PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000010262715

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. 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:

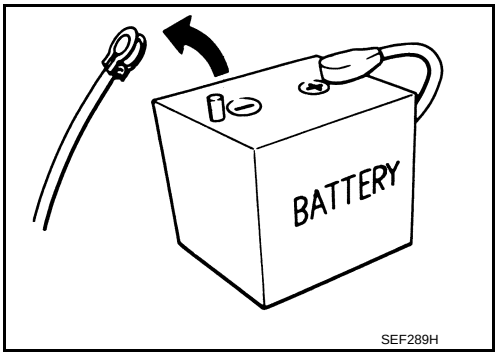
Always observe the following items for preventing accidental activation.

- **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 for Removing Battery Terminal

INFOID:0000000010262716

- 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.



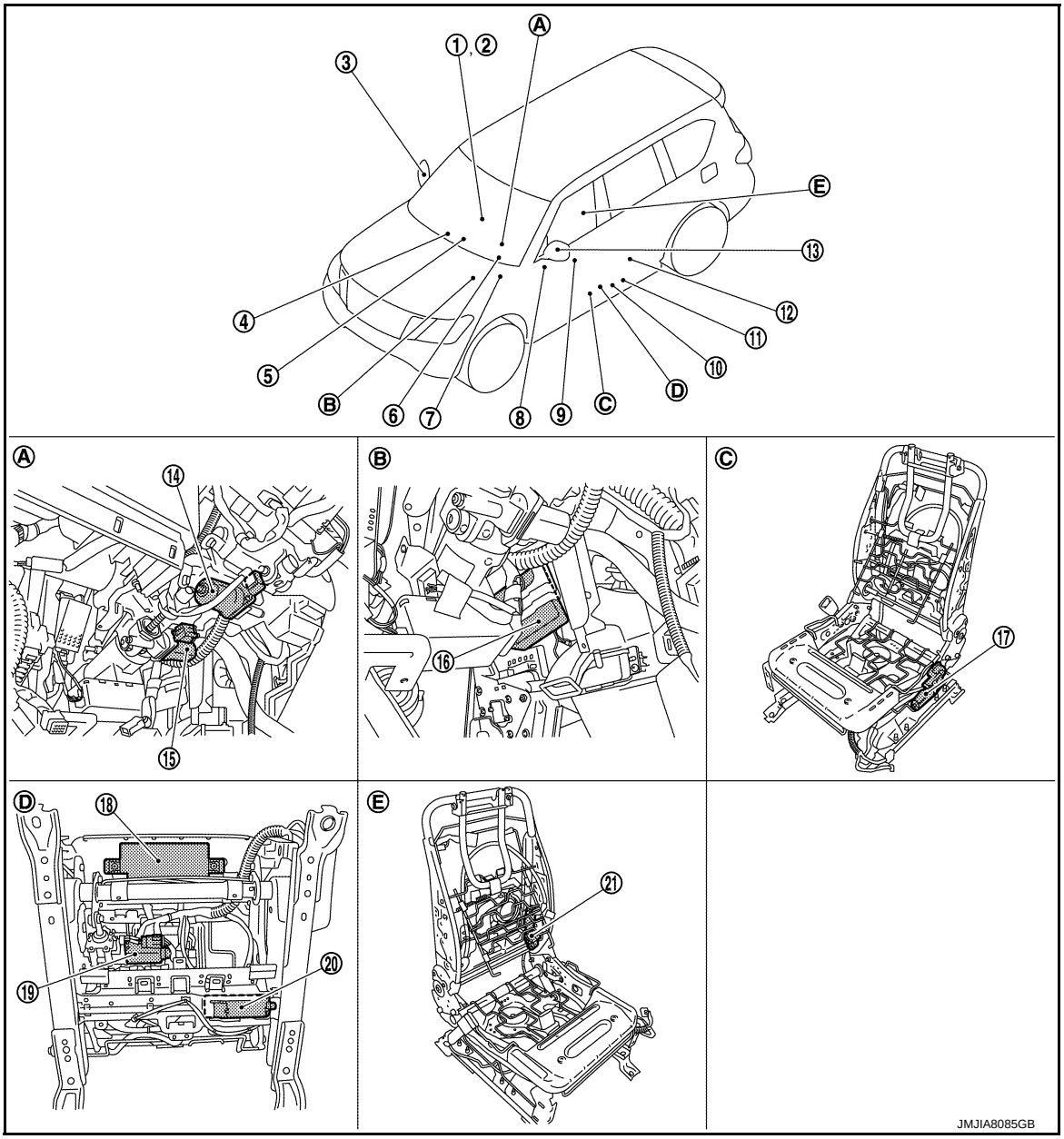
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

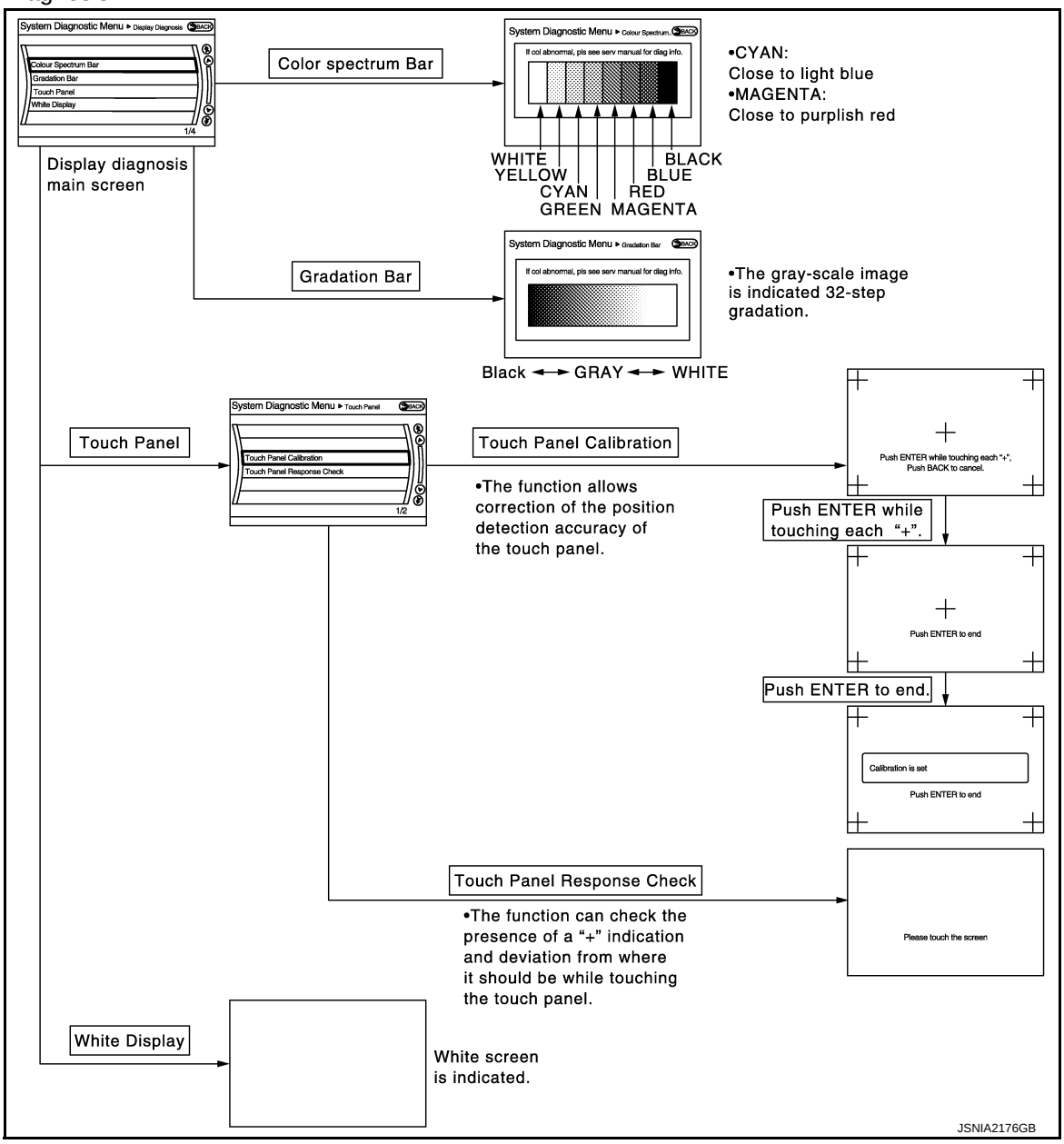
Component Parts Location

INFOID:0000000010259477



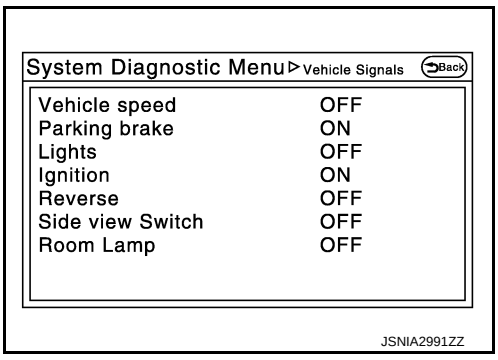
1. A/T shift selector (detention switch) Refer to TM-11, "A/T CONTROL SYSTEM : Component Parts Location".
2. TCM Refer to TM-11, "A/T CONTROL SYSTEM : Component Parts Location".
3. Door mirror (passenger side)
4. Combination meter Refer to MWI-6, "METER SYSTEM : Component Parts Location".
5. BCM Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location".
6. Tilt & telescopic switch
7. ABS actuator and electric unit (control unit) Refer to BRC-9, "Component Parts Location".
8. Seat memory switch
9. Power window main switch (Door mirror remote control switch)
10. Sliding, lifting switch
11. Reclining switch
12. Driver side door switch
13. Door mirror (driver side)
14. Tilt motor
15. Telescopic motor

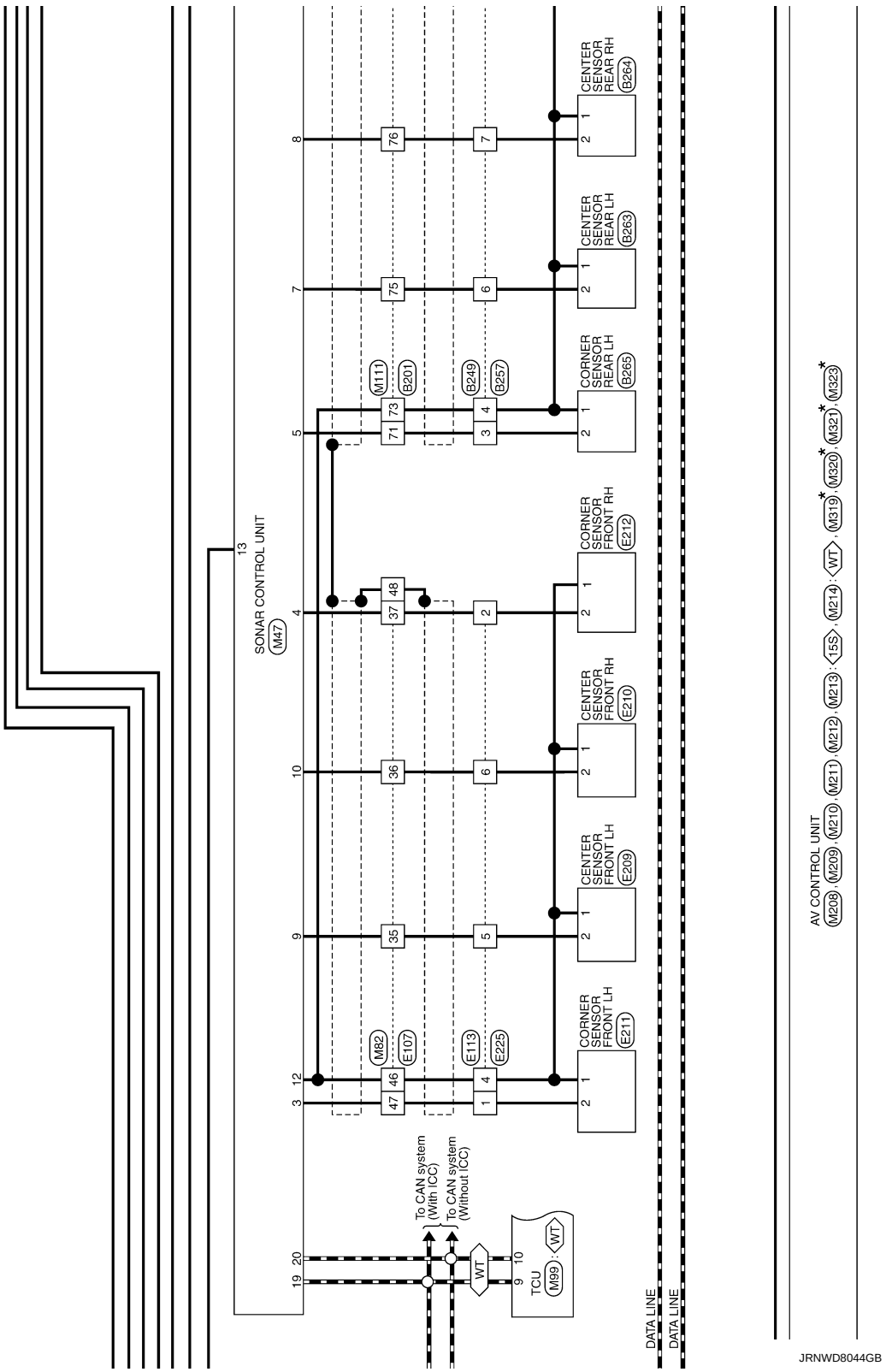
Display Diagnosis



Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

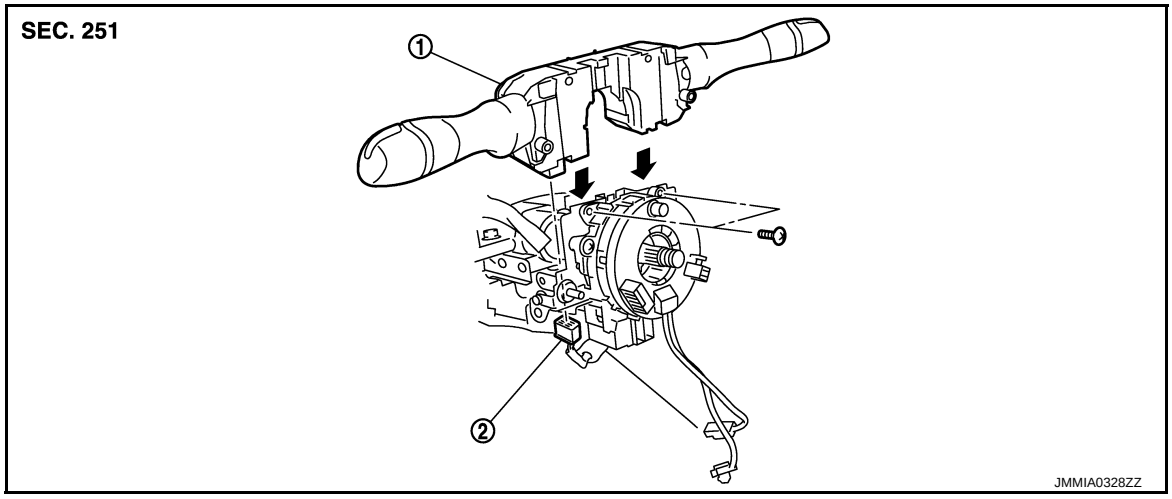



SONAR CONTROL UNIT
M47
13
CENTER SENSOR REAR RH
B264
CENTER SENSOR REAR LH
B263
CORNER SENSOR REAR LH
B265
CORNER SENSOR FRONT RH
E212
CENTER SENSOR FRONT RH
E210
CENTER SENSOR FRONT LH
E209
CORNER SENSOR FRONT LH
E211
M111
B201
B249
B257
M82
E107
E113
E225
To CAN system (With ICC)
To CAN system (Without ICC)
WT
TCU
M99
DATA LINE
DATA LINE
AV CONTROL UNIT
M208, M209, M210, M211, M212, M213, 15S, M214, WT, M319*, M320*, M321*, M323*
JRNWD8044GB

COMBINATION SWITCH

Exploded View

INFOID:0000000010262559



1. Combination switch
2. Combination switch connector

Removal and Installation

INFOID:0000000010262560

REMOVAL

1. Remove steering column cover. Refer to IP-13, "Exploded View".
2. Remove screws.
3. Disconnect the connector.
4. Pull up the combination switch to remove it.

INSTALLATION

Install in the reverse order of removal.

DTC	CONSULT display	Fail-safe				Reference
CONSULT		Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Emergency Braking (FEB) /Predictive Forward Collision Warning (PFCW)	
C1A00	CONTROL UNIT	×	×	×	×	CCS-99
C1A01	POWER SUPPLY CIR	×	×	×	×	CCS-100
C1A02	POWER SUPPLY CIR2	×	×	×	×	CCS-100
C1A12	RADAR OFF-CENTER	×		×	×	CCS-101
C1A16	RADAR BLOCKED	×		×	×	CCS-102
C1A21	UNIT HIGH TEMP	×	×	×	×	CCS-104
C1A23	UNIT LOW TEMP	×	×	×	×	CCS-105
C1A39	STRG SEN CIR	×	×	×	×	CCS-106
C1A50	ADAS MALFUNCTION	×	×	×	×	CCS-107
U0104	ADAS CAN CIR1	×	×	×	×	CCS-108
U0121	VDC CAN CIR2	×	×	×	×	CCS-109
U0126	STRG SEN CAN CIR1	×	×	×	×	CCS-110
U0405	ADAS CAN CIR2	×	×	×	×	CCS-111
U0415	VDC CAN CIR1	×	×	×	×	CCS-112
U0428	STRG SEN CAN CIR2	×	×	×	×	CCS-113
U1000	CAN COMM CIRCUIT	×	×	×	×	CCS-114
U1010	CONTROL UNIT (CAN)	×	×	×	×	CCS-115

U0424 HVAC CAN CIRCUIT 1

Description

INFOID:0000000011449860

ADAS control unit reads status of signal that is transmitted from A/C auto AMP. to ADAS control unit.

DTC Logic

INFOID:0000000011449861

DTC DETECTION LOGIC

DTC (On board display)	Display Item	Malfunction detected condition
U0424 (156)	HVAC CAN CIR 1 (HVAC CAN circuit 1)	When signal that is transmitted from A/C auto amp. is not the latest information

POSSIBLE CAUSE

A/C auto amp.

FAIL-SAFE

None

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0424” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-126, "DTC Logic".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U0424” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U0424” detected as the current malfunction?

YES >> Refer to DAS-124, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-43, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011449862

1.CHECK DTC PRIORITY

If DTC “U0424” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-126, "DTC Logic".
NO >> GO TO 2.

2.CHECK A/C AUTO AMP. SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “HVAC”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HAC-48, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-159, "Removal and Installation".

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000010258200

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. 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:

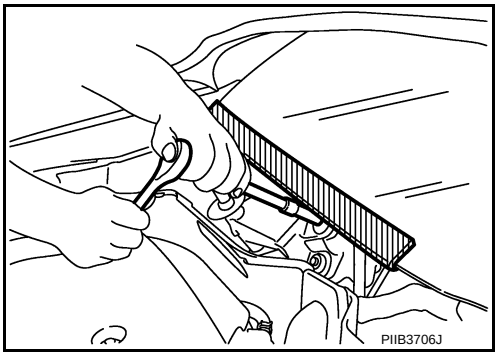
Always observe the following items for preventing accidental activation.

- **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.**

Precaution for Procedure without Cowl Top Cover

INFOID:0000000011402704

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Work

INFOID:0000000010258202

- After removing and installing the opening/closing parts, be sure to carry out fitting adjustments to check their operational.
- Check the lubrication level, damage, and wear of each part. If necessary, grease or replace it.

OUTSIDE KEY ANTENNA

DRIVER SIDE

DRIVER SIDE : Removal and Installation

INFOID:0000000010258498

REMOVAL

Remove the driver side outside handle. Refer to DLK-246, "OUTSIDE HANDLE : Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

PASSENGER SIDE

PASSENGER SIDE : Removal and Installation

INFOID:0000000010258499

REMOVAL

Remove the passenger side outside handle. Refer to DLK-246, "OUTSIDE HANDLE : Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

BACK DOOR

BACK DOOR : Removal and Installation

INFOID:0000000010258500

REMOVAL

Remove the back door finisher inner. Refer to INT-39, "Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

Calculated load value: (Calculated load value in the freeze frame data) x (1±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

INFOID:0000000010256255

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 permanent DTC is stored or MIL illuminates 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”), DTC (No DTCs) and permanent DTC (NO permanent 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.

VHCL SPEED SE	More than 64 km/h (40 mph)
Selector lever	Suitable position

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Go to EC-414, "Diagnosis Procedure".
NO >> INSPECTION END

5.PERFORM COMPONENT FUNCTION CHECK

WITH GST
Perform Component Function Check. Refer to EC-414, "Component Function Check".
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 >> Go to EC-414, "Diagnosis Procedure".

Component Function Check

INFOID:0000000010256500

1.PERFORM COMPONENT FUNCTION CHECK

WITH GST
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			
F111	11	175	Selector lever	P or N position	Battery voltage
				Except above position	Approx. 0

Is the inspection result normal?

YES >> INSPECTION END
NO >> Go to EC-414, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000010256501

1.CHECK DTC WITH TCM

Refer to TM-64, "CONSULT Function".

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-58, "DTC Index".

3.CHECK PNP SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect A/T assembly harness connector.
3. Disconnect ECM harness connector.
4. Check the continuity between A/T assembly harness connector and ECM harness connector.

P0131, P0151 A/F SENSOR 1

DTC Logic

INFOID:0000000010256842

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 (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P0131	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1 (bank 1) circuit low voltage]	• The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 0 V.	• Harness or connectors (The A/F sensor 1 circuit is open or shorted.) • A/F sensor 1
P0151	A/F SENSOR1 (B2) [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 10.5 V or more 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.

WITH GST

Follow the procedure “With CONSULT” above.

Is the indication constantly approx. 0 V?

YES >> Go to EC-791, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

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. Restart engine.
5. 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.
6. Maintain the following conditions for approximately 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
Selector lever	Suitable position

NOTE:

HEADLAMP WARNING

Component Function Check

INFOID:0000000011509758

1.CHECK HEADLAMP WARNING OPERATION

1. Turn ignition switch ON.
2. Check that headlamp warning on combination meter is not displayed when lighting switch is turned 2ND.

Is the inspection result normal?

YES >> Headlamp warning is normal.
NO >> Refer to EXL-118, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011509759

1.CHECK HEADLAMP WARNING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front combination lamp connector.
3. Turn ignition switch ON.
4. Check voltage between front combination lamp harness connector and ground.

+			-	Voltage (Approx.)
Front combination lamp				
Connector		Terminal		
RH	E119	2	Ground	12 V
LH	E118			

Is the inspection result normal?

YES >> Replace front combination lamp. Refer to EXL-155, "Removal and Installation".
NO >> GO TO 2.

2.CHECK HEADLAMP WARNING SIGNAL CIRCUIT

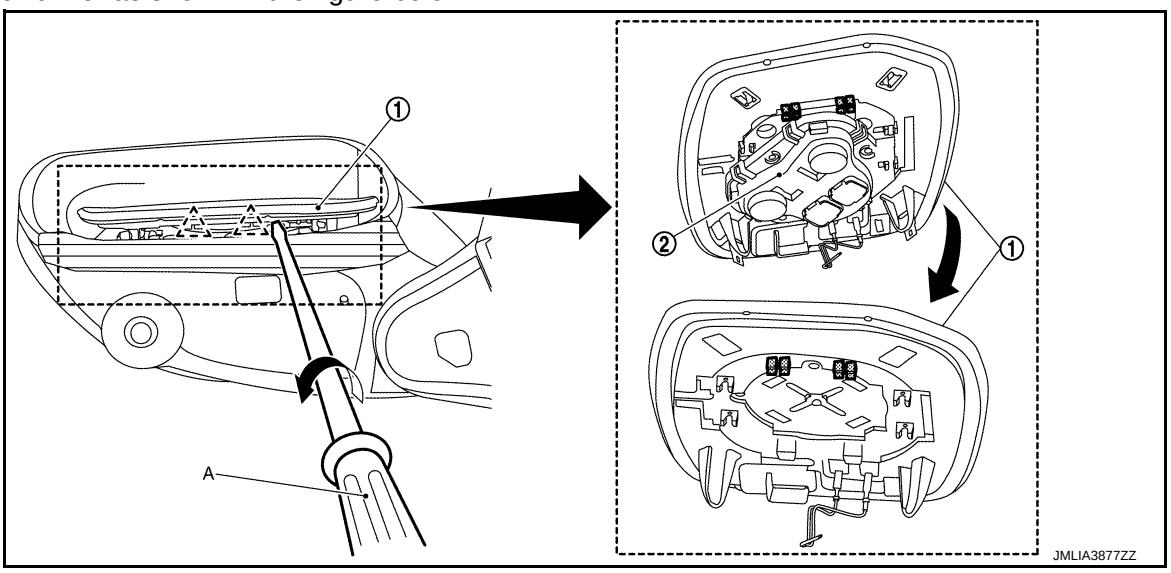
1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between front combination lamp harness connector and combination meter harness connector.

Front combination lamp			Combination meter		Continuity
Connector		Terminal	Connector	Terminal	
RH	E119	2	M34	6	Existed
LH	E118			9	

Is the inspection result normal?

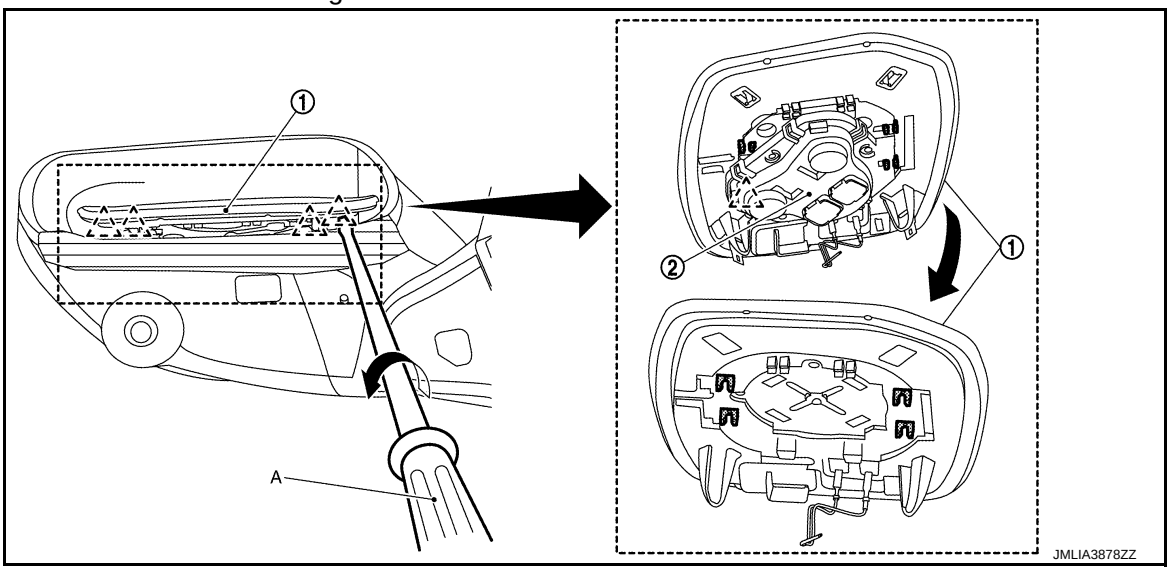
YES >> Replace combination meter. Refer to MWI-88, "Removal and Installation".
NO >> Repair or replace harness.

b. Disengage the glass mirror fixing lower pawls by pushing up while rotating (twisting) the small flat-bladed screwdriver as shown in the figure below.



△ : Pawl

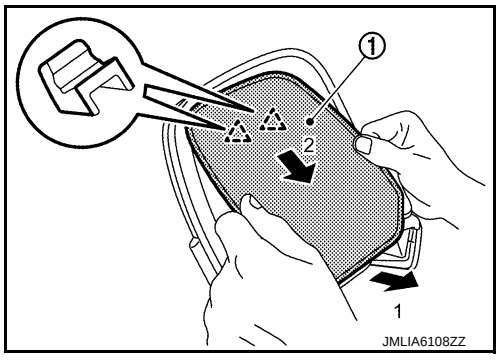
c. Disengage the glass mirror fixing side pawls by pushing up while rotating (twisting) the small flat-bladed screwdriver as shown in the figure below.



△ : Pawl

d. Lift up and pull slightly the glass mirror ① according to the numerical order 1→ 2 as shown in the figure, to disengage the upper fixing pawls.

△ : Pawl

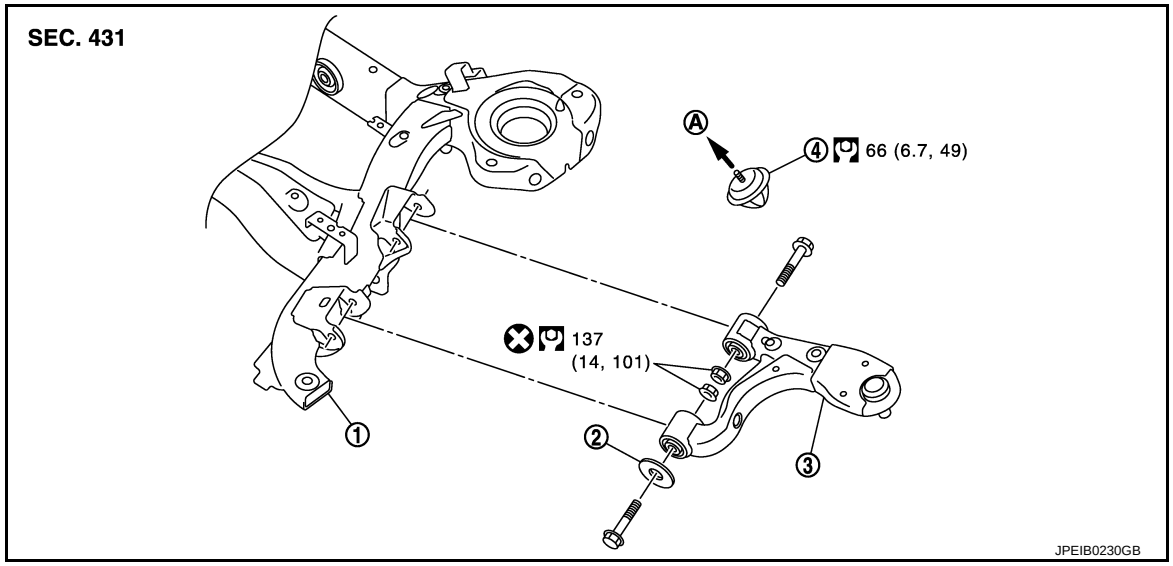


e. Disconnect glass mirror heater harness connectors (if equipped) and remove glass mirror from door mirror housing.

SUSPENSION ARM

Exploded View

INFOID:0000000010262485



1. Rear suspension member
2. Stopper rubber
3. Suspension arm
4. Bumper rubber
A. To frame

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000010262486

REMOVAL

1. Remove tires with power tool. Refer to WT-62, "Removal and Installation".
2. Remove rear suspension member assembly. Refer to RSU-18, "Removal and Installation".
3. Remove bumper rubber from frame, using a socket (commercial service tool).
4. Remove suspension arm from axle housing. Refer to RAX-7, "Removal and Installation".
5. Remove suspension arm mounting bolts, nuts, and stopper rubber from rear suspension member.
6. Remove suspension arm.
7. Perform inspection after removal. Refer to RSU-13, "Inspection and Adjustment".

INSTALLATION

Note the following and, install in the reverse order of removal.

- Perform final tightening of rear suspension member installation position (rubber bussing), under unladen conditions with tires on level ground.
- Perform inspection after installation. Refer to RSU-13, "Inspection and Adjustment".
- Perform adjustment after installation. (With HBMC) Refer to RSU-13, "Inspection and Adjustment".

Inspection and Adjustment

INFOID:0000000010262487

INSPECTION AFTER REMOVAL

Appearance

Check the following items, and replace the part if necessary.

- Suspension arm and bushing for deformation, cracks or damage.
- Boot of ball joint for cracks or damage, and also for grease leakage.

Ball Joint Inspection

Manually move ball stud to confirm it moves smoothly with no binding.

Swing Torque Inspection