23	G	-
24	BR	-
25	L	-
26	LG	-
27	W	-
28	R	-
31	GR	-
32	L	-
33	V	-
34	BG	-
39	W	-
40	BG	-
41	R	-
42	V	-
43	W	-
47	G	-
48	R	-
49	W	-
50	SHIELD	-
51	SB	-
52	B	-
53	R	-
54	B	-
56	R	-
57	G	-
58	G	-
59	R	-
60	BR	-
61	Y	-
62	SHIELD	-
63	GR	-
64	R	-
65	G	-
66	BR	-
67	BG	-
69	P	-
70	L	-
71	SHIELD	-
72	SHIELD	- [Without active noise control unit]
73	V	- [With active noise control unit]
76	LG	-
77	R	-
78	SB	-
79	G	-
80	R	-
81	G	-
82	BR	- [Without active noise control unit]

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ENGINE CONTROL SYSTEM

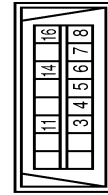
[VR38]

< WIRING DIAGRAM >

ENGINE CONTROL SYSTEM

82	G	- [With active noise control unit]
83	R	- [With active noise control unit]
84	Y	- [Without active noise control unit]
84	SHIELD	-
85	V	-
86	LG	- [Without active noise control unit]
86	W	- [With active noise control unit]
87	L	-
88	P	-
89	SHIELD	-
90	V	-
92	LG	-
93	Y	-
94	G	-
95	R	-
96	Y	-
97	R	-
98	G	-
99	L	-
100	W	-

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Connector No.	M36
Connector Name	COMBINATION SWITCH (SFPAL CABLE)
Connector Type	TK08FGY-1V



Terminal No.	Color Of Wire	Signal Name [Specification]
24	V	-
25	G	-
26	Y	-
31	SB	-
32	R	-
33	GR	-
34	W	-

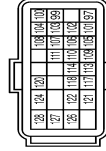
Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
3	B	GROUND
4	B	ILLUMINATION GROUND
5	B	GROUND
6	W	METER CONTROL SWITCH GROUND
7	Y	ACTUATOR COMBINATION METER SIGNAL
8	SB	AMBIENT SENSOR GROUND
9	P	AMBIENT SENSOR SIGNAL
12	L	VEHICLE SPEED SIGNAL (2-PULSE)
13	V	VEHICLE SPEED SIGNAL (8-PULSE)
14	B	OIL PRESSURE SENSOR GROUND
15	R	AIR BAG SIGNAL

16	R	LED HEAD LAMP (RH) WARNING SIGNAL
18	L	FUEL LEVEL SENSOR GROUND
19	R	OIL LEVEL SENSOR GROUND
20	W	OIL LEVEL SENSOR SIGNAL
21	L	CAN-H
22	P	CAN-L
23	LG	ILLUMINATION CONTROL SWITCH SIGNAL (+)
24	BR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
25	G	TRIP AIR RESET SWITCH SIGNAL
26	BG	ENTER SWITCH SIGNAL
27	SB	SELECT SWITCH SIGNAL
28	BR	ALTERNATOR
29	G	SEAT BELT TRUCKLE SWITCH SIGNAL (PASSENGER SIDE)
30	LG	SEAT BELT TRUCKLE SWITCH SIGNAL (DRIVER SIDE)
31	V	PARKING BRAKE SWITCH SIGNAL
32	V	BRAKE FLUID LEVEL SWITCH SIGNAL
33	L	WASHER LEVEL SWITCH SIGNAL
34	GR	OIL PRESSURE SENSOR POWER
35	W	OIL PRESSURE SENSOR SIGNAL
38	BG	FUEL LEVEL SENSOR SIGNAL
39	Y	LED HEAD LAMP (LH) WARNING SIGNAL
40	V	ILLUMINATION CONTROL

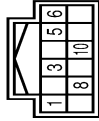
Connector No.	M107
Connector Name	ECM
Connector Type	RP24FGY-R28-RLH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
97	P	CAN COMMUNICATION LINE
99	SB	SENSOR POWER SUPPLY
100	BR	SENSOR POWER SUPPLY
101	L	CAN COMMUNICATION LINE
102	G	ASCD STEERING SWITCH
103	GR	SENSOR GROUND
104	P	ACCELERATOR PEDAL POSITION SENSOR 1
105	W	ECM RELAY (SELF SHUT-OFF)
106	LG	IGNITION SWITCH
107	BG	SENSOR GROUND
108	L	ACCELERATOR PEDAL POSITION SENSOR 2
109	L	SAVALVERLY

110	P	STOP LAMP SWITCH
111	GR	PNP SIGNAL
113	SB	ENGINE SPEED OUTPUT SIGNAL
114	V	DATA LINK CONNECTOR
117	R	ASGD BRAKE SWITCH
118	W	POWER SUPPLY FOR ECM (BACK-UP)
120	BR	SAPMPRLY
121	P	POWER SUPPLY FOR ECM
122	V	POWER SUPPLY FOR ECM
124	B	ECM GROUND
126	L	FUEL PUMP RELAY
127	G	THROTTLE CONTROL MOTOR RELAY
128	B	ECM GROUND

Connector No.	M108
Connector Name	POWER STEERING CONTROL UNIT
Connector Type	TH12FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	SOL
3	G	V/GN
5	B	SOL GND
6	B	GROUND
8	L	VSP
10	SB	TACHO

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ENGINE CONTROL SYSTEM

< WIRING DIAGRAM >

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ENGINE CONTROL SYSTEM

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK35MW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-
3	W	-
4	P	-
5	B	-
6	B	-
7	W	-
8	B	-
9	W	-
10	B	-
11	B	-
12	LG	-
13	B	-
14	BR	-
15	G	-
16	W	-
19	W	-
20	R	-
21	BG	-
26	L	-
27	Y	-
28	LG	-
29	BR	-
30	Y	-
31	R	-
32	LG	-
33	LG	-
34	Y	-
39	V	-

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
6	G	-
7	V	-
8	G	-
9	W	-
10	Y	-
31	Y	-
32	LG	-
33	BR	-
34	L	-
40	G	-
41	R	-
42	SB	-
43	L	-
44	R	-
45	G	-
51	SB	-
52	BG	-
53	R	-
54	GR	-
60	L	-
61	P	-
62	L	-
63	Y	-
64	LG	-
69	P	-
70	L	-
71	Y	-
80	L	-
81	G	-
82	BR	-
83	B	-
84	V	-
85	SB	-
86	SHIELD	-
87	W	-
96	Y	-

98	G	-
99	V	-
100	W	-

Connector No.	M303
Connector Name	COMBINATION SWITCH (SPRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

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ENGINE CONTROL SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[VR38]

SYMPTOM DIAGNOSIS

ENGINE CONTROL SYSTEM SYMPTOMS

Symptom Table (GT-R certified NISSAN dealer)

INFOID:0000000011486690

SYSTEM — BASIC ENGINE CONTROL SYSTEM

		SYMPTOM												Reference page	
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION		BATTERY DEAD (UNDER CHARGE)
Warranty symptom code		AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	HA	
Fuel	Fuel pump circuit	1	1	2	3	2		2	2			3		2	EC-541
	Sub fuel pump circuit			2	2	1									EC-432
	Fuel pressure regulator system	3	3	4	4	4	4	4	4	4		4			EC-637
	Fuel injector circuit	1	1	2	3	2		2	2			2			EC-538
	Evaporative emission system	3	3	4	4	4	4	4	4	4	4	4			EC-104
Air	Positive crankcase ventilation system	3	3	4	4	4	4	4	4	4		4	1	EC-559	
	Incorrect idle speed adjustment						1	1	1	1		1			EC-17
	Electric throttle control actuator	1	1	2	3	3	2	2	2	2		2		2	EC-454 , EC-461
Ignition	Incorrect ignition timing adjustment	3	3	1	1	1		1	1			1			EC-17
	Ignition circuit	1	1	2	2	2		2	2			2			EC-544
Main power supply and ground circuit		2	2	3	3	3		3	3		2	3			EC-191
Mass air flow sensor circuit		1			2										EC-212 , EC-219
Engine coolant temperature sensor circuit					3										
Air fuel ratio (A/F) sensor 1 circuit			1	2	3	2		2	2			2			EC-248 , EC-252 , EC-255 , EC-497
Throttle position sensor circuit							2			2					EC-237 , EC-308 , EC-450 , EC-452 , EC-463
Accelerator pedal position sensor circuit				3	2	1									EC-501 , EC-504 , EC-508

ENGINE CONTROL SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[VR38]

	SYMPTOM													Reference page
	HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	
Warranty symptom code	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	HA	
Knock sensor circuit			2								3			EC-328
Engine oil temperature sensor			4		3						3			EC-301 , EC-305
Crankshaft position sensor (POS) circuit	2	2												EC-331
Camshaft position sensor (PHASE) circuit	3	2												EC-335
Turbocharger boost sensor circuit			3		3									EC-314 , EC-319
Vehicle speed signal circuit		2	3		3						3			EC-411
Power steering pressure sensor circuit		2					3	3						EC-419
ECM	2	2	3	3	3	3	3	3	3	3	3			EC-422 , EC-424
Intake valve timing control solenoid valve circuit		3	2		3	3	2	2	3		3			EC-209
Air cut solenoid valve circuit	3				3									EC-517
Turbocharger boost control solenoid valve circuit			3		3									EC-206
PNP signal circuit			3		3		3	3			3			EC-437
Refrigerant pressure sensor circuit		2				3			3		4			EC-560
Electrical load signal circuit							3							EC-536
Air conditioner circuit	2	2	3	3	3	3	3	3	3		3		2	HAC-4
ABS actuator and electric unit (control unit)			4											BRC-6

1 - 6: The numbers refer to the order of inspection.

(continued on next page)

SYSTEM — ENGINE MECHANICAL & OTHER

ENGINE CONTROL SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[VR38]

		SYMPTOM													Reference page						
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)							
Warranty symptom code		AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	HA							
Fuel	Fuel tank	5	5												FL-5						
	Fuel piping			5	5	5		5	5		5			5		EM-46					
	Vapor lock									5						—					
	Valve deposit															—					
	Poor fuel (Heavy weight gasoline, Low octane)	5			5	5	5		5	5				5		—					
Air	Air duct		5												EM-28						
	Air cleaner															EM-17					
	Air leakage from air duct (Mass air flow sensor — electric throttle control actuator)	5		5	5		5		5	5				5		EM-28					
	Electric throttle control actuator				5		5				5					EM-36					
	Air leakage from intake manifold/Collector/Gasket															EM-38					
Cranking	Battery	1	1	1		1		1	1					1	PG-3						
	Generator circuit											CHG-27,									
	Starter circuit	3														STR-2 (with GR8-1200 NI [†]), STR-5 (without GR8-1200 NI [†])					
	Signal plate	6														EM-124					
	PNP signal	4														TM-370					
Engine	Cylinder head	5	5	5	5	5		5	5			5	3		EM-110						
	Cylinder head gasket															4					
	Cylinder block																				
	Piston													4							
	Piston ring																				
	Connecting rod	6		6	6	6	6		6	6			6			EM-124					
	Bearing																				
	Crankshaft																				

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ENGINE CONTROL SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[VR38]

		SYMPTOM												Reference page	
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION		BATTERY DEAD (UNDER CHARGE)
Warranty symptom code		AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	HA	
Valve mechanism	Timing chain														EM-85
	Camshaft														EM-91
	Intake valve timing control	5	5	5	5	5		5	5			5			EM-70
	Intake valve												3		EM-110
	Exhaust valve														
Exhaust	Exhaust manifold/Tube/Muffler/Gasket	5	5	5	5	5		5	5			5			EM-64 , EM-50
	Three way catalyst														
Lubrication	Oil pan/Oil strainer/Oil pump/Oil filter/Oil gallery/Oil cooler	5	5	5	5	5		5	5			5			EM-102 , LU-13 , LU-15 , LU-17
	Oil level (Low)/Filthy oil														LU-8
Cooling	Radiator/Hose/Radiator filler cap														CO-13 , CO-13
	Thermostat									5					CO-22
	Water pump														CO-27
	Water gallery	5	5	5	5	5		5	5		4	5			CO-24
	Cooling fan														CO-20
	Coolant level (Low)/Contaminated coolant									5					CO-9
NATS (Nissan Anti-theft System)		1	1												SEC-5

1 - 6: The numbers refer to the order of inspection.

*: For outline of GR8-1200 NI, refer to [STR-18](#), "Special Service Tools".

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[VR38]

NORMAL OPERATING CONDITION

Description (GT-R certified NISSAN dealer)

INFOID:000000011486691

FUEL CUT CONTROL (AT NO LOAD AND HIGH ENGINE SPEED)

If the engine speed is above 1,800 rpm under no load (for example, the shift lever position is neutral and engine speed is over 1,800 rpm) fuel will be cut off after some time. The exact time when the fuel is cut off varies based on engine speed.

Fuel cut will be operated until the engine speed reaches 1,500 rpm, then fuel cut will be cancelled.

In addition, to protect the engine, the maximum engine speed is restricted to 5,000 rpm when no load is applied.

NOTE:

This function is different from deceleration control listed under Multiport Fuel Injection (MFI) System, [EC-51, "System Description \(GT-R certified NISSAN dealer\)".](#)

FUEL CUT WHEN STARTING THE ENGINE WITH THE ACCELERATOR PEDAL FULLY DE-PRESSED

When intending to start the engine with the accelerator pedal fully depressed, to eliminate moisture from fuel on the spark plugs, the fuel is cut during cranking and the engine does not start. The fuel is continuously cut until the accelerator pedal is released.

ENGINE SPEED CUTTING CONTROL

The ECM receives the engine oil temperature signals from the engine oil temperature sensor and performs the engine speed cut control, to protect the engine at less than 0°C (32°F) and more than 135°C (275°F) engine oil temperature. The ECM controls the electric throttle control actuator and restricts the maximum engine speed to 4,000 rpm. This control is cancelled when the engine oil temperature is in the optimum temperature range.

NOTE:

If an engine oil temperature sensor deteriorates, the characteristic of sensor changes. In such cases, the engine speed cut control temperature may also change. Perform the engine oil temperature sensor inspection to check the deterioration of the engine oil temperature sensor. Refer to [EC-304, "Component Inspection \(GT-R certified NISSAN dealer\)".](#)

BOOST RESTRICTION CONTROL

The ECM receives the engine coolant temperature signals from the engine coolant temperature sensor and performs the boost restriction control, to protect the engine at more than 110°C (230°F) engine coolant temperature. The ECM controls the turbocharger boost control solenoid valve, lowers the boost, and decreases the engine power. This control is cancelled when the engine coolant temperature is in the optimum temperature range.

NOTE:

The boost varies depending on the vehicle and driving conditions.

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PRECAUTION**PRECAUTIONS****Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"**

INFOID:000000011486692

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS**WARNING:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions Necessary for Steering Wheel Rotation After Battery Disconnection

INFOID:000000011486693

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- Before removing and installing any control units, first turn the ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

For vehicle with steering lock unit, if the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Turn the ignition switch to ACC position.
(At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.

PRECAUTIONS

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< PRECAUTION >

4. Perform the necessary repair operation.
5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT.

Precaution for Battery Service

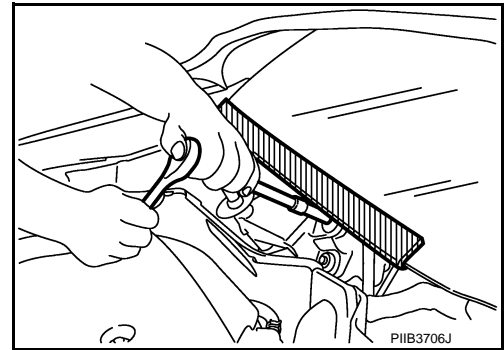
INFOID:000000011486694

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

Precaution for Procedure without Cowl Top Cover

INFOID:000000011486695

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precautions for Removing Battery Terminal

INFOID:000000011486696

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

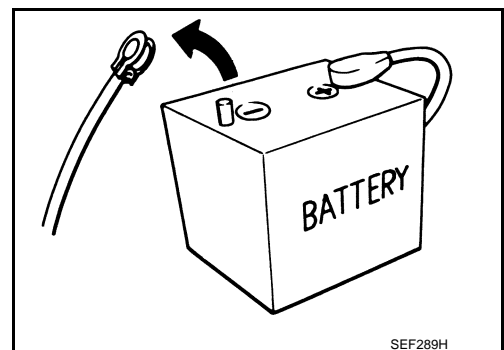
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



On Board Diagnostic (OBD) System of Engine and Transmission

INFOID:000000011486697

The ECM has an on board diagnostic system. It will light up the malfunction indicator lamp (MIL) to warn the driver of a malfunction causing emission deterioration.

CAUTION:

- Be sure to turn the ignition switch OFF and disconnect the negative battery cable before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to illuminate.
- Be sure to connect and lock the connectors securely after work. A loose (unlocked) connector will cause the MIL to illuminate due to the open circuit. (Be sure the connector is free from water, grease, dirt, bent terminals, etc.)
- Certain systems and components, especially those related to OBD, may use a new style slide-locking type harness connector. For description and how to disconnect, refer to [GI-35. "Control Units and Electrical Parts"](#).
- Be sure to route and secure the harnesses properly after work. The interference of the harness with a bracket, etc. may cause the MIL to illuminate due to the short circuit.

PRECAUTIONS

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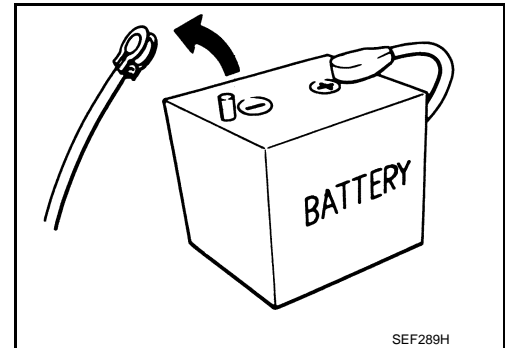
< PRECAUTION >

- Be sure to connect rubber tubes properly after work. A misconnected or disconnected rubber tube may cause the MIL to illuminate due to the malfunction of the EVAP system or fuel injection system, etc.
- Be sure to erase the unnecessary malfunction information (repairs completed) from the ECM and TCM (Transmission control module) before returning the vehicle to the customer.

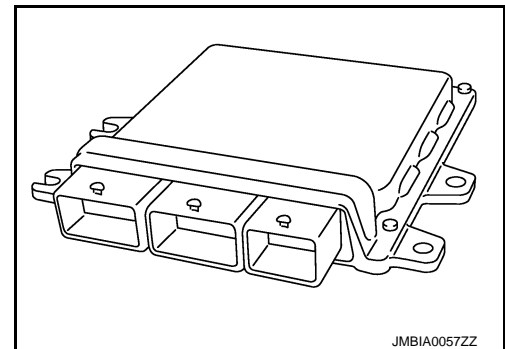
General Precautions

INFOID:000000011486698

- After finishing servicing, check that all the tools and waste are stored in a customary place.
- Always use a 12 volt battery as power source.
- Never attempt to disconnect battery cables while engine is running.
- Before connecting or disconnecting the ECM harness connector, turn ignition switch OFF and disconnect negative battery cable. Failure to do so may damage the ECM because battery voltage is applied to ECM even if ignition switch is turned OFF.
- Before removing parts, turn ignition switch OFF and then disconnect battery ground cable.

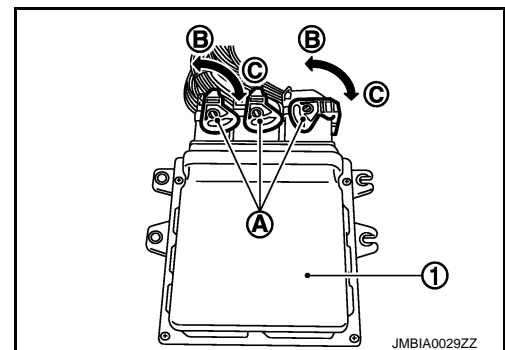


- Never disassemble ECM.
- If a battery cable is disconnected, the memory will return to the ECM value.
The ECM will now start to self-control at its initial value. Engine operation can vary slightly when the terminal is disconnected. However, this is not an indication of a malfunction. Never replace parts because of a slight variation.
- If the battery is disconnected, the following emission-related diagnostic information will be lost within 24 hours.

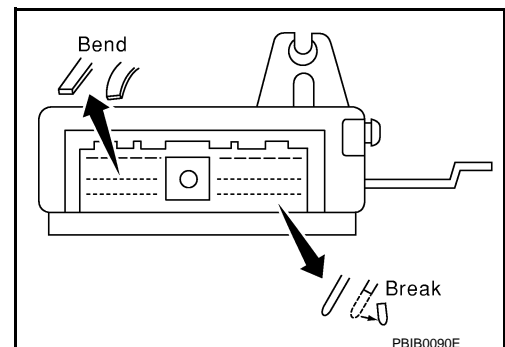


- Diagnostic trouble codes
- 1st trip diagnostic trouble codes
- Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values
- When connecting ECM harness connector (A), fasten (B) it securely with a lever as far as it will go as shown in the figure.

- 1. ECM
- C. Loosen



- When connecting or disconnecting pin connectors into or from ECM, take care not to damage pin terminals (bend or break).
Make sure that there are not any bends or breaks on ECM pin terminal, when connecting pin connectors.
- Securely connect ECM harness connectors.
A poor connection can cause an extremely high (surge) voltage to develop in coil and condenser, thus resulting in damage to ICs.
- Keep engine control system harness at least 0.1 m (0.3 ft) away from adjacent harness, to prevent engine control sys-



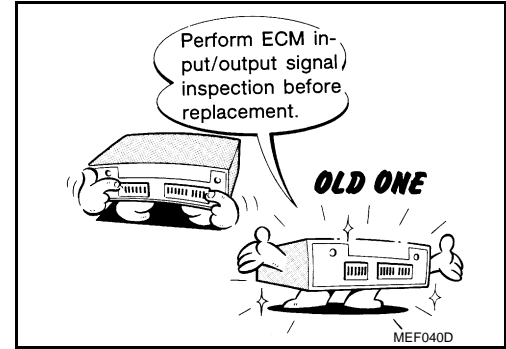
PRECAUTIONS

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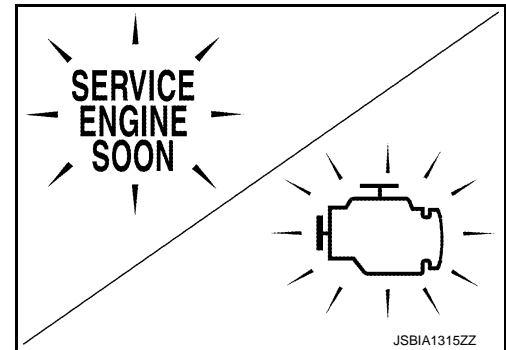
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tem malfunctions due to receiving external noise, degraded operation of ICs, etc.

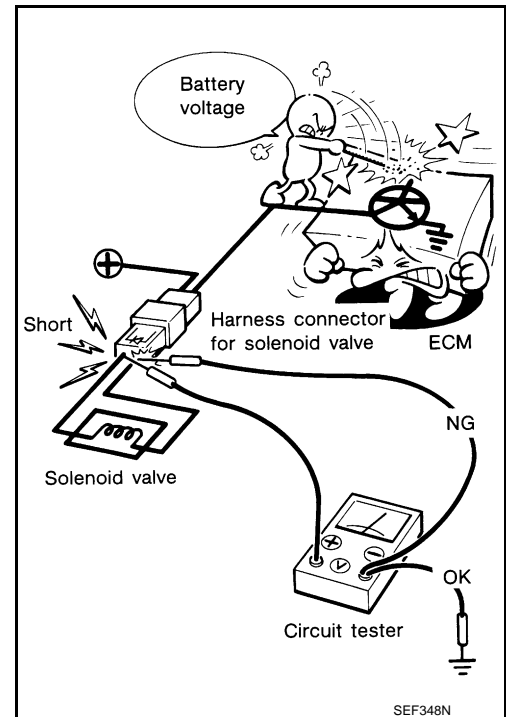
- Keep engine control system parts and harness dry.
- Before replacing ECM, perform ECM Terminals and Reference Value inspection and make sure ECM functions properly. Refer to [EC-570, "Reference Value \(GT-R certified NISSAN dealer\)"](#).
- Handle mass air flow sensor carefully to avoid damage.
- Never clean mass air flow sensor with any type of detergent.
- Never disassemble electric throttle control actuator.
- Even a slight leak in the air intake system can cause serious incidents.
- Never shock or jar the camshaft position sensor (PHASE), crankshaft position sensor (POS).



- After performing each TROUBLE DIAGNOSIS, perform DTC Confirmation Procedure or Component Function Check. The DTC should not be displayed in the DTC Confirmation Procedure if the repair is completed. The Component Function Check should be a good result if the repair is completed.



- When measuring ECM signals with a circuit tester, never allow the two tester probes to contact. Accidental contact of probes will cause a short circuit and damage the ECM power transistor.



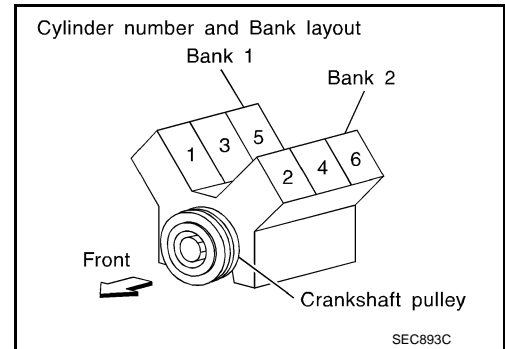
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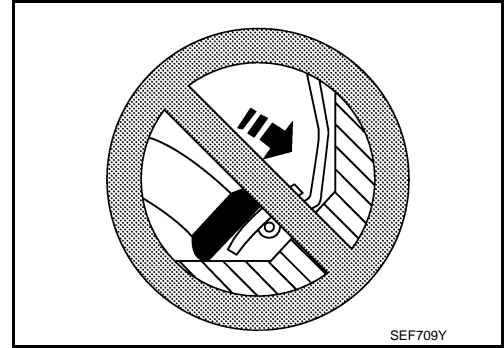
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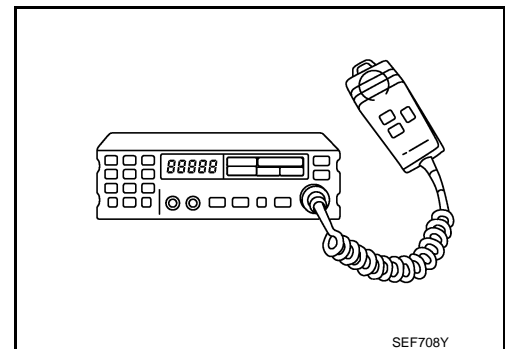
- B1 indicates the bank 1, B2 indicates the bank 2 as shown in the figure.
- Never operate fuel pump when there is no fuel in lines.
- Tighten fuel hose clamps to the specified torque.



- Never depress accelerator pedal when starting.
- Immediately after starting, never rev up engine unnecessarily.
- Never rev up engine just prior to shutdown.



- When installing C.B. ham radio or a mobile phone, be sure to observe the following as it may adversely affect electronic control systems depending on installation location.
 - Keep the antenna as far as possible from the electronic control units.
 - Keep the antenna feeder line more than 0.2 m (0.7 ft) away from the harness of electronic controls. Never let them run parallel for a long distance.
 - Adjust the antenna and feeder line so that the standing-wave ratio can be kept smaller.
 - Be sure to ground the radio to vehicle body.



PREPARATION

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PREPARATION

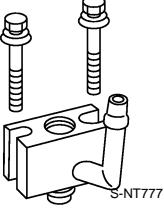
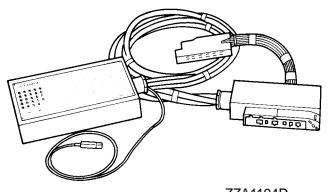
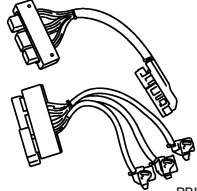
PREPARATION

Special Service Tools (GT-R certified NISSAN dealer)

INFOID:000000011486699

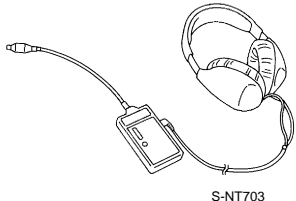
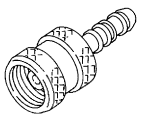
NOTE:

The actual shapes of TechMate tools may differ from those of special service tools illustrated here.

Tool number Tool name	Description
KV10117600 Fuel pressure check adapter 	Checking fuel pressure with pressure gauge
EG17550000 Break-out box 	Measuring ECM signals with a circuit tester
EG17550400 Harness adapter 	Measuring ECM signals with a circuit tester

Commercial Service Tools (GT-R certified NISSAN dealer)


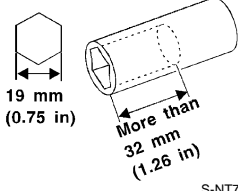
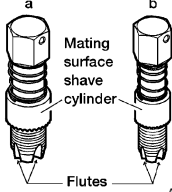

INFOID:000000011486700

Tool name (TechMate No.)	Description
Leak detector i.e.: (J-41416) 	Locates the EVAP leak
EVAP service port adapter i.e.: (J-41413-OB) 	Applies positive pressure through EVAP service port

PREPARATION

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< PREPARATION >

Tool name (TechMate No.)	Description
Fuel filler cap adapter i.e.: (MLR-8382) <div style="text-align: center;">  <p>S-NT815</p> </div>	Checks fuel tank vacuum relief valve opening pressure
Socket wrench <div style="text-align: center;">  <p>S-NT705</p> </div>	Removes and installs engine coolant temperature sensor
Oxygen sensor thread cleaner i.e.: (J-43897-18) (J-43897-12) <div style="text-align: center;">  <p>AEM488</p> </div>	Reconditions the exhaust system threads before installing a new oxygen sensor. Use with anti-seize lubricant shown below. a: 18 mm diameter with pitch 1.5 mm for Zirconia Oxygen Sensor b: 12 mm diameter with pitch 1.25 mm for Titanium Oxygen Sensor
Anti-seize lubricant i.e.: (Permatex™ 133AR or equivalent meeting MIL specification MIL-A-907) <div style="text-align: center;">  <p>S-NT779</p> </div>	Lubricates oxygen sensor thread cleaning tool when reconditioning exhaust system threads.

PERIODIC MAINTENANCE

FUEL PRESSURE

Inspection (GT-R certified NISSAN dealer)

INFOID:000000011486701

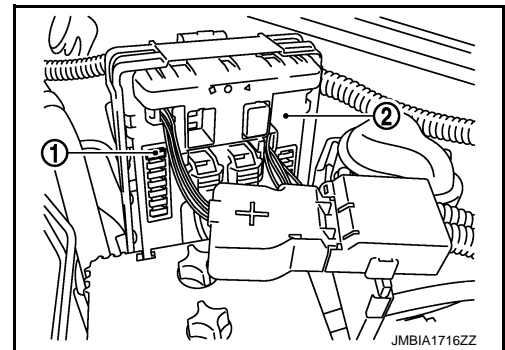
FUEL PRESSURE RELEASE

④ With CONSULT

1. Turn ignition switch ON.
2. Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode with CONSULT.
3. Start engine.
4. After engine stalls, crank it two or three times to release all fuel pressure.
5. Turn ignition switch OFF.

⊗ Without CONSULT

1. Remove fuel pump fuse (1) located in IPDM E/R (2).
2. Start engine.
3. After engine stalls, crank it two or three times to release all fuel pressure.
4. Turn ignition switch OFF.
5. Reinstall fuel pump fuse after servicing fuel system.



FUEL PRESSURE CHECK

CAUTION:

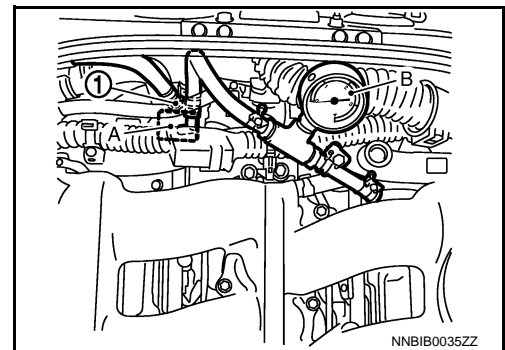
Before disconnecting fuel line, release fuel pressure from fuel line to eliminate danger.

NOTE:

- Prepare pans or saucers under the disconnected fuel line because the fuel may spill out. The fuel pressure cannot be completely released because R35 models do not have fuel return system.
- Use fuel pressure check adapter [SST: (KV10117600)] to check fuel pressure.

1. Release fuel pressure to zero.
2. Install fuel pressure check adapter [SST: KV10117600] (A) between fuel damper (1) and injector tube.
3. Connect fuel pressure gauge (B) to fuel pressure check adapter.
4. Turn ignition switch ON and check for fuel leakage.
5. Start engine and check for fuel leakage.
6. Read the indication of fuel pressure gauge.

At idling : Approximately 350 kPa (3.50 bar, 3.57 kg/cm², 51 psi)



7. If result is unsatisfactory, check fuel hoses and fuel tubes for clogging.
If OK, Replace "fuel filter and fuel pump assembly".
If NG, Repair or replace malfunctioning part.

EVAP LEAK CHECK

Inspection

INFOID:000000011486702

CAUTION:

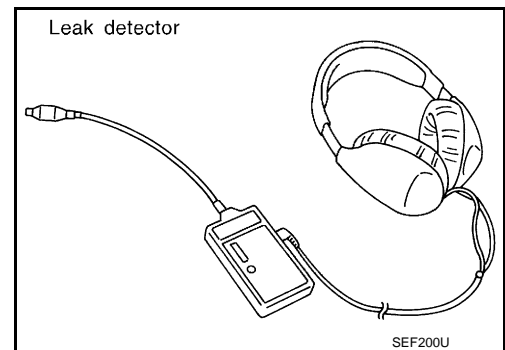
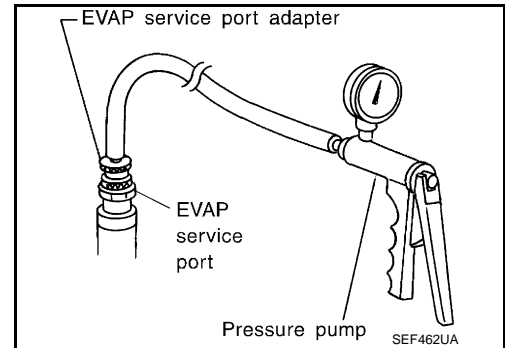
- Do not use compressed air or a high pressure pump.
- Do not exceed 4.12 kPa (0.041 bar, 0.042 kg/cm², 0.6 psi) of pressure in EVAP system.

NOTE:

- Do not start engine.
- Improper installation of EVAP service port adapter (commercial service tool) to the EVAP service port may cause a leak.

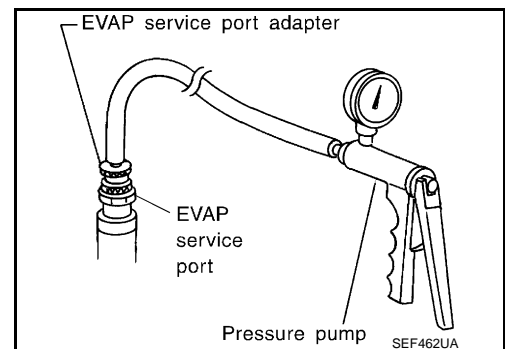
Ⓟ WITH CONSULT

1. To locate the EVAP leak, install EVAP service port adapter (commercial service tool) and pressure pump to EVAP service port.
2. Turn ignition switch ON.
3. Select the "EVAP SYSTEM CLOSE" of "WORK SUPPORT" mode with CONSULT.
4. Touch "START". A bar graph (Pressure indicating display) will appear on the screen.
5. Apply positive pressure to the EVAP system until the pressure indicator reaches the middle of the bar graph.
6. Remove EVAP service port adapter (commercial service tool) and hose with pressure pump.
7. Locate the leak using a leak detector (commercial service tool). Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).



ⓧ WITHOUT CONSULT

1. To locate the EVAP leak, install EVAP service port adapter (commercial service tool) and pressure pump to EVAP service port.
2. Apply battery voltage between the terminals of EVAP canister vent control valve to make a closed EVAP system.
3. To locate the leak, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.013 – 0.027 bar, 0.014 – 0.028 kg/cm², 0.2 – 0.4 psi).
4. Remove EVAP service port adapter (commercial service tool) and hose with pressure pump.

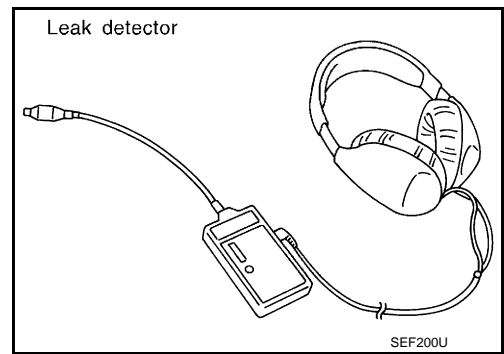


EVAP LEAK CHECK

< PERIODIC MAINTENANCE >

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5. Locate the leak using a leak detector (commercial service tool). Refer to [EC-104, "System Diagram \(GT-R certified NISSAN dealer\)"](#).



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SERVICE DATA AND SPECIFICATIONS (SDS)

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Idle Speed

INFOID:000000011486703

Condition	Specification
No load* (in P or N position)	825 ± 50 rpm

*: Under the following conditions

- A/C switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

Ignition Timing

INFOID:000000011486704

Condition	Specification
No load* (in P or N position)	27 ± 5° BTDC

*: Under the following conditions

- A/C switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

Calculated Load Value

INFOID:000000011486705

Condition	Specification (Using CONSULT or GST)
At idle	5 – 35%
At 2,500 rpm	5 – 35%

Mass Air Flow Sensor

INFOID:000000011486706

Supply voltage	Battery voltage (11 – 14 V)
Output voltage at idle	0.9 – 1.2 V*
Mass air flow (Using CONSULT or GST)	2.0 – 6.0 g/s at idle* 7.0 – 20.0 g/s at 2,500 rpm*

*: Engine is warmed up to normal operating temperature and running under no load.