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PRECAUTIONS

Precautions for Trouble Diagnosis

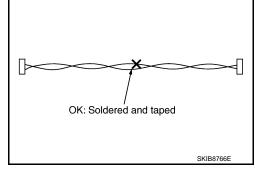
CAUTION:

- 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

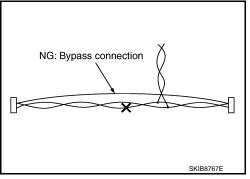
• Solder the repaired area and wrap tape around the soldered area. **NOTE:**

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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SYSTEM DESCRIPTION CAN COMMUNICATION SYSTEM

System Description

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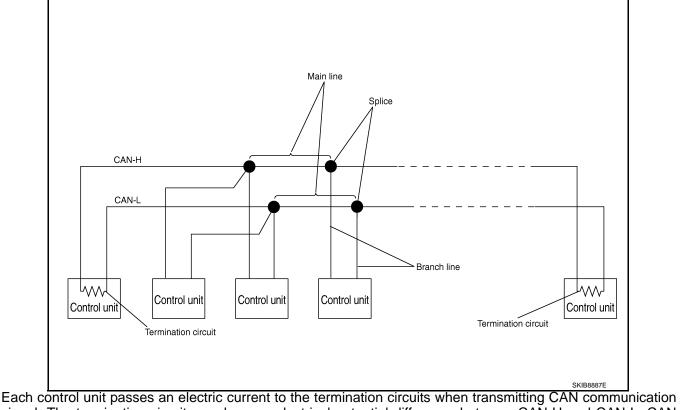
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- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network 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



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.

| 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-8, "CAN Communication Control Circuit". | (|

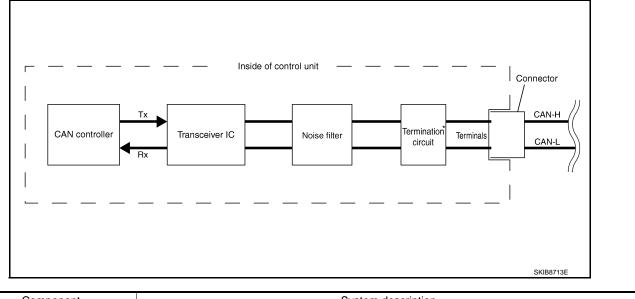
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< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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CAN Communication Control Circuit



| 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.

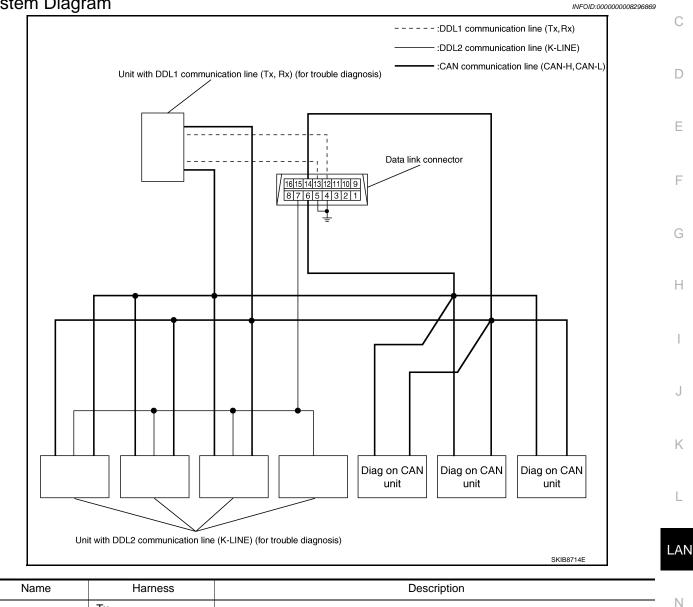
< SYSTEM DESCRIPTION >

DIAG ON CAN

Description

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

System Diagram



| Name | Hamess | Description | |
|-------------|----------------|--|-----|
| DDL1 | Tx Rx | It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling) | N |
| 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. | - 0 |

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Condition of Error Detection

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DTC (e.g. U1000 and U1001) of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT 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 under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

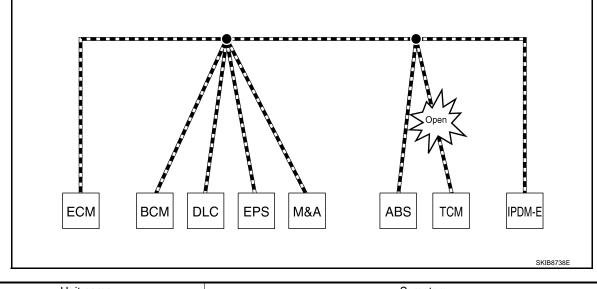
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In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction 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-21, "Abbreviation List" for the unit abbreviation.

Example: TCM branch line open circuit



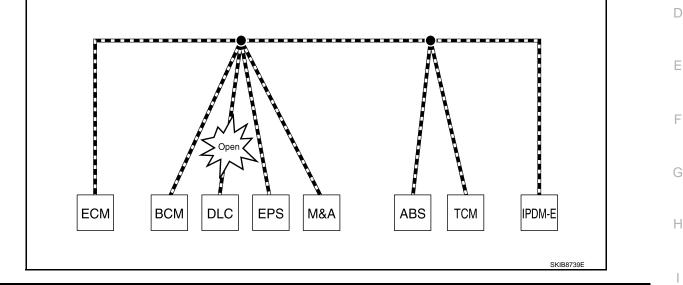
| Unit name | Symptom |
|-----------|--|
| ECM | Engine torque limiting is affected, and shift harshness increases. |
| BCM | Reverse warning chime does not sound. |

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

| Unit name | Symptom | |
|---|--|---|
| EPS control unit | Normal operation. | A |
| Combination meter | Shift position indicator and OD OFF indicator turn OFF.Warning lamps turn ON. | P |
| ABS actuator and electric unit (control unit) | Normal operation. | D |
| ТСМ | No impact on operation. | - |
| IPDM E/R | Normal operation. | С |

Example: Data link connector branch line open circuit



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

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 if the following error occurs. The error is judged by the symptom.

| Error | Difference of symptom | IN |
|--|--|----|
| 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. | 0 |

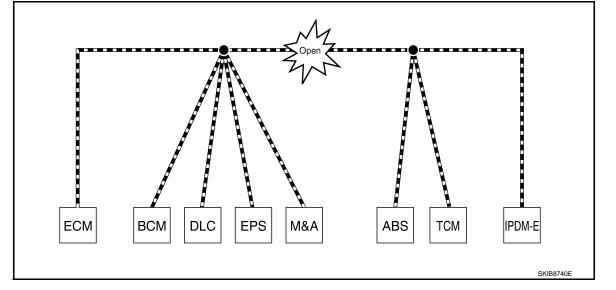
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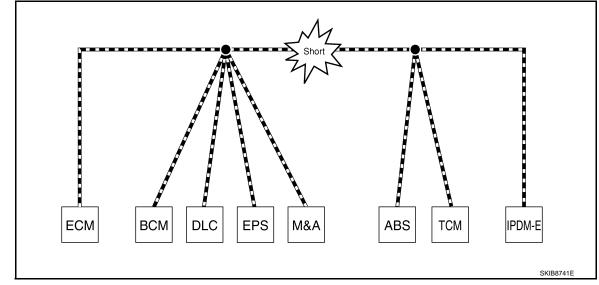
< SYSTEM DESCRIPTION >

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 | 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 | 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. | |
| ТСМ | No impact on operation. | |
| IPDM E/R | When the ignition switch is ON,The headlamps (Lo) turn ON.The cooling fan continues to rotate. | |

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



< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

| Unit name | Symptom | | | |
|---|---|--|--|--|
| ECM | Engine torque limiting is affected, and shift harshness increases.Engine speed drops. | | | |
| BCM | 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 | 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. | | | |
| ТСМ | No impact on operation. | | | |
| IPDM E/R | When the ignition switch is ON,The headlamps (Lo) turn ON.The cooling fan continues to rotate. | | | |

CAN Diagnosis with CONSULT

CAN diagnosis on CONSULT 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

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If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT "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 indication) | | DTC detection condition | Inspection/Action | L |
|-------|---|---|---|--|-----|
| 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. | | LAN |
| 01000 | | Except for ECM | When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more. | Start the inspection. Re- fer to the applicable sec- tion of the indicated | Ν |
| U1001 | CAN COMM CIRCUIT | cation sig | M is not transmitting or receiving CAN communi- gnal other than OBD (emission-related diagnosis) onds or more. | control unit. | 0 |
| U1002 | SYSTEM COMM | | control unit is not transmitting or receiving CAN cation 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.Replace the control unit indicating "U1010". | | Ρ | |

CAN Diagnostic Support Monitor

MONITOR ITEM (CONSULT)

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< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Without PAST

| | ВСМ | |
|---------------|---------|------|
| MONITOR ITEM | PRESENT | PAST |
| INITIAL DIAG | OK | - |
| TRANSMIT DIAG | OK | - |
| ECM | OK | - |
| METER/M&A | OK | - |
| TCM | OK | - |
| IPDM E/R | OK | - |
| I-KEY | OK | - |

With PAST ENGINE MONITOR ITEM PRESENT PAST TRANSMIT DIAG OK OK VDC/TCS/ABS OK 5 METER/M&A Not diagnosed BCM/SEC OK OK ICC Not diagnosed HVAC Not diagnosed TCM OK OK EPS OK OK IPDM E/R OK e4WD Not diagnosed -AWD/4WD Not diagnosed -

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Without PAST

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

With PAST

| Item | PRESENT | PAST | Description |
|--|---------------|--------|--|
| | | OK | Normal at present and in the past |
| Transmission diagnosis | ОК | 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. |
| | | OK | Normal at present and in the past |
| Control unit name (Reception diagnosis) | ОК | 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. |
| | Not diagnosed | - | 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.

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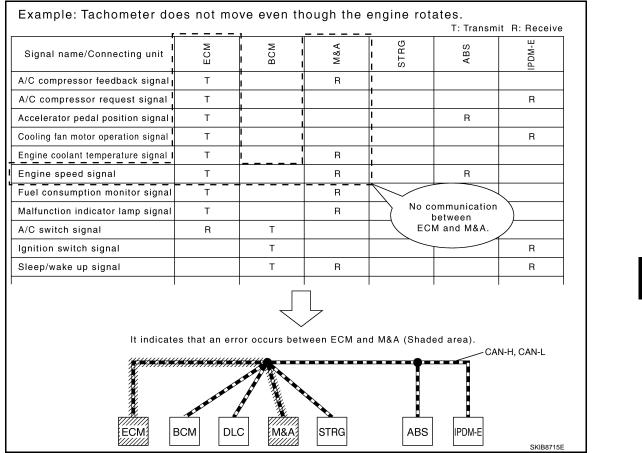
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| Item | Result indi- cated | Error counter | Description |
|---|-----------------------|---------------|---|
| | OK | 0 | Normal at present |
| CAN_COMM (Initial diagnosis) | NG | 1 – 50 | Control unit error (The number indicates how many times diagnosis 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

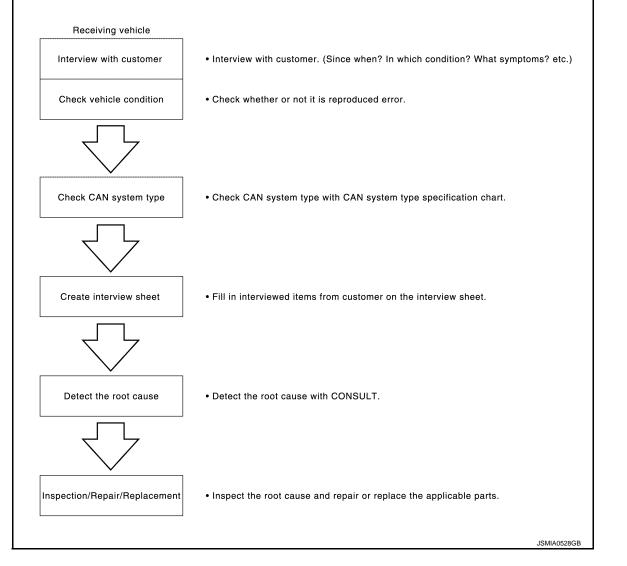
The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Trouble Diagnosis Flow Chart

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Trouble Diagnosis Procedure

INFOID:000000008296877

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 failsafe mode.

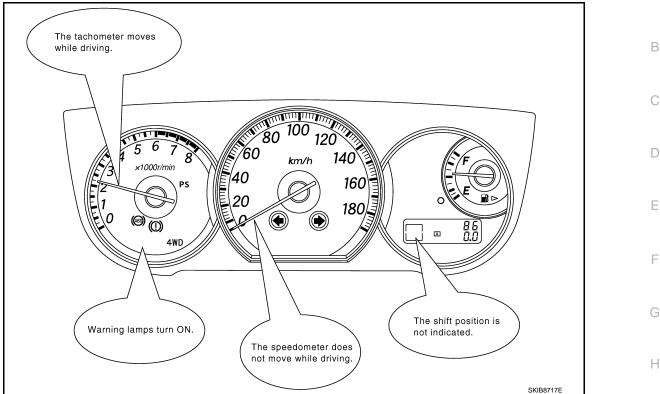
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< BASIC INSPECTION >

[CAN FUNDAMENTAL]

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• 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 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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< BASIC INSPECTION >

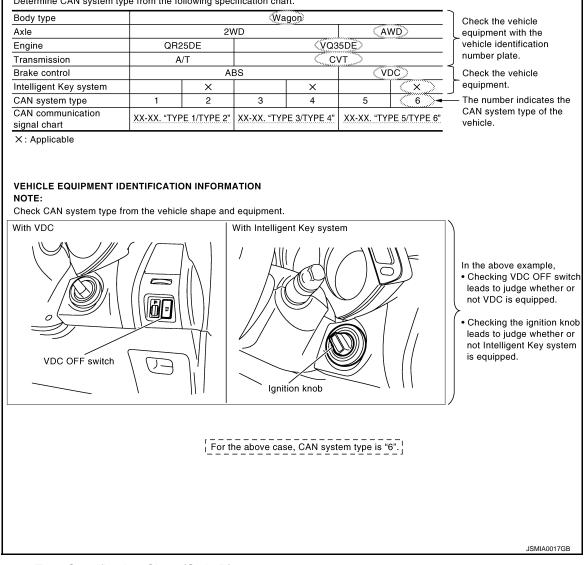
CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

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

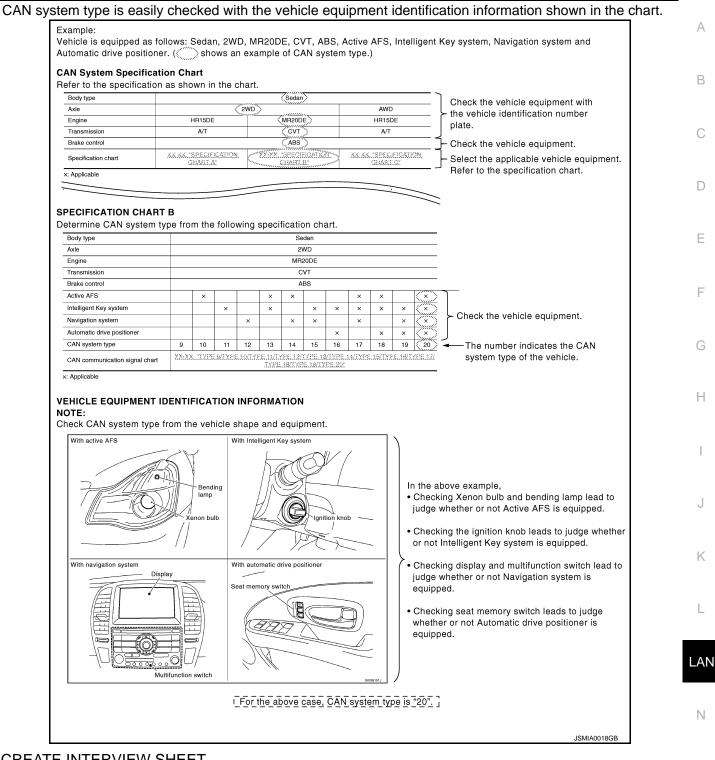
Determine CAN system type from the following specification chart.



CAN System Type Specification Chart (Style B) NOTE:

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[CAN FUNDAMENTAL]



CREATE INTERVIEW SHEET

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

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Interview Sheet (Example)

| CAN Com | munication System | n Diagnosis Ir | nterview She | et | | | | | | |
|---------------------------|---|---------------------------|--------------|-------------|--|--|--|--|--|--|
| | | Date received: | 3, Feb. 2006 | | | | | | | |
| Туре: | DBA-KG11 | VIN No.: | KG11-005040 | | | | | | | |
| Model: | BDRARGZ397EDA-E-J- | | | | | | | | | |
| First registration: | 10, Jan. 2001 | Mileage: | 62,140 | | | | | | | |
| CAN syste | m type: Type 19 | | | | | | | | | |
| Symptom (Re | sults from interview with custon | ner) | | | | | | | | |
| | Headlamps suddenly turn ON while driving the vehicle. The engine does not restart after stopping the vehicle and turning the ignition switch OEE | | | | | | | | | |
| •The coolir | ng fan continues rotating while tu | urning the ignition swite | ch ON. | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Condition at in | nspection | | | | | | | | | |
| Error Sympto | om: Present / Past | | | | | | | | | |
| While turni • The head | e does not start. ng the ignition switch ON, lamps (Lo) turn ON, and the coo or lamp does not turn ON. | oling fan continues rota | tting. | | | | | | | |
| | | | | | | | | | | |
| | | | | JSMIA0019GB | | | | | | |

DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects the root cause.

HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

Caution

• This section describes information peculiar to a vehicle and inspection procedures.

• For trouble diagnosis procedure, refer to LAN-16, "Trouble Diagnosis Procedure".

Abbreviation List

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

| | Unit name | Abbreviation |
|----|---|--------------|
| E | AWD control unit | 4WD |
| | Air bag diagnosis sensor unit | A-BAG |
| | ABS actuator and electric unit (control unit) | ABS |
| F | Driver seat control unit | ADP |
| | AV control unit | AV |
| | BCM | BCM |
| G | Data link connector | DLC |
| | ECM | ECM |
| Н | ICC sensor integrated unit | ICC |
| | IPDM E/R | IPDM-E |
| | Unified meter and A/C amp. | M&A |
| | Pre-crash seat belt control unit | PSB |
| | Steering angle sensor | STRG |
| .] | ТСМ | ТСМ |

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PRECAUTION PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Trouble Diagnosis

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.

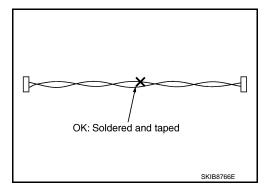
Precautions for Harness Repair

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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).



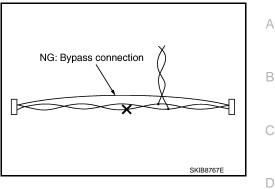
PRECAUTIONS

< PRECAUTION >

[CAN]

Bypass connection is never allowed at the repaired area.
 NOTE:
 Bypass connection may cause CAN communication or

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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[CAN]

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DIAGNOSIS AND REPAIR WORKFLOW

Interview Sheet

| riew Sheet | | INFOID:00000000829688 |
|------------------------------------|---------------------------------|-----------------------|
| CAN Communication Sy | ystem Diagnosis Interview Sheet | |
| | Date received: | |
| | | |
| Туре: | VIN No.: | |
| Model: | | |
| First registration: | Mileage: | |
| CAN system type: | | |
| Symptom (Results from interview wi | ith customer) | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Condition at inspection | | |
| Error symptom : Present / Pas | t | |
| | | |
| | | |
| | | |
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< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

CAN COMMUNICATION SYSTEM

CAN System Specification Chart

Determine CAN system type from the following specification chart.

NOTE: Refer to <u>LAN-16</u>, "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

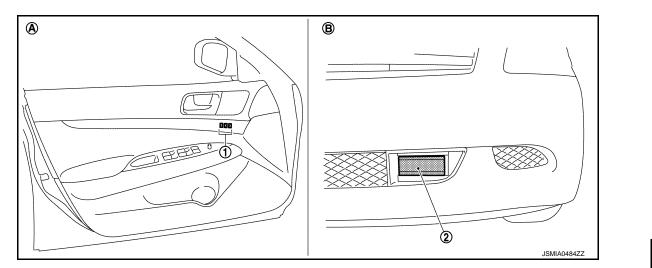
| Body type | | Sedan | | | | | | | | | | | |
|----------------------------|--------|---------|---------|---|---|---|---|---|---|--|--|--|--|
| Axle | | 2WD AWD | | | | | | | | | | | |
| Engine | VQ25HR | | VQ37VHR | | | | | | | | | | |
| Transmission | A/T | M/T | M/T A/T | | | | | | | | | | |
| Brake control | | VDC | | | | | | | | | | | |
| Automatic drive positioner | | × | | × | × | | × | × | _ | | | | |
| ICC system | | | | | × | | | × | _ | | | | |
| CAN system type | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | |

×: Applicable

VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.



- 1. Seat memory switch
- 2. ICC sensor integrated unit
- A. With automatic drive positioner
- B. With ICC system
- CAN Communication Signal Chart

Refer to <u>LAN-15, "How to Use CAN Communication Signal Chart"</u> for how to use CAN communication signal chart. NOTE:

Refer to LAN-21, "Abbreviation List" for the abbreviations of the connecting units.

| ECM | 4WD | AV | PSB | TCM | BCM | M&A | STRG | ADP | ABS | ICC | IPDM-E |
|-----|---------------|----|-----|-----|-------|-----------------------------------|-----------------------------------|--|--|---|---|
| Т | | | | | | | | | | | R |
| Т | R | | | R | | | | | R | R | |
| Т | | | | R | | | | | | | |
| | ECW T T | Т | Т | T | T R R | T R T R | T R T R | A A A A A C A B A A A A STR M8 B A A A | ADP STRG M & A A A WD A A ADP STRG M & B M A A A A | ADP STRG A <td>L R R R R R R R R R R R R R R R R R R R</td> | L R R R R R R R R R R R R R R R R R R R |



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T. Transmit R. Receive



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< SYSTEM DESCRIPTION >

| ASCD operation signal T I R I R I R ASCD SET indicator signal T I R R I R ASCD status signal T I R I R I R Cooling fan speed request signal T I R I R I R Engine and AT integrated control signal T I R R I | Signal name/Connecting unit | ECM | 4WD | AV | PSB | TCM | BCM | M&A | STRG | ADP | ABS | ICC | IPDM-E |
|---|--|-----|-----|----|-----|-----|-----|-----|------|-----|-----|-----|----------|
| ASCD status signal T I I R I R I R Cooling fan speed request signal T I R R I I R Engine and A/T integrated control signal T I R R I I R Engine coolant temperature signal T R R R I R I Engine status signal T R R R I R I Engine status signal T R R R I R I Fuel filter cap warning display signal T R R R I R ICC bracks witch signal T I I I R I R ICC bracks witch signal T I I I I R I ICC bracks witch signal T I I I I R ICC bracks witch signal T I I I I R Power generation command value signal T I I I I I Rob power seneration command value signal T I I I I I | ASCD operation signal | Т | | | | R | | | | | | | |
| Closed tractile position signal T R R R R Cooling fan speed request signal T R <td>ASCD SET indicator signal</td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>R</td> <td></td> <td></td> <td></td> <td></td> <td></td> | ASCD SET indicator signal | Т | | | | | | R | | | | | |
| Cooling fan speed request signal T I R I R I I R I I R I I I R I I I I R I I I I I R I <thi< th=""> I I <t< td=""><td>ASCD status signal</td><td>Т</td><td></td><td></td><td></td><td></td><td></td><td>R</td><td></td><td></td><td></td><td></td><td></td></t<></thi<> | ASCD status signal | Т | | | | | | R | | | | | |
| T R | Closed throttle position signal | Т | | | | R | | | | | | R | |
| Engine and AT integrated control signal R I T I I I I I I I I I I I I I I I I I I I R I R I R I R I R I R I R I R I R I R I R I R I R I R I <thi< th=""> I I I</thi<> | Cooling fan speed request signal | Т | | | | | | | | | | | R |
| Engine speed signalTRRRRRRRREngine status signalTRRRRRIIIFuel consumption monitor signalTRIRRIIIFuel consumption monitor signalTRIRRIIIFuel kinks signalTIIIIRIIIICC brake witch signalTIIIIIRIIIIICC trace witch signalTII< | Engine and A/T integrated control signal | | | | | | | | | | | | |
| Engine status signal T R R R R L <thl< th=""> L L <thl< th=""></thl<></thl<> | Engine coolant temperature signal | Т | | | | | | R | | | | | |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Engine speed signal | Т | R | | | R | | R | | | R | R | |
| Fuel filler cap warning display signal T Image: Constraint of the signal | Engine status signal | Т | | R | | | R | | | | | | |
| Income of the property of the second secon | Fuel consumption monitor signal | Т | | R | | | | R | | | | | |
| ICC prohibition signalTIII <th< td=""><td>Fuel filler cap warning display signal</td><td>Т</td><td></td><td></td><td></td><td></td><td></td><td>R</td><td></td><td></td><td></td><td></td><td></td></th<> | Fuel filler cap warning display signal | Т | | | | | | R | | | | | |
| ICC steering switch signalTIII <td>ICC brake switch signal</td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>R</td> <td></td> | ICC brake switch signal | Т | | | | | | | | | | R | |
| Malfunctioning indicator lamp signalTII <td>ICC prohibition signal</td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>R</td> <td></td> | ICC prohibition signal | Т | | | | | | | | | | R | |
| Power generation command value signal T I <thi< th=""> I I</thi<> | ICC steering switch signal | Т | | | | | | | | | | R | |
| T L L L L L R R R Snow mode switch signal R R I | Malfunctioning indicator lamp signal | Т | | | | | | R | | | | | |
| Snow mode switch signal R I <thi< th=""> I I <thi< th=""></thi<></thi<> | Power generation command value signal | Т | | | | | | | | | | | R |
| RCTCRStop lamp switch signalTRCCCRTRCRTCCTRWide open throttle position signalTRRTCCCCAWD signalTRRCRCRCCCAWD malfunction signalTRCRRCRCAWD warning lamp signalTCRRCCCAVC switch/indicator signalTCRCCCAVC switch operation signalTRCTCCAVC switch operation signalTRCCCSystem setting signalTRRCCCSystem setting signalTRTRCCVoice recognition signalRTRCCCA/T CHECK indicator lamp signalRTRCCCA/T self-diagnosis signalRTRCCCA/T self-diagnosis signalRCTRCCRCCTRCCCA/T self-diagnosis signalRCTRCCRCCCCCCCA/T self-diagnosis signalRCTRC <td></td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>R</td> <td>R</td> <td></td> | | Т | | | | | | | | | R | R | |
| Stop lamp switch signal R R R R R T R T R Wide open throttle position signal T I R R I< | Snow mode switch signal | R | | | | | | Т | | | | | |
| Image: constraint of the systemImage: constraint of the syste | | Т | | | | | | | | | | R | |
| Wide open throttle position signalTTRRIRIRAWD signalTTIIIRIRIAWD malfunction signalTTIRRIIAWD warning lamp signalTIRRIIAVC switch/indicator signalTIRIIA/C switch operation signalTRIIIA/C switch operation signalITRIIA/C switch operation signalITRIISystem setting signalITRIIVoice recognition signal'IITRIIA/T CHECK indicator lamp signalRITRIA/T self-diagnosis signalRITIRIInput speed signalRITRIIManual mode indicator signalIITRIIInput speed signalI <td>Stop lamp switch signal</td> <td></td> <td>R</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Т</td> <td>R</td> <td></td> | Stop lamp switch signal | | R | | | | | | | | Т | R | |
| AWD signalTTRRAWD malfunction signalTTRRRAWD warning lamp signalTRRRCAVC switch/indicator signalTRRCCA/C switch operation signalTRTRCA/C switch operation signalTRCCA/C switch operation signalTRCCA/C switch operation signalTRCCA/C switch operation signalTRCCRear window defogger switch signalTRCCSystem setting signalTRCCVoice recognition signal ¹¹ TRCCA/T CHECK indicator lamp signalRTRCCA/T self-diagnosis signalRTRCRInput speed signalRTRCRManual mode indicator signalCTRCCN range signalCTRCCN range signalCTRCCN range signalCTRCCCurrent gear position signalCTRCCN range signalCTRCCCN range signalCTRCCCCurrent gear position signalCTRCC <t< td=""><td></td><td></td><td></td><td></td><td></td><td>R</td><td>Т</td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | | | | | | R | Т | | | | | | |
| AWD malfunction signal T I I I R R AWD warning lamp signal T I R R I I AVC switch/indicator signal T R R I I I I A/C switch operation signal T R T R I I I A/C switch operation signal T R T R I I I A/C switch operation signal T R R I <td>Wide open throttle position signal</td> <td>Т</td> <td></td> <td></td> <td></td> <td>R</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | Wide open throttle position signal | Т | | | | R | | | | | | | |
| AWD warning lamp signalTTRRIA/C switch/indicator signalTTRRIA/C switch operation signalRTRIIA/C switch operation signalTRIIIA/C switch operation signalTRIIIRear window defogger switch signalTRIIISystem setting signalTRIIIVoice recognition signal*1TRIIIA/T CHECK indicator lamp signalRTRIIA/T self-diagnosis signalRTIRIInput speed signalRTRIRManual mode indicator signalITRIIManual mode shift refusal signalITRIIN range signalITRI <tdi< td="">Input speed signalITR<tdi< td=""><tdi< td="">Input speed signalITR<tdi< td=""><tdi< td="">Input speed signalIITR<tdi< td=""><tdi< td="">Input speed signalIIR<tdi< td=""><tdi< td=""><tdi< td="">Input speed signalIIR<tdi< td=""><tdi< td=""><tdi< td="">Input speed signal<tdi< td="">I<tdi< td="">R<tdi< td=""><tdi< td="">Input speed signal<tdi< td=""><tdi< td=""><tdi< td=""><tdi< td=""><tdi< td=""><tdi< td=""><tdi< td=""><tdi< td="">Input speed signal<tdi< td=""><tdi< td=""><tdi< td=""><tdi< td=""><tdi< td=""><t< td=""><td>AWD signal</td><td></td><td>Т</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>R</td><td></td><td></td></t<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<> | AWD signal | | Т | | | | | | | | R | | |
| A/C switch/indicator signalTTRRIA/C switch operation signalTRTIIA/C switch operation signalTTRIIA/C switch operation signalTRIIIRear window defogger switch signalTRIIISystem setting signalTRIIIVoice recognition signal ¹¹ TRIIIVoice recognition signal ¹¹ TRIIIA/T Self-diagnosis signalRTIRIInput speed signalRTRRIManual mode shift refusal signalITRIN range signalITR <tdi< td=""><tdi< td=""></tdi<></tdi<> | AWD malfunction signal | | Т | | | | | | | | R | | |
| A/C switch/indicator signalRTTIA/C switch operation signalTRRIIA/C switch operation signalTRRIIRear window defogger switch signalTRIIISystem setting signalTRIIIVoice recognition signal*1TTRIIA/T CHECK indicator lamp signalRTRIIA/T self-diagnosis signalRTRIIInput speed signalRTRRIManual mode indicator signalITRIIN range signalITRIIN range signalITRIIInput speed signalITRIIInput speed signalITRIIInput speed signalITRIIInput speed signalITRIIInput speed signalIIRIIInput speed signalIIRIIInput speed signalIIRIIInput speed signalIIRI <tdi< td="">Input speed signalIIII<tdi< td="">Input speed signalIIII<tdi< td="">Input speed signal<tdi< td="">II<tdi< td=""><tdi< td=""><tdii< td=""><td>AWD warning lamp signal</td><td></td><td>Т</td><td></td><td></td><td></td><td></td><td>R</td><td></td><td></td><td></td><td></td><td></td></tdii<></tdi<></tdi<></tdi<></tdi<></tdi<></tdi<> | AWD warning lamp signal | | Т | | | | | R | | | | | |
| A/C switch operation signalTTRRIIRear window defogger switch signalTTRIIISystem setting signalTRTRIISystem setting signalRTRIIIVoice recognition signal ^{*1} TTRIIIA/T CHECK indicator lamp signalRTRIIIA/T self-diagnosis signalRTIRIIInput speed signalRTIRRIManual mode indicator signalITRIIIManual mode shift refusal signalIITRIIN range signalIITRIIIIn range signalIITRIIIIn range signalIITRIIIIn range signalIITRIIIIn range signal <tdi< td="">IIR<tdi< td=""><tdii< td="">IIIIIIIn range signal<tdi< td="">IIIIR<tdiii< td=""><tdiii< td=""><tdiii< td=""><tdiiii< td="">In range signal<tdi< td=""><tdi< td=""><tdiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii< td=""><td>A/C switch/indicator signal</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tdiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii<></tdi<></tdi<></tdiiii<></tdiii<></tdiii<></tdiii<></tdi<></tdii<></tdi<></tdi<> | A/C switch/indicator signal | | | | | | | | | | | | |
| Rear window defogger switch signalTRRIISystem setting signalTRRIIISystem setting signalRTRIIIVoice recognition signal*1TTRIIIA/T CHECK indicator lamp signalRTRIIIA/T self-diagnosis signalRTRIIICurrent gear position signalRTIRRInput speed signalRTRIRManual mode indicator signalITRIIN range signalITRIIIN range signalIITRIIN range signalIITRII | | | | | | | | | | | | | |
| System setting signalTRRIRVoice recognition signal*1TTRIIA/T CHECK indicator lamp signalTTRIIA/T self-diagnosis signalRTTRIICurrent gear position signalRTTRRIInput speed signalRTTRRRManual mode indicator signalITTRIIN range signalITTRII | · · · · · · · · · · · · · · · · · · · | | | | | | D | ĸ | | | | | |
| System setting signalRRTRRVoice recognition signal*1TTRRIIA/T CHECK indicator lamp signalRTRIIIA/T self-diagnosis signalRTTRIICurrent gear position signalRTTRRIInput speed signalRTTRRRManual mode shift refusal signalIITRIIN range signalIITRIII | | | | | | | | | | | | | |
| A/T CHECK indicator lamp signalTRIRA/T self-diagnosis signalRTIIICurrent gear position signalTTIRRInput speed signalRTIIRManual mode indicator signalRTRIManual mode shift refusal signalTRIIN range signalITRII | System setting signal | | | | | | | | | | | | |
| A/T CHECK indicator lamp signalTRIRA/T self-diagnosis signalRTIIICurrent gear position signalTTIRRInput speed signalRTIIRManual mode indicator signalRTRIManual mode shift refusal signalTRIIN range signalITRII | Voice recognition signal ^{*1} | | | Т | | | | R | | | | | |
| A/T self-diagnosis signalRTTIIICurrent gear position signalITTIRRInput speed signalRTIIRRManual mode indicator signalITRIIIManual mode shift refusal signalITRIIN range signalITRIII | | | | | | Т | | R | | | | | |
| Current gear position signalTTRRInput speed signalRTInput speed signalRRManual mode indicator signalTTRImput speed signalImput speed signal< | | R | | | | Т | | | | | | | |
| Input speed signalRTRRManual mode indicator signalTRIRManual mode shift refusal signalTRIIN range signalTRII | · · · · · · · · · · · · · · · · · · · | | | | | Т | | | | | R | R | |
| Manual mode indicator signal T R Manual mode shift refusal signal T R N range signal T R | | R | | | | Т | | | | | | | <u> </u> |
| Manual mode shift refusal signal T R N range signal T R | · · · · · · | | | | | | | R | | | | | |
| N range signal T R | | | | | | Т | | | | | | | |
| | | | | | | | R | | | | | | |
| Output shaft revolution signal R T R | Output shaft revolution signal | R | | | | Т | | | | | | R | |
| P range signal T R | · · · · · · · · · · · · · · · · · · · | - | | | | | R | | | | | - | |

< SYSTEM DESCRIPTION >

| Signal name/Connecting unit | ECM | 4WD | AV | PSB | TCM | BCM | M&A | STRG | ADP | ABS | CC | IPDM-E | А |
|---------------------------------------|-----|-----|----|-----|-----|--------|--------|------|------|-----|----|--------|-----|
| Shift position signal | | | | R*2 | Т | | R | | R | R | R | | D |
| Buzzer output signal | | | | | | Т | R | | | | | | В |
| Buzzer bulput signal | | | | | | | R | | | | Т | | |
| Daytime running light request signal | | | | | | Т | | | | | | R | С |
| Door switch signal | | | | | | Т | R | | R | | | R | |
| Door unlock signal | | | | | | Т | | | R | | | | D |
| Front fog light request signal | | | | | | Т | R | | | | | R | D |
| Front wiper request signal | | | | | | Т | | | | | R | R | _ |
| High beam request signal | | | | | | Т | R | | | | | R | E |
| Horn reminder signal | | | | | | Т | | | | | | R | |
| Ignition switch ON signal | | | | | | T R | | | | | | R T | F |
| Ignition switch signal | | | | | | Т | | | R | | | | |
| Interlock/PNP switch signal | | | | | | T R | | | | | | R T | G |
| Key ID signal | | | | | | Т | | | R | | | | |
| Key switch signal | | | | | | Т | | | R | | | | Н |
| Key warning lamp signal | | | | | | Т | R | | | | | | |
| Low beam request signal | | | | | | Т | | | | | | R | |
| Low tire pressure warning lamp signal | | | | | | Т | R | | | | | | - |
| Meter display signal | | | | | | Т | R R | | | | Т | | |
| Oil pressure switch signal | | | | | | Т | R | | | | | | |
| | | | | | | R | | | | | | Т | K |
| Position light request signal | | | | | | Т | R | | | | | R | |
| Rear window defogger control signal | R | | R | | | Т | | | | | | R T | |
| Sleep wake up signal | | | | | | Т | R | | R | | | R | L |
| Starter control relay signal | | | | | | T | | | IN I | | | R | _ |
| Starter control relay signal | | | | | | R | | | | | | Т | LAN |
| Starter relay status signal | | | | | | Т | | | | | | R | |
| Starting mode signal | | | | | | Т | | | R | | | | N |
| Theft warning horn request signal | | | | | | Т | | | | | | R | |
| TPMS malfunction warning lamp signal | | | | | | Т | R | | | | | | - |
| Trunk switch signal | | | | | | Т | R | | | | | | 0 |
| Turn indicator signal | | | | | | Т | R | | | | | | - |
| A/C evaporator temperature signal | R | | | | | | Т | | | | | | Р |
| A/C switch signal | R | | | | | | Т | | | | | | Г |
| Blower fan motor switch signal | R | | | | | 1 | Т | | | | | | |
| Brake fluid level switch signal | | | | | | 1 | Т | | | R | | | |
| Distance to empty signal | | | R | | | 1 | Т | | | | | | |
| Fuel filler cap warning reset signal | R | | | | | | Т | | | | | | |
| Fuel level low warning signal | | | R | | | 1 | Т | | | | | | |

Revision: 2012 August

[CAN]

< SYSTEM DESCRIPTION >

[CAN]

| Signal name/Connecting unit | ECM | 4WD | AV | PSB | TCM | BCM | M&A | STRG | ADP | ABS | ICC | IPDM-E |
|--|-----|-----|-----------------|-----|-----|-----|-----|------|-----|-----|-----|--------|
| Fuel level sensor signal | R | | | | | | Т | | | | | |
| Manual mode shift down signal | | | | | R | | Т | | | | | |
| Manual mode shift up signal | | | | | R | | т | | | | | |
| Manual mode signal | | | | | R | | Т | | | | | |
| Non-manual mode signal | | | | | R | | Т | | | | | |
| Odometer signal | | | | | | R | Т | | | | | |
| Paddle shifter shift down signal ^{*3} | | | | | R | | Т | | | | | |
| Paddle shifter shift up signal ^{*3} | | | | | R | | т | | | | | |
| Parking brake switch signal | | R | | | | R | Т | | | R | | |
| Seat belt buckle switch signal | | | | | | R | Т | | | | | |
| | | | | | | R | Т | | | | | |
| Sleep-ready signal | | | | | | R | | | | | | Т |
| Target A/C evaporator temperature signal | R | | | | | | Т | | | | | |
| | R | | R | R | R | R | Т | | R | | | R |
| Vehicle speed signal | | R | | | | R | R | | | Т | R | |
| Wake up signal | | | | | | R | Т | | | | | |
| Steering angle sensor signal | | | R ^{*4} | | | | | Т | | R | | |
| A/T shift schedule change demand signal | | | | | R | | | | | Т | | |
| ABS malfunction signal | | | | | | | | | | Т | R | |
| ABS operation signal | | | | | R | | | | | Т | R | |
| ABS warning lamp signal | | | | | | | R | | | Т | | |
| Brake pressure control signal | | | | | | | | | | Т | R | |
| Brake warning lamp signal | | | | | | | R | | | т | | |
| Side G sensor signal | | | | | R | | | | | т | | |
| TCS gear keep request signal | | | | | R | | | | | т | | |
| TCS malfunction signal | | | | | | | | | | т | R | |
| TCS operation signal | | | | | | | | | | Т | R | |
| VDC OFF indicator lamp signal | | | | | | | R | | | Т | | |
| VDC OFF switch signal | | | | | | | | | | Т | R | |
| VDC operation signal | | | | | | | | | | Т | R | |
| VDC malfunction signal | | | | | | | | | | Т | R | |
| VDC warning lamp signal | | | | | | | R | | | Т | | |
| Deceleration degree commandment value signal | | | | | | | | | | R | т | |
| ICC operation signal | R | | | | | | | | | | Т | |
| ICC warning lamp signal | | | | | | | R | | | | Т | |
| A/C compressor feedback signal | R | | | | | | R | | | | | Т |
| Detention switch signal | | | | | | R | | | R | | | Т |
| Front wiper stop position signal | | | | | | R | | | | | | Т |
| High beam status signal | R | | | | | | | | | | | Т |
| Hood switch signal | | | | | | R | | | | | | Т |
| Low beam status signal | R | | | | | | | | | | | Т |
| Push-button ignition switch status signal | | | | | | R | | | | | | Т |

Revision: 2012 August

| < SYSTEM DESCRIPTION > | [CAN] | |
|--|-------|---|
| *1: Models with navigation system | | |
| *2: Receive reverse position signal only | A | Ą |
| *3: Models with paddle shifter | | |
| *4: Models with rear view monitor | | |
| NOTE: | E | З |
| CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted. | | |
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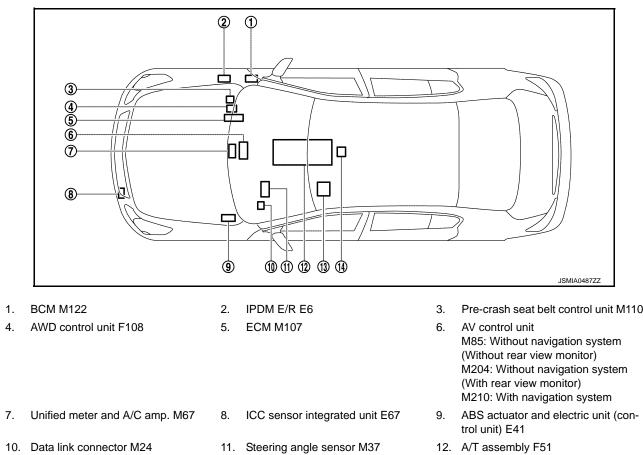
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DTC/CIRCUIT DIAGNOSIS CAN COMMUNICATION SYSTEM

Component Parts Location

INFOID:000000008296886



- 13. Driver seat control unit B451
- 14. Air bag diagnosis sensor unit M147

- ABS actuator and electric unit (con-

< DTC/CIRCUIT DIAGNOSIS >

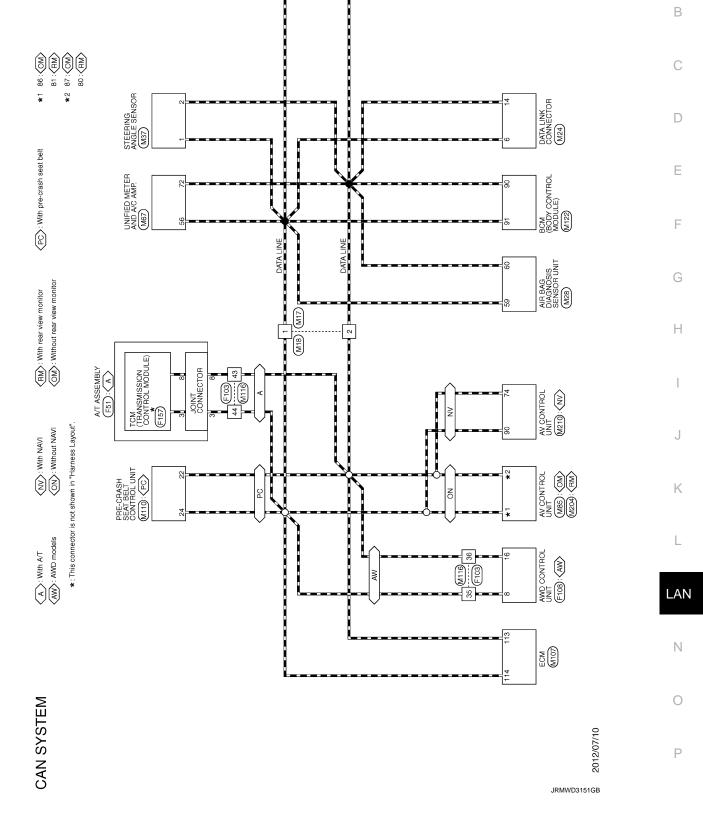
[CAN]

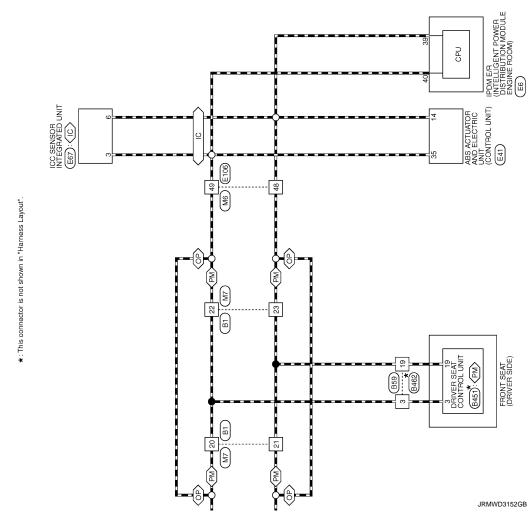
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Wiring Diagram - CAN SYSTEM -

INFOID:000000008296887

For connector terminal arrangements, harness layouts, and alphabets in a \bigcirc (option abbreviation; if not described in wiring diagram), refer to <u>GI-12, "Connector Information"</u>.





(FM): With automatic drive positioner (OP): Without automatic drive positioner (C): With ICC

MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

MALFUNCTION AREA CHART

Main Line

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[CAN]

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| Malfunction area | Reference | |
|--|-------------------------------|---|
| Main line between AV control unit and data link connector | LAN-34, "Diagnosis Procedure" | |
| Main line between data link connector and ABS actuator and electric unit (control unit) | LAN-36, "Diagnosis Procedure" | (|
| Main line between data link connector and driver seat control unit | LAN-37, "Diagnosis Procedure" | |
| Main line between driver seat control unit and ABS actuator and electric unit (control unit) | LAN-38. "Diagnosis Procedure" | |

Branch Line

INFOID:000000008296889

| Malfunction area | Reference | |
|---|-------------------------------|--|
| ECM branch line circuit | LAN-40. "Diagnosis Procedure" | |
| AWD control unit branch line circuit | LAN-41, "Diagnosis Procedure" | |
| AV control unit branch line circuit | LAN-42, "Diagnosis Procedure" | |
| Pre-crash seat belt control unit branch line circuit | LAN-43. "Diagnosis Procedure" | |
| TCM branch line circuit | LAN-44, "Diagnosis Procedure" | |
| Air bag diagnosis sensor unit branch line circuit | LAN-45, "Diagnosis Procedure" | |
| BCM branch line circuit | LAN-46. "Diagnosis Procedure" | |
| Data link connector branch line circuit | LAN-47. "Diagnosis Procedure" | |
| Unified meter and A/C amp. branch line circuit | LAN-48, "Diagnosis Procedure" | |
| Steering angle sensor branch line circuit | LAN-49, "Diagnosis Procedure" | |
| Driver seat control unit branch line circuit | LAN-50. "Diagnosis Procedure" | |
| ABS actuator and electric unit (control unit) branch line circuit | LAN-51, "Diagnosis Procedure" | |
| ICC sensor integrated unit branch line circuit | LAN-52, "Diagnosis Procedure" | |
| IPDM E/R branch line circuit | LAN-53, "Diagnosis Procedure" | |

Short Circuit

INFOID:000000008296890

| Malfunction area | Reference | |
|---------------------------|-------------------------------|-----|
| CAN communication circuit | LAN-54, "Diagnosis Procedure" | LAI |

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MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008296891

[CAN]

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.
- With navigation system

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

Without navigation system (With rear view monitor)

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

Without navigation system (Without rear view monitor)

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M85 | 86 | M18 | 1 | Existed |
| COIM | 87 | | 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.

 $\mathbf{3.}$ 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. | Continuity |
| 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.

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008296892

[CAN]

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 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 M6 and E106.

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

| Data link | Data link connector Harness connector | | Continuity | |
|---------------|---------------------------------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M24 | 6 | M6 | 49 | Existed |
| 10124 | 14 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3.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 data link connector and the ABS actuator and electric unit (control unit).

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

| Diagnosis Proced | ure | | | INFOID:00000000829689 |
|--|--|--|---------------------|------------------------|
| | | | | |
| | | | | |
| . Disconnect the bat | tery cable from the ne g terminals and conr ⁻ M7 ⁻ B1 | egative terminal. nectors for damage, l | bend and loose conn | ection (connector side |
| | terminal and connect | or. | | |
| 2. CHECK HARNESS | CONTINUITY (OPEN | I CIRCUIT) | | |
| | mess connectors M7 a ty between the data li | | harness connector. | |
| Data link o | connector | Harness | connector | Continuity |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M24 | 6 | M7 | 20 | Existed |
| | 14 | | 21 | Existed |
| • | | | | |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS | etween the harness co | I CIRCUIT) | | Continuity |
| NO >> Repair the CHECK HARNESS Check the continuity be | CONTINUITY (OPEN etween the harness co | I CIRCUIT) | 22 | Continuity Existed |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be Connector No. | CONTINUITY (OPEN etween the harness co 20 21 | I CIRCUIT) | | Continuity |

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008296894

[CAN]

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. | Termir | Continuity | |
|---------------|--------|------------|---------|
| B1 | 20 | 22 | Existed |
| Ы | 21 | 23 | 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.

${ m 3.check}$ 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. | Continuity | |
| M7 | 22 | M6 | 49 | Existed | |
| 1117 | 23 | | 48 | Existed | |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector 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 | E 41 | 35 | Existed | |
| E106 | 48 | E41 | 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 >

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| 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

Diagnosis Procedure

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. | | Resistance (12) |
| 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 the following.

VQ37VHR: <u>EC-174</u>, "Diagnosis Procedure"

VQ25HR: <u>EC-748</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: EC-25. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ECM) : Special Repair Requirement"
- VQ25HR: EC-631, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

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

4WD BRANCH LINE CIRCUIT

| < DTC/CIRCUIT DIAGNOSIS | | | [CAN] |
|---|---|---|-------------------------------|
| 4WD BRANCH LINE | CIRCUIT | | |
| Diagnosis Procedure | | | INFOID:00000008296896 |
| 1.CHECK CONNECTOR | | | |
| | · F | | |
| nector side). | le from the negative t als and connectors fo | erminal. r damage, bend and loose cc | onnection (unit side and con- |
| AWD control unit connector Harness connector F103 | r | | |
| - Harness connector M116 | | | |
| Is the inspection result normal | 2 | | |
| YES >> GO TO 2. NO >> Repair the termina | l and connector | | |
| 2. CHECK HARNESS FOR O | | | |
| | een the AWD control | unit harness connector termir | |
| Connector No. | Ter | minal No. | Resistance (Ω) |
| F108 | 8 | 16 | Approx. 54 – 66 |
| Is the measurement value with YES >> GO TO 3. NO >> Repair the AWD co 3.CHECK POWER SUPPLY A | ontrol unit branch line. | | |
| Check the power supply and t dure". Is the inspection result normal YES (Present error)>>Replac YES (Past error)>>Error was NO >> Repair the power s | ne ground circuit of th 2 e the AWD control un detected in the AWD | e AWD control unit. Refer to it. Refer to <u>DLN-50, "Explode</u> control unit branch line. | |
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AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV BRANCH LINE CIRCUIT

Diagnosis Procedure

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. | Termi | | |
| M210 | 90 74 | | Approx. 54 – 66 |

Models without navigation system (With rear view monitor)

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|--|-------------------------|
| Connector No. | Terminal No. | | 1(esistance (22) |
| M204 | 81 80 | | Approx. 54 – 66 |

Models without navigation system (Without rear view monitor)

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|--|-------------------------|
| Connector No. | Terminal No. | | |
| M85 | 86 87 | | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

 $\mathbf{3.}$ 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 rear view monitor: AV-36, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-145, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-258, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-399, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without rear view monitor: AV-75, "Exploded View"
- Base audio with rear view monitor: <u>AV-175, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-290, "Exploded View"</u>
- BOSE audio with navigation: AV-428, "Exploded View"

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

PSB BRANCH LINE CIRCUIT

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|--|---|--|-------------------------------------|
| < DTC/CIRCUIT DIAGNOS | | | [CAN] |
| PSB BRANCH LINE | | | |
| Diagnosis Procedure | | | INFOID:00000008296898 |
| 1.CHECK CONNECTOR | | | |
| | cable from the negative terr d connectors of the pre-cr d connector side). al? nal and connector. | ninal. ash seat belt control unit fo | r damage, bend and loose |
| | | ntual | |
| | or of pre-crash seat belt co etween the pre-crash seat b | ntrol unit. Delt control unit harness con | nector terminals. |
| Pre-cras | h seat belt control unit harness c | onnector | |
| Connector No. | Termin | nal No. | Resistance (Ω) |
| M110 | 24 | 22 | Approx. 54 – 66 |
| 3. CHECK POWER SUPPL | rash seat belt control unit l Y AND GROUND CIRCUIT | Г | |
| Check the power supply and nosis Procedure". | I the ground circuit of the p | re-crash seat belt control ur | nit. Refer to <u>SBC-24, "Diag-</u> |
| YES (Past error)>>Error wa | ace the pre-crash seat bel | t control unit. Refer to <u>SBC-</u> h seat belt control unit brand rcuit. | |
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TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

1.CHECK CONNECTOR

- 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-277, "Removal and Installation".
- 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. | Continuity |
| 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 <u>TM-214, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-277, "Removal and Installation".

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

A-BAG BRANCH LINE CIRCUIT

| < DTC/CIRCUIT DIAGNOSIS > [CAN] | |
|--|---|
| A-BAG BRANCH LINE CIRCUIT | А |
| Diagnosis Procedure | A |
| 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. CHECK CONNECTOR | B |
| Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side). | D |
| Is the inspection result normal? YES >> GO TO 2. NO >> Replace the main harness. | E |
| 2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT | F |
| Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow".Is the inspection result normal?YESYES>> Replace the main harness.NO>> Replace parts whose air bag system has a malfunction. | G |
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Revision: 2012 August

BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

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 <u>BCS-40, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-81, "Exploded View"</u>.

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

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

INFOID:000000008296901

DLC BRANCH LINE CIRCUIT

| < DTC/CIRCUIT DIAGNOSIS > [CAN] | |
|---|---|
| DLC BRANCH LINE CIRCUIT | ^ |
| Diagnosis Procedure | A |
| 1.CHECK CONNECTOR | В |
| Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the data link connector for damage, bend and loose connection (connector side and harness side). | С |
| Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. | D |
| 2.CHECK HARNESS FOR OPEN CIRCUIT Check the resistance between the data link connector terminals. | Е |
| | |

| | | Data link connector | | Resistance (Ω) | _ |
|----|-------------------------|---------------------------|---------|-----------------|---|
| - | Connector No. | Termi | nal No. | | F |
| _ | M24 | 6 | 14 | Approx. 54 – 66 | |
| ls | the measurement value w | vithin the specification? | | | G |

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

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.

${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-51, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-113, "Exploded View".

YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.

STRG BRANCH LINE CIRCUIT

| | OTIVO DIVANOLI | | |
|---|--|--|---------------------------|
| < DTC/CIRCUIT DIAGNOS | ilS > | | [CAN] |
| STRG BRANCH LIN | JE CIRCUIT | | |
| Diagnosis Procedure | | | INFOID:00000008296904 |
| 1.CHECK CONNECTOR | | | |
| | able from the negative terr connectors of the steering | ninal. g angle sensor for damage, b | pend and loose connection |
| Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi | nal and connector. | | |
| 2.CHECK HARNESS FOR | | | |
| | or of steering angle sensor. tween the steering angle s | ensor harness connector ter | minals. |
| Stee | ering angle sensor harness conne | ector | Resistance (Ω) |
| Connector No. | Termir | nal No. | |
| M37 | 1 | 2 | Approx. 54 – 66 |
| 3.CHECK POWER SUPPL Check the power supply and gram - BRAKE CONTROL S Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa | ing angle sensor branch lir Y AND GROUND CIRCUIT d the ground circuit of the <u>SYSTEM -"</u> . <u>al?</u> ace the steering angle sen | steering angle sensor. Refe sor. Refer to <u>BRC-117, "Exp</u> angle sensor branch line. | |
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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008296905

[CAN]

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).
- Driver seat control unit
- Harness connector B462
- Harness connector B59

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. | | |
| B451 | 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 <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-203</u>, "Exploded View".

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

ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

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 C 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 | G |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

$\mathbf{3.}$ 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 <u>BRC-81, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114</u>, "<u>Exploded</u> <u>J</u> <u>View</u>".

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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ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ICC BRANCH LINE CIRCUIT

Diagnosis Procedure

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.

$\mathbf{3}$. Check power supply and ground circuit

Check the power supply and the ground circuit of the ICC sensor integrated unit. Refer to <u>CCS-95, "Diagnosis</u> <u>Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor integrated unit. Refer to CCS-118, "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.

INFOID:000000008296907

IPDM-E BRANCH LINE CIRCUIT

| PDM-E BRANCH LINE CIRCUIT Diagnosis Procedure 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 loos and connector side). 3. 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 Connector No. IPDM E/R harness connector E6 40 | INFOID:00000008296908 |
|---|--------------------------|
| 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 loos and connector side). s 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 Connector No. | |
| Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the IPDM E/R for damage, bend and loos and connector side). Sthe inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals. | se connection (unit side |
| 2. Disconnect the battery cable from the negative terminal. 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loos and connector side). as the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. | se connection (unit side |
| YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of IPDM E/R. 2. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Connector No. | |
| CHECK HARNESS FOR OPEN CIRCUIT Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Connector No. Terminal No. | |
| Disconnect the connector of IPDM E/R. Check the resistance between the IPDM E/R harness connector terminals. IPDM E/R harness connector Connector No. Terminal No. | |
| Connector No. Terminal No. | |
| | Resistance (Ω) |
| | Approx. 108 – 132 |
| s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the IPDM E/R branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the IPDM E/R. Refer to PCS-17, "Diase the inspection result normal? YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "Exploded View". YES (Past error)>>Error was detected in the IPDM E/R branch line. NO >> Repair the power supply and the ground circuit. | iagnosis Procedure". |

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CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

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 | | |
|---------------|---------------------|----|-------------|
| Connector No. | Terminal No. | | Continuity |
| 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 | Data link connector | | Continuity |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No. | Ground | Continuity |
| M24 | 6 | Ground | Not existed |
| IVIZ4 | 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.

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

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

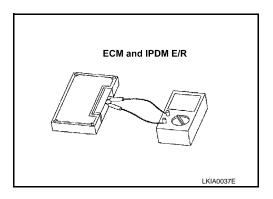
| IPDI | Resistance (Ω) | |
|--------------|----------------|-------------------|
| Terminal No. | | |
| 40 | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

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



LAN-54

INFOID:000000008296909

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

| Inspection result | |
|--|---|
| Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is | А |
| detected. | |
| 6.CHECK UNIT REPRODUCTION | В |
| 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. | С |
| Disconnect one of the unit connectors of CAN communication system. | |
| NOTE: | |
| ECM and IPDM E/R have a termination circuit. Check other units first. | D |
| 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. | Е |
| Inspection result | |
| Reproduced>>Connect the connector. Check other units as per the above procedure. | _ |
| Non-reproduced>>Replace the unit whose connector was disconnected. | F |
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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008832268

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.
- With navigation system

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

- Without navigation system (With rear view monitor)

| AV control unit h | narness connector | Harness | connector | Continuity |
|-------------------|-------------------|----------------------------|-----------|------------|
| Connector No. | Terminal No. | Connector No. Terminal No. | | Continuity |
| M204 | M204 81 80 | M18 | 1 | Existed |
| 101204 | | IVITO | 2 | Existed |

- Without navigation system (Without rear view monitor)

| AV control unit harness connector | | Harness connector | | Continuity |
|-----------------------------------|--------------|----------------------------|---|------------|
| Connector No. | Terminal No. | Connector No. Terminal No. | | Continuity |
| M85 | 86 | M18 | 1 | Existed |
| | 87 | IVI I O | 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 | Harness connector | | Data link connector | | |
|---------------|-------------------|----------------------------|---------------------|--------------|--|
| Connector No. | Terminal No. | Connector No. Terminal No. | | - Continuity | |
| M17 | 1 | M24 | 6 | Existed | |
| | 2 | M24 | 14 | Existed | |

Is the inspection result normal?

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



MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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- YES (Past error)>>Error was detected in the main line between the AV control unit and the data link connector.
- NO \rightarrow >> Repair the main line between the harness connector M17 and the data link connector.

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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008832269

[CAN SYSTEM (TYPE 1)]

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 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 M6 and E106.

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

| Data link | Data link connector | | Harness connector | |
|---------------|---------------------|----------------------------|-------------------|------------|
| Connector No. | Terminal No. | Connector No. Terminal No. | | Continuity |
| M24 | 6 | M6 | 49 | Existed |
| 11/24 | 14 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3.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. | tor No. Terminal No. | |
| E106 49 48 | 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 data link connector and the ABS actuator and electric unit (control unit).

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 DIAGNOS | SIS > | | [CAN SYSTEM (TYPE 1)] |
|--|---|---------------------|-----------------------------|
| ECM BRANCH LIN | E CIRCUIT | | |
| Diagnosis Procedure | | | INFOID:00000008832270 |
| 1.CHECK CONNECTOR | | | |
| | cable from the negative terr | | e connection (unit side and |
| Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR | inal and connector. | | |
| Disconnect the connect Check the resistance be | or of ECM. etween the ECM harness co | onnector terminals. | |
| | ECM harness connector | | Resistance (Ω) |
| Connector No. M107 | Termir 114 | nal No. 113 | Approx. 108 – 132 |
| Is the measurement value w YES >> GO TO 3. | vithin the specification? | | |
| NO >> Repair the ECN 3.CHECK POWER SUPPL | | r | |
| • VQ37VHR: <u>E</u> | nosis Procedure" osis Procedure" hal? lace the ECM. Refer to the C-25. "ADDITIONAL SER' | following. | CONTROL UNIT (ECM) : |
| VQ25HR: <u>EC</u> <u>Repair Requir</u> | ement" | | CONTROL UNIT : Special |
| | as detected in the ECM bra er supply and the ground ci | | |
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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008296913

[CAN SYSTEM (TYPE 1)]

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

| | Resistance (Ω) | |
|---------------|-------------------------|-----------------|
| Connector No. | Termi | |
| M210 | 90 | Approx. 54 – 66 |

Models without navigation system (With rear view monitor)

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

Models without navigation system (Without rear view monitor)

| AV control unit harness connector | | | Posistanco (O) |
|-----------------------------------|--------------|--|-----------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| M85 | 86 87 | | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

 $\mathbf{3.}$ 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 rear view monitor: AV-36, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-145, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-258, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-399, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without rear view monitor: AV-75, "Exploded View"
- Base audio with rear view monitor: <u>AV-175, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-290, "Exploded View"</u>
- BOSE audio with navigation: AV-428, "Exploded View"

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

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

| | | 1 | | |
|--|--|--|-----------------------|------------------------------|
| Diagnosis Procedure | | | | INF0ID:00000008832271 |
| 1.CHECK CONNECTOR | | | | |
| Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 Is the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect Check the resistance be | cable from the minals and con 3 6 <u>hal?</u> inal and conne OPEN CIRCU or of A/T asser | nectors for dama ector. JIT mbly. | ge, bend and loose co | nnection (unit side and con- |
| | A/T assembly har | | | |
| Connector No. | | Terminal No | | Resistance (Ω) |
| F51 | 3 | | 8 | Approx. 54 – 66 |
| | ector. Refer to] tween the A/T | <u> [M-277, "Remova</u> | | the TCM harness connector |
| side of the joint connect | | | | |
| side of the joint connect A/T assembly harness connect | 1 | TCM harness conne | ector side | |
| | 1 | TCM harness conne Terminal No | | Continuity |
| A/T assembly harness connect | 1 | | | Continuity Existed |
| A/T assembly harness connect Terminal No. 3 8 | ctor side | Terminal No | | · |
| A/T assembly harness connect Terminal No. 3 | nal? Ant connector. Y AND GROU | Terminal No 3 8 ND CIRCUIT | | Existed |

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

Diagnosis Procedure

INFOID:000000008832272

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-5, "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

[CAN SYSTEM (TYPE 1)]

| Diagnosis Procedure | | | INFOID:0000000883227 |
|--|---|----------------------|----------------------------------|
| .CHECK CONNECTOR | | | |
| | able from the negative ter | | ose connection (unit side and |
| s the inspection result norm YES >> GO TO 2. NO >> Repair the termi 2.CHECK HARNESS FOR | nal and connector. | | |
| Disconnect the connect Check the resistance be | r of BCM. tween the BCM harness c | connector terminals. | |
| | RCM barness connector | | |
| Connector No | BCM harness connector | inal No | Resistance (Ω) |
| Connector No. M122 | Termi 91 | inal No. 90 | — Resistance (Ω) Approx. 54 – 66 |
| | 91 thin the specification? branch line. | 90 | |

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832274

[CAN SYSTEM (TYPE 1)]

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 | | |
|---------------|---------------------|--|-----------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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

[CAN SYSTEM (TYPE 1)]

| M&A BRANCH LINE | ECIRCUIT | | |
|---|--|---------------------------|-----------------------------|
| Diagnosis Procedure | | | INFOID:00000008832275 |
| 1.CHECK CONNECTOR | | | |
| | cable from the negative tend d connectors of the unified onnector side). al? alal and connector. | | amage, bend and loose con- |
| 2. Check the resistance be | or of unified meter and A/C etween the unified meter ar | nd A/C amp. harness conn | ector terminals. |
| Unified Connector No. | meter and A/C amp. harness co | nnector nal No. | Resistance (Ω) |
| M67 | 56 | 72 | Approx. 54 – 66 |
| | I the ground circuit of the u | | . Refer to MWI-51, "UNIFIED |
| METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe | al? lace the unified meter and | neter and A/C amp. branch | |
| | | | |
| | | | |
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< DTC/CIRCUIT DIAGNOSIS >

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832276

[CAN SYSTEM (TYPE 1)]

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 <u>BRC-96, "Wiring Dia-gram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 1)]

| .CHECK CONNECTOR | | | INFOID:00000008832277 |
|---|---|----------------------------|---|
| | | | |
| Check the terminals and and loose connection (upper connection) | cable from the negative term d connectors of the ABS ac nit side and connector side | tuator and electric unit (| control unit) for damage, bend |
| s the inspection result norm YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR | nal and connector. | | |
| . Disconnect the connect | or of ABS actuator and elec | | unit) harness connector termi- |
| ABS actuator a | and electric unit (control unit) harr | ness connector | Desistance (O) |
| Connector No. | Termin | nal No. | Resistance (Ω) |
| E41 | 35 | 14 | Approx. 54 – 66 |
| CHECK POWER SUPPL Check the power supply an Check the power supply an RC-81, "Diagnosis Procedus the inspection result norm | d the ground circuit of the <u>ure"</u> . <u>al?</u> | ABS actuator and elect | ric unit (control unit). Refer to Refer to <u>BRC-114, "Exploded</u> |
| | as delected in the ABS acti | rcuit. | ontroi unit) branch line. |

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832278

[CAN SYSTEM (TYPE 1)]

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 <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "Exploded View".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 1)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:00000008832279 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.check harness continuity (short circuit) E Check the continuity between the data link connector terminals. Data link connector Continuity F 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ 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.

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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.

 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.

| DTC/CIRCUIT DIAC | SNOSIS > | | [CAN | I SYSTEM (TYPE 2)] |
|--|---|--|---|------------------------|
| | IT DIAGNO | SIS | | |
| AIN LINE BET | WEEN AV ANI | | Г | |
| Diagnosis Proced | ure | | | INFOID:00000008832280 |
| .CHECK CONNECT | ÖR | | | |
| | ttery cable from the ne ng terminals and coni r M18 | | end and loose conn | ection (connector side |
| s the inspection result | <u>normal?</u> | | | |
| YES >> GO TO 2. NO >> Repair the | e terminal and connect | tor | | |
| | CONTINUITY (OPEN | | | |
| With navigation sy | ity between the AV co | ontrol unit harness con Harness c | | ss connector. |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M210 | 90 | M18 | 1 | Existed |
| | 74 | | 2 | Existed |
| Without navigation | n system (With rear vie | ew monitor) | | |
| AV control unit h | arness connector | Harness of | connector | |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M204 | 81 | M18 | 1 | Existed |
| WI204 | 80 | IVI I O | 2 | Existed |
| Without navigation | system (Without real | r view monitor) | | |
| AV control unit h | arness connector | Harness o | connector | |
| | Terminal No. | Connector No. | Terminal No. | Continuity |
| Connector No. | | | | |
| | 86 | | 1 | Existed |
| Connector No. M85 | 86 87 | M18 | 1 2 | Existed Existed |
| M85 <u>s the inspection result</u> YES >> GO TO 3. NO >> Repair the CHECK HARNESS | 87 normal? main line between th CONTINUITY (OPEN | M18 | 2 he harness connecto | Existed |
| M85 <u>s the inspection result</u> YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be | 87 normal? main line between th CONTINUITY (OPEN etween the harness c | M18 e AV control unit and t N CIRCUIT) onnector and the data | 2 he harness connecto link connector. | Existed |
| M85 s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be Harness | 87 normal? main line between th CONTINUITY (OPEN etween the harness connector | M18 e AV control unit and t N CIRCUIT) onnector and the data Data link o | 2 he harness connecto link connector. | Existed |
| M85 <u>s the inspection result</u> YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity be | 87 normal? main line between th CONTINUITY (OPEN etween the harness c | M18 e AV control unit and t N CIRCUIT) onnector and the data | 2 he harness connecto link connector. | Existed r M18. |

Is the inspection result normal?

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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 BET | | | | |
|--|---|----------------------------------|---------------------|-------------------------|
| Diagnosis Proced | | | | INFOID:000000008832281 |
| 1. CHECK CONNECT | | | | |
| Check the followir and harness side) Harness connecto Harness connecto s the inspection result YES >> GO TO 2. | ttery cable from the ne ng terminals and conr r M7 r B1 | nectors for damage, b | pend and loose conr | nection (connector side |
| 2. CHECK HARNESS | | | | |
| | rness connectors M7 ity between the data li | and B1. ink connector and the | harness connector. | |
| Data link | connector | Harness | connector | - Continuity |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M24 | 6 | M7 | 20 | Existed |
| s the inspection result | 14 | | 21 | Existed |
| YES >> GO TO 3. NO >> Repair the | CONTINUITY (OPEN | | and the harness con | nector M7. |
| B. CHECK HARNESS | etween the narness c | | | Continuity |
| B. CHECK HARNESS | | Terminal No. | | • |
| 3. CHECK HARNESS | 20 | Terminal No. | 22 | Existed |
| 3.CHECK HARNESS Check the continuity b Connector No. | | Terminal No. | 22 | Existed |

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008832282

[CAN SYSTEM (TYPE 2)]

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 | 20 | 22 | Existed |
| | 21 | 23 | 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. | Continuity |
| M7 | 22 | M6 | 49 | Existed |
| 1117 | 23 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector 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 |
| ETUO | 48 | C 41 | 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 2)]

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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

Diagnosis Procedure

INFOID:000000008832283

[CAN SYSTEM (TYPE 2)]

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 | | |
|---------------|-----------------------|-----|-------------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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 the following.

VQ37VHR: <u>EC-174</u>, "Diagnosis Procedure"

VQ25HR: <u>EC-748</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: EC-25. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ECM) : Special Repair Requirement"
- VQ25HR: EC-631, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : 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

[CAN SYSTEM (TYPE 2)]

| AV BRANCH LINE C | IRCUIT | | |
|---|--|--|--|
| Diagnosis Procedure | | | A INFOID:00000008832284 |
| 1. CHECK CONNECTOR | | | В |
| | able from the negative terr connectors of the AV cor al? nal and connector. | | nd and loose connection (unit C |
| Disconnect the connecto Check the resistance bet Models with navigation s | ween the AV control unit h | narness connector termin | als. |
| A Connector No. | V control unit harness connecto | r nal No. | Resistance (Ω) |
| M210 | 90 | 74 | Approx. 54 – 66 G |
| - Models without navigatio | n system (With rear view i | monitor) | |
| A | V control unit harness connecto | r | H |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M204 | 81 | 80 | Approx. 54 – 66 |
| Models without navigatio | n system (Without rear vie | ew monitor) | |
| A | V control unit harness connecto | r | J |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M85 | 86 | 87 | Approx. 54 – 66 |
| 3.CHECK POWER SUPPLY | ntrol unit branch line. ' AND GROUND CIRCUIT | | L |
| Check the power supply and Base audio without rear vie Base audio with rear view r BOSE audio without navigation BOSE audio with navigation | w monitor: <u>AV-36, "AV CO</u> nonitor: <u>AV-145, "AV CON</u> tion: <u>AV-258, "AV CONTR</u> | NTROL UNIT : Diagnosis TROL UNIT : Diagnosis F OL UNIT : Diagnosis Pro | S Procedure" LA Procedure" cedure" |
| Is the inspection result norma | | | IN |
| Base audio witBOSE audio wit | ace the AV control unit. Re hout rear view monitor: <u>AV</u> h rear view monitor: <u>AV-17</u> ithout navigation: <u>AV-290.</u> ith navigation: <u>AV-428, "Ex</u> | /-75, "Exploded View" 75, "Exploded View" "Exploded View" | 0 |
| YES (Past error)>>Error wa | | ol unit branch line. | P |

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832285

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-5, "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

[CAN SYSTEM (TYPE 2)]

| Diagnosis Procedure | | | INFOID:00000008832286 |
|---|---|---------------------|------------------------------|
| .CHECK CONNECTOR | | | |
| | cable from the negative term d connectors of the BCM f | | se connection (unit side and |
| YES >> GO TO 2. NO >> Repair the termi | nal and connector. | | |
| . Disconnect the connect | or of BCM. etween the BCM harness c | onnector terminals. | |
| | BCM harness connector | | Resistance (Ω) |
| Connector No. | | nal No. | |
| M122 | 91 | 90 | Approx. 54 – 66 |
| <u>s the measurement value w</u> | | | |
| s the measurement value w YES >> GO TO 3. NO >> Repair the BCM CHECK POWER SUPPL Check the power supply and | branch line. Y AND GROUND CIRCUI | | |

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DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832287

[CAN SYSTEM (TYPE 2)]

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 | | |
|---------------|---------------------|----|-------------------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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

[CAN SYSTEM (TYPE 2)]

| | | | INFOID:00000008832288 |
|--|--|-------------------------------|------------------------------------|
| Diagnosis Procedure 1.check connector | | | |
| 1. Turn the ignition switch (| | | |
| 2. Disconnect the battery c | able from the negative tern I connectors of the unified | | amage, bend and loose con- |
| s the inspection result norm | , | | |
| YES >> GO TO 2. | nal and connector | | |
| NO >> Repair the termi 2.CHECK HARNESS FOR | | | |
| | or of unified meter and A/C | amp | |
| | tween the unified meter an | | ector terminals. |
| Unified | meter and A/C amp. harness cor | nnector | |
| Connector No. | Termin | nal No. | Resistance (Ω) |
| M67 | 56 | 72 | Approx. 54 – 66 |
| 3. CHECK POWER SUPPL' Check the power supply and METER AND A/C AMP. : Dia s the inspection result norm | I the ground circuit of the un agnosis Procedure". al? | - nified meter and A/C amp | . Refer to <u>MWI-51, "UNIFIED</u> |
| YES (Present error)>>Repl YES (Past error)>>Error wa NO >> Repair the powe | | eter and A/C amp. brancl | |
| YES (Past error)>>Error wa | as detected in the unified m | eter and A/C amp. brancl | |
| YES (Past error)>>Error wa | as detected in the unified m | eter and A/C amp. brancl | |

< DTC/CIRCUIT DIAGNOSIS >

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832289

[CAN SYSTEM (TYPE 2)]

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.

| Ste | Steering angle sensor harness connector | | | |
|---------------|---|-------------------------|-----------------|--|
| Connector No. | Termi | Resistance (Ω) | | |
| 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 <u>BRC-96, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

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

[CAN SYSTEM (TYPE 2)]

| Diagnosis Procedure | | | INFOID:00000008832290 |
|--|--|--|---|
| 1.CHECK CONNECTOR | | | |
| 1. Turn the ignition switch Of | | | |
| 2. Disconnect the battery cal | ble from the negative termina | | onnection (unit side and con- |
| Harness connector B462 | | | |
| Harness connector B59 s the inspection result normal | 2 | | |
| YES >> GO TO 2. NO >> Repair the termina 2.CHECK HARNESS FOR O | l and connector. | | |
| 1. Disconnect the connector | | nit harness connector | terminals. |
| Driver | seat control unit harness connector | | Resistance (Ω) |
| Connector No. | Terminal N | 0. | |
| DIE | 3 | 19 | Approx. 54 – 66 |
| B451 s the measurement value with | | 10 | |
| s the measurement value with YES >> GO TO 3. NO >> Repair the driver s CHECK POWER SUPPLY Check the power supply and th | in the specification? eat control unit branch line. AND GROUND CIRCUIT ie ground circuit of the driver | | |
| s the measurement value with YES >> GO TO 3. NO >> Repair the driver s 3.CHECK POWER SUPPLY | in the specification? eat control unit branch line. AND GROUND CIRCUIT e ground circuit of the driver Procedure". | | |
| s the measurement value with YES >> GO TO 3. NO >> Repair the driver s CHECK POWER SUPPLY Check the power supply and th CONTROL UNIT : Diagnosis s the inspection result normal YES (Present error)>>Replace YES (Past error)>>Error was | in the specification? eat control unit branch line. AND GROUND CIRCUIT re ground circuit of the driver Procedure". ? e the driver seat control unit | seat control unit. Refe . Refer to <u>ADP-203, "E</u> ontrol unit branch line. | r to <u>ADP-65, "DRIVER SEAT</u> Exploded View". |
| s the measurement value with YES >> GO TO 3. NO >> Repair the driver s CHECK POWER SUPPLY Check the power supply and th CONTROL UNIT : Diagnosis s the inspection result normal YES (Present error)>>Replace YES (Past error)>>Error was | in the specification? eat control unit branch line. AND GROUND CIRCUIT re ground circuit of the driver Procedure". ? e the driver seat control unit detected in the driver seat c | seat control unit. Refe . Refer to <u>ADP-203, "E</u> ontrol unit branch line. | r to <u>ADP-65, "DRIVER SEAT</u> Exploded View". |
| s the measurement value with YES >> GO TO 3. NO >> Repair the driver s CHECK POWER SUPPLY Check the power supply and th CONTROL UNIT : Diagnosis s the inspection result normal YES (Present error)>>Replace YES (Past error)>>Error was | in the specification? eat control unit branch line. AND GROUND CIRCUIT re ground circuit of the driver Procedure". ? e the driver seat control unit detected in the driver seat c | seat control unit. Refe . Refer to <u>ADP-203, "E</u> ontrol unit branch line. | r to <u>ADP-65, "DRIVER SEAT</u> Exploded View". |

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< DTC/CIRCUIT DIAGNOSIS >

ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

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 <u>BRC-81, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114</u>, "Exploded <u>View</u>".

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.

Revision: 2012 August

INFOID:000000008832291

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 2)]

| SIS > | | [CAN SYSTEM (TYPE 2)] |
|---|---|--|
| INE CIRCUIT | | |
| | | INFOID:0000000883229 |
| | | |
| cable from the negative termi nd connectors of the IPDM E/ nal? | | d loose connection (unit side |
| | | |
| | s connector terminals. | |
| Terminal No. | | Resistance (Ω) |
| 40 | 39 | Approx. 108 – 132 |
| | | |
| d the ground circuit of the IPD nal? blace the IPDM E/R. Refer to vas detected in the IPDM E/R | PCS-31, "Exploded View | |
| | nd connectors of the IPDM E/ mal? ninal and connector. R OPEN CIRCUIT tor of IPDM E/R. between the IPDM E/R harnes IPDM E/R harness connector | n OFF. cable from the negative terminal. nd connectors of the IPDM E/R for damage, bend and mal? ninal and connector. R OPEN CIRCUIT tor of IPDM E/R. between the IPDM E/R harness connector terminals. IPDM E/R harness connector 40 39 within the specification? M E/R branch line. |

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

1.CONNECTOR INSPECTION

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

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 | | |
|---------------|---------------------|------------|-------------|
| Connector No. | Termi | Continuity | |
| 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 | | Continuity |
|---------------|--------------|--------|-------------|
| Connector No. | Terminal No. | Ground | Continuity |
| M24 | 6 | Ground | Not existed |
| 10124 | 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

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

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

Check the resistance between the IPDM E/R terminals.

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

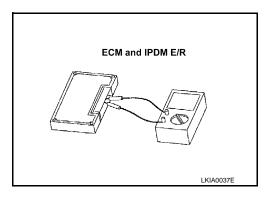
Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

Revision: 2012 August

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



INFOID:00000008832293

[CAN SYSTEM (TYPE 2)]

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. Turn the ignition switch OFF. 1. С Disconnect the battery cable from the negative terminal. 2. 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. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е 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. F Non-reproduced>>Replace the unit whose connector was disconnected.

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008832294

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.
- With navigation system

| AV control unit h | arness connector Harness connector | | Harness connector | |
|-------------------|------------------------------------|---------------|-------------------|--------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | - Continuity |
| M210 | 90 | M19 | 1 | Existed |
| M210 74 | 74 | - M18 | 2 | Existed |

- Without navigation system (With rear view monitor)

| AV control unit h | narness connector | Harness connector | | Continuity |
|-------------------|-------------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M204 | 204 81 M18 | 1 | Existed | |
| 101204 | 80 | IVITO | 2 | Existed |

- Without navigation system (Without rear view monitor)

| AV control unit I | narness connector | Harness connector | | Continuity |
|-------------------|-------------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M85 | 86 | M18 | 1 | Existed |
| | 87 | IVI I O | 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. | Continuity | | |
| M17 | 1 | M24 | 6 | Existed | | |
| | 2 | 10124 | 14 | Existed | | |

Is the inspection result normal?

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



MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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- 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.

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MAIN LINE BETWEEN DLC AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008832295

[CAN SYSTEM (TYPE 3)]

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 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 M6 and E106.

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. | Continuity |
| M24 | 6 | 49 | Existed | |
| 11/24 | 14 | M6 | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M6.

3.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 |
| E106 | 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 data link connector and the ABS actuator and electric unit (control unit).

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

ECM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

| < DTC/CIRCUIT DIAGNOS | SIS > | | [CAN SYSTEM (TYPE 3)] |
|--|--|-----------------------------------|-----------------------------|
| ECM BRANCH LIN | E CIRCUIT | | |
| Diagnosis Procedure | | | INF0ID:00000008832296 |
| 1.CHECK CONNECTOR | | | |
| Check the terminals an connector side). | cable from the negative terr id connectors of the ECM f | | e connection (unit side and |
| <u>s the inspection result norm</u> YES >> GO TO 2. | <u>181?</u> | | |
| NO >> Repair the term | inal and connector. | | |
| 2.CHECK HARNESS FOR | OPEN CIRCUIT | | |
| Disconnect the connect Check the resistance be | or of ECM. etween the ECM harness co | onnector terminals. | |
| | ECM harness connector | | Resistance (Ω) |
| Connector No. M107 | Termir 114 | nal No. 113 | Approx. 108 – 132 |
| NO >> Repair the ECM 3.CHECK POWER SUPPL | 1 branch line. Y AND GROUND CIRCUIT | Г | |
| Check the power supply and • VQ37VHR: <u>EC-174, "Diac</u> • VQ25HR: <u>EC-748, "Diagn</u> | nosis Procedure" osis Procedure" | CM. Refer to the following. | |
| • VQ37VHR: <u>E</u> | lace the ECM. Refer to the C-25. "ADDITIONAL SER | following. VICE WHEN REPLACING | CONTROL UNIT (ECM) : |
| VQ25HR: EC Repair Requir | | | CONTROL UNIT : Special |
| | er supply and the ground ci | | |
| | | | |
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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832297

[CAN SYSTEM (TYPE 3)]

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 | | | |
|---------------|-----------------------------------|----|-------------------------|--|
| Connector No. | Terminal No. | | Resistance (Ω) | |
| M210 | 90 | 74 | Approx. 54 – 66 | |

Models without navigation system (With rear view monitor)

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

Models without navigation system (Without rear view monitor)

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|----|-----------------|
| Connector No. | Terminal No. | | Resistance (22) |
| M85 | 86 | 87 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

 $\mathbf{3.}$ 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 rear view monitor: AV-36, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-145, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-258, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-399</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without rear view monitor: AV-75, "Exploded View"
- Base audio with rear view monitor: <u>AV-175, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-290, "Exploded View"</u>
- BOSE audio with navigation: AV-428, "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

| iagnosis Procedure | | | | | INFOID:00000008832298 |
|--|--|--|--|-----------|----------------------------|
| .CHECK CONNECTOR | | | | | |
| Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect | cable from minals and 3 6 <u>nal?</u> inal and co OPEN CIF | connectors for d | | oose conn | ection (unit side and con- |
| . Check the resistance be | | - | arness connector te | erminals. | |
| Connector No. | A/T assembl | ly harness connector Termin | al No | | Resistance (Ω) |
| | | 3 | 8 | | |
| YES >> GO TO 3. NO >> Repair the TCM | l branch lin | pecification? | | | Approx. 54 – 66 |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR . Remove the joint conne | l branch lin OPEN CIF ctor. Refer tween the | pecification? ne. RCUIT to <u>TM-277, "Rer</u> | noval and Installatio | | Approx. 54 – 66 |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be side of the joint connect | I branch lin OPEN CIF ector. Refer tween the tor. | pecification? ne. RCUIT to <u>TM-277, "Rer</u> A/T assembly ha | noval and Installation rness connector side | | |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR . Remove the joint conne . Check the continuity be | I branch lin OPEN CIF ector. Refer tween the tor. | pecification? ne. RCUIT to <u>TM-277, "Rer</u> | noval and Installation rness connector side | | |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be side of the joint connect A/T assembly harness connect | I branch lin OPEN CIF ector. Refer tween the tor. | pecification? ne. RCUIT to <u>TM-277, "Rer</u> A/T assembly ha | noval and Installation rness connector side connector side al No. | | TCM harness connector |
| NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connect Check the continuity be side of the joint connect A/T assembly harness connect Terminal No. | I branch lin OPEN CIF ector. Refer tween the tor. | pecification? ne. RCUIT to <u>TM-277, "Rer</u> A/T assembly ha TCM harness of Termin | noval and Installation rness connector side al No. | | TCM harness connector |

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832299

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-5, "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

| Diagnosis Procedure | | | INFOID:00000008832300 |
|--|------------------------------|-------------------|------------------------------|
| 1.CHECK CONNECTOR | | | |
| | able from the negative termi | | se connection (unit side and |
| Is the inspection result norm YES >> GO TO 2. NO >> Repair the termi | | | |
| 2. CHECK HARNESS FOR | OPEN CIRCUIT | | |
| Disconnect the connector Check the resistance be | tween the BCM harness cor | nector terminals. | |
| | BCM harness connector | | Resistance (Ω) |
| Connector No. | Termina | | |
| M122 | 91 | 90 | Approx. 54 – 66 |
| Is the measurement value w | | | |
| Is the measurement value wYES>> GO TO 3.NO>> Repair the BCM 3. CHECK POWER SUPPLY | | | |

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832301

[CAN SYSTEM (TYPE 3)]

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 | | |
|---------------|---------------------|-------------------------|-----------------|
| Connector No. | Termi | Resistance (Ω) | |
| 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

[CAN SYSTEM (TYPE 3)]

| Diagnosis Procedure | | | INFOID:00000008832302 |
|--|---|--|----------------------------|
| 1.CHECK CONNECTOR | | | |
| Check the terminals an nection (unit side and c s the inspection result norm YES >> GO TO 2. NO >> Repair the term | cable from the negative terr d connectors of the unified onnector side). <u>nal?</u> inal and connector. | | amage, bend and loose con- |
| 2.CHECK HARNESS FOR | OPEN CIRCUIT | amp | |
| | etween the unified meter and A/C | | ector terminals. |
| Unified | d meter and A/C amp. harness cor | nnector | Presistance (O) |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M67 | 56 | 72 | Approx. 54 – 66 |
| NO >> Repair the unified of the second secon | ed meter and A/C amp. brai | | |
| Check the power supply an METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | d the ground circuit of the u agnosis Procedure". | nified meter and A/C amp. A/C amp. Refer to <u>MWI-113</u> neter and A/C amp. branch | |
| Check the power supply an METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and <i>i</i> as detected in the unified m | nified meter and A/C amp. A/C amp. Refer to <u>MWI-113</u> neter and A/C amp. branch | 3, "Exploded View". |
| Check the power supply an METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and <i>i</i> as detected in the unified m | nified meter and A/C amp. A/C amp. Refer to <u>MWI-113</u> neter and A/C amp. branch | 3, "Exploded View". |

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< DTC/CIRCUIT DIAGNOSIS >

STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832303

[CAN SYSTEM (TYPE 3)]

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.

| Ste | Steering angle sensor harness connector | | | |
|---------------|---|---|-----------------|--|
| Connector No. | Terminal No. | | Resistance (Ω) | |
| 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 <u>BRC-96, "Wiring Dia-gram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 3)]

| Diagnosis Procedure | | | INFOID:00000008832304 |
|---|---|--|--|
| 1. CHECK CONNECTOR | | | |
| 3. Check the terminals and | DFF. able from the negative termina connectors of the ABS actua nit side and connector side). | | ntrol unit) for damage, bend |
| s the inspection result norma YES >> GO TO 2. NO >> Repair the termin | nal and connector. | | |
| $2.$ CHECK HARNESS FOR \cdot | OPEN CIRCUIT | | |
| nals. | tween the ABS actuator and | `` | · |
| Connector No. | Terminal N | | Resistance (Ω) |
| | 35 | 14 | |
| | | 14 | Approx. 54 – 66 |
| Is the measurement value wi YES >> GO TO 3. NO >> Repair the ABS a 3.CHECK POWER SUPPLY Check the power supply and BRC-81. "Diagnosis Procedu Is the inspection result normation YES (Present error)>>Replay View". | thin the specification? actuator and electric unit (con (AND GROUND CIRCUIT d the ground circuit of the AB are". | trol unit) branch line. S actuator and electric | unit (control unit). Refer to efer to <u>BRC-114, "Exploded</u> |

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< DTC/CIRCUIT DIAGNOSIS >

IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832305

[CAN SYSTEM (TYPE 3)]

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 | | |
|---------------|----------------------------|----|-------------------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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 <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "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

[CAN SYSTEM (TYPE 3)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:00000008832306 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ 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.

< DTC/CIRCUIT DIAGNOSIS >

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< 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.

 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.

| DTC/CIRCUIT DIA | | TWEEN AV AND | | SYSTEM (TYPE 4)] |
|--|---|--|---|---|
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| AIN LINE BE | TWEEN AV ANI | D DLC CIRCUI | Г | |
| Diagnosis Proced | lure | | | INFOID:00000000883230 |
| CHECK CONNECT | FOR | | | |
| | attery cable from the ne ng terminals and con or M18 or M17 <u>t normal?</u> | | pend and loose conn | ection (connector side |
| NO >> Repair the | e terminal and connect CONTINUITY (OPEN | | | |
| AV control unit Harness connecto | ity between the AV co | | nector and the harnes | ss connector. |
| AV control unit h | narness connector | Harness | connector | |
| Connector No. | Terminal No. | | | |
| | Terminar No. | Connector No. | Terminal No. | Continuity |
| M210 | 90 | Connector No. M18 | 1 | Existed |
| M210 | | M18 | | |
| M210 Without navigation | 90 74 n system (With rear vie | M18 ew monitor) | 1 2 | Existed |
| M210 Without navigation AV control unit h | 90 74 n system (With rear vie | M18 ew monitor) Harness o | 1 2 connector | Existed |
| M210 Without navigation | 90 74 n system (With rear vie namess connector Terminal No. | M18 ew monitor) | 1 2 connector Terminal No. | Existed Existed Continuity |
| M210 Without navigation AV control unit h | 90 74 n system (With rear vie | M18 ew monitor) Harness o | 1 2 connector | Existed |
| M210 Without navigation AV control unit h Connector No. M204 | 90 74 n system (With rear vie narness connector Terminal No. 81 | M18 ew monitor) Harness of Connector No. M18 | 1 2 connector Terminal No. 1 | Existed Existed Continuity Existed |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation | 90 74 n system (With rear vie namess connector Terminal No. 81 80 | M18 ew monitor) Harness of Connector No. M18 | 1 2 connector Terminal No. 1 2 | Existed Existed Continuity Existed Existed |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation | 90 74 n system (With rear vie narness connector Terminal No. 81 80 n system (Without real | M18 ew monitor) Harness of Connector No. M18 r view monitor) | 1 2 connector Terminal No. 1 2 | Existed Existed Continuity Existed |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation AV control unit h Connector No. | 90 74 n system (With rear vie namess connector Terminal No. 81 80 n system (Without real namess connector | M18 ew monitor) Harness of Connector No. M18 r view monitor) Harness of Connector No. | 1 2 connector Terminal No. 1 2 connector | Existed Existed Continuity Existed Existed |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation AV control unit h Connector No. M85 | 90 74 n system (With rear vie harness connector Terminal No. 81 80 n system (Without real harness connector Terminal No. 86 87 | M18 ew monitor) Harness of Connector No. M18 r view monitor) Harness of | 1 2 connector Terminal No. 1 2 connector Terminal No. | Existed Existed Continuity Existed Existed Continuity |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation AV control unit h Connector No. M85 Sthe inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b | 90 74 n system (With rear vie namess connector Terminal No. 81 80 n system (Without real namess connector Terminal No. 86 87 t normal? e main line between th S CONTINUITY (OPEN petween the harness connector | M18 ew monitor) Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 e AV control unit and to N CIRCUIT) onnector and the data | 1 2 connector Terminal No. 1 2 connector Terminal No. 1 2 the harness connector link connector. | Existed Existed Continuity Existed Existed Continuity Existed Existed Existed |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation AV control unit h Connector No. M85 Sthe inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b Harness | 90 74 n system (With rear vie harness connector Terminal No. 81 80 n system (Without real harness connector Terminal No. 86 87 t normal? e main line between th S CONTINUITY (OPEN between the harness connector | M18 ew monitor) Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 e AV control unit and to N CIRCUIT) onnector and the data | 1 2 connector Terminal No. 1 2 connector Terminal No. 1 2 the harness connector link connector. connector | Existed Existed Continuity Existed Existed Continuity Existed Existed Existed |
| M210 Without navigation AV control unit h Connector No. M204 Without navigation AV control unit h Connector No. M85 Sthe inspection resul YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b | 90 74 n system (With rear vie namess connector Terminal No. 81 80 n system (Without real namess connector Terminal No. 86 87 t normal? e main line between th S CONTINUITY (OPEN petween the harness connector | M18 ew monitor) Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 e AV control unit and to N CIRCUIT) onnector and the data | 1 2 connector Terminal No. 1 2 connector Terminal No. 1 2 the harness connector link connector. | Existed Existed Continuity Existed Existed Existed Existed Existed Existed |

Is the inspection result normal?

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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.

| Diagnosis Proced | ure | | | INFOID:00000008832308 |
|--|--|-----------------------|---------------------|-------------------------|
| .CHECK CONNECT | OR | | | |
| Check the followir and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the | ttery cable from the ne ng terminals and conr r M7 r B1 | nectors for damage, b | pend and loose con | nection (connector side |
| | rness connectors M7 ity between the data li | | harness connector. | |
| | connector | | connector | Continuity |
| Connector No. | Terminal No. 6 | Connector No. | Terminal No. 20 | Existed |
| M24 | 14 | M7 | 20 | Existed |
| | main line between th | | and the harness con | nector M7. |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS | CONTINUITY (OPEN etween the harness co | | | |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS | | | | Continuity |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity b Connector No. | | onnector terminals. | 22 | Continuity Existed |
| NO >> Repair the CHECK HARNESS Check the continuity b | etween the harness co 20 21 | onnector terminals. | 22 23 | |

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008832309

[CAN SYSTEM (TYPE 4)]

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 | 20 | 22 | Existed |
| | 21 | 23 | 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. | Continuity |
| M7 – | 22 | M6 | 49 | Existed |
| | 23 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector 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 4)]

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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

Diagnosis Procedure

INFOID:000000008832310

[CAN SYSTEM (TYPE 4)]

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 the following.

VQ37VHR: <u>EC-174</u>, "Diagnosis Procedure"

VQ25HR: <u>EC-748</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: EC-25. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ECM) : Special Repair Requirement"
- VQ25HR: EC-631, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : 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

[CAN SYSTEM (TYPE 4)]

| AV BRANCH LINE (| CIRCUIT | | |
|--|--|---|--------------------------------------|
| Diagnosis Procedure | | | A INFOID:00000008832311 |
| 1. CHECK CONNECTOR | | | В |
| | able from the negative terr connectors of the AV cor al? nal and connector. | | d and loose connection (unit C |
| Disconnect the connector Check the resistance be Models with navigation s | ween the AV control unit h | narness connector termina | als. |
| Connector No. | V control unit harness connecto | r nal No. | Resistance (Ω) |
| M210 | 90 | 74 | Approx. 54 – 66 G |
| | n system (With rear view i | monitor) | |
| A | V control unit harness connecto | r | H |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M204 | 81 | 80 | Approx. 54 – 66 |
| - Models without navigation | n system (Without rear vie | ew monitor) | |
| A | V control unit harness connecto | r | J |
| Connector No. | Termir | nal No. | – Resistance (Ω) |
| M85 | 86 | 87 | Approx. 54 – 66 |
| 3. CHECK POWER SUPPLY | ntrol unit branch line. AND GROUND CIRCUIT | | - K |
| Check the power supply and Base audio without rear view Base audio with rear view BOSE audio without navigatio BOSE audio with navigatio | w monitor: <u>AV-36, "AV CC</u> nonitor: <u>AV-145, "AV CON</u> ation: <u>AV-258, "AV CONTR</u> | NTROL UNIT : Diagnosis TROL UNIT : Diagnosis P OL UNIT : Diagnosis Proc | Procedure" LAI Procedure" cedure" |
| Is the inspection result norma | | | |
| Base audio witBOSE audio w | ace the AV control unit. Re hout rear view monitor: <u>AV</u> h rear view monitor: <u>AV-17</u> ithout navigation: <u>AV-290.</u> ith navigation: <u>AV-428, "Ex</u> | /-75, "Exploded View" 75, "Exploded View" "Exploded View" | 0 |
| YES (Past error)>>Error wa | | ol unit branch line. | P |

TCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832312

[CAN SYSTEM (TYPE 4)]

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 | r | Resistance (Ω) |
|---------------|--------------------------------|---------|-----------------|
| Connector No. | Termi | nal 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-277, "Removal and Installation".
- 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. | Continuity |
| 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 <u>TM-214, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the control valve & TCM. Refer to TM-277, "Removal and Installation".

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

[CAN SYSTEM (TYPE 4)]

A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000008832313 WARNING: В 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. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose con-3. nection (unit side and connector side). Is the inspection result normal? Е YES >> GO TO 2. NO >> Replace the main harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT F Check the air bag diagnosis sensor unit. Refer to SRC-5, "Work Flow". Is the inspection result normal? YES >> Replace the main harness. NO >> Replace parts whose air bag system has a malfunction. Н

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BCM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832314

[CAN SYSTEM (TYPE 4)]

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. | Termi | nal 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 <u>BCS-40, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-81, "Exploded View"</u>.

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

DLC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

| COTC/CIRCUIT DIAGNOS | - | | [CAN SYSTEM (TYPE 4)] |
|--|--|----------------------------|-------------------------------|
| DLC BRANCH LINE | CIRCUIT | | |
| Diagnosis Procedure | | | INFOID:0000000883231 |
| .CHECK CONNECTOR | | | |
| | able from the negative te d connectors of the data | | ge, bend and loose connectior |
| (connector side and harr | | | |
| the inspection result norma YES >> GO TO 2. | | | |
| NO >> Repair the termin | | | |
| CHECK HARNESS FOR | OPEN CIRCUIT | | |
| check the resistance betwee | en the data link connecto | r terminals. | |
| | Data link connector | | Resistance (Ω) |
| Connector No. | Ter | minal No. | |
| M24 | 6 | 14 | Approx. 54 – 66 |
| YES (Past error)>>Error wa | ck CAN system type dec as detected in the data lin link connector branch lin | nk connector branch line c | ircuit. |
| YES (Past error)>>Error wa | as detected in the data lin | nk connector branch line c | ircuit. |
| YES (Past error)>>Error wa | as detected in the data lin | nk connector branch line c | ircuit. |
| YES (Past error)>>Error wa | as detected in the data lin | nk connector branch line c | ircuit. |
| YES (Past error)>>Error wa | as detected in the data lin | nk connector branch line c | sircuit. |
| YES (Past error)>>Error wa | as detected in the data lin | nk connector branch line c | ircuit. |

< DTC/CIRCUIT DIAGNOSIS >

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

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 | d meter and A/C amp. harness co | nnector | Resistance (Ω) |
|---------------|---------------------------------|---------|-------------------------|
| Connector No. | Termi | nal 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.

$\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to <u>MWI-51, "UNIFIED</u> <u>METER AND A/C AMP. : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-113, "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.

INFOID:000000008832316

STRG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

| I. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. Check the terminals and connectors of the steering angle sensor for damage, bend and loose connection (unit side and connector side). s the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal and connector. 2.CHECK HARNESS FOR OPEN CIRCUIT I. Disconnect the connector of steering angle sensor harness connector terminals. Steering angle sensor harness connector terminals. Steering angle sensor harness connector terminals. Connector No. Terminal No. Resistance (Ω) M37 1 2 Approx. 54 - 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. ACHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-96, "Wiring Diatram - BRAKE CONTROL SYSTEM -"." s the inspection result normal? YES (Past error)>>-Replace the steering angle sensor. Refer to BRC-117, "Exploded View". YES (Past error)>>-Replace the steering angle sensor branch line. NO >> Repair the power supply and the ground circuit. | Diagnosis Procedure | | | INFOID:00000008832317 |
|---|--|---|--------------------------|--------------------------------------|
| 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). as 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 terminals. Steering angle sensor harness connector Terminal No. M37 M37 M37 M37 Approx. 54 - 66 as the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-96, "Wiring Dia-tram - BRAKE CONTROL SYSTEM". as the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-117, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line. | CHECK CONNECTOR | | | |
| YES >> GO TO 2. NO >> Repair the terminal and connector. CHECK HARNESS FOR OPEN CIRCUIT . Disconnect the connector of steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Connector No. Terminal No. M37 1 2 Approx. 54 - 66 Steering angle sensor branch line. Sthe measurement value within the specification? YES YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the steering angle sensor. Refer to BRC-96, "Wiring Dia- tram - BRAKE CONTROL SYSTEM -". Sthe inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-117, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line. | Disconnect the battery of Check the terminals and | cable from the negative terr d connectors of the steering | | ge, bend and loose connection |
| Disconnect the connector of steering angle sensor. Check the resistance between the steering angle sensor harness connector terminals. Steering angle sensor harness connector Connector No. Terminal No. M37 1 2 Approx. 54 – 66 a the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the steering angle sensor. Refer to BRC-96, "Wiring Diaram - BRAKE CONTROL SYSTEM -". Center to BRC-117, "Exploded View". * the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-117, "Exploded View". | YES >> GO TO 2. NO >> Repair the term | nal and connector. | | |
| Steering angle sensor harness connector terminals. Steering angle sensor harness connector Connector No. Terminal No. M37 1 2 Approx. 54 – 66 Sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT Sche inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to BRC-117, "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line. | | | | |
| Connector No. Terminal No. Resistance (Ω) M37 1 2 Approx. 54 – 66 S the measurement value within the specification? YES >> GO TO 3. Second S | | | | r terminals. |
| Connector No. Terminal No. M37 1 2 Approx. 54 – 66 a the measurement value within the specification? YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-96, "Wiring Dia-ram - BRAKE CONTROL SYSTEM -"</u> . a the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u> . YES (Past error)>>Error was detected in the steering angle sensor branch line. | | ering angle sensor harness conne | ctor | Resistance (Ω) |
| <u>a the measurement value within the specification?</u> YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. CHECK POWER SUPPLY AND GROUND CIRCUIT where the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-96, "Wiring Diaram - BRAKE CONTROL SYSTEM -"</u>. <u>a the inspection result normal?</u> YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>. YES (Past error)>>Error was detected in the steering angle sensor branch line. | | | | |
| YES >> GO TO 3. NO >> Repair the steering angle sensor branch line. •CHECK POWER SUPPLY AND GROUND CIRCUIT heck the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-96</u> , "Wiring Dia- <u>ram - BRAKE CONTROL SYSTEM -"</u> . the inspection result normal? YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117</u> , "Exploded View". YES (Past error)>>Error was detected in the steering angle sensor branch line. | - | | 2 | Approx. 54 – 66 |
| YES (Past error)>>Error was detected in the steering angle sensor branch line. | CHECK POWER SUPPL heck the power supply an ram - BRAKE CONTROL S | Y AND GROUND CIRCUIT d the ground circuit of the <u>SYSTEM -"</u> . | - | Refer to <u>BRC-96, "Wiring Dia-</u> |
| | YES (Past error)>>Error wa | as detected in the steering | angle sensor branch line | |
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ADP BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832318

[CAN SYSTEM (TYPE 4)]

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).
- Driver seat control unit
- Harness connector B462
- Harness connector B59

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.

| Driv | er seat control unit harness conn | ector | Resistance (Ω) |
|---------------|-----------------------------------|---------|-------------------------|
| Connector No. | Termi | nal No. | |
| B451 | 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 <u>ADP-65, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-203</u>, "Exploded View".

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 4)]

| Diagnosis Procedure | | | INFOID:00000008832319 | |
|---|---|---|---|--|
| 1. CHECK CONNECTOR | | | | |
| Check the terminals and and loose connection (upper connection) | cable from the negative term d connectors of the ABS action init side and connector side) | uator and electric unit (co | ntrol unit) for damage, bend | |
| s the inspection result norm YES >> GO TO 2. NO >> Repair the term | | | | |
| 2. CHECK HARNESS FOR | | | | |
| Check the resistance be nals. | or of ABS actuator and elect etween the ABS actuator an | d electric unit (control uni | t) harness connector termi- | |
| ABS actuator | and electric unit (control unit) harne | ess connector | Resistance (Ω) | |
| | | | Resistance (Ω) | |
| Connector No. E41 | Termina 35 | | Resistance (Ω) Approx. 54 – 66 | |
| Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS | Termina 35 | I No. 14 | | |
| Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply an BRC-81, "Diagnosis Proced | Termina 35 <u>ithin the specification?</u> actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> . | 14 14 Dontrol unit) branch line. | Approx. 54 – 66 | |
| Connector No. E41 S the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply an BRC-81. "Diagnosis Proced S the inspection result norm YES (Present error)>>Rep | Termina 35 <u>ithin the specification?</u> actuator and electric unit (co Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> . | 14 Dontrol unit) branch line. ABS actuator and electric | Approx. 54 – 66 unit (control unit). Refer to | |
| Connector No. E41 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply an BRC-81. "Diagnosis Proced Is the inspection result norm YES (Present error)>>Rep View". YES (Past error)>>Error w | Termina 35 <u>actuator and electric unit (co</u> Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> . | 14 Dentrol unit) branch line. ABS actuator and electric lectric unit (control unit). R | Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-114, "Exploded</u> | |
| Connector No. E41 Is the measurement value w YES >> GO TO 3. NO >> Repair the ABS 3.CHECK POWER SUPPL Check the power supply an BRC-81. "Diagnosis Proced Is the inspection result norm YES (Present error)>>Rep View". YES (Past error)>>Error w | Termina 35 <u>actuator and electric unit (co</u> Y AND GROUND CIRCUIT d the ground circuit of the A <u>ure"</u> . al? lace the ABS actuator and el as detected in the ABS actua | 14 Dentrol unit) branch line. ABS actuator and electric lectric unit (control unit). R | Approx. 54 – 66 unit (control unit). Refer to efer to <u>BRC-114, "Exploded</u> | |

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832320

[CAN SYSTEM (TYPE 4)]

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. | Termi | nal 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 <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "Exploded View".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 4)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000008832321 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ 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.

< DTC/CIRCUIT DIAGNOSIS >

LAN-119

< 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.

 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.

| | NOSIS > | | [CAN | SYSTEM (TYPE 5)] |
|--|---|---|---|---|
| TC/CIRCU | | SIS | | |
| AIN LINE BET | WEEN AV ANI | D DLC CIRCUIT | Г | |
| iagnosis Procedu | ure | | | INFOID:00000008832328 |
| .CHECK CONNECT | OR | | | |
| | tery cable from the ne g terminals and coni • M18 | | end and loose conn | ection (connector side |
| the inspection result | normal? | | | |
| YES >> GO TO 2. | terminal and connect | tor | | |
| .CHECK HARNESS | | | | |
| AV control unit Harness connector Check the continuit With navigation sys | ty between the AV co stem | ontrol unit harness conr Hamess c | | ss connector. |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M210 | 90 | M18 | 1 | Existed |
| | 74 | | 2 | Existed |
| Without navigation | system (With rear vie | ew monitor) | | |
| AV control unit ha | arness connector | Harness c | connector | |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M204 | 81 | M18 | 1 | Existed |
| 101204 | 80 | WITO | 2 | Existed |
| | | | | |
| Without navigation | system (Without real | r view monitor) | | |
| Without navigation | • | r view monitor) Harness c | connector | 0 |
| ç | • | , | connector Terminal No. | Continuity |
| AV control unit ha | arness connector | Harness c Connector No. | | Continuity Existed |
| AV control unit ha Connector No. M85 | arness connector Terminal No. 86 87 | , Harness c | Terminal No. | - |
| AV control unit ha Connector No. M85 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS | arness connector Terminal No. 86 87 normal? main line between th CONTINUITY (OPEN | Harness c Connector No. M18 e AV control unit and t | Terminal No. 1 2 he harness connecto | Existed |
| AV control unit ha Connector No. M85 the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be | arness connector Terminal No. 86 87 normal? main line between th CONTINUITY (OPEN etween the harness co | Harness c Connector No. M18 e AV control unit and t N CIRCUIT) onnector and the data | Terminal No. 1 2 he harness connecto link connector. | Existed |
| AV control unit ha Connector No. M85 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS heck the continuity be Harness of | arness connector Terminal No. 86 87 normal? main line between th CONTINUITY (OPEN etween the harness connector | Harness c Connector No. M18 e AV control unit and t N CIRCUIT) onnector and the data | Terminal No. 1 2 he harness connecto link connector. | Existed |
| AV control unit ha Connector No. M85 the inspection result (ES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be | arness connector Terminal No. 86 87 normal? main line between th CONTINUITY (OPEN etween the harness connector Terminal No. | Harness c Connector No. M18 e AV control unit and t N CIRCUIT) onnector and the data | Terminal No. 1 2 he harness connecto link connector. connector Terminal No. | Existed Existed or M18. Continuity |
| AV control unit ha Connector No. M85 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS heck the continuity be Harness of | arness connector Terminal No. 86 87 normal? main line between th CONTINUITY (OPEN etween the harness connector | Harness c Connector No. M18 e AV control unit and t N CIRCUIT) onnector and the data | Terminal No. 1 2 he harness connecto link connector. | Existed Existed |

Is the inspection result normal?

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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.

| iagnosis Proced | | ND ADP CIRCU | | |
|---|--|-----------------------------------|---------------------|------------------------|
| _ | | | | INFOID:000000008832329 |
| CHECK CONNECT | | | | |
| . Check the followir and harness side) Harness connecto Harness connecto the inspection result YES >> GO TO 2. NO >> Repair the | ttery cable from the ne ng terminals and conr r M7 r B1 <u>normal?</u> terminal and connect | nectors for damage, b or. | end and loose conr | ection (connector side |
| CHECK HARNESS | CONTINUITY (OPEN | I CIRCUIT) | | |
| | rness connectors M7 a ity between the data li | and B1. nk connector and the I | harness connector. | |
| Data link | connector | Harness c | onnector | Continuity |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M24 | 6 | M7 | 20 | Existed |
| | 14 | | 21 | Existed |
| - | | | | |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS | main line between the CONTINUITY (OPEN etween the harness co | | and the harness con | nector M7. |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS | CONTINUITY (OPEN | I CIRCUIT) | and the harness con | Continuity |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity b | CONTINUITY (OPEN | I CIRCUIT) | and the harness con | |
| NO >> Repair the CHECK HARNESS Check the continuity be Connector No. | CONTINUITY (OPEN etween the harness co 20 21 | I CIRCUIT) | | Continuity |

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008832330

[CAN SYSTEM (TYPE 5)]

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 | 20 | 22 | Existed |
| | 21 | 23 | 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. | Continuity |
| M7 | 22 | M6 | 49 | Existed |
| 1017 | 23 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector 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 | | nnector | | Continuity |
|---------------|--------------|--|--------------|---------|--|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | | | |
| E106 | 49 | E41 | 35 | Existed | | |
| E100 | 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 5)]

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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

Diagnosis Procedure

INFOID:000000008832331

[CAN SYSTEM (TYPE 5)]

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 | | |
|---------------|-----------------------|-----|-------------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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 the following.

VQ37VHR: <u>EC-174</u>, "Diagnosis Procedure"

VQ25HR: <u>EC-748</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: EC-25. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ECM) : Special Repair Requirement"
- VQ25HR: EC-631, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

| AV BRANCH LINE C | IRCUIT | | |
|---|---|--|--------------------------------------|
| Diagnosis Procedure | | | A INFOID:00000008832333 |
| 1. CHECK CONNECTOR | | | В |
| | able from the negative terr connectors of the AV cor al? nal and connector. | | d and loose connection (unit C |
| Disconnect the connecto Check the resistance bet Models with navigation s | ween the AV control unit h | narness connector termina | ls. |
| A Connector No. | V control unit harness connecto | r nal No. | Resistance (Ω) |
| M210 | 90 | 74 | Approx. 54 – 66 G |
| - Models without navigatio | n system (With rear view i | monitor) | |
| A | V control unit harness connecto | r | - Resistance (Ω) |
| Connector No. | Termir | nal No. | |
| M204 | 81 | 80 | Approx. 54 – 66 |
| Models without navigatio | n system (Without rear vie | ew monitor) | |
| A | V control unit harness connecto | r | J |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M85 | 86 | 87 | Approx. 54 – 66 |
| 3. CHECK POWER SUPPLY | ntrol unit branch line. AND GROUND CIRCUIT | | L |
| Check the power supply and Base audio without rear vie Base audio with rear view n BOSE audio without navigation BOSE audio with navigation | w monitor: <u>AV-36, "AV CO</u> nonitor: <u>AV-145, "AV CON</u> tion: <u>AV-258, "AV CONTR</u> | NTROL UNIT : Diagnosis TROL UNIT : Diagnosis P OL UNIT : Diagnosis Proc | Procedure" LA rocedure" edure" |
| Is the inspection result norma | | | 14 |
| Base audio wit BOSE audio wit BOSE audio wit BOSE audio wit | hout rear view monitor: <u>AV</u> h rear view monitor: <u>AV-17</u> ithout navigation: <u>AV-290,</u> ith navigation: <u>AV-428, "Ex</u> | /-75, "Exploded View" 75, "Exploded View" "Exploded View" xploded View" | 0 |
| YES (Past error)>>Error wa NO >> Repair the power | s detected in the AV contr ^r supply and the ground ci | | P |

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832334

[CAN SYSTEM (TYPE 5)]

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-cras | Pre-crash seat belt control unit harness connector | | |
|---------------|--|-------------------------|-----------------|
| Connector No. | Termi | Resistance (Ω) | |
| 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 <u>SBC-24, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to <u>SBC-34</u>, "Exploded View".

YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.

TCM BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

| | E CIRC | UIT | | |
|--|--------------------------------------|---------------------------------------|----------------------|-------------------------------|
| Diagnosis Procedure | | | | INFOID:00000008832335 |
| .CHECK CONNECTOR | | | | |
| Turn the ignition switch Disconnect the battery Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 the inspection result norm | cable from minals and 03 16 | | e, bend and loose co | onnection (unit side and con- |
| YES >> GO TO 2. NO >> Repair the term | inal and co | | | |
| 2.CHECK HARNESS FOR Disconnect the connect Check the resistance be | tor of A/T a | issembly. | connector terminals | |
| Connector No. | A/T assemb | ly harness connector Terminal No. | | Resistance (Ω) |
| F51 | | 3 | 8 | Approx. 54 – 66 |
| CHECK HARNESS FOR Remove the joint connect Check the continuity be side of the joint connect | ector. Referentiet | r to <u>TM-277, "Removal</u> | | the TCM harness connector |
| | ctor side | TCM harness connec | or side | |
| A/T assembly harness conne | | TCM harness connector side Continuity | | |
| A/T assembly harness connection Terminal No. | | Terminal No. | | Continuity |
| | | | | Continuity Existed |
| Terminal No. | | Terminal No. | | |

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

Diagnosis Procedure

INFOID:000000008832336

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-5, "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

| Diagnosis Procedure | | | |
|--|-----------------------------|--------------------|------------------------------|
| | | | INFOID:0000000883233 |
| 1.CHECK CONNECTOR | | | |
| | able from the negative term | | se connection (unit side and |
| Is the inspection result norm | <u>al?</u> | | |
| YES >> GO TO 2. NO >> Repair the termi | nal and connector | | |
| 2. CHECK HARNESS FOR | | | |
| Disconnect the connect Check the resistance be | BCM harness connector | nnector terminals. | |
| Connector No. | Termin | al No. | Resistance (Ω) |
| M122 | 91 | 90 | Approx. 54 – 66 |
| | | | |
| Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPL | branch line. | | |

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832338

[CAN SYSTEM (TYPE 5)]

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 | | |
|---------------|---------------------|----|-----------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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

[CAN SYSTEM (TYPE 5)]

| Diagnosis Procedure | | | INF01D:00000008832339 |
|--|---|--|-------------------------------------|
| 1 .CHECK CONNECTOR | | | |
| Check the terminals an nection (unit side and c | cable from the negative terr d connectors of the unified onnector side). | | damage, bend and loose con- |
| s the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR | inal and connector. | | |
| | or of unified meter and A/C etween the unified meter an | | nector terminals. |
| | d meter and A/C amp. harness co | | Resistance (Ω) |
| Connector No. M67 | 56 | nal No. 72 | Approx. 54 – 66 |
| YES >> GO TO 3. | vithin the specification? ed meter and A/C amp. bra | nch line. | |
| YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL | ed meter and A/C amp. bra Y AND GROUND CIRCUIT | - | |
| YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di | ed meter and A/C amp. bra Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". | - | p. Refer to <u>MWI-51, "UNIFIED</u> |
| YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". | - nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |
| YES >> GO TO 3. NO >> Repair the unified CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | - nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |
| YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | - nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |
| YES >> GO TO 3. NO >> Repair the unifie CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Di s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | - nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832340

[CAN SYSTEM (TYPE 5)]

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.

| Ste | Steering angle sensor harness connector | | |
|---------------|---|-------------------------|-----------------|
| Connector No. | Termi | Resistance (Ω) | |
| 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 <u>BRC-96, "Wiring Dia-gram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

| ADP BRANCH LINE | E CIRCUIT | | |
|--|---|--|--------------------------------|
| Diagnosis Procedure | | | INFOID:00000008832341 |
| .CHECK CONNECTOR | | | |
| Check the following tern nector side). Driver seat control unit Harness connector B46. Harness connector B59 | able from the negative term ninals and connectors for da | | nnection (unit side and con- |
| <u>s the inspection result norm</u> YES >> GO TO 2. NO >> Repair the termi CHECK HARNESS FOR | nal and connector. | | |
| | or of driver seat control unit. tween the driver seat contro | | erminals. |
| Driv | er seat control unit harness conne | ctor | Resistance (Ω) |
| Connector No. | Termina | al No. | |
| B451 | 3 | 19 | Approx. 54 – 66 |
| CHECK POWER SUPPL | r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the driv <u>s Procedure"</u> . | | to <u>ADP-65, "DRIVER SEAT</u> |
| YES (Present error)>>Rep | ace the driver seat control u | unit. Refer to <u>ADP-203, "Ex</u> at control unit branch line. | xploded View". |
| | er supply and the ground cire | | |

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

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.

$\mathbf{3}$. 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 <u>BRC-81, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114</u>, "Exploded <u>View</u>".

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.

Revision: 2012 August

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 5)]

| Diagnosis Procedure | | | INFOID:000000008832343 |
|--|--|--|---------------------------|
| 1. CHECK CONNECTOR | | | |
| Turn the ignition switch Disconnect the battery of Check the terminals and nection (unit side and co ls the inspection result norm YES >> GO TO 2. NO >> Repair the terminal | cable from the negative term d connectors of the ICC seconnector side). <u>nal?</u> inal and connector. | | mage, bend and loose con- |
| 2.CHECK HARNESS FOR | | | |
| | or of ICC sensor integrated etween the ICC sensor inte | l unit. grated unit harness connec | tor terminals. |
| | ensor integrated unit harness cor | | Resistance (Ω) |
| Connector No. E67 | Termi 3 | nal No. 6 | Approx. 54 – 66 |
| • | sensor integrated unit bran | | |
| NO >> Repair the ICC = 3.CHECK POWER SUPPL Check the power supply and <u>Procedure</u> ". Is the inspection result norm | Y AND GROUND CIRCUI [®] d the ground circuit of the IC | Г CC sensor integrated unit. F | |
| NO >> Repair the ICC = 3.CHECK POWER SUPPL Check the power supply and <u>Procedure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa | Y AND GROUND CIRCUI the ground circuit of the IC hal? lace the ICC sensor integra | C sensor integrated unit. F ated unit. Refer to <u>CCS-118</u> sor integrated unit branch li | , "Exploded View". |
| NO >> Repair the ICC = 3.CHECK POWER SUPPL Check the power supply and <u>Procedure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa | Y AND GROUND CIRCUIT the ground circuit of the IC <u>nal?</u> lace the ICC sensor integra as detected in the ICC sen | C sensor integrated unit. F ated unit. Refer to <u>CCS-118</u> sor integrated unit branch li | , "Exploded View". |
| NO >> Repair the ICC = 3.CHECK POWER SUPPL Check the power supply and <u>Procedure"</u> . Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error wa | Y AND GROUND CIRCUIT the ground circuit of the IC <u>nal?</u> lace the ICC sensor integra as detected in the ICC sen | C sensor integrated unit. F ated unit. Refer to <u>CCS-118</u> sor integrated unit branch li | , "Exploded View". |

< DTC/CIRCUIT DIAGNOSIS >

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832344

[CAN SYSTEM (TYPE 5)]

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.

| | Resistance (Ω) | | |
|---------------|-------------------------|--|-------------------|
| Connector No. | Termi | | |
| 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 <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "Exploded View".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 5)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:00000008832345 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.check harness continuity (short circuit) E Check the continuity between the data link connector terminals. Data link connector Continuity F 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ 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.

< DTC/CIRCUIT DIAGNOSIS >

LAN-139

< 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.

 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.

| | | | DLC CIRCUIT | SYSTEM (TYPE 6)] |
|--|---|--|---|---|
| | DIAGNO | SIS | | |
| NE BETW | 'EEN AV AN | D DLC CIRCUIT | Г | |
| s Procedure | 9 | | | INFOID:00000008832346 |
| CONNECTOR | | | | |
| | y cable from the n erminals and con 18 | | end and loose conn | ection (connector side |
| ction result no | rmal? | | | |
| GO TO 2. Repair the ter | minal and connec | tor | | |
| • | NTINUITY (OPEI | | | |
| trol unit s connectors N the continuity b vigation system control unit harne | between the AV com m | ontrol unit harness con Harness c | | ss connector. |
| ctor No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| 210 | 90 | M18 | 1 | Existed |
| 74 | | | | |
| | | | 2 | Existed |
| t navigation sys | stem (With rear vi | ew monitor) | 2 | Existed |
| t navigation sys | stem (With rear vi | ew monitor) Harness c | | |
| | stem (With rear vi | , | | Existed |
| control unit harne | stem (With rear vi | Harness of Connector No. | connector | |
| control unit harne | stem (With rear vi ess connector Terminal No. | , Harness c | connector Terminal No. | Continuity |
| control unit harne ctor No. | stem (With rear vi ess connector Terminal No. 81 | Harness of Connector No. | connector Terminal No. 1 | Continuity Existed |
| control unit harne ctor No. | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea | Harness of Connector No. | connector Terminal No. 1 2 | Continuity Existed Existed |
| control unit harne ctor No. | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea | Harness of Connector No. M18 r view monitor) | connector Terminal No. 1 2 | Continuity Existed |
| control unit harne | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea | Harness of Connector No. M18 r view monitor) Harness of Connector No. | connector Terminal No. 1 2 connector | Continuity Existed Existed |
| control unit harne ctor No. 204 t navigation system control unit harne | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea ess connector Terminal No. | Harness of Connector No. M18 r view monitor) Harness of | connector Terminal No. 1 2 connector Terminal No. | Continuity Existed Existed Continuity |
| control unit harne ctor No. 204 t navigation system control unit harne ctor No. 185 <u>ction result non</u> GO TO 3. Repair the ma HARNESS CC | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea ess connector Terminal No. 86 87 rmal? ain line between the | Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 M18 | connector Terminal No. 1 2 connector Terminal No. 1 2 :he harness connecto | Continuity Existed Existed Continuity Existed Existed |
| control unit harne ctor No. 204 t navigation system control unit harne ctor No. 185 <u>ction result non</u> GO TO 3. Repair the ma HARNESS CC | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea ess connector Terminal No. 86 87 rmal? ain line between the | Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 M18 | connector Terminal No. 1 2 connector Terminal No. 1 2 :he harness connecto | Continuity Existed Existed Continuity Existed Existed |
| control unit harne ctor No. 204 t navigation system control unit harne ctor No. 185 Ction result non GO TO 3. Repair the ma HARNESS CC continuity betwo Harness conr | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea ess connector Terminal No. 86 87 rmal? ain line between th DNTINUITY (OPEI een the harness connector | Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 ne AV control unit and to N CIRCUIT) connector and the data | connector Terminal No. 1 2 connector Terminal No. 1 2 the harness connector link connector. connector | Continuity Existed Existed Continuity Existed Existed |
| control unit harne ctor No. 204 t navigation system control unit harne ctor No. 185 <u>ction result not</u> GO TO 3. Repair the mat HARNESS CC | stem (With rear vi ress connector Terminal No. 81 80 stem (Without rea ss connector Terminal No. 86 87 rmal? ain line between th DNTINUITY (OPEI een the harness connector Terminal No. | Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 M18 M18 M18 M18 M18 M18 | connector Terminal No. 1 2 connector Terminal No. 1 2 the harness connector link connector. connector Terminal No. | Continuity Existed Existed Continuity Existed Existed or M18. Continuity |
| control unit harne ctor No. 204 t navigation system control unit harne ctor No. 185 Ction result non GO TO 3. Repair the ma HARNESS CC continuity betwo Harness conr | stem (With rear vi ess connector Terminal No. 81 80 stem (Without rea ess connector Terminal No. 86 87 rmal? ain line between th DNTINUITY (OPEI een the harness connector | Harness of Connector No. M18 r view monitor) Harness of Connector No. M18 ne AV control unit and to N CIRCUIT) connector and the data | connector Terminal No. 1 2 connector Terminal No. 1 2 the harness connector link connector. connector | Continuity Existed Existed Continuity Existed Existed or M18. |

Is the inspection result normal?

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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.

| COTC/CIRCUIT DIAG | | WEEN DLC ANI | | SYSTEM (TYPE 6)] | |
|--|---|--|---------------------------------------|---|--|
| MAIN LINE BET | WEEN DLC A | ND ABS CIRCL | JIT | | |
| Diagnosis Proced | ure | | | INFOID:00000008832347 | |
| 1 .CHECK CONNECT | OR | | | | |
| Check the followir and harness side). Harness connecto Harness connectos the inspection result YES >> GO TO 2. NO >> Repair the CHECK HARNESS Disconnect the hard | ttery cable from the non- ng terminals and con- r M6 r E106 <u>normal?</u> terminal and connect CONTINUITY (OPEN rness connectors M6 | nectors for damage, I tor. N CIRCUIT) and E106. | | ection (connector side | |
| | ty between the data I | ink connector and the | harness connector. | | |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity | |
| | 6 | | 49 | Existed | |
| M24 | 14 | M6 | 48 | Existed | |
| B. CHECK HARNESS | CONTINUITY (OPE) nnector of ABS actuation ity between the harne | tor and electric unit (cess connector and the | ontrol unit). ABS actuator and ele | ector M6. ectric unit (control unit) | |
| 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 | |
| | >Check CAN system | | he data link connecto | and the ABS actuator | |

ECM BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832348

[CAN SYSTEM (TYPE 6)]

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.

| | Resistance (Ω) | | |
|---------------|-------------------------|------------------|-------------------|
| Connector No. | Termi | Tresistance (22) | |
| 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 the following.

VQ37VHR: <u>EC-174</u>, "Diagnosis Procedure"

VQ25HR: <u>EC-748</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: EC-25. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ECM) : Special Repair Requirement"
- VQ25HR: EC-631, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

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

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

| 4WD BRANCH LINE | ECIRCUIT | | |
|--|--|-----------------------------|------------------------------|
| Diagnosis Procedure | | | INFOID:00000008832349 |
| 1.CHECK CONNECTOR | | | |
| | able from the negative terr ninals and connectors for d ctor 3 6 <u>al?</u> nal and connector. | | nnection (unit side and con- |
| Disconnect the connector Check the resistance be | or of AWD control unit. tween the AWD control unit | it harness connector termir | nals. |
| | WD control unit harness connecto | - | Resistance (Ω) |
| Connector No. F108 | 8 | nal No. 16 | Approx. 54 – 66 |
| s the measurement value w | - | | |
| 3. CHECK POWER SUPPLY | | | |
| check the power supply and <u>ture"</u> . s the inspection result norm | - | AVVD control unit. Refer to | DLN-28, "Diagnosis Proce- |
| YES (Present error)>>Repl YES (Past error)>>Error wa | ace the AWD control unit. | ntrol unit branch line. | <u>d View"</u> . |
| | | | |
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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832350

[CAN SYSTEM (TYPE 6)]

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. | Termi | | |
| M210 | 90 | 74 | Approx. 54 – 66 |

Models without navigation system (With rear view monitor)

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

Models without navigation system (Without rear view monitor)

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|--|-----------------|
| Connector No. | Terminal No. | | |
| M85 | 86 87 | | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

 $\mathbf{3}$. 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 rear view monitor: AV-36, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-145, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-258, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-399, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without rear view monitor: AV-75, "Exploded View"
- Base audio with rear view monitor: <u>AV-175, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-290, "Exploded View"</u>
- BOSE audio with navigation: AV-428, "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

| iagnosis Procedure | | | | INFOID:00000008832352 |
|---|---|--|---|----------------------------------|
| .CHECK CONNECTOR | | | | |
| Turn the ignition switch Disconnect the battery of Check the following terr nector side). A/T assembly Harness connector F10 Harness connector M11 the inspection result norm YES >> GO TO 2. NO >> Repair the term CHECK HARNESS FOR Disconnect the connect Check the resistance be | cable from minals and 3 6 <u>hal?</u> inal and c OPEN C for of A/T | d connectors for da connector. IRCUIT assembly. | amage, bend and | nnection (unit side and con- |
| | | bly harness connector | | |
| Connector No. | | Termin | al No. | Resistance (Ω) |
| F51 | | 3 | 8 | Approx. 54 – 66 |
| the measurement value w YES >> GO TO 3. NO >> Repair the TCM | | | | |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne | l branch li OPEN C ector. Refe | ine. IRCUIT er to <u>TM-277, "Ren</u> | | he TCM harness connector |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connect Check the continuity be side of the joint connect | 1 branch li OPEN C ector. Refe tween the tor. | ine. IRCUIT er to <u>TM-277, "Ren</u> e A/T assembly ha | rness connector | he TCM harness connector |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be | 1 branch li OPEN C ector. Refe tween the tor. | ine. IRCUIT er to <u>TM-277, "Ren</u> | rness connector | he TCM harness connector |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connect Check the continuity be side of the joint connect A/T assembly harness connect | 1 branch li OPEN C ector. Refe tween the tor. | ine. IRCUIT er to <u>TM-277, "Ren</u> e A/T assembly ha TCM harness of | rness connector connector side al No. | |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connect Check the continuity be side of the joint connect A/T assembly harness connect Terminal No. | 1 branch li OPEN C ector. Refe tween the tor. | ine. IRCUIT er to <u>TM-277, "Ren</u> e A/T assembly ha TCM harness of Termin | rness connector connector side al No. | Continuity |

< DTC/CIRCUIT DIAGNOSIS >

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

Diagnosis Procedure

INFOID:000000008832353

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-5, "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

| BCM BRANCH LINE C Diagnosis Procedure 1.check connector | | | |
|---|-------------------------------|-----------------|------------------------------|
| | | | |
| 1.CHECK CONNECTOR | | | INFOID:00000008832354 |
| | | | |
| | e from the negative terminal. | | se connection (unit side and |
| Is the inspection result normal? | | | |
| YES >> GO TO 2. NO >> Repair the terminal | and connector | | |
| 2.CHECK HARNESS FOR OP | | | |
| | en the BCM harness connec | ctor terminals. | |
| Connector No. | Terminal No. | | – Resistance (Ω) |
| M122 | 91 | 90 | Approx. 54 – 66 |
| Is the measurement value within YES >> GO TO 3. | | | |
| NO >> Repair the BCM bra 3.CHECK POWER SUPPLY A | ND GROUND CIRCUIT | | |

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832355

[CAN SYSTEM (TYPE 6)]

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 | | |
|---------------|---------------------|----|-----------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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

[CAN SYSTEM (TYPE 6)]

| Diagnosis Procedure | | | INF0ID:00000008832356 |
|--|---|--|-----------------------------|
| 1.CHECK CONNECTOR | | | |
| | cable from the negative terr ad connectors of the unified | | damage, bend and loose con- |
| s the inspection result norr YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOF | ninal and connector. | | |
| . Disconnect the connect | tor of unified meter and A/C etween the unified meter ar | | nector terminals. |
| Unifie | d meter and A/C amp. harness co | nnector nal No. | Resistance (Ω) |
| M67 | 56 | 121 NO. 72 | Approx. 54 – 66 |
| YES >> GO TO 3. | ed meter and A/C amp. bra | nch line. | |
| YES >> GO TO 3. NO >> Repair the unif CHECK POWER SUPP Check the power supply an METER AND A/C AMP. : D is the inspection result norr YES (Present error)>>Rep | ed meter and A/C amp. bra LY AND GROUND CIRCUIT d the ground circuit of the u iagnosis Procedure". nal? blace the unified meter and b | - nified meter and A/C am A/C amp. Refer to <u>MWI-1</u> | |
| NO >> Repair the unif 3.CHECK POWER SUPP Check the power supply an METER AND A/C AMP. : D s the inspection result norr YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra LY AND GROUND CIRCUIT d the ground circuit of the u iagnosis Procedure". nal? | - nified meter and A/C am A/C amp. Refer to <u>MWI-1</u> neter and A/C amp. brand | 13, "Exploded View". |
| YES >> GO TO 3. NO >> Repair the unif CHECK POWER SUPP Check the power supply an METER AND A/C AMP. : D s the inspection result norr YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra LY AND GROUND CIRCUIT d the ground circuit of the u iagnosis Procedure". nal? place the unified meter and a vas detected in the unified m | - nified meter and A/C am A/C amp. Refer to <u>MWI-1</u> neter and A/C amp. brand | 13, "Exploded View". |
| YES >> GO TO 3. NO >> Repair the unif CHECK POWER SUPP Check the power supply an METER AND A/C AMP. : D s the inspection result norr YES (Present error)>>Rep YES (Past error)>>Error w | ed meter and A/C amp. bra LY AND GROUND CIRCUIT d the ground circuit of the u iagnosis Procedure". nal? place the unified meter and a vas detected in the unified m | - nified meter and A/C am A/C amp. Refer to <u>MWI-1</u> neter and A/C amp. brand | 13, "Exploded View". |

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832357

[CAN SYSTEM (TYPE 6)]

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.

| Ste | Steering angle sensor harness connector | | |
|---------------|---|---|-----------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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 <u>BRC-96, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

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

ABS BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 6)]

| 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 15 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-114, "Exploded View". YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-114, "Exploded View". YES (Present error)>>-Repl | Diagnosis Procedure | | | INFOID:00000008832355 |
|--|---|---|--|--|
| 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-114, "Exploded View". YES (Present error)>> Replace the ABS actuator and electric unit (control unit). Refer to BRC-114, "Exploded View". YES (Past error)>> Error was detected in the ABS actuator and electric unit (control unit) branch line. | .CHECK CONNECTOR | | | |
| 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. 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-114. "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | Disconnect the battery of Check the terminals and and loose connection (u | cable from the negative term d connectors of the ABS act unit side and connector side) | uator and electric unit (co | ontrol unit) for damage, bend |
| 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 Sthe 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". s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-114. "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | YES >> GO TO 2. NO >> Repair the term | inal and connector. | | |
| 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 Sthe measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 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 3RC-81. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-114. "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | CHECK HARNESS FOR | OPEN CIRCUIT | | |
| Connector No. Terminal No. Resistance (Ω) E41 35 14 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. 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 3RC-81. "Diagnosis Procedure". s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-114, "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | 2. Check the resistance be | | | nit) harness connector termi- |
| E41 35 14 Approx. 54 – 66 s the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 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". Sthe inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-114, "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | ABS actuator | and electric unit (control unit) harne | ess connector | |
| 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". s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-114, "Exploded View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | | , , , , , , , , , , , , , , , , , , , | | Resistance (Ω) |
| s the inspection result normal? YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114, "Exploded</u> <u>View"</u> . YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | Connector No. E41 | Termina 35 | al No. | |
| YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114, "Exploded</u> <u>View"</u> . YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | Connector No. E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL | Termina 35 /ithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT | al No. 14 ontrol unit) branch line. | Approx. 54 – 66 |
| View". YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an BRC-81, "Diagnosis Proced | Termina 35 vithin the specification? actuator and electric unit (colspan="2") AND GROUND CIRCUIT od the ground circuit of the augment of t | al No. 14 ontrol unit) branch line. | Approx. 54 – 66 |
| YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line. | Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an BRC-81, "Diagnosis Proced s the inspection result norm | Termina 35 vithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT of the ground circuit of the v ure". hal? | al No. 14 ontrol unit) branch line. ABS actuator and electri | Approx. 54 – 66 c unit (control unit). Refer to |
| | Connector No. E41 <u>s the measurement value w</u> YES >> GO TO 3. NO >> Repair the ABS 3. CHECK POWER SUPPL Check the power supply an <u>3RC-81, "Diagnosis Proced</u> <u>s the inspection result norm</u> YES (Present error)>>Rep | Termina 35 vithin the specification? actuator and electric unit (co Y AND GROUND CIRCUIT of the ground circuit of the v ure". hal? | al No. 14 ontrol unit) branch line. ABS actuator and electri | Approx. 54 – 66 c unit (control unit). Refer to |
| | Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an SRC-81. "Diagnosis Proced s the inspection result norm YES (Present error)>>Rep View". YES (Past error)>>Error w | Termina 35 <u>vithin the specification?</u> actuator and electric unit (co Y AND GROUND CIRCUIT id the ground circuit of the v ure". hal? lace the ABS actuator and e as detected in the ABS actua | al No. 14 ontrol unit) branch line. ABS actuator and electri lectric unit (control unit). I ator and electric unit (cor | Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-114, "Exploded</u> |
| | Connector No. E41 s the measurement value w YES >> GO TO 3. NO >> Repair the ABS CHECK POWER SUPPL Check the power supply an SRC-81. "Diagnosis Proced s the inspection result norm YES (Present error)>>Rep View". YES (Past error)>>Error w | Termina 35 <u>vithin the specification?</u> actuator and electric unit (co Y AND GROUND CIRCUIT id the ground circuit of the v ure". hal? lace the ABS actuator and e as detected in the ABS actua | al No. 14 ontrol unit) branch line. ABS actuator and electri lectric unit (control unit). I ator and electric unit (cor | Approx. 54 – 66 c unit (control unit). Refer to Refer to <u>BRC-114, "Exploded</u> |

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832361

[CAN SYSTEM (TYPE 6)]

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 | | |
|---------------|----------------------------|----|-------------------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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 <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "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

[CAN SYSTEM (TYPE 6)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:00000008832362 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ 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.

< DTC/CIRCUIT DIAGNOSIS >

LAN-155

< 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.

 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.

| DTC/CIRCUIT DIA | | TWEEN AV AND | | I SYSTEM (TYPE 7)] |
|--|---|---|--|-----------------------------|
| | | SIS | - | |
| AIN LINE BET | | D DLC CIRCUI ⁻ | Г | |
| Diagnosis Proced | lure | | | INFOID:00000008832368 |
| .CHECK CONNECT | OR | | | |
| | ittery cable from the n ng terminals and con or M18 | | pend and loose conn | ection (connector side |
| s the inspection result | normal? | | | |
| YES >> GO TO 2. NO >> Repair the | e terminal and connec | tor | | |
| | | | | |
| With navigation sy | ity between the AV co | ontrol unit harness con Harness | nector and the harne | ss connector. Continuity |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M210 | 90 | - M18 | 1 | Existed |
| | 74 | | 2 | Existed |
| Without navigatior | n system (With rear vi | ew monitor) | | |
| AV control unit h | arness connector | Harness | connector | |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M204 | 81 | - M18 | 1 | Existed |
| 111201 | 80 | | 2 | Existed |
| Without navigatior | n system (Without rea | r view monitor) | | |
| AV control unit h | arness connector | Harness | connector | |
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M85 | 86 | M18 | 1 | Existed |
| WOO | 87 | MITO | 2 | Existed |
| | inormal? | | | |
| 3. CHECK HARNESS | e main line between th CONTINUITY (OPE) | | | or M18. |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b | e main line between th CONTINUITY (OPE) etween the harness c | N CIRCUIT) connector and the data | link connector. | or M18. |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b | e main line between th CONTINUITY (OPE) etween the harness c | N CIRCUIT) connector and the data Data link | link connector. | or M18. |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b | e main line between th CONTINUITY (OPE) etween the harness c connector Terminal No. | N CIRCUIT) connector and the data | link connector. connector Terminal No. | Continuity |
| YES >> GO TO 3. NO >> Repair the CHECK HARNESS Check the continuity b | e main line between th CONTINUITY (OPE) etween the harness c | N CIRCUIT) connector and the data Data link | link connector. | |

Is the inspection result normal?

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.

| iagnosis Proced | ure | | | INFOID:000000008832370 |
|---|---|--|---------------------------------|-------------------------|
| .CHECK CONNECT | | | | |
| Turn the ignition s | | | | |
| Disconnect the ba | ttery cable from the ne ng terminals and conr r M7 | | bend and loose con | nection (connector side |
| the inspection result | normal? | | | |
| YES >> GO TO 2. NO >> Repair the | terminal and connect | or | | |
| | CONTINUITY (OPEN | | | |
| | rness connectors M7 | | | |
| | ity between the data li | | harness connector. | |
| Data link | connector | Harness | connector | |
| | | | | Continuity |
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| | Terminal No. 6 | | Terminal No. 20 | Existed |
| M24 | 6 14 | Connector No. M7 | | |
| M24 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS | 6 14 | M7 e data link connector I CIRCUIT) | 20 21 | Existed |
| M24 the inspection result (ES >> GO TO 3. NO >> Repair the .CHECK HARNESS | 6 14 normal? main line between th CONTINUITY (OPEN | M7 e data link connector I CIRCUIT) | 20 21 | Existed |
| M24 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be Connector No. | 6 14 normal? main line between th CONTINUITY (OPEN | M7 e data link connector I CIRCUIT) onnector terminals. | 20 21 | Existed Existed |
| M24 the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS heck the continuity be | 6 14 normal? main line between th CONTINUITY (OPEN etween the harness co | M7 e data link connector I CIRCUIT) onnector terminals. | 20 21 and the harness cor | Existed Existed |

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MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Diagnosis Procedure

INFOID:000000008832371

[CAN SYSTEM (TYPE 7)]

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. | Termir | Continuity | |
|---------------|--------|------------|---------|
| B1 | 20 | 22 | Existed |
| | 21 | 23 | 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 | Harness connector | | connector | Continuity |
|---------------|-------------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M7 | 22 | M6 | 49 | Existed |
| 1017 | 23 | | 48 | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connector 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 | | ectric unit (control unit) connector | Continuity |
|---------------|--------------|---------------|---|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | |
| E106 | 49 | E41 | 35 | Existed |
| E100 | 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 7)]

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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

Diagnosis Procedure

INFOID:000000008832372

[CAN SYSTEM (TYPE 7)]

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 | | | | |
|---------------|-----------------------|----------------|-------------------|--|--|
| Connector No. | Termi | Resistance (Ω) | | | |
| 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 the following.

VQ37VHR: <u>EC-174</u>, "Diagnosis Procedure"

VQ25HR: <u>EC-748</u>, "Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: EC-25. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (ECM) : Special Repair Requirement"
- VQ25HR: EC-631, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

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

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

4WD BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

| 4WD BRANCH LINE | CIRCUIT | | |
|--|---|-----------------------------|------------------------------|
| Diagnosis Procedure | | | INFOID:00000008832373 |
| .CHECK CONNECTOR | | | |
| Turn the ignition switch O Disconnect the battery ca Check the following terminector side). AWD control unit connect Harness connector F103 Harness connector M116 | ble from the negative terr nals and connectors for d | | nnection (unit side and con- |
| the inspection result norma | <u>l?</u> | | |
| YES >> GO TO 2. NO >> Repair the termin | al and connector. | | |
| CHECK HARNESS FOR C | | | |
| Disconnect the connectorCheck the resistance betw | | it harness connector termin | als. |
| AW | D control unit harness connect | or | Pagiatanga (0) |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| F108 | 8 | 16 | Approx. 54 – 66 |
| the measurement value wit YES >> GO TO 3. NO >> Repair the AWD o CHECK POWER SUPPLY heck the power supply and | control unit branch line. AND GROUND CIRCUIT | | DI N-28 "Diagnosis Proce- |
| <u>ire"</u> . the inspection result norma | - | | DLN-20, Diagnosis Pioce- |
| YES (Present error)>>Repla YES (Past error)>>Error was | ce the AWD control unit. | ntrol unit branch line. | <u>d View"</u> . |
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AV BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832374

[CAN SYSTEM (TYPE 7)]

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

| | Resistance (Ω) | |
|---------------|-------------------------|-----------------|
| Connector No. | Termi | |
| M210 | 90 | Approx. 54 – 66 |

Models without navigation system (With rear view monitor)

| | Resistance (Ω) | | |
|---------------|-------------------------|-------------------|--|
| Connector No. | Termi | (125)Starice (22) | |
| M204 | 81 | 81 80 | |

Models without navigation system (Without rear view monitor)

| AV control unit harness connector | | | Resistance (Ω) |
|-----------------------------------|--------------|--|-------------------------|
| Connector No. | Terminal No. | | |
| M85 | 86 87 | | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

 $\mathbf{3.}$ 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 rear view monitor: AV-36, "AV CONTROL UNIT : Diagnosis Procedure"
- Base audio with rear view monitor: AV-145, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio without navigation: <u>AV-258, "AV CONTROL UNIT : Diagnosis Procedure"</u>
- BOSE audio with navigation: <u>AV-399</u>, "<u>AV CONTROL UNIT</u> : <u>Diagnosis Procedure</u>"

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without rear view monitor: AV-75, "Exploded View"
- Base audio with rear view monitor: <u>AV-175, "Exploded View"</u>
- BOSE audio without navigation: <u>AV-290, "Exploded View"</u>
- BOSE audio with navigation: AV-428, "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

| iagnosis Procedure | | | | | INFOID:00000000883237 |
|---|---|--|--|-----------|------------------------------------|
| .CHECK CONNECTOR | | | | | |
| nector side). A/T assembly Harness connector F10 Harness connector M11 the inspection result norm YES >> GO TO 2. NO >> Repair the term .CHECK HARNESS FOR Disconnect the connect | cable from minals and 03 16 <u>nal?</u> ninal and c COPEN C tor of A/T a | d connectors for da connector. IRCUIT assembly. | amage, bend and l | | ection (unit side and con |
| Check the resistance be | | | arness connector te | erminals. | |
| Connector No. | A/T asseml | bly harness connector Termin | | | Resistance (Ω) |
| F51 | | 3 | 8 | | Approx. 54 – 66 |
| the measurement value v YES >> GO TO 3. NO >> Repair the TCM | 1 branch li | ne. | | | Αμμιοχ. 94 – 66 |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne | I branch li OPEN C ector. Refe etween the | ne. IRCUIT er to <u>TM-277, "Ren</u> | | | TCM harness connecto |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connec Check the continuity be side of the joint connec | I branch li COPEN C ector. Refe etween the tor. | ne. IRCUIT er to <u>TM-277, "Ren</u> e A/T assembly ha | rness connector si | | |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connection check the continuity be | I branch li COPEN C ector. Refe etween the tor. | ne. IRCUIT er to <u>TM-277, "Ren</u> | rness connector si | | |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connec Check the continuity be side of the joint connec A/T assembly harness connect | I branch li COPEN C ector. Refe etween the tor. | ne. IRCUIT er to <u>TM-277, "Ren</u> e A/T assembly ha TCM harness o | rness connector si connector side al No. | | TCM harness connecto |
| YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connec Check the continuity be side of the joint connec A/T assembly harness connec Terminal No. | I branch li COPEN C ector. Refe etween the tor. | ne. IRCUIT er to <u>TM-277, "Ren</u> e A/T assembly ha TCM harness o Termin | rness connector si connector side al No. | | TCM harness connecto Continuity |

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

Diagnosis Procedure

INFOID:000000008832377

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-5, "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

| | ECIRCUIT | | | | |
|---|---|---|------------------------------|--|--|
| Diagnosis Procedure | | | | | |
| 1.CHECK CONNECTOR | | | | | |
| | able from the negative term | | se connection (unit side and | | |
| Is the inspection result norm | <u>al?</u> | | | | |
| YES >> GO TO 2. NO >> Repair the termi | nal and connector. | | | | |
| 2. CHECK HARNESS FOR | | | | | |
| Disconnect the connector Check the resistance be | or of BCM. tween the BCM harness co BCM harness connector | onnector terminals. | | | |
| Connector No. | Termin | al No. | Resistance (Ω) | | |
| | | 22 | Approx. 54 – 66 | | |
| M122 | 91 | 90 | Approx. 54 – 66 | | |
| M122 Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3.CHECK POWER SUPPLY | ithin the specification? branch line. | | Αμμιοχ. 54 – 66 | | |
| Is the measurement value w YES >> GO TO 3. NO >> Repair the BCM 3. CHECK POWER SUPPLY Check the power supply and Is the inspection result norm YES (Present error)>>Repl YES (Past error)>>Error was | ithin the specification? branch line. Y AND GROUND CIRCUIT I the ground circuit of the B al? ace the BCM. Refer to BCS | CM. Refer to <u>BCS-40, "Dia</u> S-81, "Exploded View". nch line. | | | |

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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832379

[CAN SYSTEM (TYPE 7)]

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 | | | |
|---------------|---------------------|----------------|-----------------|--|
| Connector No. | Termi | Resistance (Ω) | | |
| 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

[CAN SYSTEM (TYPE 7)]

| Diagnosis Procedure | | | INFOID:00000008832380 |
|--|--|---|-------------------------------------|
| 1.CHECK CONNECTOR | | | |
| | cable from the negative terr d connectors of the unified onnector side). | | damage, bend and loose con- |
| YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR | | | |
| 1. Disconnect the connect | or of unified meter and A/C etween the unified meter an | | nector terminals. |
| | meter and A/C amp. harness co | nnector | Resistance (Ω) |
| Connector No. M67 | Termir 56 | nal No. 72 | Approx. 54 – 66 |
| | | | |
| 3. CHECK POWER SUPPL Check the power supply and | d the ground circuit of the u | Γ | p. Refer to <u>MWI-51, "UNIFIED</u> |
| CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a | nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |
| 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |
| 3. CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia s the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | nified meter and A/C am A/C amp. Refer to <u>MWI-</u> neter and A/C amp. bran | 113, "Exploded View". |

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832381

[CAN SYSTEM (TYPE 7)]

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.

| Ste | Steering angle sensor harness connector | | |
|---------------|---|---|-------------------------|
| Connector No. | Terminal No. | | Resistance (Ω) |
| 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 <u>BRC-96, "Wiring Dia-</u> gram - BRAKE CONTROL SYSTEM -".

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

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

[CAN SYSTEM (TYPE 7)]

| ADP BRANCH LINE | ECIRCUIT | | | Δ |
|--|---|------------------------------------|------------------------------|---|
| Diagnosis Procedure | | | INFOID:00000008832382 | |
| 1. CHECK CONNECTOR | | | | В |
| 3. Check the following terr nector side). | cable from the negative terr | | nnection (unit side and con- | С |
| Driver seat control unit Harness connector B46 Harness connector B59 | | | | D |
| Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR | inal and connector. | | | Е |
| 1. Disconnect the connect | or of driver seat control unit | t. rol unit harness connector t | erminals. | F |
| Driv | er seat control unit harness conne | ector | Resistance (Ω) | G |
| Connector No. | Termir | nal No. | Resistance (32) | |
| B451 | 3 | 19 | Approx. 54 – 66 | Н |
| 3.CHECK POWER SUPPL Check the power supply and | r seat control unit branch li Y AND GROUND CIRCUIT I the ground circuit of the dr | - | to ADP-65, "DRIVER SEAT | |
| <u>CONTROL UNIT : Diagnosis</u> Is the inspection result norm | | | | J |
| • | | unit. Refer to ADP-203, "Ex | koloded View" | |
| YES (Past error)>>Error w | as detected in the driver se er supply and the ground ci | | | K |
| YES (Past error)>>Error w | as detected in the driver se | | | K |

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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

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 a | and electric unit (control unit) har | 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.

$\mathbf{3}$. 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 <u>BRC-81, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114</u>, "Exploded <u>View</u>".

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.

[CAN SYSTEM (TYPE 7)]

IPDM-E BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 7)]

| SIS > | | [CAN SYSTEM (TYPE 7)] |
|---|--|--|
| LINE CIRCUIT | | |
| 1 | | INFOID:0000000883238 |
| | | |
| cable from the negative term nd connectors of the IPDM E mal? | | d loose connection (unit side |
| | | |
| between the IPDM E/R harne | ess connector terminals. | |
| | al No. | Resistance (Ω) |
| 40 | 39 | Approx. 108 – 132 |
| PLY AND GROUND CIRCUIT nd the ground circuit of the IP mal? | | 7, "Diagnosis Procedure". |
| place the IPDM E/R. Refer to was detected in the IPDM E/I | | <u>~"</u> . |
| | nd connectors of the IPDM E mal? minal and connector. R OPEN CIRCUIT ctor of IPDM E/R. between the IPDM E/R harnes IPDM E/R harness connector IPDM E/R harness connector 40 within the specification? OM E/R branch line. PLY AND GROUND CIRCUIT nd the ground circuit of the IP | h OFF. r cable from the negative terminal. nd connectors of the IPDM E/R for damage, bend and mal? minal and connector. R OPEN CIRCUIT ctor of IPDM E/R. between the IPDM E/R harness connector terminals. IPDM E/R harness connector IPDM E/R harness connector 40 39 within the specification? DM E/R branch line. PLY AND GROUND CIRCUIT and the ground circuit of the IPDM E/R. Refer to PCS-1 |

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CAN COMMUNICATION CIRCUIT

Diagnosis Procedure

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 | | |
|---------------|---------------------|----|-------------|
| Connector No. | Terminal No. | | Continuity |
| 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 | Data link connector | | Continuity |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No. | Ground | Continuity |
| M24 | 6 | Ground | Not existed |
| 10124 | 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.

| E | СМ | Resistance (Ω) | |
|-------|---------|-------------------|--|
| Termi | nal No. | | |
| 114 | 113 | Approx. 108 – 132 | |

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

| IPDM E/R | | Resistance (Ω) | |
|----------|---------|-------------------|--|
| Termi | nal No. | Resistance (12) | |
| 40 | 39 | Approx. 108 – 132 | |

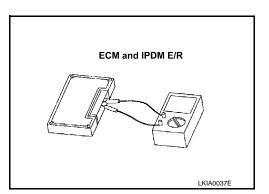
Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

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

LAN-174



[CAN SYSTEM (TYPE 7)]

INFOID:000000008832386

CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Inspection result А Reproduced>>GO TO 6. Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected. 6.CHECK UNIT REPRODUCTION В Perform the reproduction test as per the following procedure for each unit. 1. Turn the ignition switch OFF. С Disconnect the battery cable from the negative terminal. 2. 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. D Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom 4. (Results from interview with customer)" are reproduced. NOTE: Е 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. F Non-reproduced>>Replace the unit whose connector was disconnected.

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DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN AV AND DLC CIRCUIT

Diagnosis Procedure

INFOID:000000008832392

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.
- With navigation system

| AV control unit h | narness connector | Harness connector | | Continuity |
|-------------------|-------------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M210 | 90 | M18 | 1 | Existed |
| IVIZ TO | 74 | | 2 | Existed |

- Without navigation system (With rear view monitor)

| AV control unit h | narness connector | Harness connector | | Continuity |
|-------------------|-------------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M204 | 81 | M18 | 1 | Existed |
| 101204 | 80 | IVITO | 2 | Existed |

- Without navigation system (Without rear view monitor)

| AV control unit I | narness connector | Harness connector | | Continuity |
|-------------------|-------------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M85 | 86 | M18 | 1 | Existed |
| W05 | 87 | IVI I O | 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. | Continuity |
| M17 | 1 | M24 | 6 | Existed |
| | 2 | 10124 | 14 | Existed |

Is the inspection result normal?

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

MAIN LINE BETWEEN AV AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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- 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.

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MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN DLC AND ADP CIRCUIT

Diagnosis Procedure

INFOID:000000008832394

[CAN SYSTEM (TYPE 8)]

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. | Continuity |
| M24 | 6 | M7 | 20 | Existed |
| 10124 | 14 | | 21 | 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. | Termi | nal No. | Continuity |
|---------------|-------|---------|------------|
| B1 | 20 | 22 | Existed |
| DI | 21 | 23 | 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.

| DTC/CIRCUIT DIA | 210212 > | | b - | N SYSTEM (TYPE 8)] |
|---|--|---|---|--|
| AIN LINE BE | TWEEN ADP A | ND ABS CIRCI | JIT | |
| Diagnosis Procec | lure | | | INFOID:0000000883239 |
| | TOR | | | |
| Check the following and harness side) Harness connectore <l< td=""><td>attery cable from the non- ng terminals and cont or B1 or M7 or M6 or E106 t normal?</td><td>nectors for damage, tor.</td><td>bend and loose con</td><td>nection (connector side</td></l<> | attery cable from the non- ng terminals and cont or B1 or M7 or M6 or E106 t normal? | nectors for damage, tor. | bend and loose con | nection (connector side |
| . Disconnect the ha | irness connectors B1 a lity between the harne | and M7. | ls. | |
| Connector No. | | Terminal No. | | Continuity |
| B1 | 20 | 20 | | Existed |
| | | | | Existed |
| s the inspection result | | | 23 | Existed |
| the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha | t normal? | N CIRCUIT) and E106. ss connectors. | | Existed |
| s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. | t normal? e main line between th CONTINUITY (OPEN irness connectors M6 ity between the harne | N CIRCUIT) and E106. ss connectors. Harness Connector No. | unit and the harness | Existed connector B1. |
| s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. | t normal? e main line between th cONTINUITY (OPEN irness connectors M6 ity between the harne connector Terminal No. 22 23 | N CIRCUIT) and E106. ss connectors. Harness | unit and the harness connector Terminal No. | Existed connector B1. |
| s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 s the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co Check the continu harness connecto | t normal? e main line between the cONTINUITY (OPEN inness connectors M6 ity between the harne connector Terminal No. 22 23 t normal? e main line between the cONTINUITY (OPEN ity between the harne ity between the harne r. | A CIRCUIT) and E106. ss connectors. Harness Connector No. M6 e harness connector N CIRCUIT) tor and electric unit (coss connector and the ABS actuator and elector | connector Terminal No. 49 48 M7 and M6. control unit). ABS actuator and e | Existed connector B1. Continuity Existed Existed |
| s the inspection result YES >> GO TO 3. NO >> Repair the CHECK HARNESS Disconnect the ha Check the continu Harness Connector No. M7 s the inspection result YES >> GO TO 4. NO >> Repair the CHECK HARNESS Disconnect the co Check the continu harness connecto | t normal? e main line between th cONTINUITY (OPEN irrness connectors M6 ity between the harne connector Terminal No. 22 23 t normal? e main line between th cONTINUITY (OPEN innector of ABS actuated ity between the harne | A CIRCUIT) and E106. ss connectors. Harness Connector No. M6 e harness connector N CIRCUIT) tor and electric unit (coss connector and the ABS actuator and elector | connector Terminal No. 49 48 M7 and M6. control unit). ABS actuator and e | Existed connector B1. |

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

Is the inspection result normal?

E106

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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).

E41

14

Existed

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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 DIAGNOS | SIS > | | [CAN SYSTEM (TYPE 8)] |
|---|---|---------------------|-----------------------------|
| ECM BRANCH LIN | E CIRCUIT | | |
| Diagnosis Procedure | | | INFOID:00000008832396 |
| 1.CHECK CONNECTOR | | | |
| | cable from the negative terr | | e connection (unit side and |
| Is the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR | inal and connector. | | |
| Disconnect the connect Check the resistance be | or of ECM. etween the ECM harness co | onnector terminals. | |
| | ECM harness connector | | Resistance (Ω) |
| Connector No. M107 | Termir 114 | nal No. 113 | Approx. 108 – 132 |
| Is the measurement value w | vithin the specification? | | |
| YES >> GO TO 3. NO >> Repair the ECM | 1 branch line. | | |
| 3. CHECK POWER SUPPL | | г | |
| Check the power supply and • VQ37VHR: <u>EC-174</u> , "Diago • VQ25HR: <u>EC-748</u> , "Diagon Is the inspection result norm YES (Present error)>>Rep | nosis Procedure" osis Procedure" hal? lace the ECM. Refer to the | following. | |
| | C-25, "ADDITIONAL SER' r Requirement" | VICE WHEN REPLACING | CONTROL UNIT (ECM) : |
| | -631, "ADDITIONAL SER\ | /ICE WHEN REPLACING | CONTROL UNIT : Special |
| | as detected in the ECM bra er supply and the ground ci | | |
| | | | |
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4WD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832397

[CAN SYSTEM (TYPE 8)]

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).
- AWD control unit connector
- 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 AWD control unit.

2. Check the resistance between the AWD control unit harness connector terminals.

| P | WD control unit harness connect | or | Resistance (Ω) |
|---------------|---------------------------------|---------|-----------------|
| Connector No. | Termi | nal No. | |
| F108 | 8 | 16 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-28</u>, "<u>Diagnosis Proce-</u> <u>dure</u>".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-50, "Exploded View"</u>.

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

AV BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

| AV BRANCH LINE C | IRCUIT | | |
|--|---|--|--|
| Diagnosis Procedure | | | A INFOID:00000008832398 |
| 1.CHECK CONNECTOR | | | В |
| Turn the ignition switch C Disconnect the battery ca Check the terminals and side and connector side). Is the inspection result normative YES >> GO TO 2. NO >> Repair the terminals and second seco | ble from the negative terr connectors of the AV cor <u>I?</u> al and connector. | | nd and loose connection (unit |
| Disconnect the connector Check the resistance bether Models with navigation sy | ween the AV control unit h | narness connector termina | als. |
| A'Connector No. | / control unit harness connecto | r nal No. | Resistance (Ω) |
| M210 | 90 | 74 | Approx. 54 – 66 |
| - Models without navigation | ו system (With rear view ו | monitor) | |
| A | / control unit harness connecto | r | |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M204 | 81 | 80 | Approx. 54 – 66 |
| Models without navigation | n system (Without rear vie | ew monitor) | |
| A | / control unit harness connecto | r | J |
| Connector No. | Termir | nal No. | Resistance (Ω) |
| M85 | 86 | 87 | Approx. 54 – 66 |
| Is the measurement value with YES >> GO TO 3. NO >> Repair the AV con 3. CHECK POWER SUPPLY | ntrol unit branch line. AND GROUND CIRCUIT | | L |
| Check the power supply and Base audio without rear view Base audio with rear view n BOSE audio without naviga BOSE audio with navigation | w monitor: <u>AV-36, "AV CO</u> nonitor: <u>AV-145, "AV CON</u> tion: <u>AV-258, "AV CONTR</u> | NTROL UNIT : Diagnosis TROL UNIT : Diagnosis F OL UNIT : Diagnosis Pro | S Procedure" LA Procedure" cedure" |
| Is the inspection result norma | | | |
| Base audio with BOSE audio wi BOSE audio wi | nout rear view monitor: <u>AV</u> n rear view monitor: <u>AV-17</u> thout navigation: <u>AV-290,</u> th navigation: <u>AV-428, "Ex</u> | /-75, "Exploded View" 75, "Exploded View" "Exploded View" (ploded View" | C |
| YES (Past error)>>Error was NO >> Repair the power | s detected in the AV contr supply and the ground ci | | P |

PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832399

[CAN SYSTEM (TYPE 8)]

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-cras | sh seat belt control unit harness c | onnector | Resistance (Ω) |
|---------------|-------------------------------------|----------|-------------------------|
| Connector No. | Termi | nal 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 <u>SBC-24, "Diag-nosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the pre-crash seat belt control unit. Refer to <u>SBC-34</u>, "Exploded View".

YES (Past error)>>Error was detected in the pre-crash seat belt control unit branch line.

TCM BRANCH LINE CIRCUIT

| iagnosis Procedure | | | | INFOID:0000000883 |
|---|---|--|--------------|-------------------------------------|
| CHECK CONNECTOR | | | | |
| Turn the ignition switch Disconnect the battery Check the following tern nector side). A/T assembly Harness connector F10 Harness connector M17 the inspection result norm (ES >> GO TO 2. NO >> Repair the term | cable from minals and 03 16 <u>nal?</u> | l connectors for damage, bend and | d loose conn | ection (unit side and co |
| CHECK HARNESS FOR | | | | |
| Disconnect the connect | tor of A/T a etween the | assembly. e A/T assembly harness connector | terminals. | |
| 2 | A/T assemb | ly harness connector Terminal No. | | Resistance (Ω) |
| Connector No | | | | |
| ES>> GO TO 3.IO>> Repair the TCN | 1 branch lir | 3 8 specification? | | Approx. 54 – 66 |
| F51 the measurement value v YES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne | I branch lin OPEN CI ector. Refe etween the | 3 8 specification? | | |
| F51 the measurement value v (ES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connec Check the continuity be side of the joint connec | I branch lir COPEN CI ector. Refe etween the tor. | 3 8 specification? ne. RCUIT r to <u>TM-277, "Removal and Installa</u> | | e TCM harness connect |
| F51 the measurement value v 'ES >> GO TO 3. IO >> Repair the TCM CHECK HARNESS FOR Remove the joint conne Check the continuity be | I branch lir COPEN CI ector. Refe etween the tor. | 3 8 specification? ne. RCUIT r to <u>TM-277, "Removal and Installa</u> A/T assembly harness connector | | |
| F51 the measurement value v ES >> GO TO 3. IO >> Repair the TCM CHECK HARNESS FOR Remove the joint connec Check the continuity be side of the joint connec | I branch lir COPEN CI ector. Refe etween the tor. | 3 8 specification? ne. RCUIT r to <u>TM-277, "Removal and Installa</u> A/T assembly harness connector TCM harness connector side | | e TCM harness connect |
| F51 the measurement value v (ES >> GO TO 3. NO >> Repair the TCM CHECK HARNESS FOR Remove the joint connec Check the continuity be side of the joint connec A/T assembly harness conne Terminal No. | I branch lin COPEN CI ector. Refe etween the tor. | 3 8 specification? ne. RCUIT r to <u>TM-277, "Removal and Installa</u> A/T assembly harness connector TCM harness connector side Terminal No. | | e TCM harness connect Continuity |

A-BAG BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

Diagnosis Procedure

INFOID:000000008832401

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-5, "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

| BCM BRANCH LINE CIRCUIT Diagnosis Procedure 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 sid |
|--|
| CHECK CONNECTOR Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. |
| Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. |
| 2. Disconnect the battery cable from the negative terminal. |
| connector side). |
| Is the inspection result normal? |
| YES >> GO TO 2. NO >> Repair the terminal and connector. |
| 2. CHECK HARNESS FOR OPEN CIRCUIT |
| Disconnect the connector of BCM. Check the resistance between the BCM harness connector terminals. |
| Connector No. Terminal No. Resistance (Ω) |
| 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 <u>BCS-40, "Diagnosis Procedure"</u> . <u>Is the inspection result normal?</u> YES (Present error)>>Replace the BCM. Refer to <u>BCS-81, "Exploded View"</u> . YES (Past error)>>Error was detected in the BCM branch line. NO >> Repair the power supply and the ground circuit. |
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< DTC/CIRCUIT DIAGNOSIS >

DLC BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832403

[CAN SYSTEM (TYPE 8)]

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. | Termi | nal 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

[CAN SYSTEM (TYPE 8)]

| Diagnosis Procedure | | | INFOID:00000008832404 |
|--|--|--|-------------------------------------|
| 1.CHECK CONNECTOR | | | |
| 3. Check the terminals an nection (unit side and c | cable from the negative terr d connectors of the unified onnector side). | | lamage, bend and loose con- |
| s the inspection result norm YES >> GO TO 2. NO >> Repair the term 2.CHECK HARNESS FOR | inal and connector. | | |
| 1. Disconnect the connect | or of unified meter and A/C etween the unified meter ar | | nector terminals. |
| | meter and A/C amp. harness co | | Resistance (Ω) |
| Connector No. M67 | 56 | nal No. 72 | Approx. 54 – 66 |
| | ed meter and A/C amp. bra | | |
| NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and | Y AND GROUND CIRCUIT | Γ | o. Refer to <u>MWI-51, "UNIFIED</u> |
| NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and <u>METER AND A/C AMP. : Dial</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". | nified meter and A/C amp A/C amp. Refer to <u>MWI-1</u> heter and A/C amp. branc | 13, "Exploded View". |
| NO >> Repair the unifie 3. CHECK POWER SUPPL Check the power supply and <u>METER AND A/C AMP. : Dial</u> Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | nified meter and A/C amp A/C amp. Refer to <u>MWI-1</u> heter and A/C amp. branc | 13, "Exploded View". |
| NO >> Repair the unified 3.CHECK POWER SUPPL Check the power supply and METER AND A/C AMP. : Dia Is the inspection result norm YES (Present error)>>Rep YES (Past error)>>Error w | Y AND GROUND CIRCUIT d the ground circuit of the u agnosis Procedure". hal? lace the unified meter and a as detected in the unified m | nified meter and A/C amp A/C amp. Refer to <u>MWI-1</u> heter and A/C amp. branc | 13, "Exploded View". |

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STRG BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832405

[CAN SYSTEM (TYPE 8)]

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.

| Ste | ering angle sensor harness conne | ector | Resistance (Ω) |
|---------------|----------------------------------|---------|-----------------|
| Connector No. | Termi | nal 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 <u>BRC-96, "Wiring Dia-gram - BRAKE CONTROL SYSTEM -"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-117, "Exploded View"</u>.

YES (Past error)>>Error was detected in the steering angle sensor branch line.

ADP BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

| ADP BRANCH LINE | CIRCUIT | | |
|--|---|------------------------------|------------------------------|
| Diagnosis Procedure | | | INFOID:00000008832406 |
| 1.CHECK CONNECTOR | | | |
| Check the following term nector side). Driver seat control unit Harness connector B462 | able from the negative tern ninals and connectors for d | | nnection (unit side and con- |
| Harness connector B59 Is the inspection result norm | al2 | | |
| YES >> GO TO 2. NO >> Repair the termi | nal and connector. | | |
| 2.CHECK HARNESS FOR | | | |
| | or of driver seat control unit tween the driver seat contr | | erminals. |
| Drive | er seat control unit harness conne | ector | Resistance (Ω) |
| Connector No. | Termin | al No. | |
| B451 | 3 | 19 | Approx. 54 – 66 |
| 3. CHECK POWER SUPPL Check the power supply and | r seat control unit branch lin Y AND GROUND CIRCUIT the ground circuit of the dri | | to ADP-65, "DRIVER SEAT |
| CONTROL UNIT : Diagnosis s the inspection result norm | | | |
| YES (Present error)>>Repl YES (Past error)>>Error wa | ace the driver seat control | at control unit branch line. | xploded View". |
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ABS BRANCH LINE CIRCUIT

Diagnosis Procedure

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 a | and electric unit (control unit) har | ness connector | Resistance (Ω) |
|----------------|--------------------------------------|----------------|-----------------|
| Connector No. | Termi | nal 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 <u>BRC-81, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-114</u>, "Exploded <u>View</u>".

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.

Revision: 2012 August

INFOID:000000008832407

ICC BRANCH LINE CIRCUIT

[CAN SYSTEM (TYPE 8)]

| Diagnosis Procedure | | | INFOID:00000008832408 |
|---|--|--|---------------------------|
| 1. CHECK CONNECTOR | | | |
| | cable from the negative tern d connectors of the ICC se onnector side). | | mage, bend and loose con- |
| NO >> Repair the term | | | |
| 2.CHECK HARNESS FOR | | 1 | |
| | or of ICC sensor integrated etween the ICC sensor inte | grated unit harness connec | tor terminals. |
| | ensor integrated unit harness cor | | Resistance (Ω) |
| E67 | Termi 3 | nal No. 6 | Approx. 54 – 66 |
| • · | sensor integrated unit bran | | |
| NO >> Repair the ICC 3.CHECK POWER SUPPL Check the power supply and <u>Procedure</u> . | Y AND GROUND CIRCUI the ground circuit of the IC hal? lace the ICC sensor integra | CC sensor integrated unit. F ated unit. Refer to <u>CCS-118</u> | , "Exploded View". |
| NO >> Repair the ICC 3. CHECK POWER SUPPL Check the power supply and <u>Procedure</u> ". <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was | Y AND GROUND CIRCUI the ground circuit of the IC hal? lace the ICC sensor integra | T CC sensor integrated unit. F ated unit. Refer to <u>CCS-118</u> sor integrated unit branch li | , "Exploded View". |
| NO >> Repair the ICC 3. CHECK POWER SUPPL Check the power supply and <u>Procedure</u> ". <u>Is the inspection result norm</u> YES (Present error)>>Rep YES (Past error)>>Error was | Y AND GROUND CIRCUIT the ground circuit of the IC <u>nal?</u> lace the ICC sensor integra as detected in the ICC sen | T CC sensor integrated unit. F ated unit. Refer to <u>CCS-118</u> sor integrated unit branch li | , "Exploded View". |

< DTC/CIRCUIT DIAGNOSIS >

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IPDM-E BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000008832409

[CAN SYSTEM (TYPE 8)]

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 <u>PCS-17, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-31, "Exploded View".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 8)]

CAN COMMUNICATION CIRCUIT А **Diagnosis** Procedure INFOID:000000008832410 1.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT) E Check the continuity between the data link connector terminals. Data link connector Continuity F 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) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M24 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. 2. Check the resistance between the ECM terminals. LAN ECM and IPDM E/R ECM Resistance (Ω) Terminal No. Approx. 108 - 132 Ν 114 113 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance (Ω) Terminal No. LKIA0037E 40 39 Approx. 108 - 132 Ρ 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.

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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.

 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.