

SECTION LAN
LAN SYSTEM

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PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

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CAUTION:

- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

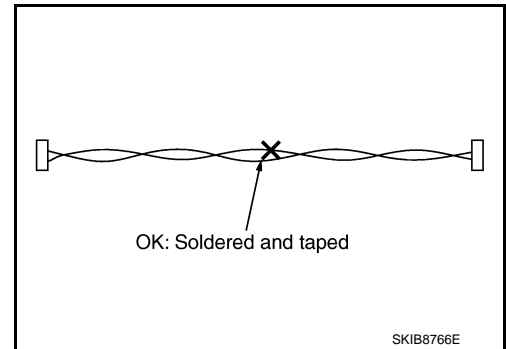
Precautions for Harness Repair

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- Solder the repaired area and wrap tape around the soldered area.

NOTE:

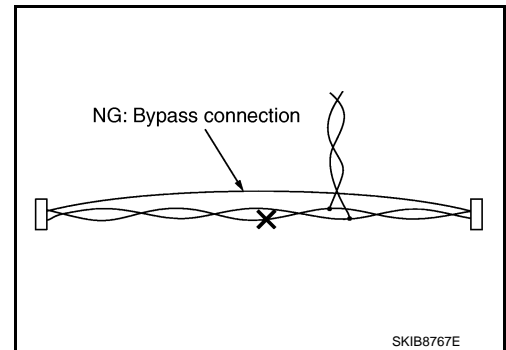
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause CAN communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



- Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

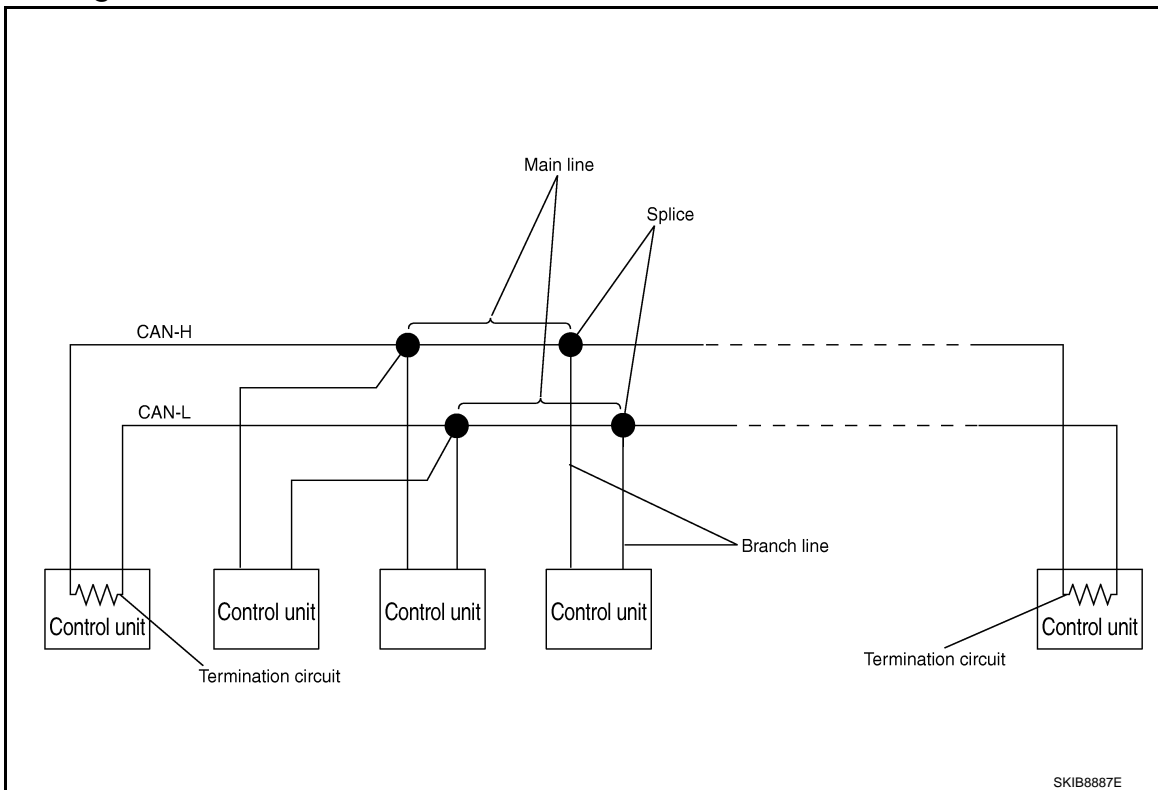
System Description

INFOID:000000006473694

- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network transmit signals using the CAN communication control circuit. They receive only necessary signals from other control units to operate various functions.
- CAN communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

System Diagram

INFOID:000000006473695



Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

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| Component | Description |
|---------------------|---|
| Main line | CAN communication line between splices |
| Branch line | CAN communication line between splice and a control unit |
| Splice | A point connecting a branch line with a main line |
| Termination circuit | Refer to LAN-6. "CAN Communication Control Circuit" . |

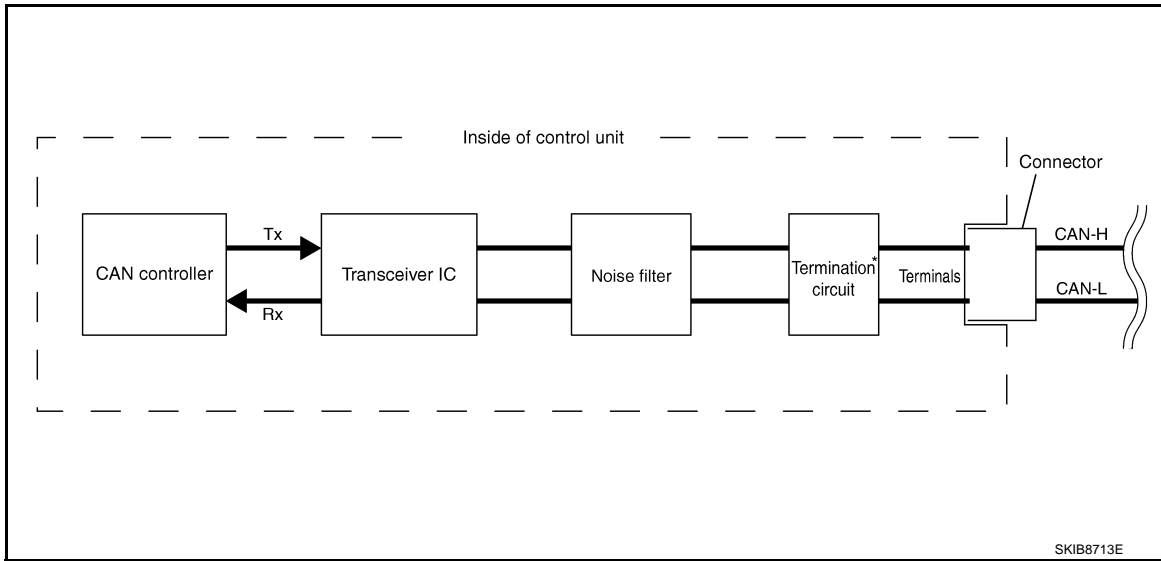
CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

CAN Communication Control Circuit

INFOID:000000006473696



| Component | System description |
|---|---|
| CAN controller | It controls CAN communication signal transmission and reception, error detection, etc. |
| Transceiver IC | It converts digital signal into CAN communication signal, and CAN communication signal into digital signal. |
| Noise filter | It eliminates noise of CAN communication signal. |
| Termination circuit* (Resistance of approx. 120 Ω) | It produces potential difference. |

*: These are the only control units wired with both ends of CAN communication system.

DIAG ON CAN

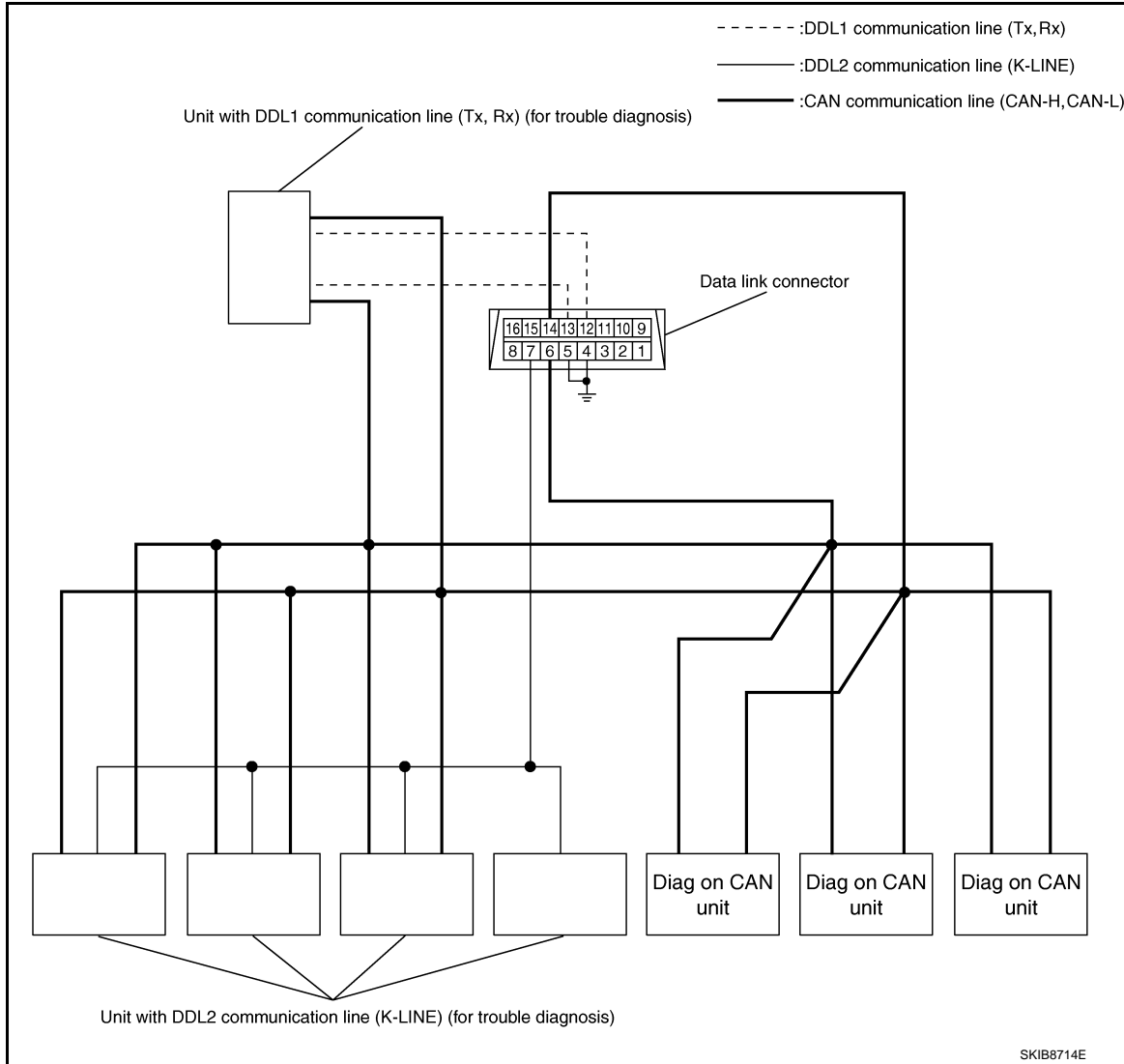
Description

INFOID:000000006473697

“Diag on CAN” is a diagnosis using CAN communication instead of previous DDL1 and DDL2 communication lines, between control units and diagnosis unit.

System Diagram

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| Name | Harness | Description |
|-------------|----------------|--|
| DDL1 | Tx Rx | It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling) |
| DDL2 | K-LINE | It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling) |
| Diag on CAN | CAN-H CAN-L | It is used for trouble diagnosis and control. |

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TROUBLE DIAGNOSIS

Condition of Error Detection

INFOID:000000006473699

DTC (e.g. U1000 and U1001) of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT-III if a CAN communication signal is not transmitted or received between units for 2 seconds or more.

CAN COMMUNICATION SYSTEM ERROR

- CAN communication line open (CAN-H, CAN-L, or both)
- CAN communication line short (ground, between CAN communication lines, other harnesses)
- Error of CAN communication control circuit of the unit connected to CAN communication line

WHEN DTC OF CAN COMMUNICATION IS INDICATED EVEN THOUGH CAN COMMUNICATION SYSTEM IS NORMAL

- Removal/installation of parts: Error may be detected when removing and installing CAN communication unit and related parts while turning the ignition switch ON. (A DTC except for CAN communication may be detected.)
- Fuse blown out (removed): CAN communication of the unit may cease.
- Voltage drop: Error may be detected if voltage drops due to discharged battery when turning the ignition switch ON (Depending on the control unit which carries out CAN communication).
- Error may be detected if the power supply circuit of the control unit, which carries out CAN communication, malfunctions (Depending on the control unit which carries out CAN communication).
- Error may be detected if reprogramming is not completed normally.

CAUTION:

CAN communication system is normal if DTC of CAN communication is indicated on SELF-DIAG RESULTS of CONSULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

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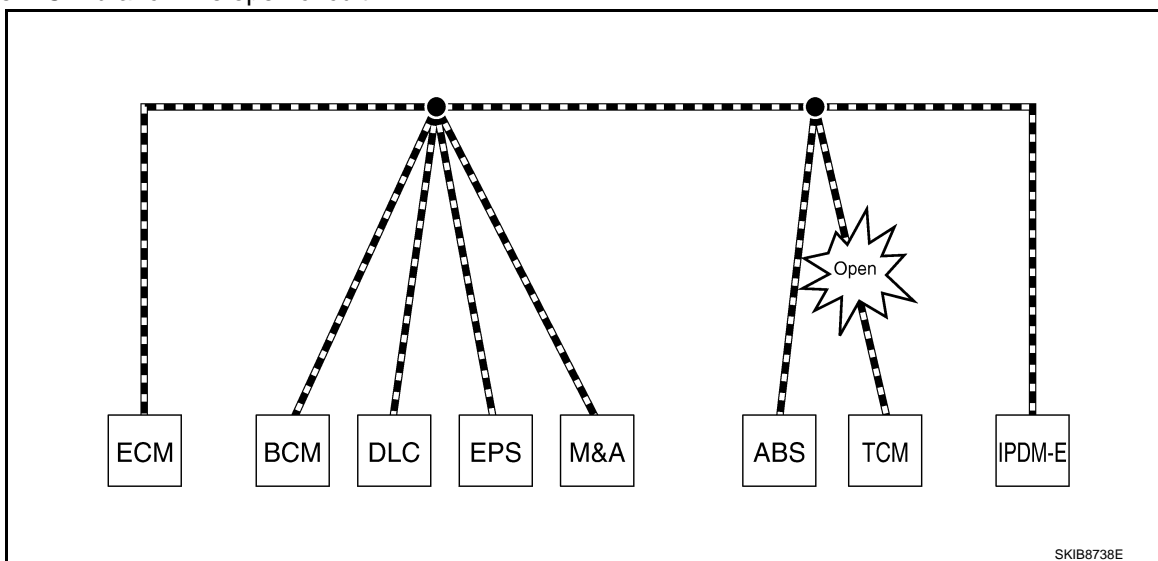
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-19, "Abbreviation List"](#) for the unit abbreviation.

Example: TCM branch line open circuit



| Unit name | Symptom |
|-----------|--|
| ECM | Engine torque limiting is affected, and shift harshness increases. |
| BCM | Reverse warning chime does not sound. |

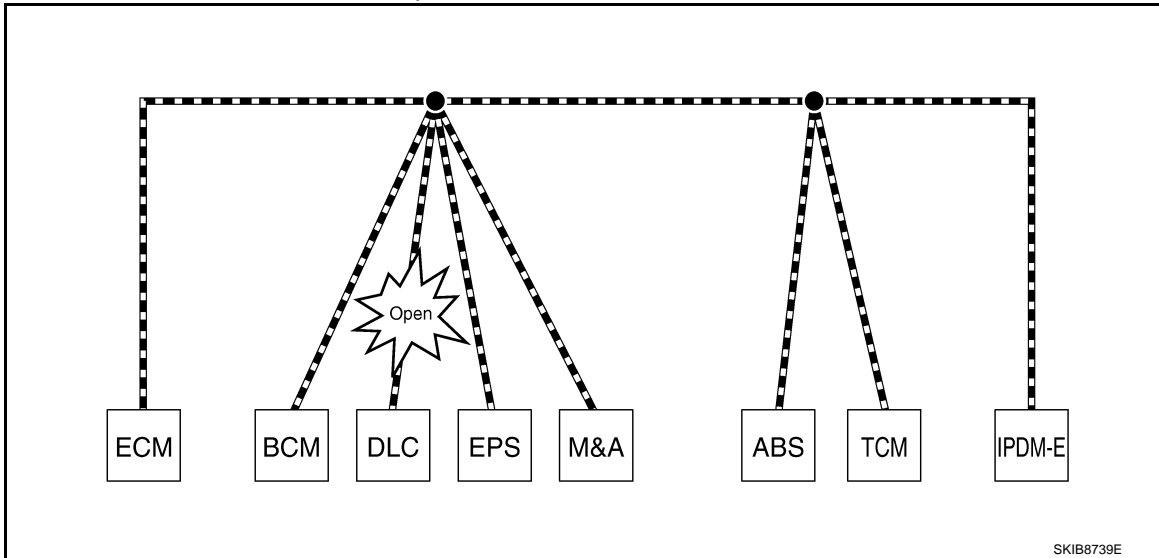
TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

| Unit name | Symptom |
|---|---|
| EPS control unit | Normal operation. |
| Combination meter | <ul style="list-style-type: none"> Shift position indicator and OD OFF indicator turn OFF. Warning lamps turn ON. |
| ABS actuator and electric unit (control unit) | Normal operation. |
| TCM | No impact on operation. |
| IPDM E/R | Normal operation. |

Example: Data link connector branch line open circuit



| Unit name | Symptom |
|---|-------------------|
| ECM | Normal operation. |
| BCM | |
| EPS control unit | |
| Combination meter | |
| ABS actuator and electric unit (control unit) | |
| TCM | |
| IPDM E/R | |

NOTE:

- When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.
- The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with CONSULT-III if the following error occurs. The error is judged by the symptom.

| Error | Difference of symptom |
|--|--|
| Data link connector branch line open circuit | Normal operation. |
| CAN-H, CAN-L harness short-circuit | Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated. |

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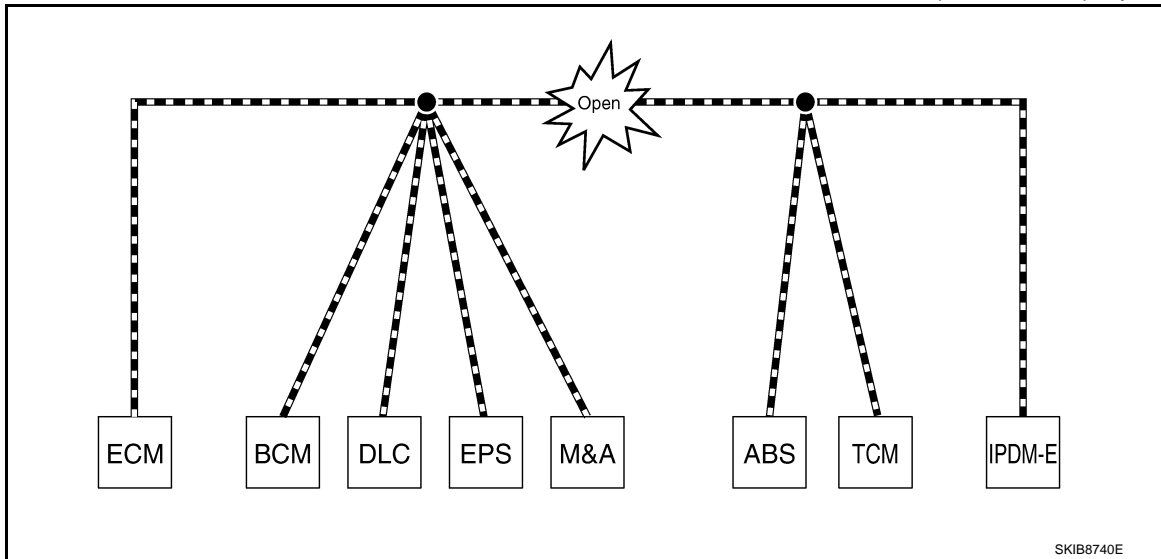
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TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

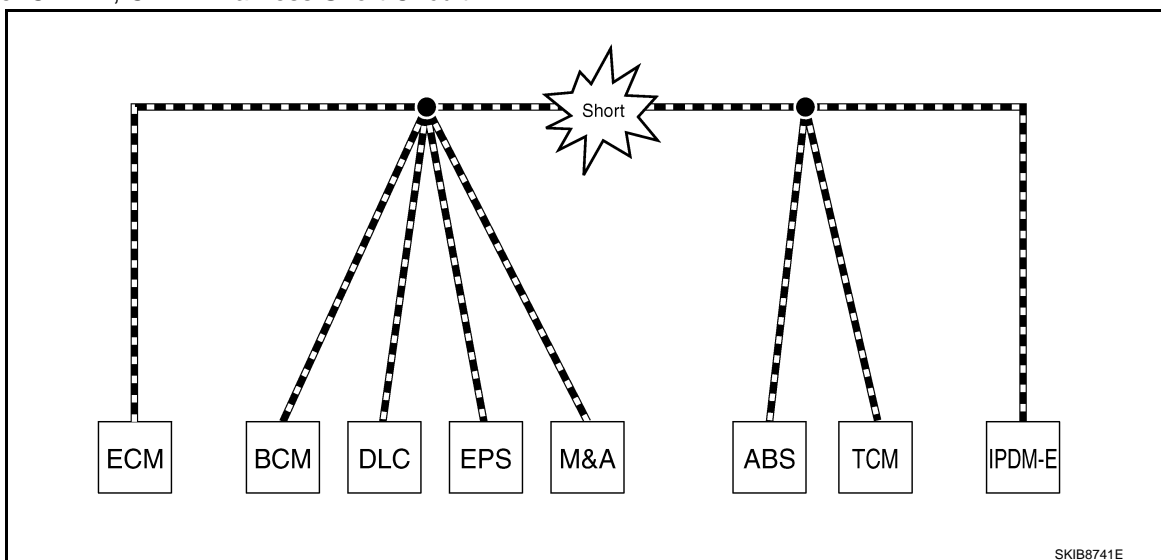
[CAN FUNDAMENTAL]

Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit



| Unit name | Symptom |
|---|---|
| ECM | Engine torque limiting is affected, and shift harshness increases. |
| BCM | <ul style="list-style-type: none"> Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. |
| EPS control unit | The steering effort increases. |
| Combination meter | <ul style="list-style-type: none"> The shift position indicator and OD OFF indicator turn OFF. The speedometer is inoperative. The odo/trip meter stops. |
| ABS actuator and electric unit (control unit) | Normal operation. |
| TCM | No impact on operation. |
| IPDM E/R | When the ignition switch is ON, <ul style="list-style-type: none"> The headlamps (Lo) turn ON. The cooling fan continues to rotate. |

Example: CAN-H, CAN-L Harness Short Circuit



TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

| Unit name | Symptom |
|---|---|
| ECM | <ul style="list-style-type: none"> Engine torque limiting is affected, and shift harshness increases. Engine speed drops. |
| BCM | <ul style="list-style-type: none"> Reverse warning chime does not sound. The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position. The room lamp does not turn ON. The engine does not start (if an error or malfunction occurs while turning the ignition switch OFF.) The steering lock does not release (if an error or malfunction occurs while turning the ignition switch OFF.) |
| EPS control unit | The steering effort increases. |
| Combination meter | <ul style="list-style-type: none"> The tachometer and the speedometer do not move. Warning lamps turn ON. Indicator lamps do not turn ON. |
| ABS actuator and electric unit (control unit) | Normal operation. |
| TCM | No impact on operation. |
| IPDM E/R | When the ignition switch is ON, <ul style="list-style-type: none"> The headlamps (Lo) turn ON. The cooling fan continues to rotate. |

CAN Diagnosis with CONSULT-III

INFOID:000000006473701

CAN diagnosis on CONSULT-III extracts the root cause by receiving the following information.

- Response to the system call
- Control unit diagnosis information
- Self-diagnosis
- CAN diagnostic support monitor

Self-Diagnosis

INFOID:000000006473702

If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT-III "Self Diagnostic Result" screen.

NOTE:

The following table shows examples of CAN communication-related DTC. For other DTC, refer to the applicable sections.

| DTC | Self-diagnosis item (CONSULT-III indication) | DTC detection condition | | Inspection/Action |
|-------|--|---|---|--|
| U1000 | CAN COMM CIRCUIT | ECM | When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more. | Start the inspection. Refer to the applicable section of the indicated control unit. |
| | | Except for ECM | When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more. | |
| U1001 | CAN COMM CIRCUIT | When ECM is not transmitting or receiving CAN communication signal other than OBD (emission-related diagnosis) for 2 seconds or more. | | |
| U1002 | SYSTEM COMM | When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less. | | |
| U1010 | CONTROL UNIT(CAN) | When an error is detected during the initial diagnosis for CAN controller of each control unit. | | |

CAN Diagnostic Support Monitor

INFOID:000000006473703

MONITOR ITEM (CONSULT-III)

TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

| Without PAST | | | With PAST | | |
|---------------|--------|------|---------------|--------|------|
| ECM | | | ECM | | |
| | PRSENT | PAST | | PRSENT | PAST |
| INITIAL DIAG | OK | | TRANSMIT DIAG | OK | OK |
| TRANSMIT DIAG | OK | | VDC/TCS/ABS | - | - |
| TCM | OK | | METER/M&A | OK | OK |
| VDC/TCS/ABS | UNKWN | | BCM/SEC | OK | OK |
| METER/M&A | OK | | ICC | - | - |
| ICC | UNKWN | | HVAC | - | - |
| BCM/SEC | OK | | TCM | OK | OK |
| IPDM E/R | OK | | EPS | - | - |
| | | | IPDM E/R | OK | OK |
| | | | e4WD | - | - |
| | | | AWD/4WD | OK | OK |

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Without PAST

| Item | PRSENT | Description |
|--|--------|--|
| Initial diagnosis | OK | Normal at present |
| | NG | Control unit error (Except for some control units) |
| Transmission diagnosis | OK | Normal at present |
| | UNKWN | Unable to transmit signals for 2 seconds or more. Diagnosis not performed |
| Control unit name (Reception diagnosis) | OK | Normal at present |
| | UNKWN | Unable to receive signals for 2 seconds or more. Diagnosis not performed |
| | UNKWN | No control unit for receiving signals. (No applicable optional parts) |

With PAST

| Item | PRSENT | PAST | Description |
|--|--------|--------|--|
| Transmission diagnosis | OK | OK | Normal at present and in the past |
| | | 1 – 39 | Normal at present, but unable to transmit signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.) |
| | UNKWN | 0 | Unable to transmit signals for 2 seconds or more at present. |
| Control unit name (Reception diagnosis) | OK | OK | Normal at present and in the past |
| | | 1 – 39 | Normal at present, but unable to receive signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.) |
| | UNKWN | 0 | Unable to receive signals for 2 seconds or more at present. |
| | - | - | Diagnosis not performed. No control unit for receiving signals. (No applicable optional parts) |

MONITOR ITEM (ON-BOARD DIAGNOSIS)

NOTE:

For some models, CAN communication diagnosis result is received from the vehicle monitor.

TROUBLE DIAGNOSIS

[CAN FUNDAMENTAL]

< SYSTEM DESCRIPTION >

Example: Vehicle Display

| Item | Result indicated | Error counter | Description |
|--|------------------|---------------|---|
| CAN_COMM (Initial diagnosis) | OK | 0 | Normal at present |
| | NG | 1 – 50 | Control unit error (The number indicates how many times diagnosis has been run.) |
| CAN_CIRC_1 (Transmission diagnosis) | OK | 0 | Normal at present |
| | UNKWN | 1 – 50 | Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.) |
| CAN_CIRC_2 – 9 (Reception diagnosis of each unit) | OK | 0 | Normal at present |
| | UNKWN | 1 – 50 | Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.) |
| | | | Diagnosis not performed. |
| | | | No control unit for receiving signals. (No applicable optional parts) |

How to Use CAN Communication Signal Chart

INFOID:0000000006473704

The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.

Example: Tachometer does not move even though the engine rotates.

T: Transmit R: Receive

| Signal name/Connecting unit | ECM | BCM | M&A | STRG | ABS | IPDM-E |
|------------------------------------|-----|-----|-----|------|-----|--------|
| A/C compressor feedback signal | T | | R | | | |
| A/C compressor request signal | T | | | | | R |
| Accelerator pedal position signal | T | | | | R | |
| Cooling fan motor operation signal | T | | | | | R |
| Engine coolant temperature signal | T | | R | | | |
| Engine speed signal | T | | R | | R | |
| Fuel consumption monitor signal | T | | R | | | |
| Malfunction indicator lamp signal | T | | R | | | |
| A/C switch signal | R | T | | | | |
| Ignition switch signal | | T | | | | R |
| Sleep/wake up signal | | T | R | | | R |

No communication between ECM and M&A.

It indicates that an error occurs between ECM and M&A (Shaded area).

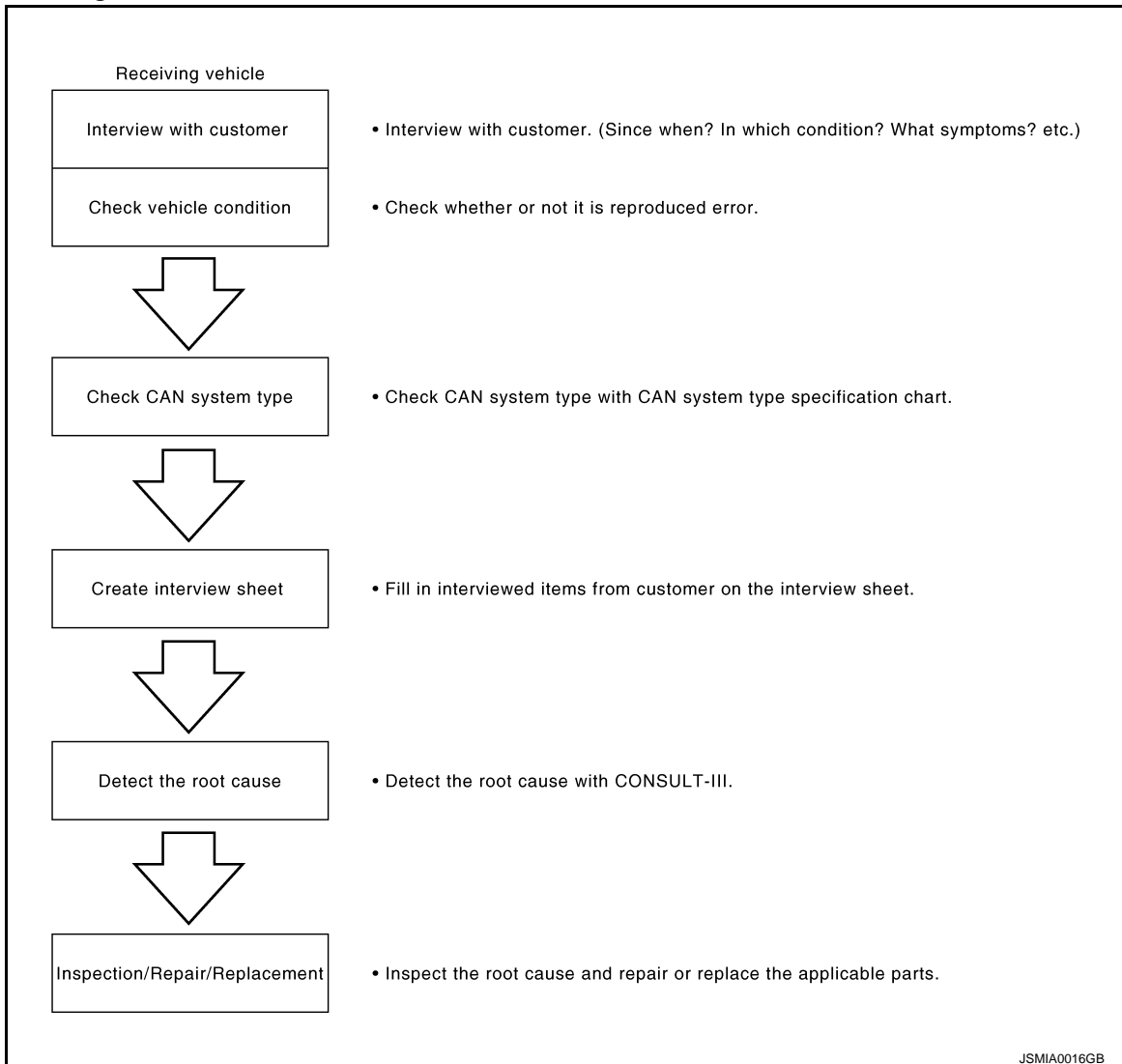
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

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Trouble Diagnosis Procedure

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INTERVIEW WITH CUSTOMER

Interview with the customer is important to detect the root cause of CAN communication system errors and to understand vehicle condition and symptoms for proper trouble diagnosis.

Points in interview

- What: Parts name, system name
- When: Date, Frequency
- Where: Road condition, Place
- In what condition: Driving condition/environment
- Result: Symptom

NOTE:

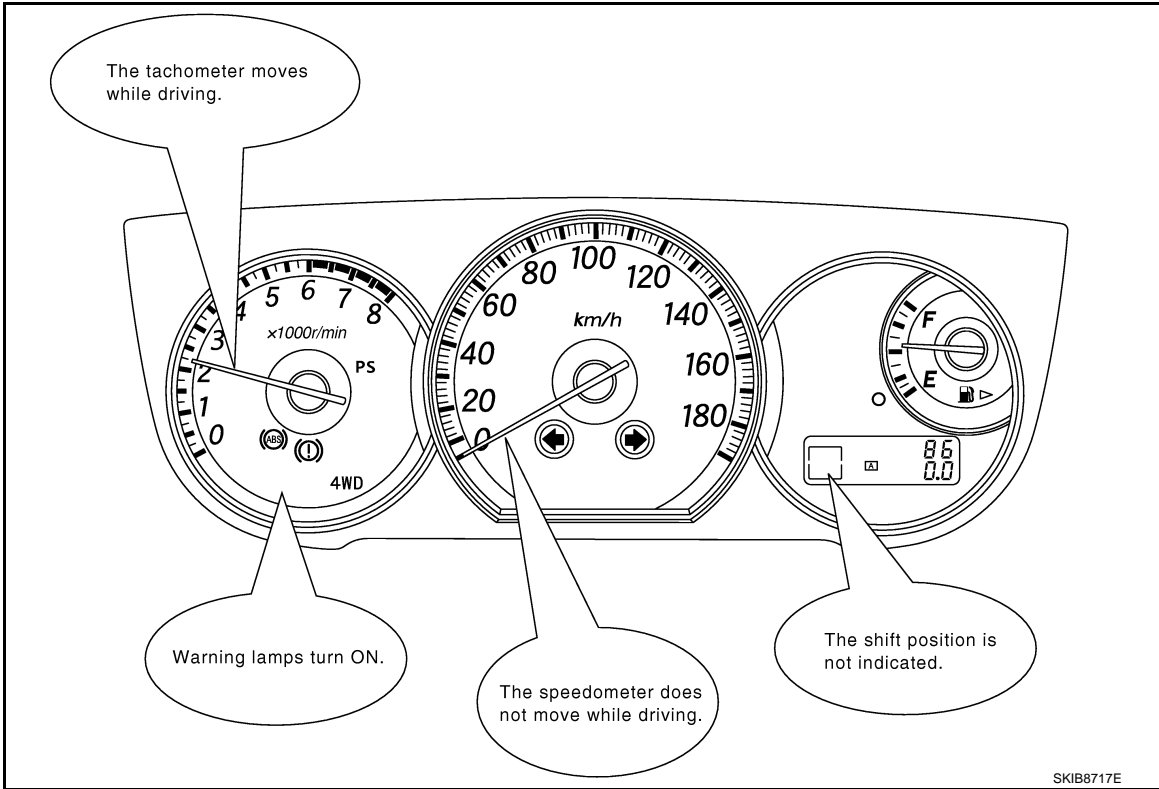
- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.
- When a CAN communication system error is present, multiple control units may malfunction or go into fail-safe mode.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

- Indication of the combination meter is important to detect the root cause because it is the most obvious to the customer, and it performs CAN communication with many units.



INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

NOTE:

Do not turn the ignition switch OFF or disconnect the battery cable while reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

CHECK OF CAN SYSTEM TYPE (HOW TO USE CAN SYSTEM TYPE SPECIFICATION CHART)

Determine CAN system type based on vehicle equipment.

NOTE:

- This chart is used if CONSULT-III does not automatically recognize CAN system type.
- There are two styles for CAN system type specification charts. Depending on the number of available system types, either style A or style B may be used.

CAN System Type Specification Chart (Style A)

NOTE:

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

Example:
Vehicle is equipped as follows: Wagon, AWD, VQ35DE, CVT, VDC, and Intelligent Key system. (○ shows an example of CAN system type.)

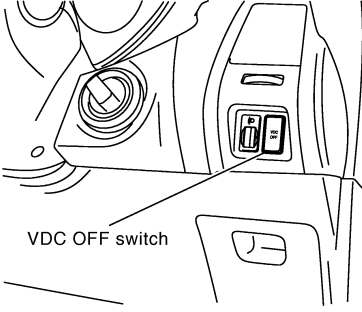
CAN System Specification Chart
Determine CAN system type from the following specification chart.

| | | | | | | |
|--------------------------------|------------------------|---|------------------------|-----|------------------------|---|
| Body type | Wagon | | | | | |
| Axle | 2WD | | | AWD | | |
| Engine | QR25DE | | VQ35DE | | | |
| Transmission | A/T | | CVT | | | |
| Brake control | ABS | | | VDC | | |
| Intelligent Key system | | X | | X | | X |
| CAN system type | 1 | 2 | 3 | 4 | 5 | 6 |
| CAN communication signal chart | XX-XX. "TYPE 1/TYPE 2" | | XX-XX. "TYPE 3/TYPE 4" | | XX-XX. "TYPE 5/TYPE 6" | |

X : Applicable

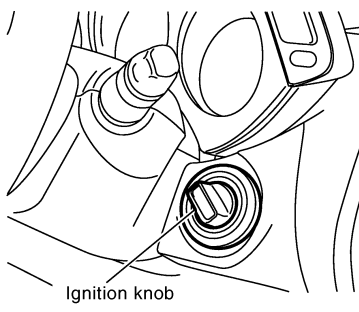
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.

With VDC



VDC OFF switch

With Intelligent Key system



Ignition knob

[For the above case, CAN system type is "6".]

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CAN System Type Specification Chart (Style B)

NOTE:

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

Example:
Vehicle is equipped as follows: Sedan, 2WD, MR20DE, CVT, ABS, Active AFS, Intelligent Key system, Navigation system and Automatic drive positioner. (○ shows an example of CAN system type.)

CAN System Specification Chart
Refer to the specification as shown in the chart.

| | | |
|---------------------|---------------------------|---------------------------|
| Body type | Sedan | |
| Axle | 2WD | AWD |
| Engine | HR15DE | MR20DE |
| Transmission | A/T | CVT |
| Brake control | ABS | |
| Specification chart | XXX SPECIFICATION CHART A | YYY SPECIFICATION CHART B |

x: Applicable

Check the vehicle equipment with the vehicle identification number plate.
Check the vehicle equipment.
Select the applicable vehicle equipment. Refer to the specification chart.

SPECIFICATION CHART B
Determine CAN system type from the following specification chart.

| | | | | | | | | | | | | | |
|--------------------------------|---------------------------|----|----|----|----|----|----|----|----|----|----|----|---|
| Body type | Sedan | | | | | | | | | | | | |
| Axle | 2WD | | | | | | | | | | | | |
| Engine | MR20DE | | | | | | | | | | | | |
| Transmission | CVT | | | | | | | | | | | | |
| Brake control | ABS | | | | | | | | | | | | |
| Active AFS | | x | | | | x | x | | | x | x | | x |
| Intelligent Key system | | | x | | | x | | x | x | x | x | x | x |
| Navigation system | | | | x | | | x | x | | x | | | x |
| Automatic drive positioner | | | | | | | | | x | | x | x | x |
| CAN system type | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| CAN communication signal chart | XXX SPECIFICATION CHART A | | | | | | | | | | | | |

x: Applicable

Check the vehicle equipment.
The number indicates the CAN system type of the vehicle.

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION
NOTE:
Check CAN system type from the vehicle shape and equipment.

| | |
|---|--|
| <p>With active AFS</p> <p>Xenon bulb Bending lamp</p> | <p>With Intelligent Key system</p> <p>Ignition knob</p> |
| <p>With navigation system</p> <p>Display Multifunction switch</p> | <p>With automatic drive positioner</p> <p>Seat memory switch</p> |

In the above example,
 • Checking Xenon bulb and bending lamp lead to judge whether or not Active AFS is equipped.
 • Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.
 • Checking display and multifunction switch lead to judge whether or not Navigation system is equipped.
 • Checking seat memory switch leads to judge whether or not Automatic drive positioner is equipped.

[For the above case, CAN system type is "20".]

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CREATE INTERVIEW SHEET

Fill out the symptom described by the customer, vehicle condition, and CAN system type on the interview sheet.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

| CAN Communication System Diagnosis Interview Sheet | |
|---|----------------------|
| Date received: | 3, Feb. 2006 |
| Type: DBA-KG11 | VIN No.: KG11-005040 |
| Model: BDRARGZ397EDA-E-J- | |
| First registration: 10, Jan. 2001 | Mileage: 62,140 |
| CAN system type: Type 19 | |
| Symptom (Results from interview with customer) | |
| <ul style="list-style-type: none">•Headlamps suddenly turn ON while driving the vehicle.•The engine does not restart after stopping the vehicle and turning the ignition switch OFF.•The cooling fan continues rotating while turning the ignition switch ON. | |
| Condition at inspection | |
| Error Symptom: Present / Past | |
| <p>The engine does not start. While turning the ignition switch ON,</p> <ul style="list-style-type: none">•The headlamps (Lo) turn ON, and the cooling fan continues rotating.•The interior lamp does not turn ON. | |

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DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT-III detects the root cause.

HOW TO USE THIS SECTION

< HOW TO USE THIS MANUAL >

[CAN]

HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Caution

INFOID:000000006473707

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-14, "Trouble Diagnosis Procedure"](#).

Abbreviation List

INFOID:000000006473708

Unit name abbreviations in CONSULT-III CAN diagnosis and in this section are as per the following list.

| Abbreviation | Unit name |
|--------------|---|
| A-BAG | Air bag diagnosis sensor unit |
| ABS | ABS actuator and electric unit (control unit) |
| ADP | Driver seat control unit |
| AV | AV control unit |
| BCM | BCM |
| C/ROOF | Retractable hard top control unit |
| DLC | Data link connector |
| ECM | ECM |
| ICC | ICC sensor integrated unit |
| IPDM-E | IPDM E/R |
| M&A | Unified meter and A/C amp. |
| PSB | Pre-crash seat belt control unit |
| STRG | Steering angle sensor |
| TCM | TCM |

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PRECAUTION

PRECAUTIONS

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

INFOID:000000006473709

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.

Service Procedure Precautions for Models with a Pop-up Roll Bar

INFOID:000000006473710

WARNING:

Always observe the following items for preventing accidental activation.

- Risk of passenger injury or death may increase if the pop-up roll bar does not deploy during a roll over collision. In order to reduce the chance of an incident where the pop-up roll bar is inoperative, all maintenance must be performed by a NISSAN or INFINITI dealer.
- Before removing and installing the pop-up roll bar component parts and harness, always turn the ignition switch OFF, disconnect the battery negative terminal, and wait for 3 minutes or more. (The purpose of this operation is to discharge electricity that is accumulated in the auxiliary power supply circuit in the air bag diagnosis sensor unit.)
- When repairing, removing, and installing a pop-up roll bar, always refer to SRS AIR BAG and SRS AIR BAG CONTROL warnings in the Service Manual.

Precaution for Battery Service

INFOID:000000006473711

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.

Precautions for Trouble Diagnosis

INFOID:000000006473712

CAUTION:

- Never apply 7.0 V or more to the measurement terminal.

PRECAUTIONS

[CAN]

< PRECAUTION >

- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

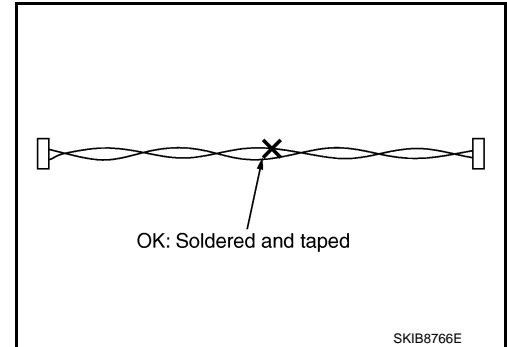
Precautions for Harness Repair

INFOID:000000006473713

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

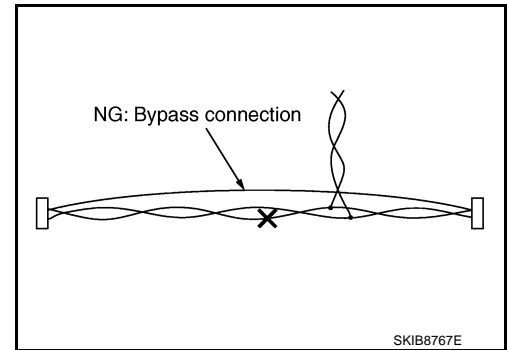
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause CAN communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



- Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

INFOID:000000006473714

CAN Communication System Diagnosis Interview Sheet

Date received:

Type:

VIN No.:

Model:

First registration:

Mileage:

CAN system type:

Symptom (Results from interview with customer)

Condition at inspection

Error symptom : Present / Past

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CAN COMMUNICATION SYSTEM

[CAN]

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

INFOID:000000006473715

Determine CAN system type from the following specification chart.

NOTE:

Refer to [LAN-14, "Trouble Diagnosis Procedure"](#) for how to use CAN system specification chart.

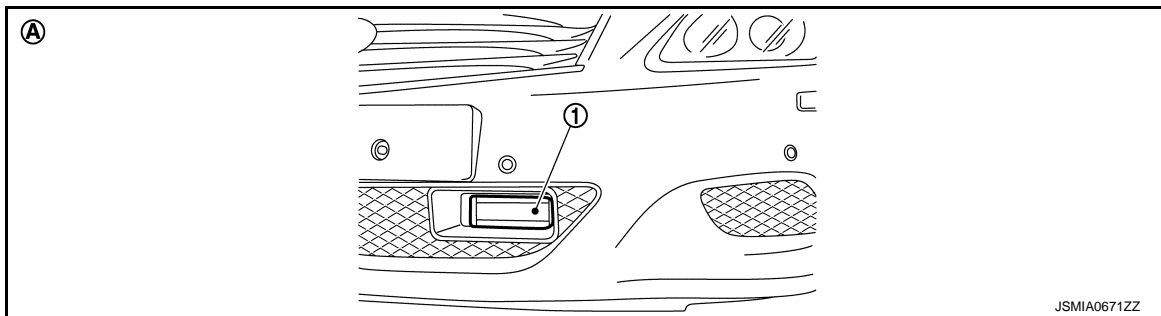
| | | | |
|-----------------|-------------|-----|---|
| Body type | Convertible | | |
| Axle | 2WD | | |
| Engine | VQ37VHR | | |
| Transmission | M/T | A/T | |
| Brake control | VDC | | |
| ICC system | | | × |
| CAN system type | 1 | 2 | 3 |

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



- 1. ICC sensor integrated unit
- A. With ICC system

CAN Communication Signal Chart

INFOID:000000006473716

Refer to [LAN-13, "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

NOTE:

Refer to [LAN-19, "Abbreviation List"](#) for the abbreviations of the connecting units.

T: Transmit R: Receive

| Signal name/Connecting unit | ECM | AV | PSB | TCM | A-BAG | BCM | M&A | STRG | ADP | C/ROOF | ABS | ICC | IPDM-E |
|-----------------------------------|-----|----|-----|-----|-------|-----|-----|------|-----|--------|-----|-----|--------|
| A/C compressor request signal | T | | | | | | | | | | | | R |
| Accelerator pedal position signal | T | | | R | | | | | | | R | R | |
| ASCD OD cancel request signal | T | | | R | | | | | | | | | |
| ASCD operation signal | T | | | R | | | | | | | | | |
| ASCD SET indicator signal | T | | | | | | R | | | | | | |
| ASCD status signal | T | | | | | | R | | | | | | |
| Closed throttle position signal | T | | | R | | | | | | | | R | |
| Cooling fan speed request signal | T | | | | | | | | | | | | R |

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

| Signal name/Connecting unit | ECM | AV | PSB | TCM | A-BAG | BCM | M&A | STRG | ADP | C/ROOF | ABS | ICC | IPDM-E |
|---|-----|----|-----------------|-----|-------|-----|-----|------|-----|--------|-----|-----|--------|
| Engine and A/T integrated control signal | T | | | R | | | | | | | | | |
| | R | | | T | | | | | | | | | |
| Engine coolant temperature signal | T | | | | | | R | | | | | | |
| Engine speed signal | T | | | R | | | R | | | | R | R | |
| Engine status signal | T | R | | | | R | | | | | | | |
| Fuel consumption monitor signal | T | R | | | | | R | | | | | | |
| Fuel filler cap warning display signal | T | | | | | | R | | | | | | |
| ICC brake switch signal | T | | | | | | | | | | | R | |
| ICC prohibition signal | T | | | | | | | | | | | R | |
| ICC steering switch signal | T | | | | | | | | | | | R | |
| Malfunctioning indicator lamp signal | T | | | | | | R | | | | | | |
| Park/neutral position switch signal ^{*1} | T | | | | | | | | | | | R | |
| Power generation command value signal | T | | | | | | | | | | | | R |
| Stop lamp switch signal | T | | | | | | | | | | | R | |
| | | | | R | | T | | | | | T | R | |
| Wide open throttle position signal | T | | | R | | | | | | | | | |
| A/C switch operation signal | | T | | | | | R | | | | | | |
| Rear window defogger switch signal | | T | | | | R | | | | | | | |
| System setting signal | | T | | | | R | | | | | | | |
| | | R | | | | T | | | | | | | |
| Voice recognition signal ^{*2} | | T | | | | | R | | | | | | |
| A/T CHECK indicator lamp signal | | | | T | | | R | | | | | | |
| A/T self-diagnosis signal | R | | | T | | | | | | | | | |
| Current gear position signal | | | | T | | | | | | | R | R | |
| Input speed signal | R | | | T | | | | | | | | R | |
| Manual mode indicator signal | | | | T | | | R | | | | | | |
| Manual mode shift refusal signal | | | | T | | | R | | | | | | |
| N range signal | | | | T | | R | | | | | | | |
| Output shaft revolution signal | R | | | T | | | | | | | | R | |
| P range signal | | | | T | | R | | | | | R | | |
| Shift position signal | | | R ^{*3} | T | | | R | | R | | R | R | |
| Pop-up roll bar malfunction signal | | | | | T | | | | | R | | | |
| Pop-up roll bar operation signal | | | | | T | | | | | R | | | |
| Buzzer output signal | | | | | | T | R | | | | | | |
| | | | | | | | R | | | | | T | |
| Daytime running light request signal | | | | | | T | | | | | | | R |
| Door switch signal | | | | | | T | R | | R | | | | R |
| Door unlock signal | | | | | | T | | | R | | | | |
| Front fog light request signal | | | | | | T | R | | | | | | R |
| Front wiper request signal | | | | | | T | | | | | | R | R |
| Handle position signal | | | | | | T | | | R | | | | |

CAN COMMUNICATION SYSTEM

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[CAN]

| Signal name/Connecting unit | ECM | AV | PSB | TCM | A-BAG | BCM | M&A | STRG | ADP | C/ROOF | ABS | ICC | IPDM-E |
|---------------------------------------|-----|----|-----|-----|-------|-----|-----|------|-----|--------|-----|-----|--------|
| High beam request signal | | | | | | T | R | | | | | | R |
| Horn reminder signal | | | | | | T | | | | | | | R |
| Ignition switch ON signal | | | | | | T | | | | R | | | R |
| | | | | | | R | | | | | | | T |
| Ignition switch signal | | | | | | T | | | R | R | | | |
| Interlock/PNP switch signal | | | | | | T | | | | | | | R |
| | | | | | | R | | | | | | | T |
| Key ID signal | | | | | | T | | | R | | | | |
| Key switch signal | | | | | | T | | | R | | | | |
| Key warning lamp signal | | | | | | T | R | | | | | | |
| Low beam request signal | | | | | | T | | | | | | | R |
| Low tire pressure warning lamp signal | | | | | | T | R | | | | | | |
| Meter display signal | | | | | | | R | | | T | | | |
| | | | | | | | R | | | | | T | |
| Oil pressure switch signal | | | | | | T | R | | | | | | |
| | | | | | | R | | | | | | | T |
| Position light request signal | | | | | | T | R | | | | | | R |
| Rear window defogger control signal | | | | | | T | | | | | | | R |
| | R | | | | | R | | | | | | | T |
| Sleep wake up signal | | | | | | T | R | | R | | | | R |
| Starter control relay signal | | | | | | T | | | | | | | R |
| Starter relay status signal | | | | | | R | | | | | | | T |
| | | | | | | T | | | | | | | R |
| Starting mode signal | | | | | | T | | | R | R | | | |
| Steering lock relay signal | | | | | | R | | | | | | | T |
| | | | | | | T | | | | | | | R |
| Theft warning horn request signal | | | | | | T | | | | | | | R |
| Trunk switch signal | | | | | | T | R | | | | | | |
| TPMS warning lamp signal | | | | | | T | R | | | | | | |
| Turn indicator signal | | | | | | T | R | | | | | | |
| A/C evaporator temperature signal | R | | | | | | T | | | | | | |
| A/C switch signal | R | | | | | | T | | | | | | |
| Blower fan motor switch signal | R | | | | | | T | | | | | | |
| Distance to empty signal | | R | | | | | T | | | | | | |
| Fuel filler cap warning reset signal | R | | | | | | T | | | | | | |
| Fuel level low warning signal | | R | | | | | T | | | | | | |
| Fuel level sensor signal | R | | | | | | T | | | | | | |
| Manual mode shift down signal | | | | R | | | T | | | | | | |
| Manual mode shift up signal | | | | R | | | T | | | | | | |
| Manual mode signal | | | | R | | | T | | | | | | |
| Non-manual mode signal | | | | R | | | T | | | | | | |
| Odometer signal | | | | | | R | T | | | | | | |

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CAN COMMUNICATION SYSTEM

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| Signal name/Connecting unit | ECM | AV | PSB | TCM | A-BAG | BCM | M&A | STRG | ADP | C/ROOF | ABS | ICC | IPDM-E |
|--|-----|----|-----|-----|-------|-----|-----|------|-----|--------|-----|-----|--------|
| Paddle shifter shift down signal*4 | | | | R | | | T | | | | | | |
| Paddle shifter shift up signal*4 | | | | R | | | T | | | | | | |
| Parking brake switch signal | | | | | | R | T | | | | | | |
| Seat belt buckle switch signal | | | | | | R | T | | | | | | |
| Sleep-ready signal | | | | | | R | T | | | | | | |
| | | | | | | R | | | | | | | T |
| Target A/C evaporator temperature signal | R | | | | | | T | | | | | | |
| Vehicle speed signal | R | R | R | R | | R | T | | R | | | | R |
| | | | | | | R | R | | | | T | R | |
| Wake up signal | | | | | | R | T | | | | | | |
| Steering angle sensor signal | | R | | | | | | T | | | R | | |
| Roof operation signal | | | | | | | R | | | T | | | |
| Roof status signal | | R | | | | | R | | | T | | | |
| Tonneau board status signal | | | | | | | R | | | T | | | |
| A/T shift schedule change demand signal | | | | R | | | | | | | T | | |
| ABS malfunction signal | | | | | | | | | | | T | R | |
| ABS operation signal | | | | R | | | | | | | T | R | |
| ABS warning lamp signal | | | | | | | R | | | | T | | |
| Brake pressure control signal | | | | | | | | | | | T | R | |
| Brake warning lamp signal | | | | | | | R | | | | T | | |
| Side G sensor signal | | | | R | | | | | | | T | | |
| TCS gear keep request signal | | | | R | | | | | | | T | | |
| TCS malfunction signal | | | | | | | | | | | T | R | |
| TCS operation signal | | | | | | | | | | | T | R | |
| VDC malfunction signal | | | | R | | | | | | | T | R | |
| VDC OFF indicator lamp signal | | | | | | | R | | | | T | | |
| VDC OFF switch signal | | | | | | | | | | | T | R | |
| VDC operation signal | | | | | | | | | | | T | R | |
| VDC warning lamp signal | | | | | | | R | | | | T | | |
| Deceleration degree commandment value signal | | | | | | | | | | | R | T | |
| ICC operation signal | R | | | | | | | | | | | T | |
| ICC warning lamp signal | | | | | | | R | | | | | T | |
| A/C compressor feedback signal | R | | | | | | R | | | | | | T |
| Detention switch signal | | | | | | R | | | R | | | | T |
| Front wiper stop position signal | | | | | | R | | | | | | | T |
| High beam status signal | R | | | | | | | | | | | | T |
| Hood switch signal | | | | | | R | | | | | | | T |
| Low beam status signal | R | | | | | | | | | | | | T |
| Push-button ignition switch status signal | | | | | | R | | | | | | | T |
| Steering lock unit status signal | | | | | | R | | | | | | | T |

*1: M/T models only

*2: Models with navigation system

CAN COMMUNICATION SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

*3: Receive reverse position signal only

*4: Models with paddle shifter

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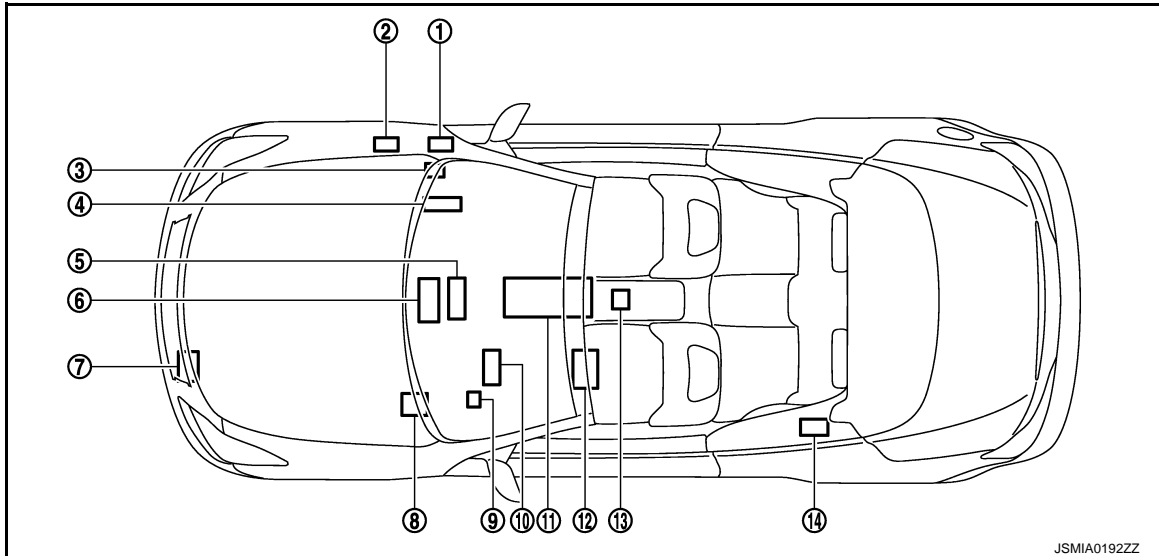
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DTC/CIRCUIT DIAGNOSIS

CAN COMMUNICATION SYSTEM

Component Parts Location

INFOID:000000006473717



- | | | |
|--|---|--|
| 1. BCM M122 | 2. IPDM E/R E6 | 3. Pre-crash seat belt control unit M110 |
| 4. ECM M107 | 5. AV control unit M204: Without navigation system M210: With navigation system | 6. Unified meter and A/C amp. M67 |
| 7. ICC sensor integrated unit E67 | 8. ABS actuator and electric unit (control unit) E41 | 9. Data link connector M24 |
| 10. Steering angle sensor M37 | 11. A/T assembly F51 | 12. Driver seat control unit B503 |
| 13. Air bag diagnosis sensor unit M147 | 14. Retractable hard top control unit B82 | |

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

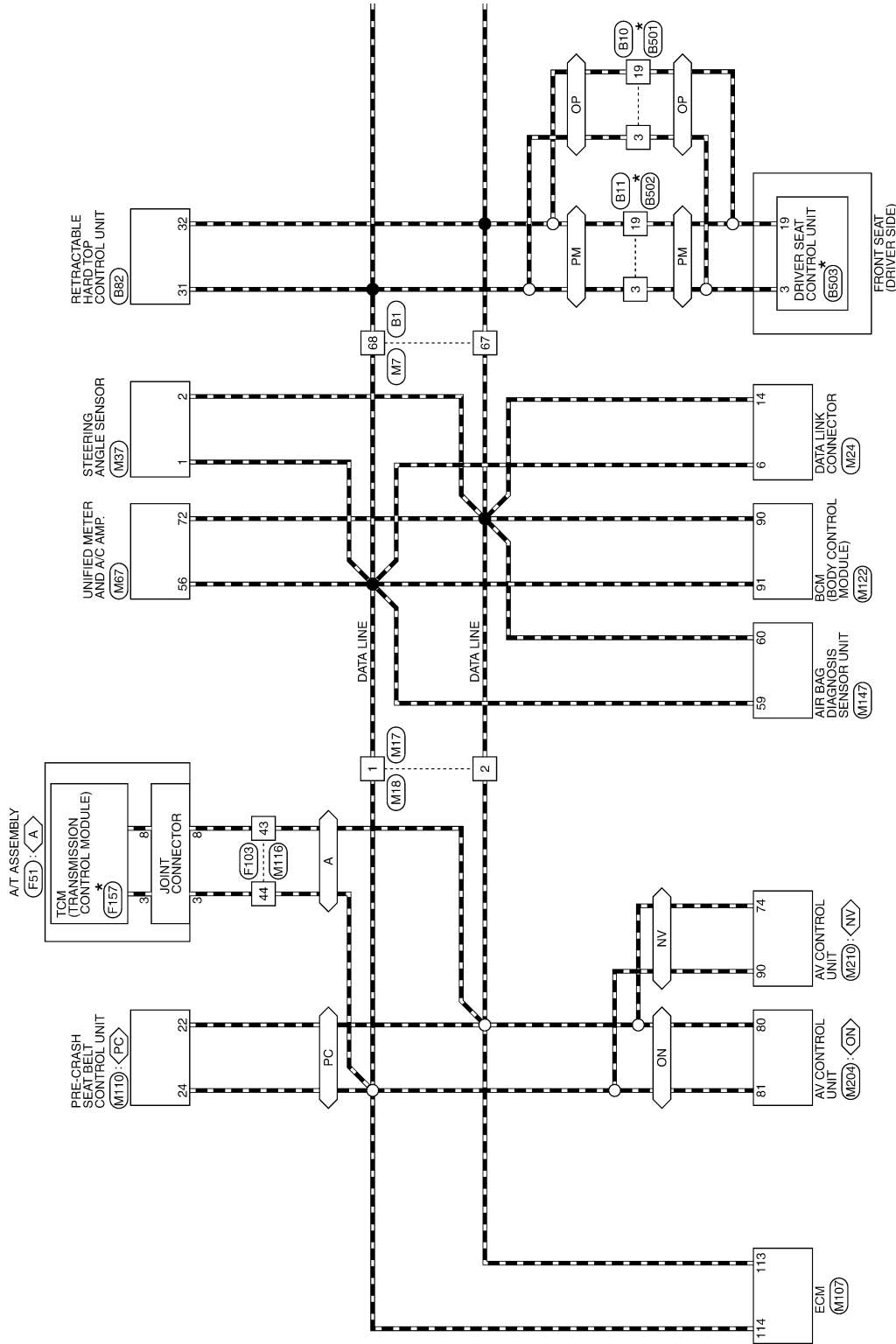
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Wiring Diagram - CAN SYSTEM -

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CAN SYSTEM

- ◊ A ◊ : With A/T
- ◊ NV ◊ : With NAVI
- ◊ ON ◊ : Without NAVI
- ◊ PM ◊ : With automatic drive positioner
- ◊ OP ◊ : Without automatic drive positioner
- ◊ PC ◊ : With pre-crash seat belt



*: This connector is not shown in "Harness Layout".

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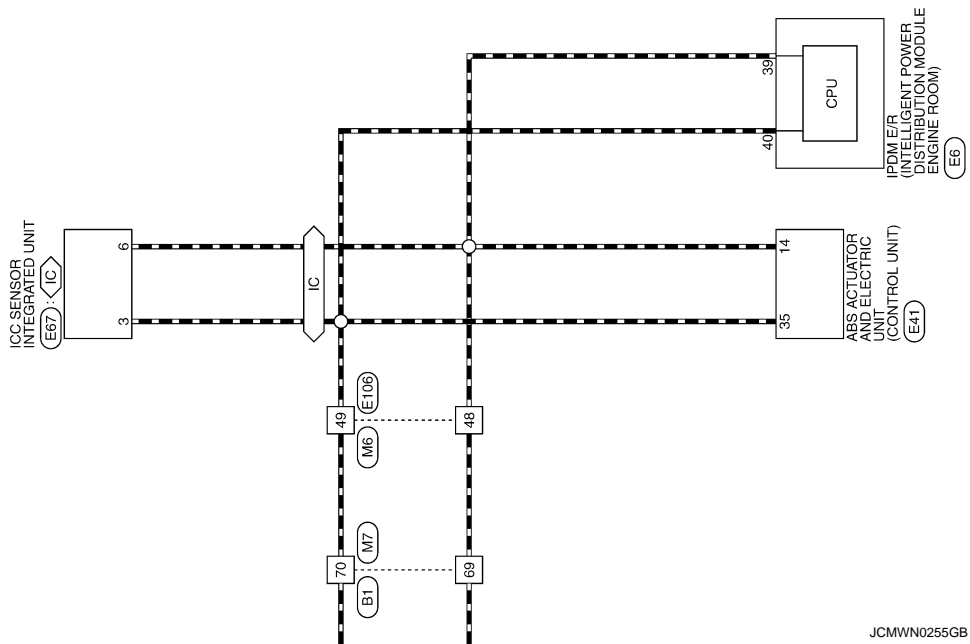
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CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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IC : With ICC



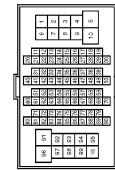
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM

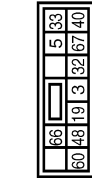
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| Connector No. | B1 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80FW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-------------------------------------|
| 1 | W | |
| 2 | L | |
| 3 | R | |
| 4 | V | |
| 5 | W | |
| 6 | B | |
| 7 | G | |
| 8 | BR | |
| 9 | LG | |
| 10 | BR | |
| 11 | SHIELD | |
| 12 | Y | |
| 13 | L | |
| 14 | L | |
| 15 | R | |
| 16 | W | |
| 17 | BR | |
| 20 | G | |
| 21 | SB | |
| 22 | GR | |
| 23 | W | |
| 24 | SB | |
| 25 | BR | |
| 26 | LG | |
| 27 | Y | |
| 28 | R | |
| 29 | V | |
| 31 | SHIELD | |
| 32 | G | |
| 33 | R | |
| 34 | BG | |
| 35 | GR | |
| 36 | BR | |
| 37 | P | - [With climate controlled seat] |
| 37 | Y | - [Without climate controlled seat] |
| 38 | V | - [With climate controlled seat] |
| 38 | GR | - [Without climate controlled seat] |
| 40 | SHIELD | |
| 41 | L | |
| 42 | P | |
| 43 | SHIELD | |

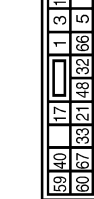
| | | |
|-----|-----|-------------------------|
| 44 | SB | |
| 45 | V | |
| 46 | W | |
| 47 | SB | |
| 48 | LG | |
| 49 | LG | - [With BOSE system] |
| 49 | Y | - [Without BOSE system] |
| 50 | SB | |
| 50 | LG | - [With BOSE system] |
| 50 | LG | - [Without BOSE system] |
| 51 | SB | |
| 52 | G | |
| 53 | LG | |
| 54 | BR | |
| 55 | Y | |
| 56 | W | |
| 57 | V | |
| 58 | R | |
| 60 | R | |
| 61 | BG | |
| 62 | B | |
| 63 | L | |
| 64 | P | |
| 65 | B | |
| 66 | SB | |
| 67 | P | |
| 68 | L | |
| 69 | P | |
| 70 | L | |
| 80 | G | |
| 81 | V | |
| 82 | R | |
| 83 | BR | |
| 84 | G | |
| 85 | L | |
| 86 | Y | |
| 87 | GR | |
| 88 | R | |
| 89 | BG | |
| 94 | P | |
| 95 | GR | |
| 96 | GR | |
| 97 | SB | |
| 99 | Y | |
| 100 | Y/B | |

| | |
|----------------|--------------|
| Connector No. | B10 |
| Connector Name | WIRE TO WIRE |
| Connector Type | NS12FW-CS |



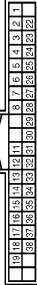
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 3 | L | |
| 5 | V | |
| 18 | P | |
| 32 | B | |
| 33 | SB | |
| 40 | G | |
| 48 | B | |
| 60 | BG | |
| 66 | Y | |
| 67 | GR | |

| | |
|----------------|--------------|
| Connector No. | B11 |
| Connector Name | WIRE TO WIRE |
| Connector Type | NS18FW-CS |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | G | |
| 3 | L | |
| 5 | V | |
| 17 | LG | |
| 19 | P | |
| 21 | Y | |
| 32 | B | |
| 33 | SB | |
| 40 | BR | |
| 48 | B | |
| 60 | BG | |
| 66 | Y | |

| | |
|----------------|----|
| Connector No. | 67 |
| Connector Name | GR |
| Connector Type | - |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|--|
| 1 | G | ROOF OPEN / CLOSE SWITCH (OPEN) |
| 2 | BR | ROOF OPEN / CLOSE SWITCH (CLOSE) |
| 3 | B | FLIPPER DOOR LIMIT SWITCH GND |
| 4 | L | TRUNK FLOOR BOARD SWITCH |
| 5 | SB | TRUNK FLOOR LAMP SWITCH |
| 6 | L | ROOF LATCH LIMIT SWITCH |
| 7 | W | FLIPPER DOOR LIMIT SWITCH (UP) |
| 8 | G | FLIPPER DOOR LIMIT SWITCH (DOWN) |
| 11 | W | RETAINED ACC POWER |
| 12 | Y | REVERSE SIGNAL |
| 13 | BG | PARCEL SHELF STATUS SENSOR POWER SUPPLY |
| 14 | P | TRUNK LINK SENSOR SIGNAL (LH) |
| 15 | SB | TRUNK LINK SENSOR SIGNAL (RH) |
| 16 | GR | ROOF LATCH LOCK SENSOR SIGNAL |
| 17 | G | ROOF LATCH STATUS SENSOR SIGNAL |
| 18 | LG | TRUNK STATUS SENSOR SIGNAL |
| 22 | V | ROOF STATUS SENSOR POWER SUPPLY |
| 23 | B | ROOF STATUS SENSOR GND |
| 24 | GR | PARCEL SHELF STATUS SENSOR SIGNAL (FORWARD) |
| 25 | R | PARCEL SHELF STATUS SENSOR SIGNAL (ROTATION) |
| 26 | P | ROOF STATUS SENSOR SIGNAL |
| 27 | Y | TRUNK LID OPEN REQUEST SIGNAL |
| 28 | BG | FLIPPER DOOR RELAY GND |
| 29 | V | LOCAL COMMUNICATION (POWER WINDOW) |
| 30 | GR | LOCAL COMMUNICATION (POWER WINDOW) |
| 31 | L | CAN-H |
| 32 | P | CAN-L |
| 33 | V | ROOF STATUS SIGNAL (AUDIO) |
| 35 | B | ROOF WARNING BUZZER |
| 36 | Y | HYDRAULIC MOTOR RELAY GND (RH) |
| 37 | W | HYDRAULIC MOTOR RELAY GND (LH) |
| 38 | BR | HYDRAULIC MOTOR RELAY POWER SUPPLY |

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CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM

| | |
|----------------|--------------|
| Connector No. | B501 |
| Connector Name | WIRE TO WIRE |
| Connector Type | NS12MW-CS |



| | | |
|----|----|----|
| 33 | 5 | 66 |
| 40 | 67 | 32 |
| 3 | 19 | 48 |
| 60 | | 60 |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|---|
| 3 | R/Y | - |
| 5 | L | - |
| 19 | V | - |
| 32 | B/W | - |
| 33 | R | - |
| 40 | R/W | - |
| 48 | B | - |
| 60 | Y | - |
| 66 | B | - [With side support] - [Without side support] |
| 67 | W | - |

| | |
|----------------|--------------|
| Connector No. | B502 |
| Connector Name | WIRE TO WIRE |
| Connector Type | NS16MW-CS |



| | | | | | |
|----|----|----|----|----|----|
| 19 | 3 | 1 | 17 | 40 | 59 |
| 8 | 5 | 66 | 32 | 48 | 21 |
| 33 | 67 | 60 | | | |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | L/W | - |
| 3 | R/Y | - |
| 5 | L | - |
| 17 | Y/R | - |
| 19 | V | - |
| 21 | L/Y | - |
| 32 | B/W | - |
| 33 | R | - |
| 40 | R/W | - |
| 48 | B | - |
| 60 | Y | - |

| | | |
|----|---|---|
| 66 | B | - |
| 67 | W | - |

| | |
|----------------|--------------------------|
| Connector No. | B503 |
| Connector Name | DRIVER SEAT CONTROL UNIT |
| Connector Type | TH42FW |



| | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 3 | 4 | 5 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 |
| 17 | 19 | 21 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | L/W | RX |
| 3 | R/Y | CAN-H |
| 4 | O/B | SLIDING LIMIT SW |
| 5 | L | BUCKLE SW |
| 8 | L/Y | P RANGE SW |
| 9 | W/G | PULSE (RECLINING) |
| 10 | P/B | PULSE (RR LIFTING) |
| 11 | BR | SLIDING SW (BACKWARD) |
| 12 | SB | RECLINING SW (BACKWARD) |
| 13 | LG/R | FRONT LIFTING SW (DOWNWARD) |
| 14 | G/B | REAR LIFTING SW (DOWNWARD) |
| 16 | O | VCC |
| 17 | Y/R | TX |
| 19 | V | CAN-L |
| 21 | L/Y | P RANGE SW |
| 24 | R | PULSE (SLIDING) |
| 25 | Y/B | PULSE (FR LIFTING) |
| 26 | Y | SLIDING SW (FORWARD) |
| 27 | R/G | RECLINING SW (FORWARD) |
| 28 | W/B | FRONT LIFTING SW (UPWARD) |
| 29 | P/L | REAR LIFTING SW (UPWARD) |
| 30 | P | POWER WALK-IN SW |
| 31 | GR | SENSOR GND |
| 32 | B/W | GND (SIGNAL) |

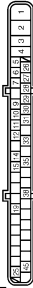
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|----------------|--|
| Connector No. | E5 |
| Connector Name | ENGINE R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM) |
| Connector Type | TH85FW-IH |



| | | | |
|----|----|----|----|
| 42 | 41 | 40 | 39 |
| 46 | 45 | 44 | 43 |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 39 | P | - |
| 40 | L | - |
| 41 | B/W | - |
| 42 | Y | - |
| 43 | SB | - |
| 44 | LG | - |
| 45 | G | - |
| 46 | W | - |

| | |
|----------------|---|
| Connector No. | E41 |
| Connector Name | ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) |
| Connector Type | BAA42FB-AH24-LH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | B | GND |
| 2 | L | UEMR |
| 3 | R | UEVR |
| 4 | B | GND |
| 5 | Y | DS FL |
| 6 | BG | DP RL |
| 7 | BR | DP RR |
| 9 | B | DP FR |
| 10 | W | DS FR |
| 11 | V | DIAG-K |
| 14 | P | CAN-L |
| 25 | Y | BUJ-L |
| 26 | LG | DP FL |
| 27 | GR | DS RL |

| | | |
|----|----|----------------|
| 28 | G | UZ |
| 29 | P | DS RR |
| 30 | SB | BLS |
| 31 | R | VDC OFF SWITCH |
| 35 | L | CAN-H |
| 45 | B | BUS-H |

| | |
|----------------|----------------------------|
| Connector No. | E67 |
| Connector Name | ICC SENSOR INTEGRATED UNIT |
| Connector Type | RS08FB-PR |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | R | IGNITION |
| 2 | V | BRAKE HOLD RLY DRIVE SIGNAL |
| 3 | L | CAN-H |
| 4 | B | GND |
| 6 | P | CAN-L |

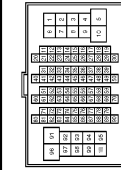
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CAN SYSTEM

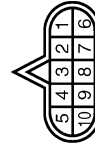
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|----------------|-----------------|
| Connector No. | E106 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80FW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | GR | - |
| 3 | BG | - |
| 4 | B/W | - |
| 5 | G | - |
| 6 | BG | - |
| 7 | LG | - |
| 8 | G | - |
| 9 | R | - |
| 10 | W | - |
| 11 | Y | - |
| 12 | R | - |
| 13 | L | - |
| 14 | GR | - |
| 15 | P | - |
| 16 | W | - |
| 17 | V | - |
| 18 | BG | - |
| 19 | GR | - |
| 20 | LG | - |
| 30 | R | - |
| 31 | L | - |
| 32 | BG | - |
| 33 | P | - |
| 34 | V | - |
| 35 | BR | - |
| 36 | W | - |
| 37 | Y | - |
| 38 | R | - |
| 39 | B | - |
| 40 | G | - |
| 41 | W | - |
| 42 | LG | - |
| 43 | SB | - |
| 44 | GR | - |
| 45 | BG | - |
| 46 | LG | - |
| 47 | V | - |
| 48 | P | - |

| | | |
|-----|--------|---|
| 49 | L | - |
| 59 | B | - |
| 66 | LG | - |
| 67 | SS | - |
| 68 | R | - |
| 69 | W | - |
| 70 | G | - |
| 80 | W | - |
| 81 | P | - |
| 82 | G | - |
| 83 | V | - |
| 84 | L | - |
| 85 | BG | - |
| 86 | LG | - |
| 87 | Y | - |
| 88 | GR | - |
| 89 | W | - |
| 90 | W | - |
| 91 | G | - |
| 92 | B | - |
| 93 | GR | - |
| 94 | L | - |
| 95 | Y | - |
| 97 | BR | - |
| 98 | SHIELD | - |
| 99 | L | - |
| 100 | P | - |

| | |
|----------------|--------------|
| Connector No. | F51 |
| Connector Name | A/T ASSEMBLY |
| Connector Type | RK10FG-DGY |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | Y | - |
| 2 | R | - |
| 3 | L | - |
| 4 | V | - |
| 5 | B | - |
| 6 | Y | - |
| 7 | R | - |
| 8 | P | - |
| 9 | GR | - |

| | | |
|----|---|---|
| 10 | B | - |
|----|---|---|

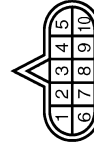


| | |
|----------------|--------------|
| Connector No. | F103 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TK30FW-NS10 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 2 | G | - |
| 3 | W | - |
| 4 | R | - |
| 5 | B | - |
| 9 | Y | - |
| 10 | GR | - |
| 19 | O | - |
| 20 | Y | - |
| 28 | B | - |
| 29 | LG | - |
| 30 | R | - |
| 31 | R | - |
| 41 | O | - |
| 42 | BR | - |
| 43 | P | - |
| 44 | L | - |
| 45 | Y | - |
| 46 | V | - |

| | |
|----------------|-----------------------------------|
| Connector No. | F157 |
| Connector Name | TCM (TRANSMISSION CONTROL MODULE) |
| Connector Type | SPI0FG |



| | | |
|--------------|---------------|-----------------------------|
| Terminal No. | Color of Wire | Signal Name [Specification] |
| 1 | - | VGN |

| | | |
|----|---|--------------|
| 2 | - | BATT |
| 3 | - | CAN-H |
| 4 | - | K-LINE |
| 5 | - | GND |
| 6 | - | VGN |
| 7 | - | REV LAMP RLY |
| 8 | - | CAN-L |
| 9 | - | STARTER RLY |
| 10 | - | GND |

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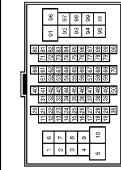
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM

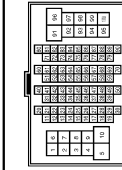
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|----------------|-----------------|
| Connector No. | M6 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | BG | |
| 2 | Y | |
| 3 | R | |
| 4 | G | |
| 5 | G | |
| 6 | BR | |
| 7 | BR | |
| 8 | Y | |
| 9 | R | |
| 10 | W | |
| 11 | GR | |
| 12 | R | |
| 13 | L | |
| 14 | G | |
| 15 | P | |
| 16 | W | |
| 17 | BR | |
| 18 | V | |
| 19 | BG | |
| 20 | L | |
| 30 | R | |
| 31 | L | |
| 32 | Y | |
| 33 | GR | |
| 34 | P | |
| 35 | BR | |
| 36 | BR | |
| 37 | Y | |
| 38 | LG | |
| 39 | SB | |
| 40 | G | |
| 41 | W | |
| 42 | LG | |
| 43 | P | |
| 44 | GR | |
| 44 | R | - [With A/T] |
| 45 | BG | - [With M/T] |
| 46 | G | |
| 47 | G | |
| 47 | P | |

| | | |
|-----|--------|--|
| 48 | P | |
| 49 | L | |
| 59 | B | |
| 66 | Y | |
| 67 | G | |
| 68 | R | |
| 69 | W | |
| 70 | G | |
| 80 | SB | |
| 81 | R | |
| 82 | V | |
| 83 | W | |
| 84 | L | |
| 85 | BG | |
| 86 | G | |
| 87 | V | |
| 88 | B | |
| 89 | SB | |
| 90 | G | |
| 91 | W | |
| 92 | B | |
| 93 | G | |
| 94 | L | |
| 95 | BR | |
| 97 | P | |
| 98 | SHIELD | |
| 99 | V | |
| 100 | SB | |

| | |
|----------------|-----------------|
| Connector No. | M7 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | BG | |
| 2 | LG | |
| 3 | G | |
| 4 | V | |
| 5 | L | |
| 6 | B | |
| 9 | L | |
| 10 | BR | |

| | | |
|----|--------|-------------------------------------|
| 12 | SHIELD | |
| 13 | V | |
| 14 | BR | |
| 15 | GR | |
| 16 | LG | |
| 17 | L | |
| 20 | BR | |
| 21 | G | |
| 22 | R | |
| 23 | SB | |
| 24 | B | |
| 25 | W | |
| 26 | L | |
| 27 | V | |
| 28 | P | |
| 29 | V | |
| 31 | SHIELD | |
| 32 | G | |
| 33 | R | |
| 34 | BG | |
| 35 | GR | |
| 36 | GR | |
| 37 | P | |
| 37 | L | - [With climate controlled seat] |
| 38 | V | - [Without climate controlled seat] |
| 38 | GR | - [With climate controlled seat] |
| 40 | SHIELD | |
| 41 | L | |
| 42 | P | |
| 43 | SHIELD | |
| 44 | Y | |
| 45 | BR | |
| 46 | SB | |
| 47 | SB | |
| 48 | LG | |
| 49 | LG | |
| 49 | LG | - [With BOSE system] |
| 49 | SB | - [Without BOSE system] |
| 50 | SB | - [With BOSE system] |
| 50 | LG | - [Without BOSE system] |
| 51 | R | |
| 52 | V | |
| 53 | P | |
| 54 | BR | |
| 55 | Y | |
| 55 | BG | - [With A/T] |
| 56 | L | - [With M/T] |
| 57 | V | |
| 58 | R | |
| 60 | LG | |
| 61 | BG | |
| 62 | B | |
| 63 | V | |

| | | |
|-----|-----|--|
| 64 | SB | |
| 65 | BR | |
| 66 | Y | |
| 67 | P | |
| 68 | L | |
| 69 | P | |
| 70 | L | |
| 80 | G | |
| 81 | LG | |
| 82 | Y | |
| 83 | BR | |
| 84 | V | |
| 85 | L | |
| 86 | Y | |
| 87 | GR | |
| 91 | R | |
| 93 | G | |
| 94 | P | |
| 95 | GR | |
| 96 | Y | |
| 97 | SB | |
| 99 | Y | |
| 100 | Y/B | |

| | |
|----------------|--------------|
| Connector No. | M17 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TK02FW |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | L | |
| 2 | P | |

CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

CAN SYSTEM

| | |
|----------------|--------------|
| Connector No. | M1B |
| Connector Name | WIRE TO WIRE |
| Connector Type | TK22NW |



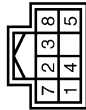
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | L | - |
| 2 | P | - |

| | |
|----------------|---------------------|
| Connector No. | M24 |
| Connector Name | DATA LINK CONNECTOR |
| Connector Type | BD16FW |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 3 | LG | - |
| 4 | B | - |
| 5 | BR | - |
| 6 | L | - |
| 7 | V | - |
| 8 | G | - |
| 11 | SB | - |
| 14 | P | - |
| 16 | R | - |

| | |
|----------------|-----------------------|
| Connector No. | M37 |
| Connector Name | STEERING ANGLE SENSOR |
| Connector Type | TH32FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | L | CAN-H |
| 2 | P | CAN-L |
| 7 | B | GND |
| 8 | G | IGN |

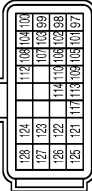
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| Connector No. | M67 |
| Connector Name | UNIFIED METER AND A/C AMP. |
| Connector Type | TH42FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|--|
| 41 | BR | ACC POWER SUPPLY |
| 42 | BR | FUEL LEVEL SENSOR SIGNAL |
| 43 | R | INTAKE SENSOR SIGNAL |
| 44 | LG | IN-VEHICLE SENSOR SIGNAL |
| 45 | V | AMBIENT SENSOR SIGNAL |
| 46 | BG | SUNLOAD SENSOR SIGNAL |
| 47 | G | EXHAUST GAS / OUTSIDE O2 DETECTING SENSOR SIGNAL |
| 53 | W | IGNITION POWER SUPPLY |
| 54 | BG | BATTERY POWER SUPPLY |
| 55 | B | GROUND |
| 56 | L | CAN-H |
| 57 | LG | BRAKE FLUID LEVEL SWITCH SIGNAL |
| 58 | Y | FUEL LEVEL SENSOR SIGNAL GROUND |
| 59 | GR | INTAKE SENSOR GROUND |
| 60 | L | IN-VEHICLE SENSOR GROUND |
| 61 | R | AMBIENT SENSOR GROUND |
| 62 | SB | SUNLOAD SENSOR GROUND |
| 63 | L | ION CONTROL MODE OUTPUT SIGNAL |

| | | |
|----|----|------------------------------|
| 65 | BG | ECV SIGNAL |
| 69 | L | A/C CAN SIGNAL |
| 70 | R | EACH DOOR MOTOR POWER SUPPLY |
| 71 | GR | GROUND |
| 72 | P | CAN-L |

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|----------------|-------------------|
| Connector No. | M107 |
| Connector Name | ECM |
| Connector Type | RH44GY-RZ8-R-LH-Z |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|----------------------------------|
| 97 | R | APP SEN 1 |
| 98 | P | APP SEN 2 |
| 99 | L | SENSOR POWER SUPPLY |
| 100 | W | SENSOR GROUND |
| 101 | SB | ASCD/ICC STEERING SW |
| 102 | G | EVAP CONTROL SYSTEM PRESS SEN |
| 103 | G | SENSOR POWER SUPPLY |
| 104 | GR | SENSOR GROUND |
| 105 | L | REFRIGERANT PRESS SEN |
| 106 | LG | FUEL TANK TEMP SEN |
| 107 | BR | SENSOR POWER SUPPLY |
| 108 | Y | SENSOR GROUND |
| 110 | BR | PNP SIGNAL |
| 112 | R | ENGINE SPEED OUTPUT SIGNAL |
| 113 | P | SENSOR GROUND |
| 114 | L | CAN COMMUNICATION LINE |
| 117 | V | CAN COMMUNICATION LINE |
| 121 | LG | DATA LINK CONNECTOR |
| 122 | P | EVAP CANISTER VENT CONTROL VALVE |
| 123 | B | STOP LAMP SW |
| 124 | B | ECM GROUND |
| 125 | R | ECM GROUND |
| 126 | BR | POWER SUPPLY FOR ECM |
| 127 | B | ASCD/ICC BRAKE SW |
| 128 | B | ECM GROUND |

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| Connector No. | M110 |
| Connector Name | PRE-CRASH SEAT BELT CONTROL UNIT |
| Connector Type | TH22FW-TB6 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | SB | MOTOR (RH) (RELEASE) |
| 2 | W | +B |
| 3 | LG | MOTOR (RH) (EASTEN) |
| 4 | R | MOTOR (LH) (EASTEN) |
| 5 | W | GND (DRIVE) |
| 6 | BR | MOTOR (LH) (RELEASE) |
| 7 | G | INDICATOR |
| 8 | LG | BUCKLE SW RH |
| 10 | BR | BUCKLE SW LH |
| 13 | W | IGN |
| 16 | W | SENS OUTPUT 1 |
| 18 | R | SENS POWER |
| 20 | G | SENS OUTPUT 2 |
| 21 | B | SENS GND |
| 22 | P | CAN-L |
| 24 | L | CAN-H |
| 26 | B | GND (CONT) |

JCMWN0260GB

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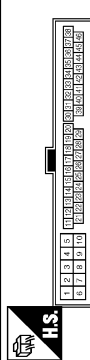
CAN COMMUNICATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

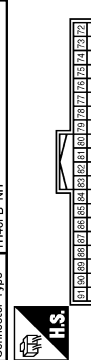
CAN SYSTEM

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| Connector No. | M116 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH36MW-NS10 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 2 | W | - |
| 3 | BG | - |
| 4 | R | - |
| 5 | B | - |
| 9 | R | - |
| 10 | R | - |
| 18 | BG | - |
| 20 | Y | - |
| 28 | GR | - |
| 29 | LG | - |
| 30 | LG | - |
| 31 | W | - |
| 41 | BG | - |
| 42 | G | - |
| 43 | P | - |
| 44 | L | - |
| 45 | G | - |
| 46 | Y | - |

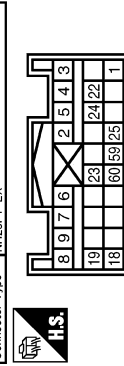
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| Connector No. | M122 |
| Connector Name | BCM BODY CONTROL MODULE |
| Connector Type | TH40FB-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 72 | R | ROOM ANT 2- |
| 73 | G | ROOM ANT 2+ |
| 74 | SB | PASSENGER DOOR ANT- |
| 75 | BR | PASSENGER DOOR ANT+ |

| | | |
|-----|----|-------------------------------------|
| 76 | V | DRIVER DOOR ANT- |
| 77 | LG | DRIVER DOOR ANT+ |
| 78 | Y | ROOM ANT 1- |
| 79 | BR | ROOM ANT 1+ |
| 80 | GR | NAIS ANTENNA AMP |
| 81 | W | NAIS ANTENNA AMP |
| 82 | R | IGN RELAY (F/B) CONT |
| 83 | Y | KEYLESS ENTRY RECEIVER COMM |
| 87 | Y | COMBI SW INPUT 5 |
| 88 | BG | COMBI SW INPUT 3 |
| 89 | BR | PUSH SW |
| 90 | P | CAN-L |
| 91 | L | CAN-H |
| 92 | LG | KEY SLOT ILL |
| 93 | V | ON IND |
| 95 | BG | ACC RELAY CONT |
| 96 | GR | A/T SHIFT SELECTOR POWER SUPPLY |
| 97 | L | S/L CONDITION 1 |
| 98 | SB | S/L CONDITION 2 |
| 99 | R | ASGD CLUTCH SW (M/S, M/T) |
| 99 | R | SHIFT P (M/S, M/T) |
| 100 | Y | PASSENGER DOOR REQUEST SW |
| 101 | P | DRIVER DOOR REQUEST SW |
| 102 | BG | BLOWER FAN MOTOR RELAY CONT |
| 103 | LG | KEYLESS ENTRY RECEIVER POWER SUPPLY |
| 106 | W | S/L UNIT POWER SUPPLY |
| 107 | LG | COMBI SW INPUT 1 |
| 108 | R | COMBI SW INPUT 4 |
| 109 | W | COMBI SW INPUT 2 |
| 110 | G | HAZARD SW |
| 111 | Y | S/L UNIT COMM |

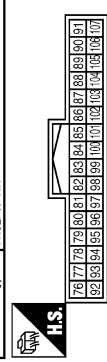
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| Connector No. | M147 |
| Connector Name | AIR BAG DIAGNOSIS SENSOR UNIT |
| Connector Type | IN28FY-EX |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | LG | IGN |
| 2 | B | GND |
| 3 | Y | DR1 (+) |
| 4 | Y | DR1 (-) DR2 (-) |
| 5 | Y | DR2 (+) |

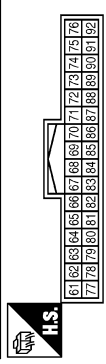
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| 6 | Y | ASI (+) |
| 7 | Y | ASI (-) |
| 8 | Y | ASZ (+) |
| 9 | Y | ASZ (-) |
| 18 | SB | EGZS (+) |
| 19 | V | EGZS (-) |
| 22 | SHIELD | GND |
| 23 | LG | AIRBAG W/L |
| 24 | G | SEAT BELT |
| 25 | R | CUTOFF TELLTALE |
| 59 | L | CAN-H |
| 60 | P | CAN-L |

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|----------------|-----------------|
| Connector No. | M204 |
| Connector Name | AV CONTROL UNIT |
| Connector Type | TH32FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 76 | LG | AV COMM (L) |
| 77 | SB | AV COMM (H) |
| 78 | LG | AV COMM (L) |
| 79 | SB | AV COMM (H) |
| 80 | P | CAN-L |
| 81 | L | CAN-H |
| 82 | BR | SW GND |
| 86 | SHIELD | SHIELD |
| 87 | P | TEL VOICE SIGNAL (+) |
| 88 | GR | TEL VOICE SIGNAL (-) |
| 92 | GR | VEHICLE SPEED (8-PULSE) |
| 93 | SB | PARKING BRAKE |
| 94 | BG | REVERSE |
| 95 | G | IGNITION |
| 96 | SB | DISK EJECT SIGNAL |

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|----------------|-----------------|
| Connector No. | M210 |
| Connector Name | AV CONTROL UNIT |
| Connector Type | TH32FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 65 | SB | PARKING BRAKE |
| 67 | P | COMPOSITE IMAGE GND |
| 68 | L | COMPOSITE IMAGE SIGNAL |
| 71 | SHIELD | MICROPHONE SHIELD |
| 72 | G | MICROPHONE VCC |
| 73 | G | COMM CONT->DISP |
| 74 | P | CAN-L |
| 75 | LG | AV COMM (L) |
| 76 | LG | AV COMM (L) |
| 79 | L | ILLUMINATION |
| 80 | G | IGNITION |
| 81 | BG | REVERSE SIGNAL |
| 82 | GR | VEHICLE SPEED (8-PULSE) |
| 83 | SHIELD | SHIELD |
| 87 | R | MICROPHONE SIGNAL |
| 88 | SHIELD | SHIELD |
| 89 | L | COMM (DISP->CONT) |
| 90 | L | CAN-H |
| 91 | SB | AV COMM (H) |
| 92 | SB | AV COMM (H) |

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MALFUNCTION AREA CHART

Main Line

INFOID:000000006473719

| Malfunction area | Reference |
|--|---|
| Main line between AV control unit and data link connector | LAN-38. "Diagnosis Procedure" |
| Main line between data link connector and driver seat control unit | LAN-39. "Diagnosis Procedure" |
| Main line between driver seat control unit and ABS actuator and electric unit (control unit) | LAN-40. "Diagnosis Procedure" |

Branch Line

INFOID:000000006473720

| Malfunction area | Reference |
|---|---|
| ECM branch line circuit | LAN-42. "Diagnosis Procedure" |
| AV control unit branch line circuit | LAN-43. "Diagnosis Procedure" |
| Pre-crash seat belt control unit | LAN-44. "Diagnosis Procedure" |
| TCM branch line circuit | LAN-45. "Diagnosis Procedure" |
| Air bag diagnosis sensor unit branch line circuit | LAN-46. "Diagnosis Procedure" |
| BCM branch line circuit | LAN-47. "Diagnosis Procedure" |
| Data link connector branch line circuit | LAN-48. "Diagnosis Procedure" |
| Unified meter and A/C amp. branch line circuit | LAN-49. "Diagnosis Procedure" |
| Steering angle sensor branch line circuit | LAN-50. "Diagnosis Procedure" |
| Driver seat control unit branch line circuit | LAN-51. "Diagnosis Procedure" |
| Retractable hard top control unit branch line circuit | LAN-52. "Diagnosis Procedure" |
| ABS actuator and electric unit (control unit) branch line circuit | LAN-53. "Diagnosis Procedure" |
| ICC sensor integrated unit branch line circuit | LAN-54. "Diagnosis Procedure" |
| IPDM E/R branch line circuit | LAN-55. "Diagnosis Procedure" |

Short Circuit

INFOID:000000006473721

| Malfunction area | Reference |
|---------------------------|---|
| CAN communication circuit | LAN-56. "Diagnosis Procedure" |

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MAIN LINE BETWEEN AV AND DLC CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006473722

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M18
 - Harness connector M17

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - AV control unit
 - Harness connectors M18 and M17
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - Models with navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M210 | 90 | M18 | 1 | Existed |
| | 74 | | 2 | Existed |

- Models without navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M204 | 81 | M18 | 1 | Existed |
| | 80 | | 2 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

| Harness connector | | Data link connector | | Continuity |
|-------------------|--------------|---------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M17 | 1 | M24 | 6 | Existed |
| | 2 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000006473723

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
2. Check the continuity between the data link connector and the harness connector.

| Data link connector | | Harness connector | | Continuity |
|---------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M24 | 6 | M7 | 68 | Existed |
| | 14 | | 67 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

LAN

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006473724

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

| Harness connector | | Harness connector | | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M7 | 70 | M6 | 49 | Existed |
| | 69 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness connector | | ABS actuator and electric unit (control unit) harness connector | | Continuity |
|-------------------|--------------|---|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| E106 | 49 | E41 | 35 | Existed |
| | 48 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473725

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

| ECM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|-----|-------------------|
| Connector No. | Terminal No. | | |
| M107 | 114 | 113 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ECM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to [EC-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473726

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M210 | 90 | 74 | Approx. 54 – 66 |

- Models without navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M204 | 81 | 80 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-81, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-220, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-387, "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-110, "Exploded View"](#)
 - BOSE audio without navigation: [AV-250, "Exploded View"](#)
 - BOSE audio with navigation: [AV-413, "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

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PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473727

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the pre-crash seat belt control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of pre-crash seat belt control unit.
2. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

| Pre-crash seat belt control unit harness connector | | | Resistance (Ω) |
|--|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| M110 | 24 | 22 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the pre-crash seat belt control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-61, "Exploded View"](#).
YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473728

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

| A/T assembly harness connector | | Resistance (Ω) |
|--------------------------------|--------------|-----------------|
| Connector No. | Terminal No. | |
| F51 | 3 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the TCM branch line.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-286, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

| A/T assembly harness connector side | TCM harness connector side | Continuity |
|-------------------------------------|----------------------------|------------|
| Terminal No. | Terminal No. | |
| 3 | 3 | Existed |
| 8 | 8 | Existed |

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-219, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-286, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473729

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-6, "Work Flow"](#).

Is the inspection result normal?

- YES >> Replace the main harness.
NO >> Replace parts whose air bag system has a malfunction.

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473730

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M122 | 91 | 90 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-81, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473731

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

| Data link connector | | | Resistance (Ω) |
|---------------------|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473732

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

| Unified meter and A/C amp. harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M67 | 56 | 72 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-49, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-132, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473733

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector | | | Resistance (Ω) |
|---|--------------|---|-------------------------|
| Connector No. | Terminal No. | | |
| M37 | 1 | 2 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-95, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-121, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473734

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Models with automatic drive positioner
 - Driver seat control unit
 - Harness connector B502
 - Harness connector B11
 - Models without automatic drive positioner
 - Driver seat control unit
 - Harness connector B501
 - Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

| Driver seat control unit harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B503 | 3 | 19 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [SE-39. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [SE-258. "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

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C/ROOF BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

C/ROOF BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473735

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the retractable hard top control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of retractable hard top control unit.
2. Check the resistance between the retractable hard top control unit harness connector terminals.

| Retractable hard top control unit harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B82 | 31 | 32 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the retractable hard top control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the retractable hard top control unit. Refer to [RF-226, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the retractable hard top control unit. Refer to [RF-309, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the retractable hard top control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473736

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| E41 | 35 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-81, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-118, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

LAN

ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473737

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ICC sensor integrated unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor integrated unit.
2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

| ICC sensor integrated unit harness connector | | | Resistance (Ω) |
|--|--------------|---|-----------------|
| Connector No. | Terminal No. | | |
| E67 | 3 | 6 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-95, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-125, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006473738

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

| IPDM E/R harness connector | | | Resistance (Ω) |
|----------------------------|--------------|----|-------------------|
| Connector No. | Terminal No. | | |
| E6 | 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

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CAN COMMUNICATION CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006473739

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

| Data link connector | | | Continuity |
|---------------------|--------------|----|-------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | 14 | Not existed |

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector | | Ground | Continuity |
|---------------------|--------------|--------|-------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | | Not existed |
| | 14 | | Not existed |

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

| ECM | | Resistance (Ω) |
|--------------|-----|-------------------------|
| Terminal No. | | |
| 114 | 113 | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

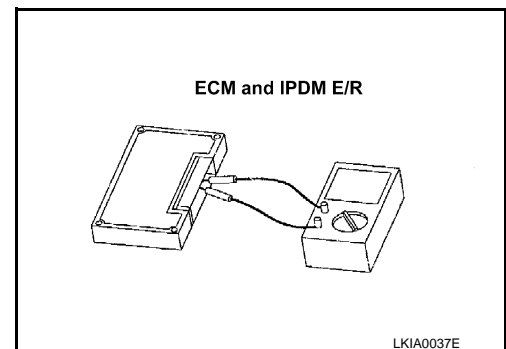
| IPDM E/R | | Resistance (Ω) |
|--------------|----|-------------------------|
| Terminal No. | | |
| 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.



CAN COMMUNICATION CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication system.

NOTE:

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

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MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006937258

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M18
 - Harness connector M17

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - AV control unit
 - Harness connectors M18 and M17
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - Models with navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M210 | 90 | M18 | 1 | Existed |
| | 74 | | 2 | Existed |

- Models without navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M204 | 81 | M18 | 1 | Existed |
| | 80 | | 2 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

| Harness connector | | Data link connector | | Continuity |
|-------------------|--------------|---------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M17 | 1 | M24 | 6 | Existed |
| | 2 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000006937259

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
2. Check the continuity between the data link connector and the harness connector.

| Data link connector | | Harness connector | | Continuity |
|---------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M24 | 6 | M7 | 68 | Existed |
| | 14 | | 67 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006937260

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

| Harness connector | | Harness connector | | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M7 | 70 | M6 | 49 | Existed |
| | 69 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness connector | | ABS actuator and electric unit (control unit) harness connector | | Continuity |
|-------------------|--------------|---|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| E106 | 49 | E41 | 35 | Existed |
| | 48 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937261

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

| ECM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|-----|-------------------|
| Connector No. | Terminal No. | | |
| M107 | 114 | 113 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ECM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to [EC-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937262

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M210 | 90 | 74 | Approx. 54 – 66 |

- Models without navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M204 | 81 | 80 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-81, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-220, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-387, "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-110, "Exploded View"](#)
 - BOSE audio without navigation: [AV-250, "Exploded View"](#)
 - BOSE audio with navigation: [AV-413, "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937265

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-6, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937266

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M122 | 91 | 90 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-81, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937267

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

| Data link connector | | | Resistance (Ω) |
|---------------------|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937268

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

| Unified meter and A/C amp. harness connector | | | Resistance (Ω) |
|--|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| M67 | 56 | 72 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-49, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-132, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937269

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector | | | Resistance (Ω) |
|---|--------------|---|-----------------|
| Connector No. | Terminal No. | | |
| M37 | 1 | 2 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-95, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-121, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937270

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Models with automatic drive positioner
 - Driver seat control unit
 - Harness connector B502
 - Harness connector B11
 - Models without automatic drive positioner
 - Driver seat control unit
 - Harness connector B501
 - Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

| Driver seat control unit harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B503 | 3 | 19 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [SE-39. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [SE-258. "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

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C/ROOF BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

C/ROOF BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937271

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the retractable hard top control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of retractable hard top control unit.
2. Check the resistance between the retractable hard top control unit harness connector terminals.

| Retractable hard top control unit harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B82 | 31 | 32 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the retractable hard top control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the retractable hard top control unit. Refer to [RF-226, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the retractable hard top control unit. Refer to [RF-309, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the retractable hard top control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937272

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| E41 | 35 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-81, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-118, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937274

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

| IPDM E/R harness connector | | | Resistance (Ω) |
|----------------------------|--------------|----|-------------------|
| Connector No. | Terminal No. | | |
| E6 | 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006937275

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

| Data link connector | | Continuity |
|---------------------|--------------|-------------|
| Connector No. | Terminal No. | |
| M24 | 6 14 | Not existed |

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector | | Ground | Continuity |
|---------------------|--------------|--------|-------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | | Not existed |
| | 14 | | Not existed |

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

| ECM | | Resistance (Ω) |
|--------------|-----|-------------------------|
| Terminal No. | | |
| 114 | 113 | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

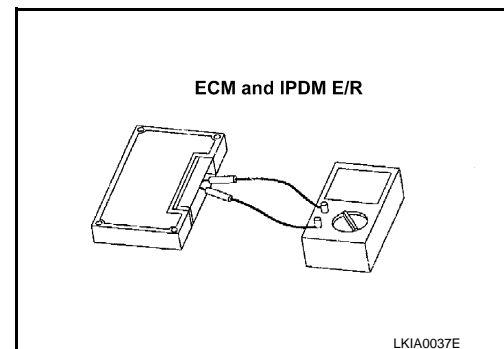
| IPDM E/R | | Resistance (Ω) |
|--------------|----|-------------------------|
| Terminal No. | | |
| 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication system.

NOTE:

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006937285

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M18
 - Harness connector M17

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - AV control unit
 - Harness connectors M18 and M17
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - Models with navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M210 | 90 | M18 | 1 | Existed |
| | 74 | | 2 | Existed |

- Models without navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M204 | 81 | M18 | 1 | Existed |
| | 80 | | 2 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

| Harness connector | | Data link connector | | Continuity |
|-------------------|--------------|---------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M17 | 1 | M24 | 6 | Existed |
| | 2 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000006937286

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
2. Check the continuity between the data link connector and the harness connector.

| Data link connector | | Harness connector | | Continuity |
|---------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M24 | 6 | M7 | 68 | Existed |
| | 14 | | 67 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006937287

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

| Harness connector | | Harness connector | | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M7 | 70 | M6 | 49 | Existed |
| | 69 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness connector | | ABS actuator and electric unit (control unit) harness connector | | Continuity |
|-------------------|--------------|---|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| E106 | 49 | E41 | 35 | Existed |
| | 48 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937288

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

| ECM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|-----|-------------------|
| Connector No. | Terminal No. | | |
| M107 | 114 | 113 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ECM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to [EC-156. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to [EC-17. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).
YES (Past error)>>Error was detected in the ECM branch line.
NO >> Repair the power supply and the ground circuit.

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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937289

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M210 | 90 | 74 | Approx. 54 – 66 |

- Models without navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M204 | 81 | 80 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-81, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-220, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-387, "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-110, "Exploded View"](#)
 - BOSE audio without navigation: [AV-250, "Exploded View"](#)
 - BOSE audio with navigation: [AV-413, "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937291

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

| A/T assembly harness connector | | Resistance (Ω) |
|--------------------------------|--------------------------|-----------------|
| Connector No. | Terminal No. | |
| F51 | 3 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the TCM branch line.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-286, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

| A/T assembly harness connector side | TCM harness connector side | Continuity |
|-------------------------------------|----------------------------|------------|
| Terminal No. | Terminal No. | |
| 3 | 3 | Existed |
| 8 | 8 | Existed |

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-219, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-286, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the TCM branch line.
NO >> Repair the power supply and the ground circuit.

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A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937292

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-6, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937293

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M122 | 91 | 90 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-81, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

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DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937294

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

| Data link connector | | | Resistance (Ω) |
|---------------------|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937295

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

| Unified meter and A/C amp. harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M67 | 56 | 72 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-49, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-132, "Exploded View"](#).
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

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STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937296

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector | | | Resistance (Ω) |
|---|--------------|---|-------------------------|
| Connector No. | Terminal No. | | |
| M37 | 1 | 2 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-95, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-121, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937297

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Models with automatic drive positioner
 - Driver seat control unit
 - Harness connector B502
 - Harness connector B11
 - Models without automatic drive positioner
 - Driver seat control unit
 - Harness connector B501
 - Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

| Driver seat control unit harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B503 | 3 | 19 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [SE-39. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [SE-258. "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

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C/ROOF BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

C/ROOF BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937298

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the retractable hard top control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of retractable hard top control unit.
2. Check the resistance between the retractable hard top control unit harness connector terminals.

| Retractable hard top control unit harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B82 | 31 | 32 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the retractable hard top control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the retractable hard top control unit. Refer to [RF-226, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the retractable hard top control unit. Refer to [RF-309, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the retractable hard top control unit branch line.
NO >> Repair the power supply and the ground circuit.

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937299

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| E41 | 35 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-81, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-118, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937301

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

| IPDM E/R harness connector | | | Resistance (Ω) |
|----------------------------|--------------|----|-------------------|
| Connector No. | Terminal No. | | |
| E6 | 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006937302

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

| Data link connector | | Continuity |
|---------------------|--------------|-------------|
| Connector No. | Terminal No. | |
| M24 | 6 14 | Not existed |

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector | | Ground | Continuity |
|---------------------|--------------|--------|-------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | | Not existed |
| | 14 | | Not existed |

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

| ECM | | Resistance (Ω) |
|--------------|-----|-------------------------|
| Terminal No. | | |
| 114 | 113 | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

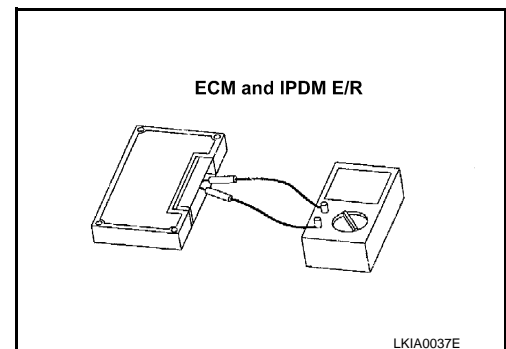
| IPDM E/R | | Resistance (Ω) |
|--------------|----|-------------------------|
| Terminal No. | | |
| 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication system.

NOTE:

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DTC/CIRCUIT DIAGNOSIS

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000006937310

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M18
 - Harness connector M17

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.
 - AV control unit
 - Harness connectors M18 and M17
2. Check the continuity between the AV control unit harness connector and the harness connector.
 - Models with navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M210 | 90 | M18 | 1 | Existed |
| | 74 | | 2 | Existed |

- Models without navigation system

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M204 | 81 | M18 | 1 | Existed |
| | 80 | | 2 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the AV control unit and the harness connector M18.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector and the data link connector.

| Harness connector | | Data link connector | | Continuity |
|-------------------|--------------|---------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M17 | 1 | M24 | 6 | Existed |
| | 2 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the data link connector.

NO >> Repair the main line between the harness connector M17 and the data link connector.

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000006937311

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector M7
 - Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.
2. Check the continuity between the data link connector and the harness connector.

| Data link connector | | Harness connector | | Continuity |
|---------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M24 | 6 | M7 | 68 | Existed |
| | 14 | | 67 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M7.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the driver seat control unit.

NO >> Repair the main line between the harness connector B1 and the driver seat control unit.

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000006937312

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
 - Harness connector B1
 - Harness connector M7
 - Harness connector M6
 - Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors B1 and M7.
2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. | | Continuity |
|---------------|--------------|----|------------|
| B1 | 68 | 70 | Existed |
| | 67 | 69 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the driver seat control unit and the harness connector B1.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M6 and E106.
2. Check the continuity between the harness connectors.

| Harness connector | | Harness connector | | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| M7 | 70 | M6 | 49 | Existed |
| | 69 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

4. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness connector | | ABS actuator and electric unit (control unit) harness connector | | Continuity |
|-------------------|--------------|---|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| E106 | 49 | E41 | 35 | Existed |
| | 48 | | 14 | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937313

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ECM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ECM.
2. Check the resistance between the ECM harness connector terminals.

| ECM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|-----|-------------------------|
| Connector No. | Terminal No. | | |
| M107 | 114 | 113 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ECM branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ECM. Refer to [EC-156. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to [EC-17. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT \(ECM\) : Special Repair Requirement"](#).

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937314

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the AV control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AV control unit.
 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M210 | 90 | 74 | Approx. 54 – 66 |

- Models without navigation system

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M204 | 81 | 80 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the AV control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation: [AV-81, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio without navigation: [AV-220, "AV CONTROL UNIT : Diagnosis Procedure"](#)
- BOSE audio with navigation: [AV-387, "AV CONTROL UNIT : Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to the following.
- Base audio without navigation: [AV-110, "Exploded View"](#)
 - BOSE audio without navigation: [AV-250, "Exploded View"](#)
 - BOSE audio with navigation: [AV-413, "Exploded View"](#)

YES (Past error)>>Error was detected in the AV control unit branch line.

- NO >> Repair the power supply and the ground circuit.

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937315

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the pre-crash seat belt control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of pre-crash seat belt control unit.
2. Check the resistance between the pre-crash seat belt control unit harness connector terminals.

| Pre-crash seat belt control unit harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M110 | 24 | 22 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the pre-crash seat belt control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit. Refer to [SBC-27, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to [SBC-61, "Exploded View"](#).
YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.
NO >> Repair the power supply and the ground circuit.

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TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937316

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - A/T assembly
 - Harness connector F103
 - Harness connector M116

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.
2. Check the resistance between the A/T assembly harness connector terminals.

| A/T assembly harness connector | | Resistance (Ω) |
|--------------------------------|--------------------------|-----------------|
| Connector No. | Terminal No. | |
| F51 | 3 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the TCM branch line.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-286, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

| A/T assembly harness connector side | TCM harness connector side | Continuity |
|-------------------------------------|----------------------------|------------|
| Terminal No. | Terminal No. | |
| 3 | 3 | Existed |
| 8 | 8 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the joint connector.

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to [TM-219, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to [TM-286, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937317

WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-6, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

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BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937318

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the BCM for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of BCM.
2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector | | | Resistance (Ω) |
|-----------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M122 | 91 | 90 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the BCM branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to [BCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-81, "Exploded View"](#).
YES (Past error)>>Error was detected in the BCM branch line.
NO >> Repair the power supply and the ground circuit.

DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937319

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

| Data link connector | | | Resistance (Ω) |
|---------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES (Present error)>>Check CAN system type decision again.
YES (Past error)>>Error was detected in the data link connector branch line circuit.
NO >> Repair the data link connector branch line.

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M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937320

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

| Unified meter and A/C amp. harness connector | | | Resistance (Ω) |
|--|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| M67 | 56 | 72 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
 NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to [MWI-49, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the unified meter and A/C amp. Refer to [MWI-132, "Exploded View"](#).
 YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
 NO >> Repair the power supply and the ground circuit.

STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937321

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of steering angle sensor.
2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector | | | Resistance (Ω) |
|---|--------------|---|-----------------|
| Connector No. | Terminal No. | | |
| M37 | 1 | 2 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the steering angle sensor branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-95, "Wiring Diagram - BRAKE CONTROL SYSTEM -"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-121, "Exploded View"](#).
YES (Past error)>>Error was detected in the steering angle sensor branch line.
NO >> Repair the power supply and the ground circuit.

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ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937322

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
 - Models with automatic drive positioner
 - Driver seat control unit
 - Harness connector B502
 - Harness connector B11
 - Models without automatic drive positioner
 - Driver seat control unit
 - Harness connector B501
 - Harness connector B10

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of driver seat control unit.
2. Check the resistance between the driver seat control unit harness connector terminals.

| Driver seat control unit harness connector | | | Resistance (Ω) |
|--|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| B503 | 3 | 19 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the driver seat control unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to [SE-39. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [SE-258. "Exploded View"](#).

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

C/ROOF BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

C/ROOF BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937323

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the retractable hard top control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of retractable hard top control unit.
2. Check the resistance between the retractable hard top control unit harness connector terminals.

| Retractable hard top control unit harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| B82 | 31 | 32 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the retractable hard top control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the retractable hard top control unit. Refer to [RF-226, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the retractable hard top control unit. Refer to [RF-309, "Removal and Installation"](#).
YES (Past error)>>Error was detected in the retractable hard top control unit branch line.
NO >> Repair the power supply and the ground circuit.

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ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937324

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ABS actuator and electric unit (control unit).
2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector | | | Resistance (Ω) |
|---|--------------|----|-----------------|
| Connector No. | Terminal No. | | |
| E41 | 35 | 14 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ABS actuator and electric unit (control unit) branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to [BRC-81, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-118, "Exploded View"](#).
YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.
NO >> Repair the power supply and the ground circuit.

ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937325

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the ICC sensor integrated unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor integrated unit.
2. Check the resistance between the ICC sensor integrated unit harness connector terminals.

| ICC sensor integrated unit harness connector | | | Resistance (Ω) |
|--|--------------|---|-----------------|
| Connector No. | Terminal No. | | |
| E67 | 3 | 6 | Approx. 54 – 66 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the ICC sensor integrated unit branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to [CCS-95, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ICC sensor integrated unit. Refer to [CCS-125, "Exploded View"](#).
YES (Past error)>>Error was detected in the ICC sensor integrated unit branch line.
NO >> Repair the power supply and the ground circuit.

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IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006937326

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.
2. Check the resistance between the IPDM E/R harness connector terminals.

| IPDM E/R harness connector | | | Resistance (Ω) |
|----------------------------|--------------|----|-------------------------|
| Connector No. | Terminal No. | | |
| E6 | 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 3.
NO >> Repair the IPDM E/R branch line.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to [PCS-18, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "Exploded View"](#).
YES (Past error)>>Error was detected in the IPDM E/R branch line.
NO >> Repair the power supply and the ground circuit.

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

INFOID:000000006937327

1. CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication system.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

| Data link connector | | Continuity |
|---------------------|--------------|-------------|
| Connector No. | Terminal No. | |
| M24 | 6 14 | Not existed |

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector | | Ground | Continuity |
|---------------------|--------------|--------|-------------|
| Connector No. | Terminal No. | | |
| M24 | 6 | | Not existed |
| | 14 | | Not existed |

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4. CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.
2. Check the resistance between the ECM terminals.

| ECM | | Resistance (Ω) |
|--------------|-----|-------------------------|
| Terminal No. | | |
| 114 | 113 | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

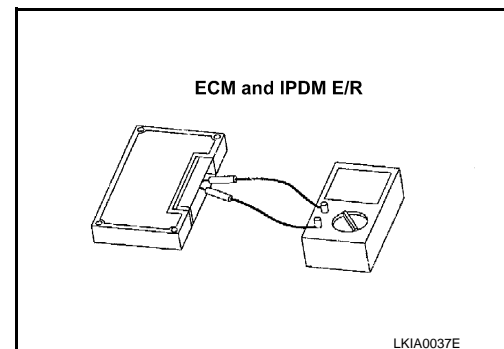
| IPDM E/R | | Resistance (Ω) |
|--------------|----|-------------------------|
| Terminal No. | | |
| 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

- YES >> GO TO 5.
NO >> Replace the ECM and/or the IPDM E/R.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.



CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect one of the unit connectors of CAN communication system.

NOTE:

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.